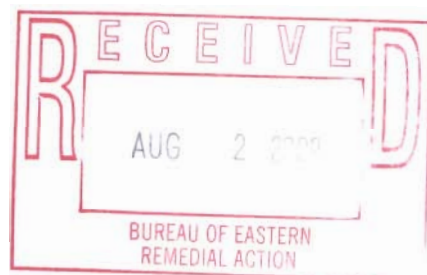


FINAL FEASIBILITY STUDY REPORT

*Mayer Landfill
Blooming Grove, New York
NYSDEC Site No. 3-36-027*

*25 January 2002
Revised 31 July 2002*



Prepared For:

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL
CONSERVATION
Division of Environmental Remediation
Bureau of Eastern Remedial Action, Room 242
625 Broadway
Albany, NY 12233

Prepared By:

ENVIRONMENTAL RESOURCES MANAGEMENT, INC.
475 Park Avenue South, 29th Floor
New York, NY 10016



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LIST OF ACRONYMS / ABBREVIATIONS

AGC	<i>annual guidance concentration</i>
alg	<i>Bull Mine Mountain leucogranite gneiss</i>
ARAR	<i>applicable or relevant and appropriate requirements</i>
BEHP	<i>bis-2-ethyl hexyl phthalate</i>
BTEX	<i>benzene, toluene, ethylbenzene, and xylenes</i>
Ca	<i>calculated maximum annual impact</i>
CAMP	<i>Community Air Monitoring Plan</i>
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act</i>
cfm	<i>cubic feet per minute</i>
CFR	<i>Code of Federal Regulations</i>
COC	<i>chemical of concern</i>
Cp	<i>calculated maximum potential annual impact</i>
CRDL	<i>contract required detection limit</i>
Cst	<i>calculated maximum short-term impact</i>
cy	<i>cubic yards</i>
EPA	<i>United States Environmental Protection Agency</i>
ERM	<i>Environmental Resources Management, Inc.</i>
FS	<i>Feasibility Study</i>
ft	<i>feet</i>
FWIA	<i>Fish and Wildlife Impact Analysis</i>
GCL	<i>geosynthetic clay layer</i>
HDPE	<i>high density polyethylene</i>
HEEA	<i>Health and Environmental Exposure Assessment</i>
HELP	<i>Hydrologic Evaluation of Landfill Performance</i>
HHEA	<i>Human Health Exposure Assessment</i>
HWR	<i>Hazardous Waste Remediation</i>
IDL	<i>instrument detection limit</i>
lbs	<i>pounds</i>
LEL	<i>lower explosive limit</i>
LNAPL	<i>light non-aqueous phase liquid</i>
MDL	<i>method detection limit</i>
MEK	<i>methyl ethyl ketone</i>
mil	<i>thousandths of an inch</i>
MTBE	<i>methyl tertiary butyl ether</i>
MW	<i>Monitoring well</i>
NCP	<i>National Contingency Plan</i>
NTU	<i>Nephelometric turbidity units</i>
NYCRR	<i>New York Code of Rules and Regulations</i>
NYS	<i>New York State</i>
NYSDEC	<i>New York State Department of Environmental Conservation</i>
NYSDOH	<i>New York State Department of Health</i>
OSWER	<i>Office of Solid Waste and Environmental Remediation</i>
PAH	<i>polynuclear aromatic hydrocarbon</i>
PCB	<i>polychlorinated biphenyl</i>
ppb	<i>parts per billion</i>
ppm	<i>parts per million</i>

PVC	<i>polyvinyl chloride</i>
Registry	<i>New York Registry of Inactive Hazardous Waste Disposal Sites</i>
RI	<i>Remedial Investigation</i>
RSCO	<i>recommended soil cleanup objective</i>
SARA	<i>Superfund Amendment and Reauthorization Act</i>
SCG	<i>standards, criteria, and guidance</i>
SEL	<i>severe effect level</i>
SGC	<i>short-term guidance concentration</i>
SRI	<i>Supplemental Remedial Investigation</i>
SVOC	<i>semi-volatile organic compound</i>
TAGM	<i>Technical and Administrative Guidance Memorandum</i>
TAL	<i>target analyte list</i>
TBC	<i>to be considered</i>
TCE	<i>trichloroethene</i>
TCL	<i>target compound list</i>
TIC	<i>tentatively identified compound</i>
TOC	<i>total organic carbon</i>
TOGS	<i>Technical and Operational Guidance Series</i>
ug/kg	<i>microgram per kilogram</i>
ug/L	<i>microgram per liter</i>
USEPA	<i>United States Environmental Protection Agency</i>
USGS	<i>United States Geological Survey</i>
VFPE	<i>very flexible polyethylene</i>
VOC	<i>volatile organic compound</i>

This Feasibility Study (FS) has been prepared by Environmental Resources Management, Inc. (ERM) as part of a New York State Department of Environmental Conservation (NYSDEC) Work Assignment (D-00397-01) for the Mayer Landfill (Site Number #3-36-027). The Mayer Landfill Site (hereinafter referred to as the "Site") is in the Town of Blooming Grove, Orange County, New York. The Site is currently co-owned by Johanna Mayer and William Mayer, Jr.

The Site is listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites (Registry) as a Class 2 site. In March 2001, the Remedial Investigation (RI) Report was prepared by ERM and submitted to the NYSDEC. Following submittal of the RI report, supplemental remedial investigative activities were conducted at the Site from February through November 2001 according to the recommendations in the RI. The Supplemental Remedial Investigation (SRI) was submitted to the NYSDEC on 14 December 2001 and is summarized in Section 1.3.2 of this FS. The RI and SRI were prepared under the advisement of NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4044, "Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills". The RI and SRI assessed the nature and extent of fill waste, leachate seeps, organic and inorganic constituents in groundwater, soil, surface water, sediment, and soil gas, and the geological and hydrogeological characteristics of the Site. A human health exposure assessment (HHEA) and fish and wildlife impact analysis (FWIA) were conducted in conjunction with field activities at the Site. The SRI was performed between February and November 2001 to supplement data obtained during the RI.

The purpose of an FS is to identify a remedial alternative that will achieve the remedial action objectives for a site. The remedial action objectives for the affected media are based upon established standards that are applicable or relevant and appropriate requirements (ARAR) for the site and on constituent concentrations which are protective of human health and the environment.

This FS has been prepared in accordance with:

- NYSDEC TAGM 4044, "Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills" (NYSDEC, 1992);
- the New York State (NYS) Inactive Hazardous Waste Site Remedial Program (6 New York Code of Rules and Regulations (NYCRR) Part 375) (NYSDEC, 1992);
- NYSDEC TAGM 4030 "Selection of Remedial Actions at Inactive Hazardous Waste Sites", (NYSDEC, 1990);
- "Work Plan for the Remedial Investigation/Feasibility Study, Mayer Landfill", dated August 1999, approved by NYSDEC; and
- sound engineering practices.

In addition, the FS used the following United States Environmental Protection Agency (USEPA or EPA) documents as guidance in preparing the FS:

- USEPA Office of Solid Waste and Environmental Remediation (OSWER) Directive 9355.3-01 "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA", (USEPA, 1988); and
- USEPA OSWER Directive 9355.3-11 "Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites".

ⁱ CERCA: Comprehensive Response, Compensation and Liability Act

The FS establishes remedial action objectives for the Site, considers general response actions capable of achieving these remedial action objectives and identifies potential remedial action technologies to implement these actions. Remedial technologies that are found to be applicable to Site conditions are then used to develop comprehensive remedial action alternatives. Remedial action alternatives are then compared in accordance with NYSDEC evaluation guidelines.

This FS is divided into five sections. The first section is an introduction to the report and contains a summary of the Site history, physical characteristics, and previous investigations. The remedial action objectives are developed in the second section of the report, based on: (1) the RI and SRI data and (2) NYSDEC standards, criteria, and guidance (SCGs) or chemical specific remediation goals designed to protect human health and the environment. This section also identifies general response actions which may achieve the remedial action objectives for the affected Site media (or medium).

In the third section of the report, various remedial action technologies, which might be used to accomplish the general response actions, are identified. This section also includes a screening of these technologies to determine which technologies are appropriate for conditions at the Site. A number of remedial action technologies are eliminated from further consideration in the FS as a result of this screening. Potential technologies are screened based on their ability to meet the remedial action objectives, on their short-term and long-term effectiveness and their implementability.

The fourth section of the report combines the remedial action technologies into comprehensive remedial action alternatives. These remedial action alternatives are evaluated using the criteria established in TAGM HWR-90-

4030. The fifth and final section of the report compares the remedial action alternatives that are presented in Section 4.0.

1.2 *BACKGROUND INFORMATION*

This section presents a general Site description, Site history, a summary of the physical characteristics of the Site and a summary of previous investigative activities conducted at the Site.

1.2.1 *Site Description*

The Mayer Landfill property is located between Peddler Hill Road and Prospect Road in the Town of Blooming Groove, Orange County, New York just northwest of Bull Mine Mountain. A Site location map is provided in Figure 1-1. The landfill occupies approximately 20 acres and is part of a 227-acre land parcel purchased by William Mayer Sr. in 1940. A Landfill Survey and Configuration Map, showing the property boundaries, is presented in Figure 1-2. Figure 1-3 presents the landfill limits and the landfill surroundings as determined through the RI conducted by ERM. Figure 1-3A shows the topography of the landfill as surveyed in 1974. This is a historical record of the landfill as it existed shortly before it stopped receiving waste. The original title of the drawing was "Remedial Leachate Control System", but the source is unknown. The purpose of specific symbols on the map are also unknown but may have been test pits or borings completed as part of initial closure measures. This figure is included in this FS for informational purposes since more comprehensive recent data is unavailable.

The Site is currently covered by low brush and various wetlands. There are areas where scrapped vehicles and white goods have been dumped. The white goods generally consist of discarded residential appliances

including, refrigerators, stoves, washing machines, and dryers. There are three apparent “borrow areas” from which material was previously removed to cover the landfill. The surface waste and borrow areas are indicated on Figure 1-3.

The landfill slopes southerly with a slope of 6 to 7 percent on top and 11 to approximately 33 percent on the edges. The approximate elevation of the Site is 600 feet (ft) above mean sea level. An intermittent stream flows north at the west side of the Site. This stream and the location of wetlands areas at the Site are shown in Figure 1-4. Some landfill waste material is present in wetland areas. However, it is unclear whether: 1) the landfill material was first placed here and the wetlands formed around it, or 2) the landfill material was placed in an existing wetland area. For example, wetland area 'C' (see Figure 1-4), partially located within the landfill limits, may be the result of a former leachate collection system. In addition, other wetland areas exist outside the eastern limit of the landfill and may have been a result of the excavation of borrow material and alteration of the landscape during the operation of the landfill, specifically wetland areas A, D, E, F, and G (see Figure 1-4). The wetlands to the south of the landfill form a swampy area along the southern berm, and extend southward from the 'B' wetlands flags (see Figure 1-4). It is possible that waste material may have subsided into and now partially occupy these wetland areas.

1.2.2 *Site History*

Mayer Landfill accepted waste from 1949 to 1975. The landfill accepted residential, commercial, industrial, demolition and agricultural waste. During the period from 1964 to 1972, Reichold Chemicals Inc., formerly of Tuxedo, New York, reportedly disposed of hazardous wastes from their research and development center at the Mayer Landfill. The final closure

plans for the landfill were developed in 1976, and in 1985 the Mayer Landfill was added to the New York Registry as a Class 2a site. In November 1991, after a Phase II Environmental Investigation by LMS, the Site was reclassified as a Class 2 site on the New York Registry.

1.2.3 *Summary of Physical Characteristics*

This section presents a description of the Site geology, hydrogeology, and surface water.

1.2.3.1 *Geology*

The Mayer Site is located in the Appalachian Valley and Ridge physiographic province. The predominating bedrock, a lower member of the Martinsburg Shale Formation, is the Ordovician age Bushkill shale. Calcite seams with traces of pyrite are present in the shale. Bull Mine Mountain, southwest of the Site, is a klippe, an overthrust block of Proterozoic age. Bull Mine Mountain leucogranite gneiss (alg) is an allochthonous block that has been mined for its magnetite deposits (N.B. magnetite is an important iron ore). Just east of the Site the Martinsburg Formation is bounded by two faults.

Surficial material above the bedrock surface at the Site consists mainly of lodgement till. Lodgement tills are depositional features formed underneath ice sheets or glaciers. The till is typically clay rich, fissile, and compacted due to the pressure exerted by the overlying glacier after deposition. Boring logs from the Site confirmed the above characteristics of a lodgement till. Lodgement tills, similar to the ones encountered at the Site, are characterized as confining layers due to high clay content, platy structure and compactness.

The composition and thickness of the overburden varies from a layer some 18 ft in thickness that consists of gray-brown silty clay with modest amounts of fine gravel to 45 ft of tight, very gravelly till with a large percentage of sand-size particles. Most of this material was identified, however, as a very dense and cohesive mass that has fairly effectively confined and added pressure to water flowing through underlying fractured bedrock.

1.2.3.2 *Hydrogeology*

Information on the hydrogeology at the Site is based upon the groundwater monitoring wells installed during the Phase II investigation by LMS and the RI by ERM. LMS installed five wells initially, GWM-1A, GWM-2, GWM-3A, GWM-4, and GWM-5. To simplify nomenclature these well designations were changed to MW-1A, MW-2, MW-3A, MW-4, and MW-5 by ERM for the RI. During the RI, ERM installed eleven additional monitoring wells at the Site, MW-4D, MW-6, MW-7, MW-7D, MW-8, MW-9, MW-9D, MW-10, MW-11, MW-12, and MW-13.

Overburden material at the Mayer Site varies from approximately 15 ft in thickness at MW-7D to approximately 60 ft in thickness at MW-4D. Figure 1-5 shows the groundwater gradient map for the overburden wells, which incorporates groundwater elevation data for MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-13. Based on the groundwater elevation contours, it has been concluded that groundwater flows radially from the Site in a generally northwest-southwest pattern (i.e., northwesterly in the northern portion of the Site and west-southwesterly in the southern portion) emanating from an area near MW-6 and MW-13. Groundwater elevation data from the overburden wells installed during the RI suggests that a flow divide exists at the Site. Groundwater flow direction may vary during the year based on seasonal changes and due to the heterogeneous

nature of the landfill material and the extent of the original excavation. Based on groundwater elevation data and surveyed surface water points, it is evident that the landfill materials extend below the water table. The hydraulic gradient at the Site ranges from 0.05 to 0.07 over distances of between 621 ft to 756 ft, with changes in head of between 31 ft, from MW-13 to MW-9, and 41 ft from MW-6 to MW-7.

Groundwater in the overburden material discharges to the stream and the swamp. Therefore, the stream and swamp are gaining features. This is evidenced by water table elevation measurements from wells MW-7 and MW-11, which are at or above the ground surface elevations.

MW-1A, MW-2, MW-3A, MW-4D, MW-7D, and MW-9D are bedrock wells. Figure 1-6 shows the bedrock groundwater gradient map based on groundwater elevation data for these wells. The groundwater in the bedrock aquifer flows from southeast to northwest. The groundwater potentiometric surface observed in the bedrock wells is within the overburden material. In MW-2, the static water level was measured above the ground surface, and after installation of MW-7D, the well was artesian (flowing for a brief period). This condition suggests that the bedrock aquifer is confined. Further analysis of groundwater elevation data at alluvial/bedrock well couplets MW-7/7D and MW-9/9D show that the potential for a downward gradient exists between the overlying aquifer and the bedrock aquifer. Due to the presence of a light non-aqueous phase liquid (LNAPL) in MW-4, a vertical gradient could not be determined at well couplet MW-4/4D. The LNAPL was investigated during the SRI and is discussed below in Section 1.3.2.1.

No literature data describing the regional groundwater flow in the vicinity of the Site was found. References reviewed included previous reports and regional Orange County Water Authority water study data.

1.2.3.3 *Surface Water*

The swampy area in the southwest corner of the Site is the headwater of the third tributary of Slatterly Creek, a class C stream that flows in a northerly direction. This swampy area may intercept groundwater flow from the shallow overburden soil. The stream classification was published in 6 NYCRR, Chapter 10, Parts 649 through 941. Recent legislation was put into effect on 14 November 2001 to establish the 'C' classification from the stream's previous 'D' class in Part 862 of the 6 NYCRR.

1.3 ***SUMMARY OF REMEDIAL INVESTIGATIONS AND EXPOSURE ASSESSMENTS***

This section presents summaries of the Remedial Investigation, Supplemental Remedial Investigation, Human and Environmental Exposure Assessment, and Fish and Wildlife Impact Analysis.

1.3.1 ***Remedial Investigation***

This section provides the results of the RI conducted by ERM at the Site from 2000 through 2001. Field investigation activities conducted during the RI consisted of:

- Geophysical survey using electromagnetic and magnetic techniques to determine the extent of fill;
- test pits and borings to delineate waste and characterize fill and soil conditions;
- background soil sampling to establish background soil concentrations;
- groundwater monitoring well installation and sampling;
- surface water sampling in stream;
- sediment sampling in stream;
- leachate sampling;
- soil gas probes to sample landfill gas; and
- domestic well sampling.

A more detailed discussion of these activities is presented below.

1.3.1.1 *Geophysical Survey*

A geophysical survey was conducted to initially outline the landfill limits at the start of the RI. The landfill extents were outlined using electromagnetic and magnetic techniques. The electromagnetic survey measured the variability in the conductivity of the subsurface to identify horizontal limits of fill. The magnetic survey measured variations in the earth's magnetic field to identify anomalies. The electromagnetic survey and magnetic survey results are shown in Figures 1-7 and 1-8. Based on these surveys, the landfill was estimated to occupy approximately 10.3 acres areally.

1.3.1.2 *Test Pits and Borings*

A total of fifty (50) test pits were installed during the RI. Test pits were installed outside the apparent landfill limits and progressively moved inward to delineate the actual landfill limits and to characterize fill waste and soil conditions. The fill waste was comprised of mainly household debris. Waste materials encountered included: tires, glass, paper, plastic bottles, aerosol cans, an unidentified 30-gallon drum lid, household hot water heaters, refrigerators, large pieces of sheet metal, five-gallon buckets, household materials, domestic glass and plastic bottles, plastic bags, aluminum cans, wood paneling, cardboard, newspaper, shingles, air filters from cars, a crushed 30-gallon drum, bed springs, styrofoam cups, metal five gallon bucket lids, trash cans, electrical conduit, a mangled 35-gallon drum, an automobile axle, and a sink. Figure 1-3 shows the landfill limits as determined by the geophysical survey and supplemented with the test pit study information.

In addition to test pits, eight (8) monitoring wells were installed as part of the RI. Soil samples were collected during the installation of these wells to

characterize soil in these areas. In total, twenty-six (26) soil samples were collected from the test pits and eight (8) soil samples were collected from the monitoring well locations (specifically MW-6, 7D, 8, 9D, 10, 11, 12, and 13). Test pit and monitoring well locations are shown in Figures 1-9 and 1-10, respectively. All soil samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), target analyte list (TAL) inorganics, and pesticides and polychlorinated biphenyls (PCBs). The results of soil sample analysis are included in Table 1-1 for test pit soil samples and in Table 1-1A for monitoring well soil samples.

Volatile Organic Compounds

All twenty-six test pit soil samples and eight monitoring well soil samples were analyzed for VOCs. Of these, seven were surface samples. Various chlorinated VOCs, carbon disulfide, 4-methyl-2-pentanone, toluene, ethylbenzene, and styrene were found to be present at low concentration levels in soils. As discussed in the RI report, acetone, 2-butanone, chlorobenzene, benzene, and xylene were detected in soil samples at concentrations above NYSDEC TAGM 4046 recommended soil clean-up objectives (RSCOs). The significance of the NYSDEC RSCOs is discussed in Section 2.3.2.2.

Semi-Volatile Organic Compounds

Four SVOCs were detected in soil samples at concentrations exceeding NYSDEC RSCOs. These compounds were benzo (a) anthracene, chrysene, bis (2-ethylhexyl) phthalate (BEHP), and benzo (a) pyrene. Additional SVOCs were detected in soil below their respective NYSDEC RSCOs. The significance of the NYSDEC RSCOs is discussed later in Section 2.3.2.2.

Pesticides and PCBs

Low levels of PCB-1242 and PCB-1254 were detected in soil samples and aldrin, heptachlor epoxide, and dieldrin were detected at concentrations above their NYSDEC RSCOs. Low levels of additional pesticides were also detected in soil. The significance of the NYSDEC RSCOs is discussed later in Section 2.3.2.2.

Inorganic Constituents

Five soil samples were collected beyond the landfill limits to determine background concentrations of inorganic constituents in soils. The locations of the background soil samples are shown in Figure 1-11 and the results for the background soil sampling are included in Table 1-2. Comparison of these background concentrations to the NYSDEC RSCOs show that the Site-specific background concentrations of beryllium, cadmium, chromium, nickel, and zinc are slightly higher than the NYSDEC RSCOs. The background concentrations of inorganic constituents do, however, fall within the published eastern USA background concentrations. This comparison is shown in Table 1-2.

Based on inorganic analysis results for soil samples, and with comparison to background soil concentrations, it was concluded that lead and mercury concentrations in the soil are attributable to the landfill. Cyanide and vanadium were the only inorganics below RSCOs in soil samples; however, lead and mercury were the only inorganics at levels outside of background and eastern USA concentrations.

1.3.1.3 *Groundwater*

During the RI, the five existing monitoring wells (MW-1A, MW-2, MW-3A, MW-4 and MW-5), previously installed by LMS at the Site were inspected

and determined to be usable. MW-1A, MW-2, and MW-3A are screened in weathered bedrock, MW-4 is screened in fill material, and MW-5 is screened in till. Eight additional overburden wells (MW-6 through MW-13) and three bedrock wells (MW-4D, MW-7D, and MW-9D) were installed by ERM as part of the RI activities.

Two rounds of groundwater sampling were conducted during the RI. The results of this sampling are presented in Tables 1-3 and 1-4. All wells were sampled for TCL VOCs, SVOCs, pesticides and PCBs, TAL Inorganics, and wet chemistry parameters (alkalinity, ammonia, chloride, and hardness) during Round 1, except MW-4, which was found to have LNAPL on the surface of the water table. Screening criteria for groundwater are also included in these tables. Their significance will be discussed in Section 2.3.3.1.

Groundwater samples for both rounds were collected using low-flow groundwater sampling techniques to minimize sample turbidity for inorganics analysis and to minimize aeration of groundwater during sample collection to improve the sample quality for VOC analysis (USEPA, 1999). Filtered samples were collected for inorganics analysis where the turbidity was greater than 50 Nephelometric turbidity units (NTU). This occurred during Round 1 for six wells (MW-5, MW-6, MW-7D, MW-9, MW-12, and MW-13). All turbidity readings were less than 50 NTU for Round 2 groundwater samples and consequently, no filtered samples were collected during that Round.

In Round 1, groundwater from eight of the fifteen wells sampled (MW-1A, MW-2, MW-5, MW-7, MW-7D, MW-8, MW-9D, and MW-11) had no detectable concentrations of VOCs, SVOCs, pesticides or PCBs. Groundwater samples from the remaining wells exhibited low levels of either VOCs, SVOCs, pesticides, or PCBs. In contrast, inorganics

constituents were detected in all of the wells. Consequently, inorganics analysis was the focus of the Round 2 groundwater sampling. For Round 2, MW-1A, MW-2, MW-5, MW-8, and MW-11 were eliminated from the sampling program since these wells contained the lowest levels of inorganic constituents at the Site. The ten remaining wells were sampled for specific parameters based on the Round 1 results. The wells and parameters analyzed for during Round 2 sampling are listed in Table 1-5 and the analytical results are presented Table 1-4. A comparison of detected compounds for Round 1 and Round 2 is contained in Table 1-6.

During Round 2, VOCs were not detected in MW-3A, MW-4D, MW-7, MW-7D, or MW-9. MW-10 had detectable concentrations of acetone, benzene, chlorobenzene, ethylbenzene, toluene, and xylene. MW-6, MW-9D, and MW-13 were not analyzed for VOCs during Round 2 since no VOCs were detected in Round 1. During Round 2 sampling, SVOCs were only detected at low levels in three wells, MW-9, MW-10, and MW-12. MW-3A, MW-4D, MW-7, MW-7D, and MW-13 did not contain detectable concentrations of SVOCs. MW-6 and MW-9D were not analyzed for SVOCs during Round 2 since no SVOCs were detected during Round 1. turbidity readings were below 50 NTUs before sampling. However, in review Neither pesticides nor PCBs were detected in any Round 2 groundwater samples.

As stated above, dissolved (field filtered) samples were not obtained during Round 2 sampling because all of Round 1 sampling results, the concentration of metals bound to particulates or large ionic radii ions capable of forming colloids, such as aluminum, iron, etc., were reduced in filtered samples. The absence of these constituents in the filtered samples suggests that suspended/particulate matter contribute significantly to groundwater chemistry.

Leachate-enriched groundwater is characterized by higher ion concentrations in dissolved solids than typical of regional groundwater. The concentration of cations sodium (Na+), potassium (K+), calcium (Ca+), and magnesium (Mg+) and of anions chloride (Cl-), bicarbonate (HCO3-), and sulfate (SO4-) in leachate plumes are higher than in ambient water. These ions are dissolved directly from refuse by percolating water and are released from the organic matrix by biological decomposition. Nitrogen is present in refuse as a component of organic matter. Upon decomposition of organic matter, proteinaceous nitrogen is converted to nitrate under aerobic (oxidizing) conditions or to ammonia under anaerobic (reducing) conditions. Because anaerobic conditions prevail in landfills, ammonium-nitrogen is the major nitrogen species in leachate (Kimmel and Braids, 1980). Therefore, groundwater impacted by leachate should be expected to have elevated levels of the cations and anions as described above. Wet chemistry results from monitoring well MW-3A indicated elevated levels of ammonia and alkalinity/hardness. Hardness is typically the result of increases in magnesium and calcium concentrations. Alkalinity increases result from elevated bicarbonate concentrations. Therefore, increases in alkalinity/hardness would result from leachate impacts to groundwater. Other wells showing elevated levels of alkalinity/hardness, when compared to other Site wells, were MW-6, MW-9, MW-9D, MW-10, and MW-12. Conductivity increases may in part be due to increased concentrations of sodium and potassium. Additionally, elevated levels of aluminum, iron, magnesium, manganese, and thallium were detected across the Site.

1.3.1.4 *Surface Water*

Ten (10) surface water samples (SW01 through SW10) were collected during the RI from the wetland area and stream along the south/southwestern section of the Site. Sampling locations were selected

in areas suspected to be downgradient of, or in likely overburden discharge areas. All surface water samples were analyzed for TCL VOCs, SVOCs, TAL Inorganics, and pesticides and PCBs. The locations of the surface water samples are shown in Figure 1-11 and the results of sampling are provided in Table 1-7. The samples taken for inorganics analyses were analyzed as filtered and unfiltered. No VOCs were detected in surface water. BEHP was detected in three samples. No pesticides or PCBs were detected in surface water. Finally, metals analysis revealed lower concentrations of metals in the filtered samples than in the unfiltered samples. Additional downstream surface water sampling was proposed to be conducted during the SRI. However, during the period from May 2001 to November 2001, the stream downstream from the Site was dry during all visits by ERM field personnel. Consequently, no additional surface water samples were collected during the SRI.

1.3.1.5 *Stream Sediment*

A total of ten (10) sediment samples (SS01 through SS10) were collected during the RI from the wetland area and stream, which extends along the north/northwest section of the Site. Sediment samples were collected alongside the surface water sampling points and the locations are provided in Figure 1-11. Sediment samples were analyzed for TCL VOCs, SVOCs, TAL Inorganics, pesticides and PCBs, and Total Organic Carbon (TOC). Sediment sampling results are included in Table 1-8.

Acetone, methyl ethyl ketone (MEK), and trichloroethene (TCE) were detected in sediment VOC analyses, and SVOC analyses revealed the presence of polynuclear aromatic hydrocarbons (PAHs) and phthalates. The suspected source of the PAHs is discussed in Section 2.3.6.2. Phenol, aldrin, 4,4-DDE, and a number of inorganic constituents were also

detected in on-Site stream sediment samples. The SRI sediment data is discussed in Section 1.3.2.2.

1.3.1.6 *Leachate Seeps*

Ten (10) leachate/seep samples were collected and analyzed for TCL VOCs, SVOCs, pesticides and PCBs, and TAL Inorganics. Results for these analyses are presented in Table 1-9. VOCs, including acetone, benzene, chlorobenzene, and xylene, were detected at or below detection limits in the leachate samples. SVOCs were detected at low levels and included 2-chlorophenol, naphthalene, 1,4-dichlorobenzene, 2-methylnaphthalene, 4-methylphenol, and BEHP. Pesticides and PCBs were not detected in any of the leachate samples. Inorganic constituents generally were similar to the Site soil composition. The source of lead in the samples is considered anthropogenic and was discussed in Section 1.3.1.2.

1.3.1.7 *Soil Gas Survey*

During the initial RI effort, three soil gas samples were collected within the landfill limits at locations indicated on Figure 1-12. The soil gas report is included in Appendix A. Soil gas samples were analyzed for methane and VOCs. Methane was detected in all three samples at concentrations ranging from 2,500 parts per million (ppm) to 20,000 ppm. Appendix A contains the soil gas report and results. VOCs were also detected in all three samples, with the most compounds detected and the highest concentrations observed in SG-2 (central part of the landfill). VOCs detected include: benzene, toluene, ethylbenzene, xylene, (BTEX); solvents, including MEK and chlorobenzene; halogenated ethanes/ethenes including degradation products tetrachlorethene, TCE, *cis*- and *trans*-1,2-dichloroethene, 1,1-dichloroethane, 1,2-dichloroethane, vinyl chloride, chloroethane, and chloromethane; and styrene, 1,2,4-

trimethylbenzene, and 1,3,5-trimethylbenzene. The RI soil gas survey was qualitative in nature and did not evaluate the flux of landfill gases into the atmosphere. Quantitative soil gas samples were collected during the SRI and the results are discussed in Section 1.3.2.4.

1.3.1.8 *Residential Wells*

Sixty-two (62) residential well surveys were reviewed by ERM. Of the surveys returned, a total of forty-eight (48) residents reported that their wells were bedrock wells. The problems associated with the wells were generally mechanical and production in nature and odor problems. Three residents indicated sulfur odors and three other residences had problems with coliform and/or bacteria. One resident on Prospect Road stated on the questionnaire that their well water had a “petroleum type smell (manganese?)” in the comment section of the survey. Forty-three (43) residents indicated that their well had been sampled for various parameters by the State, the New York State Department of Health (NYSDOH), Orange County, and/or a private company.

The NYSDEC and NYSDOH sampled twenty-six (26) residential wells in the vicinity of the landfill. The sampling was conducted primarily at residences bordering the landfill property to the north, east, and south. No residences border the landfill property immediately to the west. However, samples were obtained from several houses located in close proximity to the western boundary of the landfill property. Figure 1-13 shows the locations of the residential wells that were sampled.

Each well was sampled for VOCs, SVOCs, pesticides and PCBs, and inorganics. Analytical results for wells containing detectable concentrations of compounds are presented in Table 1-10. VOC results indicated that methyl tertiary butyl ether (MTBE) was detected in two residences located along Prospect Road to the east of the landfill.

Groundwater samples were not analyzed for MTBE as part of the RI. MTBE is not considered a landfill related chemical. Siloxane was detected in seven residences and in blank samples and was attributed to laboratory origination. SVOC detections included low levels of di-n-butylphthalate, BEHP, and tentatively identified compounds (TICs). Endosulfan was the only pesticide detected and was found in two wells. No PCBs were detected in any residential well.

Sodium, copper, iron, manganese, and lead were detected above naturally occurring ranges in residential wells. For the most part, though, residential well sampling results showed non-detectable concentrations or were within naturally occurring concentration ranges. One residential well, RW-9, near the landfill contained unusually high manganese concentrations. This well was resampled for inorganic constituents subsequent to the RI and the results are presented in Table 1-11. The manganese concentration was still elevated and this issue is addressed in Section 2.3.3.

1.3.2 *Supplemental Remedial Investigation*

The SRI was conducted between February and November 2001. The SRI included LNAPL delineation, downstream sediment sampling, surface water observations, soil gas sampling, and installation of a bedrock monitoring well. The SRI was to include the collection of additional surface water samples downstream of the Site. However, since water was not present in the downstream section of the stream during the SRI period, these additional surface water samples could not be collected. An SRI report was submitted by ERM to the NYSDEC on 14 December 2001.

During the SRI, LNAPL delineation was conducted in the vicinity of MW-4. LNAPL was detected in this well during the RI. A total of thirteen borings were installed around MW-4 to determine both the horizontal and vertical extent of the LNAPL (see Figure 1-14A and Figure 1-14B). Temporary monitoring wells were installed at four of the thirteen boring locations. The temporary wells were installed to monitor the horizontal extent of the LNAPL (TMW-1, TMW-2, and TMW-4) and to monitor the vertical extent of the LNAPL (TMW-3).

Borings were installed in five directions radially from MW-4 to determine the horizontal extent of free phase LNAPL (Figure 1-14A). Borings TB-1 (east of MW-4), TB-7 (north of MW-4), TB-12 (south of MW-4) and TB-13 (southwest of MW-4) did not contain LNAPL. The western extent of the LNAPL was delineated by TB-8, which contained LNAPL and MW-4D, which did not during the installation on February 17, 2000. TB-13 marked the horizontal delineation of the LNAPL to the southwest of MW-4 because no LNAPL was observed within the boring. The LNAPL extends from boring TB-6, north of MW-4, to boring TB-11, south of MW-4. The southwestern extent of the LNAPL is boring TB-10. Temporary wells (TMW-1, TMW-2, and TMW-4) were installed to confirm that the horizontal extent of LNAPL was defined by these borings.

Vertical delineation of the free phase product was determined from the boring logs. LNAPL staining was detected as high as 6 feet below the ground surface (bgs) in TB-3. Free phase product was observed in six borings and the maximum vertical extent of free phase product encountered during the LNAPL test boring investigation was from 8 to 18 feet bgs. The maximum depth that residual product was observed was 18 feet bgs in TB-4 and TB-11. TB-4 had no recovery for the 16 to 18-foot

interval; however, the split-barrel core sampler was covered with free phase material. Temporary well, TMW-3, was installed to measure the thickness of product within this portion of the delineated LNAPL area. Based on measurements collected from the temporary well, the thickness of the product was estimated at three-quarters of an inch. A plan view of the LNAPL plume was presented in Figure 1-14A. Cross sections of the LNAPL plume are presented in Figure 1-14B.

The LNAPL observed in all borings, except TB-13, was described by ERM field personnel as a black to reddish brown viscous material bound up within the soil matrix. Two rounds of groundwater/LNAPL monitoring were conducted using the temporary wells. The first round of monitoring was conducted on 11 October 2001, and the second round was conducted on 15 November 2001. The monitoring was conducted on TMW-1, TMW-2, and TMW-4 to determine if LNAPL had migrated into areas where the horizontal extent of the LNAPL had been defined. ERM concluded that the extent of the LNAPL could be defined by TMW-1, TMW-2, and TMW-4. TMW-3 was monitored to determine the product thickness from within the LNAPL area. LNAPL was detected in TMW-3 with an interface probe. However, an accurate measurement was not possible due to the high viscosity of the LNAPL. Visual observation of product on the interface probe indicated that the LNAPL was approximately three-quarters of an inch thick.

Two LNAPL samples were obtained for petroleum identification. Samples were collected from MW-4 and from TB-4 (16-18'). Zymax Forensics of San Luis Obispo, CA carried out a GC/MS analysis of aliphatic and aromatic fractions in both product samples (Appendix B). Zymax determined that the results indicate both samples are a mixture of highly degraded No. 2 fuel oil or diesel #2 (both mid-distillated) and degraded creosote (coal tar oil), with a small amount of heavier

hydrocarbons. MW-4 also contained a newer mildly degraded mid-distillated fuel. ERM analyzed the data and calculated the age of the product in MW-4 as 14.6 +/- 2 years old. No h-alkanes were present in TB-4. Therefore an age determination was not possible. The lack of alkanes in the samples would indicate that the sample is highly degraded and therefore older in age than the MW-4 sample (> 20 years).

1.3.2.2 *Stream Sediment*

Sediment samples were collected from six locations (SS11 through SS16) over an approximate distance of 1300 ft downstream of the Mayer Pond. The locations of downstream sediment samples are shown in Figure 1-15. The samples were analyzed for TCL VOCs, SVOCs, pesticides/PCBs, and TAL metals. These results were presented in Table 1-8.

Methylene chloride was detected in two downstream sediment samples, SS12 and SS13, at 2J and 3J ug/kg, respectively, and tetrachloroethene was detected in one downstream sediment sample, SS12, at 1 J ug/kg in the VOC analyses. BEHP was the only SVOC detected in downstream sediment samples: SS12, SS13, SS14, SS15, and SS16 at concentrations ranging from 41J to 60J ug/kg. Neither pesticides nor PCBs were detected in any downstream sediment samples. Finally, 20 inorganic constituents were detected in downstream sediment samples: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, selenium, silver, sodium, vanadium, and zinc. These results are further discussed in Section 2.3.6. Concentrations of each analyte were relatively similar, i.e. the same order of magnitude, as the samples closer to the landfill. For most analytes, the highest concentration was detected in the samples farthest downstream (SS-14, SS-15 or SS-16). Lead, which was detected during the RI in samples upstream of the Mayer Pond and suggested to have originated

from the landfill, was not observed downstream of Mayer Pond at concentrations in excess of background levels.

1.3.2.3 *Surface Water*

As discussed in Section 1.3.1.4, surface water was not present downstream of the Site during the time period that the SRI was conducted. Therefore, it was not possible to collect additional surface water samples. In addition, as discussed below in Section 1.3.3, there are no significant impacts to human health posed by surface water on-Site. Therefore, it is not anticipated that off-Site surface water would pose a potential for exposure.

1.3.2.4 *Soil Gas*

Six soil gas samples were collected outside the landfill limits (see Figure 1-16 for locations) and analyzed for methane and VOCs (by USEPA method TO-15). Quantitative results were obtained for the samples analyzed during the SRI. Table 1-12 presents the concentrations of the compounds detected in soil gas. Also included in this table are the calculated maximum actual annual impact (Ca), maximum potential annual impact (Cp), and maximum short-term impact (Cst) with a comparison to New York State DAR-1 Air Guidelines. Additional discussion regarding this calculation is presented in Section 2.3.7.2. Methane was not detected above method detection limits (MDLs) in the SRI soil gas samples. The Cst for all compounds were below their short-term guidance concentrations (SGC) and the Ca and Cp for all compounds were below their annual guidance concentration (AGC).

In conjunction with the RI, a Health and Environmental Exposure Assessment (HEEA) was conducted based on RI field data and interpretation. The HEEA identified potential exposure pathways for contaminants at the Site, identified potential on-Site and off-Site receptors, and qualitatively evaluated potential human health exposures to the receptors.

The HEEA evaluated the chemicals of concern (COCs) and the potential exposure pathways for seven media at the Site: soil, groundwater, surface water, sediment, landfill gas, leachate seeps, and waste material. The COCs of concern identified by the HEEA are discussed in Section 2.3 for each medium of interest. The COCs were selected based on comparison of the maximum detected concentration of a chemical to relative SCGs which are defined in Section 2.2.

The potential exposure pathways that were qualitatively evaluated included: direct contact with soil; leaching of chemicals in soil to groundwater; ingestion, inhalation, and dermal absorption of chemicals in groundwater during residential use; direct contact, incidental ingestion, and ingestion of fish from surface waters; direct contact with sediment; inhalation of landfill gas; and exposure to seeps. The following provides a summary of the findings for each pathway.

Direct Contact with Soil

Organic chemicals in soil that were determined to pose potential exposure to human health via direct contact under future conditions include benzo (a) pyrene, benzo (a) anthracene, aldrin, dieldrin, PCB-1242, and PCB-1254. Under current conditions, it was determined none of these chemicals pose an exposure to human health via direct contact based on

surface soil data. Nearly all of the inorganics exceeded the established Site background levels, however, this direct contact exposure pathway was not evaluated for inorganics since the screening levels (i.e., NYSDEC TAGM 4046 RSCOs) for the inorganic constituents are not risk-based values.

Leaching of Chemicals in Soil to Groundwater

Organic chemicals in soil which were determined to pose potential exposure to human health through leaching to and ingestion of groundwater include benzene, chlorobenzene, and xylene. However, this is assuming that groundwater is used at the Site itself. Under current conditions, there is no use of groundwater at the Site. Although groundwater use does occur at nearby residences, organics were not detected at concentrations above drinking water standards in these residential wells.

Ingestion, Inhalation, and Dermal Absorption of Chemicals in Groundwater

Based on comparison to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards & Guidance Values, the following chemicals were considered to be of potential concern in groundwater based on ingestion, inhalation while showering, and dermal absorption exposure pathway: four VOCs (benzene, chlorobenzene, ethylbenzene, and xylene), one SVOC (1,4-dichlorobenzene), and five inorganics (iron, magnesium, manganese, sodium, and thallium). The Round 2 groundwater data was used since it is the most representative of current Site conditions. As mentioned above, there is no use of groundwater at the Site. With the exception of manganese in groundwater at off-Site well location RW-9, ingestion, dermal contact, and inhalation with respect to groundwater do not pose an unacceptable exposure. RW-9 water will be addressed in the FS.

Direct Contact, Incidental Ingestion and Ingestion of Fish from Surface Water

It was concluded in the HEEA that no significant impacts to human health are expected to occur relating to direct contact with surface water, incidental ingestion of surface water, and ingestion of fish from Site waters since only low concentrations of chemicals are present in surface water at the Site. Additionally, the unnamed tributary is not a significant fishing resource and is unlikely to yield consumable quantities of fish.

Direct Contact with Sediment

Organic chemicals in sediment were determined to present potential for exposure via direct contact under both current and future conditions based on comparison with direct contact soil cleanup levels.

Inhalation of Landfill Gas

Eighteen VOCs and methane were detected in Site soil gas. The Site is currently inactive. The nearest residential structures are located to the southeast of the landfill where there is no evidence of landfilling activity. Migration of landfill gases does not appear likely. Therefore, this pathway was determined not to be a potential pathway for human exposure.

Seeps

Since leachate seeps are only present a portion of the year and residual sediments are present the rest of the year, inadvertent exposures through direct contact or ingestion (via trespassing) are possible. These brief, transitory exposures to seep/sediments are not likely to cause health effects.

Waste Material

Based on current Site conditions it was determined that direct contact with any subsurface material is not likely and therefore does not present an exposure potential to humans. Except for the junked automobiles and equipment, the waste material observed on the surface of the landfill does not present a potential pathway for human exposure.

1.3.4 *Fish and Wildlife Impact Analysis*

A FWIA was also performed in conjunction with the RI. The analysis identified the Site topography and drainage, land use and major plant communities within one-half mile of the Site, wetlands, streams and related surface water bodies within a one-half mile and two mile radius of the Site, and characterized resources within a one-half and two mile radius of the Site. The FWIA also included pathway analysis through which wildlife could potentially be exposed to Site-related contaminants.

The major conclusions drawn from the FWIA were that the unnamed sub-tributary of Slatterly Creek located adjacent to the Site exhibited concentrations of several metals and PAHs above the NYSDEC sediment criteria (further discussed in Section 2.3.6), and that impacts to surface water quality, specifically with respect to fish propagation, are most likely minor. Sediment sample results compared to NYS Division of Fish and Wildlife's *Technical Guidance for Screening Contaminated Sediments* values are presented in Table 1-13. The FWIA concluded that the sediments are not significantly impacted with respect to protection of benthic aquatic life. Furthermore, the FWIA stated that any proposed remediation to remove the sediments would have a greater impact on aquatic habitat and the surrounding deciduous forested wetland habitat than leaving the sediments in place.

REMEDIAL ACTION OBJECTIVES

This section presents the development of remedial action objectives for the Site. The NYSDEC TAGM 4030 entitled "Selection of Remedial Actions at Inactive Hazardous Waste Sites" (NYSDEC, 1990) provides for the development of remedial action objectives in order to determine the extent of remediation, if any, which may be necessary at a site. Remedial action objectives consist of medium-specific goals to protect human health and the environment.

According to this NYSDEC FS guidance, the media to be evaluated for remediation are identified based on the nature and extent of contamination, and on applicable or relevant and appropriate NYS SCGs. As identified in Section 375-1.10(c)(1)(ii) of the NYSDEC Inactive Hazardous Waste Disposal Site Remedial Program regulations, SCGs are provided in a listing prepared by the NYSDEC (NYSDEC, 1995). Remedial action objectives are developed by specifying the contaminants and media of interest and exposure pathways.

A remedial action objective which reflects a promulgated or legally enforceable chemical concentration may be defined as a chemical-specific SCG. Additional SCGs may be based on the site location or pertain to a technology considered for remediation. These SCGs are referred to as location specific and action specific, respectively. The purpose of SCGs is to protect human health and the environment and comply with related federal and state laws, regulations and guidelines.

In the case of protection of human health, remedial action objectives usually reflect the concentration of a COC and the potential exposure route since protection may be achieved by reducing potential exposure (for example, well restrictions, limiting access) as well as by reducing concentrations. Remedial action objectives that are established for protection of environmental receptors are usually intended to preserve or

restore a resource. As such, environmental remedial action objectives are set for a medium of interest and a target concentration level.

The USEPA document "Presumptive Remedy for CERCLA Municipal Landfill Sites" (USEPA, 1993) provides guidance regarding remedial action objectives for a landfill. They are:

- preventing direct contact with landfill contents;
- minimizing infiltration and resulting contaminant leaching to groundwater;
- controlling surface water runoff and erosion;
- collecting and treating contaminated groundwater and leachate to contain the contaminant plume and prevent further migration from source area; and
- controlling and treating landfill gas.

Additional non-presumptive remedies are:

- remediating groundwater
- remediating contaminated surface water and sediments; and
- remediating contaminated wetland areas.

Following development of the remedial action objectives, the NYSDEC TAGM 4030 FS guidance document referenced above recommends that general response actions be developed. General response actions describe those actions that satisfy the remedial action objectives. General response actions are descriptive terms, which are intended to satisfy the remedial action objectives. Typically, general response actions are medium-specific and may include containment, excavation, treatment, disposal, institutional actions, or a combination of these general remedial approaches, to achieve the remedial action objectives.

The NYSDEC TAGM FS guidance also suggests that volumes of media to which general response actions might be applied be identified. These volumes should take into account requirements for the protection of

human health and the environment as identified in the remedial action objectives and the chemical and geological characterization of the site.

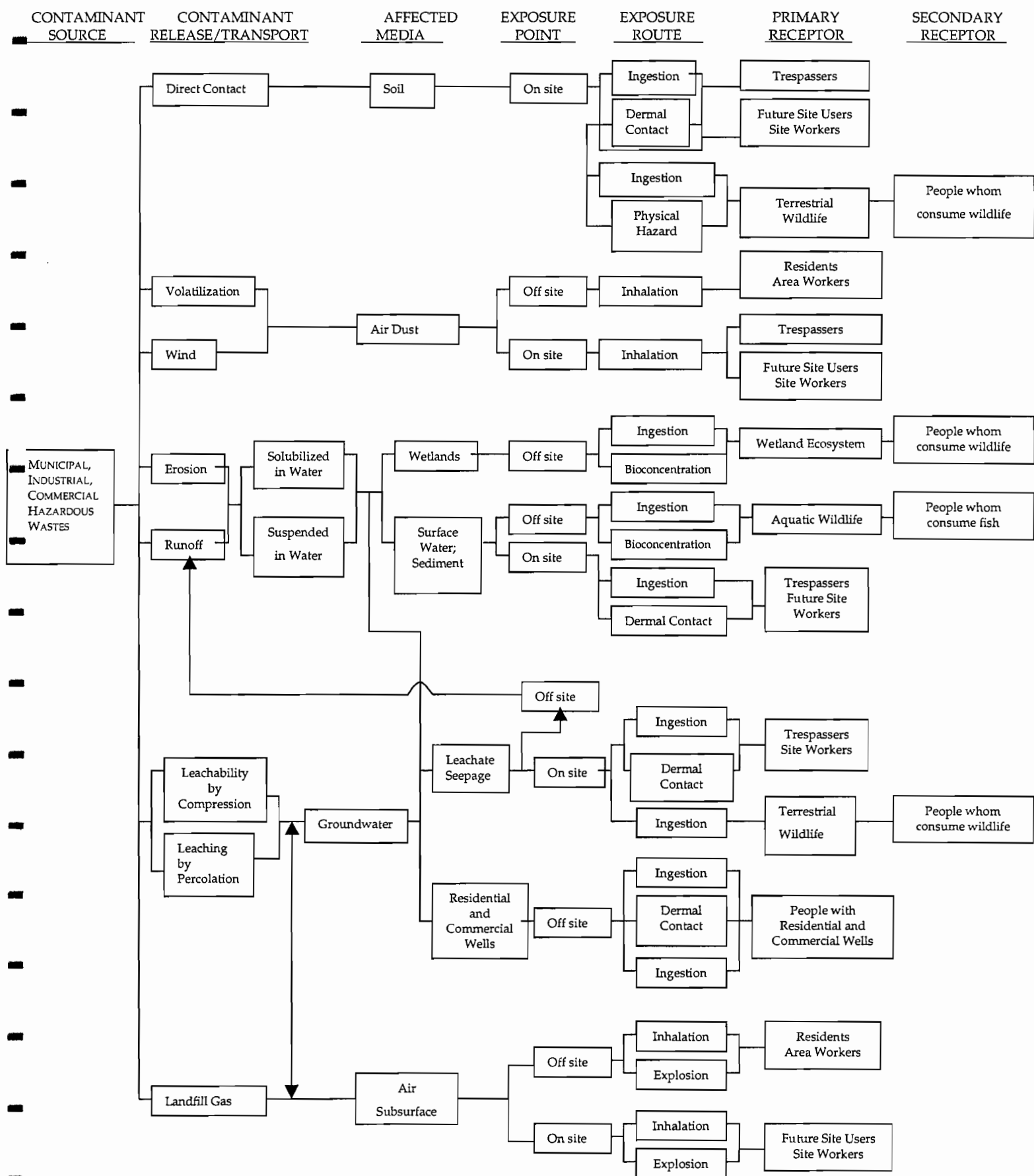
The NYSDEC TAGM 4044, "Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills" provides guidance for the identification of technologies used in remediating these type of landfills. The NYSDEC TAGM 4044 deals with technologies, not remedial action objectives, and proposes a three step approach to landfill remediation: 1) placement of a final cover, 2) implementation of a leachate collection system, and 3) leachate treatment. TAGM 4044 states that the latter two technologies need to be integrated with the design and construction of a cap, if they are determined to be necessary.

2.1 *CONCEPTUAL SITE MODEL*

The site conceptual model is a tool used to define the site dynamics, streamline the risk evaluation, and develop the response action, according to the EPA's "Presumptive Remedy for CERCLA Municipal Landfill Sites". The model defines the contaminant source as either a "municipal, industrial, commercial, hazardous waste" landfill, in this case, the Mayer Landfill. The contaminant release/transport mechanisms include direct contact, volatilization, wind, erosion, runoff, leaching by compression, leaching by percolation, and landfill gas. Media affected by contaminants generally include soil, air dust, wetlands, surface water, sediment, groundwater, air, and subsurface. The exposure to contaminants may be on-site or off-site through ingestion, dermal contact, or inhalation. Potential primary receptors in the conceptual site model include trespassers, future site users, site workers, terrestrial wildlife, residents, area workers, wetland ecosystem, aquatic wildlife, people swimming, etc. Potential secondary receptors include people who consume wildlife and people who consume fish. An outline of the conceptual site model is presented on the following page. The components that play a role in the

Site dynamics at the Mayer Landfill are highlighted for identification. These components were evaluated during the RI, HHEA, and FWIA.

The following sections, 2.2 and 2.3, Identification of SCGs and Media of Interest, evaluate the Site dynamics with respect to applicable SCGs and the media of concern, with the site conceptual model as a guide basis for evaluation.



Conceptual Site Model

Table 2-1 presents potential SCGs that may govern remediation at the Site. This table lists the regulatory citation, a description of the SCG, whether the SCG is chemical, action or location specific, and the reason the SCG may be relevant, applicable or appropriate. These SCGs were obtained from the NYSDEC issued list of SCGs presented in Appendix C. The relevance of a regulation to the Site and to remedial actions included in the development of alternatives is discussed with the evaluation of each alternative in Section 4.0 (i.e., in the evaluation of the alternatives' ability to comply with the SCGs).

The National Contingency Plan (NCP) establishes ARARs, which are the federal equivalent of the NYSDEC SCGs, and defines To Be Considered (TBC) information as other advisories, criteria or guidance, as well as proposed standards issued by federal or state agencies, that while not meeting the definition of an ARAR should also be considered in remedial decisions (NCP at 40 Code of Federal Regulations (CFR) 300.400(g)(3)). The preamble to the NCP states that TBCs are to be used on an "as appropriate" basis. Because federal TBCs are not promulgated or enforceable, they do not have the same weight as ARARs (or SCGs in the case of NYS), and thus, consideration of TBCs is not required.

This report uses the TBC approach established in the NCP in order to address NYSDEC and USEPA regulations or guidelines that have not been identified as an SCG by the NYSDEC but which may be relevant and appropriate to remedial actions that are to be evaluated for the Site. That is, USEPA and additional NYSDEC regulations or guidelines are listed in Table 2-1 as TBC and are used in Section 4.0 in the evaluation of remedial actions at the Site.

During the RI and SRI, the quality of various media was evaluated. Each media of interest at the Site will be reviewed based on the following items to determine the remedial action objectives:

- identifying the chemicals of concern for the media of interest;
- identifying the exposure pathways and receptors for the media of interest;
- selecting appropriate cleanup levels for the complete exposure pathways;
- determining the extent of the affected media of interest; and
- determining the remedial action objectives and general response actions for media of interest.

The following media were investigated during the RI and SRI and will be reviewed as potential media of interest:

- surface waste
- fill waste/soil
- groundwater
- surface water
- leachate seeps
- stream sediment
- landfill gas
- LNAPL

2.3.1

Surface Waste

Approximately one-half acre of the Site is covered with surface waste consisting of white goods and scrapped vehicles. The surface waste does not pose potential exposure concerns except for tripping and injury hazards. Additionally, Site aesthetics would be improved by the removal of this waste. Therefore, the remedial action objective for surface waste is to prevent injury. The general response actions for surface waste will include no action, access and use restrictions, and removal and disposal.

2.3.2 *Fill Waste/Soil*

2.3.2.1 *Extent of Fill Waste*

The approximate areal extent of fill waste at the Site is 10.3 acres. Figure 1-3 indicates the horizontal extent of the fill waste. The test pit and boring logs in Appendix D contain landfill depth information. Generally, a layer of topsoil was encountered throughout the landfill area ranging in thickness from one-half to two and a half feet. Below this, typically a one-half to three feet noncontinuous layer of gray sandy clay to tight clay was encountered. Overall, the existing overlying material at the Site was nearly two feet thick on average, and varied from one-half to four feet thick in places. The thickness of waste encountered during the RI below the overlying soils varied from seven and a half feet to 25 feet. For the purpose of estimating the volume of fill waste, the Site elevation prior to the landfill start was obtained from the 1957 United States Geological Survey (USGS) Monroe Quadrangle topographic map. Based on historical Site elevation contours and current Site topography, the thickness of fill waste was estimated to be between 17 and 27 feet. Therefore, based on a 10.3 acre area and 17 to 27 foot depth, the volume occupied by landfill waste and overlying soils is between 283,000 and 450,000 cubic yards (cy), with approximately 25,000 cy of surface cover.

Fill Waste below the Water Table

As discussed in Section 1.2.3.2, groundwater elevation data demonstrate that fill waste at the Site is located below the water table. Table 2-1A shows the groundwater elevation measurements collected in March 2000 and on 15 November 2001. This table shows the depth of fill waste observed in the monitoring wells during their installation. MW-4, MW-4D, MW-8, MW-9, MW-9D, MW-10, and MW-12 are all located within the landfill limits. The "D" wells are bedrock wells, and are not included in this discussion since they are not indicative of groundwater levels within

the landfill. The boring log for MW-3A was unavailable, but the well is installed in bedrock. It is unknown whether fill waste was encountered during the installation of this well. MW-4 has a layer of LNAPL on the water surface and is not included in the discussion. However, two temporary monitoring wells, TMW-01 and TMW-04, nearby MW-4 were installed through fill waste and are discussed below. TMW-03 was installed in fill waste but had LNAPL on the water surface. Finally, TMW-02 was installed outside the landfill limits.

Figure 1-5 showed the March 2000 groundwater gradient map for overburden wells at the Site. During this monitoring round, the depth to water in MW-12, which is located in the north side of the landfill, was 11.77 feet bgs (see Table 2-1A). Based on a 17 to 27 foot depth of fill, potentially between 5 and 15 feet of fill waste were below the water table in this area of the landfill during that monitoring round. Similar depths to water were observed in other areas of the landfill as well, with the depth to water as shallow as 3.16 bgs in MW-10 at the eastern side of the landfill and as deep as 8.08 bgs in MW-9, located in the southern portion of the landfill. The fill waste in MW-9 was observed to extend from 2 to 27 feet bgs. Therefore, there was 19 feet of fill waste below the water table. The depth to water in MW-8 was 7.99 feet bgs in March 2000 and the fill waste in this well was located from 5 to 21 feet bgs during its installation. During this round of measurements, approximately 13 feet of fill waste was beneath the water table in this area.

The groundwater measurements collected in November 2001 indicate a significant drop in the water level in the northern area of the Site. Four wells were dry on this date: MW-5, MW-6, MW-12, and MW-13. The measurements show that the depth to water at the northern side of the landfill in MW-12 is more than 18.07 feet bgs. Therefore, based on a 17 foot depth of fill waste, all the fill waste in this area would have been above the water table during this monitoring round. However, based on a

27 foot depth of fill, there would potentially still be as much as 9 feet of fill waste below the water table, or if the water table was much lower than 18.07 feet bgs, none at all. In the area of TMW-01 and TMW-04, approximately 8 feet and 13 feet of fill waste were below the water table, respectively. The groundwater in MW-8 was 3.2 feet lower during this round than the March 2000 round, indicating that only 10 feet of fill waste was below the water table at this location in November 2001. The water table at MW-9 and MW-10 did not vary as much as other areas of the landfill. The amount of fill waste below the water table in MW-9 was approximately 16.5 feet during November 2001. MW-10 contained only a foot of fill waste, which would have been partially below the water table during November 2001.

Based on this information, the amount of fill below the water table varies greatly depending upon the time of year. The measurements show that there is more fill waste below the water table at the southern side (i.e. MW-8 and MW-9) of the landfill than at the northern side. Without control points at the northern side of the landfill (i.e., deeper wells) and within the center of the landfill, the amount of fill below the water table cannot be determined. Therefore, the percentage of fill waste below the water table cannot accurately be determined. Additionally, as discussed in Section 2.3.3, only limited impacts to groundwater have been observed at the Site. This further corroborates that only a small percentage of waste is located below the water table. Fill waste below the water table is further discussed in Section 4.4.

Fill Waste within Wetlands Areas

The RI estimated that wetlands occupy as much as 0.7 acres of the landfill area. Some of these wetlands appear to have formed as a result of landfill activities, created in depressions through alteration of the landscape at the Site. The wetlands extents at the Site are shown in Figure 1-4. Soil samples were not collected in the wetlands due to access problems. However, these

wetlands will be addressed as part of the FS since they contain landfill waste.

2.3.2.2 *Potential Exposure Pathways and Identification of Cleanup Levels*

Potential exposure pathways for chemicals in fill waste/soil are: direct contact with chemicals in surface soil by trespassers (incidental ingestion and dermal absorption); direct contact with chemicals in subsurface soil by construction workers; and leaching of chemicals from soil to groundwater.

As shown in Table 2-1, the NYSDEC TAGM 4046 RSCOs are SCGs for Site soil. The RSCOs are risk-based acceptable soil levels for organic compounds for both direct contact with soil and protection of groundwater. The lower of these two values is generally the RSCO. The RSCOs for inorganic constituents are based on eastern USA background soil concentrations. As such, these values represent acceptable soil background concentrations for NYSDEC and can therefore be used for screening purposes.

The test pit soil sample locations exhibiting soil/fill concentrations of organics above their RSCOs are shown in Figure 2-1. Figure 2-2 shows the surface sample locations exhibiting soil/fill concentrations of inorganic constituents above Site background levels. Figure 2-3 shows the subsurface sample locations exhibiting soil/fill concentrations of inorganic constituents above their Site background levels. Finally, Figure 2-4 shows the monitoring well soil sample locations exhibiting soil/fill concentrations of organics above their RSCOs and inorganic constituents above their Site background levels.

The NYSDEC risk-based direct contact screening criteria for benzo(a)pyrene, benzo(a)anthracene, aldrin, dieldrin, PCB-1242, and PCB-1254 were exceeded in at least one soil sample at the Site. Therefore, these

chemicals may pose an exposure to human health via direct contact. It may be noted that this analysis includes all samples, regardless of depth. Generally, only samples from the top two feet are available for direct contact under current conditions. Therefore, the maximum detected concentration of each of these six chemicals in surface soil samples was compared to the direct contact criteria. Benzo(a)pyrene, aldrin, dieldrin, and PCB-1254 were not detected in any surface soil samples. The maximum detected concentration of benzo(a)anthracene in surface soil samples (47J micrograms per kilogram (ug/kg)) is below the direct contact screening criteria of 224 ug/kg. Similarly, the maximum detected concentration of PCB-1242 in surface soils (210 ug/kg) is below the surface standard of 1000 ug/kg. Therefore, under current conditions, no organic compounds pose a significant exposure to human health via direct contact. Subsurface soils could have the potential to become exposed in the future and pose a potential for direct contact exposure. It should be further noted that the direct contact screening criteria are based on residential use of the Site.

The surface cover over the landfill waste at the Site varied from a half a foot depth to four feet in depth. A total of seven surface soil samples were collected during the test pit investigation from test pits 24B, 25D, 26A, 28B, 28D, 30B, and 30C. Of these seven surface soil samples, the only VOC detected above RSCOs was acetone in test pit 24B at 1,200 ppb. This analytical result, however, was qualified with "DB", indicating that the compound was detected at a secondary dilution factor (D) and found in the blank sample as well value (B). SVOCs were detected at estimated values, below the contract required quantitation limit (CRQL), in three surface soil samples, from 28B, 28D, and 25D. No PCB or pesticide was detected in any surface soil sample. Finally, inorganics were detected above site background levels in all seven surface soil samples.

Table 2-3 presents a comparison of the maximum detected concentrations of inorganic constituents in Site soil to their TAGM 4046 RSCOs and Site background concentrations. The concentrations of inorganics in soils exceeded the higher of the site background or RSCO for all inorganics except vanadium and cyanide. TAGM 4046 does not include groundwater protection criteria and risk-based direct contact criteria for inorganics. Therefore, no further risk-based analysis using TAGM 4046 can be completed for inorganics in soil. However, the groundwater data provided in Section 2.3.3 indicates that the inorganic constituents in fill waste are not impacting groundwater, except for manganese.

To evaluate which exposure scenario was impacted by Site soil concentrations, the maximum detected concentration of organic COCs were compared to their groundwater protection criteria and direct contact criteria (see Table 2-2). The organic chemicals present in soil at concentrations in excess of groundwater protection criteria are: acetone, MEK, benzene, chlorobenzene, xylene, chrysene, and heptachlor epoxide. Of these chemicals, benzene, chlorobenzene, and xylene were also identified as chemicals of potential concern in Site groundwater as discussed in Section 2.3.3.1. Consequently, these chemicals could potentially leach from the soil into groundwater. Thus, benzene, chlorobenzene, and xylene could pose an exposure to human health via subsequent domestic use of groundwater. However, as further discussed in Section 2.3.3.2, these chemicals were determined not to present exposure concerns.

The maximum detected concentration of acetone in groundwater was below the NYSDOH drinking water standard and the Class GA groundwater quality guidance value. The remaining three chemicals (MEK, chrysene, and heptachlor epoxide) were not detected in either Site groundwater or groundwater seeps. Therefore, the presence of these

three chemicals in Site soil do not appear to present an exposure to human health via leaching to and domestic use of groundwater.

2.3.2.3 *Remedial Action Objectives and General Response Actions for Fill Waste*

As discussed above, the only potential exposure pathways for Site soil are direct contact through incidental ingestion and dermal absorption and leaching of chemicals to groundwater. With the exception of potential leaching to groundwater of benzene, chlorobenzene, and xylene, organic chemicals were determined not to present exposure concerns (see Section 2.3.3.2 for additional discussion).

Site soil does, however, exceed the NYSDEC RSCOs for twenty-two inorganic constituents. Even though the NYSDEC RSCOs for inorganic constituents are not risk-based, they have been considered in the development of remedial action objectives for the Site.

The remedial action objectives for fill waste/soil are:

- prevent direct contact and ingestion of soil containing chemical concentrations in excess of their RSCOs; and
- prevent leaching to groundwater.

The general response actions for Fill Waste/Soil include:

- no action;
- access and use restrictions;
- containment (prevent access and infiltration);
- excavation; and
- disposal.

2.3.3 *Groundwater*

2.3.3.1 *Characterization of Groundwater*

The groundwater sampling results for monitoring wells at the Site are provided in Tables 1-3 and 1-4. To determine the COCs in Site

groundwater, these sampling results were compared to the TOGS 1.1.1 Class GA Ambient Water Quality Standards & Guidance Values. As shown in Table 2-1, these values are SCGs. As shown in the Tables 1-3 and 1-4, fewer chemicals were detected in Site groundwater during Round 2 sampling. This is most likely due to the monitoring wells equilibrating over a period of time and producing less turbid samples. As discussed in Section 1.3.1.3, turbid samples contain particulates that contribute to higher detected concentrations of certain chemicals. Therefore, it can be concluded that Round 2 groundwater sampling results are more representative of Site groundwater, and determination of the COCs will be based only on Round 2 groundwater sampling results. Figure 2-5 shows the groundwater sampling locations exceeding the TOGS 1.1.1 Class GA standards and guidance values for organics and Figure 2-6 shows the exceedences for inorganics. Based on this comparison, the following chemicals have been identified as COCs for groundwater:

benzene	1,4-dichlorobenzene	sodium
chlorobenzene	iron	thallium
ethylbenzene	magnesium	
xylene	manganese	

2.3.3.2 *Potential Exposure Pathways and Receptors and Identification of Cleanup Levels*

The potential exposure pathways for chemicals in Site groundwater are: migration of these chemicals with groundwater to nearby residential wells and ingestion of impacted groundwater; inhalation of VOCs in groundwater while showering or cooking; dermal absorption during bathing at off-Site residences; and contribution of groundwater to the stream on-Site. Since there are no supply wells located on-Site, there is no concern for ingestion of on-Site groundwater. The exposure pathway for off-Site groundwater is discussed below. As discussed below in Section 2.3.4, surface water at the Site is minimally impacted but does not pose any exposure concerns. Therefore, the contribution from groundwater to

the on-Site stream is minor and will not be considered as a potential exposure pathway.

As discussed above, ingestion of off-Site groundwater and other residential uses are potential complete exposure pathways for this medium of interest. All non-saline (fresh) groundwater in New York State is given a GA classification. Since the intended use for all Class GA groundwater is potable water supply, the Class GA standards may be used as cleanup levels for groundwater. The following table summarizes the range of exceedences for Round 2 groundwater sampling for each chemical, the applicable NYS Class GA Standard, the number of exceedences, and whether or not the chemical has been detected in off-Site wells. The off-Site residential groundwater analytical results are provided in Table 1-10.

Groundwater Chemical of Concern	Range of Concentrations in Groundwater (ppb)	New York State Class GA Standard (ppb)	No. of exceedences of the Class GA Standard*	Detected in Off-Site Groundwater ?
benzene	ND – 6J	1	1 (7)	No
chlorobenzene	ND - 48	5	1 (7)	No
ethylbenzene	ND - 34	5	1 (7)	No
xylene	ND - 29	5	1 (7)	No
1-4 dichlorobenzene	ND – 9J	3	1 (8)	No
iron	62.6B – 67,900	300	7 (10)	Yes
magnesium	2,240B – 51,200	35,000 **	1 (10)	Yes
manganese	140 – 5,790	300	7 (10)	Yes
sodium	2,370B – 346,000	20,000	3 (10)	Yes
thallium	ND – 2.7B	0.5 **	1 (10)	NA

B – Indicates the value is less than the contract required detection limit (CRDL) but greater than the instrument detection limit (IDL)
J – Estimated value. NA = Not analyzed

* The first number is the number of samples that exceeded a standard or guidance value, the second number is the total number of samples analyzed.

** No Class GA standard available. Guidance value

The VOCs and one SVOC listed above were all detected in only one monitoring well, MW-10. This well is located on the western boundary of the landfill. The groundwater elevation in this monitoring well is around 599 feet above MSL. MW-10 is located downgradient from the groundwater high at the Site of about 633 feet above MSL. Therefore, the groundwater in MW-10 is likely to be directly impacted by water infiltrating through the landfill. The closest test pit soil samples to MW-10 were collected from 24A and 25AA. The only organic compound detected in MW-10 groundwater that was detected above its NYSDEC RSCO was xylene in test pit 24A. The closest off-Site well along this direction is a half-mile away. As mentioned above, these VOCs and SVOC have not been detected in off-Site groundwater. As discussed in Section 2.3.2.2, benzene, chlorobenzene, and xylene were detected in fill waste at concentrations above their leaching to groundwater and direct contact NYSDEC RSCOs. This may be contributing to the VOCs in groundwater. The remaining inorganic COCs for groundwater were compared to TOGS 1.1.1 values that are specific for certain impacts. The TOGS 1.1.1 values for magnesium and thallium are guidance values. These chemicals exceeded their guidance values in only one well each. Also, it should be noted that the thallium concentration data is qualified with a "B", indicating that the result is less than the CRDL but greater than the IDL. As a result, the actual concentration of thallium in this well may be less than the reported value. Consequently, magnesium and thallium will not be retained for further evaluation. The TOGS 1.1.1 Class GA values listed for iron, manganese, and sodium are standards. However, the iron standard is based on aesthetics and is likely natural to the area. As a result, this inorganic COC can be eliminated from further consideration.

Based on the above evaluation, three of the five inorganic COCs do not pose unacceptable groundwater ingestion exposures and therefore have been eliminated from further consideration. The remaining inorganic

COCs in groundwater are manganese and sodium. While, ingestion of on-Site groundwater is not a potential exposure pathway, manganese has been detected at unacceptable levels in off-Site well RW-9. During the RI and subsequent sampling, manganese was detected at three to four times the TOGS 1.1.1 standard and NYSDOH MCL of 300 ppb (see Tables 1-10 and 1-11). Therefore, the manganese in the residential well, RW-9, will be retained as a COC for further remedial action evaluation.

Sodium was detected in on-Site monitoring wells at concentrations above the groundwater quality standard of 20 mg/L. Water containing more than 20 mg/L of sodium should not be consumed by individuals on a severely restricted sodium diet. For individuals on a moderately restricted sodium diet, the guideline is 270 mg/L. Sodium was detected above 20 mg/L in sixteen of the twenty-three wells that were sampled for sodium. Sodium in all 23 samples analyzed from the residential wells was below 270 mg/L. Therefore, sodium will be carried through as a COC. The NYSDOH has notified residents about the elevated sodium concentrations in groundwater.

2.3.3.3 *Remedial Action Objectives and General Response Actions for Groundwater*

Based on this assessment of groundwater quality, the remedial action objective for Site groundwater are as follows:

- continue to prevent ingestion of on-Site groundwater.

To address the off-Site manganese-impacted groundwater at RW-9, the remedial action objectives will be:

- continue to monitor sodium concentrations in on-Site wells and in nearby residential wells;
- prevent ingestion of groundwater containing elevated manganese at RW-9; and
- reduce manganese levels to acceptable concentrations for drinking at RW-9.

General response actions for on-Site and off-Site groundwater include:

- no action;
- use restrictions;
- groundwater monitoring;
- alternate drinking water source for residence; and
- off-Site well head treatment for manganese at residence.

These general response actions will be used to evaluate technologies (Section 3.0) and to develop remedial action alternatives (Section 4.0).

2.3.4 *Surface Water*

2.3.4.1 *Characterization of Surface Water*

Figure 2-7 presents locations where surface water concentrations exceeded the TOGS 1.1.1 Class C Ambient Water Quality Standards and Guidance Values. A summary of all surface water sampling results is presented in Table 1-7. As shown in this figure, the only chemicals in surface water samples that exceeded the Class C standards were selenium and BEHP.

Selenium was detected above the Class C standard of 4.6 ppb in three dissolved samples along the northern portion of the stream: SW02, SW05, and SW06 at 6.4 ppb, 6.2 ppb, and 6.2 ppb, respectively. Three samples collected along the southern portion of the stream exhibited BEHP concentrations above the Class C standard of 0.6 ppb. However, BEHP concentrations ranged from 1 to 2 ppb and were all estimated values.

Aluminum and iron were also detected above their relevant TOGS Class C standards but only in the unfiltered samples. Therefore, the higher concentration of these inorganics in unfiltered samples can be attributed to the particulate matter. In addition, the surface water standard for aluminum is based on ionic aluminum and the surface water analytical results represent total aluminum. Furthermore, the standard for iron is based on aesthetic quality, and does not address health impacts. Therefore, although

the SW01 and SW02 aluminum results were slightly above the standard, the reported concentrations most likely do not represent a significant impact on surface water quality.

2.3.4.2 *Evaluation of Complete Exposure Pathways*

Potential exposure pathways for surface water at the Site include direct contact with and incidental ingestion of surface water by trespassers during recreational activities. Based on the above data analysis, surface water quality at the Site is minimally impacted with respect to protection of fish propagation. Only a few minor exceedences of TOGS 1.1.1 Class C standards were observed in the surface water samples. In addition, the only criteria exceeded were for the protection of fish propagation. Furthermore, it was determined in the FWIA that the stream segment does not have substantial fish population and ingestion of fish does not appear to be a potential pathway for human exposure. Finally, NYSDEC regulations state that the water quality for Class C waters shall be suitable for primary and secondary recreation. Thus, direct contact with and incidental ingestion of surface water by trespassers do not pose an unacceptable exposure concern. Therefore, surface water will not be retained as a medium of interest for further review.

2.3.5 *Leachate Seeps*

2.3.5.1 *Characterization of Leachate Seeps and Potential Exposure Pathways*

As discussed in Section 1.3.1.6, sampling of leachate seeps was conducted during the RI by ERM. The analytical results compared to TOGS 1.1.1 class C surface water standards are presented in Table 1-9.

Concentrations of chlorobenzene, BEHP, and ten inorganics were detected above TOGS 1.1.1 Class C water quality standards in a number of samples. No pesticides or PCBs were detected in leachate seeps. As discussed above, the Class C water quality standards are for the protection of fish

propagation. Since fish do not inhabit the seeps, the seep quality does not pose any impacts to fish propagation. Therefore, further evaluation of leachate seeps may be conducted by determining whether any impacts are observed in surface water.

The only chemicals potentially originating from leachate seeps that were observed in surface water above Class C standards were BEHP, aluminum, selenium, and iron. However, it was determined in the surface water analysis that these chemicals do not have a complete exposure pathway for human exposure and were thus eliminated from further remedial action analysis. Therefore, impact to surface water from leachate seeps is only minimal and poses little exposure concerns. In addition, once the leachate seeps are addressed, surface water quality will be expected to improve. Nonetheless, it was determined in the FWIA that potential direct contact impacts to wildlife from leachate seeps could occur. Also, inadvertent exposures via trespassing are possible during part of the year and exposure to residual sediments are possible the rest of the year for humans. Leachate seeps can be present during anytime of year, but are not likely to occur during drought conditions. While the seeps are only intermittently present and unlikely to cause health effects, it was recommended in the HEEA to use controls to stop potential exposures.

2.3.5.2 *Remedial Action Objectives and General Response Actions for Leachate Seeps*

As previously discussed the possibility that leachate seeps will pose unacceptable exposures to human health or the environment is very unlikely. Nevertheless, the following remedial action objectives have been identified for the leachate seeps:

- reduce infiltration;
- prevent direct contact with and ingestion of seeps; and
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria

or result in groundwater levels in excess of groundwater quality criteria

General response action for leachate seeps include:

- no action and monitoring;
- access and use restrictions; and
- containment.

2.3.6 *Stream Sediment*

2.3.6.1 *Characterization of Sediment*

Sediment samples were collected from the intermittent stream during the RI, as well as from the off-Site portion of the stream, downstream of the Mayer Pond, during the SRI. The on-Site stream segment begins adjacent to the west side of the landfill, nearly at the northern limit of the landfill extent, and is shown in Figure 1-11. This on-Site stream section is approximately 780 ft long. Samples SS01 through SS-10 were collected from the on-Site portion. The off-Site section of the stream investigation is approximately 1,300 feet long. Samples SS-11 through SS-16 were collected from this stream segment.

2.3.6.2 *Evaluation of Complete Exposure Pathways and Identification of Cleanup Levels*

The HEEA identified direct contact with on-Site sediment via trespassing as a potential exposure pathway for sediment. There are no sediment cleanup objectives for direct contact exposures. To evaluate this potential exposure pathway, the sediment sample results were compared to the TAGM 4046 direct contact RSCOs in Table 2-4 ⁱⁱ. Based on this comparison, it was concluded that PAHs in sediment may present the potential for exposure via direct contact under both current and future conditions.

ⁱⁱ There are no direct contact RSCOs for inorganic constituents.

In addition, the potential ecological impacts of chemicals in sediment were evaluated using the NYSDEC *Technical Guidance for Screening Contaminated Sediment* (NYSDEC, 1993). This comparison was presented in Table 1-13. PAHs were detected in sediment samples SS01, SS02, and SS04 above their NYSDEC sediment criteria. Both SS01 and SS02 were collected adjacent to the road, and SS04 was collected approximately 180 feet from the road. Consequently, PAH concentrations are most likely associated with runoff from Prospect Road and are not likely Site related. In fact, concentrations of PAHs are greatest in the samples collected furthest from the landfill. This suggests either other local sources of PAHs exist in the area (automobile or wood fireplace/heating system exhaust), or that these compounds were released in the early years of landfill operations and have been transported downstream since the landfill ceased operations. The latter case is unlikely since other chemicals associated with the landfill are present in the sediment closest to the landfill. PAH concentrations in sediment samples collected adjacent to the landfill (SS05 through SS10) were below their respective PAH sediment criteria. The NYSDEC sediment criteria for several PAHs including benzo(a)pyrene, benz(a)anthracene, benzo(b)fluoranthene, benzo(d)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene is based on human health bioaccumulation from consumption of aquatic life. Human consumption of aquatic species from the unnamed sub-tributary to Slatterly Creek is not a concern. The tributary is small and shallow and does not support a viable game fisheries population.

Sediment samples SS04, SS08, and SS09 exhibited phenol concentrations above their sediment guideline criteria. However, the phenol sediment criterion is based on the NYSDEC TOGS 1.1.1 water quality phenol standard of 1 microgram per liter (ug/L). This standard is based on tainting of fish flesh and not on acute or chronic affects on aquatic life. The reported phenol values are not considered significant. None of the downstream SRI sediment samples exceeded any sediment criteria for VOCs, SVOCs, pesticides, or PCBs.

Manganese and silver were detected in SS02 and SS03 above the severe effect level (SEL) sediment criteria. The downstream SRI sediment samples exhibited concentrations of iron, manganese, and silver slightly above the SEL. The only chemical in sediment that exceeded its sediment criteria that was detected in surface water above TOGS 1.1.1 Class C criteria was selenium. In addition, selenium was only detected in downstream sediment samples. Based on this comparison of sediment sample results and surface water sample results, it can be concluded that the concentrations of chemicals in sediment are not adversely impacting surface water.

2.3.6.3 *Remedial Action Objectives and General Response Actions for Sediment*

Although sediment from the unnamed sub-tributary of Slatterly Creek exhibits concentrations of several metals and PAHs above the NYSDEC sediment criteria, the data do not indicate that the sediments are significantly impacted with respect to benthic aquatic life. In addition, the location of the PAH exceedences suggest off-Site run-off sources. As discussed above, the potential exposure pathways for Site sediment are direct contact through incidental ingestion and dermal absorption and contribution to surface water. However, impact to surface water from sediment is not being observed at the Site. Finally, the FWIA concluded that any proposed remediation to remove the sediments would most likely have a greater impact on the aquatic habitat and the surrounding deciduous forested wetland habitat than leaving the sediments in place. Based on these conclusions, stream sediment will be eliminated as a medium of interest. No further evaluation of this medium will be conducted.

2.3.7 *Landfill Gas*

2.3.7.1 *Characterization and Distribution of Landfill/Soil Gas*

Soil gas sample results are presented in Appendix A and Table 1-12. Table 2-5 presents the maximum concentrations of compounds detected in SRI soil gas samples and the calculated values for Ca, Cp, and Cst. Methane was not detected in any samples outside the landfill limits. The highest concentrations of landfill gas compounds were found within the landfill limits. The soil gas samples taken outside the landfill limits also contained compounds that were found in soil gas samples 1, 2, and 3, which were collected within the landfill.

2.3.7.2 *Potential Exposure Pathways and Identification of Cleanup Levels*

The pathway for exposure for landfill gas is ambient air exposure to trespassers at the Site. Also, landfill gas could potentially migrate to nearby buildings and potentially impact indoor air quality.

A DAR-1 air emissions analysis was conducted for the landfill gas at the Site. To perform the analysis, a concentration of each compound is needed, along with a flow rate. The flow rate of vented landfill gas vapors was assumed to be equivalent to the landfill gas generation rate. Using the calculations identified in USEPA AP-42 Section 2.4.4.1 (known as the Landfill Air Emissions Estimation Model), the flow rate was estimated to be approximately 8 cubic feet per minute (cfm). The soil gas flow rate was estimated based on years of operation of the landfill, typical density of municipal solid waste, and methane generation potential of municipal solid waste. Using this estimated flow and the maximum detected concentrations of a DAR-1 air emissions analysis was performed.

Two simple DAR-1 models - Point Source and Area Source Methods - were used to calculate a maximum actual and maximum potential annual impact and short-term impact from the emission of vented landfill gas.

These impacts were compared to the AGC and SGC, respectively. The first model conservatively assumes that all gas is vented through a single point, and the maximum impacts may occur onsite. The area source model assumes that the entire site is an emission source and the maximum impacts occur off-Site. It was determined that any emission point above about six inches would result in annual and short-term impacts less than the AGC and SGC. Off-Site migration was determined to be unlikely in the HEEA. Therefore, this pathway is not a complete exposure route.

2.3.7.3 *Remedial Action Objectives and General Response Actions for Landfill Gas*

Remedial action objectives for landfill gas include:

- prevent migration of landfill gas.

General response actions for landfill gas include:

- no action and monitoring;
- access and use restrictions; and
- collection and venting.

2.3.8 *LNAPL*

2.3.8.1 *Distribution and Characterization of LNAPL*

During the RI, as mentioned in Sections 1.2.3.2 and 1.3.1.3, the presence of LNAPL was discovered in MW-4. Due to this condition, MW-4 was not included in either groundwater sampling round, and the RI recommendations instructed for further investigation of the LNAPL to be conducted during the SRI. Based on the SRI, the depth to product in MW-4 is between 6 and 9 feet bgs. The LNAPL extends out from MW-4 about 50 feet to the south and lies 40-feet across laterally as shown in Figure 1-14A. The thickness of LNAPL is estimated to be three quarters of an inch in MW-4 and only a surface film in TW03. The LNAPL was identified through laboratory analysis as a mixture of highly degraded No. 2 fuel oil

or diesel No. 2 and degraded creosote (coal tar oil) with small amounts of heavy hydrocarbons.

2.3.8.2 *Potential Exposure Pathways and Receptors*

Potential exposure pathways consist of direct contact, leaching to groundwater, and migration to residential wells. Direct contact to workers is a concern if subsurface work is conducted at the Site. Groundwater results do not show any evidence of impact from the LNAPL partitioning into the water phase. Finally, the delineation of LNAPL determined that the product is only present in a limited area and the likelihood of it migrating off-Site is very small.

2.3.8.3 *Remedial Action Objectives and General Response Actions for LNAPL*

While potential exposure to LNAPL is very unlikely as described above, NYSDEC policies and procedures require that LNAPL be removed from subsurface areas to the extent practical. The NYSDEC is authorized to pursue this goal of LNAPL removal by the New York Oil Spill, Control, and Compensation Act, Article 12 of the New York State Navigation Law, New York Consolidated Laws Service, 1977, as amended. Section 176 (3) of this statute requires that any unexplained discharge of petroleum within state jurisdiction shall be removed by or under the direction of the NYSDEC. Cleanup and removal is defined in this statute as the: (a) containment or attempted containment of a discharge; (2) removal or attempted removal of a discharge; or (c) taking of reasonable measures to prevent or mitigate damages to the public health, safety, or welfare, including but not limited to, public and private property, shorelines, beaches, surface waters, water columns and bottom sediment, soils and other affected property, including wildlife and other natural resources.

Section 176(4) of this statute also provides that cleanup and removal of petroleum and actions to minimize damage from a discharge of petroleum

shall be implemented, to the greatest extent possible, in accordance with the NCP for removal of oil and hazardous substances (NCP, 1990). The NCP at 40 CFR 300.320(a)(4)(i) requires that the cleanup of a discharge be fully sufficient to minimize or mitigate threats to public health and welfare and the environment. The NCP states at 40 CFR 300.310(b) that appropriate actions shall be taken to recover the oil and mitigate its effects. The NCP also states at 40 CFR 300.310(c) that oil and chemicals in recovered oil that are removed during cleanup be disposed of properly.

To summarize, removal of LNAPL from the areas surrounding MW-4 is required by the following: (1) Article 12 of the New York State Navigation Law; and (2) the NCP at 40 CFR 300, Subpart D (Operational Response Phases for Oil Removal). Therefore, the remedial action objectives for LNAPL at the Site are:

- prevent migration of LNAPL;
- remove LNAPL to extent practical; and
- continue to prevent direct contact with subsurface LNAPL.

General response actions include:

- no action and monitoring;
- access and use restrictions;
- LNAPL removal;
- recovery; and
- disposal.

2.4 *SUMMARY OF SITE REMEDIAL ACTION OBJECTIVES*

The development of the Site conceptual model defined the Site dynamics and provided the outline for determining the Site remedial action objectives. The Mayer Landfill has been identified as the contaminant source at the Site and, as a result, the media evaluated in Section 2.3 were fill waste/soil, groundwater, surface water, leachate seeps, stream sediment, landfill gas, and LNAPL. Exposure pathways, remedial action

objectives, and general response actions for each media were identified. The evaluation of stream sediment in Section 2.3.6 eliminated sediment as a medium of interest for the following reasons: 1) no impact to surface water from sediment is being observed at the Site; 2) the PAH concentrations present in the sediment samples are most likely associated with runoff from Prospect Road and are not likely Site related; and 3) the FWIA concluded that any proposed remediation to remove the sediments would most likely have a greater impact on the aquatic habitat and the surrounding deciduous forested wetland habitat than leaving the sediments in place. In addition, surface water was eliminated as a media of interest since direct contact and incidental ingestion were determined not to cause an unacceptable exposure, and the stream does not appear to support substantial fish population. In summary, the following are the Site remedial action objectives:

- prevent injury posed by surface waste risk;
- prevent direct contact with and incidental ingestion of fill waste/soil containing chemical concentrations in excess of their RSCOs and leachate seeps;
- reduce infiltration and prevent leaching to groundwater;
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria or result in groundwater levels in excess of groundwater quality criteria;
- prevent migration of landfill gas;
- continue to prevent ingestion of on-Site groundwater;
- prevent migration of LNAPL;
- remove LNAPL to extent practicable;
- continue to prevent direct contact with subsurface LNAPL; and
- prevent ingestion of groundwater containing elevated manganese concentrations at RW-9.

The general response actions identified potential mechanisms for satisfying the remedial action objectives. Section 3.0 will identify the available technologies for these response actions and their ability to meet the remedial action objectives.

This section identifies applicable remedial technologies and associated process options which can be employed at the Site to achieve the remedial action objectives for the media of interest at the Site (i.e., soil/fill waste, groundwater, leachate seeps, landfill gas, and LNAPL) described in Section 2.3. The media specific remedial action objectives should be met through the use of these technologies and be consistent with the overall objectives for the Site. The remedial technologies discussed in this section are considered general technologies, which correspond to the previously identified response actions for affected media. The process options, associated with each remedial technology, are specific procedures in each technology. For example, a remedial technology such as capping may be composed of a number of process options, which involve regrading of the Site and placement of various cover layers.

The remedial technologies and associated process options in this section were identified through a review of USEPA guidelines, NYSDEC guidelines, relevant literature, and experience in developing remedial actions for similar types of environmental issues. The objectives of screening the remedial technologies and process options is to narrow the field of available technologies, eliminating those which cannot technically be implemented and combine the technologies into a variety of remedial alternatives which will undergo more detailed evaluation in Section 4.0. The screening procedures are based on limitations posed by on-Site and off-Site conditions and the characterization of chemicals in affected media. For example, a limiting factor in the capping option may be the availability of materials in the surrounding area needed to construct layers. This type of factor will be considered in the screening.

Remedial technologies and process options considered to be implementable will undergo further evaluation to select one process for each technology. The categories of this further evaluation involve the ability of the technology to meet the remedial action objectives, short- and long-term effectiveness, and implementability.

The criteria for effectiveness consider whether the technology and process options can handle the volume of the affected media and meet the remedial action objectives. Also considered are potential impacts to human health and the environment, which result from the use of the process options and, whether the process options have proven reliable for the media and chemicals requiring remediation at the Site.

The criteria for implementability focuses on institutional aspects associated with use of the remedial technology and associated process options. Institutional aspects involve potential permits or access approvals for on and off-Site work as well as off-Site treatment, storage and disposal services.

The following section describes 14 remedial action technologies and associated process options for affected media at the Site. The remedial technology descriptions include evaluations of the practical aspects of the remedial technologies and process options which are judged to be implementable. A summary of the remedial action technologies and process options, which are subsequently combined into remedial alternatives, follows these descriptions.

3.1 IDENTIFICATION OF REMEDIAL ACTION TECHNOLOGIES

The Remedial Action Technologies identified for the Site are:

- Access and Use Restrictions
- Surface Waste Removal and Disposal

- LNAPL Removal
- LNAPL Recovery
- Excavation within Wetlands and Outlying Areas
- Consolidation and Containment through Capping
- Excavation and Off-Site Disposal
- Seepage Control
- Residential Bottled Water Supply
- Off-Site Residential Well Head Treatment
- Groundwater Monitoring
- Passive Landfill Gas Collection

Sections 3-2 through 3-12 present descriptions of each remedial action technology and associated process options. Each remedial technology is evaluated based on its ability to meet the remedial objectives and its short and long-term effectiveness and implementability.

As discussed in Section 2.0, the remedial action objectives for the Site media of interest are:

Surface Waste

- prevent injury to trespassers by contact with surface waste

Soil/Fill Waste

- prevent direct contact and ingestion of soil/fill waste containing chemical concentrations in excess of their NYSDEC RSCOs
- prevent leaching to groundwater

Groundwater

- continue to prevent ingestion of on-Site ground water
- confirm that there is not a significant increase in manganese
- prevent ingestion groundwater containing manganese at RW-9
- reduce manganese levels to acceptable concentrations for drinking

Leachate Seeps

- prevent direct contact with seeps
- prevent ingestion of seeps
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria or result in groundwater levels in excess of groundwater quality criteria

Landfill Gas

- prevent migration of landfill gas
- recover and treat landfill gas

LNAPL

- prevent migration of LNAPL
- remove LNAPL to extent practicable
- continue to prevent direct contact with subsurface LNAPL

3.2 *ACCESS AND USE (DEED) RESTRICTIONS*

Institutional controls can be used to restrict site access, control future site uses through zoning and/or deed restrictions, control development on and near the site, restrict groundwater and surface water use on and near the site, and provide alternative water supplies.

Access restrictions would be provided by installing fencing around portions of the site, or the entire site. Fencing would reduce unauthorized access and potential damage to the existing cover systems from trespassers. Chain link fence with barbed wire may be used to deter trespassing and gates to obstruct vehicular access may be constructed. Additionally, "no trespassing" signs can be posted. These would be posted at equal intervals along the perimeter of the Site and along roads leading to the Site. Access restrictions would be applied as necessary for both the excavation and reclamation and consolidation and containment options.

If consolidation and containment is pursued, future Site uses would need to be restricted to prevent damage to the final cover and surface water control systems. Site use may also need to be restricted for the excavation/reclamation option if contaminants on-Site are above cleanup levels at depths less than 15 feet bgs. Use restrictions may include: no potable wells installed at the Site, no construction except with proper personal protective equipment, and no residential or recreational use.

3.2.1 *Ability to Meet Remedial Action Objectives*

Fencing may limit access to the landfill Site physically. This would reduce the potential for direct contact. However, the reliability of this control is uncertain since the measures may be circumvented. Leaching of contaminants to groundwater may still occur. The Site remedial objectives for groundwater, leachate seeps, landfill gas, and LNAPL would not be achieved with this technology. The access and use restrictions must be used in conjunction with other technologies to be effective.

3.2.2 *Short-Term and Long-Term Effectiveness*

The fencing technology has minimal health or environmental impacts during implementation with the exception of physical hazards associated with routine construction activities. In terms of continuing effectiveness, the technology does not provide assured protection of human health and the environment. A deed restriction could prevent residential use of the Site and would provide interested parties with information regarding Site conditions, but it is unclear what agency would enforce this. The town clerk for the Town of Blooming Grove and the zoning department have no knowledge of deed restrictions. The deed restriction would also be filed with the Orange County clerk's office. The Site owner would be required to submit annual certification of the deed restriction to the NYSDEC. This technology could be used in conjunction with one or more of the other

remedial action technologies to address the remaining remedial action objectives.

This technology has been proven to be effective at numerous Sites, with proper enforcement. This technology is effective in preventing unauthorized Site use.

3.2.3 *Implementability*

Fencing is easily implementable. Equipment and supplies are readily available. However, the Town of Blooming Grove does not have a system in place to enforce deed restrictions. The deed restriction would also be filed with the Orange County clerk and certified annually to the NYSDEC. In addition, owner approval is needed to implement deed restrictions. William Mayer, Jr. currently owns the Site.

3.2.4 *Evaluation Summary*

In conjunction with additional technologies this technology would be effective and is likely readily implementable. This technology is therefore carried forward to the development of alternatives section.

3.3 *SURFACE WASTE REMOVAL AND DISPOSAL*

This remedial action technology calls for the collection and off-Site transportation of the surface waste from the Site. The surface waste at the Site, as described in Sections 1.2.1 and 2.3.1, mainly consists of discarded vehicles and white goods. Removal of this waste would be accomplished through the use of heavy equipment to load the waste onto flat bed trucks and trailers. A facility, which accepts such type of waste, would be employed to dispose of the waste.

3.3.1 *Ability to Meet Remedial Action Objectives*

This action meets the remedial action objective of preventing injury to trespassers through contact with surface waste. Additionally, Site aesthetics would be improved through the removal of surface waste.

3.3.2 *Short-Term and Long-Term Effectiveness*

The proposed remedial technology would be effective in the short term. However, this technology would not prevent additional illegal dumping at the Site.

3.3.3 *Implementability*

This technology would be readily implementable at the Site. Some difficulty may be encountered in accessing the surface waste due to trees and other obstructions. However, this is only a minor obstacle and can be easily overcome through the use of proper equipment.

3.3.4 *Evaluation Summary*

This technology would be implementable at the Site and would meet the remedial action objective for dealing with surface waste at the Site. Therefore, it will be carried through to the evaluation of alternatives section.

3.4 *LNAPL REMOVAL*

The technology would entail LNAPL removal through excavation and off-Site disposal of LNAPL and associated LNAPL-affected materials. This could be completed in conjunction with the excavation and off-Site disposal technology or prior to the placement of a final cover as discussed in Sections 4.4.1.5 and 4.5.1.3, respectively. LNAPL removal would involve excavating overlying materials in the area of MW-4 to the level of LNAPL affected fill

and LNAPL. Depending upon the overall remedial alternative for the Site, the overlying materials would be: (1) stockpiled for replacement used with the final cover technology, or (2) transported off-Site for disposal if used with the excavation option (see Sections 4.4.1.5 and 4.5.1.3). LNAPL-affected materials and free-phase LNAPL would be transported to an off-Site disposal facility. The depth to groundwater in the LNAPL area ranges from nine to 11 feet bgs. Therefore, LNAPL-affected soils and fill waste and free-phase LNAPL would be excavated, transferred into trucks, and transported to an off-Site disposal facility.

3.4.1 *Ability to Meet Remedial Action Objectives*

This technology would meet the remedial action objective of removing LNAPL to the extent practicable, preventing direct contact with LNAPL, and preventing migration of LNAPL.

3.4.2 *Short-Term and Long-Term Effectiveness*

Excavation and off-Site disposal of LNAPL and associated LNAPL-affected materials would be effective in achieving LNAPL remedial action objectives. This technology would be more effective in achieving remedial action objectives than installation of a NAPL recovery system following cover construction.

3.4.3 *Implementability*

The available equipment for excavation or for placing the final cover would be used to excavate the overlying soils, fill waste, and material down to the depth where the LNAPL resides at the top of the water table. This technology is feasible if coordinated with capping the landfill. The excavated LNAPL and associated LNAPL-affected materials would be transported to a disposal facility that accepts petroleum containing waste.

3.4.4 *Evaluation Summary*

This technology would be effective in meeting the remedial action objectives for LNAPL at the Site and would be implementable. This technology would eliminate the LNAPL source and preclude any further LNAPL remediation.

3.5 *LNAPL RECOVERY*

LNAPL-only recovery is evaluated in this section as a possible option for the LNAPL present in the area surrounding MW-4. Four main categories of LNAPL recovery are available: (1) LNAPL-only recovery, (2) total fluids recovery (i.e., removal of LNAPL and groundwater together), (3) LNAPL recovery with groundwater depression (i.e., removal of LNAPL and groundwater as separate phases), and (4) vacuum enhanced LNAPL recovery (i.e., removal of LNAPL and air together). Due to the limited amount of LNAPL present at the Site, only one technology, LNAPL-only recovery, will be evaluated for the Site.

LNAPL-only recovery technologies use either canister collection systems or LNAPL-only pumps equipped with LNAPL/water interface sensors. Canisters that float are situated on the LNAPL/water interface within a LNAPL recovery well, either collect LNAPL-only through a hydrophobic filter, or LNAPL and water through an inlet port. For the latter canister type, LNAPL and water are separated in the canister. The recovered LNAPL, which is stored in a sump above the unit, is transferred from the canister to an above ground storage vessel by pumping or water displacement (automated LNAPL-only recovery) or hand bailing (manual LNAPL-only recovery). The collected LNAPL is temporarily stored above ground and is subsequently disposed of at an appropriate off-site facility.

In contrast, LNAPL-only recovery pumps equipped with interface sensors pump LNAPL directly from the recovery well into an above ground storage vessel. This system uses LNAPL interface sensors to situate the pump on the NAPL interface. The pump then removes LNAPL until the interface sensor indicates that water has been reached. At this point, all the recoverable NAPL has been evacuated from the well. The pump would then resume pumping when a sufficient amount of LNAPL has accumulated in the well. Recovered LNAPL would be transported and disposed of at an approved facility. LNAPL-only recovery systems can be installed in recovery wells or in recovery wells located within recovery trenches.

Recovery wells would be installed in the area surrounding MW-4. The wells would be screened above and below the water table. The wells would provide access to LNAPL and groundwater for removal. In general, well diameters of four to six inches are used for LNAPL recovery. The LNAPL recovery system located in recovery wells would remove the LNAPL that accumulates in the LNAPL recovery well and would transfer it to an above ground storage tank.

LNAPL recovery trenches consist of subsurface trenches filled with permeable material, such as crushed stone. LNAPL recovery trenches provide access to LNAPL and groundwater for the LNAPL removal system. Because the trench has a higher permeability than the surrounding soil, groundwater and LNAPL from adjoining soil flows into the recovery trench. The LNAPL-only recovery system installed in the trench would remove the LNAPL that accumulates in the trench and transfer it to an above ground storage tank. A cross-section of a typical recovery trench is shown in Figure 3-1.

LNAPL-only recovery, which relies on the natural flow of LNAPL into the recovery well, does not disturb the continuity of the floating LNAPL layer. In addition, this technology does not spread floating LNAPL vertically throughout the soil column and does not require the treatment and subsequent discharge of groundwater.

3.5.1 *Ability to Meet Remedial Action Objectives*

As discussed in Section 1.3.7.3, the LNAPL remedial action objectives for the Site are: (1) prevent migration of LNAPL; (2) remove LNAPL to extent practicable; and (3) continue to prevent direct contact with subsurface LNAPL. This technology would remove LNAPL to the extent practical, and would prevent further migration of LNAPL. It would not ensure continued direct contact prevention without additional measures such as deed restrictions to preclude any type of unearthing activity in the LNAPL area.

3.5.2 *Short-Term and Long-Term Effectiveness*

This technology would not be necessary for the excavation/reclamation option discussed in Section 3.7 since the LNAPL would be removed during the excavation process. For the final cover option (Section 3.7), LNAPL-recovery is less effective in comparison to excavation removal in the area surrounding MW-4. The LNAPL-only recovery technology would not recover LNAPL present in residual saturation surrounding MW-4.

3.5.3 *Implementability*

LNAPL-only recovery is a common technology used to recover LNAPL. However, it should be noted that wide variability in performance and recovery rates are encountered. Installation of LNAPL-only recovery systems in recovery wells is readily implementable. This technology would not be necessary for the excavation/reclamation option (Section 3.7) since

the LNAPL would be removed during the excavation process. For the final cover option (Section 3.6), LNAPL-recovery may be less practical than excavation and disposal of material and LNAPL surrounding MW-4. In addition, the final cover system would need to be properly sealed around recovery wells to ensure its integrity. The presence of recovery wells would therefore have the potential to compromise the cover performance.

3.5.4 *Evaluation Summary*

LNAPL-only recovery systems can be implemented at the Site and the removal of subsurface LNAPL using LNAPL-only recovery systems would effectively address LNAPL remedial action objectives. The approach to installing such a system would vary depending on whether a final cover is selected as the remedial action for the Site. However, since LNAPL removal through soil excavation during regrading and/or excavation would be considerably more effective and present less implementation issues, LNAPL recovery will not be retained for use in developing the remedial action alternatives.

3.6 *EXCAVATION OF FILL WASTE FROM OUTLYING AREAS AND WETLAND AREAS*

This technology involves the removal of waste from outlying areas and wetland areas at the Site. In total, approximately 0.7 acres of wetlands at the Site may contain fill waste. Wetland area D, located along the south berm, is the only area to contain outlying wastes and is subject to removal (see Figure 1-4). Under this technology, waste from these areas would be excavated and the waste would be placed under a Part 360 cover for the Site (see Section 3.7).

3.6.1 *Ability to Meet Remedial Action Objectives*

This technology would meet the remedial action objectives for soil/fill waste in the wetlands area by preventing direct contact with soil/fill waste in the wetlands areas containing chemical concentrations in excess of their NYSDEC RSCOs and preventing leaching to groundwater.

3.6.2 *Short-Term and Long-Term Effectiveness*

Excavation within the wetlands would be effective in the short and long term in meeting the remedial action objectives; however such excavation would eliminate the existing habitat in these areas. Restoration may be possible during Site reclamation should the excavation and reclamation alternative be selected or subsequent to placement of the final cover if the Part 360 cover alternative is selected.

3.6.3 *Implementability*

Access to the wetlands areas would be difficult due to the steep slopes in this area. As such, excavating within the wetlands areas would be very difficult to implement. Special equipment and techniques would need to be applied. In addition, restoration may not be feasible since the wetlands would be essentially removed during this effort. Dewatering may be necessary to perform excavation and the stability of the adjacent landfill may be compromised, requiring sheeting and shoring to stabilize the waste mass.

3.6.4 *Evaluation Summary*

As discussed above, there is increased difficulty in excavating within the wetlands and all waste may not be recovered. Sheeting and shoring may be required to stabilize the steep slopes and stabilize the waste mass in the main landfill area. In addition, removing the waste would have severe

impacts on the wetlands and evaluation of mitigation measures may be necessary. This technology will be carried through to the alternatives section for further evaluation.

3.7 ***CONSOLIDATION AND CONTAINMENT: PART 360 COVER***

This option would involve consolidating waste media at the Site and placing a constructed impermeable cap over the consolidated media. NYSDEC recognizes that containment is suitable for sites containing large volumes of materials exhibiting relatively low chemical concentrations. The NYSDEC TAGM No. 4044 states that "it is often obvious that major mixed waste landfills will not be amenable to complete permanent remedies and that a cap will be called for." Containment technologies are also consistent with EPA expectations at municipal landfills, as specified in the EPA guidance document *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites* (EPA, 1991). In addition, EPA's Fact Sheet, *Presumptive Remedy for CERCLA Municipal Landfill Sites* (EPA, 1993), establishes containment as the presumptive remedy for CERCLA municipal landfill sites. In conclusion, waste containment technologies are recognized by both the NYSDEC and EPA as feasible remedies for municipal landfill sites, and will therefore be analyzed for remediation of Site waste sources.

Based on the landfill area shown in Figure 1-3, a Part 360 cover would be placed over approximately 10.3 acres of landfill. The Mayer Landfill stopped accepting waste in 1975. The current Part 360-1.7(a)(3)(viii)(c) regulation states that "landfills without an approved closure plan that have ceased to accept waste before October 9, 1993 must meet the closure and post-closure requirements of the regulations in effect the day before the effective date of this Part". Therefore, the April 25, 1988 6 NYCRR Part 360 regulation governs the installation of a final cover for the Mayer Landfill

since the landfill stopped accepting waste prior to 1975. Any reference to a Part 360 cover herein will be to the April 25, 1988 regulation.

The 10.3 acre total area includes the landfill and the outlying wetlands area containing landfill waste. The amount of fill waste in outlying areas and wetland areas is estimated to be 25,000 cy, located along the southern boundary of the landfill. This technology assumes coverage of the entire 10.3 acres. As an alternative, the waste in the wetlands area may be excavated and consolidated under the final cover. Section 3.6 addresses this latter method for outlying wastes areas at the Site.

Prior to placement of the final cover, filling and regrading of areas outside of the main cover area would be needed. The cover area would be defined to optimize the incorporation of outlying wastes. Areas with slopes exceeding three horizontal to one vertical would require regrading. Additional areas may also need to be regraded and/or excavated to create appropriate stormwater management measures. Most of the areas of outlying waste excavation would need to be regraded with earth to maintain even grades over the site. On-Site soils from the existing borrow areas could be excavated and used for this purpose. It is likely that the cap barrier protection layer, gas venting layer, and top soil cover materials would be brought in from off-Site for additional grading, drainage, and cover construction.

The EPA's RI/FS guidance document, *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites*, (EPA, 1991) states that moving hazardous or dangerous wastes within an area of contamination is not considered waste generation as defined by federal or state hazardous or dangerous waste regulations. At the Mayer site, the area of contamination would generally include wastes that are adjacent to or near the main landfill or media that might be contaminated by releases from the

main source area. Under this definition, the fill waste in surrounding wetland areas and outlying areas could be consolidated and contained within the main landfill.

The 1988 6 NYCRR Part 360 Sections 2.13 (p) through 2.13 (s) outline the components of a cover system that are needed to meet the requirements of Part 360 Section 2.15 (b), "Final Cover System". A diagram of this cover system is shown in Figure 3-2. Following regrading, the landfill waste would first be covered by a 12-inch gas-venting layer. The gas-venting would provide a method to collect and control potential landfill gases generated by any remaining decomposing waste mass. Above the gas-venting layer, an impermeable geomembrane would be installed. The geomembrane would be either 60- thousandths of an inch (mil) thick high-density polyethylene (HDPE) or 40-mil thick very flexible polyethylene (VFPE) or polyvinyl chloride (PVC). The geomembrane would prevent rainwater from infiltrating and reaching the solid waste buried in the landfill, and would thereby prevent the generation of additional leachate. A 24-inch thick barrier protection layer and six inches of vegetated topsoil would then be placed above the geomembrane layer. The vegetated topsoil layer would be primarily planted to stabilize soils and would have other long-term benefits. The selected vegetation would be a variety that requires minimal mowing and fertilization, and would be attractive to wildlife. (USDI, 1996) These overlying layers protect the underlying geomembrane and promote rainwater run-off away from the landfill.

The current surface soils overlying the fill waste at the Site vary in depth from a half foot to four feet. It would be impracticable to separate the surface soils off the top of the fill waste for reuse as the barrier protection layer and/or topsoil. Also, the quality of on-Site soils from the current borrow areas is generally poor. Using natural soils as cover layers could involve: preprocessing of natural soils to remove oversized material, wood,

and debris; ongoing soil testing to adjust for fluctuations in the quality of the natural soil-additive; monitoring soil moisture and compaction to achieve the desired permeability; an extended construction season to mix, place, and compact a soil mixture. Therefore, the cover would likely be constructed with fill material from off-Site sources. In addition to the difficulties of construction, a soil mixture would have less consistent quality as compared to materials from an off-Site source. Therefore, for the design of a final cover, nearby sources of material for the 24-inch barrier protection layer would be identified for use in construction.

3.7.1 *Ability to Meet Remedial Action Objectives*

Placing a final cover at the Site through consolidation of the waste materials Site would:

- minimize releases and exposure from waste materials within the landfill;
- remove outlying wastes; and
- establish proper grading for site drainage, management of settlement and surface water runoff.

Excavation of the outlying waste material and consolidating materials beneath a final cover would reduce potential direct contact exposures. In addition, capping the landfill would prevent infiltration and reduce leaching of contaminants to groundwater. As discussed above, the EPA and NYSDEC recognize capping as an acceptable technology for meeting the remedial action objectives for a landfill.

3.7.2 *Short-Term and Long-Term Effectiveness*

This technology may increase the potential for short-term inhalation and direct contact exposures to construction workers. Increased dust and noise would also occur from construction and truck traffic. With proper maintenance, this technology would be effective in reducing direct contact

exposures in the long-term. According to the USEPA *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfills*, a single barrier cap (i.e. 1988 Part 360 cover) “lessens future leachate formation and subsequent groundwater contamination by reducing potential for infiltration by 70-90 percent” (USEPA, 1991). However, the reliability of a Part 360 cover may vary with large differential soil/waste material settlement. Further evaluation regarding site-specific infiltration reductions may be conducted through the use of the EPA-developed Hydrologic Evaluation of Landfill Performance (HELP) model during the design phase.

3.7.3 *Implementability*

The Site is accessible to the type of heavy equipment needed for implementing and constructing a final cover. Excavation, consolidation, and capping are readily implemented using standard construction equipment. The implementability of excavating within the wetlands areas would pose difficulty and may be limited to areas accessible by equipment, or may require dewatering. The barrier protection layer and topsoil materials would need to be transported to the Site for the cover and the geomembrane would require specialty contractors to assure proper installation.

3.7.4 *Evaluation Summary*

Installing a Part 360 cover system at the Site would meet the remedial action objectives for the Site when implemented with additional technologies. Capping is a widely accepted technology for landfills and is implementable with proper planning and design. Therefore, this technology is selected for further evaluation in the alternative section.

This technology would involve excavating waste from the landfill and disposing this material off-Site. The total volume of all fill waste, waste contained within wetlands, and overlying cover soils at Mayer Landfill is approximately 284,000 to 450,000 cy. Generally, landfill waste can be categorized into the following groups:

- *Bulky* material: large items such as furniture and large household appliances, including hot water heaters and refrigerators.
- *Refuse* material (also referred to as the "garbage" fraction): similar to household garbage and rubbish that still contains decomposable organic material, for example, paper, cardboard, and other organic household material. In addition, garbage material also includes tires, aluminum cans, and glass bottles.
- *Inert* material: not readily decomposable compared to the organic refuse material in the landfill, which largely consists of soil and gravel.

Separation of the waste into these categories could be performed and each waste category group could be handled separately to complete the remedial action. This separation could also be used to segregate out hazardous waste for appropriate disposal at a RCRA-approved facility. The bulky fraction would be transported directly off-Site. Technologies to consider for the garbage fraction include off-Site disposal and composting. If the inert materials are to be retained and reused as backfill, it may be necessary to treat the soil prior to reuse.

Based on the small size of the Mayer Landfill, it would be more efficient to excavate and transport all wastes off-Site than implementing multiple technologies for varied waste types. Therefore, only the off-Site disposal approach would be considered for the excavation and reclamation technology and no separation of wastes will be considered.

Dewatering may be necessary to remove all landfill waste since the water table intercepts landfill material. After waste excavation, the site would be

restored. Restoration would include backfilling and regrading the excavated areas with on-Site soils from outside of the landfill area and additional off-Site sources of clean fill. The disturbed areas would be planted or restored to control erosion and the existing intermittent stream and wetlands would be replaced.

3.8.1 *Ability to Meet Remedial Action Objectives*

Excavation and off-Site disposal would prevent direct contact and ingestion of soil/fill waste containing chemical concentrations in excess of their RSCOs by removing these materials from the Site. This technology will also prevent leaching of chemicals to groundwater since the source materials would not be present.

3.8.2 *Short-Term and Long-Term Effectiveness*

This technology would be effective in meeting the short and long-term remedial action objectives for the Site.

3.8.3 *Implementability*

Excavation, off-Site disposal, and regrading are all readily implementable using standard construction equipment. Based on the shallow depth to groundwater, steep slopes, and health and safety measures needed to perform the work, this technology would be challenging to implement. Should excavation within the wetlands be selected, the success of removal of fill waste would largely be dependent upon equipment access and may be limited to only a portion of the 0.7 acres of wetlands estimated to contain fill waste.

Additionally, hazardous waste may be encountered during the work. Additional precautions would need to be employed to ensure the safety of workers and reduce the risk of further releases to the environment. For

example, buried drums may be unearthed and would need to be opened to characterize the waste for proper disposal. Furthermore, specific wastes may need to be disposed of at different facilities. Full time air monitoring would need to be conducted and control measures to reduce odors and risks associated with landfill gas would need to be implemented.

3.8.4 *Evaluation Summary*

Although this technology would be difficult to implement, it is the only technology that would reduce the concentrations of chemicals of concern in Site soil/fill waste to levels that would be below the NYSDEC RSCOs. Therefore, the excavation and reclamation option will be retained to evaluate the technical and economic feasibility of attaining these chemical specific SCGs. As a result, this technology will be carried forward to the evaluation of alternatives section.

3.9 *SEEPAGE CONTROL*

Leachate seeps at the Site were identified as a media of concern in Section 2.3.4 and would be addressed by either implementing a Part 360 cover (see Section 3.7) or by the excavation, off-Site disposal, and reclamation technology (see Section 3.8). The generation of leachate is the direct result of infiltration of precipitation and runoff into the landfill waste mass. Consequently, seepage control must be approached in an integrated manner with the selected remedial action for the fill waste at the Site. It was determined, however, in Section 2.3.5 that leachate seeps have only minor exceedences of SCGs and minimal impact on surface water. In addition, leachate does not appear to be impacting groundwater.

Section 3.6 discusses waste consolidation and containment in the context of a Part 360 cover. If a Part 360 cover is selected, leachate generation would be eliminated by the final cover system and subsequent seepage would be

minimized. The excavation and off-Site disposal option discussed in Section 3.7 would eliminate leachate by removing the landfill wastes from the Site. The use of this technology would also eliminate the need for seepage control.

If it is determined during remedial design that leachate will continue to be a problem even with the installation of an impermeable cover, a perforated drain/piping system would be installed at the cap perimeter to allow for leachate collection to be sent to a collection basin, storage tank, or similar structure. This would be sampled to determine if this could be allowed to drain with surface water from the Site. If results show that the collected leachate exceeds TOGS Class C standards, it would be disposed of by off-Site disposal on an as-needed basis, otherwise it would be discharged to the stream. Because the Part 360 cover or excavation and off-Site disposal would eliminate or minimize leachate generation at the Site and surface water diversion would direct leachate away from the landfill, additional technologies for leachate containment, collection, and treatment will not be considered.

3.9.1 *Ability to Meet Remedial Action Objectives*

Either a Part 360 cover or excavation and off-Site disposal of waste would meet the remedial action objectives for leachate at the Site. Both would prevent direct contact with and ingestion of leachate and prevent migration/releases of chemicals from seeps by eliminating or greatly minimizing the generation of leachate at the Site. The excavation technology accomplishes this through elimination of source waste and the final cover option eliminates generation of leachate through preventing infiltration. A leachate collection system in combination with a final cover at the Site would also meet the remedial action objectives for leachate at the Site.

3.9.2 *Short-Term and Long-Term Effectiveness*

Both the final cover and excavation and reclamation methods of addressing seepage control are effective in the short-term and long-term. The excavation and reclamation technology would be a permanent solution to leachate seeps. The final cover option is also effective in the long-term provided severe damage is not incurred to the final cover. Finally, leachate collection and disposal would be effective in the short-term and long-term provided that the system is properly monitored.

3.9.3 *Implementability*

The implementability of each technology is discussed in their respective implementability sections. A leachate collection system would be readily implementable in combination with the construction of a final cover at the Site.

3.9.4 *Evaluation Summary*

Seepage control at the Site would be accomplished in conjunction with the selected fill waste remedial technology, either through the use of a Part 360 cover or through the removal of waste from the Site. As summarized in Sections 3.6.4 and 3.7.4, the Part 360 final cover technology and the excavation and reclamation technology are both implementable options for the Site. Each technology will be retained for use in developing the remedial action alternatives evaluated in Section 4.0. Leachate collection and disposal would also be a viable option for addressing leachate seeps at the Site.

3.10 *BOTTLED WATER SUPPLY FOR AFFECTED RESIDENCE*

As discussed in Section 2.3.3, preventing ingestion of manganese-impacted groundwater and reducing manganese to acceptable drinking water levels at the residence supplied by RW-9 are remedial action objectives for

groundwater. Although off-Site groundwater collection would be technically feasible, the logistics of property/easement acquisition for well construction, maintenance, and long-term monitoring and access for pipeline, instrumentation and controls, and electric power in and across multiple private residential properties also limits the feasibility of off-Site groundwater collection and treatment. Furthermore, the required groundwater pumping may adversely impact the groundwater resource relied upon by local residents. Due to the limited number of impacted residences, bottled water supply and well head treatment will only be evaluated. This section evaluates provision of a bottle water supply. This would entail the purchase of a water dispensing system and arranging for a service contract to deliver bottled water.

3.10.1 *Ability to Meet Remedial Action Objectives*

Provision of bottled water supply would meet the remedial action objective of preventing ingestion of groundwater containing manganese.

3.10.2 *Short-Term and Long-Term Effectiveness*

This remedial action technology would be effective in the short and long-term. However, a consistent drinking water supply would need to be ensured to meet the needs of the affected residence. While bottled water could be supplied for drinking and cooking uses, it would not reduce the effect the elevated manganese may have in using the washer, bath, shower, and toilet with respect to staining. Also, in cases of snowstorm and limited road access, the supply may be overdrawn, and it would become necessary to resort to the household supply until additional supply could be delivered.

3.10.3 *Implementability*

This technology is readily available and implementable. Numerous delivery services provide this type of bottled water supply.

3.10.4 *Evaluation Summary*

While this technology meets the remedial action objective of preventing ingestion of groundwater containing manganese, this technology would not be effective in preventing staining of household appliances and could be impacted by weather conditions. Therefore this technology will not be carried forward to the remedial alternatives evaluation.

3.11 *OFF-SITE RESIDENTIAL WELL HEAD TREATMENT*

Residential well head treatment would entail treating residential well water to reduce the manganese concentration in household drinking water. There are a number of standard available technologies that may fulfill this goal. They are:

- cation exchange (water softener)
- greensand (adsorptive/oxidative) filtration
- chemical treatment plus filtration
- aeration

The following briefly describes each one of these treatments.

Cation Exchange

A water softener can remove small amounts of manganese and ferrous iron. The soluble manganese and iron can be exchanged for sodium on an exchange resin or zeolite. The manganese in untreated water is flushed from the softener medium through ion exchange by backwashing sodium-

rich water back through the unit. This process adds sodium to the resin medium, and iron and manganese are carried away in waste water. The amount of manganese removed depends on the water properties, the types of regeneration and backwash controls, and the ion exchange resin or zeolite used. A clean resin bed must be maintained for proper ion exchange. This is due to the potential for precipitation by oxygen, which would reduce the exchange capacity over time. In addition, suspended solids may plug the resin. Suspended solids can be filtered out ahead of time.

Greensand Filtration

This method of treatment utilizes glauconite as the active material in exchange. It is a green clay mineral that contains iron and has ion exchange properties. Water is filtered through the greensand and soluble iron and manganese are extracted to react and form insoluble iron and manganese. The precipitate builds up in the greensand filter and must be removed by backwashing once or twice a week. The efficiency of the greensand is lowered over time and requires that washing with a permanganate solution to regenerate the greensand. The pH of the water would influence the ability of the filter to remove both iron and manganese. The pH of the water needs to be greater than 6.8, to adequately filter out the manganese and iron. If needed, the pH can be raised above 7.0 by running the water through a calcite filter.

Chemical Treatment and Filtration

Chemical treatment and filtration involves the use of small chemical pumps are used to add chlorine bleach, potassium permanganate, or hydrogen peroxide into the water. A retention time of 20 minutes is needed to allow for oxidation. After oxidation, insoluble particles may be filtered out to

remove the iron and manganese. This method may result in an unpleasant taste if a particle filter of calcite, sand, anthracite, or aluminum silicate used. Therefore, an activated carbon filter may be used to remove excess chlorine and solid manganese particles. A system with an automatic backwash cycle is helpful for frequent backwashing. This technology works best for water that has high concentrations of manganese and iron on the order of 10 ppm.

Aeration

Manganese is easily oxidized to a solid form by mixing with air. A pressure aerator mixes air with the water, the air is vented, and then solid particles are filtered from the water. This method does not utilize chemicals and is most effective in warm climates. The system must be maintained by backwashing frequently and should be enclosed to protect from bacteria in the air. Adequate air intake must be maintained through correct pump settings.

Based upon the ultimate remedial alternative selected for the Site, the contribution to manganese in groundwater may be reduced over time. Testing would be conducted at yearly intervals to determine if the manganese concentrations in RW-9 decline following remedial action at the Site. Reevaluation of the need for the treatment system would be conducted, and if determined unnecessary, the system would be shut down.

3.11.1 *Ability to Meet Remedial Action Objectives*

Treating water at the residential well head would be effective in reducing the manganese level to acceptable concentrations for drinking and would prevent the ingestion of groundwater containing manganese at RW-9. Any of the above treatment technologies may be used in conjunction with one or more of the other remedial action technologies to address the remedial action objectives for the Site.

3.11.2 *Short-Term and Long-Term Effectiveness*

As described above, common water treatment technologies are widely available to remove manganese from drinking water and are proven to be effective. The water softener (cation exchange), greensand filtration, and chemical treatment and filtration technologies, with proper maintenance, would provide short and long term effectiveness by reducing the manganese concentration in residential drinking water.

3.11.3 *Implementability*

The above listed technologies are readily implementable treatment technologies for household water supplies. Household treatment systems are manufactured for commercial sale and are readily available. The most easy to use would be cation exchange, followed by greensand filtration, the aeration, and finally chemical treatment and filtration.

3.11.4 *Evaluation Summary*

The above technologies for residential well head treatment are effective in the short and long-term for meeting the medium specific remedial action objectives and are readily implementable. Aeration may not be as effective as the other technologies. Also, the concentration of manganese in the groundwater is only in the range of 0.1 to 0.2 ppm and chemical treatment and filtration is recommended for concentrations above 10 ppm. Therefore, greensand filtration and cation exchange will be carried forward in the alternatives section.

3.12 *GROUNDWATER MONITORING*

This technology would entail collection and analysis of groundwater samples from groundwater monitoring wells at the Site. Based on the remedial action selected for the landfill waste, groundwater monitoring

wells may need to be replaced. Depending on which technology is selected, modifications to existing wells and/or installation of additional wells may be necessary.

It is anticipated that downgradient wells, MW-1A, MW-2, MW-5, MW-6, MW-7, MW-7D, MW-11, and MW-13 would still be intact for the purposes of sampling following implementation of any of the aforementioned technologies. For the access and use restrictions technology, all existing monitoring wells would be available for continued groundwater monitoring. Additional wells would be installed to replace wells along the southern direction, specifically to replace MW-9, MW-9D, and MW-10. Off-Site residential wells would also be monitored on a rotating basis.

The groundwater samples would be collected using low-flow sampling methods. Based on the groundwater concentrations observed, quarterly monitoring would be conducted for TAL inorganics and annual monitoring would be conducted for VOCs and SVOCs.

Residential wells would be monitored for TAL inorganics annually. Specific attention will be placed on the sodium concentrations with respect to NYSDOH guidelines of 20 mg/L and 270 mg/L for severely and moderately restricted sodium diets, respectively. Residents have already been notified if their well contained sodium above 20 mg/L. If any residential well sample contains sodium above 270 mg/L, the resident will be notified. If an increase in VOCs and SVOCs concentrations in on-Site groundwater was observed, residential wells would also be sampled for these parameters. The results of the monitoring rounds, which would be used to document Site groundwater conditions, would be reported to NYSDEC annually.

3.12.1 *Ability to Meet Remedial Action Objectives*

Limited quarterly groundwater monitoring would continue to confirm that there is not any significant increase in COC concentrations in on-Site groundwater in the near future and would be used to evaluate conditions as concentrations decrease. Sampling of off-Site residential wells would monitor concentrations of inorganics. This technology would be used in conjunction with one or more of the other remedial action technologies to address the remedial action objectives.

3.12.2 *Short-Term and Long-Term Effectiveness*

This technology is routinely conducted at sites and is effective in determining concentrations of chemicals in groundwater.

3.12.3 *Implementability*

Existing groundwater monitoring wells are located at the Site downgradient of the landfill. Additional downgradient wells may need to be installed depending on the selected remedial technology. Installation of groundwater monitoring wells is a common procedure and has proven to be readily implementable at the Site. Residents would be notified in writing to arrange sampling of their wells.

3.12.4 *Evaluation Summary*

Groundwater monitoring is both effective and implementable. This technology is therefore carried forward to the development of alternatives section.

Landfill gas venting would be necessary if a Part 360 cover is installed at the site. This technology is not applicable for the excavation/off-Site disposal option. Landfill gas was evaluated in Section 2.3.7. The Part 360 cover includes a gas venting layer. If needed, this layer could be supplemented with gas venting wells or trenches. Permeable interception systems (such as gas venting layers) capture gas that is moving laterally and provide preferential pathways for the gas to escape to the surface.

The two main categories for landfill gas collection are passive and active. Active landfill gas collection systems restrict subsurface migration of gases through the use of mechanical equipment. The principle is to alter the pressure gradients and redirect subsurface gas flow. The system usually consists of gas extraction wells, gas collection headers, vacuum blowers or compressors, and gas treatment systems. These types of systems are used in cases where severe odor problems exist, but also are used to prevent landfill gas from migrating to and endangering nearby structures. Given, the low concentrations of chemicals in the soil gas, this supplementation would not be needed and a passive system could be used.

3.13.1 *Ability to Meet Remedial Action Objectives*

The gas venting layer would prevent lateral migration of landfill gas with reasonable reliability. The releases to the environment would not require further treatment.

3.13.2 *Short-Term and Long-Term Effectiveness*

This measure of controlling landfill gas would be effective. However, lateral migration of landfill gas was shown not to be an issue at the Site. Primarily,

this type of system would protect the cap from buildup of gas. The installation of extraction wells, if needed, involves potential for impact to workers during installation and waste may be disturbed. Passive gas venting is effective in the long-term in reducing migration of landfill gases.

3.13.3 *Implementability*

Passive venting systems may be installed as part of the final cover installation and are not difficult to implement. Modifications may be necessary after startup to optimize the system. Also, if used, it is possible that landfill settlement may cause collection piping to bend.

3.13.4 *Evaluation Summary*

Passive venting is effective in controlling landfill gas. When used in combination with other technologies this method is practical. As such, this technology will be evaluated in the alternatives section.

3.14 *SUMMARY OF SELECTED REMEDIAL TECHNOLOGIES*

Remedial technologies were evaluated in this section to address the remedial action objectives for the Site. The following technologies were evaluated to address the general response actions developed in Section 2.0:

GENERAL RESPONSE ACTION TYPE	RESPONSE ACTION TECHNOLOGY
Containment:	• access and use restrictions • Part 360 cover • consolidation and containment of fill waste from wetland areas • bottled water supply for affected residence • groundwater monitoring • passive landfill gas venting

Removal:	• surface waste removal • excavation, off-Site disposal, and reclamation • LNAPL removal • seepage control
Disposal:	• off-Site disposal of fill waste • off-Site disposal of LNAPL
Treatment:	• residential well head treatment at affected residence

These technologies were evaluated using the following three criteria: (1) ability to meet remedial action objectives; (2) short-term and long-term effectiveness; and (3) implementability. The results of this technology evaluation are summarized in Table 3-1. As shown in Table 3-1, 10 of the 12 technologies evaluated in this section were retained for use in developing the remedial action alternatives evaluated in Section 4.0.

LNAPL recovery technologies were eliminated from further consideration since: (1) the technology is significantly less efficient than LNAPL removal by excavation and (2) the effort to implement LNAPL recovery technologies far exceeds that of LNAPL removal by excavation. Since LNAPL recovery has no advantages over LNAPL removal and requires considerable more effort for less effect, this technology was eliminated from further consideration for LNAPL remediation at the Site.

The bottled water supply for the residence with RW-9 was not selected for further evaluation since it does not address all the issues associated with elevated manganese in the water. In addition, only three of the four well-head treatment technologies were carried forward based on limitations involved with polyphosphate treatment and aeration.

In summary, the following remedial technologies were retained for use in developing the remedial action alternatives evaluated in Section 4.0:

- Access and Use Restrictions
- Surface Waste Removal and Disposal

- LNAPL Removal
- Consolidation and Containment: Part 360 Cover
- Excavation, Off-Site Disposal, and Reclamation
- Seepage Control
- Consolidation and Containment of Fill Waste from Outlying Areas and Wetland Areas
- Off-Site Residential Well Head Treatment
- Groundwater Monitoring
- Passive Landfill Gas Venting

DESCRIPTION AND EVALUATION OF INDIVIDUAL REMEDIAL ACTION ALTERNATIVES

The remedial action objectives for the each media of interest at the Site were identified in Section 2.0. Section 3.0 evaluated fourteen remedial action technologies for soil/fill waste, off-Site groundwater, leachate seeps, landfill gas, and LNAPL. Of these, ten technologies that can be used to address the remedial action objectives for the Site were selected for use in this section to develop remedial action alternatives. The ten remedial action technologies are:

- Access and Use Restrictions
- Surface Waste Removal and Disposal
- LNAPL Removal
- Consolidation and Containment: Part 360 Cover
- Excavation, Off-Site Disposal, and Reclamation
- Seepage Control
- Consolidation and Containment of Fill Waste from Wetland Areas
- Off-Site Residential Well Head Treatment
- Groundwater Monitoring
- Passive Landfill Gas Collection

Each of these technologies generally satisfies some, but not all, of the remedial action objectives defined in Section 2.0. These technologies have been combined in this section to form comprehensive approaches (i.e., remedial action alternatives) to adequately satisfy the Site remedial action objectives.

Using these remedial technologies, the remedial action alternatives developed for the Site are:

Alternative I: No Action (Section 4.2)

Alternative II: Access and Use Restrictions (Section 4.3)

Alternative III: Consolidation and Containment: Part 360 Cover (Section 4.4)

Alternative IV: Excavation, Off-Site Disposal, and Reclamation (Section 4.5)

Remedial action alternatives are conceptual approaches to Site remediation. They demonstrate how the technologies selected for the alternative can be used to achieve the remedial action objectives and provide a basis by which to estimate the potential costs associated with implementation of the alternative. Section 4.1 discusses three common actions that may be incorporated with Alternatives II, III, and IV.

In accordance with the NYSDEC FS TAGM (NYSDEC, 1990), *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA, 1988) and the National Contingency Plan, each alternative has been evaluated for the following criteria:

- overall protection of human health and the environment;
- compliance with SCGs;
- long-term effectiveness and permanence;
- reduction of toxicity, mobility or volume through treatment;
- short-term effectiveness;
- implementability; and
- cost.

An evaluation of each of these criteria for the four above-referenced remedial action alternatives is provided along with a description of the respective alternative in Sections 4.2 through 4.5. Detailed cost estimates for each alternative are provided in Appendix E. These are conceptual design cost estimates and changes in the media of interest requiring remediation (e.g., volume of waste requiring excavation, extent of regrading), detailed engineering, as well as other factors not foreseen at the time this report was prepared, could increase costs by as much as 50 percent or decrease costs by as much as 30 percent, as defined in Section

6.2.3.7 of *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA, 1988). In addition, a discount rate of five percent was used to compute the present worth of annual operation and maintenance costs. NYSDEC uses a five percent discount rate for estimating the present worth value of potential alternatives in feasibility studies for Class 2 sites (NYSDEC, 2002).

After the remedial action alternatives have been evaluated in this section, a comparison of each alternative will be conducted in Section 5.0. This will be based on a comparison of the evaluation criteria for each of the alternatives. This comparison will be provided in Section 5.2. The factors considered in selecting a preferred remedial action alternative will be reviewed as well. In accordance with the NYSDEC FS TAGM (NYSDEC, 1990), a selected remedial action alternative would:

- be protective of human health and the environment;
- attain SCGs when needed to protect public health and the environment;
- satisfy the preference for treatment that permanently reduces toxicity, mobility or volume, if practicable; and
- be cost effective.

The selected remedial action alternative may be modified during the remedial action design phase if the modified approach achieves the same level of protection to public health or the environment at a similar or lower cost.

4.1 COMMON ACTIONS

Three common actions have been identified for the Site. They are:

- Groundwater Monitoring
- Residential Well Head Treatment
- Surface Waste Removal

With the exception of the No Action Alternative, these common actions will be included in all of the remedial alternatives.

4.1.1 *Groundwater Monitoring*

As discussed in Section 2.3.2.1, Round 2 groundwater sampling results were determined to be the most representative of Site groundwater. One well at the Site, MW-10, exhibited groundwater concentrations of organics in excess of their Class GA standards. No pesticides or PCBs were detected during the Round 2 groundwater sampling. Iron and manganese were detected in seven of ten Site wells at concentrations above their NYSDEC Class GA standards; sodium concentrations were above their Class GA standard in three wells; and magnesium and thallium were detected in one well above their Class GA guidance values. The groundwater concentration of one constituent, manganese, is above its Class GA standard in one off-Site residential well, RW-9. No other exceedences of the Class GA standards were observed in any other residential well.

In order to ensure that there is no significant increase in chemical concentrations in on-Site groundwater, groundwater monitoring would be conducted for 30 years. Samples would be analyzed for inorganic constituents, VOCs, and SVOCs. During the first five years, quarterly monitoring would be conducted for inorganic constituents and annual monitoring would be conducted for VOCs and SVOCs.

After five years, groundwater sampling would be conducted annually for all parameters. The monitoring frequency would be increased if the chemical concentrations in groundwater increase measurably. This monitoring would be continued for an additional 25 years. In addition, ten residential wells would be sampled annually for inorganic constituents on a rotating basis, such that all residential wells would be sampled once every three years. If a notable increase in organic

compound concentrations is detected in the on-Site wells, residential wells would be analyzed for these parameters during their annual monitoring. The on-Site and residential groundwater samples would be collected using low-flow sampling methods.

Depending upon the ultimate remedial action selected for the Site, it may be necessary to abandon existing wells to implement either a final cover or excavate the landfill contents for off-Site disposal. The goal of the groundwater monitoring is to determine the groundwater concentrations downgradient of the landfill to ensure that off-Site migration is not occurring. Under Alternative II, existing wells MW-1A, MW-2, MW-5, MW-6, MW-7, MW-7D, MW-11, MW-13, MW-9/9D and MW-10 would be used for ground water monitoring. Since the remedial action would likely result in the destruction of MW-9/9D and MW-10, installation of 2 to 3 additional wells has been assumed for Alternatives III and IV.. Ten residential wells would also be monitored. The results of the groundwater monitoring would be reported to NYSDEC annually. This task would take 30 years to complete. The estimated present value cost for this Common Action is \$586,558.

4.1.2 Residential Well Head Treatment

One residential well, RW-9, exhibits manganese concentrations in excess of the Class GA standard. Well head treatment will be installed to reduce the groundwater concentration of manganese below its Class GA standard of 300 parts per billion (ppb). Treatment will entail one of the following technologies: greensand filtration, cation exchange, or chemical treatment and filtration. The final treatment selection would be conducted in the Remedial Design. Operation and maintenance of this treatment system has been assumed for a 30 year period. The present value cost for this type of system is approximately \$2,922.

4.1.3 *Surface Waste Removal*

A waste-hauling contractor would gather, remove and dispose of the surface waste located at the Site. Approximately 28 tons of waste would be transported off-Site for disposal. The cost for removal and off-Site disposal of this material is approximately \$10,000.

4.2 *ALTERNATIVE I: NO ACTION*

The NYSDEC Inactive Hazardous Waste Disposal regulations at 6 NYCRR Part 375-1.10(c) state that a remedial program for a site listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites must not be inconsistent with the National Contingency Plan (NCP, 1990). Section 300.430(e)(6) of the NCP recommends describing and evaluating a no action alternative as a measure of identifying the potential problems posed by a site if no remedial actions were to be implemented. In response, Alternative I: No Action, is described and evaluated in this section. The no action alternative also provides a baseline against which other alternatives can be compared.

4.2.1 *Description*

Under the No Action alternative, no actions would be conducted at the Site.

4.2.2 *Evaluation*

In accordance with NYSDEC guidance for the selection of remedial action alternatives at inactive hazardous waste sites (NYSDEC, 1990), USEPA RI/FS guidance (USEPA, 1988) and Section 300.430 of the NCP, this alternative is evaluated for the seven criteria listed in Section 4.0.

4.2.2.1 *Overall Protection of Human Health and The Environment*

Protection of Human Health and the Environment can be measured by the alternative's ability to address the remedial action objectives. The Site remedial action objectives are:

- prevent injury posed by surface waste risk;
- prevent direct contact with and incidental ingestion of fill waste/soil containing chemical concentrations in excess of their RSCOs and leachate seeps;
- reduce infiltration and prevent leaching to groundwater;
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria or result in groundwater levels in excess of groundwater quality criteria;
- prevent migration of landfill gas;
- continue to prevent ingestion of on-Site groundwater;
- prevent migration of LNAPL;
- remove LNAPL to extent practicable;
- continue to prevent direct contact with subsurface LNAPL; and
- prevent ingestion of groundwater containing elevated manganese concentrations at RW-9.

The No Action alternative would not address any of the Site remedial action objectives and therefore would not provide any measures for protection of human health and the environment.

4.2.2.2 *Compliance with SCGs*

Table 2-1 listed the potential federal and state regulatory requirements which may be applicable or relevant and appropriate to remedial actions at the Site. The No Action Alternative would not comply with SCGs considered to be relevant and appropriate to the Site. More specifically, it would not meet the minimum requirements for landfill closure as outlined in Part 360 of 6 NYCRR.

The No Action Alternative would not reduce the concentration of manganese in the off-Site residential well to levels that would comply with the Class GA ground water standards. In this respect, the No Action Alternative would not comply with the NYSDEC Water Quality Regulations for Ground Water (6 NYCRR Parts 700 through 705) or with the NYSDEC TOGS 1.1.1 Ambient Water Quality Standards and Guidance, which are NYSDEC SCGs, as listed on Table 2-1.

4.2.2.3 *Long Term Effectiveness and Permanence*

Long-term effectiveness and permanence is measured by the magnitude of the residual potential for exposure and the adequacy and reliability of controls. Thus the long-term permanence and effectiveness of an alternative may be measured by its short-term and long-term ability to meet the remedial action objectives for a site. Since the No Action Alternative would not meet any of the above remedial action objectives, it would not provide adequate long-term effectiveness and permanence.

4.2.2.4 *Reduction of Toxicity, Mobility or Volume*

The normal biodegradation associated with landfill material would continue to occur with this alternative. The scope of the New York State Part 375 hazardous waste site regulations is focused on the cleanup of areas where hazardous wastes were disposed (6 NYCRR Part 375-1.1) and defines hazardous waste as a RCRA characteristic or listed hazardous waste as that term is defined in 6 NYCRR Part 371. The NYSDEC TAGM on the selection of remedial actions (NYSDEC, 1990) defines this evaluation criteria as the ability of an alternative to reduce the toxicity, mobility or volume of the hazardous waste at a site. Refer to Table 5.6 of the NYSDEC TAGM on the selection of remedial actions (NYSDEC, 1990).

4.2.2.5 *Short-Term Effectiveness*

There are no short-term effects associated with the No Action alternative.

4.2.2.6 *Implementability*

There are no implementability concerns posed by this alternative.

4.2.2.7 *Cost*

The total cost of this alternative is \$0.

4.3 ***ALTERNATIVE II: ACCESS AND USE RESTRICTIONS***

4.3.1 *Description*

Alternative II would provide minimal safeguards against trespassers and inappropriate use of the Site. This alternative would also address off-Site potable well users. The tasks for this alternative include:

- Common Actions (Task No. 1):
 - Groundwater Monitoring
 - Residential Well Head Treatment
 - Surface Waste Removal
- Posting No Trespassing Signs (Task No. 2);
- Access Restrictions (Task No. 3); and
- Use Restrictions (Task No. 4).

This alternative could be completed within three (3) months of NYSDEC approval of a Remedial Action Work Plan for this Site, with the exception of continued groundwater monitoring. This work plan would be a brief document that would summarize the work involved with the above tasks and associated deliverables.

4.3.1.1 *Task No. 1: Common Actions*

This task incorporates the three common actions discussed in Section 4.1 and includes: groundwater monitoring, residential wellhead treatment, and surface waste removal. Under this alternative, the existing wells at the Site would be used to perform the groundwater monitoring, and are MW-1A, MW-2, MW-3, MW-4D, MW-5, MW-6, MW-7, MW-8, MW-9, MW-9D, MW-10, MW-11, MW-12, and MW-13. No additional wells would be needed. Residential well head treatment would be implemented at the residence supplied by RW-9. This would entail sizing, installation, and use of a treatment system at the residence. Lastly, surface waste removal would be included. Surface waste removal would take approximately two (2) to three (3) weeks to complete prior to fence installation. The residential well head treatment could be implemented upon approval of a NYSDEC remedial action work plan.

4.3.1.2 *Task No. 2: Posting "No Trespassing" Signs*

This task would involve placing warning signs at the perimeter of the Site at equal intervals along the roads leading to the Site and at Site boundaries. This task would take about two (2) days to complete.

4.3.1.3 *Task No. 3: Access Restrictions*

Access restrictions to be implemented at the Site include fencing and gates. A chain link fence would be installed at the Site perimeter bordering the road and along boundaries with residential properties. Gates would be constructed at all access roads leading onto the Site and secured with padlocks. This task would take about one (1) month to complete.

4.3.1.4 *Task No. 4: Use Restrictions*

This task would be implemented to restrict the installation of potable water wells at the Site. In addition, a deed restriction would be filed for the Site which:

- indicates the period of time during which the property was used as a landfill;
- describes the wastes contained within and noting that records of the facility have been filed with the NYSDEC;
- references a map that would be filed with the county clerk and clearly indicates the limits of the landfilled areas within the property boundary;
- contains a summary of the chemicals detected in Site soil exceeding the NYSDEC RSCOs and their locations; and
- prohibits any Site use or intrusive activities.

This task would take approximately one (1) month to complete.

4.3.2 *Evaluation*

4.3.2.1 *Overall Protection of Human Health and The Environment*

Protection of Human Health and the Environmental can be measured by the alternative's ability to address the remedial action objectives. The Site remedial action objectives are:

- prevent injury posed by surface waste risk;
- prevent direct contact with and incidental ingestion of fill waste/soil containing chemical concentrations in excess of their RSCOs and leachate seeps;
- reduce infiltration and prevent leaching to groundwater;
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria or result in groundwater levels in excess of groundwater quality criteria;
- prevent migration of landfill gas;
- continue to prevent ingestion of on-Site groundwater;

- prevent migration of LNAPL;
- remove LNAPL to extent practicable;
- continue to prevent direct contact with subsurface LNAPL; and
- prevent ingestion of groundwater containing elevated manganese concentrations at RW-9.

This alternative would address some, but not all of the Site remedial action objectives. Remedial action objectives addressed would include: prevent ingestion of groundwater containing manganese by the one impacted resident; prevent direct contact risks and ingestion associated with soil/fill waste; continue to prevent ingestion of on-Site groundwater; reduce manganese concentrations in the water supply from RW-9; and prevent direct contact and ingestion of seeps. This alternative would therefore provide some degree of protection to human health and the environment.

4.3.2.2 *Compliance with SCGs*

Table 2-1 listed the potential federal and state regulatory requirements which may be applicable or relevant and appropriate to remedial actions at the Site. This alternative will comply with the Class GA standard for manganese at the residential well.

4.3.2.3 *Long Term Effectiveness and Permanence*

Long-term effectiveness and permanence is measured by the magnitude of the residual potential for exposure and the adequacy and reliability of controls. Thus the long-term permanence and effectiveness of an alternative can be measured it short-term and long-term ability to meet the remedial action objectives for a site.

As discussed above, this alternative would address only the surface waste remedial action objective and provide a means to prevent direct contact with fill/waste and leachate seeps. However, these institutional controls

may not be dependable to reduce human health risk since they are easily tampered with. Currently, the Site is relatively easily accessible to trespassers. The long term permanence and effectiveness of this alternative is therefore not acceptable.

4.3.2.4 *Reduction of Toxicity, Mobility or Volume*

The normal biodegradation associated with landfill material would continue to occur with this alternative. Beyond natural biodegradation, institutional controls would not provide a substantial reduction of the toxicity, mobility, or volume of chemicals present in the landfill mass. Rather, the institutional controls provide for isolating the area from the general population and making "best efforts" to keep the area free of unauthorized people. The residential well head treatment would reduce the concentration of manganese in the water supplied by RW-9.

4.3.2.5 *Short-Term Effectiveness*

As discussed above, this alternative can be completed within three (3) months from the approval by the NYSDEC of a Remedial Action Work Plan, with the exception of continued groundwater monitoring which will be completed in five (5) years. The specific schedule for implementation of Alternative II would be defined in the Remedial Action Work Plan. The possible short-term exposures that could result from implementation of this remedy are related to the following activities:

to community and workers:	construction activities related to installing fencing and surface waste removal
to community and the environment:	transportation and off-Site disposal of surface wastes.

None of these actions involve the handling of hazardous waste. Because of the nature and relative short duration of these activities, the potential short term effects posed by this alternative are minimal.

4.3.2.6 *Implementability*

This alternative can be readily implemented. The owner of the Site must consent to the imposition of the deed restriction.

4.3.2.7 *Cost*

The total present worth cost of Alternative II (Access and Use Restrictions) is approximately \$854,808. A detailed description of the Alternative II cost estimates is provided in Appendix E.

4.4 ***ALTERNATIVE III: CONSOLIDATION AND CONTAINMENT: PART 360 COVER***

4.4.1 *Description*

Alternative III would include the following technologies:

- Common Actions (Task No. 1)):
 - groundwater monitoring
 - residential well head treatment
 - surface waste removal;
- Site Preparation and Mobilization (Task No. 2);
- Ambient Air Monitoring for Particulates and Methane during Site Activities (Task No. 3);
- LNAPL Removal (Task No. 4);
- Excavation of Outlying Wastes, Filling and Grading (Task No. 5);
- Landfill Gas Collection System and Treatment (Task No. 6);
- Installation of Final Cover (Task No. 7);
- Construction of Surface Water Runoff System (Task No. 8);
- Institutional Controls to Protect Cover System (Task No. 9);
- Site Restoration (Task No. 10); and
- Engineered Systems Monitoring (Task No. 11).

The main components of this alternative could be completed within two (2) years of NYSDEC approval of the Remedial Action Work Plan for this

Site. Additional monitoring and performance evaluation would be conducted beyond the two (2) year implementation and construction period as described in Sections 4.4.1 (groundwater monitoring) and 4.4.1.12 (engineered systems monitoring). The Remedial Action Work Plan would summarize the work to be performed. This work plan would address the above tasks and associated deliverables.

4.4.1.1 Task No. 1: Common Actions

The common actions discussed in Section 4.1 would be implemented under this alternative. Additional monitoring wells would be installed subsequent to remedial action, specifically along the southern boundary of the Site to replace MW-9/9D and MW-10. These wells are needed to evaluate off-Site groundwater conditions after landfill closure. It is proposed that one well would be installed south of MW-10 and a well pair south of MW-9 and MW-9D would be constructed to accomplish this.

Residential well head treatment would be implemented at the residence supplied by RW-9. This would entail sizing, installation, and use of a treatment system at the residence. Lastly, surface waste removal would be included. Surface waste removal would take approximately two (2) to three (3) weeks to complete and would be conducted prior to initiation of capping activities. The residential well head treatment could be implemented upon approval of a NYSDEC remedial action work plan. Installation of three (3) additional monitoring wells following Site restoration would take about one (1) week to complete.

4.4.1.2 Task No. 2: Site Preparation and Mobilization

The first component of the remedial action is mobilization and Site preparation. This would include: mobilization of equipment to the Site; set up of the decontamination area; provision of temporary facilities and utilities, as needed; establishment of the soil/fill waste areas to be

excavated; construction of a staging area; vegetation clearing; and installation of sedimentation control measures.

A stabilized construction entrance would be installed at the entrance to the Site prior to earth disturbance activities on the Site. Clearing of existing vegetation would include removal of trees, shrubs, and undergrowth. The sedimentation control would involve installation of geotextile silt fences, sedimentation basins, and surface water management and diversion structures to control off-Site soil transport during construction activities. This task would take approximately six (6) to eight (8) weeks to complete.

4.4.1.3 *Task No. 3: Ambient Air Monitoring for Particulates and Methane during Excavation and Cap Construction*

An ambient air monitoring program would be implemented to measure the concentration of particulates in ambient air in the work zone and at the perimeter of the Site during excavation, soil/fill waste handling activities, and cap construction. A Perimeter Air Monitoring Plan that specifies the components of this program would be developed in accordance with the NYSDEC TAGM HWR-89-4031 (TAGM 4031) entitled "Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites" (NYSDEC, 1989a). Dust control measures such as water or foam sprays, or limiting areas of soil to be disturbed at any one time would be used at the Site during these activities. The degree to which these measures would be used would depend on particulate levels in ambient air at the perimeter of the Site as determined through the particulate air monitoring program. Methane monitoring would also be conducted during Site remedial activities. In addition, workers would also be protected by respirators (if needed) and protective clothing. This task be conducted during the 12 to 18 months of Site preparation, construction, and restoration.

4.4.1.4 *Task No. 4: LNAPL Removal*

LNAPL removal would be carried out prior to cap construction in conjunction with filling and grading as described in Section 4.4.1.5. The area surrounding MW-4 would be excavated to just below the NAPL depth. The excavated materials would be separated into NAPL-stained material and free product, and non-NAPL stained material. Overlying materials that are not stained with NAPL would be stockpiled for replacement into the excavation area for consolidation under the final cover. NAPL-stained materials and free product would be transported for off-Site disposal to a RCRA-approved facility. This activity would take about two (2) to four (4) weeks to complete concurrent with filling and grading activities.

4.4.1.5 *Task No. 5: Excavation of Outlying Wastes, Filling and Grading*

Wastes at the southern boundary of the landfill, along the western berm, and in areas of steep slopes may need to be excavated and relocated in the main landfill. The purpose of this would be to remove waste from wetlands, optimize the capping area, and reduce areas with slopes greater than 3:1. The majority of this would be done using conventional excavation techniques. At the southern boundary of the landfill, sheeting, shoring, and dewatering may be necessary to excavate the wetland landfill waste and to stabilize the waste mass. Once excavation is completed, filling and regrading would be performed as necessary to prepare the Site for capping. This activity would take about two (2) to four (4) months to complete.

The purpose of filling and grading would be to establish a minimum grade of 4% to promote drainage across the Site and a maximum grade of 33% to ensure slope stability. According to 6 NYCRR Part 360, the landfill may be closed with slopes exceeding 33 percent conditional upon a slope stability analysis. Final slopes would be determined during the Remedial Design. It should be noted that if the slope stability analysis indicates grades greater than 33% are acceptable, final grades must not exceed 50 percent for more

than a 20-foot vertical rise. In addition, for longer slopes, run-off diversion terraces must be constructed at vertical intervals not exceeding 20 feet. The existing monitoring wells could be retrofitted to the new elevation of the cover. The area to be capped would be the extent of fill waste as shown in Figure 1-3.

Clean soil from off-Site sources would be used to fill in areas that need to be smoothed out. At a minimum, this soil would be required to have chemical concentrations below the NYSDEC TAGM No. 4046 RSCOs. For the purpose of cost estimating, it would be assumed that the entire southern boundary of the landfill from MW-8 to MW-10 would need to be regraded and/or excavated for consolidation. The assumed area is estimated to be 0.7 acres and the volume is 31,500 cy. Using this estimate, approximately 7% of the landfill volume would need to be regraded and/or excavated. This activity would take about two (2) months to complete.

4.4.1.6 *Task No. 6: Landfill Gas Venting System*

The gas generated will be vented through a system consisting of gas venting wells and perimeter collection piping. A gas collection trench is shown in Figure 4-1 and typical gas extraction well cross-sections are depicted in Figure 4-2. For the purposes of this FS and the cost estimate, a conservative gas venting density of one vent per acre was assumed. A variance to the Part 360 gas venting requirements could be evaluated during the design phase. This would be so that less than one gas venting well per acre could be implemented, given the age of the waste and methane concentrations observed in landfill gas. This activity would take an additional one (1) month to complete.

4.4.1.7 *Task No. 7: Construction of Final Cover*

The final cover would be installed following completion of the initial seven steps described above. Figure 4-1 shows the components of the final cover as

they would be constructed at the Site. The cover would be placed over all fill waste areas. As discussed in Section 3.7, it is assumed that 450,000 sf is the area to be covered.

The cover would be constructed in conjunction with construction of the landfill gas venting system and surface water management system. The final cover, including the gas venting layer and associated surface water drainage system, would consist of the layers as shown in figure 4-1. The layer components include a 6-in topsoil and seeded vegetation layer, a 24-in barrier protection layer, a geomembrane, and a 12-in gas venting layer.

The final step in construction of the final cover is the vegetative cover layer. The United States Department of the Interior (USDI) recommends that a "diverse grassland community" be planted that is beneficial for grassland birds, which consists of a mixture of native warm and cool season grasses (USDI, 1996 reference document provided in Appendix F) Thus, grasses common to Orange County and other appropriate varieties would be planted. Seeding would be completed in early spring using a hydroseeder. Warm season grasses would establish roots during the first growing season subsequent to planting (i.e., no mowing). The vegetative cover would be mowed once the second growing season. During the third growing season and following years, one-third of the Site would be mowed so that each area of the Site is mowed approximately once every 3 years. Mowing would not be done during the nesting season. This task, including installation of surface water management structures and landfill gas system, would be expected to take about five (5) to eight (8) months to complete.

4.4.1.8 *Task No.8: Construction of Surface Water Runoff System*

The final cover would be designed to promote off-landfill surface water flow away from the landfill. A drainage system at the boundary of the landfill cover would divert water and any potential leachate seepage to a retention basin or similar storm water control feature. This would be sampled to

determine if the water exceeds TOGS Class C standards, and would be disposed of by off-Site on an as-needed basis, otherwise it could be discharged to the stream. The stormwater outfall would be designed to permit discharge of the stormwater to the stream. Design of this system would be for the peak discharge of a 24-hour, 25-year frequency storm for the area. This would be completed during the construction of the final cover and following completion in the subsequent one (1) to two (2) months.

4.4.1.9 Task No. 9: Institutional Controls to Protect Cover System

Following construction of the final cover system at the Site, access would be limited by fencing, gates, and posting signs to reduce the risk for trespassers that may damage the cover system. This would take about one (1) month to complete following implementation of the surface water management system and the gas recovery system. In addition, a deed restriction would be put into place to limit future Site uses, and would include at a minimum, the elements discussed in Section 4.3.1.4.

4.4.1.10 Task No. 10: Site Restoration

Following construction of the final cover, drainage system, and fencing, the Site would be restored. This would include:

- installation of permanent monitoring wells;
- re-vegetation with low lying brush and trees in perimeter areas; and
- removal of temporary construction facilities.

The approximate quantities of fencing, monitoring wells, regrading, seeding and revegetation required under this alternative are provided in Appendix E, Table E-2. Costs for re-seeding, revegetation, Site decommissioning, and monitoring well replacement are reflected in the cost estimate provided in Section 4.4.2.7. This task is expected to take two (2) months to complete.

Engineered systems monitoring and maintenance would be conducted in accordance with Part 360-2.15(i) 1 through 7. Yearly measurements would be collected for a period of 30 years to monitor the stability of the landfill and the integrity of the cover. Data that would be collected would include: notation of odors, erosional effects, observance of seeps, depressions and puddles, subsidence areas, vegetation stress, undesirable species of vegetation, and animal burrows and mounds. Settlement plates would be established on the completed cover and monitored by surveying periodically. The post-closure operation and maintenance monitoring activities would meet the requirements outlined in Part 360-2.15 (i) 1 through 7 for final grades, slope requirements, drainage control structures, soil cover integrity, environmental and facility monitoring points, maintenance of surface water collection system, vegetative cover maintenance, and development of a post-closure operations manual. Environmental and facility monitoring points, which include monitoring wells and gas venting locations, would be maintained and sampled during the post-closure period for a minimum of thirty years and annual reports submitted to the NYSDEC. Corrective maintenance would be performed as necessary based on recommendations from the facility monitoring data. After thirty years, or if measurements indicate sooner, re-evaluation of the cap performance would be conducted.

Annual summary reports would be issued to the NYSDEC that describe the results of maintenance, monitoring, and sampling for the environmental and facility monitoring points. A comprehensive post-closure monitoring and maintenance operations manual would be developed to identify the activities involved in the engineered systems monitoring and maintenance. This manual would address the requirements set forth in 6 NYCRR Part 360-2.15(i)(7). In addition, since hazardous waste would remain in place underneath the Part 360 cover, the remedial action would be reviewed once

every five years after completion "to assure that human health and the environment are being protected" by the measures put forth in this alternative. This would address with the requirement in TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites*.

4.4.2 Evaluation

4.4.2.1 Overall Protection of Human Health and The Environment

Protection of Human Health and the Environmental can be measured by the alternative's ability to address the remedial action objectives. The Site remedial action objectives are:

- prevent injury posed by surface waste risk;
- prevent direct contact with and incidental ingestion of fill waste/soil containing chemical concentrations in excess of their RSCOs and leachate seeps;
- reduce infiltration and prevent leaching to groundwater;
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria or result in groundwater levels in excess of groundwater quality criteria;
- prevent migration of landfill gas;
- continue to prevent ingestion of on-Site groundwater;
- prevent migration of LNAPL;
- remove LNAPL to extent practicable;
- continue to prevent direct contact with subsurface LNAPL; and
- prevent ingestion of groundwater containing elevated manganese concentrations at RW-9.

This alternative would address all of the above Site remedial action objectives. As such, it would provide adequate protection of human health and the environment.

Table 2-1 listed the potential federal and state regulatory requirements, which may be applicable or relevant and appropriate to remedial actions at the Site. The chemical and location specific SCGs and TBCs that were considered in this evaluation to be applicant or relevant and appropriate to this alternative are listed below.

SCGs

- Solid Waste Management Facilities, 6 NYCRR Part 360;
- Inactive Hazardous Waste Disposal Site Remedial Program, 6 NYCRR Part 375;
- Selection of Remedial Actions at Inactive Hazardous Waste Sites, TAGM HWR-90-4030;
- Waste Transporter Permits, 6 NYCRR Part 364;
- Hazardous Waste Management Regulations, 6 NYCRR Part 370 through Part 373;
- Land Disposal Restrictions, 6 NYCRR Part 376;
- Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites, NYSDEC TAGM HWR-89-4031;
- NYSDEC Water Quality Standards, Surface Water and Groundwater, 6 NYCRR Part 700 through 705; and
- Guidelines and Requirements for Workers at Hazardous Waste Sites (Subpart 120), OSHA 29 CFR 1910;

TBCs

- Article 12 of the New York State Navigation Law (New York Oil Spill, Control and Compensation Act);
- Environmental Priorities and Procedures in Petroleum Cleanup and Removal, 6 NYCRR Part 611;
- National Contingency Plan, Subpart D, Operational Response Phases for Oil Removal, 40 CFR Part 300; and
- NYSDEC TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values.

This Alternative would be in compliance with TAGM 4044, *Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills*, for closure by capping of Class 2 landfills, such as the Mayer Landfill, and would meet the Part 360 capping requirements.

The landfill gas venting system would meet the DAR-1 air guidelines. Because this alternative includes a number of different technologies and tasks, a number of SCGs listed in Table 2-1 are applicable and many of the SCGs and TBCs are relevant and appropriate for this alternative. This alternative complies with the requirements of Solid Waste Management Facilities (NYCRR Part 360), the Inactive Hazardous Waste Disposal Site Remedial Program (6 NYCRR Part 375), and the NYSDEC TAGM *Selection of Remedial Actions at Inactive Hazardous Waste Sites* (HWR-90-4030). That is, this alternative complies with these regulatory requirements since it eliminates or mitigates all significant threats to the public health and to the environment presented by hazardous waste disposal at the Site (see 6 NYCRR Part 375-1.10(b)) and has been evaluated for the seven criteria listed earlier in Section 4.0 of this FS and defined in Section 375-1.10(c) of 6 NYCRR Part 375 and in section 5.0 of TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites* (NYSDEC, 1990).

TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites* primarily deals with the criteria to be used to evaluate remedial action alternatives for inactive hazardous waste sites and the methods to be used to select a preferred remedial action alternative. As discussed earlier in Section 4.0, the remedial action alternatives developed for this Site were evaluated for the criteria established by the NYSDEC and as a result, the selection of this alternative would comply with these components of TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites*.

This alternative would comply with state rules and regulations, Article 12 of the NYS Navigation Law, and 6 NYCRR Part 611, which require

cleanup and removal of petroleum spills as discussed in Section 1.3.3.6. Excavation and off-Site disposal of the LNAPL and associated subsurface soil would exceed the requirements contained in these rules and regulations for petroleum cleanup and removal response actions. As discussed in Section 2.3.8, there are no exposures to or the potential for exposure associated with the LNAPL at the current time and it is very unlikely that any exposures to and risks associated with the LNAPL would occur in the future. However, LNAPL would be removed as part of this Alternative. As a result, this alternative exceeds the requirements contained in the NCP to minimize or mitigate risks related to NAPL.

With regard to groundwater, Alternative III would not reduce the concentration of COCs in on-Site groundwater to levels that would comply with the Class GA groundwater standards. In this respect, Alternative III would not comply with the NYSDEC Water Quality Regulations for Ground Water (6 NYCRR Parts 700 through 705) or with the NYSDEC Ambient Water Quality Standards and Guidance Values (TOGS 1.1.1), which are NYSDEC SCGs, as listed on Table 2-1. However, as discussed in Section 2.3.3.2, manganese is the only COC in off-Site groundwater above the drinking water standard. With the implementation of wellhead treatment for the residence supplied by RW-9, Alternative III, then, does comply with this water quality SCG for off-Site groundwater.

Any remedial actions conducted under this alternative would comply with applicable OSHA requirements contained in 29 CFR 1926: Safety and Health Regulations for Construction. Alternative III complies with all other remaining SCGs and TBCs.

4.4.2.3 *Long-Term Effectiveness and Permanence*

Long-term effectiveness and permanence is measured by the magnitude of the residual potential for exposure and the adequacy and reliability of

controls. Thus the long-term permanence and effectiveness of an alternative can be measured by its short-term and long-term ability to meet the remedial action objectives for a site.

The consolidation and containment and groundwater monitoring components of this alternative provide adequate long-term effectiveness and permanence. The potential for exposure to soil/fill waste containing COCs in concentrations exceeding NYSDEC RSCOs is greatly reduced. The future formation of leachate is minimized by preventing additional infiltration. According to the EPA landfill FS guidance, a final cover would be expected to prevent infiltration for 20 to 30 years provided it is properly designed and maintained (USEPA, 1991).

Alternative III also includes the collection and analysis of groundwater from and additional engineering systems monitoring. Groundwater samples would be collected and analyzed as described in Section 4.1. The groundwater monitoring component of this alternative would confirm that on-Site COC concentrations in groundwater remain the same or decrease, and that there is not a significant increase in concentrations in on-Site groundwater in the near future. This data would confirm that on-Site groundwater does not pose an unacceptable potential for exposure to humans or the environment.

4.4.2.4 *Reduction of Toxicity, Mobility or Volume*

The consolidation and containment alternative would significantly reduce the mobility of the COCs within the landfill. The volume of leachate volume generated by the landfill would decrease with time. Future infiltration would be reduced with this alternative, thereby greatly reducing the driving force for leaching to groundwater.

As discussed in Section 2.3.2.1, some fill waste at the Site is located below the water table. However, installing a low permeability cover may in time

reduce the groundwater mound beneath the landfill and lower the water table. This would in turn reduce the leaching to groundwater posed by landfill waste currently located beneath the water table and would reduce the future generation of leachate. It is unlikely, though, that the water table would drop as much as 27 feet such that all the fill waste would be above the water table. Therefore, some fill waste would still be below the water table. While the potential for waste contact with water would still exist, seepage of water into the landfill would be reduced after installation of a low-permeability cover, and thus, leachate generation would be lower. Once the cover is installed and the water table lowers over time, it would be expected that there would be less seepage at the sides of the landfill. As discussed in Section 2.3.5 and Section 3.9, leachate seeps had only minor exceedences of SCGs and would be minimized with a low-permeability cover. The proposed surface water drainage system would act to divert any leachate seepage away from the landfill into a retention basin or similar storm water control feature.

Landfill gas would continue to be generated by the waste material, however, this gas would be vented by the passive system, which would be installed. The concentrations of COCs in the soil gas will be reduced through venting; thus further reducing the toxicity and volume of COCs. In addition, this alternative includes for the treatment of RW-9 to reduce the concentration of manganese in the water. Only minimal volume, mobility, and toxicity reduction would occur with the removal of LNAPL-stained waste from the area surrounding MW-4.

4.4.2.5 *Short-Term Effectiveness*

As discussed in Section 4.4.1, the main components of this alternative can be completed within two (2) years from the approval by the NYSDEC of a Remedial Design. Groundwater monitoring would be conducted for five years at which time a performance review would be conducted, and

engineered systems monitoring would be conducted for the life of the Part 360 Cover. The specific schedule for implementation of this alternative would be defined in the Remedial Design.

Activities potentially posing short-term effects would be associated with excavation, consolidation, filling and grading, and with excavation and off-Site disposal of LNAPL and associated subsurface soil/fill waste. These activities would be completed within two (2) years. The possible short-term exposures that could result from implementation of this remedy are related to the following activities:

to community and workers:	soil excavation, filling and grading

to community and the environment:	transportation and excavated materials from LNAPL area; and

transportation of fill materials to Site

The potential for a temporary increase of risk to the community and workers due to particulate emissions (dust) during soil excavation would be controlled by the use of dust control measures such as water or foam sprays. The degree to which these measures would be used would depend upon particulate levels in ambient air at the property boundary as determined through the particulate air monitoring program. In addition, constant methane monitoring would be conducted during Site activities. Workers would also be protected by respirators (if needed) and protective clothing.

Potential short-term risks to the community would result from transportation of excavated LNAPL wastes to an off-Site landfill disposal facility and delivery of fill and cover materials to the Site. Automotive related injuries, as well as potential exposure of spilled material to the community and the environment along the transportation route, would be potential concerns. Since trucks would be removing LNAPL wastes and

continually transporting cover construction materials to the Site, there are significant potential short-term risks associated with the truck traffic.

4.4.2.6 *Implementability*

The use of geosynthetic liners requires specialty contractors to assure proper installation. A nearby source of clay is needed, if clay is used. Dewatering, possibly requiring sheeting and shoring, may be necessary to excavate in certain areas for waste consolidation. In addition, the presence of wetlands poses considerable implementability concerns.

4.4.2.7 *Cost*

The total present worth cost of Alternative III (Consolidation and Containment) is approximately \$7,271,707. A detailed description of the Alternative III cost estimates is provided in Appendix E.

4.5 ***ALTERNATIVE IV: EXCAVATION, OFF-SITE DISPOSAL, AND RECLAMATION***

4.5.1 *Description*

Alternative IV would provide for the greatest reduction of contaminant volume, compliance with SCGs, permanence, and future Site use potential. This alternative consists of removal by excavation of approximately 450,000 cubic yards of municipal refuse and some industrial/hazardous wastes from the Mayer Landfill. Soils underlying the waste may also be removed. Drums and other clearly distinguishable industrial waste would be segregated and disposed of at a RCRA-approved facility. As needed, groundwater and surface water removed during dewatering operations would be treated and discharged to the stream. The excavation would be backfilled and graded with clean fill and stormwater management features would be installed. This alternative consists of the following technologies:

- Common Actions (Task No. 1):
 - groundwater monitoring
 - residential well head treatment
 - surface waste removal;
- Site Preparation and Mobilization (Task No. 2);
- Excavation of Soil/Fill Waste (Task No. 3);
- Ambient Air Monitoring for Particulates during Excavation (Task No. 4);
- Off-Site Disposal of Excavated Soil/Fill Waste (Task No. 5);
- Backfilling and Regrading (Task No. 6);
- Runoff/Erosion Control (Task No. 7); and
- Site Restoration (Task No. 8).

This alternative could be completed within three (3) years of NYSDEC approval of the Remedial Design for this Site.

4.5.1.1 *Task No. 1: Common Actions*

The common actions discussed in Section 4.1 would be implemented under this alternative. Additional monitoring wells would be installed subsequent to remedial action, specifically along the southern boundary of the Site to replace MW-9/9D and MW-10. These wells are needed to evaluate off-Site groundwater conditions after landfill closure. It is proposed that one well would be installed south of MW-10 and a well pair south of MW-9 and MW-9D would be constructed to accomplish this.

Residential well head treatment would be implemented at the residence supplied by RW-9. This would entail sizing, installation, and use of a treatment system at the residence. Lastly, surface waste removal would be included. Surface waste removal would take approximately two (2) to three (3) weeks to complete and would be conducted prior to excavation activities. The residential well head treatment could be implemented upon approval of a NYSDEC remedial action work plan. Installation of three (3) additional

monitoring wells following Site restoration would take about one (1) week to complete.

4.5.1.2 *Task No. 2: Site Preparation and Mobilization*

The first component of the remedial action is mobilization and Site preparation. This would include: mobilization of equipment to the Site; set up of the decontamination area; provision of temporary facilities and utilities, as needed; construction of a waste/truck transfer station; vegetation clearing; and installation of sedimentation control measures. Clearing of existing vegetation would include removal of trees, shrubs, and undergrowth. Also, silt fences and/or sedimentation basins to control surface soil/sediment transport would be implemented during this phase. The sedimentation control would involve installation of geotextile silt fences, sedimentation basins, and diversion and surface water management structures to control off-Site soil transport. Installation of sheet piling cutoff walls at the perimeter of the landfill limits for dewatering the excavation area would be executed as well. This task would take approximately 10 to 12 weeks to complete.

4.5.1.3 *Task No. 3: Excavation of Soil/Fill Waste*

Under this alternative, all landfill waste, and residual soils containing chemicals of concern in concentrations that exceed the NYSDEC RSCOs, would be excavated and disposed of at an appropriate off-Site disposal facilities, including, when necessary, at a RCRA Subtitle C-permitted facility. As discussed in Section 2.3.2.2, there are five VOCs, four SVOCs, five pesticide/PCB compounds, and twenty inorganic compounds that are present in Site fill waste/soil in concentrations that exceed their respective NYSDEC RSCOs.

As discussed in Section 2.3.2.2, the NYSDEC RSCOs for inorganic constituents in soil are based on eastern USA background concentrations

in soil and do not address the potential for these constituents to pose unacceptable potentials for exposure to humans or the environment. The approach used in this alternative is to restore the Site to eastern USA background concentrations for inorganic constituents in soil and RSCOs for VOCs, SVOCs, and pesticides/PCB compounds. Since background concentrations of inorganic constituents are generally lower than acceptable risk-based concentrations and remediation to these levels is not necessary to protect human health and the environment, implementation of this alternative would exceed the remedial goals for soil at the Site.

As discussed in Section 3.6, the fill waste extends to a depth of 17 to 27 feet bgs. Excavation to this depth would be performed to remove all landfill material. Excavation of the lower portion may be complicated by the shallow water table. Since the groundwater table elevation is within the vertical limit of excavation (i.e., 10 to 15 feet bgs), it would be necessary to dewater the area of excavation. Dewatering will likely be necessary in wetlands areas.

Excavation would proceed in stages across the Site and progress vertically until all refuse is removed. During excavation, drums and other clearly distinguishable industrial waste would be segregated out. Stockpiling would not be allowed due to the nature of the waste. Excavated soil and fill waste would be placed into dump trailers for transportation to various RCRA-permitted facilities for disposal.

The cost estimate presented later in this section, uses a 30% contingency to account for excess volume encountered during excavation and additional unexpected scope. The total volume of material to be removed from the Site under this alternative to excise all existing fill waste meet the NYSDEC RSCO levels, and excavate all existing fill waste, is approximately 450,000 cy.

For cost estimation purposes, it has conservatively been assumed that forty (40) dump trailers can be mobilized to the Site each day of excavation. Assuming that 25 cy loads would be transported at a time, and 40 truckloads per day, it would take approximately 450 work days to excavate and transport the fill waste of approximately 450,000 cubic yards. Disposal of excavated soil and fill waste is discussed in Section 4.5.1.5. The excavation task would take 21 months to complete, based on transportation of 1,000 cy of excavated waste per day. Any hazardous waste encountered would be segregated and disposed of at a RCRA Subtitle C facility.

4.5.1.4 *Task No. 4: Ambient Air Monitoring for Particulates and Methane during Excavation*

To protect the health and safety of workers and local residents, a health and safety program that includes air monitoring for organic vapors and dust would be implemented during Site activities. Prior to Site activities, a worst case air quality impact analysis would be prepared to estimate the impact from fugitive dusts arising from soil/fill waste disturbance.

During Site excavation, an ambient air monitoring program that would measure the concentration of particulates in ambient air in the work zone and at the perimeter of the Site would be implemented. A Perimeter Air Monitoring Plan that specifies the components of this program would be developed in accordance with the TAGM 4031 (NYSDEC, 1989a). Dust control measures such as water or foam sprays, or limiting areas of soil to be disturbed at any one time would be used at the Site during these activities. The degree to which these measures would be used would depend on particulate levels in ambient air at the perimeter of the Site as determined through the particulate air monitoring program. In addition, methane monitoring would be performed during Site activities. Workers would also be protected by respirators (if needed) and protective clothing. This task would be conducted during the majority of the 21 to 31 months of Site activities.

4.5.1.5 *Task No. 5: Off-Site Disposal of Excavated Soil/Fill Waste*

Segregation of wastes would be conducted as described in Section 3.7. Excavated soil would be transported to and disposed of at an off-Site Subtitle D, non-hazardous waste landfill under this alternative. Any hazardous waste encountered would be segregated and disposed of at a RCRA Subtitle C facility. Costs for disposal are determined on a weight basis (i.e., per ton). In order to calculate the cost of the disposal of soil, the estimated volume of this material was converted to a weight basis (i.e., from cubic yards to tons) using a density of 750 pounds (lbs) per cy (Tchobanoglous, 1993). The excavation of the volume of soil/fill waste to be removed (i.e., 450,000 cy) was calculated to be approximately 168,750 tons (i.e., 450,000 cy x 750 lbs/cy).

For cost estimation purposes, it was assumed that one (1) sample would be collected every 1,000 cy of excavated soil and analyzed for disposal characteristics, amounting to approximately 450 samples. In addition, for cost estimation, it was assumed that 15% of the waste would be characterized as hazardous waste. Also, since seven monitoring wells are located in the area to be excavated and will likely be destroyed, additional monitoring wells would need to be installed following remedial action, specifically along the southern boundary of the Site. Any remaining riser, or open hole portion of the well would be abandoned and sealed. It is proposed that one well would be installed in the area of MW-10 and a well pair in the area of MW-9 and MW-9D would be constructed.

4.5.1.6 *Task No. 6: Backfilling and Regrading*

Following removal of the waste mass from the Site, the Site would be restored similar to original Site condition. The excavation area would be filled with approximately 25,000 cy of clean fill from off-Site sources. Clean fill will be defined, at a minimum, as soil containing chemicals at concentrations below the NYSDEC TAGM No. 4046 RSCOs. Excavation and

filling would be sequenced and partially phased concurrently during the 21 months of soil/fill waste excavation.

4.5.1.7 Task No. 7: Runoff/Erosion Control

Subsequent to excavation, off-Site disposal, backfilling, and regrading, surface water control measures would be implemented at the Site to control the contribution of surface water runoff to the surrounding area. Drainage channels and proper grading would be used to divert water into detention ponds where water can be stored and naturally infiltrate into the ground, or released to the stream at an acceptable flow rate. Design of this system would be for the peak discharge of a 24-hour, 25-year frequency storm for the area. This would be developed in the Remedial Design. This task would take two (2) months to complete.

4.5.1.8 Task No. 8: Site Restoration

After the Site has been excavated and backfilled and surface water runoff controls have been installed, the Site would be restored. This would include revegetation, restoration to disturbed wetlands and surface water channels, installation of groundwater monitoring wells, and installing of fencing. This task would take two (2) to five (5) months to complete depending upon the extent of impairment to wetlands and surface water channels and the work involved restoring them.

4.5.2 Evaluation

4.5.2.1 Overall Protection of Human Health and The Environment

Protection of Human Health and the Environmental can be measured by the alternative's ability to address the remedial action objectives. The Site remedial action objectives are:

- prevent injury posed by surface waste risk;

- prevent direct contact with and incidental ingestion of fill waste/soil containing chemical concentrations in excess of their RSCOs and leachate seeps;
- reduce infiltration and prevent leaching to groundwater;
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria or result in groundwater levels in excess of groundwater quality criteria;
- prevent migration of landfill gas;
- continue to prevent ingestion of on-Site groundwater;
- prevent migration of LNAPL;
- remove LNAPL to extent practicable;
- continue to prevent direct contact with subsurface LNAPL; and
- prevent ingestion of groundwater containing elevated manganese concentrations at RW-9.

This alternative would address all of the above Site remedial action objectives. Alternative IV would remove all Site soil/fill waste to a depth of 17 to 27 feet including all material containing COCs in concentrations exceeding NYSDEC RSCO levels. The soil and fill waste removed under this alternative would then be replaced with uncontaminated soil from an off-Site source. These actions would eliminate the source of and any potential direct contact exposures to COCs in Site soil/fill waste. This alternative, then would provide an acceptable level of protection to human health and the environment.

4.5.2.2 *Compliance with SCGs*

Table 2-1 listed the potential federal and state regulatory requirements, which may be applicable or relevant and appropriate to remedial actions at the Site. The chemical and location specific SCGs and TBCs for the Site that were considered in this evaluation to be applicable or relevant and appropriate to this alternative are listed below.

SCGs

- Inactive Hazardous Waste Disposal Site Remedial Program, 6 NYCRR Part 375;
- Selection of Remedial Actions at Inactive Hazardous Waste Sites, TAGM HWR-90-4030;
- Waste Transporter Permits, 6 NYCRR Part 364;
- Hazardous Waste Management Regulations, 6 NYCRR Part 370 through Part 373;
- Land Disposal Restrictions, 6 NYCRR Part 376;
- Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites, NYSDEC TAGM HWR-89-4031;
- NYSDEC Water Quality Standards, Surface Water and Groundwater, 6 NYCRR Part 700 through 705; and
- Guidelines and Requirements for Workers at Hazardous Waste Sites (Subpart 120), OSHA 29 CFR 1910.

TBCs

- Article 12 of the New York State Navigation Law (New York Oil Spill, Control and Compensation Act);
- Environmental Priorities and Procedures in Petroleum Cleanup and Removal, 6 NYCRR Part 611;
- Determination of Soil Cleanup Objectives and Cleanup Levels, NYSDEC TAGM HWR-92-4046;
- National Contingency Plan, Subpart D, Operational Response Phases for Oil Removal, 40 CFR Part 300; and
- NYSDEC TOGS 1.1.1, Ambient Water Quality Standards and Guidance Values.

This Alternative would exceed the requirements contained in TAGM 4044, *Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills*, for closure by capping of Class 2 landfills, such as the Mayer Landfill and would exceed the Part 360 capping requirements.

Because this alternative includes a number of different technologies and tasks, a number of SCGs listed in Table 2-1 are applicable and many of the

SCGs and TBCs are relevant and appropriate for this alternative. It complies with regulatory requirements since it eliminates or mitigates all significant threats to the public health and to the environment presented by hazardous waste disposal at the Site (see 6 NYCRR Part 375-1.10(b)) and has been evaluated for the seven criteria listed earlier in Section 4.0 of this FS and defined in Section 375-1.10(c) of 6 NYCRR Part 375 and in section 5.0 of TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites* (NYSDEC, 1990).

TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites* primarily deals with the criteria to be used to evaluate remedial action alternatives for inactive hazardous waste sites and the methods to be used to select a preferred remedial action alternative. As discussed earlier in Section 4.0, the remedial action alternatives developed for this Site were evaluated for the criteria established by the NYSDEC and as a result, the selection of this alternative would comply with these components of TAGM 4030, *Selection of Remedial Actions at Inactive Hazardous Waste Sites*.

In addition, TAGM 4030 also establishes a hierarchy of remedial technology treatments to be consistent with the federal Superfund Amendments and Reauthorization Act of 1986 (SARA), Public Law 99-499, which amended CERCLA, and with RCRA amendments which restricted land disposal. This TAGM also states that the NYSDEC concurs with the requirements contained in SARA that preference be given to remedies that permanently reduce the toxicity, volume or mobility of hazardous substances, pollutants or contaminants found at a site. In response, TAGM 4030 defined the following hierarchy of remedial technologies for hazardous waste disposal sites, from most desirable to least desirable:

- 1) Destruction
- 2) Separation/Treatment

- 3) Solidification/Chemical Fixation
- 4) Containment and Isolation Technologies
- 5) Off-Site Land Disposal

Alternative IV entails the entire excavation and off-Site landfill disposal of the Mayer Landfill fill waste. Some of these wastes would be characterized as RCRA hazardous waste. The need for this alternative to rely on off-Site landfill disposal, identified in TAGM 4030 as the least desirable remedial approach, would not satisfy the preference for treatment contained in SARA and used by the NYSDEC to select remedial actions for inactive hazardous waste disposal sites.

This alternative would comply with state rules and regulations, Article 12 of the NYS Navigation Law, and 6 NYCRR Part 611, which require cleanup and removal of petroleum spills as discussed in Section 1.3.3.6. Excavation and off-Site disposal of the LNAPL and associated subsurface soil would exceed the requirements contained in these rules and regulations for petroleum cleanup and removal response actions. As discussed in Section 2.3.8, there are no exposures to or the potential for exposure associated with the LNAPL at the current time and it is very unlikely that any exposures to and risks associated with the LNAPL would occur in the future. However, LNAPL would be removed as part of the entire landfill excavation. As a result, this alternative exceeds the requirements contained in the NCP to minimize or mitigate risks related to NAPL.

With regard to groundwater, Alternative IV would not reduce the concentration of COCs in on-Site groundwater to levels that would comply with the Class GA groundwater standards. In this respect, Alternative IV would not comply with the NYSDEC Water Quality Regulations for Ground Water (6 NYCRR Parts 700 through 705) or with the NYSDEC Ambient Water Quality Standards and Guidance Values

(TOGS 1.1.1), which are NYSDEC SCGs, as listed on Table 2-1. However, as discussed in Section 2.3.3.2, manganese is the only COC in off-Site groundwater above the drinking water standard. With the implementation of wellhead treatment for the residence supplied by RW-9, Alternative IV, then, does comply with this water quality SCG for off-Site groundwater.

Any remedial actions conducted under this alternative would comply with applicable OSHA requirements contained in 29 CFR 1926: Safety and Health Regulations for Construction. Alternative IV complies with all other remaining SCGs and TBCs.

As discussed in Section 3.8, all waste materials would be properly characterized, stored, transported and disposed of at an approved off-Site disposal facility, either a RCRA Subtitle D facility, or in the case of hazardous or chemical waste, a RCRA Subtitle C facility. In addition, storage, transportation, treatment, and disposal of any wastes that may be subsequently characterized as a RCRA hazardous waste would be designed to comply with the requirements contained in the regulations pertaining to the management of hazardous waste. These regulations are: Waste Transporter Permits (6 NYCRR Part 364), Hazardous Waste Management Regulations (6 NYCRR Part 370 through Part 373); and Land Disposal Restrictions (6 NYCRR Part 376).

This alternative would be designed to comply with the substantive requirements of permits that may be applicable to on-Site activities relating to the management of hazardous wastes. In accordance with Section 375-1.7 of 6 NYCRR Part 375, the Inactive Hazardous Waste Disposal Site Remedial Program, no permit, consent, approval or other authorization under any local government zoning, land-use, or NYSDEC or other New York State regulatory program is required for remedial actions that are: (1) on-site; (2) satisfies all the substantive requirements of

the permit; and (3) selected by a process complying with the public participation program requirements of Section 375-1.5, to the extent applicable. This provision does not cover off-Site activities and, as a result, all off-Site landfill facilities used for the disposal of waste material to be generated by this alternative would be permitted by RCRA and TSCA, as necessary.

The Excavation, Off-Site Disposal and Reclamation Alternative would remove all accessible soil/fill waste that contains COCs present in concentrations above the NYSDEC RSCO levels. As a result, this alternative complies with the RSCOs defined in the TAGM 4046. This alternative would eliminate any potential direct contact exposures to chemicals of concern in Site soil/fill waste by removing the source.

TAGM 4030, the NYSDEC guidance on the selection of remedial actions at inactive hazardous waste sites (NYSDEC, 1990) and the NCP, through the 1986 amendments to CERCLA, requires that preference be given to remedies that permanently reduce the toxicity, mobility or volume of hazardous waste. However, this alternative only transfers the chemicals of concern from the Site to an off-Site landfill. This would reduce the mobility of these chemicals at the Site, but would only move the location of these chemicals to another site (i.e., from the Site to an off-Site landfill), the overall volume of these chemicals would not be reduced.

Any remedial actions conducted under this alternative would comply with applicable OSHA requirement contained in 29 CFR 1926: Safety and Health Regulations for Construction and TAGM HWR-89-4031: Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites. This alternative complies with all other remaining SCGs and TBCs.

4.5.2.3 *Long Term Effectiveness and Permanence*

Long-term effectiveness and permanence is measured by the magnitude of the residual potential for exposure and the adequacy and reliability of controls. Thus the long-term permanence and effectiveness of an alternative can be measured by its short-term and long-term ability to meet the remedial action objectives for a site.

The Excavation, Off-Site Disposal, and Reclamation Alternative and groundwater monitoring components of this alternative provide adequate long-term effectiveness and permanence. The potential for exposure to soil/fill waste containing COCs in concentrations exceeding NYSDEC RSCOs is eliminated. The future formation of leachate is eliminated.

This alternative also includes the collection and analysis of groundwater samples from existing on-Site monitoring wells MW-1, 2, 5, 6, 7, 11, 13, 14, 15 and 16 and three additional wells to be installed following remedial action. The groundwater monitoring component of this alternative would confirm that on-Site groundwater concentrations remain the same or decrease, and that there is not a significant increase in concentrations in on-Site groundwater in the near future. This data would confirm that on-Site groundwater does not pose an unacceptable potential for exposure to humans or the environment.

Also, the excavation of 17 to 27 feet of Site soil/fill waste containing COCs in excess of the NYSDEC RSCOs would permit unrestricted use of the Site in the future. Little long-term management is required in this alternative. Periodic inspections may be required to check the revegetation of the Site and erosion potential. Where deficiencies are noted, actions would be taken for maintenance.

The soil/fill waste removal and clean fill replacement and groundwater monitoring components of this alternative provide adequate long-term

effectiveness and permanence. Alternative IV would provide effective remediation for the long-term and is a permanent remedy.

4.5.2.4 *Reduction of Toxicity, Mobility or Volume*

Excavation and off-Site disposal of Site soil/fill waste would remove all fill waste in addition to all material containing chemical concentrations in excess of NYSDEC RSCOs from the Site. This would eliminate waste and contaminated soil volume. As a result, the on-Site and off-Site groundwater concentrations are expected to decrease over time. Therefore, this alternative would greatly reduce any residual toxicity and would preclude mobility of chemicals. However, the toxicity, mobility, and volume of chemicals would just be transferred to another landfill off-Site.

The scope of the New York State Part 375 "Inactive Hazardous Waste Disposal Site" is limited to the cleanup of areas where hazardous wastes were disposed (6 NYCRR Part 375-1.1), and defines hazardous waste as a RCRA characteristic or listed hazardous waste as that term is defined in 6 NYCRR Part 371. The NYSDEC TAGM on the selection of remedial actions (NYSDEC, 1990) defines this evaluation criteria as the ability of an alternative to reduce the toxicity, mobility or volume of the hazardous waste at a site. (Refer to Table 5.6 of the NYSDEC TAGM on the selection of remedial actions (NYSDEC, 1990).) Since any existing hazardous wastes at the Site would be removed, this alternative is a permanent remedy.

4.5.2.5 *Short-Term Effectiveness*

As discussed in Section 4.5.1, this alternative, with the exception of groundwater monitoring, can be completed within three years from the approval by the NYSDEC of a Remedial Design. As discussed in Section 4.1, groundwater monitoring would be performed quarterly for five years

subsequent to remediation and would be reevaluated after that time. The specific schedule for implementation of this alternative would be defined in the Remedial Design. During implementation of this alternative, the risks to the community from the construction of the sheet piling cutoff wall, excavation, and transportation activities must be addressed.

Activities potentially posing short-term effects would be associated with excavation and off-Site disposal of soil/fill waste. These activities would be completed in a 16 to 20 month time period. The possible short-term exposures that could result from implementation of this remedy are related to the following activities:

to community and soil/fill waste excavation; and
workers:

to community and the transportation and off-site disposal of
environment: excavated soil.

The potential for a temporary increase of risk to the community and workers due to particulate emissions (dust) during soil excavation would be controlled by the use of dust control measures such as water or foam sprays. The degree to which these measures would be used would depend upon particulate levels in ambient air at the property boundary as determined through the particulate air monitoring program. Methane monitoring would be conducted during site activities to monitor the potential for explosion. Workers would also be protected by respirators (if needed) and protective clothing. Also, erosion control measures would need to be implemented.

Potential short-term risks to the community would be posed by this alternative from transportation of excavated soil to off-Site landfill disposal facilities and also by the release of vapors to the air. Automotive related injuries, as well as potential exposure of spilled material to the community and the environment along the transportation route, would be potential concerns. Because almost 14,500 truckloads would be required to

transport excavated soil/fill waste to an off-Site landfill disposal facility, there are significant potential short-term risks associated with the transportation of excavated materials from the Site to an off-Site landfill. In addition, a short-term odor problem may also be a annoyance to the local public.

4.5.2.6 *Implementability*

To complete this alternative, extensive sheeting and shoring would be installed for dewatering and stability, and extensive excavation would take place at the Site. Excavation at the Mayer Landfill may be difficult in areas where removal of refuse below the water table or to bedrock is required. Special contingency measures such as slope stabilization or shoring would be necessary. Also, the rate of excavation would be governed by the availability of the dump trailers. In conclusion, this alternative would have considerable implementability concerns.

4.5.2.6 *Cost*

The total present worth cost of Alternative IV (Excavation to the NYSDEC RSCOs, Off-Site Disposal and Reclamation) is approximately \$36,453,241. A detailed description of the Alternative IV cost estimates is provided in Appendix E.

This section uses the evaluation of remedial action alternatives presented in Section 4.0 to compare the proposed remedial action alternatives. The NCP (40 CFR 300.430) and the NYSDEC guidance on the selection of remedial actions at inactive hazardous waste disposal sites (NYSDEC, 1990) require that alternatives be developed that protect human health and the environment by eliminating, reducing and controlling potential risks posed through each pathway at a site. As discussed in Section 2.0, six of the eight environmental media evaluated at the Site pose potential for exposure to potential receptors through available pathways. These media, identified as media of interest for the Site, are Site soil/fill waste, surface waste, leachate seeps, landfill gas, LNAPL, and the off-Site groundwater at RW-9. Sediment and surface water were eliminated as media of interest in Section 2.0.

With respect to developing remedial alternatives, the NCP provides for a review of remedial alternatives that: (1) involve little or no treatment but protect human health and the environment by preventing or controlling potential exposures to hazardous substances through engineering or institutional controls {40 CFR 300.430(e)(3)(ii)}; and (2) reduce the toxicity, mobility or volume of hazardous substances through treatment {40 CFR 300.430(e)(3)(i)}. In addition, the NCP also requires that a no action alternative be developed and evaluated {40 CFR 300.430(e)(6)}.

The No Action approach evaluated in this Feasibility Study in Alternative I complies with the NCP requirement to evaluate the applicability of not implementing additional remedial actions at the Site. Alternative II (Access and Use Restrictions), Alternative III (Consolidation and Containment: Part 360 Cover) and Alternative IV (Excavation, Off-Site Disposal and Reclamation) comply with the NCP requirement to evaluate, where applicable, alternatives which protect human health and the environment

through engineering or institutional controls and by reducing the toxicity, mobility or volume of hazardous substances.

5.1 *MEDIA OF INTEREST*

The media of interest at the Site include surface waste, soil/fill waste, off-Site groundwater, landfill gas, LNAPL, and leachate. Based on the evaluation conducted in Section 2.3, the following remedial action objectives were developed for the Site:

- prevent injury posed by surface waste risk;
- prevent direct contact with and incidental ingestion of fill waste/soil containing chemical concentrations in excess of their RSCOs, leachate seeps, and sediment containing;
- reduce infiltration and prevent leaching to groundwater;
- prevent migration/releases of contaminants from seeps that would result in surface water levels in excess of ambient water quality criteria or result in groundwater levels in excess of groundwater quality criteria;
- prevent migration of landfill gas;
- continue to prevent ingestion of on-Site groundwater;
- prevent migration of LNAPL;
- remove LNAPL to extent practicable;
- continue to prevent direct contact with subsurface LNAPL; and
- prevent ingestion of groundwater containing elevated manganese concentrations at RW-9.

5.2 *COMPARATIVE EVALUATION OF THE REMEDIAL ACTION ALTERNATIVES*

Using the technologies selected in Section 3.0 to address the remedial action objectives that were defined in Section 2.4, the following remedial action alternatives were developed in Section 4.0 for the Site:

Alternative I: No Action

Alternative II: Access and Use Restrictions

Alternative III: Consolidation and Containment: Part 360 Cover

Alternative IV: Excavation, Off-site Disposal, and Reclamation

Each alternative was evaluated for the seven items identified in the NCP {40 CFR 300.430(e)(9)} and in the NYSDEC TAGM guidance for the selection of remedial actions (NYSDEC, 1990) as performance criteria to be considered during the preparation of an FS. The NCP and the NYSDEC TAGM guidance (NYSDEC, 1990) also require that alternatives be evaluated for community acceptance. Alternatives are to be evaluated for community acceptance after the NYSDEC has distributed a proposed plan and the proposed plan and FS have been reviewed by the community.

In accordance with the NCP (40 CFR 300.430(f)(1)(i)) and with the NYSDEC TAGM on the selection of remedial actions (NYSDEC, 1990), the first two performance criteria are considered threshold criteria. Remedial action alternatives that do not satisfy both of these criteria cannot be selected for use in remediating a site. The remaining five criteria are considered primary balancing criteria. These balancing criteria address the following issues:

1. How will the remedial actions perform in the future (long-term effectiveness)?
2. Does the alternative reduce the toxicity, mobility or volume of hazardous substances?
3. Does the implementation of the alternative create adverse impacts (short-term effectiveness)?
4. Can the alternative be implemented (implementability)?
5. What is the total cost of the alternative?

These criteria were discussed in Section 4.0 for each alternative. A summary comparison of the remedial action alternatives in terms of these criteria is provided in Table 5-1. Detailed cost estimates for Alternatives II, III, and IV are presented in Appendix E; there are no costs associated with Alternative

I. A summary of the total capital, annual operation and maintenance (O&M) and present worth costs for each alternative is presented in Table 5-1. The total present worth costs for each alternative, as discussed below, are as follows:

<i>Alternative</i>	<i>Total Present Worth Cost</i>
Alternative I (No Action)	\$0
Alternative II (Access and Use (Deed) Restrictions) ⁽¹⁾	\$854,808
Alternative III (Consolidation and Containment: Part 360 Cover)	\$7,271,707
Alternative IV (Excavation, Off-Site Disposal, and Reclamation)	\$36,453,241
NOTES: 1. This does not include the additional expense that may be required to secure the Site Owner's consent to the deed restriction limiting future use of the Site.	

In summary, eight media of interest (surface waste, soil/fill waste, groundwater, surface water, sediment, seeps, soil gas, and LNAPL) were evaluated in Section 2.0 in terms of exposure pathways, cleanup levels, remedial action objectives, and general response actions. In response to the identified media of interest, fourteen remedial technologies were evaluated, ten of which were selected to be appropriate for the Site. The selected remedial technologies were formulated into four Remedial Action Alternatives: I No Action, II Access and Use Restrictions, III Consolidation and Containment by Part 360 Cover, and IV Excavation, Off-Site Disposal, And Reclamation. Finally, this section provided a comparison of these remedial alternatives.

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Tables

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION	TAGM 4046	SS-23 AA	SS-23C	SS-24A	SS-24B	SS-25 AA	SS-25 B	SS-25 C
SAMPLE DEPTH	Recommended	10'	8'	11'	SURFACE	13'	13.5'	2.5'-3.5'
LAB ID	Soil Cleanup	62364001	62355009	62383002	62383001	62364002	62364003	62364004
DATE COLLECTED	Objectives	11-30-99	11-29-99	12-01-99	12-01-99	11-30-99	11-30-99	11-30-99
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Chloromethane		68 U	11 U	63 U	12 U	23 U	110 U	10 U
Bromomethane		68 U	11 U	63 U	12 U	23 U	110 U	10 U
Vinyl Chloride	200	68 U	11 U	63 U	12 U	23 U	110 U	10 U
Chloroethane	1900	68 U	11 U	63 U	12 U	23 U	110 U	10 U
Methylene Chloride	100	64 U	11 U	96 U	12 U	6 J	67 U	4 U
Acetone	200	330	2 J	170 S	1200 DB	130 B	560 B	12
Carbon Disulfide	2700	14 J	11 U	23 J	12 U	17 J	36 J	10 U
1,1-Dichloroethene	400	68 U	11 U	63 U	12 U	23 U	110 U	10 U
1,1-Dichloroethane	200	68 U	11 U	63 U	12 U	23 U	110 U	10 U
1,2-Dichloroethene (Total)	300	68 U	11 U	63 U	12 U	23 U	110 U	10 U
Chloroform	300	68 U	11 U	63 U	12 U	23 U	6 J	10 U
1,2-Dichloroethane	100	68 U	11 U	63 U	12 U	23 U	110 U	10 U
2-Butanone	300	140	11 U	25 J	5 J	42	230	10 U
1,1,1-Trichloroethane	800	68 U	11 U	63 U	12 U	23 U	110 U	10 U
Carbon Tetrachloride	600	68 U	11 U	63 U	12 U	23 U	110 U	10 U
Bromodichloromethane		68 U	11 U	63 U	12 U	23 U	110 U	10 U
1,2-Dichloropropane		68 U	11 U	63 U	12 U	23 U	110 U	10 U
cis-1,3-Dichloropropene		68 U	11 U	63 U	12 U	23 U	110 U	10 U
Trichloroethene	700	68 U	11 U	63 U	12 U	23 U	110 U	10 U
Dibromochloromethane		68 U	11 U	63 U	12 U	23 U	110 U	10 U
1,1,2-Trichloroethane		68 U	11 U	63 U	12 U	23 U	110 U	10 U
Benzene	60	25 J	11 U	27 J	1 J	18 J	22 J	10 U
trans-1,3-Dichloropropene		68 U	11 U	63 U	12 U	23 U	110 U	10 U
Bromoform		68 U	11 U	63 U	12 U	23 U	110 U	10 U
4-Methyl-2-Pentanone	1000	68 U	11 U	63 U	12 U	23 U	110 U	10 U
2-Hexanone		68 U	11 U	63 U	12 U	23 U	110 U	10 U
Tetrachloroethene	1400	68 U	11 U	63 U	12 U	23 U	110 U	10 U
1,1,2,2-Tetrachloroethane	600	68 U	11 U	63 U	12 U	23 U	110 U	10 U
Toluene	1500	79	11 U	94	2 J	6 J	50 J	10 U
Chlorobenzene	1700	750	11 U	630	21	100	370	10 U
Ethylbenzene	550	22 J	11 U	48 J	1 J	4 J	22 J	10 U
Styrene		68 U	11 U	63 U	12 U	23 U	110 U	10 U
Xylene (Total)	1200	2400	11 U	2000	12 J	130	920	1 J

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION	TAGM 4046	SS-25 D	SS-25F	SS-26A	SS-26A	SS-26B	SS-27A	SS-27B
SAMPLE DEPTH	Recommended	SURFACE	2'	SURFACE	6'	8'	15'	15'
LAB ID	Soil Cleanup	62364005	62355007	62383004	62383005	62383011	62355003	62355006
DATE COLLECTED	Objectives	11-30-99	11-29-99	12-01-99	12-01-99	12-01-99	11-29-99	11-29-99
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Chloromethane		12 U	11 U	12 U	21 U	280 U	16 U	12 U
Bromomethane		12 U	11 U	12 U	21 U	280 U	16 U	12 U
Vinyl Chloride	200	12 U	11 U	12 U	21 U	280 U	16 U	12 U
Chloroethane	1900	12 U	11 U	12 U	21 U	280 U	16 U	12 U
Methylene Chloride	100	2 U	11 U	12 U	21 U	280 U	16 U	17 BS
Acetone	200	6 J	2 J	2 JS	66 S	790 S	130	59
Carbon Disulfide	2700	12 U	11 U	12 U	21 U	82 J	4 J	3 J
1,1-Dichloroethene	400	12 U	11 U	12 U	21 U	280 U	16 U	12 U
1,1-Dichloroethane	200	12 U	11 U	12 U	21 U	280 U	16 U	12 U
1,2-Dichloroethene (Total)	300	12 U	11 U	12 U	21 U	280 U	16 U	12 U
Chloroform	300	12 U	11 U	12 U	21 U	280 U	16 U	12 U
1,2-Dichloroethane	100	12 U	11 U	12 U	21 U	280 U	16 U	12 U
2-Butanone	300	12 U	11 U	12 U	21 U	330	44	22
1,1,1-Trichloroethane	800	12 U	11 U	12 U	21 U	280 U	16 U	12 U
Carbon Tetrachloride	600	12 U	11 U	12 U	21 U	280 U	16 U	12 U
Bromodichloromethane		12 U	11 U	12 U	21 U	280 U	16 U	12 U
1,2-Dichloropropane		12 U	11 U	12 U	21 U	280 U	16 U	12 U
cis-1,3-Dichloropropene		12 U	11 U	12 U	21 U	280 U	16 U	12 U
Trichloroethene	700	12 U	11 U	12 U	21 U	280 U	16 U	12 U
Dibromochloromethane		12 U	11 U	12 U	21 U	280 U	16 U	12 U
1,1,2-Trichloroethane		12 U	11 U	12 U	21 U	280 U	16 U	12 U
Benzene	60	12 U	11 U	12 UJ	21 UJ	30 J	4 J	5 J
trans-1,3-Dichloropropene		12 U	11 U	12 U	21 U	280 U	16 U	12 U
Bromoform		12 U	11 U	12 U	21 U	280 U	16 U	12 U
4-Methyl-2-Pentanone	1000	12 U	11 U	12 U	21 U	280 U	2 J	12 U
2-Hexanone		12 U	11 U	12 U	21 U	280 U	16 U	12 U
Tetrachloroethene	1400	12 U	11 U	12 U	21 U	280 U	16 U	12 U
1,1,2,2-Tetrachloroethane	600	12 U	11 U	12 U	21 U	280 U	16 U	12 U
Toluene	1500	12 U	11 U	12 U	7 J	150 J	23	40
Chlorobenzene	1700	2 J	11 U	12 U	42	2200	15 J	140
Ethylbenzene	550	2 J	11 U	12 U	57	170 J	10 J	14
Styrene		12 U	11 U	12 U	21 U	280 U	16 U	12 U
Xylene (Total)	1200	17	11 U	6 J	160	3000	64	230

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION SAMPLE DEPTH LAB ID DATE COLLECTED UNITS	TAGM 4046 Recommended Soil Cleanup Objectives ug/kg	SS-27D 14' 62355008 11-29-99 ug/kg	SS-27E 8-9' 62355005 11-29-99 ug/kg	SS-28B SURFACE 62383010 12-01-99 ug/kg	SS-28D SURFACE 62383009 12-01-99 ug/kg	SS-29E 9' 62355004 11-29-99 ug/kg	SS-30-B SURFACE 62383003 12-01-99 ug/kg	SS-30B 12' 62383006 12-01-99 ug/kg
Chloromethane		150 U	2 J	15 U	11 U	12 U	12 U	11 U
Bromomethane		150 U	16 U	15 U	11 U	12 U	12 U	11 U
Vinyl Chloride	200	150 U	16 U	15 U	11 U	12 U	12 U	11 U
Chloroethane	1900	150 U	16 U	15 U	11 U	12 U	12 U	11 U
Methylene Chloride	100	150 U	16 U	15 U	11 U	12 U	12 U	11 U
Acetone	200	270	170	39 BS	11 U	22	3 JS	12 U
Carbon Disulfide	2700	16 J	5 J	15 U	11 U	12 U	12 U	11 U
1,1-Dichloroethene	400	150 U	16 U	15 U	11 U	12 U	12 U	11 U
1,1-Dichloroethane	200	150 U	16 U	15 U	11 U	12 U	12 U	11 U
1,2-Dichloroethene (Total)	300	150 U	2 J	15 U	11 U	12 U	12 U	11 U
Chloroform	300	150 U	16 U	15 U	11 U	12 U	12 U	11 U
1,2-Dichloroethane	100	150 U	16 U	15 U	11 U	2 J	12 U	11 U
2-Butanone	300	120 J	51	15 U	11 U	3 J	12 U	11 U
1,1,1-Trichloroethane	800	150 U	16 U	15 U	11 U	12 U	12 U	11 U
Carbon Tetrachloride	600	150 U	16 U	15 U	11 U	12 U	12 U	11 U
Bromodichloromethane		150 U	16 U	15 U	11 U	12 U	12 U	11 U
1,2-Dichloropropane		150 U	16 U	15 U	11 U	12 U	12 U	11 U
cis-1,3-Dichloropropene		150 U	16 U	15 U	11 U	12 U	12 U	11 U
Trichloroethene	700	150 U	11 J	15 U	11 U	12 U	12 U	11 U
Dibromochloromethane		150 U	16 U	15 U	11 U	12 U	12 U	11 U
1,1,2-Trichloroethane		150 U	16 U	15 U	11 U	12 U	12 U	11 U
Benzene	60	41 J	6 J	15 U	11 UJ	110	12 UJ	11 U
trans-1,3-Dichloropropene		150 U	16 U	15 U	11 U	12 U	12 U	11 U
Bromoform		150 U	16 U	15 U	11 U	12 U	12 U	11 U
4-Methyl-2-Pentanone	1000	150 U	16 U	15 U	11 U	12 U	12 U	11 U
2-Hexanone		150 U	16 U	15 U	11 U	12 U	12 U	11 U
Tetrachloroethene	1400	150 U	4 J	15 U	11 U	12 U	1 J	11 U
1,1,2,2-Tetrachloroethane	600	150 U	16 U	15 UJ	11 U	12 U	12 U	11 UJ
Toluene	1500	210	15 J	15 U	4 J	160	10 J	11 U
Chlorobenzene	1700	960	140	15 U	11 U	2 J	12 U	9 J
Ethylbenzene	550	160	220	2 J	5 J	240	6 J	11 U
Styrene		150 U	16 U	15 U	11 U	12 U	12 U	11 U
Xylene (Total)	1200	1000	1600 D	19	41	510	46	4 J

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION	TAGM 4046	SS-30C	SS-30C	SS-31B	SS-32 B	SS-31C	DUP112999
SAMPLE DEPTH	Recommended	SURFACE	3'	13'	6'	7'	62355010
LAB ID	Soil Cleanup	62383007	62383008	62355001	62364006	62355002	11-29-99
DATE COLLECTED	Objectives	12-01-99	12-01-99	11-29-99	11-30-99	11-29-99	ug/kg
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	Dup of SS-27B
Chloromethane		12 U	26 U	1 J	130 U	12 U	13 U
Bromomethane		12 U	26 U	14 U	130 U	12 U	13 U
Vinyl Chloride	200	12 U	26 U	14 U	130 U	12 U	13 U
Chloroethane	1900	12 U	26 U	14 U	130 U	12 U	13 U
Methylene Chloride	100	12 U	7 J	14 U	19 J	12 U	13 U
Acetone	200	12 U	98 BS	74	1200 B	49	56
Carbon Disulfide	2700	12 U	16 J	5 J	130 U	2 J	13 U
1,1-Dichloroethene	400	12 U	26 U	14 U	130 U	12 U	13 U
1,1-Dichloroethane	200	12 U	26 U	14 U	130 U	3 J	13 U
1,2-Dichloroethene (Total)	300	12 U	26 U	14 U	130 U	12 U	13 U
Chloroform	300	12 U	26 U	14 U	130 U	12 U	13 U
1,2-Dichloroethane	100	12 U	26 U	14 U	130 U	12 U	13 U
2-Butanone	300	12 U	33	27	100 J	14	17
1,1,1-Trichloroethane	800	12 U	26 U	14 U	130 U	69	13 U
Carbon Tetrachloride	600	12 U	26 U	14 U	130 U	12 U	13 U
Bromodichloromethane		12 U	26 U	14 U	130 U	12 U	13 U
1,2-Dichloropropane		12 U	26 U	14 U	130 U	12 U	13 U
cis-1,3-Dichloropropene		12 U	26 U	14 U	130 U	12 U	13 U
Trichloroethene	700	12 U	26 U	14 U	130 U	12 U	13 U
Dibromochloromethane		12 U	26 U	14 U	130 U	12 U	13 U
1,1,2-Trichloroethane		12 U	26 U	14 U	130 U	12 U	13 U
Benzene	60	12 U	26 U	200	16 J	2 J	2 J
trans-1,3-Dichloropropene		12 U	26 U	14 U	130 U	12 U	13 U
Bromoform		12 U	26 U	14 U	130 U	12 U	13 U
4-Methyl-2-Pentanone	1000	12 U	26 U	14 U	130 U	12 U	13 U
2-Hexanone		12 U	26 U	14 U	130 U	12 U	13 U
Tetrachloroethene	1400	12 U	26 U	14 U	130 U	12 U	13 U
1,1,2,2-Tetrachloroethane	600	12 UJ	26 U	14 U	130 UJ	12 U	13 U
Toluene	1500	3 J	25 UJ	2 J	79 J	5 J	24
Chlorobenzene	1700	12 U	290	41	130 U	3 J	63
Ethylbenzene	550	2 J	88	4 J	20 J	13	12 J
Styrene		12 U	26 U	2 J	130 U	12 U	13 U
Xylene (Total)	1200	15	400	35	100 J	190	140

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION SAMPLE DEPTH LAB ID DATE COLLECTED UNITS	TAGM 4046 Recommended Soil Cleanup Objectives ug/kg	FB112999 62355011 11-29-99 ug/l	TB112999 62355012 11-29-99 ug/l	FB 113099 62364007 11-30-99 ug/l	TB 113099 62364008 11-30-99 ug/l	DUP120199 62383012 12-01-99 ug/kg Dup of 26A Surface	FB120199 62383013 12-01-99 ug/l	TB120199 62383014 12-01-99 ug/l
Chloromethane		10 U	10 U	10 U	10 U	14 U	10 U	10 U
Bromomethane		10 UJ	10 U	10 U	10 UJ	14 U	10 U	10 U
Vinyl Chloride	200	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Chloroethane	1900	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Methylene Chloride	100	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Acetone	200	10 U	10 U	5 J	4 J	2 JS	4 J	10 U
Carbon Disulfide	2700	10 U	10 U	10 U	10 U	14 U	10 U	10 U
1,1-Dichloroethene	400	10 U	10 U	10 U	10 U	14 U	10 U	10 U
1,1-Dichloroethane	200	10 UJ	10 U	10 U	10 UJ	14 U	10 U	10 U
1,2-Dichloroethene (Total)	300	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Chloroform	300	10 U	11	10 U	10	14 U	10 U	10
1,2-Dichloroethane	100	10 U	10 U	10 U	10 U	14 U	10 U	10 U
2-Butanone	300	10 U	10 U	10 U	10 U	14 U	10 U	10 U
1,1,1-Trichloroethane	800	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Carbon Tetrachloride	600	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Bromodichloromethane		10 U	10 U	10 U	10 U	14 U	10 U	10 U
1,2-Dichloropropane		10 U	10 U	10 U	10 U	14 U	10 U	10 U
cis-1,3-Dichloropropene		10 U	10 U	10 U	10 U	14 U	10 U	10 U
Trichloroethene	700	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Dibromochloromethane		10 U	10 U	10 U	10 U	14 U	10 U	10 U
1,1,2-Trichloroethane		10 U	10 U	10 U	10 U	14 U	10 U	10 U
Benzene	60	10 U	10 U	10 U	10 U	14 UJ	10 U	10 U
trans-1,3-Dichloropropene		10 U	10 U	10 U	10 U	14 U	10 U	10 U
Bromoform		10 U	10 U	10 U	10 U	14 U	10 U	10 U
4-Methyl-2-Pentanone	1000	10 U	10 U	10 U	10 U	14 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	14 U	10 U	10 U
Tetrachloroethene	1400	10 U	10 U	10 U	10 U	14 U	10 U	10 U
1,1,2,2-Tetrachloroethane	600	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Toluene	1500	10 U	10 U	10 U	10 U	3 J	10 U	10 U
Chlorobenzene	1700	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Ethylbenzene	550	10 U	10 U	10 U	10 U	14 U	10 U	10 U
Styrene		10 U	10 U	10 U	10 U	14 U	10 U	10 U
Xylene (Total)	1200	10 U	10 U	10 U	10 U	9 J	10 U	10 U

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TAGM 4046	SS-23 AA	SS-23C	SS-24A	SS-24B	SS-25 AA	SS-25 B	SS-26B	SS-25 C
SAMPLE DEPTH	Recommended	10'	8'	11'	SURFACE	13'	13.5'	8'	2.5'-3.5'
LAB ID	Soil Cleanup	62364001	62355009	62383002	62383001	62364002	62364003	62383011	62364004
DATE COLLECTED	Objectives	11-30-99	11-29-99	12-01-99	12-01-99	11-30-99	11-30-99	12-01-99	11-30-99
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol	30	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
bis(-2-Chloroethyl)Ether		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2-Chlorophenol	800	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
1,3-Dichlorobenzene	1,600	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
1,4-Dichlorobenzene	8,500	720 J	360 U	1600	420 U	530 J	470 J	2900	380 U
1,2-Dichlorobenzene	7,900	350 J	360 U	1100 U	420 U	950 U	820 U	1200	380 U
2-Methylphenol	100	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,2-oxybis(1-Chloropropane)		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
4-Methylphenol	900	1200 U	360 U	1100 U	420 U	140 J	170 J	600	380 U
N-Nitroso-di-n-propylamine		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Hexachloroethane		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Nitrobenzene	200	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Isophorone	4,400	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2-Nitrophenol	330	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,4-Dimethylphenol		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,4-Dichlorophenol		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
1,2,4-Trichlorobenzene	3,400	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Naphthalene	13,000	4700	360 U	5800	420 U	1300	3100	2100	380 U
4-Chloroaniline	220	1200 U	360 U	1100 U	420 U	950 U	150 J	540 U	380 U
bis(2-Chloroethoxy)methane		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Hexachlorobutadiene		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
4-Chloro-3-methylphenol	240	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2-Methylnaphthalene	36,400	640 J	360 U	1500	420 U	830 J	910	380 J	380 U
Hexachlorocyclopentadiene		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,4,6-Trichlorophenol		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,4,5-Trichlorophenol	100	2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U
2-Chloronaphthalene		1200 U	360 U	1100 U	420 U	950 U	160 J	540 U	380 U
2-Nitroaniline	430	2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U
Dimethylphthalate	2,000	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Acenaphthylene	41,000	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,6-Dinitrotoluene	1,000	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
3-Nitroaniline	500	2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U
Acenaphthene	50,000	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,4-Dinitrophenol	200	2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TAGM 4046 Recommended	SS-23 AA 10'	SS-23C 8'	SS-24A 11'	SS-24B SURFACE	SS-25 AA 13'	SS-25 B 13.5'	SS-26B 8'	SS-25 C 2.5'-3.5'
SAMPLE DEPTH	Soil Cleanup	62364001	62355009	62383002	62383001	62364002	62364003	62383011	62364004
LAB ID	Objectives	11-30-99	11-29-99	12-01-99	12-01-99	11-30-99	11-30-99	12-01-99	11-30-99
DATE COLLECTED	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
UNITS									
4-Nitrophenol	100	2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U
Dibenzofuran	6,200	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
2,4-Dinitrotoluene		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Diethylphthalate	7,100	1200 U	360 U	1400	420 U	170 J	120 J	540 U	380 U
4-Chlorophenyl-phenylether		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Fluorene	50,000	180 J	360 U	1100 U	420 U	170 J	130 J	540 U	380 U
4-Nitroaniline		2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U
4,6-Dinitro-2-methylphenol		2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U
N-Nitrosodiphenylamine (1)		160 J	360 U	1100 U	420 U	290 J	820 U	540 U	380 U
4-Bromophenyl-phenylether		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Hexachlorobenzene	410	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Pentachlorophenol	1,000	2900 U	900 U	2600 U	1000 U	2400 U	2100 U	1300 U	940 U
Phenanthrene	50,000	920 J	360 U	1100 U	420 U	600 J	390 J	540 U	380 U
Anthracene	50,000	1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Carbazole		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Di-n-butylphthalate	8,100	250 J	360 U	1100 U	420 U	650 J	390 J	470 J	380 U
Fluoranthene	50,000	640 J	360 U	1100 U	420 U	210 J	210 J	540 U	380 U
Pyrene	50,000	770 J	360 U	1100 U	420 U	680 J	470 J	540 U	380 U
Butylbenzylphthalate	50,000	1100 J	360 U	1100 U	420 U	11000 D	770 J	540 U	380 U
3,3-Dichlorobenzidine		1200 U	360 U	1100 U	420 U	950 U	820 U	540 U	380 U
Benzo(a)anthracene	224	200 J	360 U	1100 U	420 U	130 J	110 J	540 U	380 U
Chrysene	400	240 J	360 U	1100 U	420 U	150 J	110 J	540 U	380 U
bis(2-Ethylhexyl)phthalate	50,000	16000 D	44 J	28000 D	420 U	18000 D	240000 D	3800	44 J
Di-n-octylphthalate	50,000	1200 UJ	360 UJ	26000 DJ	420 U	950 U	83 J	540 U	380 U
Benzo(b)fluoranthene	1,100	260 J	360 UJ	4200 U	420 U	120 J	94 J	540 U	380 U
Benzo(k)fluoranthene	1,100	120 J	360 UJ	4200 U	420 UJ	950 UJ	820 UJ	540 UJ	380 UJ
Benzo(a)pyrene	61	130 J	360 UJ	850 DJ	420 U	950 UJ	820 UJ	540 U	380 U
Indeno(1,2,3-cd)pyrene	3,200	1200 UJ	360 UJ	450 DJ	420 U	950 UJ	820 UJ	540 U	380 U
Dibenzo(a,h)anthracene	14	1200 UJ	360 UJ	4200 U	420 U	950 UJ	820 UJ	540 U	380 U
Benzo(g,h,i)perylene	50,000	1200 UJ	360 UJ	490 DJ	420 U	950 UJ	820 UJ	540 U	380 U
Total PAHs		8800	0	9090	0	4190	5524	2480	0
Cacinogenic PAHs		950	0	1790	0	400	314	0	0
BaP Equivalants		177.44	0	895	0	25.15	20.51	0	0

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TAGM 4046	SS-25 D	SS-25F	SS-26A	SS-26A	SS-27A	SS-27B	SS-27D	SS-27E
SAMPLE DEPTH	Recommended	SURFACE	2'	SURFACE	6'	15'	15'	14'	8-9'
LAB ID	Soil Cleanup	62364005	62355007	62383004	62383005	62355003	62355006	62355008	62355005
DATE COLLECTED	Objectives	11-30-99	11-29-99	12-01-99	12-01-99	11-29-99	11-29-99	11-29-99	11-29-99
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol	30	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
bis(-2-Chloroethyl)Ether		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2-Chlorophenol	800	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
1,3-Dichlorobenzene	1,600	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
1,4-Dichlorobenzene	8,500	77 J	370 U	110 J	1200	840 J	680	270 J	300 J
1,2-Dichlorobenzene	7,900	380 U	370 U	410 U	620 U	170 J	92 J	82 J	420 U
2-Methylphenol	100	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2,2-oxybis(1-Chloropropane)		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
4-Methylphenol	900	380 U	370 U	410 U	180 J	210 J	48 J	170 J	170 J
N-Nitroso-di-n-propylamine		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Hexachloroethane		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Nitrobenzene	200	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Isophorone	4,400	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2-Nitrophenol	330	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2,4-Dimethylphenol		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2,4-Dichlorophenol		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
1,2,4-Trichlorobenzene	3,400	380 U	370 U	410 U	310 J	1000 U	400 U	610 U	420 U
Naphthalene	13,000	380 U	370 U	70 J	270 J	1700	1600	360 J	620
4-Chloroaniline	220	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
bis(2-Chloroethoxy)methane		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Hexachlorobutadiene		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
4-Chloro-3-methylphenol	240	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2-Methylnaphthalene	36,400	380 U	370 U	410 U	190 J	650 J	2200	140 J	160 J
Hexachlorocyclopentadiene		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2,4,6-Trichlorophenol		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2,4,5-Trichlorophenol	100	960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U
2-Chloronaphthalene		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2-Nitroaniline	430	960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U
Dimethylphthalate	2,000	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Acenaphthylene	41,000	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
2,6-Dinitrotoluene	1,000	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
3-Nitroaniline	500	960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U
Acenaphthene	50,000	380 U	370 U	410 U	620 U	1000 U	170 J	610 U	420 U
2,4-Dinitrophenol	200	960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION SAMPLE DEPTH LAB ID DATE COLLECTED UNITS	TAGM 4046 Recommended Soil Cleanup Objectives ug/kg	SS-25 D SURFACE 62364005 11-30-99 ug/kg	SS-25F 2' 62355007 11-29-99 ug/kg	SS-26A SURFACE 62383004 12-01-99 ug/kg	SS-26A 6' 62383005 12-01-99 ug/kg	SS-27A 15' 62355003 11-29-99 ug/kg	SS-27B 15' 62355006 11-29-99 ug/kg	SS-27D 14' 62355008 11-29-99 ug/kg	SS-27E 8-9' 62355005 11-29-99 ug/kg
4-Nitrophenol	100	960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U
Dibenzofuran	6,200	380 U	370 U	410 U	620 U	1000 U	68 J	610 U	420 U
2,4-Dinitrotoluene		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Diethylphthalate	7,100	380 U	370 U	410 U	84 J	1000 U	76 J	610 U	420 U
4-Chlorophenyl-phenylether		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Fluorene	50,000	380 U	370 U	410 U	620 U	1000 U	280 J	610 U	420 U
4-Nitroaniline		960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U
4,6-Dinitro-2-methylphenol		960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U
N-Nitrosodiphenylamine (1)		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
4-Bromophenyl-phenylether		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Hexachlorobenzene	410	380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Pentachlorophenol	1,000	960 U	930 U	1000 U	1500 U	2600 U	1000 U	1500 U	1100 U
Phenanthrene	50,000	380 U	370 U	410 U	92 J	180 J	830	610 U	170 J
Anthracene	50,000	380 U	370 U	410 U	620 U	1000 U	120 J	610 U	420 U
Carbazole		380 U	370 U	410 U	620 U	1000 U	400 U	610 U	420 U
Di-n-butylphthalate	8,100	380 U	370 U	410 U	110 J	5800	270 J	610 U	630
Fluoranthene	50,000	380 U	370 U	410 U	620 U	1000 U	170 J	610 U	160 J
Pyrene	50,000	380 U	370 U	410 U	620 U	200 J	1000 J	610 U	250 J
Butylbenzylphthalate	50,000	380 U	370 U	410 U	130 J	1300 J	930 J	610 U	990 J
3,3-Dichlorobenzidine		380 U	370 U	410 U	620 U	1000 UJ	4000 U	610 U	420 UJ
Benzo(a)anthracene	224	380 U	370 U	410 U	620 U	1000 UJ	4000 U	610 U	58 J
Chrysene	400	380 U	370 U	410 U	620 U	1000 UJ	220 J	610 U	63 J
bis(2-Ethylhexyl)phthalate	50,000	47 J	42 J	410 U	7100 D	6000 DJ	16000 D	1900	5500 D
Di-n-octylphthalate	50,000	380 U	370 U	410 U	620 U	1000 UJ	2900 J	610 U	290 J
Benzo(b)fluoranthene	1,100	380 U	370 U	410 U	620 U	1000 UJ	150 J	610 U	420 UJ
Benzo(k)fluoranthene	1,100	380 U	370 U	410 UJ	620 UJ	1000 UJ	62 J	610 U	420 UJ
Benzo(a)pyrene	61	380 U	370 U	410 U	620 U	1000 UJ	160 J	610 U	420 UJ
Indeno(1,2,3-cd)pyrene	3,200	380 U	370 U	410 U	620 U	1000 UJ	86 J	610 U	420 UJ
Dibenzo(a,h)anthracene	14	380 U	370 U	410 U	620 U	1000 UJ	4000 U	610 U	420 UJ
Benzo(g,h,i)perylene	50,000	380 U	370 U	410 U	620 U	1000 UJ	130 J	610 U	420 UJ
Total PAHs		0	0	70	552	1030	7246	500	1481
Cacinogenic PAHs		0	0	0	0	0	808	0	121
BaP Equivalents		0	0	0	0	0	184.44	0	5.863

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TAGM 4046	SS-28B	SS-28D	SS-29E	SS-30-B	SS-30B	SS-30C	SS-30C	SS-31B
SAMPLE DEPTH	Recommended	SURFACE	SURFACE	9'	SURFACE	12'	SURFACE	3'	13'
LAB ID	Soil Cleanup	62383010	62383009	62355004	62383003	62383006	62383007	62383008	62355001
DATE COLLECTED	Objectives	12-01-99	12-01-99	11-29-99	12-01-99	12-01-99	12-01-99	12-01-99	11-29-99
UNITS	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Phenol	30	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
bis-(2-Chloroethyl)Ether		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2-Chlorophenol	800	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
1,3-Dichlorobenzene	1,600	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
1,4-Dichlorobenzene	8,500	490 U	420 U	380 U	420 U	380 U	410 U	670	180 J
1,2-Dichlorobenzene	7,900	490 U	420 U	380 U	420 U	380 U	410 U	120 J	190 J
2-Methylphenol	100	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2,2-oxybis(1-Chloropropane)		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
4-Methylphenol	900	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
N-Nitroso-di-n-propylamine		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Hexachloroethane		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Nitrobenzene	200	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Isophorone	4,400	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2-Nitrophenol	330	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2,4-Dimethylphenol		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2,4-Dichlorophenol		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
1,2,4-Trichlorobenzene	3,400	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Naphthalene	13,000	490 U	420 U	2600	420 U	380 U	410 U	770	1400
4-Chloroaniline	220	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
bis(2-Chloroethoxy)methane		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Hexachlorobutadiene		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
4-Chloro-3-methylphenol	240	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2-Methylnaphthalene	36,400	490 U	420 U	630	420 U	380 U	410 U	1100	490 J
Hexachlorocyclopentadiene		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2,4,6-Trichlorophenol		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2,4,5-Trichlorophenol	100	1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U
2-Chloronaphthalene		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
2-Nitroaniline	430	1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U
Dimethylphthalate	2,000	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Acenaphthylene	41,000	490 U	420 U	87 J	420 U	380 U	410 U	550 U	1200 U
2,6-Dinitrotoluene	1,000	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
3-Nitroaniline	500	1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U
Acenaphthene	50,000	490 U	420 U	360 J	420 U	380 U	410 U	550 U	1200 U
2,4-Dinitrophenol	200	1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION SAMPLE DEPTH LAB ID DATE COLLECTED UNITS	TAGM 4046 Recommended Soil Cleanup Objectives ug/kg	SS-28B SURFACE 62383010 12-01-99 ug/kg	SS-28D SURFACE 62383009 12-01-99 ug/kg	SS-29E 9' 62355004 11-29-99 ug/kg	SS-30-B SURFACE 62383003 12-01-99 ug/kg	SS-30B 12' 62383006 12-01-99 ug/kg	SS-30C SURFACE 62383007 12-01-99 ug/kg	SS-30C 3' 62383008 12-01-99 ug/kg	SS-31B 13' 62355001 11-29-99 ug/kg
4-Nitrophenol	100	1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U
Dibenzofuran	6,200	490 U	420 U	320 J	420 U	380 U	410 U	550 U	1200 U
2,4-Dinitrotoluene		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Diethylphthalate	7,100	490 U	420 U	380 U	420 U	380 U	410 U	550 U	160 J
4-Chlorophenyl-phenylether		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Fluorene	50,000	490 U	420 U	520	420 U	380 U	410 U	550 U	1200 U
4-Nitroaniline		1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U
4,6-Dinitro-2-methylphenol		1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U
N-Nitrosodiphenylamine (1)		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
4-Bromophenyl-phenylether		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Hexachlorobenzene	410	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Pentachlorophenol	1,000	1200 U	1000 U	960 U	1000 U	960 U	1000 U	1400 U	2900 U
Phenanthrene	50,000	490 U	120 J	2700	420 U	380 U	410 U	550 U	320 J
Anthracene	50,000	490 U	420 U	490	420 U	380 U	410 U	550 U	1200 U
Carbazole		490 U	420 U	440	420 U	380 U	410 U	550 U	1200 U
Di-n-butylphthalate	8,100	490 U	420 U	380 U	420 U	380 U	410 U	170 J	240 J
Fluoranthene	50,000	88 J	140 J	1600	420 U	380 U	410 U	250 J	120 J
Pyrene	50,000	79 J	110 J	1500	420 U	380 U	410 U	330 J	260 J
Butylbenzylphthalate	50,000	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1900
3,3-Dichlorobenzidine		490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 U
Benzo(a)anthracene	224	490 U	47 J	460	420 U	380 U	410 U	550 U	1200 U
Chrysene	400	490 U	53 J	450	420 U	380 U	410 U	550 U	1200 U
bis(2-Ethylhexyl)phthalate	50,000	490 U	420 U	54 J	420 U	380 U	410 U	3300	75000 D
Di-n-octylphthalate	50,000	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 UJ
Benzo(b)fluoranthene	1,100	58 J	420 U	390	420 U	380 U	410 U	550 U	1200 UJ
Benzo(k)fluoranthene	1,100	490 UJ	420 UJ	190 J	420 UJ	380 UJ	410 UJ	550 UJ	1200 UJ
Benzo(a)pyrene	61	490 U	420 U	300 J	420 U	380 U	410 U	550 U	1200 UJ
Indeno(1,2,3-cd)pyrene	3,200	490 U	420 U	170 J	420 U	380 U	410 U	550 U	1200 UJ
Dibenzo(a,h)anthracene	14	490 U	420 U	380 U	420 U	380 U	410 U	550 U	1200 UJ
Benzo(g,h,i)perylene	50,000	490 U	420 U	150 J	420 U	380 U	410 U	550 U	1200 UJ
Total PAHs		225	470	12340	0	0	0	2450	2590
Cacinogenic PAHs		58	100	2110	0	0	0	0	0
BaP Equivalents		5.8	4.753	104.35	0	0	0	0	0

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TAGM 4046	SS-31C	SS-32 B	DUP112999	FB112999	FB 113099	DUP120199	FB120199
SAMPLE DEPTH	Recommended	7'	6'	62355010			62383012	
LAB ID	Soil Cleanup	62355002	62364006	11-29-99	62355011	62364007	Dup of 26A Surface	62383013
DATE COLLECTED	Objectives	11-29-99	11-30-99	ug/kg	11-29-99	11-30-99	12-01-99	12-01-99
UNITS	ug/kg	ug/kg	ug/kg	Dup of SS-27B	ug/l	ug/l	ug/kg	ug/l
Phenol	30	440 U	710 U	400 U	10 U	10 U	420 U	10 U
bis(-2-Chloroethyl)Ether		440 U	710 U	400 U	10 U	10 U	420 U	10 U
2-Chlorophenol	800	440 U	710 U	400 U	10 U	10 U	420 U	10 U
1,3-Dichlorobenzene	1,600	440 U	710 U	400 U	10 U	10 U	420 U	10 U
1,4-Dichlorobenzene	8,500	65 J	200 J	1200	10 U	10 U	420 U	10 U
1,2-Dichlorobenzene	7,900	440 U	710 U	150 J	10 U	10 U	420 U	10 U
2-Methylphenol	100	440 U	710 U	400 U	10 U	10 U	420 U	10 U
2,2-oxybis(1-Chloropropane)		440 U	710 U	400 U	10 U	10 U	420 U	10 U
4-Methylphenol	900	440 U	710 U	400 U	10 U	10 U	420 U	10 U
N-Nitroso-di-n-propylamine		440 U	710 U	400 U	10 U	10 U	420 U	10 U
Hexachloroethane		440 U	710 U	400 U	10 U	10 U	420 U	10 U
Nitrobenzene	200	440 U	710 U	400 U	10 U	10 U	420 U	10 U
Isophorone	4,400	440 U	710 U	400 U	10 U	10 U	420 U	10 U
2-Nitrophenol	330	440 U	710 U	400 U	10 U	10 U	420 U	10 U
2,4-Dimethyphenol		440 U	710 U	400 U	10 U	10 U	420 U	10 U
2,4-Dichlorophenol		440 U	710 U	400 U	10 U	10 U	420 U	10 U
1,2,4-Trichlorobenzene	3,400	440 U	710 U	42 J	10 U	10 U	420 U	10 U
Naphthalene	13,000	49 J	200 J	970	10 U	10 U	420 U	10 U
4-Chloroaniline	220	440 U	710 U	400 U	10 U	10 U	420 U	10 U
bis(2-Chloroethoxy)methane		440 U	710 U	400 U	10 U	10 U	420 U	10 U
Hexachlorobutadiene		440 U	710 U	400 U	10 U	10 U	420 U	10 U
4-Chloro-3-methylphenol	240	440 U	710 U	400 U	10 U	10 U	420 U	10 U
2-Methylnaphthalene	36,400	440 U	710 U	600	10 U	10 U	420 U	10 U
Hexachlorocyclopentadiene		440 U	710 U	400 U	10 U	10 U	420 U	10 U
2,4,6-Trichlorophenol		440 U	710 U	400 U	10 U	10 U	420 U	10 U
2,4,5-Trichlorophenol	100	1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U
2-Chloronaphthalene		440 U	710 U	400 U	10 U	10 U	420 U	10 U
2-Nitroaniline	430	1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U
Dimethylphthalate	2,000	440 U	710 U	400 U	10 U	10 U	420 U	10 U
Acenaphthylene	41,000	440 U	710 U	400 U	10 U	10 U	420 U	10 U
2,6-Dinitrotoluene	1,000	440 U	710 U	400 U	10 U	10 U	420 U	10 U
3-Nitroaniline	500	1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U
Acenaphthene	50,000	440 U	710 U	52 J	10 U	10 U	420 U	10 U
2,4-Dinitrophenol	200	1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION SAMPLE DEPTH LAB ID DATE COLLECTED UNITS	TAGM 4046 Recommended Soil Cleanup Objectives ug/kg	SS-31C 7' 62355002 11-29-99 ug/kg	SS-32 B 6' 62364006 11-30-99 ug/kg	DUP112999 62355010 11-29-99 ug/kg Dup of SS-27B	FB112999 62355011 11-29-99 ug/l	FB 113099 62364007 11-30-99 ug/l	DUP120199 62383012 Dup of 26A Surface 12-01-99 ug/kg	FB120199 62383013 12-01-99 ug/l
4-Nitrophenol	100	1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U
Dibenzofuran	6,200	440 U	710 U	400 U	10 U	10 U	420 U	10 U
2,4-Dinitrotoluene		440 U	710 U	400 U	10 U	10 U	420 U	10 U
Diethylphthalate	7,100	440 U	710 U	130 J	10 U	10 U	420 U	10 U
4-Chlorophenyl-phenylether		440 U	710 U	400 U	10 U	10 U	420 U	10 U
Fluorene	50,000	440 U	710 U	74 J	10 U	10 U	420 U	10 U
4-Nitroaniline		1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U
4,6-Dinitro-2-methylphenol		1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U
N-Nitrosodiphenylamine (1)		440 U	710 U	400 U	10 U	10 U	420 U	10 U
4-Bromophenyl-phenylether		440 U	710 U	400 U	10 U	10 U	420 U	10 U
Hexachlorobenzene	410	440 U	710 U	400 U	10 U	10 U	420 U	10 U
Pentachlorophenol	1,000	1100 U	1800 U	990 U	25 U	25 U	1000 U	25 U
Phenanthrene	50,000	440 U	160 J	250 J	10 U	10 U	420 U	10 U
Anthracene	50,000	440 U	710 U	50 J	10 U	10 U	420 U	10 U
Carbazole		440 U	710 U	58 J	10 U	10 U	420 U	10 U
Di-n-butylphthalate	8,100	220 J	110 J	120 J	10 U	10 U	420 U	10 U
Fluoranthene	50,000	440 U	420 J	110 J	10 U	10 U	420 U	10 U
Pyrene	50,000	440 U	660 J	260 J	10 U	10 U	420 U	10 U
Butylbenzylphthalate	50,000	440 U	100 J	4900 D	10 U	10 U	420 U	10 U
3,3-Dichlorobenzidine		440 U	710 U	400 U	10 U	10 U	420 U	10 U
Benzo(a)anthracene	224	440 U	250 J	55 J	10 U	10 U	420 U	10 U
Chrysene	400	440 U	260 J	57 J	10 U	10 U	420 U	10 U
bis(2-Ethylhexyl)phthalate	50,000	7300 D	2100	9900 D	10 U	10 U	420 U	10 U
Di-n-octylphthalate	50,000	440 U	710 UJ	5200 J	10 U	10 U	420 U	10 U
Benzo(b)fluoranthene	1,100	440 U	410 J	62 J	10 U	10 U	420 U	10 U
Benzo(k)fluoranthene	1,100	440 U	150 J	23 J	10 U	10 U	420 UJ	10 U
Benzo(a)pyrene	61	440 U	240 J	400 UJ	10 U	10 U	420 U	10 U
Indeno(1,2,3-cd)pyrene	3,200	440 U	130 J	400 UJ	10 U	10 U	420 U	10 U
Dibenzo(a,h)anthracene	14	440 U	710 U	400 UJ	10 U	10 U	420 U	10 U
Benzo(g,h,i)perylene	50,000	440 U	110 J	400 UJ	10 U	10 U	420 U	10 U
Total PAHs		49	2990	2563	0	0	0	0
Cacinogenic PAHs		0	1550	197	0	0	0	0
BaP Equivalents		0	320.76	11.987	0	0	0	0

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION	TAGM 4046	SS-23 AA	SS-23C	SS-24A	SS-24B	SS-25 AA	SS-25 B	SS-25 C
SAMPLE DEPTH	Recommended	10'	8'	11'	SURFACE	13'	13.5'	2.5'-3.5'
LAB ID	Soil Cleanup	62364001	62355009	62383002	62383001	62364002	62364003	62364004
DATE COLLECTED	Objectives	11-30-99	11-29-99	12-01-99	12-01-99	11-30-99	11-30-99	11-30-99
ANALYTE	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
alpha-BHC	110	6 U	1.9 U	5.3 U	2.1 U	4.8 U	15 PJ	1.9 U
beta-BHC	200	6 U	1.9 U	5.3 U	2.1 U	16 J	4.7 PJ	1.9 U
delta-BHC	300	14 P	1.9 U	5.3 U	2.1 U	7.3 P	4.2 U	1.9 U
gamma-BHC (Lindane)	60	6 U	1.9 U	5.3 U	2.1 U	4.8 U	4.2 U	1.9 U
Heptachlor	100	29 P	1.9 U	23 P	2.1 U	16 P	9.8 P	1.9 U
Aldrin	41	14 P	1.9 U	8.5 P	2.1 U	41	4.2 U	1.9 U
Heptachlor epoxide	20	36 P	1.9 U	17 P	2.1 U	17 P	10 P	1.9 U
Endosulfan I	900	6 U	1.9 U	5.3 U	2.1 U	12 P	4.2 U	1.9 U
Dieldrin	44	53 P	3.6 U	10 U	4 U	48	8.3	3.8 U
4,4-DDE	2,100	46	3.6 U	10 U	4 U	32	8.1 U	3.8 U
Endrin	100	12 U	3.6 U	10 U	4 U	9.3 U	8.1 U	3.8 U
Endosulfan II	900	22 P	3.6 U	10 U	4 U	11 P	8.1 U	3.8 U
4,4-DDD	2,900	39 P	3.6 U	10 U	4 U	28	8.1 U	3.8 U
Endosulfan sulfate	1,000	12 P	3.6 U	10 U	4 U	9.3 U	8.1 U	3.8 U
4,4-DDT	2,100	13 P	3.6 U	10 U	4 U	9.3 U	8.1 U	3.8 U
Methoxychlor	***	60 U	19 U	53 U	21 U	48 U	67 P	19 U
Endrin ketone	N/A	12 U	3.6 U	10 U	4 U	9.3 U	8.1 U	3.8 U
Endrin aldehyde		12 U	3.6 U	10 U	4 U	9.3 U	8.1 U	3.8 U
alpha-Chlordane	540	6 U	1.9 U	5.3 U	2.1 U	11 P	4.2 U	1.9 U
gamma-Chlordane	540	32 P	1.9 U	5.5 P	2.1 U	25 P	9.7 P	1.9 U
Toxaphene		600 U	190 U	530 U	210 U	480 U	420 U	190 U
Aroclor-1016	1,000-surface 10,000-subsurface	120 U	36 U	100 U	40 U	93 U	81 U	38 U
Aroclor-1221	1,000-surface 10,000-subsurface	240 U	74 U	210 U	82 U	190 U	160 U	76 U
Aroclor-1232	1,000-surface 10,000-subsurface	120 U	36 U	100 U	40 U	93 U	81 U	38 U
Aroclor-1242	1,000-surface 10,000-subsurface	1300	36 U	1200 P	40 U	620 P	570	38 U
Aroclor-1248	1,000-surface 10,000-subsurface	120 U	36 U	100 U	40 U	93 U	81 U	38 U
Aroclor-1254	1,000-surface 10,000-subsurface	700 P	36 U	100 U	40 U	700	93 P	38 U
Aroclor-1260	1,000-surface 10,000-subsurface	120 U	36 U	100 U	40 U	93 U	81 U	38 U

***: As per TAGM #4046, Total VOCs < 10 ppm.

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION SAMPLE DEPTH LAB ID DATE COLLECTED ANALYTE	TAGM 4046 Recommended Soil Cleanup Objectives ug/kg	SS-25 D SURFACE 62364005 11-30-99 ug/kg	SS-25F 2' 62355007 11-29-99 ug/kg	SS-26A SURFACE 62383004 12-01-99 ug/kg	SS-26A 6' 62383005 12-01-99 ug/kg	SS-26B 8' 62383011 12-01-99 ug/kg	SS-27A 15' 62355003 11-29-99 ug/kg	SS-27B 15' 62355006 11-29-99 ug/kg	SS-27D 14' 62355008 11-29-99 ug/kg	SS-27E 8-9' 62355005 11-29-99 ug/kg
alpha-BHC	110	1.9 U	1.9 U	2 U	3.1 U	2.7 U	2.6 U	2 U	3.1 U	2.2 U
beta-BHC	200	1.9 U	1.9 U	2 U	3.1 U	2.7 U	2.6 U	2 U	3.1 U	2.2 U
delta-BHC	300	1.9 U	1.9 U	2 U	3.1 U	2.7 U	3	2 U	3.1 U	3 P
gamma-BHC (Lindane)	60	1.9 U	1.9 U	2 U	3.1 U	2.7 U	2.6 U	2 U	3.1 U	2.2 U
Heptachlor	100	1.9 U	1.9 U	2.9 P	3.1 U	2.7 U	4.5 P	3.9 P	3.1 U	3.8 P
Aldrin	41	1.9 U	1.9 U	2 U	3.1 U	2.7 U	2.6 U	64 PD	3.1 U	6.8 P
Heptachlor epoxide	20	1.9 U	1.9 U	2 U	3.1 U	3.1 P	6.2	3.5 P	3.1 U	10
Endosulfan I	900	1.9 U	1.9 U	2 U	3.1 U	2.7 U	2.6 U	3.7 P	3.1 U	6.4 P
Dieldrin	44	3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.1 U	15 P	5.9 U	11 P
4,4-DDE	2,100	3.8 U	3.6 U	4 U	7.5	5.3 U	8.9 P	17 P	5.9 U	5.9 P
Endrin	100	3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.1 U	4 U	5.9 U	4.3 U
Endosulfan II	900	3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.1 U	4 U	5.9 U	4.3 U
4,4-DDD	2,900	3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.9 P	66 PD	5.9 U	14
Endosulfan sulfate	1,000	3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.1 U	4 U	5.9 U	4.3 U
4,4-DDT	2,100	3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.1 U	4 U	5.9 U	4.3 U
Methoxychlor	***	19 U	19 U	20 U	31 U	27 U	26 U	20 U	31 U	22 U
Endrin ketone	N/A	3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.1 U	4 U	5.9 U	4.3 U
Endrin aldehyde		3.8 U	3.6 U	4 U	6.1 U	5.3 U	5.2 P	4 U	5.9 U	4.3 U
alpha-Chlordane	540	1.9 U	1.9 U	2 U	3.1 U	2.7 U	2.6 U	3	3.1 U	5.6 P
gamma-Chlordane	540	1.9 U	1.9 U	2 U	4.3	3.5 P	5.9	4.6 P	3.1 U	13 P
Toxaphene		190 U	190 U	200 U	310 U	270 U	260 U	200 U	310 U	220 U
Aroclor-1016	1,000-surface 10,000-subsurface	38 U	36 U	40 U	61 U	53 U	51 U	40 U	59 U	43 U
Aroclor-1221	1,000-surface 10,000-subsurface	77 U	74 U	80 U	120 U	110 U	100 U	81 U	120 U	87 U
Aroclor-1232	1,000-surface 10,000-subsurface	38 U	36 U	40 U	61 U	53 U	51 U	40 U	59 U	43 U
Aroclor-1242	1,000-surface 10,000-subsurface	38 U	36 U	210	61 U	140	210	130 P	80	190 P
Aroclor-1248	1,000-surface 10,000-subsurface	38 U	36 U	40 U	61 U	53 U	51 U	40 U	59 U	43 U
Aroclor-1254	1,000-surface 10,000-subsurface	38 U	36 U	40 U	120 P	68 P	120	88 P	59 U	270
Aroclor-1260	1,000-surface 10,000-subsurface	38 U	36 U	40 U	61 U	53 U	51 U	40 U	59 U	43 U

***: As per TAGM #4046, Total VOCs<10 ppm.

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION	TAGM 4046	SS-28B	SS-28D	SS-29E	SS-30-B	SS-30B	SS-30C	SS-30C	SS-31B	SS-31C
SAMPLE DEPTH	Recommended	SURFACE	SURFACE	9'	SURFACE	12'	SURFACE	3'	13'	7'
LAB ID	Soil Cleanup	62383010	62383009	62355004	62383003	62383006	62383007	62383008	62355001	62355002
DATE COLLECTED	Objectives	12-01-99	12-01-99	11-29-99	12-01-99	12-01-99	12-01-99	12-01-99	11-29-99	11-29-99
ANALYTE	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
alpha-BHC	110	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	6.1 U	2.2 U
beta-BHC	200	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	6.1 U	2.2 U
delta-BHC	300	2.5 U	2.1 U	2.1 P	2.2 U	2 U	2.1 U	2.8 U	8.9	2.2 U
gamma-BHC (Lindane)	60	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	6.1 U	2.2 U
Heptachlor	100	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	6.1 U	2.2 U
Aldrin	41	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	6.1 U	2.2 U
Heptachlor epoxide	20	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	17 P	2.9 P
Endosulfan I	900	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	6.1 U	2.2 U
Dieldrin	44	4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	14	4.3 U
4,4-DDE	2,100	4.9 U	4.1 U	6.1	4.2 U	3.8 U	4 U	6	12 U	4.3 U
Endrin	100	4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	12 U	4.3 U
Endosulfan II	900	4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	12 U	4.4 P
4,4-DDD	2,900	4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	12 U	4.3 U
Endosulfan sulfate	1,000	4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	12 U	4.3 U
4,4-DDT	2,100	4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	12 U	4.3 U
Methoxychlor	***	25 U	21 U	19 U	22 U	20 U	21 U	28 U	61 U	22 U
Endrin ketone	N/A	4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	12 U	4.3 U
Endrin aldehyde		4.9 U	4.1 U	3.8 U	4.2 U	3.8 U	4 U	5.3 U	12 U	4.3 U
alpha-Chlordane	540	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	2.8 U	6.1 U	2.2 U
gamma-Chlordane	540	2.5 U	2.1 U	1.9 U	2.2 U	2 U	2.1 U	5.1	9.3 P	2.9 P
Toxaphene		250 U	210 U	190 U	220 U	200 U	210 U	280 U	610 U	220 U
Aroclor-1016	1,000-surface 10,000-subsurface	49 U	41 U	38 U	42 U	38 U	40 U	53 U	120 U	43 U
Aroclor-1221	1,000-surface 10,000-subsurface	99 U	84 U	77 U	85 U	78 U	81 U	110 U	240 U	88 U
Aroclor-1232	1,000-surface 10,000-subsurface	49 U	41 U	38 U	42 U	38 U	40 U	53 U	120 U	43 U
Aroclor-1242	1,000-surface 10,000-subsurface	49 U	41 U	45 P	42 U	38 U	40 U	88	340	51 P
Aroclor-1248	1,000-surface 10,000-subsurface	49 U	41 U	38 U	42 U	38 U	40 U	53 U	120 U	43 U
Aroclor-1254	1,000-surface 10,000-subsurface	49 U	41 U	38 U	42 U	38 U	40 U	100	120 U	48 P
Aroclor-1260	1,000-surface 10,000-subsurface	49 U	41 U	38 U	42 U	38 U	40 U	53 U	120 U	43 U

***: As per TAGM #4046, Total VOCs<10 ppm.

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION SAMPLE DEPTH LAB ID DATE COLLECTED ANALYTE	TAGM 4046 Recommended Soil Cleanup Objectives ug/kg	SS-32 B 6' 62364006 11-30-99 ug/kg	DUP112999 62355010 11-29-99 ug/kg Dup of SS-27B	FB112999 62355011 11-29-99 ug/l	FB 113099 62364007 11-30-99 ug/l	DUP120199 62383012 12-01-99 ug/kg Dup of 26A Surface	FB120199 62383013 12-01-99 ug/l
alpha-BHC	110	3.7 U	.05 U	.05 U	.05 U	2.1 U	.05 U
beta-BHC	200	3.7 U	.05 U	.05 U	.05 U	2.1 U	.05 U
delta-BHC	300	3.9 P	.05 U	.05 U	.05 U	2.1 U	.05 U
gamma-BHC (Lindane)	60	5.4 P	.05 U	.05 U	.05 U	2.1 U	.05 U
Heptachlor	100	7.6 P	.05 U	.05 U	.05 U	2.1 U	.05 U
Aldrin	41	3.7 U	.05 U	.05 U	.05 U	2.1 U	.05 U
Heptachlor epoxide	20	13 P	.05 U	.05 U	.05 U	2.1 U	.05 U
Endosulfan I	900	12	.05 U	.05 U	.05 U	2.1 U	.05 U
Dieldrin	44	12 P	.1 U	.1 U	.1 U	4.2 U	.1 U
4,4-DDE	2,100	9.6 P	.1 U	.1 U	.1 U	4.2 U	.1 U
Endrin	100	7.1 U	.1 U	.1 U	.1 U	4.2 U	.1 U
Endosulfan II	900	7.1 U	.1 U	.1 U	.1 U	4.2 U	.1 U
4,4-DDD	2,900	25	.1 U	.1 U	.1 U	4.2 U	.1 U
Endosulfan sulfate	1,000	7.1 U	.1 U	.1 U	.1 U	4.2 U	.1 U
4,4-DDT	2,100	7.1 U	.1 U	.1 U	.1 U	4.2 U	.1 U
Methoxychlor	***	37 U	.5 U	.5 U	.5 U	21 U	.5 U
Endrin ketone	N/A	7.1 U	.1 U	.1 U	.1 U	4.2 U	.1 U
Endrin aldehyde		7.1 U	.1 U	.1 U	.1 U	4.2 U	.1 U
alpha-Chlordane	540	11	.05 U	.05 U	.05 U	2.1 U	.05 U
gamma-Chlordane	540	26	.05 U	.05 U	.05 U	2.1 U	.05 U
Toxaphene		370 U	5 U	5 U	5 U	210 U	5 U
Aroclor-1016	1,000-surface 10,000-subsurface	71 U	1 U	1 U	1 U	42 U	1 U
Aroclor-1221	1,000-surface 10,000-subsurface	140 U	2 U	2 U	2 U	84 U	2 U
Aroclor-1232	1,000-surface 10,000-subsurface	71 U	1 U	1 U	1 U	42 U	1 U
Aroclor-1242	1,000-surface 10,000-subsurface	320	1 U	1 U	1 U	42 U	1 U
Aroclor-1248	1,000-surface 10,000-subsurface	71 U	1 U	1 U	1 U	42 U	1 U
Aroclor-1254	1,000-surface 10,000-subsurface	200 P	1 U	1 U	1 U	42 U	1 U
Aroclor-1260	1,000-surface 10,000-subsurface	71 U	1 U	1 U	1 U	42 U	1 U

***: As per TAGM #4046, Total VOCs<10 ppm.

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Inorganics

Sample Location Sample Depth Lab ID Date Collected Units	Eastern USA Background (ppm)	TAGM 4046 Recommended Soil Cleanup Objective (ppm)	Site Background Concentration* (ppm)	SS-23 AA 10' 62364001 11-30-99 mg/kg	SS-23C 8' 62355009 11-29-99 mg/kg	SS-24A 11' 62383002 12-01-99 mg/kg	SS-24B SURFACE 62383001 12-01-99 mg/kg	SS-25 AA 13' 62364002 11-30-99 mg/kg	SS-25 B 13.5' 62364003 11-30-99 mg/kg
Aluminum	33,000	SB	14,319	41600	10500	9960	11100	15800	7460
Antimony	N/A	SB	1.95	1.3 U	R	346	0.43 U	9.1 B	0.73 U
Arsenic	3-12 **	7.5 or SB	7	5.6 B	6	5	5.9	8.1	3.1 B
Barium	15-600	300 or SB	80	126 B	50.8	143	46.6	276	106
Beryllium	0-1.75	0.16 or SB	0.64	0.43 B	0.48 B	0.17 B	0.52 B	0.3 B	0.096 B
Cadmium	0.1-1	10 or SB ****	1.41	3 B	0.45 B	2.4 B	0.15 B	5.7	1.9
Calcium	130 - 35,000 **	SB	2946	23100	2500	38900	2330	27900	18600
Chromium	1.5 - 40 **	50 or SB****	18.5	112	13.9	26.6	12.8 J	339	23.9
Cobalt	2.5 - 60 **	30 or SB	9.3	11.7 B	10 B	10.2 B	10.2 B	18.6 B	8.3 B
Copper	1-50	25 or SB	17.5	67.8	25.3	37.7	19.7	2210	143
Cyanide	N/A	N/A	N/A	2	0.31 U	0.26 B	0.22 B	0.35 B	2.8
Iron	2,000 - 550,000	200-500 or SB****	23,723	104000	24400	57600	22600	95500	62000
Lead	***	SB	28	374	14.5 J	266	14.3	3130	191
Magnesium	100 - 5,000	SB	4390	6730	4090	4540	4470	6030	1430 B
Manganese	50 - 5,000	SB	514	707	751	990	775	1170	1940
Mercury	0.001-0.2	0.1	0.12	0.66	0.71 J	0.54	0.06 U	0.48	0.11 U
Nickel	0.5- 25	13 or SB	18.6	47.1	27	51.7	25.7	458	42.7
Potassium	8,500 - 43,000 **	SB	1041	1150 B	1010 B	633 B	825 B	1450 B	560 B
Selenium	0.1- 3.9	2 or SB	1.4	39.4	4.5	2.4 U	15.4	39.2	17.5
Silver	N/A	SB	2.2	R	R	5.8	1.4 B	R	R
Sodium	6,000 - 8,000	SB	162	911 B	86.5 B	1180 B	67.3 B	2080 B	1080 B
Thallium	N/A	SB	2.42	2.6 U	1 B	2.3 B	0.87 U	2 U	1.5 U
Vanadium	1-300	150 or SB	23	25.9 B	17.8	13.5 B	17.4	23.9 B	8.3 B
Zinc	9-50	20 or SB	55	678	74.3	791	60.1	1970	1290

* : Site background (SB) concentrations estimated to be 95% UCL of average site background concentrations (see Table 1-2 for calculation)

** : New York State background

*** : Average Levels in undeveloped, rural areas may range from 4-61 ppm.

****: Interim criteria used by the NYSDEC.

Exceeds Site Background Value, or for calcium, iron, magnesium, potassium, and sodium, exceeds Eastern Background Concentration as noted in TAGM 4046

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Inorganics

Sample Location Sample Depth Lab ID Date Collected Units	Eastern USA Background (ppm)	TAGM 4046 Recommended Soil Cleanup Objective (ppm)	Site Background Concentration* (ppm)	SS-25 C 2.5'-3.5' 62364004 11-30-99 mg/kg	SS-25 D SURFACE 62364005 11-30-99 mg/kg	SS-25F 2' 62355007 11-29-99 mg/kg	SS-26A SURFACE 62383004 12-01-99 mg/kg	SS-26A 6' 62383005 12-01-99 mg/kg	SS-26B 8' 62383011 12-01-99 mg/kg
Aluminum	33,000	SB	14,319	12300	13300	13500	12700	35500	6680
Antimony	N/A	SB	1.95	0.34 U	0.4 U	0.32 U	0.34 U	1 U	0.69 U
Arsenic	3-12 **	7.5 or SB	7	4.4	5.2	5.8	3	11.8	3.9
Barium	15-600	300 or SB	80	56	61.5	60.6	55.8	98 B	79.3
Beryllium	0-1.75	0.16 or SB	0.64	0.55 B	0.55 B	0.55 B	0.57 B	1.6 B	0.15 B
Cadmium	0.1-1	10 or SB ****	1.41	0.26 B	0.11 B	0.49 B	0.034 B	0.64 B	0.56 B
Calcium	130 - 35,000 **	SB	2946	437 B	337 B	1370	194 B	2550 B	14000
Chromium	1.5 - 40 **	50 or SB****	18.5	15.4	13.2	15.7	13.5	70.3	15.9
Cobalt	2.5 - 60 **	30 or SB	9.3	8.4	8 B	12.4	8 B	22.7 B	7.1 B
Copper	1-50	25 or SB	17.5	22.6	17.5	26.9	16.3	126	18.2
Cyanide	N/A	N/A	N/A	0.049 U	0.048 B	0.037	0.051 B	0.43 B	14.7
Iron	2,000 - 550,000	200-500 or SB****	23,723	22900	19400	26100	16900	71700	68400
Lead	***	SB	28	15.6	32.5	18.4	24.9	173	48.1
Magnesium	100 - 5,000	SB	4390	4290	3450	4860	4060	15900	2510
Manganese	50 - 5,000	SB	514	258	345	1080	183	589	521
Mercury	0.001- 0.2	0.1	0.12	0.057 U	0.06 B	0.056 U	R	R	R
Nickel	0.5- 25	13 or SB	18.6	27.8	20.6	30.1	21.9	148	23.2
Potassium	8,500 - 43,000 **	SB	1041	661 B	410 B	1200	563 B	1730 B	570 B
Selenium	0.1- 3.9	2 or SB	1.4	23.1	21.4	10.8	17.7	67.2	1.7 U
Silver	N/A	SB	2.2	R	R	R	0.82 B	8.3	4.5
Sodium	6,000 - 8,000	SB	162	76.8 B	27.1 U	92.8 B	34.9 B	285 B	535 B
Thallium	N/A	SB	2.42	0.67 U	0.81 U	0.63 U	0.68 U	2.1 U	1.4 U
Vanadium	1-300	150 or SB	23	18.4	18.6	19.5	17.8	55.2	14.4 B
Zinc	9-50	20 or SB	55	109	96	80	57.5	321	168

* : Site background (SB) concentrations estimated to be 95% UCL of average site background concentrations (see Table 1-2 for calculation)

** : New York State background

*** : Average Levels in undeveloped, rural areas may range from 4-61 ppm.

****: Interim criteria used by the NYSDEC.

Exceeds Site Background Value, or for calcium, iron, magnesium, potassium, and sodium, exceeds Eastern Background Concentration as noted in TAGM 4046

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Inorganics

Sample Location Sample Depth Lab ID Date Collected Units	Eastern USA Background (ppm)	TAGM 4046 Recommended Soil Cleanup Objective (ppm)	Site Background Concentration* (ppm)	SS-27A 15' 62355003 11-29-99 mg/kg	SS-27B 15' 62355006 11-29-99 mg/kg	SS-27D 14' 62355008 11-29-99 mg/kg	SS-27E 8-9' 62355005 11-29-99 mg/kg	SS-28B SURFACE 62383010 12-01-99 mg/kg	SS-28D SURFACE 62383009 12-01-99 mg/kg	SS-29E 9' 62355004 11-29-99 mg/kg
Aluminum	33,000	SB	14,319	11600	12500	17800	11000	11900	11800	13300
Antimony	N/A	SB	1.95	0.5 U	0.45 U	0.49 U	0.46 U	0.54 UJ	0.46 U	0.32 U
Arsenic	3-12 **	7.5 or SB	7	5.5	5.8	6.1	5.4	2.3 B	4.9	6.1
Barium	15-600	300 or SB	80	54.3	1220	73.2	79.2	45.4 B	53.5	52.7
Beryllium	0-1.75	0.16 or SB	0.64	0.43 B	0.47 B	0.68 B	0.4 B	0.43 B	0.48 B	0.56 B
Cadmium	0.1-1	10 or SB ****	1.41	1.4	4.4	0.95 B	2.5	0.027 U	0.12 B	0.39 B
Calcium	130 - 35,000 **	SB	2946	5660	4510	2300	3240	269 B	435 B	3140
Chromium	1.5 - 40 **	50 or SB****	18.5	20.6	55.8	25.6	27.4	10.9	11	16.1
Cobalt	2.5 - 60 **	30 or SB	9.3	11.1 B	10 B	14.7	9 B	5.3 B	7.4 B	11.9
Copper	1-50	25 or SB	17.5	44.8	37.3	42	42.3	9.2	13.1	25.2
Cyanide	N/A	N/A	N/A	0.046 B	0.74	0.055	0.1 B	0.86 J	0.19 B	0.032 U
Iron	2,000 - 550,000	200-500 or SB****	23,723	38100	25300	37500	37600	14800	17900	25600
Lead	***	SB	28	105	116	47.4	122	16.5	23.9	19.9
Magnesium	100 - 5,000	SB	4390	5250	5240	5580	3890	3070	3170	5220
Manganese	50 - 5,000	SB	514	642	621	1420	680	185 J	849	976
Mercury	0.001- 0.2	0.1	0.12	0.065 U	0.26	0.15	0.11 B	0.059 U	0.057 U	0.048 U
Nickel	0.5- 25	13 or SB	18.6	32.3	31	37.2	31.9	17.3	17.7	29.7
Potassium	8,500 - 43,000 **	SB	1041	1560	655 B	910 B	808 B	448 B	561 B	817
Selenium	0.1- 3.9	2 or SB	1.4	5.8	1.8	12.8	10	6.3 J	7.2	6
Silver	N/A	SB	2.2	R	47.2	R	R	0.67 B	0.92 B	R
Sodium	6,000 - 8,000	SB	162	955 B	639 B	310 B	359 B	36.2 U	30.8 U	130 B
Thallium	N/A	SB	2.42	1 U	0.9 B	1.3 B	1.8 B	1.1 U	0.92 U	0.64 U
Vanadium	1-300	150 or SB	23	17.3	17.4	28.8	17.1	15.8	18.2	20.5
Zinc	9-50	20 or SB	55	340	987	231	496	50.6	59.5	72

* : Site background (SB) concentrations estimated to be 95% UCL of average site background concentrations (see Table 1-2 for calculation)

** : New York State background

*** : Average Levels in undeveloped, rural areas may range from 4-61 ppm.

****: Interim criteria used by the NYSDEC.

Exceeds Site Background Value, or for calcium, iron, magnesium, potassium, and sodium, exceeds Eastern Background Concentration as noted in TAGM 4046

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Inorganics

Sample Location Sample Depth Lab ID Date Collected Units	Eastern USA Background (ppm)	TAGM 4046 Recommended Soil Cleanup Objective (ppm)	Site Background Concentration* (ppm)	SS-30-B SURFACE 62383003 12-01-99 mg/kg	SS-30B 12' 62383006 12-01-99 mg/kg	SS-30C SURFACE 62383007 12-01-99 mg/kg	SS-30C 3' 62383008 12-01-99 mg/kg	SS-31B 13' 62355001 11-29-99 mg/kg	SS-31C 7' 62355002 11-29-99 mg/kg
Aluminum	33,000	SB	14,319	11100	13000	11700	12600	4140	12800
Antimony	N/A	SB	1.95	0.37 U	0.31 U	0.33 U	0.4 U	2.4 B	0.34 U
Arsenic	3-12 **	7.5 or SB	7	4.7	4.7	4.8	4.9	2.6 U	3.9
Barium	15-600	300 or SB	80	51.3	51.5	45.1	74.3	206	54.9
Beryllium	0-1.75	0.16 or SB	0.64	0.49 B	0.56 B	0.45 B	0.5 B	0.13 U	0.52 B
Cadmium	0.1-1	10 or SB ****	1.41	0.033 B	0.015 U	0.016 U	3.7	2.9 B	0.37 B
Calcium	130 - 35,000 **	SB	2946	161 B	2800	116 B	1330	38400	1070
Chromium	1.5 - 40 **	50 or SB****	18.5	11.1	15	11.6	19.2	52	14.8
Cobalt	2.5 - 60 **	30 or SB	9.3	9 B	13.3	8.9	10.2	3.9 B	10
Copper	1-50	25 or SB	17.5	12.3	21.6	12	31.3	44.4	20.2
Cyanide	N/A	N/A	N/A	0.06 U	0.055 U	0.099 B	0.13 B	0.49 B	0.077 B
Iron	2,000 - 550,000	200-500 or SB****	23,723	18700	24100	19300	22400	45400	22700
Lead	***	SB	28	17.2	15.9	15.6	94.9	380	27.9
Magnesium	100 - 5,000	SB	4390	3160	4660	3400	4460	6440	4120
Manganese	50 - 5,000	SB	514	821	851	940	266	1280	637
Mercury	0.001- 0.2	0.1	0.12	R	0.048 U	0.058 U	R	1.8	0.058 U
Nickel	0.5- 25	13 or SB	18.6	18.6	27.7	19.4	27.9	18 B	25.2
Potassium	8,500 - 43,000 **	SB	1041	469 B	1070	619 B	1040	716 B	793 B
Selenium	0.1- 3.9	2 or SB	1.4	19.9	15.5	20	18.2	3.2 U	10
Silver	N/A	SB	2.2	1.1 B	1.2 B	1 B	1.2 B	R	R
Sodium	6,000 - 8,000	SB	162	26.5 B	153 B	21.8 U	198 B	1810 B	81.8 B
Thallium	N/A	SB	2.42	0.89 B	0.72 B	0.65 U	0.81 U	2.6 U	0.69 U
Vanadium	1-300	150 or SB	23	17.2	18.9	17.1	18.4	11.6 B	18.7
Zinc	9-50	20 or SB	55	50.2	80.2	46.8	251	888	70.2

* : Site background (SB) concentrations estimated to be 95% UCL of average site background concentrations (see Table 1-2 for calculation)

** : New York State background

*** : Average Levels in undeveloped, rural areas may range from 4-61 ppm.

****: Interim criteria used by the NYSDEC.

Exceeds Site Background Value, or for calcium, iron, magnesium, potassium, and sodium, exceeds Eastern Background Concentration as noted in TAGM 4046

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

Inorganics

Sample Location Sample Depth Lab ID Date Collected Units	Eastern USA Background (ppm)	TAGM 4046 Recommended Soil Cleanup Objective (ppm)	Site Background Concentration* (ppm)	SS-32 B 6' 62364006 11-30-99 mg/kg	DUP112999 62355010 62355010 11-29-99 mg/kg	DUP120199 62383012 62383012 12-01-99 mg/kg	FB112999 62355011 11-29-99 ug/l	FB 113099 62364007 11-30-99 ug/l	FB120199 62383013 12-01-99 ug/l
Aluminum	33,000	SB	14,319	5070	13600	11500	20 U	20 U	20 U
Antimony	N/A	SB	1.95	2.8 B	0.43 U	0.45 U	2 U	2 U	2 U
Arsenic	3-12 **	7.5 or SB	7	5.1	3.7	5.7	4 U	4 U	4 U
Barium	15-600	300 or SB	80	52.8 B	59.8	46.2	18 B	12 B	13.5 B
Beryllium	0-1.75	0.16 or SB	0.64	0.12 B	0.57 B	0.49 B	0.2 U	0.2 U	0.2 U
Cadmium	0.1-1	10 or SB ****	1.41	6.5	0.47 B	0.022 U	1.2 B	0.53 B	0.62 B
Calcium	130 - 35,000 **	SB	2946	2240 B	1080 B	90.1 B	203 U	203 U	203 U
Chromium	1.5 - 40 **	50 or SB****	18.5	76	19	12.4	1.8 B	2.1 B	0.88 B
Cobalt	2.5 - 60 **	30 or SB	9.3	7.7 B	13.1	8.1 B	1.5 B	0.85 B	0.92 B
Copper	1-50	25 or SB	17.5	95.4	26.8	11.2	7.3 B	1.4 B	1.7 B
Cyanide	N/A	N/A	N/A	9.1	0.065 B	0.077 B	1 U	1 U	1.9 B
Iron	2,000 - 550,000	200-500 or SB****	23,723	192000	23600	20600	27.3 B	20.2 B	22 B
Lead	***	SB	28	248	19.3	17.1	9	5.6	4.7
Magnesium	100 - 5,000	SB	4390	1260 B	4800	3100	38.2 B	22.1 B	29.5 B
Manganese	50 - 5,000	SB	514	450	542	743	2.6 B	1.8 B	1.8 B
Mercury	0.001- 0.2	0.1	0.12	1	0.14	0.048 U	0.14 U	0.14 U	0.13 U
Nickel	0.5- 25	13 or SB	18.6	139	31.8	18.5	2.1 B	1.6 B	0.7 B
Potassium	8,500 - 43,000 **	SB	1041	376 B	1120	424 B	185 B	107 B	74 U
Selenium	0.1- 3.9	2 or SB	1.4	176	9.9	8.2	5 U	5 U	5 U
Silver	N/A	SB	2.2	R	1.2 B	1 B	R	R	1.3 B
Sodium	6,000 - 8,000	SB	162	530 B	138 B	29.9 U	134 U	134 U	134 U
Thallium	N/A	SB	2.42	1.9 U	0.9 B	0.89 U	4 U	4 U	4 U
Vanadium	1-300	150 or SB	23	15.7 B	20	17.8	0.55 B	0.4 U	0.4 U
Zinc	9-50	20 or SB	55	722	153	45.7	22	13.4 B	13 U

* : Site background (SB) concentrations estimated to be 95% UCL of average site background concentrations (see Table 1-2 for calculation)

** : New York State background

*** : Average Levels in undeveloped, rural areas may range from 4-61 ppm.

****: Interim criteria used by the NYSDEC.

Exceeds Site Background Value, or for calcium, iron, magnesium, potassium, and sodium, exceeds Eastern Background Concentration as noted in TAGM 4046

TABLE 1-1
Test Pit Investigation
November, 1999
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- TAGM - New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046 "Determination of Soil 4046 Cleanup Objectives and Cleanup Levels" dated January 24, 1994
- RSCO - Recommended Soil Cleanup Objective
- ug/kg - Microgram per kilogram
- ug/l - Microgram per liter
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls
- N/A - Not Available

Duplicate Samples

- DUP112999 Corresponds to SS-27B
- DUP120199 Corresponds to SS-26A Surface

TABLE 1-1A
Monitoring Well Installation
Soil Sampling - February thru March 2000
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION	TAGM 4046 Recommended	MW-06 6'-8'	MW-07D 6'-10'	MW-08 16'-18'	MW-09D 22'-24'	MW-10 6'-12'	MW-11 16'-18'	MW-12 8'-12'	MW-13 12'-14'
SAMPLE DEPTH	Soil Clean -up	2-11-00	2-23-00	2-17-00	2-21-00	2-24-00	3-2-00	3-1-00	3-2-00
DATE COLLECTED	Objectives	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
UNITS	(ug/Kg)								
ANALYTE									
Chloromethane		11U	11U	16U	13U	13U	11U	11U	10U
Bromomethane		11U	11U	16U	13U	13U	11U	11U	10U
Vinyl chloride	200	11U	11U	16U	13U	13U	11U	11U	10U
Chloroethane	1900	11U	11U	16U	13U	13U	11U	11U	10U
Methylene chloride	100	11U	10J	16U	3J	2J	11U	11U	10U
Acetone	200	11UJ	11UJ	28U	46	96	11UJ	11UJ	10UJ
Carbon disulfide	2700	11U	11U	16U	13U	13U	11U	11U	10U
1,1-Dichloroethene	400	11U	11U	16U	13U	13U	11U	11U	10U
1,1-Dichloroethane	200	11U	11U	16U	13U	13U	11U	11U	10U
1,2-Dichloroethene (Total)	300	11U	11U	16U	13U	13U	11U	11U	10U
Chloroform	300	11U	11U	16U	13U	13U	11U	11U	10U
1,2-Dichloroethane	100	11U	11U	16U	13U	13U	11U	11U	10U
2-Butanone	300	11U	11UJ	16U	13U	21	11UJ	2J	10UJ
1,1,1-Trichloroethane	800	11U	11U	16U	13U	13U	11U	11U	10U
Carbon tetrachloride	600	11U	11U	16U	13U	13U	11U	11U	10U
Bromodichloromethane		11U	11U	16U	13U	13U	11U	11U	10U
1,2-Dichloropropane		11U	11U	16U	13U	13U	11U	11U	10U
cis-1,3-Dichloropropene		11U	11U	16U	13U	13U	11U	11U	10U
Trichloroethene	700	3J	11U	16U	13U	13U	11U	11U	10U
Dibromochloromethane		11U	11U	16U	13U	13U	11U	11U	10U
1,1,2-Trichloroethane		11U	11U	16U	13U	13U	11U	11U	10U
Benzene	60	11U	11U	4J	3J	13U	11U	11U	10U
trans-1,3-Dichloropropene		11U	11U	16U	13U	13U	11U	11U	10U
Bromoform		11U	11U	16U	13U	13U	11U	11U	10U
4-Methyl-2-pentanone	1000	11U	11UJ	16U	13U	13U	11UJ	11UJ	10UJ
2-Hexanone		11UJ	11UJ	2J	13U	13U	11UJ	11UJ	10UJ
Tetrachloroethene	1400	11UJ	11U	16U	13U	13U	11U	11U	10U
1,1,2,2-Tetrachloroethane	600	11UJ	11U	16U	13U	13U	11U	11U	10U
Toluene	1500	11U	11U	2J	13U	13U	11U	11U	10U
Chlorobenzene	1700	11U	11U	27	25	13U	11U	11U	10U
Ethylbenzene	5500	11U	11U	7J	13U	13U	11U	11U	10U
Styrene		11U	11U	16U	13U	13U	11U	11U	10U
Xylene (total)	1200	11U	11U	100	16	3J	11U	11U	10U
Sum of Constituents		3	10	140	93.00	122.00	0	2	0

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1A
Monitoring Well Installation
Soil Sampling - February thru March 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TAGM 4046	MW-06	MW-07D	MW-08	MW-09D	MW-10	MW-11	MW-12	MW-13
SAMPLE DEPTH	Recommended	6'-8'	6'-10'	16'-18'	22'-24'	6'-12'	16'-18'	8'-12'	12'-14'
DATE COLLECTED	Soil Clean -up	2-11-00	2-23-00	2-17-00	2-21-00	2-24-00	3-2-00	3-1-00	3-2-00
UNITS	Objectives	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
ANALYTE	(ug/Kg)								
Phenol	30	360U	390U	1100U	430U	440U	380U	380U	370U
bis(-2-Chloroethyl)Ether		360U	390U	1100U	430U	440U	380U	380U	370U
2-Chlorophenol	800	360U	390U	1100U	430U	440U	380U	380U	370U
1,3-Dichlorobenzene	1,600	360U	390U	1100U	430U	440U	380U	380U	370U
1,4-Dichlorobenzene	8,500	360U	390U	1300	130J	440U	380U	380U	370U
1,2-Dichlorobenzene	7,900	360U	390U	660J	430U	440U	380U	380U	370U
2-Methylphenol	100	360U	390U	1100U	430U	440U	380U	380U	370U
2,2-oxybis(1-Chloropropane)		360UJ	390U	1100U	430U	440U	380U	380U	370U
4-Methylphenol	900	360U	390U	1100U	430U	440U	380U	380U	370U
N-Nitroso-di-n-propylamine		360U	390U	1100U	430U	440U	380U	380U	370U
Hexachloroethane		360U	390U	1100U	430U	440U	380U	380U	370U
Nitrobenzene	200	360U	390U	1100U	430U	440U	380U	380U	370U
Isophorone	4,400	360U	390U	1100U	430U	440U	380U	380U	370U
2-Nitrophenol	330	360U	390U	1100U	430U	440U	380U	380U	370U
2,4-Dimethylphenol		360U	390U	1100U	430U	440U	380U	380U	370U
2,4-Dichlorophenol	400	360U	390U	1100U	430U	440U	380U	380U	370U
1,2,4-Trichlorobenzene	3,400	360U	390U	1100U	52J	440U	380U	380U	370U
Naphthalene	13,000	360U	390U	4100	300J	440U	380U	380U	370U
4-Chloroaniline	220	360UJ	390U	1100U	430U	440U	380U	380U	370U
Bis(2-chloroethoxy)methane		360U	390U	1100U	430U	440U	380U	380U	370U
Hexachlorobutadiene		360U	390U	1100U	430U	440U	380U	380U	370U
4-Chloro-3-methylphenol	240	360U	390U	1100U	430U	440U	380U	380U	370U
2-Methylnaphthalene	36,400	360U	390U	420J	220J	440U	380U	380U	370U
Hexachlorocyclopentadiene		360U	390UJ	1100U	430U	440U	380UJ	380UJ	370UJ
2,4,6-Trichlorophenol		360U	390U	1100U	430U	440U	380U	380U	370U
2,4,5-Trichlorophenol	100	910U	960U	2800U	1100U	1100U	950U	940U	920U
2-Chloronaphthalene		360U	390U	1100U	430U	440U	380U	380U	370U
2-Nitroaniline	430	910UJ	960U	2800U	1100U	1100U	950U	940U	920U
Dimethylphthalate	2,000	360U	390U	1100U	430U	440U	380U	380U	370U
Acenaphthylene	41,000	360U	390U	1100U	430U	440U	380U	380U	370U
2,6-Dinitrotoluene	1,000	360U	390U	1100U	430U	440U	380U	380U	370U
3-Nitroaniline	500	910UJ	960U	2800U	1100U	1100U	950U	940U	920U
Acenaphthene	50,000	360U	390U	1100U	430U	440U	380U	380U	370U
2,4-Dinitrophenol	200	910U	960U	2800U	1100U	1100U	950U	940U	920U

TABLE 1-1A
Monitoring Well Installation
Soil Sampling - February thru March 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TAGM 4046	MW-06	MW-07D	MW-08	MW-09D	MW-10	MW-11	MW-12	MW-13
SAMPLE DEPTH	Recommended	6'-8'	6'-10'	16'-18'	22'-24'	6'-12'	16'-18'	8'-12'	12'-14'
DATE COLLECTED	Soil Clean -up	2-11-00	2-23-00	2-17-00	2-21-00	2-24-00	3-2-00	3-1-00	3-2-00
UNITS	Objectives	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
ANALYTE	(ug/Kg)								
4-Nitrophenol	100	910U	960U	2800U	1100U	1100U	950U	940U	920U
Dibenzofuran	6,200	360U	390U	1100U	430U	440U	380U	380U	370U
2,4-Dinitrotoluene		360U	390U	1100U	430U	440U	380U	380U	370U
Diethylphthalate	7,100	360U	390U	1100U	430U	440U	380U	380U	370U
4-chlorophenyl-phenylether		360U	390U	1100U	430U	440U	380U	380U	370U
Fluorene	50,000	360U	390U	1100U	430U	440U	380U	380U	370U
4-Nitroaniline		910UJ	960U	2800U	1100U	1100U	950U	940U	920U
4,6-Dinitro-2-methylphenol		910U	960U	2800U	1100U	1100U	950U	940U	920U
N-Nitrosodiphenylamine (1)		360U	390U	180J	140J	440U	380U	380U	370U
Hexachlorobenzene	410	360U	390U	1100U	430U	440U	380U	380U	370U
Pentachlorophenol	1,000	910U	960U	2800U	1100U	1100U	950U	940U	920U
Phenanthrene	50,000	360U	390U	420J	120J	440U	380U	380U	370U
Anthracene	50,000	0.36U	0.39U	1.1U	0.43U	0.44U	380U	380U	370U
Carbazole		360U	390U	1100U	430U	440U	380U	380U	370U
Di-n-butylphthalate	8,100	360U	390U	1100U	54J	440U	380U	380U	370U
Fluoranthene	50,000	360U	390U	1100U	430U	440U	380U	380U	370U
Pyrene	50,000	360U	390U	290J	66J	440U	380U	380U	370U
3,3-Dichlorobenzidine		360U	390U	1100U	430U	440U	380U	380U	370U
Butylbenzylphthalate	50,000	360U	390U	4300	430U	440U	380U	380U	370U
Benzo(a)anthracene	224	360U	390U	1100U	430U	440U	380U	380U	370U
Chrysene	400	360U	390U	1100U	430U	440U	380U	380U	370U
Bis(2-ethylhexyl)phthalate	50,000	44J	390U	10000DJ	570	96J	380U	380U	370U
Di-n-octylphthalate	50,000	360U	390UJ	1100UJ	430U	440U	380UJ	380UJ	370UJ
Benzo(b)fluoranthene	1,100	360U	390U	1100UJ	430U	440U	380U	380U	370U
Benzo(k)fluoranthene	1,100	360U	390U	1100UJ	430U	440U	380U	380U	370U
Benzo(a)pyrene	61	360U	390U	1100UJ	430U	440U	380U	380U	370U
Indeno(1,2,3-cd)pyrene	3,200	360U	390U	1100UJ	430U	440U	380U	380U	370U
Dibenzo(a,h)anthracene	14	360U	390U	1100UJ	430U	440U	380U	380U	370U
Benzo(g,h,i)perylene	50,000	360U	390U	1100UJ	430U	440U	380U	380U	370U
Total PAHs		0	0	5230	706	0	0	0	0
Cacinogenic PAHs		0	0	0	0	0	0	0	0
BaP Equivalents		0	0	0	0	0	0	0	0
Sum of Constituents		44.00	0	21670	1652.00	96.00	0	0	0

Bolded: Detected Concentration

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1A
Monitoring Well Installation
Soil Sampling - February thru March 2000
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION	TAGM 4046	MW-06	MW-07D	MW-08	MW-09D	MW-10	MW-11	MW-12	MW-13
SAMPLE DEPTH	Recommended	6'-8'	6'-10'	16'-18'	22'-24'	6'-12'	16'-18'	8'-12'	12'-14'
DATE COLLECTED	Soil Clean -up	2-11-00	2-23-00	2-17-00	2-21-00	2-24-00	3-2-00	3-1-00	3-2-00
UNIT	Objectives (ug/Kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
alpha-BHC	110	1.9U	2.0U	2.9U	2U	2U	1.9U	1.9U	1.9U
beta-BHC	200	1.9U	2.0U	3.6J	2U	2U	1.9U	1.9U	1.9U
delta-BHC	300	1.9U	2.0U	10J	3J	2J	1.9U	1.9U	1.9U
gamma-BHC (Lindane)	60	1.9U	2.0U	2.9U	2U	2U	1.9U	1.9U	1.9U
Heptachlor	100	1.9U	2.0U	2.9U	10J	2U	1.9U	1.9U	1.9U
Aldrin	41	1.9U	2.0U	11J	2U	2U	1.9U	1.9U	1.9U
Heptachlor Epoxide	20	1.9U	2.0U	2.9U	2U	2U	1.9U	1.9U	1.9U
Endosulfan I	900	1.9U	2.0U	2.9U	2U	2U	1.9U	1.9U	1.9U
Dieldrin	44	3.6U	3.8U	13J	4U	4U	3.8U	3.7U	3.7U
4,4'-DDE	2100	3.6U	3.8U	6.4J	67J	4U	3.8U	3.7U	3.7U
Endrin	100	3.6U	3.8U	5.5U	4U	4U	3.8U	3.7U	3.7U
Endosulfan II	900	3.6U	3.8U	5.5U	26J	4U	3.8U	3.7U	3.7U
4,4'-DDD	2900	3.6U	3.8U	11J	4U	4U	3.8U	3.7U	3.7U
Endosulfan Sulfate	1000	3.6U	3.8U	5.5U	4U	4U	3.8U	3.7U	3.7U
4,4'-DDT	2100	3.6U	3.8U	5.5U	4U	4U	3.8U	3.7U	3.7U
Methoxychlor	***	19U	20U	29U	60J	22U	19U	19U	19U
Endrin Ketone		3.6U	3.8U	5.5U	9J	4U	3.8U	3.7U	3.7U
Endrin Aldehyde	5	3.6U	3.8U	5.5U	14J	4U	3.8U	3.7U	3.7U
alpha-Chlordane	540	1.9U	2.0U	16J	2U	2U	1.9U	1.9U	1.9U
gamma-Chlordane	540	1.9U	2.0U	9.4J	30J	2U	1.9U	1.9U	1.9U
Toxaphene		190U	200U	290U	220U	220U	190U	190U	190U
Aroclor-1016	1,000-surface 10,000-subsurface	36U	38U	55U	42U	42U	38U	37U	37U
Aroclor-1221	1,000-surface 10,000-subsurface	73U	78U	110U	86U	86U	76U	76U	74U
Aroclor-1232	1,000-surface 10,000-subsurface	36U	38U	55U	42U	42U	38U	37U	37U
Aroclor-1242	1,000-surface 10,000-subsurface	36U	38U	310J	600	42U	38U	37U	37U
Aroclor-1248	1,000-surface 10,000-subsurface	36U	38U	55U	42U	42U	38U	37U	37U
Aroclor-1254	1,000-surface 10,000-subsurface	36U	38U	290	2000	42U	38U	37U	37U
Aroclor-1260	1,000-surface 10,000-subsurface	36U	38U	55U	42U	42U	38U	37U	37U
Sum of Constituents		0.00	0.00	680.40	2819.00	2.00	0.00	0.00	0.00

Bolded: Detected Concentration

*** = As per TAGM 4046, total VOCs < 10 ppm

Exceeds NYSDEC TAGM 4046 RSCO

TABLE 1-1A
Monitoring Well Installation
Soil Sampling - February thru March 2000
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION SAMPLE DEPTH DATE COLLECTED UNIT ANALYTE	Eastern USA Background ppm	TAGM 4046 Recommended Soil Cleanup Objective ppm	Site Background Concentration* ppm	MW-06 6'-8' 2-11-00 mg/Kg	MW-07D 6'-10' 2-23-00 mg/Kg	MW-08 16'-18' 2-17-00 mg/Kg	MW-09D 22'-24' 2-21-00 mg/Kg	MW-10 6'-12' 2-24-00 mg/Kg	MW-11 16'-18' 3-2-00 mg/Kg	MW-12 8'-12' 3-1-00 mg/Kg	MW-13 12'-14' 3-2-00 mg/Kg
Aluminum	33,000	SB	14,319	10500	8270	29100	4430	9640	11200	11600	10600
Antimony	N/A	SB	1.95	0.65 U	0.76 UJ	1.9 B	1.02 U	0.89 U	0.72 U	0.79 U	0.72 U
Arsenic	3-12 **	7.5 or SB	7	5 J	2.4	6.2	5.4	4.4	3.3	4.4	4.5
Barium	15-600	300 or SB	80	42 B	38.8	131	81.3	67.3	39.3	48.5	44.3
Beryllium	0-1.75	0.16 or SB	0.64	0.45 B	0.34 B	0.55 B	0.18 B	0.46 B	0.43 B	0.46 B	0.44 B
Cadmium	0.1-1	10**** or SB	1.41	0.37 B	1.2	13.5	3.9	3.2	1.5	1.5	1.4
Calcium	130 - 35,000 **	SB	2946	17100	7650	5360	3880	17900	1810	1880	17300
Chromium	1.5 - 40 **	50**** or SB	18.5	13.6	11.4	48.6	36.7	15.4	14.6	14.4	13.9
Cobalt	2.5 - 60 **	30 or SB	9.3	9.6 B	6 J	15.2 B	5.8 B	8.5 B	7.6 B	7.9 B	6.4 B
Copper	1-50	25 or SB	17.5	22.2 J	15.8	68	55.6	16.2	23.8	23.4	22.4
Iron	2,000 - 550,000	200-500**** or SB	23,723	21700	17000	79800	30300	28400	23500	23300	21700
Lead	***	SB	28	11.1	4.5 J	266	1730	41.9	5.4 J	5.4 J	4.4 J
Magnesium	100 - 5,000	SB	4390	4580	4000	7040	2810	6310	5620	4290	5090
Manganese	50 - 5,000	SB	514	707	1030	1920	587	772	1050	819	582
Mercury	0.001- 0.2	SB	0.12	0.048 U	0.058 U	0.17	0.68	0.28	0.053 U	0.064 B	0.054 B
Nickel	0.5- 25	0.1	18.6	22.7	17.3	56.1	18.7	23.8	21.9	21.7	19.5
Potassium	8,500 - 43,000 **	13 or SB	1041	1290	791 B	1630 B	687 B	1070 B	882 B	975 B	1120
Selenium	0.1- 3.9	SB	1.4	0.65 U	0.57 U	1.1 U	0.76 U	0.67 U	0.54 U	0.59 U	0.05 U
Silver	N/A	2 or SB	2.2	4.2	3.2	12.3	8.9	5.6	4.1	4	3.6
Sodium	6,000 - 8,000	SB	162	213 B	30.1 B	895 B	676 B	481 B	73.4 B	41.2 B	50.1 B
Thallium	N/A	SB	2.42	1.3 B	0.38 U	0.73 U	0.51 U	0.67 U	0.36 U	0.39 U	0.36 U
Vanadium	1-300	SB	23	17.9	0.19 B	0.22 U	0.15 U	3 B	0.11 U	0.12 U	0.09 U
Zinc	9-50	150 or SB	55	67.2	49.5	347	314	133	62.5	67.9	57.7
Cyanide	NA	20 or SB	NA	0.12 B	0.2 U	0.19 B	4 U	4 U	0.2 U	0.068 U	0.19 U

* : Site background (SB) concentrations estimated to be 95% UCL of average site background concentrations (see Table 1-2 for calculation)

** : New York State background

*** : Average Levels in undeveloped, rural areas may range from 4-61 ppm.

****: Interim criteria used by the NYSDEC.

Exceeds Site Background Value, or for calcium, iron, magnesium, potassium, and sodium, exceeds Eastern Background Concentration as noted in TAGM 4046

TABLE 1-1A
Monitoring Well Installation
Soil Sampling - February thru March 2000
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- TAGM - New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels" dated January 24, 1994
- RSCO - Recommended Soil Cleanup Objective
- ug/kg - Microgram per kilogram
- ug/l - Microgram per liter
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls
- N/A - Not Available

TABLE 1-2
Target Analyte List Metals
Background Soil Sample Results
June, 2000
Mayer Landfill, Blooming Grove, NY

SAMPLE LOCATION LAB ID UNITS	Eastern USA Background (mg/kg)	TAGM 4046 Recommended Soil Clean-Up Objective (mg/kg)	BS01 70870009 mg/kg	DUP03600 70870015 mg/kg dup of BS01	BS02 70870010 mg/kg	BS03 70870011 mg/kg	BS04 70870012 mg/kg	BS05 70870013 mg/kg	95 % UCL of Average Site Background Mayer Landfill
ANALYTE									
Aluminum	33000	SB	15600	12900	12000	11000	12200	15900 U	14319
Antimony	N/A	SB	1.4 U	0.66 U	1.4 B	1 U	0.94 U	1.7 B	2.0
Arsenic	3-12 **	7.5 or SB	6.5	4.3	5.7	6.3	2.5	2.2	7.0
Barium	15-600	300 or SB	62.3	47.1	41.2 B	49	42.9	121 B	80
Beryllium	0-1.75	0.16 or SB	0.46 B	0.37 B	0.47 B	0.47 B	0.4 B	0.83 B	0.6
Cadmium	0.1-1	10**** or SB	1.2 B	1.6	1.2	0.95 B	1.1	0.89	1.41
Calcium	130 - 35,000 **	SB	1440	1390	112 B	253 B	56.1 U	3940	2946
Chromium	1.5 - 40 **	50**** or SB	20.4	17.8	13.6	11	14	16 B	18.5
Cobalt	2.5 - 60 **	30 or SB	7.6 B	6.6 B	10.8 B	7.3 B	7 B	4.5	9
Copper	1-50	25 or SB	4.7 B	5 B	19.5	12.4	10.9	13.8	17.5
Iron	2,000 - 550,000	200-500**** or SB	21600	18300	21600	17200	21800	12700	23723
Lead	***	SB	18.8	22.6	12.4	13	11.5	41.4	27.8
Magnesium	100 - 5,000	SB	4440	3580	4380	3200	3950	3020	4390
Manganese	50 - 5,000	SB	216	188	742	586	318	190 B	514
Mercury	0.001- 0.2	0.1	0.063 U	0.089 B	0.052 U	0.052 U	0.053 U	0.091	0.1
Nickel	0.5- 25	13 or SB	17.4	16.3	21.4	16.3	16.7	16.4 B	18.6
Potassium	8,500 - 43,000 **	SB	1070 B	29.7 U	717 B	438 B	611 B	845 U	1041
Selenium	0.1- 3.9	2 or SB	1.4 U	1.1 U	1.1 U	1.1	0.94 U	1.7 U	1.4
Silver	N/A	SB	1.5 Bf	2.8	1.6 Bf	1.3 Bf	1.6 Bf	0.99 B	2.2
Sodium	6,000 - 8,000	SB	152 B	45.1 B	83.7 B	89.6 B	87 B	244 U	162
Thallium	N/A	SB	1.6 U	0.44 U	1.3 U	1.7 B	1.1 U	2	2.4
Vanadium	1-300	150 or SB	22	7 B	16.6	14.5	19.5	19.1 E	23
Zinc	9-50	20 or SB	53.3 E	46.3 E	52.6 E	47.5 E	43.8 E	56.9	55.3

** : New York State background

*** : Average Levels in undeveloped, rural areas may range from 4-61 ppm.

**** : Interim criteria used by the NYSDEC.

SB = Soil Background

Bolded value exceeds higher of TAGM 4046 RSCO and Site Background value

Exceeds Eastern USA Background

TABLE 1-2
Target Analyte List Metals
Background Soil Sample Results
June, 2000
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- E -

Abbreviations

- TAGM - New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046
- 4046 "Determination of Soil Cleanup Objectives and Cleanup Levels" dated January 24, 1994
- RSCO - Recommended Soil Cleanup Objective
- mg/kg - Milligram per kilogram
- N/A - Not Available
- SB - Soil Background
- UCL - Upper Confidence Level

Duplicate Samples

DUP03600 Duplicate of BS01

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/l)	MW-01A MW-1A ug/l	MW-02 MW-2 ug/l	MW-03A MW-3A ug/l	MW-04D MW-4D ug/l	MW-05 MW-5 ug/l	MW-06 MW-6 ug/l	MW-07 MW-7 ug/l
Chloromethane	5	10U	10U	10U	10U	10U	10U	10U
Bromomethane	5	10U	10UJ	10U	10U	10U	10U	10U
Vinyl chloride	2	10U	10U	10U	10U	10U	10U	10U
Chloroethane	5	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5	10U	10U	10U	10U	10U	10U	10U
Acetone	50*	10U	10U	10U	10U	10U	10U	10U
Carbon disulfide		10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethene	5	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloroethene (Total)	5	10U	10U	10U	10U	10U	10U	10U
Chloroform	7	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloroethane	0.6	10U	10U	10U	10U	10U	10U	10U
2-Butanone	50*	10U	10U	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5	10U	10U	10U	10U	10U	10U	10U
Carbon tetrachloride	5	10U	10U	10U	10U	10U	10U	10U
Bromodichloromethane	50*	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloropropane	1	10U	10U	10U	10U	10U	10U	10U
cis-1,3-Dichloropropene	0.4**	10U	10U	10U	10U	10U	10U	10U
Trichloroethene	5	10U	10U	10U	10U	10U	10U	10U
Dibromochloromethane	50*	10U	10U	10U	10U	10U	10U	10U
1,1,2-Trichloroethane	1	10U	10U	10U	10U	10U	10U	10U
Benzene	1	10U	10U	8J	10U	10U	10U	10U
trans-1,3-Dichloropropene	0.4**	10U	10U	10U	10U	10U	10U	10U
Bromoform	50*	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone		10U	10U	10U	10U	10U	10U	10U
2-Hexanone	50*	10U	10U	10U	10U	10U	10U	10U
Tetrachloroethene	5	10U	10U	10U	10U	10U	10U	10U
1,1,2,2-Tetrachloroethane	5	10U	10U	10U	10U	10U	10U	10U
Toluene	5	10U	10U	10U	10U	10U	10U	10U
Chlorobenzene	5	10U	10U	29	10U	10U	10U	10U
Ethylbenzene	5	10U	10U	10U	10U	10U	10U	10U
Styrene	5	10U	10U	10U	10U	10U	10U	10U
Xylene (total)	5	10U	10U	36	10U	10U	10U	10U
Sum of Constituents		0.00	0.00	73.00	0.00	0.00	0.00	0.00

* : Guidance value

** : Value is for sum of cis- and trans-1,3-Dichloropropene

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/l)	MW-07D MW-7D ug/l	MW-08 MW-8 ug/l	MW-09D MW-9D ug/l	MW-09S MW-9 ug/l	MW-10 MW-10 ug/l	MW-11 MW-11 ug/l	MW-12 MW-12 ug/l	MW-13 MW-13 ug/l
Chloromethane	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Bromomethane	5	10UJ	10U	10U	10UJ	10UJ	10UJ	10U	10UJ
Vinyl chloride	2	10UJ	10U	10U	10U	10U	10U	10U	10U
Chloroethane	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Acetone	50*	10UJ	10U	10U	45	10U	10U	10U	10U
Carbon disulfide		10UJ	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethene	5	10UJ	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5	10UJ	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloroethene (Total)	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Chloroform	7	10UJ	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloroethane	0.6	10UJ	10U	10U	10U	10U	10U	10U	10U
2-Butanone	50*	10UJ	10U	10U	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Carbon tetrachloride	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Bromodichloromethane	50*	10UJ	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloropropane	1	10UJ	10U	10U	10U	10U	10U	10U	10U
cis-1,3-Dichloropropene	0.4**	10UJ	10U	10U	10U	10U	10U	10U	10U
Trichloroethene	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Dibromochloromethane	50*	10UJ	10U	10U	10U	10U	10U	10U	10U
1,1,2-Trichloroethane	1	10UJ	10U	10U	10U	10U	10U	10U	10U
Benzene	1	10UJ	10U	10U	10U	6J	10U	10U	10U
trans-1,3-Dichloropropene	0.4**	10UJ	10U	10U	10U	10U	10U	10U	10U
Bromoform	50*	10UJ	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone		10UJ	10U	10U	10U	10U	10U	10U	10U
2-Hexanone	50*	10UJ	10U	10U	10U	10U	10U	10U	10U
Tetrachloroethene	5	10UJ	10U	10U	10U	10U	10U	10U	10U
1,1,2,2-Tetrachloroethane	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Toluene	5	10UJ	10U	10U	10U	1J	10U	10U	10U
Chlorobenzene	5	10UJ	10U	10U	10U	57	10U	10U	10U
Ethylbenzene	5	10UJ	10U	10U	10U	1J	10U	10U	10U
Styrene	5	10UJ	10U	10U	10U	10U	10U	10U	10U
Xylene (total)	5	10UJ	10U	10U	10U	43	10U	10U	10U
Sum of Constituents		0.00	0.00	0.00	45.00	108.00	0.00	0.00	0.00

* : Guidance value

** : Value is for sum of cis- and trans-1,3-Dichloropropene

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/L)	MW-01A MW-1A ug/l	MW-02 MW-2 ug/l	MW-03A MW-3A ug/l	MW-04D MW-4D ug/l	MW-05 MW-5 ug/l	MW-06 MW-6 ug/l	MW-07 MW-7 ug/l	MW-07D MW-7D ug/l	MW-08 MW-8 ug/l	MW-09D MW-9D ug/l
Phenol	1	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
bis-(2-Chloroethyl)Ether	1	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2-Chlorophenol	1	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
1,3-Dichlorobenzene	3	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
1,4-Dichlorobenzene	3	10U	10U	6J	10U	10U	10U	10U	10U	10U	10U
1,2-Dichlorobenzene	3	10U	10U	2J	10U	10U	10U	10U	10U	10U	10U
2-Methylphenol	1	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,2-oxybis(1-Chloropropane)		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
4-Methylphenol	1	10U	10U	2J	10U	10U	10U	10U	10U	10U	10U
N-Nitroso-di-n-propylamine		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Hexachloroethane	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Nitrobenzene	0.4	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Isophorone	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2-Nitrophenol		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dimethylphenol	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dichlorophenol	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
1,2,4-Trichlorobenzene	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Naphthalene	10*	10U	10U	21	10U	10U	10U	10U	10U	10U	10U
4-Chloroaniline	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
bis(2-Chloroethoxy)methane	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Hexachlorobutadiene	0.5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
4-Chloro-3-methylphenol		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2-Methylnaphthalene		10U	10U	2J	10U	10U	10U	10U	10U	10U	10U
Hexachlorocyclopentadiene	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,4,6-Trichlorophenol		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,4,5-Trichlorophenol		25U	25U	25U	25U	25U	25U	25U	25U	25U	25U
2-Chloronaphthalene	10*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2-Nitroaniline	5	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U
Dimethylphthalate	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Acenaphthylene		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,6-Dinitrotoluene	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
3-Nitroaniline	5	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U
Acenaphthene	20*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dinitrophenol	10*	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/L)	MW-01A MW-1A ug/l	MW-02 MW-2 ug/l	MW-03A MW-3A ug/l	MW-04D MW-4D ug/l	MW-05 MW-5 ug/l	MW-06 MW-6 ug/l	MW-07 MW-7 ug/l	MW-07D MW-7D ug/l	MW-08 MW-8 ug/l	MW-09D MW-9D ug/l
4-Nitrophenol		25U	25U	25U	25U	25U	25U	25U	25U	25U	25U
Dibenzofuran		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dinitrotoluene	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Diethylphthalate	50*	10U	10U	2J	10U	10U	10U	10U	10U	10U	10U
4-Chlorophenyl-phenylether		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Fluorene	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
4-Nitroaniline	5	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U
4,6-Dinitro-2-methylphenol		25U	25U	25U	25U	25U	25U	25U	25U	25U	25U
N-Nitrosodiphenylamine	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Hexachlorobenzene	0.04	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Pentachlorophenol	1	25U	25U	25U	25U	25U	25U	25U	25U	25U	25U
Phenanthrene	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Anthracene	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Carbazole		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Di-n-butylphthalate	50	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Fluoranthene	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Pyrene	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Butylbenzylphthalate	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
3,3-Dichlorobenzidine	5	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(a)anthracene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Chrysene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
bis(2-Ethylhexyl)phthalate	5	10U	10U	10U	4J	10U	10U	10U	10U	10U	10U
Di-n-octylphthalate	50*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(b)fluoranthene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(k)fluoranthene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(a)pyrene	ND	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Indeno(1,2,3-cd)pyrene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Dibenzo(a,h)anthracene		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(g,h,i)perylene		10U	10U	10U	10U	10U	10U	10U	10U	10U	10U

* : Guidance Value

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/L)	MW-09S MW-9 ug/l	MW-10 MW-10 ug/l	MW-11 MW-11 ug/l	MW-12 MW-12 ug/l	MW-13 MW-13 ug/l
Phenol	1	10U	10U	10U	10U	10U
bis-(2-Chloroethyl)Ether	1	10U	10U	10U	10U	10U
2-Chlorophenol	1	10U	10U	10U	10U	10U
1,3-Dichlorobenzene	3	10U	10U	10U	10U	10U
1,4-Dichlorobenzene	3	10U	11	10U	10U	10U
1,2-Dichlorobenzene	3	10U	2J	10U	10U	10U
2-Methylphenol	1	10U	10U	10U	10U	10U
2,2-oxybis(1-Chloropropane)		10U	10U	10U	10U	10U
4-Methylphenol	1	2J	11	10U	2J	10U
N-Nitroso-di-n-propylamine		10U	10U	10U	10U	10U
Hexachloroethane	5	10U	10U	10U	10U	10U
Nitrobenzene	0.4	10U	10U	10U	10U	10U
Isophorone	50*	10U	10U	10U	10U	10U
2-Nitrophenol		10U	10U	10U	10U	10U
2,4-Dimethylphenol	50*	10U	10U	10U	10U	10U
2,4-Dichlorophenol	5	10U	10U	10U	10U	10U
1,2,4-Trichlorobenzene	5	10U	10U	10U	10U	10U
Naphthalene	10*	10U	9J	10U	10U	10U
4-Chloroaniline	5	10U	10U	10U	10U	10U
bis(2-Chloroethoxy)methane	5	10U	10U	10U	10U	10U
Hexachlorobutadiene	0.5	10U	10U	10U	10U	10U
4-Chloro-3-methylphenol		10U	10U	10U	10U	10U
2-Methylnaphthalene		10U	1J	10U	2J	10U
Hexachlorocyclopentadiene	5	10U	10U	10U	10U	10U
2,4,6-Trichlorophenol		10U	10U	10U	10U	10U
2,4,5-Trichlorophenol		25U	25U	25U	25U	25U
2-Chloronaphthalene	10*	10U	10U	10U	10U	10U
2-Nitroaniline	5	25U	25U	25U	25U	25U
Dimethylphthalate	50*	10U	10U	10U	10U	10U
Acenaphthylene		10U	10U	10U	10U	10U
2,6-Dinitrotoluene	5	10U	10U	10U	10U	10U
3-Nitroaniline	5	25U	25U	25U	25U	25U
Acenaphthene	20*	10U	10U	10U	10U	10U
2,4-Dinitrophenol	10*	25U	25U	25U	25U	25U

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/L)	MW-09S MW-9 ug/l	MW-10 MW-10 ug/l	MW-11 MW-11 ug/l	MW-12 MW-12 ug/l	MW-13 MW-13 ug/l
4-Nitrophenol		25U	25U	25U	25U	25U
Dibenzofuran		10U	10U	10U	1J	10U
2,4-Dinitrotoluene	5	10U	10U	10U	10U	10U
Diethylphthalate	50*	10U	3J	10U	10U	10U
4-Chlorophenyl-phenylether		10U	10U	10U	10U	10U
Fluorene	50*	10U	10U	10U	2J	10U
4-Nitroaniline	5	25U	25U	25U	25U	25U
4,6-Dinitro-2-methylphenol		25U	25U	25U	25U	25U
N-Nitrosodiphenylamine	50*	10U	2J	10U	10U	10U
Hexachlorobenzene	0.04	10U	10U	10U	10U	10U
Pentachlorophenol	1	25U	25U	25U	25U	25U
Phenanthrene	50*	1J	10U	10U	11	10U
Anthracene	50*	10U	10U	10U	10U	10U
Carbazole		10U	10U	10U	10U	10U
Di-n-butylphthalate	50	2J	10U	10U	10U	10U
Fluoranthene	50*	10U	10U	10U	10U	10U
Pyrene	50*	10U	10U	10U	10U	10U
Butylbenzylphthalate	50*	10U	10U	10U	10U	10U
3,3-Dichlorobenzidine	5	10U	10U	10U	10U	10U
Benzo(a)anthracene	0.002*	10U	10U	10U	10U	10U
Chrysene	0.002*	10U	10U	10U	10U	10U
bis(2-Ethylhexyl)phthalate	5	10U	1J	10U	10U	2J
Di-n-octylphthalate	50*	10U	10U	10U	10U	10U
Benzo(b)fluoranthene	0.002*	10U	10U	10U	10U	10U
Benzo(k)fluoranthene	0.002*	10U	10U	10U	10U	10U
Benzo(a)pyrene	ND	10U	10U	10U	10U	10U
Indeno(1,2,3-cd)pyrene	0.002*	10U	10U	10U	10U	10U
Dibenzo(a,h)anthracene		10U	10U	10U	10U	10U
Benzo(g,h,i)perylene		10U	10U	10U	10U	10U

* : Guidance Value

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/l)	MW-01A MW-1A ug/l	MW-02 MW-2 ug/l	MW-03A MW-3A ug/l	MW-04D MW-4D ug/l	MW-05 MW-5 ug/l	MW-06 MW-6 ug/l	MW-07 MW-7 ug/l
alpha-BHC	0.01	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
beta-BHC	0.04	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
delta-BHC	0.04	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
gamma-BHC (Lindane)	0.05	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
Heptachlor	0.04	0.050U	0.050U	0.050U	0.05U	0.050U	0.2	0.05U
Aldrin	ND	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
Heptachlor Epoxide	0.03	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
Endosulfan I	0.22	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
Dieldrin	0.004	0.10U	0.10U	0.10U	0.1U	0.10U	0.14P	0.1U
4,4'-DDE	0.2	0.10U	0.10U	0.10U	0.1U	0.10U	0.10U	0.1U
Endrin	ND	0.10U	0.10U	0.10U	0.1U	0.10U	0.3P	0.1U
Endosulfan II		0.10U	0.10U	0.10U	0.1U	0.10U	0.10U	0.1U
4,4'-DDD	0.3	0.10U	0.10U	0.10U	0.1U	0.10U	0.10U	0.1U
Endosulfan Sulfate		0.10U	0.10U	0.10U	0.1U	0.10U	0.10U	0.1U
4,4'-DDT	0.2	0.10U	0.10U	0.10U	0.1U	0.10U	0.10U	0.1U
Methoxychlor	35	0.50U	0.50U	0.50U	0.5U	0.50U	0.50U	0.5U
Endrin Ketone	5	0.10U	0.10U	0.10U	0.1U	0.10U	0.10U	0.1U
Endrin Aldehyde	5	0.10U	0.10U	0.10U	0.1U	0.10U	0.10U	0.1U
alpha-Chlordane	0.05	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
gamma-Chlordane	0.05	0.050U	0.050U	0.050U	0.05U	0.050U	0.050U	0.05U
Toxaphene	0.06	5.0U	5.0U	5.0U	5U	5.0U	5.0U	5U
Aroclor-1016	0.09**	1.0U	1.0U	1.0U	1U	1.0U	1.0U	1U
Aroclor-1221	0.09**	2.0U	2.0U	2.0U	2U	2.0U	2.0U	2U
Aroclor-1232	0.09**	1.0U	1.0U	1.0U	1U	1.0U	1.0U	1U
Aroclor-1242	0.09**	1.0U	1.0U	1.0U	1U	1.0U	1.0U	1U
Aroclor-1248	0.09**	1.0U	1.0U	1.0U	1U	1.0U	1.0U	1U
Aroclor-1254	0.09**	1.0U	1.0U	1.0U	1U	1.0U	1.0U	1U
Aroclor-1260	0.09**	1.0U	1.0U	1.0U	1U	1.0U	2.4P	1U

** : Applies to sum of these compounds

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/l)	MW-07D MW-7D ug/l	MW-08 MW-8 ug/l	MW-09D MW-9D ug/l	MW-09S MW-9 ug/l	MW-10 MW-10 ug/l	MW-11 MW-11 ug/l	MW-12 MW-12 ug/l	MW-13 MW-13 ug/l
alpha-BHC	0.01	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.14J	0.050U
beta-BHC	0.04	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U
delta-BHC	0.04	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U
gamma-BHC (Lindane)	0.05	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.34J	0.050U
Heptachlor	0.04	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U
Aldrin	ND	0.05U	0.050U	0.050U	0.050U	0.15P	0.050U	0.050U	0.050U
Heptachlor Epoxide	0.03	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U
Endosulfan I	0.22	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U
Dieldrin	0.004	0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
4,4'-DDE	0.2	0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
Endrin	ND	0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
Endosulfan II		0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
4,4'-DDD	0.3	0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.11J	0.10U
Endosulfan Sulfate		0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
4,4'-DDT	0.2	0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
Methoxychlor	35	0.5U	0.50U	0.50U	0.50U	0.50U	0.50U	0.50U	0.50U
Endrin Ketone	5	0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
Endrin Aldehyde	5	0.1U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U	0.10U
alpha-Chlordane	0.05	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U
gamma-Chlordane	0.05	0.05U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U	0.050U
Toxaphene	0.06	5U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U
Aroclor-1016	0.09**	1U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U
Aroclor-1221	0.09**	2U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U	2.0U
Aroclor-1232	0.09**	1U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U
Aroclor-1242	0.09**	1U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U
Aroclor-1248	0.09**	1U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U
Aroclor-1254	0.09**	1U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U
Aroclor-1260	0.09**	1U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U	1.0U

** Applies to sum of these compounds

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE ID SAMPLE LOCATION UNITS Filtered/Unfiltered ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/l)	MW-01A MW1A ug/l Unfiltered	MW-02 MW-2 ug/l Unfiltered	MW-03A MW3A ug/l Unfiltered	MW-04D MW-4D ug/l Unfiltered	MW-05 MW5 ug/l Unfiltered	MW-05 MW-5DISS ug/l Filtered	MW-06 MW6 ug/l Unfiltered	MW-06 MW-6DISS ug/l Filtered	MW-07 MW-7 ug/l Unfiltered	MW-07D MW-7D ug/l Unfiltered	MW-07D MW-7DDISS ug/l Filtered
Aluminum		302	11.7B	134B	337	4130	18.5B	NA	18.9B	67.4B	479	11.7B
Antimony	3	4U	3U	4U	4U	4U	4U	4U	4U	4U	4U	4.1B
Arsenic	25	2U	3U	7.2B	2U	2U	2U	2U	2U	7.7B	2U	2U
Barium	1000	21.9B	13.7B	177B	16B	30.1B	9B	28.4B	31B	22.8B	7.8B	3.9B
Beryllium	3*	0.44B	0.3U	0.2U	0.2U	0.25B	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U
Cadmium	5	0.26B	0.3U	4.5B	0.32B	0.27B	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U
Calcium		16600	39500	93000	48000	32200	37600	35100	47800	77000	77800	89300
Chromium	50	2U	2U	2U	0.6U	4.7B	2U	2U	2U	0.6U	0.6U	0.6U
Cobalt		4.8B	3U	5.9B	0.7U	1.7B	0.88B	1.1B	0.71B	0.7U	0.7U	0.7U
Copper	200	7.8B	2U	5U	17.2B	6.4B	5U	5U	5U	7.9B	7.7B	5.8B
Iron	300**	226E	106	46100E	456	3670E	36.4B	594	38.8B	424	523	19.6B
Lead	25	2U	2U	2U	7.6	2U	2U	2U	2U	4.7	5.6	5.9
Magnesium	35000*	3450B	10800	33800	20100	6810	7180	5390	7850	14500	14300	15200
Manganese	300**	36.9	185	305	363	537	5.4J	335	300	2030	1260	1620
Mercury	0.7	0.14U	0.14U	0.14U	0.14U	0.15U	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U
Nickel	100	5.9B	3U	41.9	1.9B	4.8B	1.4B	2.1B	1.2B	1B	1.6B	1B
Potassium		591B	874B	59300	1980B	1760B	424B	1150B	1600B	671B	891B	804B
Selenium	10	3U	5U	11.4	8	5.9	4.4B	3U	4.7B	4.9B	7.5	6.4
Silver	50	2B	8UJ	8.8B	2U	2U	2U	2U	2U	2U	2U	2U
Sodium	20,000	1820B	12600	96400	19900	6670	7110	2080BE	2920B	8740	9960	11300
Thallium	0.5*	2U	5U	2U	4.7B	2U	2U	2U	2U	2.7B	3.1B	2.9B
Vanadium		8.6B	3U	20.4B	31.8B	11.8B	9.5B	7.7B	10.2B	23.3B	23.6B	24.4B
Zinc	2000*	13.3BJ	6.5BJ	12.2BJ	18.9B	14.3BJ	10.2BJ	5.8BJ	4.5BJ	4.9B	5.2B	5.6B
Cyanide	200	2U	2U	2U	2U	2U	2U	2U	2U	2U	2U	2U
Alkalinity (as CaCO3)	(mg/l)	53	180	1200	260	130		140		260	260	
Ammonia (as N)	(mg/l)	0.2U	0.2U	150	0.2U	0.2U		0.4		0.2U	0.2U	
Chloride	(mg/l)	5	5U	95	13	5U		5U		13	14	
Hardness	(mg/kg)	56	140	370	200	110		110		250	250	

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for
Class GA

*: Guidance Value

**: Sum of Iron and Manganese

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE ID SAMPLE LOCATION UNITS Filtered/Unfiltered ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/l)	MW-08 MW8 ug/l Unfiltered	MW-09D MW9D ug/l Unfiltered	MW-09S MW9 ug/l Unfiltered	MW-09S MW-9DISS ug/l Filtered	MW-10 MW-10 ug/l Unfiltered	MW-11 MW-11 ug/l Unfiltered	MW-12 MW12 ug/l Unfiltered	MW-12 MW-12DISS ug/l Filtered	MW-13 MW13 ug/l Unfiltered	MW-13 MW-13DISS ug/l Filtered
Aluminum		56.9B	206	493	101B	116B	9U	4100	20.8B	335	64.9B
Antimony	3	4U	4U	4U	4U	3U	3U	4U	4U	4U	4U
Arsenic	25	2U	2U	10.9	9.6B	3U	3U	4B	2U	2U	2U
Barium	1000	36.6B	82.7B	104B	90.2B	205	16.4B	91.3B	59.6B	9.6B	6.3B
Beryllium	3*	0.2U	0.2U	0.2U	0.2U	0.3U	0.3U	0.24B	0.2U	0.20U	0.2U
Cadmium	5	0.2U	0.2U	0.2U	0.2U	1.4B	0.3U	1.1B	0.29B	0.20U	0.2U
Calcium		51400	113000	82900	74700	83800	4540B	154000	153000	7620	7940
Chromium	50	2U	2U	2U	2U	2U	2U	6.8B	2U	2.0U	2U
Cobalt		0.7U	4.5B	2.5B	2.1B	3.6J	3U	5.3B	2.7B	0.96B	0.7U
Copper	200	5U	12B	5U	5U	2U	2U	10.8B	5U	5.0U	5U
Iron	300**	243E	312	675	83B	67800	9.8B	10800E	3470E	394	91.4B
Lead	25	2U	2U	4.5	2U	11	2U	2U	2U	2.0U	2.0U
Magnesium	35000*	15500	28900	17400	15200	28700	1600J	48100	46600	1210B	1200B
Manganese	300**	711	3200	676	566	738	15.6J	4370	4560	62.8	68
Mercury	0.7	0.14U	0.14U	0.14U	0.15U	0.14U	0.14U	0.14U	0.14U	0.14U	0.14U
Nickel	100	1.5B	28.8B	28.6B	29.8B	22.3BJ	3U	12.4B	4.7B	1.3B	1.1B
Potassium		1470B	17900	55300	70900	45800	509B	10300	6690	506B	467B
Selenium	10	3U	3U	4.2B	6.8	5U	5U	3.7B	3.2B	3.6B	3U
Silver	50	2U	2U	2U	2U	8UJ	8UJ	2.5B	2U	2.0U	2U
Sodium	20,000	14900	347000E	355000E	381000J	93100	1760B	14900	12000	1270B	1380B
Thallium	0.5*	2U	2U	2.5B	2U	5U	5U	2U	2U	2.0U	2U
Vanadium		17.7B	35.3B	29B	26.3B	7B	3U	50.3	44.9B	2.2B	1.6B
Zinc	2000*	4.6BJ	4.2BJ	6BJ	4.2BJ	46.8	7BJ	19.1BJ	3.2BJ	7.5BJ	7.8BJ
Cyanide	200	2U	2U	2U	2U	2.5B	R	2U	2U	2U	2U
Alkalinity (as CaCO3)	(mg/l)	250	930	700		890	10	680		23	
Ammonia (as N)	(mg/l)	0.4	14	15		0.4	0.3	0.2		0.2U	
Chloride	(mg/l)	11	170	280		98	5U	6		5U	
Hardness	(mg/kg)	190	400	280		330	18	580		25	

Bolded: Detected Concentration

**Exceeds TOGS 1.1.1 Ambient Water Quality Standard for
Class GA**

***:** Guidance Value

****:** Sum of Iron and Manganese

TABLE 1-3
Groundwater Sampling Round 1
March, 2000
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- ug/kg - Microgram per kilogram
- ug/l - Microgram per liter
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls
- N/A - Not Available
- ND - Non-Detectable

TABLE 1-4
Groundwater Sampling Round 2
May, 2000
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/L)	MW-03A MW03A (ug/l)	MW-04D MW04D (ug/l)	MW-07D MW07D (ug/l)	MW-07 MW07 (ug/l)	MW-09S MW09S (ug/l)	MW-10 MW10 (ug/l)	MW-12 MW12 (ug/l)
Chloromethane	5	10U	10U	10U	10U	10U	10U	10U
Bromomethane	5	10U	10U	10U	10U	10U	10U	10U
Vinyl chloride	2	10U	10U	10U	10U	10U	10U	10U
Chloroethane	5	10U	10U	10U	10U	10U	10U	10U
Methylene chloride	5	10U	10U	10U	10U	10U	10U	1JB
Acetone	50*	10U	10U	10U	10U	10U	7J	21B
Carbon disulfide		10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethene	5	10U	10U	10U	10U	10U	10U	10U
1,1-Dichloroethane	5	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloroethene (Total)	5	10U	10U	10U	10U	10U	10U	10U
Chloroform	7	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloroethane	0.6	10U	10U	10U	10U	10U	10U	10U
2-Butanone	50*	10U	10U	10U	10U	10U	10U	10U
1,1,1-Trichloroethane	5	10U	10U	10U	10U	10U	10U	10U
Carbon tetrachloride	5	10U	10U	10U	10U	10U	10U	10U
Bromodichloromethane	50*	10U	10U	10U	10U	10U	10U	10U
1,2-Dichloropropane	1	10U	10U	10U	10U	10U	10U	10U
cis-1,3-Dichloropropene	0.4**	10U	10U	10U	10U	10U	10U	10U
Trichloroethene	5	10U	10U	10U	10U	10U	10U	10U
Dibromochloromethane	50*	10U	10U	10U	10U	10U	10U	10U
1,1,2-Trichloroethane	1	10U	10U	10U	10U	10U	10U	10U
Benzene	1	10U	10U	10U	10U	10U	6J	10U
trans-1,3-Dichloropropene	0.4**	10U	10U	10U	10U	10U	10U	10U
Bromoform	50*	10U	10U	10U	10U	10U	10U	10U
4-Methyl-2-pentanone		10U	10U	10U	10U	10U	2J	10U
2-Hexanone	50*	10U	10U	10U	10U	10U	2J	10U
Tetrachloroethene	5	10U	10U	10U	10U	10U	10U	10U
1,1,2,2-Tetrachloroethane	5	10U	10U	10U	10U	10U	10U	10U
Toluene	5	10U	10U	10U	10U	10U	1J	10U
Chlorobenzene	5	10U	10U	10U	10U	10U	48	10U
Ethylbenzene	5	10U	10U	10U	10U	10U	34	10U
Styrene	5	10U	10U	10U	10U	10U	10U	10U
Xylene (total)	5	10U	10U	10U	10U	10U	29	10U
Sum of Constituents		0	0	0	0	0	129	22

* : Guidance Value

** : Value is for sum of cis-and trans-1,3-Dichloropropene

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-4
Groundwater Sampling Round 2
May, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/L)	MW-03A MW03A ug/l	MW-04D MW04D ug/l	MW-07D MW07D ug/l	MW-07 MW07 ug/l	MW-09S MW09S ug/l	MW-10 MW10 ug/l	MW-12 MW12 ug/l	MW-13 MW13 ug/l
Phenol	1	10U	10U	10U	10U	10U	10U	10U	10U
bis-(2-Chloroethyl)Ether	1	10U	10U	10U	10U	10U	10U	10U	10U
2-Chlorophenol	1	10U	10U	10U	10U	10U	10U	10U	10U
1,3-Dichlorobenzene	3	10U	10U	10U	10U	10U	10U	10U	10U
1,4-Dichlorobenzene	3	10U	10U	10U	10U	10U	9J	10U	10U
1,2-Dichlorobenzene	3	10U	10U	10U	10U	10U	10U	10U	10U
2-Methylphenol	1	10U	10U	10U	10U	10U	10U	10U	10U
2,2-oxybis(1-Chloropropane)		10U	10U	10U	10U	10U	10U	10U	10U
4-Methylphenol	1	10U	10U	10U	10U	10U	10U	10U	10U
N-Nitroso-di-n-propylamine		10U	10U	10U	10U	10U	10U	10U	10U
Hexachloroethane	5	10U	10U	10U	10U	10U	10U	10U	10U
Nitrobenzene	0.4	10U	10U	10U	10U	10U	10U	10U	10U
Isophorone	50*	10U	10U	10U	10U	10U	10U	10U	10U
2-Nitrophenol		10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dimethylphenol	50*	10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dichlorophenol	5	10U	10U	10U	10U	10U	10U	10U	10U
1,2,4-Trichlorobenzene	5	10U	10U	10U	10U	10U	10U	10U	10U
Naphthalene	10*	10U	10U	10U	10U	10U	8J	10U	10U
4-Chloroaniline	5	10U	10U	10U	10U	10U	10U	10U	10U
bis(2-Chloroethoxy)methane	5	10U	10U	10U	10U	10U	10U	10U	10U
Hexachlorobutadiene	0.5	10U	10U	10U	10U	10U	10U	10U	10U
4-Chloro-3-methylphenol		10U	10U	10U	10U	10U	10U	10U	10U
2-Methylnaphthalene		10U	10U	10U	10U	10U	1J	10U	10U
Hexachlorocyclopentadiene	5	10U	10U	10U	10U	10U	10U	10U	10U
2,4,6-Trichlorophenol		10U	10U	10U	10U	10U	10U	10U	10U
2,4,5-Trichlorophenol		25U	25U	25U	25U	25U	25U	25U	25U
2-Chloronaphthalene	10*	10U	10U	10U	10U	10U	10U	10U	10U
2-Nitroaniline	5	25U	25U	25U	25U	25U	25U	25U	25U
Dimethylphthalate	50*	10U	10U	10U	10U	10U	10U	10U	10U
Acenaphthylene		10U	10U	10U	10U	10U	10U	10U	10U
2,6-Dinitrotoluene	5	10U	10U	10U	10U	10U	10U	10U	10U
3-Nitroaniline	5	25U	25U	25U	25U	25U	25U	25U	25U
Acenaphthene	20*	10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dinitrophenol	10*	25U	25U	25U	25U	25U	25U	25U	25U

TABLE 1-4
Groundwater Sampling Round 2
May, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE ID	TOGS 1.1.1	MW-03A	MW-04D	MW-07D	MW-07	MW-09S	MW-10	MW-12	MW-13
SAMPLE LOCATION	Ambient Water Quality	MW03A	MW04D	MW07D	MW07	MW09S	MW10	MW12	MW13
UNITS	Standards & Guidance	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE	Values: Class GA (ug/L)								
4-Nitrophenol		25U	25U	25U	25U	25U	25U	25U	25U
Dibenzofuran		10U	10U	10U	10U	10U	10U	10U	10U
2,4-Dinitrotoluene	5	10U	10U	10U	10U	10U	10U	10U	10U
Diethylphthalate	50*	10U	10U	10U	10U	10U	2J	10U	10U
4-Chlorophenyl-phenylether		10U	10U	10U	10U	10U	10U	10U	10U
Fluorene	50*	10U	10U	10U	10U	10U	10U	10U	10U
4-Nitroaniline	5	25U	25U	25U	25U	25U	25U	25U	25U
4,6-Dinitro-2-methylphenol		25U	25U	25U	25U	25U	25U	25U	25U
N-Nitrosodiphenylamine	50*	10U	10U	10U	10U	10U	2J	10U	10U
Hexachlorobenzene	0.04	10U	10U	10U	10U	10U	10U	10U	10U
Pentachlorophenol	1	25U	25U	25U	25U	25U	25U	25U	25U
Phenanthrene	50*	10U	10U	10U	10U	10U	10U	5J	10U
Anthracene	50*	10U	10U	10U	10U	10U	10U	10U	10U
Carbazole		10U	10U	10U	10U	10U	10U	10U	10U
Di-n-butylphthalate	50	10U	10U	10U	10U	3J	10U	10U	10U
Fluoranthene	50*	10U	10U	10U	10U	10U	10U	10U	10U
Pyrene	50*	10U	10U	10U	10U	10U	10U	10U	10U
Butylbenzylphthalate	50*	10U	10U	10U	10U	10U	10U	10U	10U
3,3-Dichlorobenzidine	5	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(a)anthracene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U
Chrysene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U
bis(2-Ethylhexyl)phthalate	5	10U	10U	10U	10U	10U	10U	10U	10U
Di-n-octylphthalate	50*	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(b)fluoranthene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(k)fluoranthene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U
Benzo(a)pyrene	ND	10U	10U	10U	10U	10U	10U	10U	10U
Indeno(1,2,3-cd)pyrene	0.002*	10U	10U	10U	10U	10U	10U	10U	10U
Dibenzo(a,h)anthracene		10U	10U	10U	10U	10U	10U	10U	10U
Benzo(g,h,i)perylene		10U	10U	10U	10U	10U	10U	10U	10U
Sum of Constituents		0.00	0.00	0.00	0.00	3.00	22.00	5.00	0.00

*: Guidance Value

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-4
Groundwater Sampling Round 2
May, 2000
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE ID SAMPLE LOCATION UNITS ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values: Class GA (ug/l)	TAGM 4046 Groundwater Standards/ Criteria (ug/l)	MW-06 MW06 ug/l	MW-07 MW07D ug/l	MW-07 MW07 ug/l	MW-10 MW10 ug/l	MW-12 MW12 ug/l
alpha-BHC	0.01	0.05	0.050U	0.045U	0.050U	0.050U	0.050U
beta-BHC	0.04	0.05	0.050U	0.045U	0.050U	0.050U	0.050U
delta-BHC	0.04	0.05	0.050U	0.045U	0.050U	0.050U	0.050U
gamma-BHC (Lindane)	0.05	0.05	0.050U	0.045U	0.050U	0.050U	0.050U
Heptachlor	0.04	0.01	0.050U	0.045U	0.050U	0.050U	0.050U
Aldrin	ND	0.01	0.050U	0.045U	0.050U	0.050U	0.050U
Heptachlor Epoxide	0.03	0.01	0.050U	0.045U	0.050U	0.050U	0.050U
Endosulfan I	0.22	0.1	0.050U	0.045U	0.050U	0.050U	0.050U
Dieldrin	0.004	0.01	0.10U	0.090U	0.10U	0.10U	0.10U
4,4'-DDE	0.2	0.01	0.10U	0.090U	0.10U	0.10U	0.10U
Endrin	ND	0.01	0.10U	0.090U	0.10U	0.10U	0.10U
Endosulfan II		0.1	0.10U	0.090U	0.10U	0.10U	0.10U
4,4'-DDD	0.3	0.01	0.10U	0.090U	0.10U	0.10U	0.10U
Endosulfan Sulfate		0.1	0.10U	0.090U	0.10U	0.10U	0.10U
4,4'-DDT	0.2	0.01	0.10U	0.090U	0.10U	0.10U	0.10U
Methoxychlor	35		0.50U	0.45U	0.50U	0.50U	0.50U
Endrin Ketone	5		0.10U	0.090U	0.10U	0.10U	0.10U
Endrin Aldehyde	5		0.10U	0.090U	0.10U	0.10U	0.10U
alpha-Chlordane	0.05		0.050U	0.045U	0.050U	0.050U	0.050U
gamma-Chlordane	0.05	0.1	0.050U	0.045U	0.050U	0.050U	0.050U
Toxaphene	0.06		5.0U	4.5U	5.0U	5.0U	5.0U
Aroclor-1016	0.09**	0.1	1.0U	0.90U	1.0U	1.0U	1.0U
Aroclor-1221	0.09**	0.1	2.0U	1.8U	2.0U	2.0U	2.0U
Aroclor-1232	0.09**	0.1	1.0U	0.90U	1.0U	1.0U	1.0U
Aroclor-1242	0.09**	0.1	1.0U	0.90U	1.0U	1.0U	1.0U
Aroclor-1248	0.09**	0.1	1.0U	0.90U	1.0U	1.0U	1.0U
Aroclor-1254	0.09**	0.1	1.0U	0.90U	1.0U	1.0U	1.0U
Aroclor-1260	0.09**	0.1	1.0U	0.90U	1.0U	1.0U	1.0U

** Applies to sum of these compounds

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

TABLE 1-4
Groundwater Sampling Round 2
May, 2000
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE ID SAMPLE LOCATION UNITS Filtered/Unfiltered ANALYTE	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/l)	MW-03A MW03A ug/l	MW-04D MW04D ug/l	MW-06 MW06 ug/l	MW-07D MW07D ug/l	MW-07 MW07 ug/l	MW-09D MW09D ug/l	MW-09S MW09S ug/l	MW-10 MW10 ug/l	MW-12 MW12 ug/l	MW-13 MW13 ug/l
Aluminum		463	27.2B	117B	106B	326	435	226	73B	703	1370
Antimony	3	3U	3U	3U	3U	3U	3U	3U	3U	3U	3U
Arsenic	25	2U	2U	2U	2U	4.8B	2U	7.4B	2U	2.3B	2U
Barium	1000	36.5B	4.1B	21.1B	3.7B	20.7B	79.4B	150B	206	72.6B	14.3B
Beryllium	3*	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U
Cadmium	5	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	0.2U	2B	0.42B	0.2U
Calcium		52200	43400	33100	75300	71000	110000	116000	87100	171000	15900
Chromium	50	0.4U	0.4U	0.72B	0.4U	0.4U	0.4U	0.4U	5.2B	0.4U	2.2B
Cobalt		0.7U	0.7U	0.7U	0.7U	0.7U	3.7B	2.4B	0.7U	2.4B	0.75B
Copper	200	6.3B	5.7B	3.5B	6.7B	3.4B	11.9B	3U	3U	11.7B	6.5B
Iron	300**	569	62.6B	207	125	599	634	1010	67900	18700	1600
Lead	25	2U	2U	2U	2.7B	2.6B	4.2	4.9	2U	2U	2.2B
Magnesium	35000*	14900	17600	3620B	15000	13200	27100	26200	27300	51200	2240B
Manganese	300**	648	281	186	977	1800	2810	1320	645	5790	140
Mercury	0.7	0.13U	0.14U	0.13U	0.13U	0.13U	0.13U	0.13U	0.13U	0.14U	0.13U
Nickel	100	2U	2U	2U	2U	2U	25.9B	25.4B	16.6B	6.6B	2U
Potassium		1590B	1290B	985B	831B	772B	17200	34100	47600	5710	135U
Selenium	10	5U	5U	5U	5U	5U	5U	5U	5U	5U	5U
Silver	50	5U	5U	5U	5U	5U	5U	5U	12.1	5U	5U
Sodium	20,000	15300	16800	2370B	9610	8310	319000	346000	97800	11300	2770B
Thallium	0.5*	2U	2U	2U	2.7B	2U	2U	2U	2U	2U	2U
Vanadium		21.6B	24.2B	5.7B	18.7B	16.8B	42.2B	41.7B	2U	44.3B	3.9B
Zinc	2000*	17.8B	16.2B	10.7B	21.1	15.3B	30.9	6.8B	24	27.9	16.6B
Cyanide	200	2U	2U	10.4	2U	2U	2U	2U	2U	2U	2U
Alkalinity (as CaCO3)	(mg/l)	220	240	91	270	260	850	910	940	710	47
Ammonia (as N)	(mg/l)	0.6	0.2U	0.3	0.3	0.3	15	14	110	0.2U	0.2U
Chloride	(mg/l)	13	13	5U	11	11	210	200	110	5U	5U
Hardness	(mg/kg)	190	180	98	230	250	400	390	330	640	49

BoIded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class GA

*: Guidance Value

**:: Sum of Iron and Manganese

TABLE 1-4
Groundwater Sampling Round 1
May, 2000
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- ug/kg - Microgram per kilogram
- ug/l - Microgram per liter
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls
- N/A - Not Available
- ND - Non-Detectable

TABLE 1-5
Round 2 Groundwater Parameter Sampling Summary
Mayer Landfill, Blooming Grove, NY

Parameter List:	VOCs	SVOCs	Pesticides/PCBs	Inorganics
Monitoring Well				
MW-3A	X	X	--	X
MW-4D	X	X	--	X
MW-6	--	--	X	X
MW-7	X	X	X	X
MW-7D	X	X	X	X
MW-9	X	X	--	X
MW-9D	--	--	--	X
MW-10	X	X	X	X
MW-12	X	X	X	X
MW-13	--	X	--	X

An 'X' indicates the monitoring well sample was analyzed for the parameter list.
 -- indicates the monitoring well was not analyzed for the parameter list.

TABLE 1-6
Comparison of Round 1 and Round 2 Results
Parameters Detected Above TOGS 1.1.1 Class GA Standards
Groundwater Sampling March and May 2000
Mayer Landfill, Blooming Grove, NY

Monitoring Well	Parameter List	ROUND 1*	ROUND 2*
MW-3A	VOCs	Benzene Chlorobenzene Xylene	No VOCs Detected
	SVOCs	1,4-Dichlorobenzene 4-Methylphenol	No SVOCs Detected
	Pesticides/PCBs	None detected	Not analyzed
	Inorganics	None detected above Class GA standards	Iron, Manganese
MW-4D	VOCs	None detected	No VOCs Detected
	SVOCs	None detected above Class GA standards	No SVOCs Detected
	Pesticides/PCBs	None detected	Not analyzed
	Inorganics	Iron, Manganese	None detected above Class GA standards
MW-6	VOCs	None detected	Not analyzed
	SVOCs	None detected	Not analyzed
	Pesticides/PCBs	Heptachlor Dieldrin Endrin PCB-1260	No pesticide or PCB detected
	Inorganics	Unfiltered: Iron, Manganese Filtered: Manganese	None detected above Class GA standards
MW-7	VOCs	None detected	None detected
	SVOCs	None detected	No pesticide or PCB detected
	Pesticides/PCBs	None detected	None detected
	Inorganics	Iron, Manganese	Iron, Manganese
MW-7D	VOCs	None detected	None detected
	SVOCs	None detected	None detected
	Pesticides/PCBs	None detected	No pesticide or PCB detected
	Inorganics	Turbidity = 171 NTU Unfiltered: Iron, Manganese Filtered: Antimony, Manganese	Manganese
MW-9	VOCs	None detected above Class GA standards	None detected
	SVOCs	4-Methylphenol	None detected above Class GA standards
	Pesticides/PCBs	None detected	Not analyzed
	Inorganics	Turbidity = 101.1 NTU Unfiltered: Iron, Manganese, Sodium Filtered: Manganese, Sodium	Iron, Manganese, Sodium
MW-9D	VOCs	None detected	Not analyzed
	SVOCs	None detected	Not analyzed
	Pesticides/PCBs	None detected	Not analyzed
	Inorganics	Iron, Manganese, Sodium	Iron, Manganese, Sodium
MW-10	VOCs	Benzene Chlorobenzene Xylene	Benzene Chlorobenzene Ethylbenzene Xylene
	SVOCs	1,4-Dichlorobenzene 4-Methylphenol	1,4-Dichlorobenzene
	Pesticides/PCBs	Aldrin	No pesticide or PCB detected
	Inorganics	Iron, Manganese, Sodium	Iron, Manganese, Sodium
MW-12	VOCs	None detected	None detected above Class GA standards
	SVOCs	4-Methylphenol	None detected above Class GA standards
	Pesticides/PCBs	alpha-BHC gamma-BHC	No pesticide or PCB detected
	Inorganics	Turbidity = 336 NTU Filtered and Unfiltered: Iron, Manganese	Iron, Magnesium, Manganese
MW-13	VOCs	None detected	Not analyzed
	SVOCs	None detected above Class GA standards	None detected
	Pesticides/PCBs	None detected	Not analyzed
	Inorganics	Unfiltered: Iron Filtered: None detected above Class GA	Iron

* Round 2 groundwater samples were not filtered since all turbidity readings were less than 50 NTU. Round 1 groundwater samples were not filtered unless indicated. Turbidity was less than 50 NTU, except where noted.

VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds
PCBs = Poly Chlorinated Biphenyls

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

VOCs

SAMPLE LOCATION	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values (ug/L)	SW01	DUP01600	SW02	SW03	SW04	SW05	SW06
UNIT		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE			SW01 DUP					
Chloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (Total)		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,1-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	10 U	10 U	10 U	10 U	10 U
trans-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform		10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	1*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	6,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Ethylbenzene	17	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (Total)	65*	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Bolded: Detected Concentration

*: Guidance Value

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

VOCs

SAMPLE LOCATION	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values (ug/L)	SW07	SW08	SW09	SW10	FBSW060700	TBSW060700
UNIT		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE							
Chloromethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Bromomethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Vinyl Chloride		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Chloroethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Methylene Chloride	200	10 UJ	10 UJ	10 UJ	10 UJ	1 J	10 U
Acetone		10 UJ	10 UJ	10 UJ	10 UJ	1 J	10 U
Carbon Disulfide		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1-Dichloroethene		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1-Dichloroethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,2-Dichloroethene (Total)		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Chloroform		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,2-Dichloroethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
2-Butanone		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1,1-Trichloroethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Carbon Tetrachloride		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Bromodichloromethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,2-Dichloropropane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
cis-1,3-Dichloropropene		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Trichloroethene	40	10 UJ	10 UJ	3 J	4 J	10 U	10 U
Dibromochloromethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1,2-Trichloroethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Benzene	10	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
trans-1,3-Dichloropropene		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Bromoform		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
4-Methyl-2-Pentanone		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
2-Hexanone		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Tetrachloroethene	1*	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
1,1,2,2-Tetrachloroethane		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Toluene	6,000	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Chlorobenzene	5	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Ethylbenzene	17	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Styrene		10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U
Xylene (Total)	65*	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 U

Bolded: Detected Concentration

*: Guidance Value

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TOGS 1.1.1 Class C	SW01	DUP01600	SW02	SW03	SW04	SW05	SW06	SW07	SW08	SW09	SW10
UNITS	Ambient Water Quality Standards & Guidance Values (ug/L)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE			SW01 DUP									
Phenol	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(-2-Chloroethyl)Ether		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	1**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,2-oxybis(1-Chloropropane)		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	0.6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Isophorone		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	1**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	13*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.01	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	1**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	4.7*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	0.45	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	1**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	1**	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	5.3*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	5**	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values (ug/L)	SW01	DUP01600	SW02	SW03	SW04	SW05	SW06	SW07	SW08	SW09	SW10
UNITS		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE			SW01 DUP									
4-Nitrophenol	5**	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	0.54*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline		25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	5**	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.00003	10 U	10 U	10 U	10 U	25 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1**	25 U	25 U	25 U	25 U	10 U	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	5*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	3.8*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	4.6*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3-Dichlorobenzidine		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	0.03*	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	0.6	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	1 J	1 J	2 J
Di-n-octylphthalate		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	0.0012	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class C

* : Guidance Value

** : Indicates that the standard is for the sum of the compound family; ie. the standard of 1 ppb for chlorinated phenols is for the sum of all chlorinated phenols, as is 5 ppb is for the sum of all dichlorobenzenes

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values (ug/L)	SW01	DUP01600	SW02	SW03	SW04	SW05	SW06	SW07	SW08	SW09	SW10
UNIT		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE			SWO1 DUP									
alpha-BHC	0.002	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.007	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.008	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.008	0.05 UJ	0.05 UJ	0.05 UJ	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.0002	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.001**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor Epoxide	0.0003	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.009	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.000006	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.000007	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	0.002	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UJ	0.1 UJ	0.1 UJ	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	0.0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan Sulfate		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.00001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	0.03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Endrin Ketone		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin Aldehyde		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	0.00002**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	0.00002**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	0.000006	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Aroclor-1016	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1221	0.000001**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Aroclor-1232	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1242	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1248	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1254	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1260	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U

Bolded: Detected Concentration

*: Guidance Value

** : Sum of PCBs, chlordanes, or dieldrin and aldrin.

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

Inorganics

SAMPLE LOCATION	TOGS 1.1.1 Class C Ambient Water Quality Standards & & Guidance Values # (ug/l)	SW01 ug/l	SW01F ug/l FILTERED	SW02 ug/l	SW02F ug/l FILTERED	SW03 ug/l	SW03F ug/l FILTERED	SW04 ug/l	SW04F ug/l FILTERED	SW05 ug/l	SW05F ug/l FILTERED
UNITS											
FILTERED/UNFILTERED											
ANALYTE											
Aluminum	100 ⁽ⁱ⁾	160 B	31.8 B	127 B	32.6 B	93.4 B	12 U	76 B	12 U	70.5 B	12 U
Antimony		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Arsenic	150 ^(d)	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Barium		21.8 B	20.5 B	21.3 B	48.5 B	21.4 B	40.5 B	21.9 B	28.4 B	22.2 B	40.8 B
Beryllium	11 ^(a-s)	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	1.35 ^(d)	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.25 B	0.2 U
Calcium		15500	15800	15100	15200	15600	15200	15800	15000	16000	14700
Chromium	46.8 ^(d)	0.61 B	0.48 B	0.67 B	0.4 U	0.65 B	0.47 B	0.42 B	0.44 B	0.63 B	0.73 B
Cobalt	5 ^(a-s)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	5.5 ^(d)	1.5 B	1.2 B	1.4 B	0.86 B	1.9 B	0.63 B	0.92 B	0.88 B	0.88 B	0.62 B
Iron	300	629	231	623	211	547	163	565	166	526	166
Lead	2.0 ^(d)	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Magnesium		3820 B	3810 B	3730 B	3730 B	4030 B	3770 B	3930 B	3760 B	4150 B	3800 B
Manganese		64.2 J	49.5 J	63.4 J	46.7 J	61.9	50.4	63	53.8	59.9	49.8
Mercury	0.0007 ^(d)	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	32.3 ^(d)	1.6 B	1.7 B	1.6 B	1.5 B	1.7 B	2.2 B	1.6 B	1.5 B	1.5 B	1.5 B
Potassium		4160 B	4170 B	3960 B	3950 B	3990 B	3790 B	4070 B	3760 B	4140 B	3720 B
Selenium	4.6 ^(d)	5 U	5 U	5 U	6.4	5.9	5 U	5.9	5 U	6.4	6.2
Silver	0.1 ⁽ⁱ⁾	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3	3 UJ	3 UJ	3 UJ	3 UJ
Sodium		8080	8210	7970	8100	8800	8250	8700	8400	9180	8340
Thallium	8 ^(a-s)	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Vanadium	14 ^(a-s)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Zinc	51.2 ^(d)	5 B	4.3 B	2.5 B	21.4	2.3 B	7.9 B	2 B	4.3 B	2.6 B	5.8 B
Cyanide	5.2	2 UJ	2 UJ	2 UJ	2 UJ	2 U	2 U	2 U	2 U	2 U	5 U

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Class C Ambient Water Quality
Standard

(d) : Dissolved form

(i) : Ionic form

(a-s) : Acid-Soluble form

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

Inorganics

SAMPLE LOCATION	TOGS 1.1.1 Class C Ambient Water Quality Standards & & Guidance Values # (ug/l)	SW06 ug/l	SW06F ug/l FILTERED	SW07 ug/l	SW07F ug/l FILTERED	SW08 ug/l	SW08F ug/l FILTERED	SW09 ug/l	SW09F ug/l FILTERED	SW10 ug/l	SW10F ug/l FILTERED
UNITS											
FILTERED/UNFILTERED ANALYTE											
Aluminum	100 ⁽ⁱ⁾	41.8 B	12 U	39.3 B	14.7 B	39.2 B	12 B	46.4 B	22.1 B	39.2 B	13.1 B
Antimony		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Arsenic	150 ^(d)	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Barium		21.5 B	26.1 B	24.1 B	36.5 B	24.2 B	41.3 B	24.5 B	45.5 B	21.3 B	29.7 B
Beryllium	11 ^(a-s)	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	1.35 ^(d)	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Calcium		15700	16200	16600	16600	16700	16300	16800	17400	15000	15700
Chromium	46.8 ^(d)	0.52 B	0.46 B	0.67 B	0.73 B	0.58 B	0.56 B	0.54 B	0.57 B	0.49 B	0.49 B
Cobalt	5 ^(a-s)	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U
Copper	5.5 ^(d)	0.7 B	0.65 B	1.2 B	1.2 B	0.95 B	2.2 B	1.3 B	0.9 B	1.7 B	0.5 B
Iron	300	446	177	451	212	454	217	502	231	362	140
Lead	2.0 ^(d)	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Magnesium		3970 B	4060 B	4230 B	4210 B	4250 B	4120 B	4280 B	4390 B	3800 B	3910 B
Manganese		54.8	53.1	61.2	58.3	60.3	56	60.1	58.2	41.2	39.2
Mercury	0.0007 ^(d)	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.13 U	0.13 U	0.13 U	0.14 U
Nickel	32.3 ^(d)	1.5 B	1.5 B	1.7 B	1.8 B	1.8 B	1.7 B	1.7 B	1.8 B	1.5 B	1.5 B
Potassium		4060 B	4170 B	4490 B	4600 B	4610 B	4490 B	4650 B	4840 B	4040 B	4180 B
Selenium	4.6 ^(d)	5.1	6.2	5.5	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Silver	0.1 ⁽ⁱ⁾	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ	3 UJ
Sodium		8760	9130	9560	9440	9530	9390	9740	10100	8410	8680
Thallium	8 ^(a-s)	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Vanadium	14 ^(a-s)	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Zinc	51.2 ^(d)	1.2 B	2 B	1.7 B	8.9 B	1.8 B	9.6 B	2.5 B	8.8 B	1.6 B	3.6 B
Cyanide	5.2	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Class C Ambient Water Quality
Standard

(d) : Dissolved form

(i) : Ionic form

(a-s) : Acid-Soluble form

TABLE 1-7
Surface Water Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated value. The value was designated as estimated as a result of the data validation criteria. Also used to indicated tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the Contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- ug/kg - Microgram per kilogram
- ug/l - Microgram per liter
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls
- N/A - Not Available
- ND - Non-Detectable

Duplicate Samples

- DUP01600 - Corresponds to SW01

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg	SS06 70854008 ug/kg
Chloromethane	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Bromomethane	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Vinyl Chloride	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chloroethane	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Methylene Chloride	15 U	15 UJ	14 U	1U U	14 U	14 U	24 U
Acetone	25 S	15 UJ	14 U	4 JS	16 S	7 JS	24 U
Carbon Disulfide	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1-Dichloroethene	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1-Dichloroethane	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,2-Dichloroethene (Total)	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chloroform	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,2-Dichloroethane	14 U	15 U	14 U	11 U	14 U	14 U	24 U
2-Butanone	14 U	15 U	14 U	11 U	14 U	3 J	24 U
1,1,1-Trichloroethane	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Carbon Tetrachloride	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Bromodichloromethane	14 U	15 U	14 U	11 U	14 U	14 U	24 U
1,2-Dichloropropane	14 U	15 U	14 U	11 U	14 U	14 U	24 U
cis-1,3-Dichloropropene	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Trichloroethene	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Dibromochloromethane	14 U	15 U	14 U	11 U	14 U	14 U	24 U
1,1,2-Trichloroethane	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Benzene	14 U	15 U	14 U	11 U	14 U	14 U	24 U
trans-1,3-Dichloropropene	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Bromoform	14 U	15 U	14 U	11 U	14 U	14 U	24 U
4-Methyl-2-Pentanone	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
2-Hexanone	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Tetrachloroethene	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1,2,2-Tetrachloroethane	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Toluene	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chlorobenzene	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Ethylbenzene	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Styrene	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Xylene (Total)	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	FBSS060700 70843009 ug/kg	TBSS060700 70843010 ug/kg
Chloromethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Bromomethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Vinyl Chloride	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Chloroethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Methylene Chloride	18 UJ	12 UJ	11 UJ	24 UJ	1 J	10 U
Acetone	18 UJ	12 UJ	11 UJ	50 J	2 J	10 U
Carbon Disulfide	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1-Dichloroethene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1-Dichloroethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,2-Dichloroethene (Total)	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Chloroform	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,2-Dichloroethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
2-Butanone	6 J	12 UJ	11 UJ	19 J	10 U	10 U
1,1,1-Trichloroethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Carbon Tetrachloride	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Bromodichloromethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,2-Dichloropropane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
cis-1,3-Dichloropropene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Trichloroethene	76 J	42 J	49	5 J	10 U	10 U
Dibromochloromethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1,2-Trichloroethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Benzene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
trans-1,3-Dichloropropene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Bromoform	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
4-Methyl-2-Pentanone	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
2-Hexanone	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Tetrachloroethene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1,2,2-Tetrachloroethane	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Toluene	18 UJ	12 UJ	11 UJ	14 J	10 U	10 U
Chlorobenzene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Ethylbenzene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Styrene	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Xylene (Total)	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	SS11 ug/kg	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
Chloromethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Bromomethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Vinyl Chloride	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Chloroethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Methylene Chloride	12 U	2 J	3 J	11 U	11 U	11 U	11 U
Acetone	12 UJ	13 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
Carbon Disulfide	12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethene (Total)	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Chloroform	12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	12 UJ	13 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,1,1-Trichloroethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Carbon Tetrachloride	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Benzene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
trans-1,3-Dichloropropene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Bromoform	12 U	13 U	11 U	11 U	11 U	11 U	11 U
4-Methyl-2-Pentanone	12 U	13 U	11 U	11 U	11 U	11 U	11 U
2-Hexanone	12 UJ	13 U	11 UJ	11 UJ	11 U	11 U	11 UJ
Tetrachloroethene	12 U	1 J	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Toluene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Chlorobenzene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Styrene	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Xylene (Total)	12 U	13 U	11 U	11 U	11 U	11 U	11 U

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg
Phenol	590 U	940 U	550 U	270 J	470 U	470 U
bis(-2-Chloroethyl)Ether	590 U	940 U	550 U	450 U	470 U	470 U
2-Chlorophenol	590 U	940 U	550 U	450 U	470 U	470 U
1,3-Dichlorobenzene	590 U	940 U	550 U	450 U	470 U	470 U
1,4-Dichlorobenzene	590 U	940 U	550 U	450 U	470 U	470 U
1,2-Dichlorobenzene	590 U	940 U	550 U	450 U	470 U	470 U
2-Methylphenol	590 U	940 U	550 U	450 U	470 U	470 U
2,2-oxybis(1-Chloropropane)	590 U	940 U	550 U	450 U	470 U	470 U
4-Methylphenol	590 U	940 U	550 U	450 U	470 U	470 U
N-Nitroso-di-n-propylamine	590 U	940 U	550 U	450 U	470 U	470 U
Hexachloroethane	590 U	940 U	550 U	450 U	470 U	470 U
Nitrobenzene	590 U	940 U	550 U	450 U	470 U	470 U
Isophorone	590 U	940 U	550 U	450 U	470 U	470 U
2-Nitrophenol	590 U	940 U	550 U	450 U	470 U	470 U
2,4-Dimethylphenol	590 U	940 U	550 U	450 U	470 U	470 U
2,4-Dichlorophenol	590 U	940 U	550 U	450 U	470 U	470 U
1,2,4-Trichlorobenzene	590 U	940 U	550 U	450 U	470 U	470 U
Naphthalene	62 J	940 U	550 U	450 U	470 U	470 U
4-Chloroaniline	590 U	940 U	550 U	450 U	470 U	470 U
bis(2-Chloroethoxy)methane	590 U	940 U	550 U	450 U	470 U	470 U
Hexachlorobutadiene	590 U	940 U	550 U	450 U	470 U	470 U
4-Chloro-3-methylphenol	590 U	940 U	550 U	450 U	470 U	470 U
2-Methylnaphthalene	590 U	940 U	550 U	450 U	470 U	470 U
Hexachlorocyclopentadiene	590 U	940 U	550 U	450 U	470 U	470 U
2,4,6-Trichlorophenol	590 U	940 U	550 U	450 U	470 U	470 U
2,4,5-Trichlorophenol	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
2-Chloronaphthalene	590 U	940 U	550 U	450 U	470 U	470 U
2-Nitroaniline	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Dimethylphthalate	590 U	940 U	550 U	450 U	470 U	470 U
Acenaphthylene	96 J	130 J	550 U	450 U	470 U	470 U
2,6-Dinitrotoluene	590 U	940 U	550 U	450 U	470 U	470 U
3-Nitroaniline	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Acenaphthene	240 J	170 J	550 U	450 U	470 U	470 U
2,4-Dinitrophenol	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
4-Nitrophenol	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Dibenzofuran	80 J	940 U	550 U	450 U	470 U	470 U
2,4-Dinitrotoluene	590 U	940 U	550 U	450 U	470 U	470 U
Diethylphthalate	590 U	940 U	550 U	450 U	470 U	470 U

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

SAMPLE LOCATION LAB ID UNITS ANALYTE	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg
4-Chlorophenyl-phenylether	590 U	940 U	550 U	450 U	470 U	470 U
Fluorene	250 J	220 J	550 U	450 U	470 U	470 U
4-Nitroaniline	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
4,6-Dinitro-2-methylphenol	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
N-Nitrosodiphenylamine (1)	590 U	940 U	550 U	450 U	470 U	470 U
4-Bromophenyl-phenylether	590 U	940 U	550 U	450 U	470 U	470 U
Hexachlorobenzene	590 U	940 U	550 U	450 U	470 U	470 U
Pentachlorophenol	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Phenanthrene	2300	2900	170 J	450 U	56 J	470 U
Anthracene	540 J	530 J	550 U	450 U	470 U	470 U
Carbazole	210 J	210 J	550 U	450 U	470 U	470 U
Di-n-butylphthalate	590 U	940 U	55 J	450 U	470 U	470 U
Fluoranthene	3500	5000	380 J	450 U	210 J	470 U
Pyrene	3100	4200	240 J	450 U	140 J	470 U
Butylbenzylphthalate	590 U	940 U	550 U	450 U	470 U	470 U
3,3-Dichlorobenzidine	590 U	940 U	550 U	450 U	470 U	470 U
Benzo(a)anthracene	1900	2400	120 J	450 U	83 J	470 U
Chrysene	1900	2500	130 J	450 U	85 J	470 U
bis(2-Ethylhexyl)phthalate	590 U	940 U	550 U	220 JS	470 U	470 U
Di-n-octylphthalate	590 U	940 U	550 U	450 U	470 U	470 U
Benzo(b)fluoranthene	3300	4000	220 J	450 U	150 J	470 U
Benzo(k)fluoranthene	1100	1500	81 J	450 U	51 J	470 U
Benzo(a)pyrene	2400	3000	150 J	450 U	89 J	470 U
Indeno(1,2,3-cd)pyrene	1300	1800	89 J	450 U	53 J	470 U
Dibenzo(a,h)anthracene	270 J	370 J	550 U	450 U	470 U	470 U
Benzo(g,h,i)perylene	1100	1500	550 U	450 U	48 J	470 U

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	SS06 70854008 ug/kg	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	SS11 ug/kg
Phenol	660 U	360 J	340 J	410 U	790 U	390 U
bis-(2-Chloroethyl)Ether	660 U	480 U	440 U	410 U	790 U	390 U
2-Chlorophenol	660 U	480 U	440 U	410 U	790 U	390 U
1,3-Dichlorobenzene	660 U	480 U	440 U	410 U	790 U	390 U
1,4-Dichlorobenzene	660 U	480 U	440 U	410 U	790 U	390 U
1,2-Dichlorobenzene	660 U	480 U	440 U	410 U	790 U	390 U
2-Methylphenol	660 U	480 U	440 U	410 U	790 U	390 U
2,2-oxybis(1-Chloropropane)	660 U	480 U	440 U	410 U	790 U	390 U
4-Methylphenol	660 U	480 U	440 U	410 U	790 U	390 U
N-Nitroso-di-n-propylamine	660 U	480 U	440 U	410 U	790 U	390 U
Hexachloroethane	660 U	480 U	440 U	410 U	790 U	390 U
Nitrobenzene	660 U	480 U	440 U	410 U	790 U	390 U
Isophorone	660 U	480 U	440 U	410 U	790 U	390 U
2-Nitrophenol	660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dimethylphenol	660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dichlorophenol	660 U	480 U	440 U	410 U	790 U	390 U
1,2,4-Trichlorobenzene	660 U	480 U	440 U	410 U	790 U	390 U
Naphthalene	660 U	480 U	440 U	410 U	790 U	390 U
4-Chloroaniline	660 U	480 U	440 U	410 U	790 U	390 U
bis(2-Chloroethoxy)methane	660 U	480 U	440 U	410 U	790 U	390 U
Hexachlorobutadiene	660 U	480 U	440 U	410 U	790 U	390 U
4-Chloro-3-methylphenol	660 U	480 U	440 U	410 U	790 U	390 U
2-Methylnaphthalene	660 U	480 U	440 U	410 U	790 U	390 U
Hexachlorocyclopentadiene	660 U	480 U	440 U	410 U	790 U	390 U
2,4,6-Trichlorophenol	660 U	480 U	440 U	410 U	790 U	390 U
2,4,5-Trichlorophenol	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
2-Chloronaphthalene	660 U	480 U	440 U	410 U	790 U	390 U
2-Nitroaniline	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Dimethylphthalate	660 U	480 U	440 U	410 U	790 U	390 U
Acenaphthylene	660 U	480 U	440 U	410 U	790 U	390 U
2,6-Dinitrotoluene	660 U	480 U	440 U	410 U	790 U	390 U
3-Nitroaniline	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Acenaphthene	660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dinitrophenol	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
4-Nitrophenol	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Dibenzofuran	660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dinitrotoluene	660 U	480 U	440 U	410 U	790 U	390 U
Diethylphthalate	660 U	480 U	440 U	410 U	790 U	390 U

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

SAMPLE LOCATION LAB ID UNITS ANALYTE	SS06 70854008 ug/kg	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	SS11 ug/kg
4-Chlorophenyl-phenylether	660 U	480 U	440 U	410 U	790 U	390 U
Fluorene	660 U	480 U	440 U	410 U	790 U	390 U
4-Nitroaniline	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
4,6-Dinitro-2-methylphenol	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
N-Nitrosodiphenylamine (1)	660 U	480 U	440 U	410 U	790 U	390 U
4-Bromophenyl-phenylether	660 U	480 U	440 U	410 U	790 U	390 U
Hexachlorobenzene	660 U	480 U	440 U	410 U	790 U	390 U
Pentachlorophenol	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Phenanthrene	660 U	480 U	440 U	410 U	790 U	390 U
Anthracene	660 U	480 U	440 U	410 U	790 U	390 U
Carbazole	660 U	480 U	440 U	410 U	790 U	390 U
Di-n-butylphthalate	660 U	480 U	440 U	410 U	790 U	390 U
Fluoranthene	660 U	480 U	440 U	410 U	790 U	390 U
Pyrene	660 U	480 U	440 U	410 U	790 U	390 UJ
Butylbenzylphthalate	660 U	480 U	440 U	410 U	790 U	390 U
3,3-Dichlorobenzidine	660 U	480 U	440 U	410 U	790 U	390 U
Benzo(a)anthracene	660 U	480 U	440 U	410 U	790 U	390 U
Chrysene	660 U	480 U	440 U	410 U	790 U	390 U
bis(2-Ethylhexyl)phthalate	660 U	290 J	220 J	250 J	320 J	390 U
Di-n-octylphthalate	660 U	480 U	440 U	410 U	790 U	390 UJ
Benzo(b)fluoranthene	660 U	480 U	440 U	410 U	790 U	390 U
Benzo(k)fluoranthene	660 U	480 U	440 U	410 U	790 U	390 U
Benzo(a)pyrene	660 U	480 U	440 U	410 U	790 U	390 U
Indeno(1,2,3-cd)pyrene	660 U	480 U	440 U	410 U	790 U	390 U
Dibenzo(a,h)anthracene	660 U	480 U	440 U	410 U	790 U	390 U
Benzo(g,h,i)perylene	660 U	480 U	440 U	410 U	790 U	390 UJ

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
Phenol	450 U	370 U	390 U	370 U	370 U	380 U
bis-(2-Chloroethyl)Ether	450 U	370 U	390 U	370 U	370 U	380 U
2-Chlorophenol	450 U	370 U	390 U	370 U	370 U	380 U
1,3-Dichlorobenzene	450 U	370 U	390 U	370 U	370 U	380 U
1,4-Dichlorobenzene	450 U	370 U	390 U	370 U	370 U	380 U
1,2-Dichlorobenzene	450 U	370 U	390 U	370 U	370 U	380 U
2-Methylphenol	450 U	370 U	390 U	370 U	370 U	380 U
2,2-oxybis(1-Chloropropane)	450 U	370 U	390 U	370 U	370 U	380 U
4-Methylphenol	450 U	370 U	390 U	370 U	370 U	380 U
N-Nitroso-di-n-propylamine	450 U	370 U	390 U	370 U	370 U	380 U
Hexachloroethane	450 U	370 U	390 U	370 U	370 U	380 U
Nitrobenzene	450 U	370 U	390 U	370 U	370 U	380 U
Isophorone	450 U	370 U	390 U	370 U	370 U	380 U
2-Nitrophenol	450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dimethylphenol	450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dichlorophenol	450 U	370 U	390 U	370 U	370 U	380 U
1,2,4-Trichlorobenzene	450 U	370 U	390 U	370 U	370 U	380 U
Naphthalene	450 U	370 U	390 U	370 U	370 U	380 U
4-Chloroaniline	450 U	370 U	390 U	370 U	370 U	380 U
bis(2-Chloroethoxy)methane	450 U	370 U	390 U	370 U	370 U	380 U
Hexachlorobutadiene	450 U	370 U	390 U	370 U	370 U	380 U
4-Chloro-3-methylphenol	450 U	370 U	390 U	370 U	370 U	380 U
2-Methylnaphthalene	450 U	370 U	390 U	370 U	370 U	380 U
Hexachlorocyclopentadiene	450 U	370 U	390 U	370 U	370 U	380 U
2,4,6-Trichlorophenol	450 U	370 U	390 U	370 U	370 U	380 U
2,4,5-Trichlorophenol	1100 U	930 U	960 U	930 U	930 U	960 U
2-Chloronaphthalene	450 U	370 U	390 U	370 U	370 U	380 U
2-Nitroaniline	1100 U	930 U	960 U	930 U	930 U	960 U
Dimethylphthalate	450 U	370 U	390 U	370 U	370 U	380 U
Acenaphthylene	450 U	370 U	390 U	370 U	370 U	380 U
2,6-Dinitrotoluene	450 U	370 U	390 U	370 U	370 U	380 U
3-Nitroaniline	1100 U	930 U	960 U	930 U	930 U	960 U
Acenaphthene	450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dinitrophenol	1100 U	930 U	960 U	930 U	930 U	960 U
4-Nitrophenol	1100 U	930 U	960 U	930 U	930 U	960 U
Dibenzofuran	450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dinitrotoluene	450 U	370 U	390 U	370 U	370 U	380 U
Diethylphthalate	450 U	370 U	390 U	370 U	370 U	380 U

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

SAMPLE LOCATION LAB ID UNITS ANALYTE	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
4-Chlorophenyl-phenylether	450 U	370 U	390 U	370 U	370 U	380 U
Fluorene	450 U	370 U	390 U	370 U	370 U	380 U
4-Nitroaniline	1100 U	930 U	960 U	930 U	930 U	960 U
4,6-Dinitro-2-methylphenol	1100 U	930 U	960 U	930 U	930 U	960 U
N-Nitrosodiphenylamine (1)	450 U	370 U	390 U	370 U	370 U	380 U
4-Bromophenyl-phenylether	450 U	370 U	390 U	370 U	370 U	380 U
Hexachlorobenzene	450 U	370 U	390 U	370 U	370 U	380 U
Pentachlorophenol	1100 U	930 U	960 U	930 U	930 U	960 U
Phenanthrene	450 U	370 U	390 U	370 U	370 U	380 U
Anthracene	450 U	370 U	390 U	370 U	370 U	380 U
Carbazole	450 U	370 U	390 U	370 U	370 U	380 U
Di-n-butylphthalate	450 U	370 U	390 U	370 U	370 U	380 U
Fluoranthene	450 U	370 U	390 U	370 U	370 U	380 U
Pyrene	450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ
Butylbenzylphthalate	450 U	370 U	390 U	370 U	370 U	380 U
3,3-Dichlorobenzidine	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(a)anthracene	450 U	370 U	390 U	370 U	370 U	380 U
Chrysene	450 U	370 U	390 U	370 U	370 U	380 U
bis(2-Ethylhexyl)phthalate	46 J	46 J	60 J	54 J	41 J	380 U
Di-n-octylphthalate	450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ
Benzo(b)fluoranthene	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(k)fluoranthene	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(a)pyrene	450 U	370 U	390 U	370 U	370 U	380 U
Indeno(1,2,3-cd)pyrene	450 U	370 U	390 U	370 U	370 U	380 U
Dibenzo(a,h)anthracene	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(g,h,i)perylene	450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 78054006 ug/kg
ANALYTE						
alpha-BHC	2.9 UJ	4 UJ	3.2 UJ	2.2 U	2.4 U	2.4 U
beta-BHC	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
delta-BHC	2.9 UJ	4 UJ	3.2 UJ	2.2 U	2.4 U	2.4 U
gamma-BHC (Lindane)	2.9 UJ	4 UJ	3.2 UJ	2.2 U	2.4 U	2.4 U
Heptachlor	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Aldrin	6.7 P	4 U	8.9 P	2.2 U	2.4 U	2.4 U
Heptachlor Epoxide	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Endosulfan I	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Dieldrin	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
4,4'-DDE	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Endrin	5.6 U	7.9 U	6.2 U	4.3 U	4.7 UJ	4.6 UJ
Endosulfan II	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
4,4'-DDD	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Endosulfan Sulfate	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
4,4'-DDT	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Methoxychlor	29 U	40 U	32 U	22 U	24 U	24 U
Endrin Ketone	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Endrin Aldehyde	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
alpha-Chlordane	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
gamma-Chlordane	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Toxaphene	290 U	400 U	320 U	220 U	240 U	240 U
Aroclor-1016	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1221	110 U	160 U	130 U	88 U	95 U	94 U
Aroclor-1232	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1242	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1248	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1254	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1260	56 U	79 U	62 U	43 U	47 U	46 U

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS	SS06 70854008 ug/kg	SS07 78070002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg
ANALYTE					
alpha-BHC	3.4 U	2.4 U	2.2 U	2.1 U	4 U
beta-BHC	3.4 U	2.4 U	2.2 U	2.1 U	4 U
delta-BHC	3.4 U	2.4 U	2.2 U	2.1 U	4 U
gamma-BHC (Lindane)	3.4 U	2.4 U	2.2 U	2.1 U	4 U
Heptachlor	3.4 U	2.4 U	2.2 U	2.1 U	4 U
Aldrin	3.4 U	2.4 U	2.2 U	2.1 U	4 U
Heptachlor Epoxide	3.4 U	2.4 U	2.2 U	2.1 U	4 U
Endosulfan I	3.4 U	2.4 U	2.2 U	2.1 U	4 U
Dieldrin	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
4,4'-DDE	6.5 U	4.8 U	4.3 U	4.1 U	13
Endrin	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
Endosulfan II	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
4,4'-DDD	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
Endosulfan Sulfate	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
4,4'-DDT	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
Methoxychlor	34 U	24 U	22 U	21 U	40 U
Endrin Ketone	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
Endrin Aldehyde	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U
alpha-Chlordane	3.4 U	2.4 U	2.2 U	2.1 U	4 U
gamma-Chlordane	3.4 U	2.4 U	2.2 U	2.1 U	4 U
Toxaphene	340 U	240 U	220 U	210 U	400 U
Aroclor-1016	65 U	48 U	43 U	41 U	77 U
Aroclor-1221	130 U	96 U	86 U	83 U	160 U
Aroclor-1232	65 U	48 U	43 U	41 U	77 U
Aroclor-1242	65 U	48 U	43 U	41 U	77 U
Aroclor-1248	65 U	48 U	43 U	41 U	77 U
Aroclor-1254	65 U	48 U	43 U	41 U	77 U
Aroclor-1260	65 U	48 U	43 U	41 U	77 U

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS	SS11 ug/kg	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
ANALYTE							
alpha-BHC	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
beta-BHC	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
delta-BHC	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
gamma-BHC (Lindane)	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Heptachlor	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Aldrin	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Heptachlor Epoxide	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Endosulfan I	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Dieldrin	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
4,4'-DDE	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endrin	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endosulfan II	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
4,4'-DDD	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endosulfan Sulfate	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
4,4'-DDT	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Methoxychlor	20 U	23 U	19 U	20 U	19 UJ	19 U	20 U
Endrin Ketone	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endrin Aldehyde	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
alpha-Chlordane	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
gamma-Chlordane	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Toxaphene	200 U	230 U	190 U	200 U	190 UJ	190 U	200 U
Aroclor-1016	38 U	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1221	77 U	91 U	75 U	77 U	75 UJ	74 U	77 U
Aroclor-1232	38 U	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1242	38 U	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1248	38 U	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1254	38 U	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1260	38 U	45 U	37 U	38 U	37 UJ	36 U	38 U

Bolded: Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS ANALYTE	SS01 70843004 mg/kg	DUP02600 70843002 mg/kg dup of SS01	SS02 70843006 mg/kg	SS03 70854002 mg/kg	SS04 70854004 mg/kg	SS05 70854006 mg/kg
Aluminum	7770	8300	9890	10600	8930	6890
Antimony	1.5 U	1.9 U	1.4 U	1 UJ	1.4 UJ	1.2 UJ
Arsenic	1.5 B	3.7 B	7.5	7.5	5.5	1.7 B
Barium	40.7 B	41.9 B	131	145	52.1 B	32.8 B
Beryllium	0.39 B	0.5 B	0.5 B	0.6 B	0.41 B	0.33 B
Cadmium	1.2 B	1.7 B	2.1	2.1 J	1.3 BJ	0.86 BJ
Calcium	2050	3190	9860	1110	1160 B	642 B
Chromium	11.3 J	11.8 J	10.9 J	14.3 J	10.5 J	8.8 J
Cobalt	6 B	6.4 B	8.6 B	12.2	6.8 B	6.1 B
Copper	20.9	22.6	13.7	18.8	13.1	13.4
Iron	17200	16800	34000	35600	22700	15500
Lead	35	30.5	28.4	29.6	37.4	11.2
Magnesium	3570	3830	7740	4320	3220	2880
Manganese	211	187	2410	2430	691	440
Mercury	0.081 U	0.11 U	0.079 U	0.056 U	0.075 B	0.061 U
Nickel	16	17.5	19	23.4 J	15.5 J	14.7
Potassium	737 B	791 B	606 B	701 B	616 B	530 J
Selenium	1.5 U	1.9 U	1.4 U	1 U	1.4 U	1.2 U
Silver	1.3 BJ	1.8 BJ	3 J	3.1	1.8 B	1.2 B
Sodium	305 B	336 B	436 B	267 B	148 B	102 B
Thallium	1.8 U	2.3 U	1.7 U	2.6	1.7 U	1.5 U
Vanadium	14.3 B	15.2 B	19.7	18.3	15.2	11.2 B
Zinc	164	173	127	140 J	90.5 J	51.3 J
Cyanide	0.31 B	0.47 B	0.31 B	0.23 B	0.26 B	0.12 B
TOC (%)	1.68	1.67	1.17	0.91	1.75	0.59

Bolded : Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS	SS06 70854008 mg/kg	SS07 70870002 mg/kg	SS08 70870004 mg/kg	SS09 70870006 mg/kg	SS10 70870008 mg/kg
ANALYTE					
Aluminum	9460	6950	6250	7240	12400
Antimony	1.6 U	1.3 U	1.1 U	0.95 U	1.8 U
Arsenic	4.3	3.4	1.8 B	2.6	6.7
Barium	82.6	48.8 B	30.7 B	29.3 B	126
Beryllium	0.54 B	0.33 B	0.33 B	0.48 B	0.79 B
Cadmium	1.3 B	1.3	0.92 B	1.3	1.6 B
Calcium	2310	966 B	588 B	271 B	3810
Chromium	12.1	8.3	7.7	9.5	16.1
Cobalt	6.6 B	6.1 B	5.2 B	7.7 B	6.7 B
Copper	17.4	11.3	9.6	13.9	39.1
Iron	19400	20700	16300	22300	15100
Lead	23.6	12.4	11.9	11.9	31.8
Magnesium	3000	2320	2460	3100	3370
Manganese	265	338	262	191	227
Mercury	0.1 U	0.051 U	0.048 U	0.052 U	0.093 U
Nickel	16.9	13.3	11.8	16.6	21.8
Potassium	805 B	621 B	441 B	422 B	944 B
Selenium	1.6 U	1.3 U	1.1 U	0.95 U	1.8 U
Silver	1.4 B	2 BJ	1.5 BJ	2.1 J	1.2 B
Sodium	183 B	108 B	112 B	95.9 B	381 B
Thallium	1.9 U	1.5 U	1.9 B	1.1 U	2.1 UJ
Vanadium	17.2	12.5 B	12.1	14.4	18.3
Zinc	85.1	54.2 J	45.6 J	50.7 J	108 J
Cyanide	0.12 U	0.12 U	0.098 U	0.099 U	0.22 U
TOC (%)	1.14	1.03	0.58	0.26	2.6

Bolded : Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS	SS11 mg/kg	SS12 mg/kg	SS13 mg/kg	SS14 mg/kg	SS15 mg/kg	SS16 mg/kg	DUP082201 mg/kg
ANALYTE							
Aluminum	12900 J	10200 J	12400 J	11900 J	12000 J	12200 J	12200 J
Antimony	0.64 UJ	0.78 UJ	0.86 UJ	0.54 UJ	0.80 UJ	0.62 UJ	0.42 UJ
Arsenic	8.4	8.4	12.1	17.7	17.7	18.7	7.7
Barium	77.9 J	96.2 J	99.5 J	163 J	120 J	113 J	64.5 J
Beryllium	0.56 B	0.49 B	0.67 B	0.73 B	0.76 B	0.80 B	0.52 B
Cadmium	0.36 J	0.43 J	0.53 J	0.82 J	0.79 J	0.71 J	0.28 J
Calcium	1170	2090	1140	1370	1410	1200	839
Chromium	15.4	14.2	16.4	15.3	17.4	17.9	14.4
Cobalt	12.5	9.9 B	11.5	13.6	13.1	13.7	12.8
Copper	10.8 J	4.2 J	4.8 J	2.5 U	4.7 J	6.0 J	12.1 J
Iron	26800	27100	37400	46100	46100	44600	25300
Lead	22.4 J	22.5 J	23.0 J	27.0 J	25.9 J	24.9 J	21.1 J
Magnesium	5960	4610	5810	5260	5570	5830	5740
Manganese	1950 J	1970 J	2100 J	2720 J	2070 J	2020 J	1850 J
Mercury	0.056 U	0.057 U	0.049 U	0.053 U	0.045 U	0.056 U	0.055 U
Nickel	23.7	19.8	23.8	22.5	22.9	24.9	22.5
Potassium	651 J	622 J	602 J	675 J	650 J	731 J	615 J
Selenium	4.2 J	4.6 J	5.4 J	6.8 J	7.0 J	6.9 J	3.9 J
Silver	4.3 J	4.4 J	6.1 J	7.5 J	7.4 J	7.2 J	4.0 J
Sodium	227 J	296 J	294 J	335 J	320 J	300 J	195 J
Thallium	0.71 U	0.96 U	0.83 U	0.87 U	0.80 U	0.83 U	0.64 U
Vanadium	18.3	15.1	21.1	24.0	24.1	24.6	16.6
Zinc	108	133	153	176	164	154	98.6
Cyanide	0.22 U	0.23 U	0.28 U	0.22 U	0.19 U	0.15 UJ	0.19 U
TOC (%)	0.62	0.96	0.23	0.44	0.45	0.29	0.41

Bolded : Detected Concentration

TABLE 1-8
Sediment Samples
June, 2000 and August, 2001
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- ug/kg - Microgram per kilogram
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls

Duplicate Samples

DUP02600 Corresponds to SS01
DUP082201 Corresponds to SS16

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values ug/L	SEEP01 70916002 ug/l	DUP061500 70916001 ug/l dup of SEEP01	SEEP02 70916003 ug/l	SEEP03 70998002 ug/l	SEEP04 70098001 ug/l	SEEP05 70998004 ug/l	SEEP06 70998003 ug/l
Chloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone		10 U	10 U	10 U	10 U	10 U	10 U	3 J
Carbon Disulfide		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (Total)		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone		10 U	10 U	10 U	10 UJ	10 UJ	10 UJ	10 UJ
1,1,1-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10	10 U	10 U	3 J	10 U	3 J	10 U	2 J
trans-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform		10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	1*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	6,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	14	5 J	62	10 U	10	10 U	22
Ethylbenzene	17	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (Total)	65*	10 U	10 U	34	10 U	10 U	10 U	1 J

Bolded: Detected Concentration

*: Guidance Value

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

VOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values ug/L	SEEP07 70998005 ug/l	SEEP08 70998006 ug/l	SEEP09 70998008 ug/l	SEEP10 70998009 ug/l	FB062900 70998010 ug/l	TB061500 70916004 ug/l	TB062900 70998011 ug/l
Chloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromomethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Vinyl Chloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone		4 J	5 J	10 U	10 U	10 U	10 U	10 U
Carbon Disulfide		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethene (Total)		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chloroform		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone		10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 U	10 UJ
1,1,1-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbon Tetrachloride		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromodichloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichloropropane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Trichloroethene	40	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibromochloromethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2-Trichloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	10	3 J	10 U	10 U	2 J	10 U	10 U	10 U
trans-1,3-Dichloropropene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Bromoform		10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-Pentanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Tetrachloroethene	1*	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,1,2,2-Tetrachloroethane		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Toluene	6,000	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chlorobenzene	5	100	10 U	10 U	18	10 U	10 U	10 U
Ethylbenzene	17	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Styrene		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Xylene (Total)	65*	10	10 U	10 U	5 J	10 U	10 U	10 U

Bolded: Detected Concentration

*: Guidance Value

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TOGS 1.1.1	SEEP01	DUP061500	SEEP02	SEEP03	SEEP04	SEEP05
LAB ID	Class C Ambient Water Quality	70916002	70916001	70916003	70998002	70998001	70998004
UNITS	Standards & Guidance Values	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE	ug/L	dup of SEEP01					
Phenol	5**	10 U	10 U	10 U	10 U	10 U	10 U
bis-(2-Chloroethyl)Ether		10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	1**	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	5**	2 J	1 J	6 J	1 J	3 J	10 U
1,2-Dichlorobenzene	5**	10 U	10 U	1 J	10 U	10 U	10 U
2-Methylphenol	5**	10 U	10 U	10 U	10 U	10 U	10 U
2,2-oxybis(1-Chloropropane)		10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	5**	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine		10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	0.6	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene		10 U	10 U	10 U	10 U	10 U	10 U
Isophorone		10 U	10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	5**	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	5**	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	1**	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	13*	1 J	10 U	6 J	10 U	2 J	10 U
4-Chloroaniline		10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane		10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.01	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	1**	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	4.7*	10 U	10 U	1 J	10 U	10 U	10 U
Hexachlorocyclopentadiene	0.45	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	1**	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	1**	25 U	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene		10 U	10 U	10 U	10 U	10 U	10 U
2-Nitroaniline		25 U	25 U	25 U	25 U	25 U	25 U
Dimethylphthalate		10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene		10 U	10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene		10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline		25 U	25 U	25 U	25 U	25 U	25 U
Acenaphthene	5.3*	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	5**	25 U	25 U	25 U	25 U	25 U	25 U

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values ug/L	SEEP01 70916002 ug/l	DUP061500 70916001 ug/l dup of SEEP01	SEEP02 70916003 ug/l	SEEP03 70998002 ug/l	SEEP04 70998001 ug/l	SEEP05 70998004 ug/l
4-Nitrophenol	5**	25 U	25 U	25 U	25 U	25 U	25 U
Dibenzofuran		10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene		10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate		10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl-phenylether		10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	0.54*	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline		25 U	25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	5**	25 U	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine		10 U	10 U	10 U	10 U	10 U	10 U
4-Bromophenyl-phenylether		10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.00003	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1**	25 U	25 U	25 U	25 U	25 U	25 U
Phenanthrene	5*	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	3.8*	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole		10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate		10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene		10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	4.6*	10 U	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate		10 U	10 U	10 U	10 U	10 U	10 U
3,3-Dichlorobenzidine		10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	0.03*	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene		10 U	10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	0.6	3 J	2 J	3 J	10 U	1 J	10 U
Di-n-octylphthalate		10 U	10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene		10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene		10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	0.0012	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene		10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene		10 U	10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene		10 U	10 U	10 U	10 U	10 U	10 U

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class C

* : Guidance Value

** : Indicates that the standard is for the sum of the compound family.

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TOGS 1.1.1	SEEP06	SEEP07	SEEP08	SEEP09	SEEP10
LAB ID	Class C Ambient Water Quality	70998003	70998005	70998006	70998008	70998009
UNITS	Standards & Guidance Values	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE	ug/L					
Phenol	5**	10 U	10 U	10 U	10 U	10 U
bis-(2-Chloroethyl)Ether		10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	1**	10 U	2 J	10 U	10 U	10 U
1,3-Dichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	5**	5 J	10	1 J	10 U	10 U
1,2-Dichlorobenzene	5**	2 J	3 J	10 U	10 U	10 U
2-Methylphenol	5**	10 U	10 U	10 U	10 U	10 U
2,2-oxybis(1-Chloropropane)		10 U	10 U	10 U	10 U	10 U
4-Methylphenol	5**	2 J	10 U	10 U	10 U	10 U
N-Nitroso-di-n-propylamine		10 U	10 U	10 U	10 U	10 U
Hexachloroethane	0.6	10 U	10 U	10 U	10 U	10 U
Nitrobenzene		10 U	10 U	10 U	10 U	10 U
Isophorone		10 U	10 U	10 U	10 U	10 U
2-Nitrophenol	5**	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	5**	10 U	10 U	10 U	10 U	10 U
2,4-Dichlorophenol	1**	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	5**	10 U	10 U	10 U	10 U	10 U
Naphthalene	13*	5 J	15	10 U	10 U	3 J
4-Chloroaniline		10 U	10 U	10 U	10 U	10 U
bis(2-Chloroethoxy)methane		10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.01	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	1**	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	4.7*	10 U	1 J	10 U	10 U	10 U
Hexachlorocyclopentadiene	0.45	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	1**	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	1**	25 U	25 U	25 U	25 U	25 U
2-Chloronaphthalene		10 U	10 U	10 U	10 U	10 U
2-Nitroaniline		25 U	25 U	25 U	25 U	25 U
Dimethylphthalate		10 U	10 U	10 U	10 U	10 U
Acenaphthylene		10 U	10 U	10 U	10 U	10 U
2,6-Dinitrotoluene		10 U	10 U	10 U	10 U	10 U
3-Nitroaniline		25 U	25 U	25 U	25 U	25 U
Acenaphthene	5.3*	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	5**	25 U	25 U	25 U	25 U	25 U

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION	TOGS 1.1.1	SEEP06	SEEP07	SEEP08	SEEP09	SEEP10
LAB ID	Class C Ambient Water Quality	70998003	70998005	70998006	70998008	70998009
UNITS	Standards & Guidance Values	ug/l	ug/l	ug/l	ug/l	ug/l
ANALYTE	ug/L					
4-Nitrophenol	5**	25 U	25 U	25 U	25 U	25 U
Dibenzofuran		10 U	10 U	10 U	10 U	10 U
2,4-Dinitrotoluene		10 U	10 U	10 U	10 U	10 U
Diethylphthalate		10 U	1 J	10 U	10 U	2 J
4-Chlorophenyl-phenylether		10 U	10 U	10 U	10 U	10 U
Fluorene	0.54*	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline		25 U	25 U	25 U	25 U	25 U
4,6-Dinitro-2-methylphenol	5**	25 U	25 U	25 U	25 U	25 U
N-Nitrosodiphenylamine		10 U	10 U	10 U	10 U	2 J
4-Bromophenyl-phenylether		10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.00003	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1**	25 U	25 U	25 U	25 U	25 U
Phenanthrene	5*	10 U	10 U	10 U	10 U	10 U
Anthracene	3.8*	10 U	10 U	10 U	10 U	10 U
Carbazole		10 U	10 U	10 U	10 U	10 U
Di-n-butylphthalate		10 U	10 U	10 U	10 U	10 U
Fluoranthene		10 U	10 U	10 U	10 U	10 U
Pyrene	4.6*	10 U	10 U	10 U	10 U	10 U
Butylbenzylphthalate		10 U	10 U	10 U	10 U	10 U
3,3-Dichlorobenzidine		10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	0.03*	10 U	10 U	10 U	10 U	10 U
Chrysene		10 U	10 U	10 U	10 U	10 U
bis(2-Ethylhexyl)phthalate	0.6	10 U	1 J	10 U	10 U	10 U
Di-n-octylphthalate		10 U	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene		10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene		10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	0.0012	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene		10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene		10 U	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene		10 U	10 U	10 U	10 U	10 U

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Ambient Water Quality Standard for Class C

* : Guidance Value

** : Indicates that the standard is for the sum of the compound family.

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values ug/L	SEEP01 70916002 ug/l	DUP061500 70916001 ug/l dup of SEEP01	SEEP02 70916003 ug/l	SEEP03 70998002 ug/l	SEEP04 70998001 ug/l	SEEP05 70998004 ug/l
alpha-BHC	0.002	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.007	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.008	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.008	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.0002	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.001**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor Epoxide	0.0003	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.009	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.0000006	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.000007	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	0.002	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	0.0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan Sulfate		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.00001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	0.03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Endrin Ketone		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin Aldehyde		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	0.00002**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	0.00002**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	0.000006	5 U	5 U	5 U	5 U	5 U	5 U
Aroclor-1016	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1221	0.000001**	2 U	2 U	2 U	2 U	2 U	2 U
Aroclor-1232	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1242	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1248	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1254	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor-1260	0.000001**	1 U	1 U	1 U	1 U	1 U	1 U

Bolded: Detected Concentration

*: Guidance Value

** : Sum of PCBs, chlordanes, or dieldrin and aldrin.

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values ug/L	SEEP06 70998003 ug/l	SEEP07 70998005 ug/l	SEEP08 70998006 ug/l	SEEP09 70998008 ug/l	SEEP10 700998009 ug/l
alpha-BHC	0.002	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
beta-BHC	0.007	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC	0.008	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.008	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.0002	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aldrin	0.001**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor Epoxide	0.0003	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan I	0.009	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.000006	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDE	0.000007	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	0.002	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan II		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDD	0.0	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan Sulfate		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4'-DDT	0.00001	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Methoxychlor	0.03	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Endrin Ketone		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin Aldehyde		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
alpha-Chlordane	0.00002**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane	0.00002**	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Toxaphene	0.000006	5 U	5 U	5 U	5 U	5 U
Aroclor-1016	0.000001**	1 U	1 U	1 U	1 U	1 U
Aroclor-1221	0.000001**	2 U	2 U	2 U	2 U	2 U
Aroclor-1232	0.000001**	1 U	1 U	1 U	1 U	1 U
Aroclor-1242	0.000001**	1 U	1 U	1 U	1 U	1 U
Aroclor-1248	0.000001**	1 U	1 U	1 U	1 U	1 U
Aroclor-1254	0.000001**	1 U	1 U	1 U	1 U	1 U
Aroclor-1260	0.000001**	1 U	1 U	1 U	1 U	1 U

Bolded: Detected Concentration

*: Guidance Value

** : Sum of PCBs, chlordanes, or dieldrin and aldrin.

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS ANALYTE	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values ug/L	SEEP01 70916002 ug/l	DUP061500 70916001 ug/l dup of SEEP01	SEEP02 70916003 ug/l	SEEP03 70998002 ug/l	SEEP04 70998001 ug/l	SEEP05 70998004 ug/l
Aluminum	100 ⁽ⁱ⁾	4320 J	5570 J	NR	29300	27.6 B	43.5 B
Antimony		5.2 B	5 U	5 U	3 U	3 U	3 U
Arsenic	150 ^(d)	4 U	4 U	4 U	7.6 B	2.4 B	2 U
Barium		216	208	211	434	300	160 B
Beryllium	11 ^(a-s)	0.2 U	0.22 B	0.2 U	1.3 B	0.2 U	0.2 U
Cadmium	1.35 ^(d)	3.5 B	3.6 B	5.5	16	0.54 B	0.2 U
Calcium		103000	104000	65100	131000	55300	68500
Chromium	46.8 ^(d)	0.53 B	2.4 B	0.4 U	42.9	1.9 B	0.4 U
Cobalt	5 ^(a-s)	26 B	25.9 B	3.1 B	43.2 B	6.1 B	2.1 B
Copper	5.5 ^(d)	7.9 B	9.7 B	0.5 U	72.1	4.2 B	3 U
Iron	300	60000	61200	101000	164000	6280	1360
Lead	2.0 ^(d)	5.4	8.1	3 U	46	2.6 B	2 U
Magnesium		9760	10500	8030	22200	31400	16300
Manganese		13400	12900	NR	7960	327	712
Mercury	0.0007 ^(d)	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
Nickel	32.3 ^(d)	31.4 B	32.5 B	13.4 B	108	22 B	9.6 B
Potassium		5650	5910	9930	14700	99600	27700
Selenium	4.6 ^(d)	68.9	76.1	88.5	5 U	5 U	5 U
Silver	0.1 ⁽ⁱ⁾	7.1 J	8.1 J	11.6 J	30.3	5 J	5 J
Sodium		9240	9540	8850	17200	219000	33700
Thallium	8 ^(a-s)	11.3 J	6 U	6 U	2.1 B	7.7 B	5.5 B
Vanadium	14 ^(a-s)	5.7 B	8.9 B	0.95 B	2 U	53.6	29.5 B
Zinc	51.2 ^(d)	30.7	41.1	6.7 B	238	12.3 B	5 U
Cyanide	5.2	2 U	3 B	2 U	3.2 B	2 U	2 U

Bolded: Detected Concentration

Exceeds TOGS 1.1.1 Class C Ambient Water Quality Standard

(d) : Dissolved form

(i) : Ionic form

(a-s) : Acid-Soluble form

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS	TOGS 1.1.1 Class C Ambient Water Quality Standards & Guidance Values ug/L	SEEP06 70998003 ug/l	SEEP07 70998005 ug/l	SEEP08 70998006 ug/l	SEEP08F 70098007 ug/l FILTERED	SEEP09 70998008 ug/l	SEEP10 70998009 ug/l
ANALYTE							
Aluminum	100 ⁽ⁱ⁾	590	42.8 B	74.3 B	230	2180	77.6 B
Antimony		3 U	3 U	3 U	3 U	3 U	3 U
Arsenic	150 ^(d)	2 U	2 U	2 U	2 U	2 U	2 U
Barium		363	240	202	166 B	48.6 B	270
Beryllium	11 ^(a-s)	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Cadmium	1.35 ^(d)	6.2	6	3.1 B	3 B	0.41 B	6.1
Calcium		73600	95100	76400	53300	19500	93400
Chromium	46.8 ^(d)	5.7 B	3.8 B	2.5 B	2.8 B	3.2 B	4.9 B
Cobalt	5 ^(a-s)	8.7 B	5.7 B	11.8 B	7.1 B	1.8 B	6.6 B
Copper	5.5 ^(d)	3 U	3 U	3 U	3 U	3 U	3 U
Iron	300	72200	69800	38100	37100	4590	71700
Lead	2.0 ^(d)	2 U	2 U	2 U	2 U	3.5	2 U
Magnesium		22700	19200	10600	7460	3210 B	13000
Manganese		2080	757	1430	711	493	1610
Mercury	0.0007 ^(d)	0.14 U	0.13 U	0.14 U	0.13 U	0.13 U	0.13 U
Nickel	32.3 ^(d)	28.8 B	21.7 B	24.5 B	16.7 B	6.7 B	19.6 B
Potassium		58500	41500	18500	13100	6260	15500
Selenium	4.6 ^(d)	5 U	5 U	5 U	5 U	5 U	5 U
Silver	0.1 ⁽ⁱ⁾	13.8 J	13.2 J	7.3 J	7.2 J	5 J	13.4
Sodium		112000	70400	23600	14100	3650 B	19600
Thallium	8 ^(a-s)	2 U	5.4 B	3.7 B	2.3 B	2 U	4.4 B
Vanadium	14 ^(a-s)	2 U	2 U	2 U	2 U	5.5 B	2 U
Zinc	51.2 ^(d)	24.6	14.8 B	5 U	6.4 B	13.9 B	11.2 B
Cyanide	5.2	2 U	2 U	2 U	2 U	2 U	2 U

Bolded: Detected Concentration

**Exceeds TOGS 1.1.1 Class C Ambient Water Quality
Standard**

(d) : Dissolved form

(i) : Ionic form

(a-s) : Acid-Soluble form

TABLE 1-9
Leachate Samples
June, 2000
Mayer Landfill - Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated value. The value was designated as estimated as a result of the data validation criteria. Also used to indicated tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the Contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- ug/l - Microgram per liter
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls
- N/A - Not Available
- ND - Non-Detectable
- NR - No Result

Duplicate Samples

DUP061500 Corresponds to SEEP01

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/L)	RW-2	RW-4	RW-12	RW-10	RW-3	RW-24	RW-7	RW-5
VOCs									
acetone	50**	7	8	NR	NR	4	NR	NR	NR
siloxane		10 *	10 *	107 *	80 *	10 *	NR	30 *	30 *
2-butanone	50**	NR	NR	1	NR	NR	NR	NR	NR
di-n-butylphthalate	50	NR	NR	NR	NR	NR	0.8	NR	NR
MTBE	10	NR	NR	NR	NR	NR	NR	NR	NR
TICs		NR	NR	NR	NR	NR	NR	NR	NR

 Concentration exceeds
guidelines/standards

NR-No Result

* - Contaminants also found in blanks

** - Guidance Value

All units in parts per billion (ppb)

TICs-Tenatively Identified Compounds

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/L)	RW-6	RW-8	RW-9	RW-13	RW-1	RW-11
VOCs							
acetone	50**	NR	NR	NR	NR	12	NR
siloxane		29 *	6 *	206 *	70 *	12 *	106 *
2-butanone	50**	NR	NR	1	1	NR	NR
di-n-butylphthalate	50	NR	NR	NR	NR	NR	NR
MTBE	10	NR	NR	NR	NR	12	0.5
TICs		NR	NR	NR	NR	9 unknown	NR

 Concentration exceeds
guidelines/standards

NR-No Result

* - Contaminants also found in blanks

** - Guidance Value

All units in parts per billion (ppb)

TICs-Tenatively Identified Compounds

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/L)	RW-15	RW-2	RW-22	RW-19	RW-18	RW-16
SVOCs							
di-n-butylphthalate	50	NR	0.5	NR	0.7	1	NR
bis(2-ethylhexyl)phthalate	5	NR	4	NR	NR	NR	NR
TICs		Yes*	NR	Yes*	20 unknown	Yes*	Yes*

NR-No Result

* - Contaminants also found in blanks

All units in parts per billion (ppb)

TICs-Tenatively Identified Compounds

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/L)	RW-17	RW-24	RW-7	RW-9	RW-13	RW-20	RW-21	RW-23	RW-1
SVOCs										
di-n-butylphthalate	50	NR	NR	NR	NR	NR	NR	NR	2	0.8
bis(2-ethylhexyl)phthalate	5	NR	NR	NR	NR	1 *	NR	0.9	NR	NR
TICs		Yes*	50 unknown	3 unknown	11 unknown	NR	24 unknown	37	37 unknown	NR

NR-No Result

* - Contaminants also found in blanks

All units in parts per billion (ppb)

TICs-Tenatively Identified Compounds

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

Pest./PCBs	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/L)	RW-19	RW-24
Endosulfan		0.034	0.043

All units in parts per billion (ppb)

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

Inorganics	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/l)	RW-15	RW-2	RW-22	RW-19	RW-4	RW-18	RW-14	RW-12	RW-10
Calcium		58,200	63,200	50,500	36,100	37,200	41,700	NR	73,200	73,200
Copper	200	NR	NR	NR	NR	34.6	NR	NR	NR	514
Fe+Mn	500	NR	NR	NR	NR	NR	NR	NR	NR	563
Iron	300	NR	NR	NR	NR	NR	NR	NR	NR	101
Lead	25	NR	NR	NR	NR	NR	NR	NR	NR	NR
Magnesium	35000**	13,500	10,500	11,800	7,710	6,280	6,200	NR	17,400	20,600
Manganese	300	9.8	NR	130	NR	NR	NR	NR	NR	446
Potassium		NR	NR	NR	NR	768	NR	NR	NR	NR
Selenium	10	NR	NR	NR	NR	NR	6	NR	NR	NR
Sodium	20,000	36,200	40,200	16,300	7,410	NR	7,120	38,300	18,800	31,400
Zinc	2000**	NR	NR	NR	NR	NR	NR	NR	NR	NR

Concentration exceeds
guidelines/standards

NR-No Result

* - Contaminants also found in blanks

** - Guidance Value

All units in parts per billion (ppb)

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

Inorganics	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/l)	RW-3	RW-16	RW-17	RW-24	RW-7	RW-5	DOH	RW-6
Calcium		70,500	71,900	NR	94,300	NR	79,600	NR	NR
Copper	200	NR	39.4	NR	39.2	NR	NR	NR	NR
Fe+Mn	500	NR	NR	NR	NR	NR	NR	NR	NR
Iron	300	162	NR	NR	NR	NR	NR	355	NR
Lead	25	NR	16.5	NR	4.5	NR	25.9	NR	NR
Magnesium	35000**	19,200	11,200	NR	17,300	NR	23,600	NR	NR
Manganese	300	209	NR	NR	NR	NR	139	338	44.3
Potassium		NR	NR	NR	NR	NR	NR	NR	NR
Selenium	10	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	20,000	30,000	16,000	139,000 *	39,600	138,000	31,600	29,500	62,200
Zinc	2000**	419	118	147	NR	NR	NR	NR	NR

NR - No Result
Concentration exceeds
guidelines/standards

NR-No Result

* - Contaminants also found in blanks

** - Guidance Value

All units in parts per billion (ppb)

TABLE 1-10
Residential Well Sampling
August - October 2000
Mayer Landfill, Blooming Grove, NY

Inorganics	TOGS 1.1.1 Ambient Water Quality Standards & Guidance Values (ug/l)	RW-8	RW-9	RW-13	RW-20	RW-21	RW-23	RW-1	RW-11
Calcium		50,800	70,000	NR	NR	11,300	42,000	56,800	38,900
Copper	200	NR	NR	NR	NR	NR	NR	NR	NR
Fe+Mn	500	NR	NR	NR	NR	NR	NR	NR	NR
Iron	300	NR	341	NR	NR	NR	NR	NR	NR
Lead	25	NR	NR	NR	NR	3.6	NR	6.6	NR
Magnesium	35000**	8,820	18,500	NR	NR	NR	9,930	9,550	7,000
Manganese	300	NR	1560	NR	NR	28.1	51.9	275	NR
Potassium		NR	NR	NR	NR	NR	NR	NR	NR
Selenium	10	NR	NR	NR	NR	NR	NR	NR	NR
Sodium	20,000	NR	17,700	121,000	94,700	62,900	10,600	32,200	33,500
Zinc	2000**	NR	NR	NR	NR	NR	NR	64	NR

Concentration exceeds
guidelines/standards

NR-No Result

* - Contaminants also found in blanks

** - Guidance Value

All units in parts per billion (ppb)

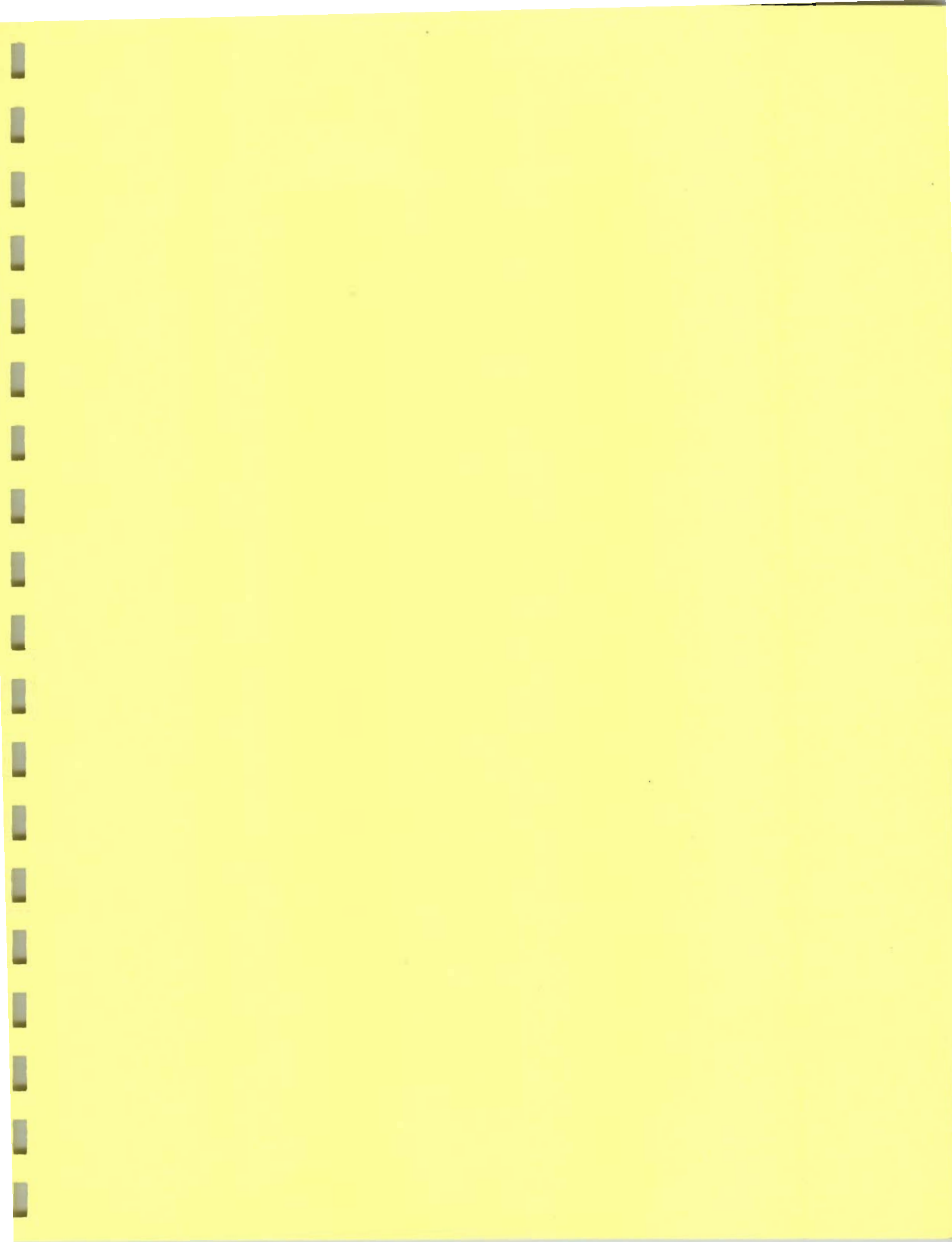


TABLE 1-11
 Residential Well Sampling for Manganese: RW-9
 23 March 2001
 Mayer Landfill, Blooming Grove, NY

	TOGS 1.1.1 Ambient Water Quality Standard for Manganese (ug/L)	RW-9 Manganese Concentration (ug/L)
Parameter		
Manganese	300	946

Concentration exceeds
guidelines/standards

TABLE 1-12
Volatile Organic Compounds and Methane
Soil Gas Sampling August, 2001 - Supplemental Remedial Investigation
Mayer Landfill, Blooming Grove, NY

	DAR-1 (Air Guide-1)		SG04				SG05				SG06			
	SGC ug/m3	AGC ug/m3	Ca ppbV	Cp ug/m3	Cst ug/m3		Ca ppbV	Cp ug/m3	Cst ug/m3		Ca ppbV	Cp ug/m3	Cst ug/m3	
Methane			0.8 UJ	-	-	-	0.8 UJ	-	-	-	0.8 UJ	-	-	-
Dichlorodifluoromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Chloromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Vinyl Chloride			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Bromomethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Chloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Trichlorofluoromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Freon TF			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,1-Dichloroethene			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
Methylene Chloride	NA	NA	0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
1,1-Dichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
cis-1,2-Dichloroethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Chloroform			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,1,1-Trichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Carbon Tetrachloride			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Benzene	1300	0.13	0.54	3.8E-08	3.3E-04	0.008	0.71	5.0E-08	4.4E-04	0.011	0.72	5.1E-08	4.4E-04	0.011
1,2-Dichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Trichloroethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,2-Dichloropropane			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
cis-1,3-Dichloropropene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Toluene	37000	400	5.3	4.4E-07	0.004	0.096	4.8	4.0E-07	0.003	0.087	5.4	4.5E-07	0.004	0.098
trans-1,3-Dichloropropene			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
1,1,2-Trichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Tetrachloroethene	1000	1	5.6	8.4E-07	0.007	0.183	6.6	9.9E-07	0.009	0.216	12	1.8E-06	0.016	0.392
Chlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Ethylbenzene	54000	1000	1.2	1.1E-07	0.001	0.025	1.3	1.2E-07	0.001	0.027	1.1	1.1E-07	0.001	0.023
Xylene (m,p)	4300	700	5.1	4.9E-07	0.004	0.107	4.7	4.5E-07	0.004	0.098	4.7	4.5E-07	0.004	0.098
Styrene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Xylene (o)	4300	700	1.6	1.5E-07	0.001	0.033	1.2	1.1E-07	0.001	0.025	1.2	1.1E-07	0.001	0.025
1,1,2,2-Tetrachloroethane			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
1,3-Dichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,4-Dichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-

TABLE 1-12
Volatile Organic Compounds and Methane
Soil Gas Sampling August, 2001 - Supplemental Remedial Investigation
Mayer Landfill, Blooming Grove, NY

	DAR-1 (Air Guide-1)		SG04				SG05				SG06			
	SGC ug/m3	AGC ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3
1,2-Dichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,2,4-Trichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Hexachlorobutadiene			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
1,3,5-Trimethylbenzene	NA	290	0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,2,4-Trimethylbenzene	NA	290	2.6	2.8E-07	0.002	0.062	2.7	2.9E-07	0.003	0.064	2.2	2.4E-07	0.002	0.052
Dichlorotetrafluoroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,2-Dibromoethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,3-Butadiene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Carbon Disulfide			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Acetone	180000	28000	3.5	1.8E-07	0.002	0.040	12	6.3E-07	0.005	0.137	0.87	4.6E-08	0.000	0.010
Isopropyl Alcohol			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Methyl tert-Butyl Ether			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Cyclohexane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
n-Heptane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Dibromochloromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
n-Hexane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Tetrahydrofuran			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Methyl Ethyl Ketone	59000	1000	1.6	1.0E-07	0.001	0.023	2.2	1.4E-07	0.001	0.031	0.5 U	-	-	-
1,4-Dioxane			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
Methyl Isobutyl Ketone	31000	490	0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Methyl Butyl Ketone	4100	48	0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Bromoform			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Bromodichloromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
trans-1,2-Dichloroethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
4-Ethyltoluene	NA	NA	0.86	9.3E-08	0.001	0.020	0.86	9.3E-08	0.001	0.020	0.58	6.3E-08	0.001	0.014
3-Chloropropene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
2,2,4-Trimethylpentane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Bromoethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
2-Chlorotoluene	NA	NA	0.5 U	-	-	-	0.5 U	-	-	-	0.52	5.9E-08	0.001	0.013

SGC=Short-term Guidance Concentration

AGC= Annual Guidance Concentration

ug/m³ = microgram per cubic meter

Ca=Maximum Actual Annual Impact

Cp=Maximum Potential Annual Impact

Cst=Maximum Short-Term Impact

TABLE 1-12
Volatile Organic Compounds and Methane
Soil Gas Sampling August, 2001 - Supplemental Remedial Investigation
Mayer Landfill, Blooming Grove, NY

	DAR-1 (Air Guide-1)		SG07				SG08				SG09			
	SGC ug/m3	AGC ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3
Methane			0.8 UJ	-	-	-	0.8 UJ	-	-	-	0.8 UJ	-	-	-
Dichlorodifluoromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Chloromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Vinyl Chloride			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Bromomethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Chloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Trichlorofluoromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Freon TF			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,1-Dichloroethene			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
Methylene Chloride	NA	NA	0.79 J	6.0E-08	0.001	0.013	0.9 J	6.9E-08	0.001	0.015	0.74 J	5.7E-08	5.0E-04	0.012
1,1-Dichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
cis-1,2-Dichloroethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Chloroform			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,1,1-Trichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Carbon Tetrachloride			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Benzene	1300	0.13	0.62	4.4E-08	3.8E-04	0.010	0.5 U	-	-	-	0.56	3.9E-08	3.4E-04	0.009
1,2-Dichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Trichloroethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,2-Dichloropropane			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
cis-1,3-Dichloropropene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Toluene	37000	400	4.3	3.6E-07	0.003	0.078	6.6	5.5E-07	0.005	0.120	3.2	2.7E-07	0.002	0.058
trans-1,3-Dichloropropene			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
1,1,2-Trichloroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Tetrachloroethene	1000	1	6.4	9.6E-07	0.008	0.209	9.6	1.4E-06	0.013	0.314	9.1	1.4E-06	0.012	0.297
Chlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Ethylbenzene	54000	1000	0.82	7.8E-08	0.001	0.017	1.5	1.4E-07	0.001	0.031	1.3	1.2E-07	0.001	0.027
Xylene (m,p)	4300	700	3.6	3.4E-07	0.003	0.075	6.7	6.4E-07	0.006	0.140	6.7	6.4E-07	0.006	0.140
Styrene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Xylene (o)	4300	700	0.94	9.0E-08	0.001	0.020	1.8	1.7E-07	0.002	0.038	2.2	2.1E-07	0.002	0.046
1,1,2,2-Tetrachloroethane			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
1,3-Dichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,4-Dichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-

TABLE 1-12
Volatile Organic Compounds and Methane
Soil Gas Sampling August, 2001 - Supplemental Remedial Investigation
Mayer Landfill, Blooming Grove, NY

	DAR-1 (Air Guide-1)		SG07				SG08				SG09			
	SGC ug/m3	AGC ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3	ppbV	Ca ug/m3	Cp ug/m3	Cst ug/m3
1,2-Dichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,2,4-Trichlorobenzene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Hexachlorobutadiene			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
1,3,5-Trimethylbenzene	NA	290	0.5 U	-	-	-	0.74	8.0E-08	0.001	0.018	0.5 U	-	-	-
1,2,4-Trimethylbenzene	NA	290	2.4	2.6E-07	0.002	0.057	4.4	4.8E-07	0.004	0.104	2.5	2.7E-07	0.002	0.059
Dichlorotetrafluoroethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,2-Dibromoethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
1,3-Butadiene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Carbon Disulfide			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Acetone	180000	28000	35	1.8E-06	0.016	0.401	13	6.8E-07	0.006	0.149	1.4	7.3E-08	0.001	0.016
Isopropyl Alcohol			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Methyl tert-Butyl Ether			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Cyclohexane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
n-Heptane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Dibromochloromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
n-Hexane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Tetrahydrofuran			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Methyl Ethyl Ketone	59000	1000	3.1	2.0E-07	0.002	0.044	2.3	1.5E-07	0.001	0.033	0.5 U	-	-	-
1,4-Dioxane			0.5 UJ	-	-	-	0.5 UJ	-	-	-	0.5 UJ	-	-	-
Methyl Isobutyl Ketone	31000	490	0.78	7.0E-08	0.001	0.015	0.5 U	-	-	-	0.5 U	-	-	-
Methyl Butyl Ketone	4100	48	2.9	2.6E-07	0.002	0.057	0.5 U	-	-	-	0.5 U	-	-	-
Bromoform			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Bromodichloromethane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
trans-1,2-Dichloroethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
4-Ethyltoluene	NA	NA	0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
3-Chloropropene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
2,2,4-Trimethylpentane			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
Bromoethene			0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-
2-Chlorotoluene	NA	NA	0.5 U	-	-	-	0.5 U	-	-	-	0.5 U	-	-	-

SGC=Short-term Guidance Concentration

AGC= Annual Guidance Concentration

ug/m³ = microgram per cubic meter

Ca=Maximum Actual Annual Impact

Cp=Maximum Potential Annual Impact

Cst=Maximum Short-Term Impact

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA* (ug/kg)	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg	SS06 70854008 ug/kg
Chloromethane		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Bromomethane		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Vinyl Chloride	0.854****	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chloroethane		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Methylene Chloride		15 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Acetone		25 S	15 UJ	14 U	4 JS	16 S	7 JS	24 U
Carbon Disulfide		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1-Dichloroethene	0.244****	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1-Dichloroethane		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,2-Dichloroethene (Total)		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chloroform		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,2-Dichloroethane	8.54****	14 U	15 U	14 U	11 U	14 U	14 U	24 U
2-Butanone		14 U	15 U	14 U	11 U	14 U	3 J	24 U
1,1,1-Trichloroethane		14 U	15 U	14 U	11 U	14 U	14 U	24 U
Carbon Tetrachloride	7.32****	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Bromodichloromethane		14 U	15 U	14 U	11 U	14 U	14 U	24 U
1,2-Dichloropropane		14 U	15 U	14 U	11 U	14 U	14 U	24 U
cis-1,3-Dichloropropene		14 U	15 U	14 U	11 U	14 U	14 U	24 U
Trichloroethene	24.4****	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Dibromochloromethane		14 U	15 U	14 U	11 U	14 U	14 U	24 U
1,1,2-Trichloroethane	7.32****	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Benzene	7.32****	14 U	15 U	14 U	11 U	14 U	14 U	24 U
trans-1,3-Dichloropropene		14 U	15 U	14 U	11 U	14 U	14 U	24 U
Bromoform		14 U	15 U	14 U	11 U	14 U	14 U	24 U
4-Methyl-2-Pentanone		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
2-Hexanone		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Tetrachloroethene	9.76****	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1,2,2-Tetrachloroethane	3.66****	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Toluene	597.8**	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chlorobenzene	42.7***	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Ethylbenzene	292.8**	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Styrene		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Xylene (Total)	1122.4**	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U

Bolded: Detected Concentration

Exceeds NYSDEC Sediment Criteria

* Based on Site specific TOC average value of 12.2 g/Kg

** Benthic Aquatic Life Chronic Toxicity

*** Wildlife Bioaccumulation/Benthic Aquatic Life Chronic Toxicity

**** Based on human health bioaccumulation

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA* (ug/kg)	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	FBSS060700 70843009 ug/kg	TBSS060700 70843010 ug/kg
Chloromethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Bromomethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Vinyl Chloride	0.854****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Chloroethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Methylene Chloride		18 UJ	12 UJ	11 UJ	24 UJ	1 J	10 U
Acetone		18 UJ	12 UJ	11 UJ	50 J	2 J	10 U
Carbon Disulfide		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1-Dichloroethene	0.244****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1-Dichloroethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,2-Dichloroethene (Total)		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Chloroform		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,2-Dichloroethane	8.54****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
2-Butanone		6 J	12 UJ	11 UJ	19 J	10 U	10 U
1,1,1-Trichloroethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Carbon Tetrachloride	7.32****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Bromodichloromethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,2-Dichloropropane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
cis-1,3-Dichloropropene		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Trichloroethene	24.4****	76 J	42 J	49	5 J	10 U	10 U
Dibromochloromethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1,2-Trichloroethane	7.32****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Benzene	7.32****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
trans-1,3-Dichloropropene		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Bromoform		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
4-Methyl-2-Pentanone		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
2-Hexanone		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Tetrachloroethene	9.76****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
1,1,2,2-Tetrachloroethane	3.66****	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Toluene	597.8**	18 UJ	12 UJ	11 UJ	14 J	10 U	10 U
Chlorobenzene	42.7***	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Ethylbenzene	292.8**	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Styrene		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U
Xylene (Total)	1122.4**	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U

Bolded: Detected Concentration

Exceeds NYSDEC Sediment Criteria

* Based on Site specific TOC average value of 12.2 g/Kg

** Benthic Aquatic Life Chronic Toxicity

*** Wildlife Bioaccumulation/Benthic Aquatic Life Chronic Toxicity

**** Based on human health bioaccumulation

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA* (ug/kg)	SS11 ug/kg	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
Chloromethane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Bromomethane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Vinyl Chloride	0.854****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Chloroethane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Methylene Chloride		12 U	2 J	3 J	11 U	11 U	11 U	11 U
Acetone		12 UJ	13 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
Carbon Disulfide		12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethene	0.244****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethene (Total)		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Chloroform		12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	8.54****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
2-Butanone		12 UJ	13 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,1,1-Trichloroethane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Carbon Tetrachloride	7.32****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	24.4****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane		12 U	13 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane	7.32****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Benzene	7.32****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
trans-1,3-Dichloropropene		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Bromoform		12 U	13 U	11 U	11 U	11 U	11 U	11 U
4-Methyl-2-Pentanone		12 U	13 U	11 U	11 U	11 U	11 U	11 U
2-Hexanone		12 UJ	13 U	11 UJ	11 UJ	11 U	11 U	11 UJ
Tetrachloroethene	9.76****	12 U	1 J	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	3.66****	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Toluene	597.8**	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Chlorobenzene	42.7***	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	292.8**	12 U	13 U	11 U	11 U	11 U	11 U	11 U
Styrene		12 U	13 U	11 U	11 U	11 U	11 U	11 U
Xylene (Total)	1122.4**	12 U	13 U	11 U	11 U	11 U	11 U	11 U

Bolded: Detected Concentration

Exceeds NYSDEC Sediment Criteria

* Based on Site specific TOC average value of 12.2 g/Kg

** Benthic Aquatic Life Chronic Toxicity

*** Wildlife Bioaccumulation/Benthic Aquatic Life Chronic Toxicity

**** Based on human health bioaccumulation

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

SVOCs and Pesticides

SAMPLE LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA* (ug/kg)	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg
Phenol	6.1**	590 U	940 U	550 U	270 J	470 U	470 U
Naphthalene		62 J	940 U	550 U	450 U	470 U	470 U
Acenaphthylene		96 J	130 J	550 U	450 U	470 U	470 U
Acenaphthene	1708**	240 J	170 J	550 U	450 U	470 U	470 U
Dibenzofuran		80 J	940 U	550 U	450 U	470 U	470 U
Fluorene		250 J	220 J	550 U	450 U	470 U	470 U
Phenanthrene	1464**	2300	2900	170 J	450 U	56 J	470 U
Anthracene		540 J	530 J	550 U	450 U	470 U	470 U
Carbazole		210 J	210 J	550 U	450 U	470 U	470 U
Di-n-butylphthalate		590 U	940 U	55 J	450 U	470 U	470 U
Fluoranthene	12,444	3500	5000	380 J	450 U	210 J	470 U
Pyrene		3100	4200	240 J	450 U	140 J	470 U
Benzo(a)anthracene	15.86****	1900	2400	120 J	450 U	83 J	470 U
Chrysene	15.86****	1900	2500	130 J	450 U	85 J	470 U
bis(2-Ethylhexyl)phthalate	2434**	590 U	940 U	550 U	220 JS	470 U	470 U
Benzo(b)fluoranthene	15.86****	3300	4000	220 J	450 U	150 J	470 U
Benzo(k)fluoranthene	15.86****	1100	1500	81 J	450 U	51 J	470 U
Benzo(a)pyrene	15.86****	2400	3000	150 J	450 U	89 J	470 U
Indeno(1,2,3-cd)pyrene		1300	1800	89 J	450 U	53 J	470 U
Dibenzo(a,h)anthracene		270 J	370 J	550 U	450 U	470 U	470 U
Benzo(g,h,i)perylene		1100	1500	550 U	450 U	48 J	470 U
Aldrin	9.3****	6.7 P	4 U	8.9 P	2.2 U	2.4 U	2.4 U
Heptachlor	0.004****	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
4,4-DDE	12.2***	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U

Bolded: Detected Concentration

Exceeds NYSDEC Sediment Criteria

* Based on Site specific TOC average value of 12.2 g/Kg

** Benthic Aquatic Life Chronic Toxicity

*** Wildlife Bioaccumulation/Benthic Aquatic Life Chronic Toxicity

**** Based on human health bioaccumulation

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

SVOCs and Pesticides

SAMPLE LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA* (ug/kg)	SS06 70854008 ug/kg	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg
Phenol	6.1**	660 U	360 J	340 J	410 U	790 U
Naphthalene		660 U	480 U	440 U	410 U	790 U
Acenaphthylene		660 U	480 U	440 U	410 U	790 U
Acenaphthene	1708**	660 U	480 U	440 U	410 U	790 U
Dibenzofuran		660 U	480 U	440 U	410 U	790 U
Fluorene		660 U	480 U	440 U	410 U	790 U
Phenanthrene	1464**	660 U	480 U	440 U	410 U	790 U
Anthracene		660 U	480 U	440 U	410 U	790 U
Carbazole		660 U	480 U	440 U	410 U	790 U
Di-n-butylphthalate		660 U	480 U	440 U	410 U	790 U
Fluoranthene	12,444	660 U	480 U	440 U	410 U	790 U
Pyrene		660 U	480 U	440 U	410 U	790 U
Benzo(a)anthracene	15.86****	660 U	480 U	440 U	410 U	790 U
Chrysene	15.86****	660 U	480 U	440 U	410 U	790 U
bis(2-Ethylhexyl)phthalate	2434**	660 U	290 J	220 J	250 J	320 J
Benzo(b)fluoranthene	15.86****	660 U	480 U	440 U	410 U	790 U
Benzo(k)fluoranthene	15.86****	660 U	480 U	440 U	410 U	790 U
Benzo(a)pyrene	15.86****	660 U	480 U	440 U	410 U	790 U
Indeno(1,2,3-cd)pyrene		660 U	480 U	440 U	410 U	790 U
Dibenzo(a,h)anthracene		660 U	480 U	440 U	410 U	790 U
Benzo(g,h,i)perylene		660 U	480 U	440 U	410 U	790 U
Aldrin	9.3****	3.4 U	2.4 U	2.2 U	2.1 U	4 U
Heptachlor	0.004****	3.4 U	2.4 U	2.2 U	2.1 U	4 U
4,4-DDE	12.2***	6.5 U	4.8 U	4.3 U	4.1 U	13

Bolded: Detected Concentration

Exceeds NYSDEC Sediment Criteria

* Based on Site specific TOC average value of 12.2 g/Kg

** Benthic Aquatic Life Chronic Toxicity

*** Wildlife Bioaccumulation/Benthic Aquatic Life Chronic Toxicity

**** Based on human health bioaccumulation

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

SVOCs and Pesticides

SAMPLE LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA* (ug/kg)	SS11 ug/kg	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
Phenol	6.1**	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Naphthalene		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Acenaphthylene		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Acenaphthene	1708**	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Dibenzofuran		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Fluorene		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Phenanthrene	1464**	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Anthracene		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Carbazole		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Di-n-butylphthalate		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Fluoranthene	12,444	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Pyrene		390 UJ	450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ
Benzo(a)anthracene	15.86****	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Chrysene	15.86****	390 U	450 U	370 U	390 U	370 U	370 U	380 U
bis(2-Ethylhexyl)phthalate	2434**	390 U	46 J	46 J	60 J	54 J	41 J	380 U
Benzo(b)fluoranthene	15.86****	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(k)fluoranthene	15.86****	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(a)pyrene	15.86****	390 U	450 U	370 U	390 U	370 U	370 U	380 U
Indeno(1,2,3-cd)pyrene		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Dibenzo(a,h)anthracene		390 U	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(g,h,i)perylene		390 UJ	450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ
Aldrin	9.3****	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Heptachlor	0.004****	2 U	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
4,4-DDE	12.2***	3.8 U	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U

Bolded: Detected Concentration

Exceeds NYSDEC Sediment Criteria

* Based on Site specific TOC average value of 12.2 g/Kg

** Benthic Aquatic Life Chronic Toxicity

*** Wildlife Bioaccumulation/Benthic Aquatic Life Chronic Toxicity

**** Based on human health bioaccumulation

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA (mg/kg)		SS01 70843004 mg/kg	DUP02600 70843002 mg/kg dup of SS01	SS02 70843006 mg/kg	SS03 70854002 mg/kg	SS04 70854004 mg/kg	SS05 70854006 mg/kg
	Lowest Effect Level	Severe Effect Level						
Antimony	2	25	1.5 U	1.9 U	1.4 U	1 UJ	1.4 UJ	1.2 UJ
Arsenic	6	33	1.5 B	3.7 B	7.5	7.5	5.5	1.7 B
Cadmium	0.6	9	1.2 B	1.7 B	2.1	2.1 J	1.3 BJ	0.86 BJ
Chromium	26	110	11.3 J	11.8 J	10.9 J	14.3 J	10.5 J	8.8 J
Copper	16	110	20.9	22.6	13.7	18.8	13.1	13.4
Iron	20,000	40,000	17200	16800	34000	35600	22700	15500
Lead	31	110	35	30.5	28.4	29.6	37.4	11.2
Manganese	460	1100	211	187	2410	2430	691	440
Mercury	0.15	1.3	0.081 U	0.11 U	0.079 U	0.056 U	0.075 B	0.061 U
Nickel	16	50	16	17.5	19	23.4 J	15.5 J	14.7
Silver	1	2.2	1.3 BJ	1.8 BJ	3 J	3.1	1.8 B	1.2 B
Zinc	120	270	164	173	127	140 J	90.5 J	51.3 J
TOC (%)			1.68	1.67	1.17	0.91	1.75	0.59

Bolded : Exceeds Lowest Effect Level

Exceeds Severe Effect Level

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA (mg/kg)		SS06 70854008 mg/kg	SS07 70870002 mg/kg	SS08 70870004 mg/kg	SS09 70870006 mg/kg	SS10 70870008 mg/kg
	Lowest Effect Level	Severe Effect Level					
Antimony	2	25	1.6 U	1.3 U	1.1 U	0.95 U	1.8 U
Arsenic	6	33	4.3	3.4	1.8 B	2.6	6.7
Cadmium	0.6	9	1.3 B	1.3	0.92 B	1.3	1.6 B
Chromium	26	110	12.1	8.3	7.7	9.5	16.1
Copper	16	110	17.4	11.3	9.6	13.9	39.1
Iron	20,000	40,000	19400	20700	16300	22300	15100
Lead	31	110	23.6	12.4	11.9	11.9	31.8
Manganese	460	1100	265	338	262	191	227
Mercury	0.15	1.3	0.1 U	0.051 U	0.048 U	0.052 U	0.093 U
Nickel	16	50	16.9	13.3	11.8	16.6	21.8
Silver	1	2.2	1.4 B	2 BJ	1.5 BJ	2.1 J	1.2 B
Zinc	120	270	85.1	54.2 J	45.6 J	50.7 J	108 J
TOC (%)			1.14	1.03	0.58	0.26	2.6

Bolded : Exceeds Lowest Effect Level

Exceeds Severe Effect Level

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

Inorganics

SAMPLE LOCATION LAB ID UNITS ANALYTE	NYSDEC SEDIMENT CRITERIA (mg/kg)		SS11	SS12	SS13	SS14	SS15	SS16	DUP082201
	Lowest Effect Level	Severe Effect Level	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Antimony	2	25	0.64 UJ	0.78 UJ	0.86 UJ	0.54 UJ	0.80 UJ	0.62 UJ	0.42 UJ
Arsenic	6	33	8.4	8.4	12.1	17.7	17.7	18.7	7.7
Cadmium	0.6	9	0.36 J	0.43 J	0.53 J	0.82 J	0.79 J	0.71 J	0.28 J
Chromium	26	110	15.4	14.2	16.4	15.3	17.4	17.9	14.4
Copper	16	110	10.8 J	4.2 J	4.8 J	2.5 U	4.7 J	6.0 J	12.1 J
Iron	20,000	40,000	26800	27100	37400	46100	46100	44600	25300
Lead	31	110	22.4 J	22.5 J	23.0 J	27.0 J	25.9 J	24.9 J	21.1 J
Manganese	460	1100	1950 J	1970 J	2100 J	2720 J	2070 J	2020 J	1850 J
Mercury	0.15	1.3	0.056 U	0.057 U	0.049 U	0.053 U	0.045 U	0.056 U	0.055 U
Nickel	16	50	23.7	19.8	23.8	22.5	22.9	24.9	22.5
Silver	1	2.2	4.3 J	4.4 J	6.1 J	7.5 J	7.4 J	7.2 J	4.0 J
Zinc	120	270	108	133	153	176	164	154	98.6
TOC (%)			0.62	0.96	0.23	0.44	0.45	0.29	0.41

Bolded : Exceeds Lowest Effect Level

Exceeds Severe Effect Level

TABLE 1-13
Sediment Sample Results Compared to Available NYSDEC Sediment Screening Values
June, 2000 and August 2001
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- ug/kg - Microgram per kilogram
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls

Duplicates

DUP02600 Corresponds to SS01

DUP082201 Corresponds to SS16

Table 2-1
Potential New York State Standards, Criteria and Guidelines (SCGs)
Mayer Landfill
Blooming Grove, NY

DIVISION/ AGENCY	CITATION	DESCRIPTION	S/G ⁽¹⁾	ACTION OR CHEMICAL	REASON FOR LISTING
DAR	6 NYCRR Part 257	Air Quality Standards	S	Chemical	May relate to landfill management with respect to soil gas.
DFW	NYSDEC Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites	Ecological assessment guidance document	G	Action, Chemical	May relate to remedial requirements for stream.
DFW	ECL Article 24& Article 71, Title 23	Freshwater Wetlands Act	S	Action	May relate to remediation/ capping/ mitigation of wetlands.
DFW	NYSDEC Freshwater Wetlands Regulations, Guidelines on Compensatory Mitigation		S	Action	May relate to remediation/ capping/ mitigation of wetlands.
DFW	NYSDEC Technical Guidance for Screening of Contaminated Sediment	Sediment screening guidance document	G	Chemical	May relate to remedial requirements for stream sediment.
DHSR	6 NYCRR Part 370 through 373	Hazardous Waste Management Regulations	S	Action	May relate to any possible excavations for off-site disposal of material and /or management of LNAPL if recovered from the area surrounding MW-4.
DHWR	TAGM HWR-92-4030	Selection of Remedial Actions at Inactive Hazardous Waste Sites	G	Action	May relate to all Site remedial activities i.e., remedy selection criteria/ evaluations.
DHWR	TAGM HWR-89-4031	Fugitive Dust Suppression and Particulate Monitoring at Inactive Hazardous Waste Sites	G	Action, Chemical	Dust suppression during IRM/RA.
DHWR	TAGM HWR-92-4042	Interim Remedial Measures	G	Action	Define and track IRMs.
DHWR	TAGM HWR- -4044	Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills	G	Action	May relate to all Site remedial activities.
DHWR	TAGM HWR-92-4046	Determination of Soil Cleanup Objectives and Cleanup Levels	G	Action, Chemical	Relates to areas that need to be precluded from direct contact and ingestion, i.e., soil cleanup goals.
DHWR	TAGM 4048	Interim Remedial Measures - Procedures	G	Action	May relate to any interim measures.
DHWR	6 NYCRR Part 375	Inactive Hazardous Waste Disposal Site Remedial Program	S	Action	May related to all site remedial activities; requirements regarding remedial programs; private party programs, state funded programs, state assistance to municipalities.
DSW	6 NYCRR Chapter IV Part 360	Solid Waste Management Facilities	S	Action	May relate to landfill management with respect to cap, soil gas management, leachate control, etc.
DRA	6 NYCRR Part 364	Waste Transporter Permits	S	Action	May relate to any possible excavations for off-site disposal and/or management of LNAPL if recovered from the area surrounding MW-4, i.e., regulates collection, transport, and delivery of regulated waste.
	6 NYCRR Part 376	Land Disposal Restrictions			
DOW	6 NYCRR Part 700-705	NYSDEC Water Quality Regulations for Surface Waters and Groundwater	S	Action, Chemical	May relate to surface water and/or groundwater remediation goals.

Table 2-1
Potential New York State Standards, Criteria and Guidelines (SCGs)
Mayer Landfill
Blooming Grove, NY

DIVISION/ AGENCY	CITATION	DESCRIPTION	S/G ⁽¹⁾	ACTION OR CHEMICAL	REASON FOR LISTING
DOW	TOGS 1.1.1	Ambient Water Quality Standards and Guidance Values	G	Action, Chemical	Will govern goals for groundwater remediation at off-site well; compilation of ambient water quality standards and guidance values.
	Article 12 of the NYS Navigation Law	New York Oil Spill, Control, and Compensation Act	S	Action, Chemical	Relates to LNAPL remediation.
OSHA/ PESH	OSHA; 29 CFR 1910.120; Hazardous Waste Operations and Emergency Response	Guidelines and Requirements for Workers at Hazardous Waste Sites (Subpart 120) and Standards for Air Contaminants (Subpart 1)	S	Action	May related to certain remedial Site activities.
USACE	33 USC 466 Section 404	Clean Water Act	S	Action	Control disturbances in wetlands.
USACE	Federal Register Part VII Volume 61, No. 241	Nationwide General Permit Number 38 - Cleanup of Hazardous and Toxic Waste	S	Action	May relate to Site activities in wetlands areas.
USEPA	Integrated Risk Information System (IRIS)	USEPA database containing toxicity data for various chemicals	G	Chemical	May relate to all Site remedial activities.
USEPA		Hydrologic Evaluation of Landfill Performance (HELP) Model Hydrologic Simulation of Solid Waste Disposal Sites	G	Action	May relate to cover system performance/hydrology.
USEPA	16 USC 661	Fish and Wildlife Coordination Act	S		May relate to mitigating impacts to wetlands.
USEPA	40 CFR Part 60 Subpart WWW	Standards of Performance for Municipal Solid Waste Landfills	S	Action	May relate to landfill gas collection/treatment.
USEPA	40 CFR Part 280	Guidelines for Specifications of Disposal Sites for Dredged or Fill Material	G	Action	May relate to restoration of wetlands.
USEPA	Directive No. 9355.3-01	Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA	G	Action	May relate to all Site remedial activities.
USEPA	Directive No. 9355.3-11	Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites	G	Action	May relate to all Site remedial activities.
USEPA	Directive No. 9355.0-49FS	Presumptive Remedy for CERCLA Municipal Landfill Sites	G	Action	May relate to landfill cap.
USEPA	Directive No. 9355.3-18FS	Presumptive Remedies: CERCLA Landfill Caps RI/FS Data Collection Guide	G	Action	May relate to landfill cap.

1. S/G refers to standard or guidance

DAR = Division of Air Resources
DFW = Division of Fish and Wildlife
DHSR = Division of Hazardous Substances Regulation
NYSDEC = New York State Department of Environmental Conservation
NYCRR = New York Code of Rules and Regulations
DHWR = Division of Hazardous Waste Remediation
TAGM = Technical and Administrative Guidance Memorandum
DSW = Division of Solid Waste
DRA = Division of Regulatory Affairs
DOW = Division of Water
OSHA = Occupational Safety and Health Administration
PESH = Public Employee Safety and Health Bureau
USACE = United States Army Corps of Engineers
USEPA = United States Environmental Protection Agency

Table 2-1A
Groundwater Depth Measurements
March 2000 and November 15, 2001
Mayer Landfill
Blooming Grove, NY

Well	Depth of Fill Waste in Monitoring Well (ft) bgs	Depth to Water (ft) bgs 3/2000	Depth to Product (ft) bgs 11/15/2002	Depth to Water (ft) bgs 11/15/2002	Approximate Well Total Depth bgs (ft)
MW-1A	Not in Fill	10.11	--	18.46	46.05
MW-2	Not in Fill	0.56 ags	--	4.64	65.90
MW-3A	(1)	13.32	--	16.77	51.99
MW-4	(1)	NA	8.75	NA	NA
MW-4D	NA to 18'	26.26	--	31.19	76.61
MW-5	Not in Fill	2.18	--	DRY	10.28
MW-6	Not in Fill	5.72	--	DRY	16.92
MW-7	Not in Fill	1.69 ags	--	1.50	14.48
MW-7D	Not in Fill	0.48	--	5.43	30.08
MW-8	5 to 21'	7.99	--	11.19	21.70
MW-9	2 to 27'	8.08	--	10.49	49.14
MW-9D	2 to 27'	8.54	--	10.72	63.87
MW-10	4 to 5'	3.16	--	4.39	16.79
MW-11	Not in Fill	0.20	--	12.23	19.76
MW-12	Not recorded	11.77	--	DRY	18.07
MW-13	Not in Fill	3.73	--	DRY	15.68
MW-14D	Not in Fill	NI	--	121.14	132.84
TMW-01	12 to 20'	NI	--	9.91	20
TMW-02	Not in Fill	NI	--	10.47	20
TMW-03	2 to 24.5'	NI	11.18	11.18	20
TMW-04	2 to 24.5'	NI	--	11.35	20

bgs: below ground surface

NI: not installed

ags: above ground surface

NA: depth information not available due to presence of non-aqueous phase liquid (NAPL)
on water surface

1. Boring log unavailable

TABLE 2-2
Comparison of Maximum Detected Organic Concentrations in Soil to RSCOs
Mayer Landfill, Blooming Grove, New York

CONSTITUENT (ug/kg)	Maximum Detected Concentration	Groundwater Protection Criteria	Direct Contact Criteria
Acetone	1200 DB	110	8000000
2-Butanone	330	300	4000000
Benzene	200	60	24000
Chlorobenzene	2200	1700	2000000
Xylene (total)	3000	1200	200000000
Benzo(a)anthracene	460	3000	224
Chrysene	450	400	NA
bis(2-Ethylhexyl) phthalate	240000 D	435000	2000000
Benzo(a)pyrene	850 DJ	11000	61
Aldrin	64 PD	500	41
Heptachlor epoxide	36 P	120	77
Dieldrin	53 P	100	44
Aroclor-1242	210/1300(1)	10000	1000/10000(2)
Aroclor-1254	ND/2000(1)	10000	1000/10000(2)

(1) Surface/subsurface soil concentration

(2) Surface/subsurface RSCO

Only chemicals exceeding the groundwater protection criteria or direct contact criteria are listed.

Indicates the criteria is exceeded.

TABLE 2-3
Comparison of Maximum Detected Inorganic Concentrations in Soil to RSCOs and Site Background
Mayer Landfill, Blooming Grove, New York

CONSTITUENT (mg/kg)	Recommended Soil Cleanup Objective	Maximum Detected Concentration	95 % UCL of Average Site Background Mayer Landfill
Aluminum	SB	47984	14319
Antimony	SB	346	2.0
Arsenic	7.5 or SB	10.5	7.0
Barium	300 or SB	1820	80
Beryllium	0.16 or SB	2.55 B	0.6
Cadmium	10 or SB	10.5	1.41
Calcium	SB	38900	2946
Chromium	50 or SB	500	18.5
Cobalt	30 or SB	16.05	9
Copper	25 or SB	2200	17.5
Iron	200-500 or SB	417705	23723
Lead	SB	3130	27.8
Magnesium	SB	19144	4390
Manganese	SB	3549	514
Mercury	0.1	1.1 N	0.1
Nickel	13 or SB	458	18.6
Potassium	SB	4666	1041
Selenium	2 or SB	413	1.4
Silver	SB	47.2	2.2
Sodium	SB	2080	162
Thallium	SB	29.1 B	2.4
Vanadium	150 or SB	83 B	23
Zinc	20 or SB	1970	55.3
Cyanide	-	14.7	-

SB = Site background

Exceeds Soil Background (see Table 1-2)

Exceeds SB and RSCO value for RSCO is higher than SB

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg	SS06 70854008 ug/kg
Chloromethane		14.0 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Bromomethane		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Vinyl Chloride		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chloroethane		14.0 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Methylene Chloride	93,000	15 U	15 UJ	14 U	1U U	14 U	14 U	24 U
Acetone	8,000,000	25.0 S	15 UJ	14 U	4 JS	16 S	7 JS	24 U
Carbon Disulfide	8,000,000	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1-Dichloroethene	12,000	14.0 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1-Dichloroethane		14.0 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,2-Dichloroethene (Total)	2,000,000	14.0 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chloroform	114,000	14.0 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,2-Dichloroethane	7,700	14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
2-Butanone	4,000,000	14.0 U	15 U	14 U	11 U	14 U	3 J	24 U
1,1,1-Trichloroethane	7,000,000	14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
Carbon Tetrachloride	5,400	14 U	15 U	14 U	11 U	14 U	14 U	24 U
Bromodichloromethane		14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
1,2-Dichloropropane		14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
cis-1,3-Dichloropropene		14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
Trichloroethene	64,000	14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
Dibromochloromethane		14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
1,1,2-Trichloroethane		14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
Benzene	24,000	14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
trans-1,3-Dichloropropene		14.0 U	15 U	14 U	11 U	14 U	14 U	24 U
Bromoform		14 U	15 U	14 U	11 U	14 U	14 U	24 U
4-Methyl-2-Pentanone		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
2-Hexanone		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Tetrachloroethene	14,000	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
1,1,2,2-Tetrachloroethane	35,000	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Toluene	20,000,000	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Chlorobenzene	2,000,000	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Ethylbenzene	8,000,000	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Styrene		14 U	15 UJ	14 U	11 U	14 U	14 U	24 U
Xylene (Total)	200,000,000	14 U	15 UJ	14 U	11 U	14 U	14 U	24 U

Bolded: Detected Concentration

* USEPA Health Based Soil Cleanup Objective (Direct Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	FBSS060700 70843009 ug/kg	TBSS060700 70843010 ug/kg	SS11 ug/kg
Chloromethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Bromomethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Vinyl Chloride		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Chloroethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Methylene Chloride	93,000	18 UJ	12 UJ	11 UJ	24 UJ	1 J	10 U	12 U
Acetone	8,000,000	18 UJ	12 UJ	11 UJ	50 J	2 J	10 U	12 UJ
Carbon Disulfide	8,000,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
1,1-Dichloroethene	12,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
1,1-Dichloroethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
1,2-Dichloroethene (Total)	2,000,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Chloroform	114,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
1,2-Dichloroethane	7,700	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
2-Butanone	4,000,000	6 J	12 UJ	11 UJ	19 J	10 U	10 U	12 UJ
1,1,1-Trichloroethane	7,000,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Carbon Tetrachloride	5,400	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Bromodichloromethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
1,2-Dichloropropane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
cis-1,3-Dichloropropene		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Trichloroethene	64,000	76 J	42 J	49	5 J	10 U	10 U	12 U
Dibromochloromethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
1,1,2-Trichloroethane		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Benzene	24,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
trans-1,3-Dichloropropene		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Bromoform		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
4-Methyl-2-Pentanone		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
2-Hexanone		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 UJ
Tetrachloroethene	14,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
1,1,2,2-Tetrachloroethane	35,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Toluene	20,000,000	18 UJ	12 UJ	11 UJ	14 J	10 U	10 U	12 U
Chlorobenzene	2,000,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Ethylbenzene	8,000,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Styrene		18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U
Xylene (Total)	200,000,000	18 UJ	12 UJ	11 UJ	24 UJ	10 U	10 U	12 U

Bolded: Detected Concentration

* USEPA Health Based Soil Cleanup Objective (Direct
Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

VOCs

LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
Chloromethane		13 U	11 U	11 U	11 U	11 U	11 U
Bromomethane		13 U	11 U	11 U	11 U	11 U	11 U
Vinyl Chloride		13 U	11 U	11 U	11 U	11 U	11 U
Chloroethane		13 U	11 U	11 U	11 U	11 U	11 U
Methylene Chloride	93,000	2 J	3 J	11 U	11 U	11 U	11 U
Acetone	8,000,000	13 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
Carbon Disulfide	8,000,000	13 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethene	12,000	13 U	11 U	11 U	11 U	11 U	11 U
1,1-Dichloroethane		13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethene (Total)	2,000,000	13 U	11 U	11 U	11 U	11 U	11 U
Chloroform	114,000	13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloroethane	7,700	13 U	11 U	11 U	11 U	11 U	11 U
2-Butanone	4,000,000	13 UJ	11 UJ	11 UJ	11 UJ	11 UJ	11 UJ
1,1,1-Trichloroethane	7,000,000	13 U	11 U	11 U	11 U	11 U	11 U
Carbon Tetrachloride	5,400	13 U	11 U	11 U	11 U	11 U	11 U
Bromodichloromethane		13 U	11 U	11 U	11 U	11 U	11 U
1,2-Dichloropropane		13 U	11 U	11 U	11 U	11 U	11 U
cis-1,3-Dichloropropene		13 U	11 U	11 U	11 U	11 U	11 U
Trichloroethene	64,000	13 U	11 U	11 U	11 U	11 U	11 U
Dibromochloromethane		13 U	11 U	11 U	11 U	11 U	11 U
1,1,2-Trichloroethane		13 U	11 U	11 U	11 U	11 U	11 U
Benzene	24,000	13 U	11 U	11 U	11 U	11 U	11 U
trans-1,3-Dichloropropene		13 U	11 U	11 U	11 U	11 U	11 U
Bromoform		13 U	11 U	11 U	11 U	11 U	11 U
4-Methyl-2-Pentanone		13 U	11 U	11 U	11 U	11 U	11 U
2-Hexanone		13 U	11 UJ	11 UJ	11 U	11 U	11 UJ
Tetrachloroethene	14,000	1 J	11 U	11 U	11 U	11 U	11 U
1,1,2,2-Tetrachloroethane	35,000	13 U	11 U	11 U	11 U	11 U	11 U
Toluene	20,000,000	13 U	11 U	11 U	11 U	11 U	11 U
Chlorobenzene	2,000,000	13 U	11 U	11 U	11 U	11 U	11 U
Ethylbenzene	8,000,000	13 U	11 U	11 U	11 U	11 U	11 U
Styrene		13 U	11 U	11 U	11 U	11 U	11 U
Xylene (Total)	200,000,000	13 U	11 U	11 U	11 U	11 U	11 U

Bolded: Detected Concentration

* USEPA Health Based Soil Cleanup Objective (Direct
Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg
Phenol	50,000,000	590 U	940 U	550 U	270 J	470 U	470 U
bis(-2-Chloroethyl)Ether		590 U	940 U	550 U	450 U	470 U	470 U
2-Chlorophenol	400,000	590 U	940 U	550 U	450 U	470 U	470 U
1,3-Dichlorobenzene		590 U	940 U	550 U	450 U	470 U	470 U
1,4-Dichlorobenzene		590 U	940 U	550 U	450 U	470 U	470 U
1,2-Dichlorobenzene		590 U	940 U	550 U	450 U	470 U	470 U
2-Methylphenol		590 U	940 U	550 U	450 U	470 U	470 U
2,2-oxybis(1-Chloropropane)		590 U	940 U	550 U	450 U	470 U	470 U
4-Methylphenol	4,000,000	590 U	940 U	550 U	450 U	470 U	470 U
N-Nitroso-di-n-propylamine		590 U	940 U	550 U	450 U	470 U	470 U
Hexachloroethane		590 U	940 U	550 U	450 U	470 U	470 U
Nitrobenzene	40,000	590 U	940 U	550 U	450 U	470 U	470 U
Isophorone	1,707,000	590 U	940 U	550 U	450 U	470 U	470 U
2-Nitrophenol		590 U	940 U	550 U	450 U	470 U	470 U
2,4-Dimethylphenol		590 U	940 U	550 U	450 U	470 U	470 U
2,4-Dichlorophenol	200,000	590 U	940 U	550 U	450 U	470 U	470 U
1,2,4-Trichlorobenzene		590 U	940 U	550 U	450 U	470 U	470 U
Naphthalene	300,000	62 J	940 U	550 U	450 U	470 U	470 U
4-Chloroaniline	300,000	590 U	940 U	550 U	450 U	470 U	470 U
bis(2-Chloroethoxy)methane		590 U	940 U	550 U	450 U	470 U	470 U
Hexachlorobutadiene		590 U	940 U	550 U	450 U	470 U	470 U
4-Chloro-3-methylphenol		590 U	940 U	550 U	450 U	470 U	470 U
2-Methylnaphthalene		590 U	940 U	550 U	450 U	470 U	470 U
Hexachlorocyclopentadiene		590 U	940 U	550 U	450 U	470 U	470 U
2,4,6-Trichlorophenol		590 U	940 U	550 U	450 U	470 U	470 U
2,4,5-Trichlorophenol	8,000,000	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
2-Chloronaphthalene		590 U	940 U	550 U	450 U	470 U	470 U
2-Nitroaniline		1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Dimethylphthalate	80,000	590 U	940 U	550 U	450 U	470 U	470 U
Acenaphthylene		96 J	130 J	550 U	450 U	470 U	470 U
2,6-Dinitrotoluene	1,030	590 U	940 U	550 U	450 U	470 U	470 U
3-Nitroaniline		1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Acenaphthene	5,000,000	240 J	170 J	550 U	450 U	470 U	470 U
2,4-Dinitrophenol	200,000	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

SAMPLE LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 70854006 ug/kg
4-Nitrophenol		1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Dibenzofuran		80 J	940 U	550 U	450 U	470 U	470 U
2,4-Dinitrotoluene		590 U	940 U	550 U	450 U	470 U	470 U
Diethylphthalate	60,000,000	590 U	940 U	550 U	450 U	470 U	470 U
4-Chlorophenyl-phenylether		590 U	940 U	550 U	450 U	470 U	470 U
Fluorene	3,000,000	250 J	220 J	550 U	450 U	470 U	470 U
4-Nitroaniline		1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
4,6-Dinitro-2-methylphenol		1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
N-Nitrosodiphenylamine		590 U	940 U	550 U	450 U	470 U	470 U
4-Bromophenyl-phenylether		590 U	940 U	550 U	450 U	470 U	470 U
Hexachlorobenzene	410	590 U	940 U	550 U	450 U	470 U	470 U
Pentachlorophenol	2,000,000	1500 U	2400 U	1400 U	1100 U	1200 U	1200 U
Phenanthrene		2300	2900	170 J	450 U	56 J	470 U
Anthracene	20,000,000	540 J	530 J	550 U	450 U	470 U	470 U
Carbazole		210 J	210 J	550 U	450 U	470 U	470 U
Di-n-butylphthalate		590 U	940 U	55 J	450 U	470 U	470 U
Fluoranthene	3,000,000	3500	5000	380 J	450 U	210 J	470 U
Pyrene	2,000,000	3100	4200	240 J	450 U	140 J	470 U
Butylbenzylphthalate	20,000,000	590 U	940 U	550 U	450 U	470 U	470 U
3,3-Dichlorobenzidine		590 U	940 U	550 U	450 U	470 U	470 U
Benzo(a)anthracene	224	1900	2400	120 J	450 U	83 J	470 U
Chrysene		1900	2500	130 J	450 U	85 J	470 U
bis(2-Ethylhexyl)phthalate	50,000	590 U	940 U	550 U	220 JS	470 U	470 U
Di-n-octylphthalate	2,000,000	590 U	940 U	550 U	450 U	470 U	470 U
Benzo(b)fluoranthene		3300	4000	220 J	450 U	150 J	470 U
Benzo(k)fluoranthene		1100	1500	81 J	450 U	51 J	470 U
Benzo(a)pyrene	61	2400	3000	150 J	450 U	89 J	470 U
Indeno(1,2,3-cd)pyrene		1300	1800	89 J	450 U	53 J	470 U
Dibenzo(a,h)anthracene	14.3	270 J	370 J	550 U	450 U	470 U	470 U
Benzo(g,h,i)perylene		1100	1500	550 U	450 U	48 J	470 U

Bolded: Detected Concentration

**Exceeds USEPA Health Based Soil Cleanup Objective as cited
in TAGM 4046**

* USEPA Health Based Soil Cleanup Objective (Direct
Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS06 70854008 ug/kg	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	SS11 ug/kg
Phenol	50,000,000	660 U	360 J	340 J	410 U	790 U	390 U
bis-(2-Chloroethyl)Ether		660 U	480 U	440 U	410 U	790 U	390 U
2-Chlorophenol	400,000	660 U	480 U	440 U	410 U	790 U	390 U
1,3-Dichlorobenzene		660 U	480 U	440 U	410 U	790 U	390 U
1,4-Dichlorobenzene		660 U	480 U	440 U	410 U	790 U	390 U
1,2-Dichlorobenzene		660 U	480 U	440 U	410 U	790 U	390 U
2-Methylphenol		660 U	480 U	440 U	410 U	790 U	390 U
2,2-oxybis(1-Chloropropane)		660 U	480 U	440 U	410 U	790 U	390 U
4-Methylphenol	4,000,000	660 U	480 U	440 U	410 U	790 U	390 U
N-Nitroso-di-n-propylamine		660 U	480 U	440 U	410 U	790 U	390 U
Hexachloroethane		660 U	480 U	440 U	410 U	790 U	390 U
Nitrobenzene	40,000	660 U	480 U	440 U	410 U	790 U	390 U
Isophorone	1,707,000	660 U	480 U	440 U	410 U	790 U	390 U
2-Nitrophenol		660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dimethylphenol		660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dichlorophenol	200,000	660 U	480 U	440 U	410 U	790 U	390 U
1,2,4-Trichlorobenzene		660 U	480 U	440 U	410 U	790 U	390 U
Naphthalene	300,000	660 U	480 U	440 U	410 U	790 U	390 U
4-Chloroaniline	300,000	660 U	480 U	440 U	410 U	790 U	390 U
bis(2-Chloroethoxy)methane		660 U	480 U	440 U	410 U	790 U	390 U
Hexachlorobutadiene		660 U	480 U	440 U	410 U	790 U	390 U
4-Chloro-3-methylphenol		660 U	480 U	440 U	410 U	790 U	390 U
2-Methylnaphthalene		660 U	480 U	440 U	410 U	790 U	390 U
Hexachlorocyclopentadiene		660 U	480 U	440 U	410 U	790 U	390 U
2,4,6-Trichlorophenol		660 U	480 U	440 U	410 U	790 U	390 U
2,4,5-Trichlorophenol	8,000,000	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
2-Chloronaphthalene		660 U	480 U	440 U	410 U	790 U	390 U
2-Nitroaniline		1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Dimethylphthalate	80,000	660 U	480 U	440 U	410 U	790 U	390 U
Acenaphthylene		660 U	480 U	440 U	410 U	790 U	390 U
2,6-Dinitrotoluene	1,030	660 U	480 U	440 U	410 U	790 U	390 U
3-Nitroaniline		1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Acenaphthene	5,000,000	660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dinitrophenol	200,000	1600 U	1200 U	1100 U	1000 U	2000 U	970 U

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

SAMPLE LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS06 70854008 ug/kg	SS07 70870002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	SS11 ug/kg
4-Nitrophenol		1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Dibenzofuran		660 U	480 U	440 U	410 U	790 U	390 U
2,4-Dinitrotoluene		660 U	480 U	440 U	410 U	790 U	390 U
Diethylphthalate	60,000,000	660 U	480 U	440 U	410 U	790 U	390 U
4-Chlorophenyl-phenylether		660 U	480 U	440 U	410 U	790 U	390 U
Fluorene	3,000,000	660 U	480 U	440 U	410 U	790 U	390 U
4-Nitroaniline		1600 U	1200 U	1100 U	1000 U	2000 U	970 U
4,6-Dinitro-2-methylphenol		1600 U	1200 U	1100 U	1000 U	2000 U	970 U
N-Nitrosodiphenylamine		660 U	480 U	440 U	410 U	790 U	390 U
4-Bromophenyl-phenylether		660 U	480 U	440 U	410 U	790 U	390 U
Hexachlorobenzene	410	660 U	480 U	440 U	410 U	790 U	390 U
Pentachlorophenol	2,000,000	1600 U	1200 U	1100 U	1000 U	2000 U	970 U
Phenanthrene		660 U	480 U	440 U	410 U	790 U	390 U
Anthracene	20,000,000	660 U	480 U	440 U	410 U	790 U	390 U
Carbazole		660 U	480 U	440 U	410 U	790 U	390 U
Di-n-butylphthalate		660 U	480 U	440 U	410 U	790 U	390 U
Fluoranthene	3,000,000	660 U	480 U	440 U	410 U	790 U	390 U
Pyrene	2,000,000	660 U	480 U	440 U	410 U	790 U	390 U
Butylbenzylphthalate	20,000,000	660 U	480 U	440 U	410 U	790 U	390 U
3,3-Dichlorobenzidine		660 U	480 U	440 U	410 U	790 U	390 U
Benzo(a)anthracene	224	660 U	480 U	440 U	410 U	790 U	390 U
Chrysene		660 U	480 U	440 U	410 U	790 U	390 U
bis(2-Ethylhexyl)phthalate	50,000	660 U	290 J	220 J	250 J	320 J	390 U
Di-n-octylphthalate	2,000,000	660 U	480 U	440 U	410 U	790 U	390 U
Benzo(b)fluoranthene		660 U	480 U	440 U	410 U	790 U	390 U
Benzo(k)fluoranthene		660 U	480 U	440 U	410 U	790 U	390 U
Benzo(a)pyrene	61	660 U	480 U	440 U	410 U	790 U	390 U
Indeno(1,2,3-cd)pyrene		660 U	480 U	440 U	410 U	790 U	390 U
Dibenzo(a,h)anthracene	14.3	660 U	480 U	440 U	410 U	790 U	390 U
Benzo(g,h,i)perylene		660 U	480 U	440 U	410 U	790 U	390 U

Bolded: Detected Concentration

Exceeds USEPA Health Based Soil Cleanup Objective as cited in TAGM 4046

* USEPA Health Based Soil Cleanup Objective (Direct Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

SVOCs

SAMPLE LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
Phenol	50,000,000	450 U	370 U	390 U	370 U	370 U	380 U
bis(-2-Chloroethyl)Ether		450 U	370 U	390 U	370 U	370 U	380 U
2-Chlorophenol	400,000	450 U	370 U	390 U	370 U	370 U	380 U
1,3-Dichlorobenzene		450 U	370 U	390 U	370 U	370 U	380 U
1,4-Dichlorobenzene		450 U	370 U	390 U	370 U	370 U	380 U
1,2-Dichlorobenzene		450 U	370 U	390 U	370 U	370 U	380 U
2-Methylphenol		450 U	370 U	390 U	370 U	370 U	380 U
2,2-oxybis(1-Chloropropane)		450 U	370 U	390 U	370 U	370 U	380 U
4-Methylphenol	4,000,000	450 U	370 U	390 U	370 U	370 U	380 U
N-Nitroso-di-n-propylamine		450 U	370 U	390 U	370 U	370 U	380 U
Hexachloroethane		450 U	370 U	390 U	370 U	370 U	380 U
Nitrobenzene	40,000	450 U	370 U	390 U	370 U	370 U	380 U
Isophorone	1,707,000	450 U	370 U	390 U	370 U	370 U	380 U
2-Nitrophenol		450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dimethylphenol		450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dichlorophenol	200,000	450 U	370 U	390 U	370 U	370 U	380 U
1,2,4-Trichlorobenzene		450 U	370 U	390 U	370 U	370 U	380 U
Naphthalene	300,000	450 U	370 U	390 U	370 U	370 U	380 U
4-Chloroaniline	300,000	450 U	370 U	390 U	370 U	370 U	380 U
bis(2-Chloroethoxy)methane		450 U	370 U	390 U	370 U	370 U	380 U
Hexachlorobutadiene		450 U	370 U	390 U	370 U	370 U	380 U
4-Chloro-3-methylphenol		450 U	370 U	390 U	370 U	370 U	380 U
2-Methylnaphthalene		450 U	370 U	390 U	370 U	370 U	380 U
Hexachlorocyclopentadiene		450 U	370 U	390 U	370 U	370 U	380 U
2,4,6-Trichlorophenol		450 U	370 U	390 U	370 U	370 U	380 U
2,4,5-Trichlorophenol	8,000,000	1100 U	930 U	960 U	930 U	930 U	960 U
2-Chloronaphthalene		450 U	370 U	390 U	370 U	370 U	380 U
2-Nitroaniline		1100 U	930 U	960 U	930 U	930 U	960 U
Dimethylphthalate	80,000	450 U	370 U	390 U	370 U	370 U	380 U
Acenaphthylene		450 U	370 U	390 U	370 U	370 U	380 U
2,6-Dinitrotoluene	1,030	450 U	370 U	390 U	370 U	370 U	380 U
3-Nitroaniline		1100 U	930 U	960 U	930 U	930 U	960 U
Acenaphthene	5,000,000	450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dinitrophenol	200,000	1100 U	930 U	960 U	930 U	930 U	960 U

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

SAMPLE LOCATION LAB ID UNITS ANALYTE	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
4-Nitrophenol		1100 U	930 U	960 U	930 U	930 U	960 U
Dibenzofuran		450 U	370 U	390 U	370 U	370 U	380 U
2,4-Dinitrotoluene		450 U	370 U	390 U	370 U	370 U	380 U
Diethylphthalate	60,000,000	450 U	370 U	390 U	370 U	370 U	380 U
4-Chlorophenyl-phenylether		450 U	370 U	390 U	370 U	370 U	380 U
Fluorene	3,000,000	450 U	370 U	390 U	370 U	370 U	380 U
4-Nitroaniline		1100 U	930 U	960 U	930 U	930 U	960 U
4,6-Dinitro-2-methylphenol		1100 U	930 U	960 U	930 U	930 U	960 U
N-Nitrosodiphenylamine		450 U	370 U	390 U	370 U	370 U	380 U
4-Bromophenyl-phenylether		450 U	370 U	390 U	370 U	370 U	380 U
Hexachlorobenzene	410	450 U	370 U	390 U	370 U	370 U	380 U
Pentachlorophenol	2,000,000	1100 U	930 U	960 U	930 U	930 U	960 U
Phenanthrene		450 U	370 U	390 U	370 U	370 U	380 U
Anthracene	20,000,000	450 U	370 U	390 U	370 U	370 U	380 U
Carbazole		450 U	370 U	390 U	370 U	370 U	380 U
Di-n-butylphthalate		450 U	370 U	390 U	370 U	370 U	380 U
Fluoranthene	3,000,000	450 U	370 U	390 U	370 U	370 U	380 U
Pyrene	2,000,000	450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ
Butylbenzylphthalate	20,000,000	450 U	370 U	390 U	370 U	370 U	380 U
3,3-Dichlorobenzidine		450 U	370 U	390 U	370 U	370 U	380 U
Benzo(a)anthracene	224	450 U	370 U	390 U	370 U	370 U	380 U
Chrysene		450 U	370 U	390 U	370 U	370 U	380 U
bis(2-Ethylhexyl)phthalate	50,000	46 J	46 J	60 J	54 J	41 J	380 U
Di-n-octylphthalate	2,000,000	450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ
Benzo(b)fluoranthene		450 U	370 U	390 U	370 U	370 U	380 U
Benzo(k)fluoranthene		450 U	370 U	390 U	370 U	370 U	380 U
Benzo(a)pyrene	61	450 U	370 U	390 U	370 U	370 U	380 U
Indeno(1,2,3-cd)pyrene		450 U	370 U	390 U	370 U	370 U	380 U
Dibenzo(a,h)anthracene	14.3	450 U	370 U	390 U	370 U	370 U	380 U
Benzo(g,h,i)perylene		450 UJ	370 UJ	390 UJ	370 UJ	370 UJ	380 UJ

Bolded: Detected Concentration

Exceeds USEPA Health Based Soil Cleanup Objective as cited
in TAGM 4046

* USEPA Health Based Soil Cleanup Objective (Direct
Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS01 70843004 ug/kg	DUP02600 70843002 ug/kg dup of SS01	SS02 70843006 ug/kg	SS03 70854002 ug/kg	SS04 70854004 ug/kg	SS05 78054006 ug/kg
ANALYTE							
alpha-BHC	111	3 UJ	4 UJ	3.2 UJ	2.2 U	2.4 U	2.4 U
beta-BHC	3,890	3 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
delta-BHC		2.9 UJ	4 UJ	3.2 UJ	2.2 U	2.4 U	2.4 U
gamma-BHC (Lindane)	5,400	2.9 UJ	4 UJ	3.2 UJ	2.2 U	2.4 U	2.4 U
Heptachlor	160	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Aldrin	41	6.7 P	4 U	8.9 P	2.2 U	2.4 U	2.4 U
Heptachlor Epoxide	77	2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Endosulfan I		2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Dieldrin	44	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
4,4'-DDE	2,100	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Endrin	20,000	5.6 U	7.9 U	6.2 U	4.3 U	4.7 UJ	4.6 UJ
Endosulfan II		5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
4,4'-DDD	2,900	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Endosulfan Sulfate		5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
4,4'-DDT	2,100	5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Methoxychlor	400,000	29.0 U	40 U	32 U	22 U	24 U	24 U
Endrin Ketone		5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
Endrin Aldehyde		5.6 U	7.9 U	6.2 U	4.3 U	4.7 U	4.6 U
alpha-Chlordane		2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
gamma-Chlordane		2.9 U	4 U	3.2 U	2.2 U	2.4 U	2.4 U
Toxaphene		290.0 U	400 U	320 U	220 U	240 U	240 U
Aroclor-1016	1,000	56.0 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1221	1,000	110 U	160 U	130 U	88 U	95 U	94 U
Aroclor-1232	1,000	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1242	1,000	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1248	1,000	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1254	1,000	56 U	79 U	62 U	43 U	47 U	46 U
Aroclor-1260	1,000	56 U	79 U	62 U	43 U	47 U	46 U

BoIded: Detected Concentration

* USEPA Health Based Soil Cleanup Ojective (Direct
Contact Expsoures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS06 70854008 ug/kg	SS07 78070002 ug/kg	SS08 70870004 ug/kg	SS09 70870006 ug/kg	SS10 70870008 ug/kg	SS11 ug/kg
ANALYTE							
alpha-BHC	111	3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
beta-BHC	3,890	3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
delta-BHC		3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
gamma-BHC (Lindane)	5,400	3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
Heptachlor	160	3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
Aldrin	41	3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
Heptachlor Epoxide	77	3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
Endosulfan I		3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
Dieldrin	44	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
4,4'-DDE	2,100	6.5 U	4.8 U	4.3 U	4.1 U	13	3.8 U
Endrin	20,000	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
Endosulfan II		6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
4,4'-DDD	2,900	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
Endosulfan Sulfate		6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
4,4'-DDT	2,100	6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
Methoxychlor	400,000	34 U	24 U	22 U	21 U	40 U	20 U
Endrin Ketone		6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
Endrin Aldehyde		6.5 U	4.8 U	4.3 U	4.1 U	7.7 U	3.8 U
alpha-Chlordane		3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
gamma-Chlordane		3.4 U	2.4 U	2.2 U	2.1 U	4 U	2 U
Toxaphene		340 U	240 U	220 U	210 U	400 U	200 U
Aroclor-1016	1,000	65 U	48 U	43 U	41 U	77 U	38 U
Aroclor-1221	1,000	130 U	96 U	86 U	83 U	160 U	77 U
Aroclor-1232	1,000	65 U	48 U	43 U	41 U	77 U	38 U
Aroclor-1242	1,000	65 U	48 U	43 U	41 U	77 U	38 U
Aroclor-1248	1,000	65 U	48 U	43 U	41 U	77 U	38 U
Aroclor-1254	1,000	65 U	48 U	43 U	41 U	77 U	38 U
Aroclor-1260	1,000	65 U	48 U	43 U	41 U	77 U	38 U

Bolded: Detected Concentration

* USEPA Health Based Soil Cleanup Objective (Direct
Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

Pesticides/PCBs

SAMPLE LOCATION LAB ID UNITS	TAGM 4046 Direct Contact RSCOs* (ug/kg)	SS12 ug/kg	SS13 ug/kg	SS14 ug/kg	SS15 ug/kg	SS16 ug/kg	DUP082201 ug/kg
ANALYTE							
alpha-BHC	111	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
beta-BHC	3,890	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
delta-BHC		2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
gamma-BHC (Lindane)	5,400	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Heptachlor	160	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Aldrin	41	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Heptachlor Epoxide	77	2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2.9 UJ
Endosulfan I		2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Dieldrin	44	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
4,4'-DDE	2,100	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endrin	20,000	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endosulfan II		4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
4,4'-DDD	2,900	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endosulfan Sulfate		4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
4,4'-DDT	2,100	4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Methoxychlor	400,000	23 U	19 U	20 U	19 UJ	19 U	20 U
Endrin Ketone		4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
Endrin Aldehyde		4.5 U	3.7 U	3.8 U	3.7 UJ	3.6 U	3.8 U
alpha-Chlordane		2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
gamma-Chlordane		2.3 U	1.9 U	2 U	1.9 UJ	1.9 U	2 U
Toxaphene		230 U	190 U	200 U	190 UJ	190 U	200 U
Aroclor-1016	1,000	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1221	1,000	91 U	75 U	77 U	75 UJ	74 U	77 U
Aroclor-1232	1,000	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1242	1,000	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1248	1,000	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1254	1,000	45 U	37 U	38 U	37 UJ	36 U	38 U
Aroclor-1260	1,000	45 U	37 U	38 U	37 UJ	36 U	38 U

Bolded: Detected Concentration

* USEPA Health Based Soil Cleanup Objective (Direct
Contact Exposures) as cited in TAGM 4046

TABLE 2-4
Sediment Sample Results Compared to TAGM 4046 RSCOs
Mayer Landfill, Blooming Grove, NY

NOTES

Qualifiers

- U - Non Detect. The compound was analyzed for, but not detected. The associated numerical value is the detection limit. The value is usable as non detect at the detection limit.
- J - Estimated Value. The value was designated as estimated as a result of the data validation criteria. Also used to indicate tentatively identified compounds (TICs) or when an organic compound is present (mass spectral identification criteria are met), but the concentration is less than the contract Required Detection Limit (CRQL).
- UJ - The compound was analyzed for, but not detected. The associated numerical value is the detection limit. However, due to a QC exceedence the value is an estimated quantity. The value is usable as a non-detect at the estimated detection limit.
- B - for organics: The analyte was found in the associated blank as well as in the sample. However, the value is greater than the action level and has not been negated as blank contamination.
- B - for inorganics: Indicates the value is less than the Contract Required Detection Limit (CRDL) but greater than the Instrument Detection Limit (IDL).
- D - The compound was identified in an analysis at a secondary dilution factor.
- N - Indicates presumptive evidence of a compound. This flag is used for TICs. Typically a Chemical Abstract Services (CAS) number is reported with the TIC.
- P - Indicates that the difference between the sample results from the two analytical columns is greater than 25%.
- S - Indicates that the value is "Suspect" and is most likely laboratory derived and not actually present in the sample.
- R - Rejected. Quality control indicates that the data are unusable (compound may or may not be present).
- V - Estimated value. The value was designated as estimated as a result of the data validation criteria. The value is usable as an estimated result. The validator uses this qualifier in the same manner as a "J". For continuity within the tables all "V" qualifiers were changed to "J".

Abbreviations

- ug/kg - Microgram per kilogram
- mg/kg - Milligram per kilogram
- Dup - Duplicate Sample
- VOCs - Volatile Organic Compounds
- SVOCs - Semi-Volatile Organic Compounds
- PCBs - Poly Chlorinated Biphenyls

Duplicates

- DUP02600 Corresponds to SS01
- DUP082201 Corresponds to SS16

TABLE 2-5
Maximum Detected Soil Gas Concentrations Compared to NYS DAR-1 Air Guidelines
Supplemental Remedial Investigation August, 2001
Mayer Landfill, Blooming Grove, NY

	DAR-1 (Air Guide-1)		Maximum Detected Concentration	Maximum Calculated Values		
	SGC	AGC		Ca	Cp	Cst
	ug/m3	ug/m3	ppbV	ug/m3	ug/m3	ug/m3
Methylene Chloride	NA	NA	0.9	6.04E-08	5.29E-04	0.013
Benzene	1300	0.13	0.72	5.06E-08	4.43E-04	0.011
Toluene	37000	400	6.6	5.48E-07	0.005	0.120
Tetrachloroethene	1000	1	12	1.79E-06	0.016	0.392
Ethylbenzene	54000	1000	1.5	1.43E-07	0.001	0.031
Xylene (m,p)	4300	700	6.7	6.41E-07	0.006	0.140
Xylene (o)	4300	700	2.2	2.10E-07	0.002	0.046
1,3,5-Trimethylbenzene	NA	290	0.74	8.01E-08	0.001	0.018
1,2,4-Trimethylbenzene	NA	290	4.4	4.76E-07	0.004	0.104
Acetone	180000	28000	35	1.83E-06	0.016	0.401
Methyl Ethyl Ketone	59000	1000	3.1	2.01E-07	0.002	0.044
Methyl Isobutyl Ketone	31000	490	0.78	7.04E-08	0.001	0.015
Methyl Butyl Ketone	4100	48	2.9	2.62E-07	0.002	0.057
4-Ethyltoluene	NA	NA	0.86	9.31E-08	0.001	0.020
2-Chlorotoluene	NA	NA	0.52	5.93E-08	0.001	0.013

SGC=Short-term Guidance Concentration

AGC= Annual Guidance Concentration

ug/m³ = microgram per cubic meter

ppbV= parts per billion by volume

Ca=Maximum Actual Annual Impact

Cp=Maximum Potential Annual Impact

Cst=Maximum Short-Term Impact

The Ca and Cp for all compounds are less than their AGCs.

The Cst for all compounds are less than their SGCs.

<u>Assumptions</u>	<u>value</u>	<u>unit</u>
Methane generation potential	3.33	ft ³ /lb waste
Landfill volume	450,000	yd ³
Landfill mass	78,750,000	lb
Refuse acceptance rate	3,028,846	lb waste / yr
Rate constant k	0.04	yr ⁻¹
Years since landfill closed (c)	27	Year
Years since landfill opened (t)	53	Year

Equations Used For Airguide-1 Calculations

Maximum Actual Annual Impact

$$C_a (\mu\text{g}/\text{m}^3) = (6.0 \cdot Q_a) / (h_e^{2.25})$$

where Q_a is in lbs/yr and h_e is in feet

Maximum Potential Annual Impact

$$C_p (\mu\text{g}/\text{m}^3) = (52500 \cdot Q) / (h_e^{2.25})$$

where Q is lbs/hr and h_e is in feet

Maximum Short Term Impact

$$C_{st} (\mu\text{g}/\text{m}^3) = C_p \cdot 65$$

Table 3-1
Summary of Remedial Technology Evaluation
Mayer Landfill
Blooming Grove, NY

Technology	Short-Term Effectiveness	Long-Term Effectiveness	Implementability	Selected?
Access and Use Restrictions	Minimal health or environmental impacts during implementation except ordinary construction hazards.	Enforcement of deed restrictions may not be available. Fencing and gates would need to be maintained.	Easy to implement fencing and gates. Owner approval needed for deed restrictions.	Yes
Surface Waste Removal and Disposal	Removes hazard associated with surface waste.	Does not prevent future illegal dumping.	Easy to implement.	Yes
LNAPL Removal	May pose health and safety concerns during construction. Effective by removing source. Removes LNAPL all at one time.	Removes the source from the site for long-term effectiveness. Precludes any further LNAPL remediation in the area of MW-4.	Relatively easy to implement.	Yes
LNAPL Recovery	Requires drilling through the waste mass. Optimal system functioning may need to be determined.	Removes only a percentage of the NAPL source. Effectiveness may vary depending on waste mass properties and system selected.	Readily implementable with moderate difficulty.	No
Excavation in Wetlands and Outlying Areas	Will disturb and/or eliminate some wetland areas at the Site.	Long-term effectiveness same as cap or excavation depending on which technology this is used in conjunction with.	Very difficult to implement. May require dewatering. May require restoration or compensatory wetlands.	Yes
Consolidation and Containment: Part 360 Cover	Potential for inhalation and direct contact concerns for workers during excavation of outlying waste and regrading. Truck traffic volume will increase for importation of cover materials.	Reduces the potential for direct contact and minimized future leachate formation and leaching to groundwater	Site is accessible and equipment available for this work. Special contractors may be needed for installation of synthetic liner and clay sources necessary. Moderate difficulty.	Yes
Excavation and Off-Site Disposal	Potential for inhalation by workers and residents during excavation. Potential of direct contact for workers. High volume truck traffic will occur for off-Site transportation for disposal. Will disturb and/or eliminate some wetland areas.	Effective in the long term for meeting all remedial action objectives.	Technically challenging based on shallow depth to groundwater, steep slopes, and necessary health and safety measures. Hazardous waste may be encountered and need to be handled separately. Very difficult to implement.	Yes
Seepage Control	Will be controlled through either a final cover or excavation. See each technology.	The excavation option eliminates any future seepage. The capping option will nearly eliminate any seepage.	See each relevant technology.	Yes

Table 3-1
Summary of Remedial Technology Evaluation
Mayer Landfill
Blooming Grove, NY

Bottled Water Supply to Affected Residence	Effective in the short-term for drinking water supply. Will not address manganese impact to household appliances and shower uses.	Long-term effectiveness will depend upon reliability of delivery service.	Very easy to implement.	No
Off-Site Residential Well Head Treatment	Effective in the short-term for removing manganese from water. Effective for all uses of water including drinking.	Long-term effectiveness will depend upon maintenance of the service.	Easy to implement. Requires regular maintenance.	Yes
Groundwater Monitoring	Effective in determining concentrations of chemicals in groundwater. Does not remediate water.	Effective in monitoring concentration trends over periods of time.	Readily implementable and easy to perform. May require additional well installation depending upon which final remedial alternative is selected.	Yes
Passive Landfill Gas Collection	Installation may pose health and safety concerns similar to drilling activities. Protects cap in short-term. May impact environment and community through gas release.	Not as effective as active landfill gas collection in the long-term. Works locally to vent or trench.	Not difficult to implement during cap construction.	Yes
Active Landfill Gas Collection	Comparable to passive landfill gas collection.	Effective for long-term landfill gas management with proper disposal.	Not difficult to implement during cap construction.	No
Landfill Gas Treatment	May increase potential of exposure to gases to community during installation.	Effective in the long term for managing collected landfill gas.	Easy to implement. May require supplemental fuel.	No

*Comparison of Evaluation Criteria for the Remedial Action Alternatives
Mayer Landfill, Blooming Grove, NY*

<i>Evaluation Criteria</i>	<i>Alternative II: Access and Use Restrictions</i>	<i>Alternative III: Consolidation and Containment: Part 360 Cover</i>	<i>Alternative IV: Excavation, Off-Site Disposal, and Reclamation</i>
Overall Protection of Human Health and the Environment	Groundwater at the Site is not used for drinking and does not currently pose an unacceptable risk to human health or the environment. Ingestion of on-Site groundwater would continue to be prevented. This alternative would reduce the potential for trespassers to access the Site and would provide some protection to human health and the environment by preventing direct contact risks and ingestion associated with soil/fill waste. Installation of a treatment/filter system for the residence supplied by RW-9 would provide adequate protection for human health by preventing ingestion of manganese above drinking water standards. This technology would not minimize infiltration and resultant contaminant leaching to groundwater, prevent migration/releases of contaminants from seeps, remove LNAPL to extent practicable, or allow for leachate to drain.	Alternative III would significantly reduce and possibly eliminate infiltration into the landfill and reduce the potential for direct contact exposure and leachate generation. LNAPL would be removed to extent practicable. Off-Site groundwater would be treated. This alternative would provide an acceptable level of protection to human health and the environment. In addition, this alternative would confirm that Site groundwater concentrations do not increase.	Alternative IV would protect human health and the environment and would address all of the remedial action objectives for the Site and for off-Site groundwater.
Compliance with SCGs	This alternative will comply with the Class GA standard for manganese at the residential well.	This Alternative would comply with TAGM 4044, Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills, for closure by capping of Class 2 landfills by a Part 360 cover. The landfill gas venting system would meet the DAR-1 air guidelines. Also, complies with the requirements of Solid Waste Management Facilities (NYCRR Part 360), the Inactive Hazardous Waste Disposal Site Remedial Program (6 NYCRR Part 375), and the NYSDEC TAGM 4030 Selection of Remedial Actions at Inactive Hazardous Waste Sites. Complies with Article 12 of the NYS Navigation Law, and 6 NYCRR Part 611. Does not comply with Class GA groundwater standards for on-Site groundwater. Manganese is the only COC in off-Site groundwater above the drinking water standard and will be treated to comply with drinking water standards. Any remedial actions would comply with applicable OSHA requirements contained in 29 CFR 1926: Safety and Health Regulations for Construction.	Exceeds the requirements contained in TAGM 4044, for closure by capping of Class 2 landfills. Does not comply the hierarchy of remedial technology treatments as outlined in TAGM 4030 to be consistent with the federal SARA Public Law 99-499 which restricted land disposal or with SARA that preference be given to remedies that permanently reduce the toxicity, volume or mobility of hazardous substances, pollutants or contaminants found at a site. Does comply with Article 12 of the NYS Navigation Law, and 6 NYCRR Part 611. Would not comply with Class GA groundwater standards for on-Site groundwater. Would comply with this water quality SCG for off-Site groundwater. Any remedial actions would comply with applicable OSHA requirements contained in 29 CFR 1926.

Table 5-1
Comparison of Evaluation Criteria for the Remedial Action Alternatives
Mayer Landfill, Blooming Grove, NY

Evaluation Criteria	Alternative II: Access and Use Restrictions	Alternative III: Consolidation and Containment: Part 360 Cover	Alternative IV: Excavation, Off-Site Disposal, and Reclamation
Long-term Effectiveness and Permanence	Currently, the Site is relatively easily accessible to trespassers. The landfill Site is currently only minimally fenced. The proposed fencing would not prevent access to the Site if the fence is cut or the fencing is not properly maintained. Institutional controls may not be dependable to reduce human health risk since they are easily tampered with. Groundwater at the Site would not be used with this alternative. This alternative would provide an adequate and effective level of protection for the Site over the long-term.	This alternative provides adequate long-term effectiveness and permanence. The potential for exposure to soil/fill waste containing COCs in concentrations exceeding NYSDEC RSCOs is greatly reduced. The future formation of leachate is minimized by preventing additional infiltration. According to the EPA landfill FS guidance, a final cover would be expected to last for 20 to 30 years before replacement provided it is properly designed and maintained (USEPA, 1991). The groundwater monitoring component of this alternative would confirm that on-Site COC concentrations in groundwater remain the same or decrease, and that there is not a significant increase in concentrations in on-Site groundwater in the near future. This data would confirm that on-Site groundwater does not pose an unacceptable potential for exposure to humans or the environment. This alternative would provide an adequate and effective level of protection for the Site over the long-term.	This alternative would provide an adequate and effective level of protection for the Site over the long-term. Eliminates the waste source at the Site
Reduction of Toxicity, Mobility or Volume	The normal biodegradation associated with landfill material would continue to occur with this alternative. Beyond natural biodegradation, institutional controls would not provide a substantial reduction of the toxicity, mobility, or volume of chemicals present in the landfill mass. Rather, the institutional controls provide for isolating the area from the general population and making "best efforts" to keep the area free of unauthorized people. The residential well head treatment would reduce the concentration of manganese in the water supplied by RW-9.	Mobility of COCs would be significantly reduced. Future infiltration would be reduced, thereby greatly reducing the driving force for leaching to groundwater. Covering the landfill may in time reduce the groundwater mound beneath the landfill and lower the water table and would in turn reduce the leaching to groundwater posed by landfill waste currently located beneath the water table and would reduce the future generation of leachate. Landfill gas would continue to be generated by the waste material, however, this gas would be vented by the passive system, which would be installed and concentrations of COCs in the soil gas will be reduced through venting. Also treatment of RW-9 would reduce the concentration of manganese in the water. Minimal volume, mobility, and toxicity reduction would occur with the removal of LNAPL-stained waste from the area surrounding MW-4.	Reduces contaminant source toxicity, mobility, and volume by removing from the Site. However, the toxicity, mobility, and volume of chemicals would just be transferred to another landfill off-Site. As defined in the NYSDEC TAGM regarding the selection of remedial actions at hazardous waste sites (NYSDEC, 1990), this alternative is a permanent remedy.

*Comparison of Evaluation Criteria for the Remedial Action Alternatives
Mayer Landfill, Blooming Grove, NY*

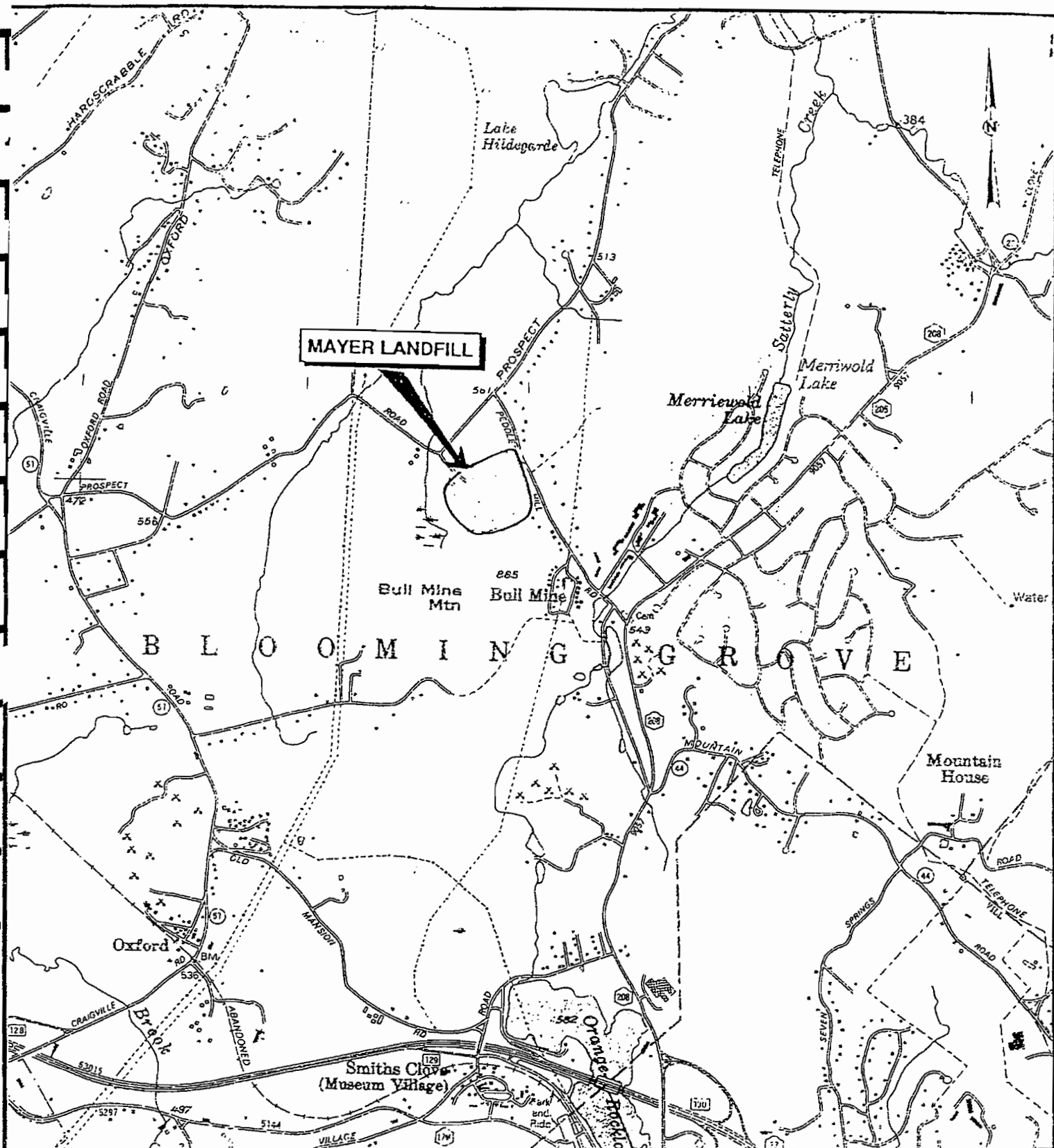
<i>Evaluation Criteria</i>	<i>Alternative II: Access and Use Restrictions</i>	<i>Alternative III: Consolidation and Containment: Part 360 Cover</i>	<i>Alternative IV: Excavation, Off-Site Disposal, and Reclamation</i>
Short-Term Effectiveness	No short-term effects associated with this option except for ordinary construction risks associated with installation of fencing.	The main components of this alternative can be completed within two (2) years from the approval by the NYSDEC of a Remedial Design. Groundwater monitoring would be conducted for five years at which time a performance review would be conducted, and engineered systems monitoring would be conducted for the life of the Part 360 Cover. Short-term effects would be associated with excavation, consolidation, filling and grading, and transportation of LNAPL wastes. Automotive related injuries, as well as potential exposure of spilled material to the community and the environment along the transportation route, would be potential concerns. There are significant potential short-term risks associated with the truck traffic. The potential for a temporary increase of risk to the community and workers due to particulate emissions (dust) during soil excavation would be controlled by the use of dust control measures such as water or foam sprays. Constant methane monitoring would be conducted during Site activities. Workers would also be protected by respirators (if needed) and protective clothing.	Potential for a temporary increase of risk to the community and workers due to particulate emissions (dust) during soil excavation would be controlled by the use of dust control measures such as water or foam sprays. Methane monitoring would be conducted during site activities to monitor the potential for explosion. Workers would also be protected by respirators (if needed) and protective clothing. Also, erosion control measures would need to be implemented. Potential short-term risks to the community would be posed by this alternative from transportation of excavated soil to off-Site landfill disposal facilities and also by the release of vapors to the air. Automotive related injuries, as well as potential exposure of spilled material to the community and the environment along the transportation route, would be potential concerns. Significant potential short-term risks associated with the transportation of excavated materials from the Site to an off-Site landfill. In addition, a short-term odor problem may also be a annoyance to the local public.
Implementability	This alternative can be readily implemented. The owner of the Site must consent to the imposition of the deed restriction.	The use of geosynthetic liners requires specialty contractors to assure proper installation. A nearby source of clay is needed, if clay is used. Dewatering, possibly requiring sheeting and shoring, may be necessary to excavate in certain areas for waste consolidation. The presence of wetlands poses considerable implementability concerns.	There are considerable implementability concerns related to implementing Alternative IV.
Cost	Capital costs = \$235,500 O&M costs* (present worth) = <u>\$70,400</u> Total Alternative II Costs = \$305,900	Capital costs = \$5,465,000 O&M costs** (present worth) = <u>\$503,000</u> Total Alternative II Costs = \$5,968,000	Capital costs = \$42,760,000 O&M costs* (present worth) = <u>\$249,000</u> Total Alternative III Costs = \$43,008,000

*The annual O&M costs for the groundwater monitoring component of Alternative II were estimated to be \$42,000 per year. Five (5) years of ground water monitoring was assumed.

** The annual O&M costs for the groundwater monitoring are described as above. Quarterly air monitoring is assumed for thirty years.

Figures





0 1000 2000 ft
SCALE
1 in. = 2000 ft



SOURCE: NYSDOT; MONROE & MAYBROOK
MAYBROOK QUADRANGLES,
NEW YORK ORANGE COUNTY,
7.5 MINUTE SERIES

LAT 41° 22' 15"
LONG 74° 12' 15"

TITLE

SITE LOCATION

PREPARED FOR

MAYER LANDFILL
NYSDEC I.D. NO. 336027



Environmental Resources Management

DRAWN

C.G.

JOB NO.

154,014

FILE NAME

SCALE

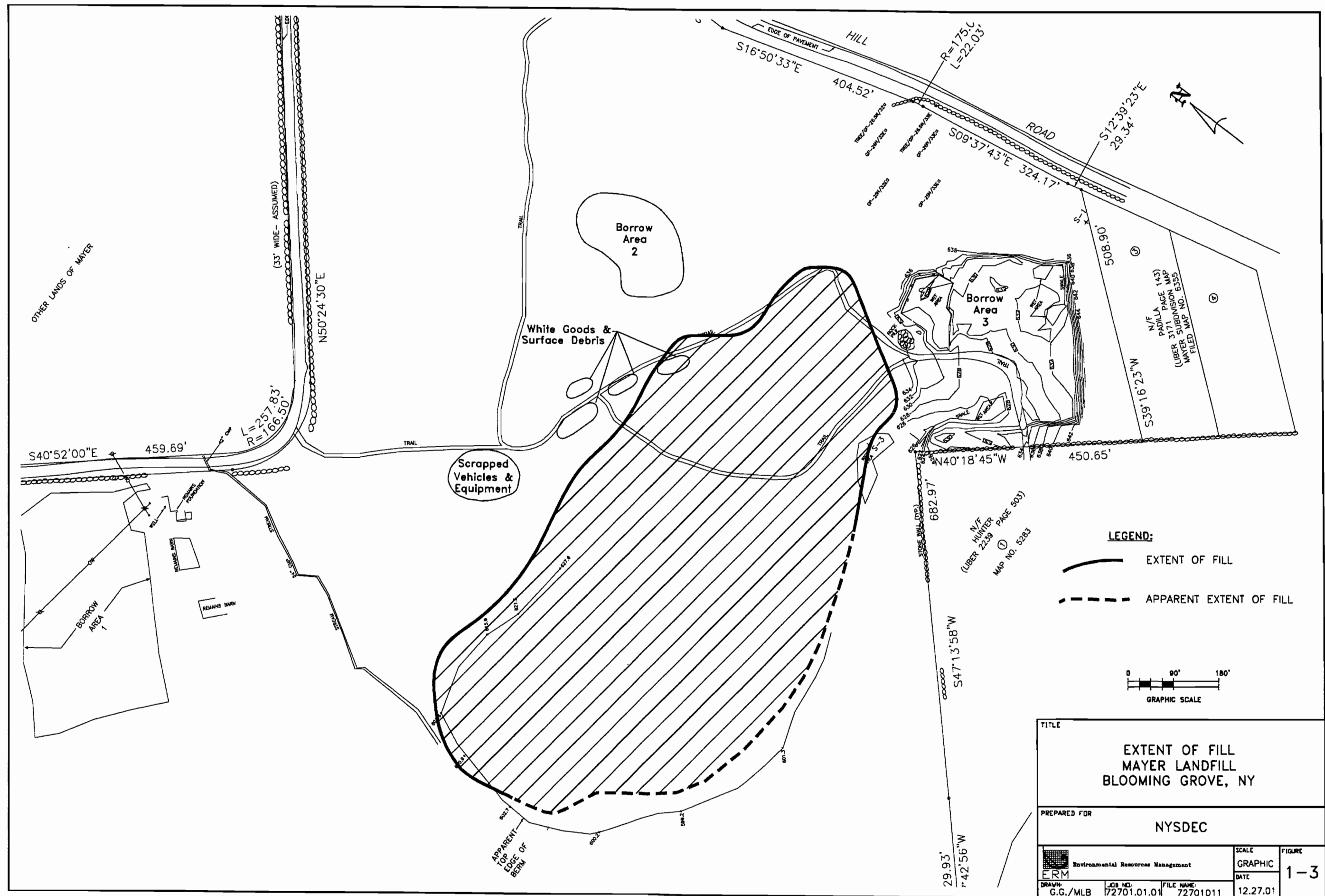
1" = 2000'

DATE

5/4/93

FIGURE

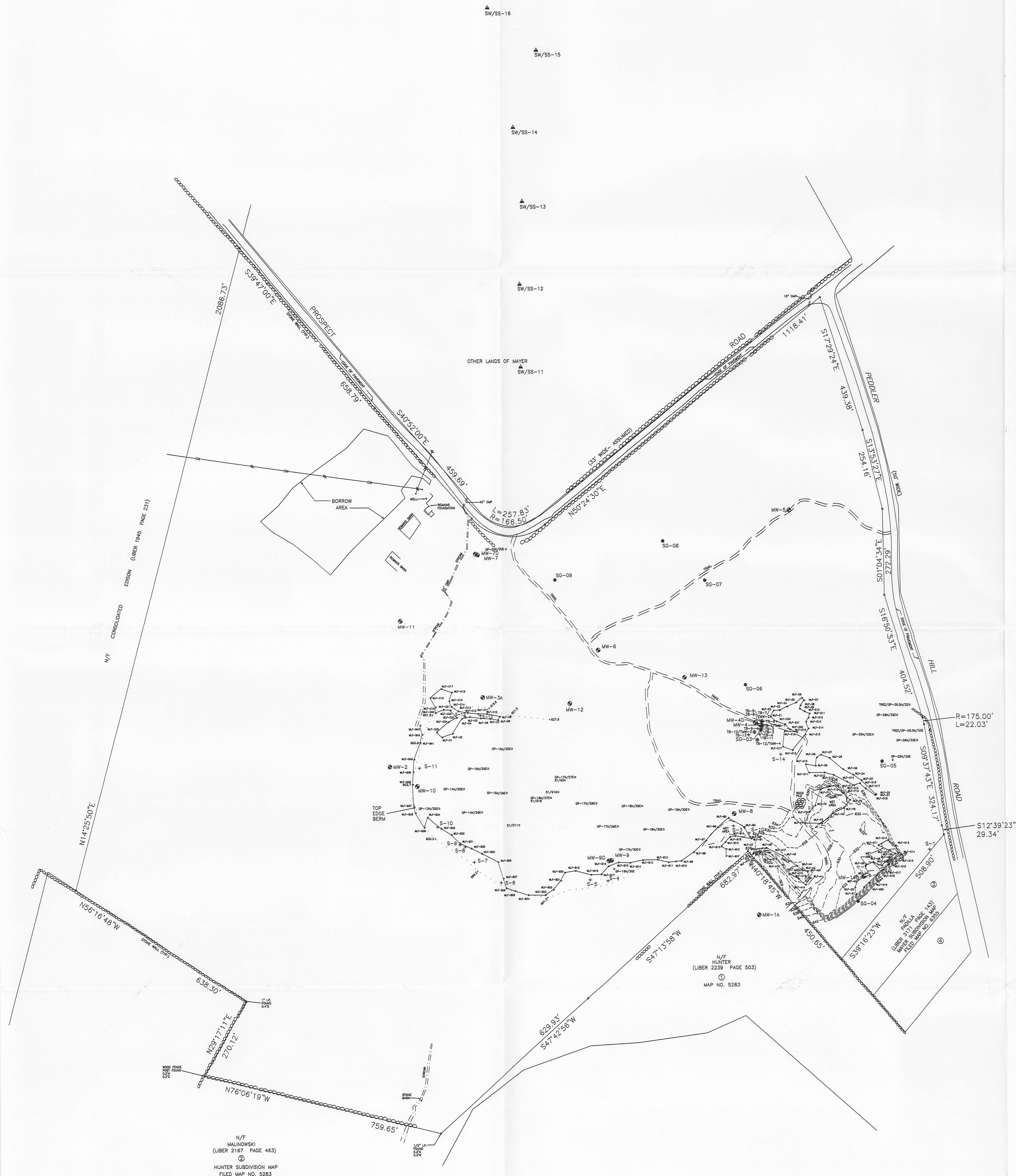
1-1



- LEGEND
- MONITORING WELL
 - GRID POINT
 - STONE WALL
 - OVERHEAD WIRE
 - UTILITY POLE
 - DRAINAGE PIPE
 - EDGE OF WATER
 - PROPERTY CORNER
 - PROPERTY LINE
 - CONTOUR LINE (2' INTERVAL)
 - WETLAND FLAG
 - SAMPLE POINT
 - SOIL SAMPLE
 - SOIL GUS SAMPLE POINT
 - TEST BORING
 - TEMPORARY MONITORING WELL

WELL ELEVATION TABLE (in feet)

WELL I.D.	TOP CONC.	GROUND	TOP OF CASING	TOP OF PVC
MW-1A	-	618.23	620.54	620.53
MW-2	-	597.51	600.22	600.28
MW-3A	-	609.09	611.03	611.00
MW-4	-	627.09	629.43	629.36
MW-4D	627.62	626.70	629.59	629.59
MW-5	-	592.17	594.79	594.84
MW-6	638.65	638.47	640.64	640.79
MW-7	-	590.35	592.37	592.50
MW-7D	-	590.11	592.39	592.33
MW-8	-	623.74	626.00	625.84
MW-9	-	609.94	612.31	612.30
MS-9D	-	610.08	612.49	612.36
MW-10	-	602.04	603.80	603.61
MW-11	-	601.92	603.93	603.86
MW-12	-	633.45	635.88	635.88
MW-13	636.74	636.63	639.02	639.05
MW-14D	-	631.82	633.63	633.54
TMW-1	-	626.62	626.62	626.33
TMW-2	-	627.17	627.17	626.87
TMW-3	-	628.70	628.70	628.21
TMW-4	-	629.18	629.18	628.90



- NOTES:
- TAX LOT: PORTION OF 44-1-63.9
 - RECORD DEED: LIBER 2209 PAGE 1081
 - DATE OF SURVEY: DECEMBER 7, 1999, ADDITIONAL SURVEY ON JULY 7, 2000 - WETLAND FLAGS, MW-4D THRU MW-13, S-1 THROUGH S-14; ADDITIONAL SURVEY ON NOVEMBER 14, 2001 - TB-1 THRU TB-13; SW/SS-11 THRU SW/SS-16; SG-04 THRU SG-09; MW-14D; TMW-1 THRU TMW-4.
 - UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S EMBOSSED SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
 - ONLY COPIES FROM THE ORIGINAL TRACING MARKED WITH THE LAND SURVEYOR'S EMBOSSED SEAL SHALL BE CONSIDERED VALID, TRUE COPIES.
 - SUBJECT TO THE FINDINGS OF AN UP-TO-DATE ABSTRACT OF TITLE.
 - PER CLIENTS REQUEST, THE SURVEY ONLY ENCOMPASSES THE PROPERTY SOUTH OF PROSPECT ROAD.
 - HORIZONTAL DATUM: COORDINATES ARE ASSUMED, NORTH PER HUNTER SUBDIVISION MAP NO. 5283.
 - VERTICAL DATUM: NGVD 1929 FROM PREVIOUS SURVEY
 - AREA = 103.848 ACRES

Source: Base map provided by YEC, Inc. Valley Cottage, New York revised

NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION	NO.	DATE	APPR.	REVISION
7-17-00			ADDED WETLAND FLAGS, MW-4D THRU MW13, S-1 THRU S-14								
11-14-01			ADDED TB-1 THRU TB-13; SW/SS-11 THRU SW/SS-16; SG-04 THRU SG-09; MW-14D; TMW-1 THRU TMW-4								

Town of Blooming Grove

Orange County

Environmental Resources Management

Exton, Pennsylvania 19341 (610) 524-3500

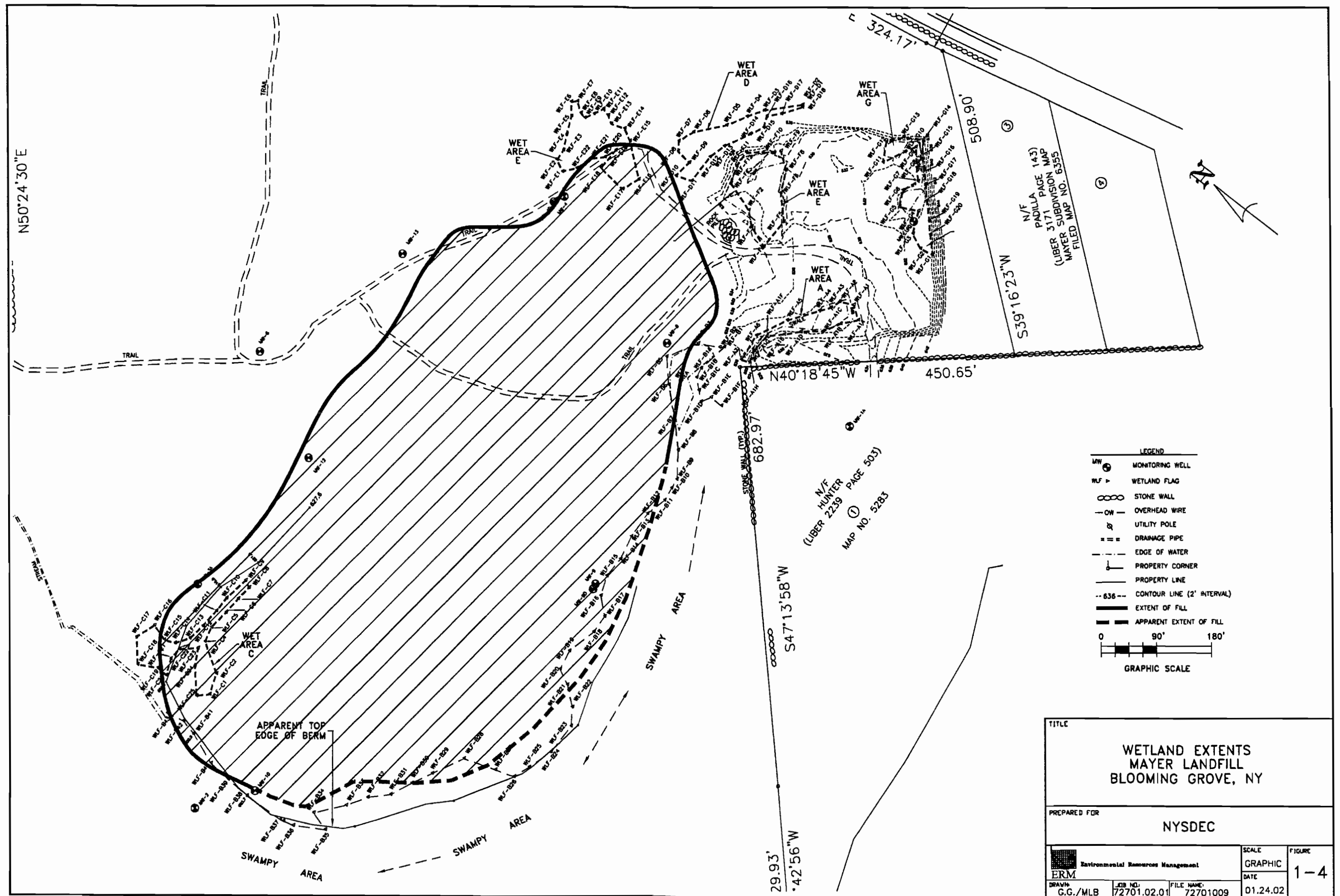
New York

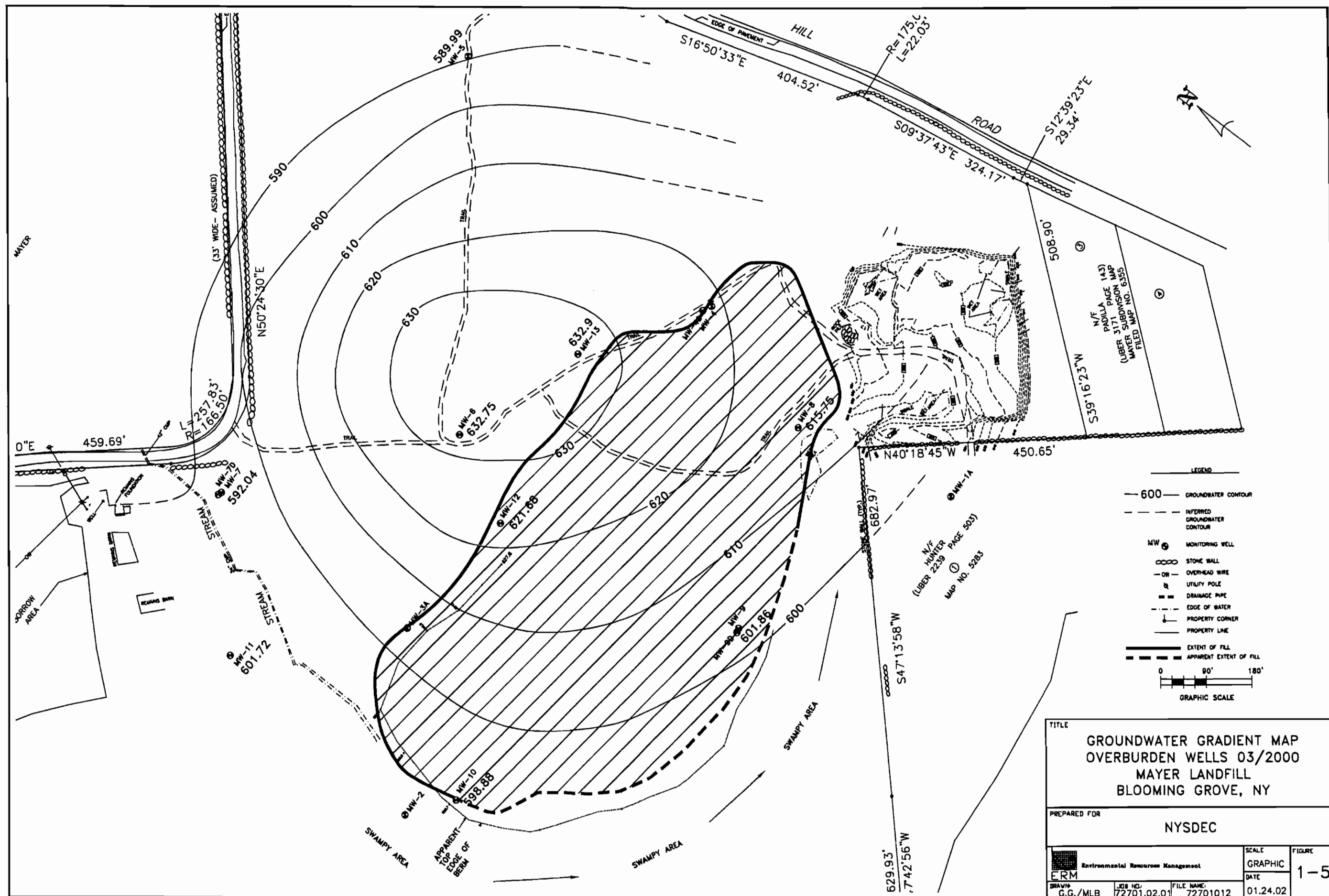
ERM

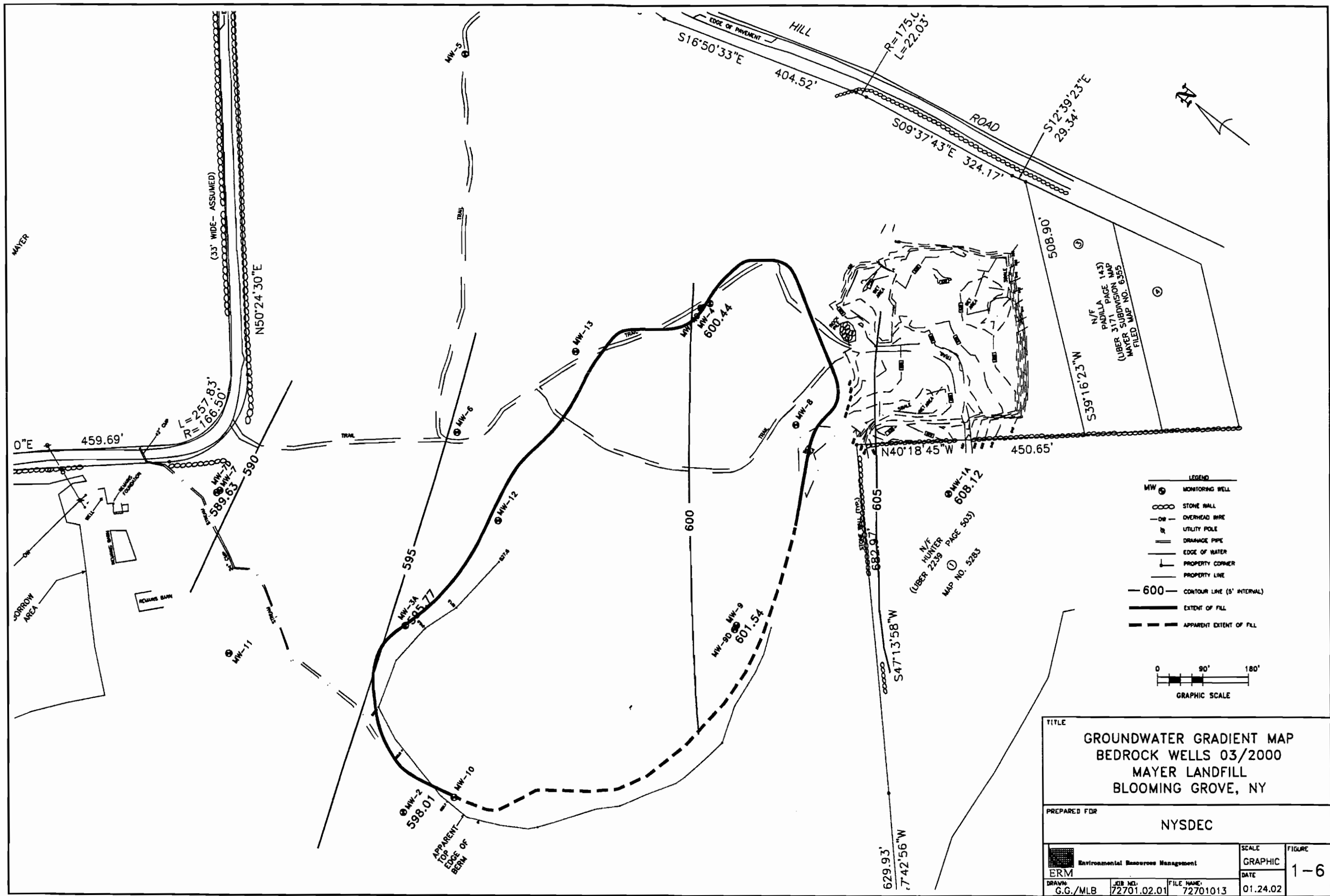
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DESIGN ENGINEER								
PROJECT GEOLOGIST								
PROJECT MANAGER								
APPROVED								
APPROVED								

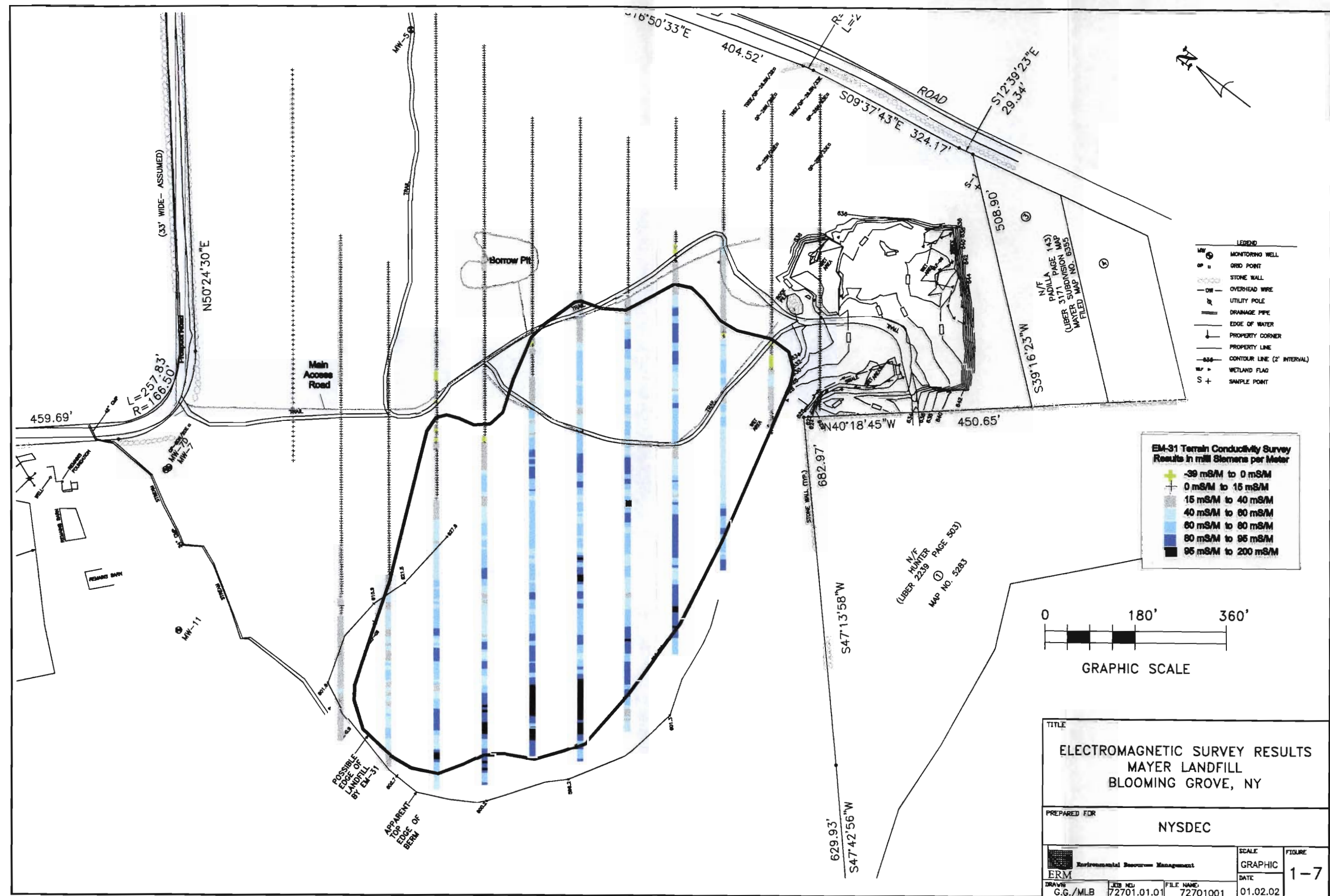
Figure 1-2
Mayer Landfill Survey

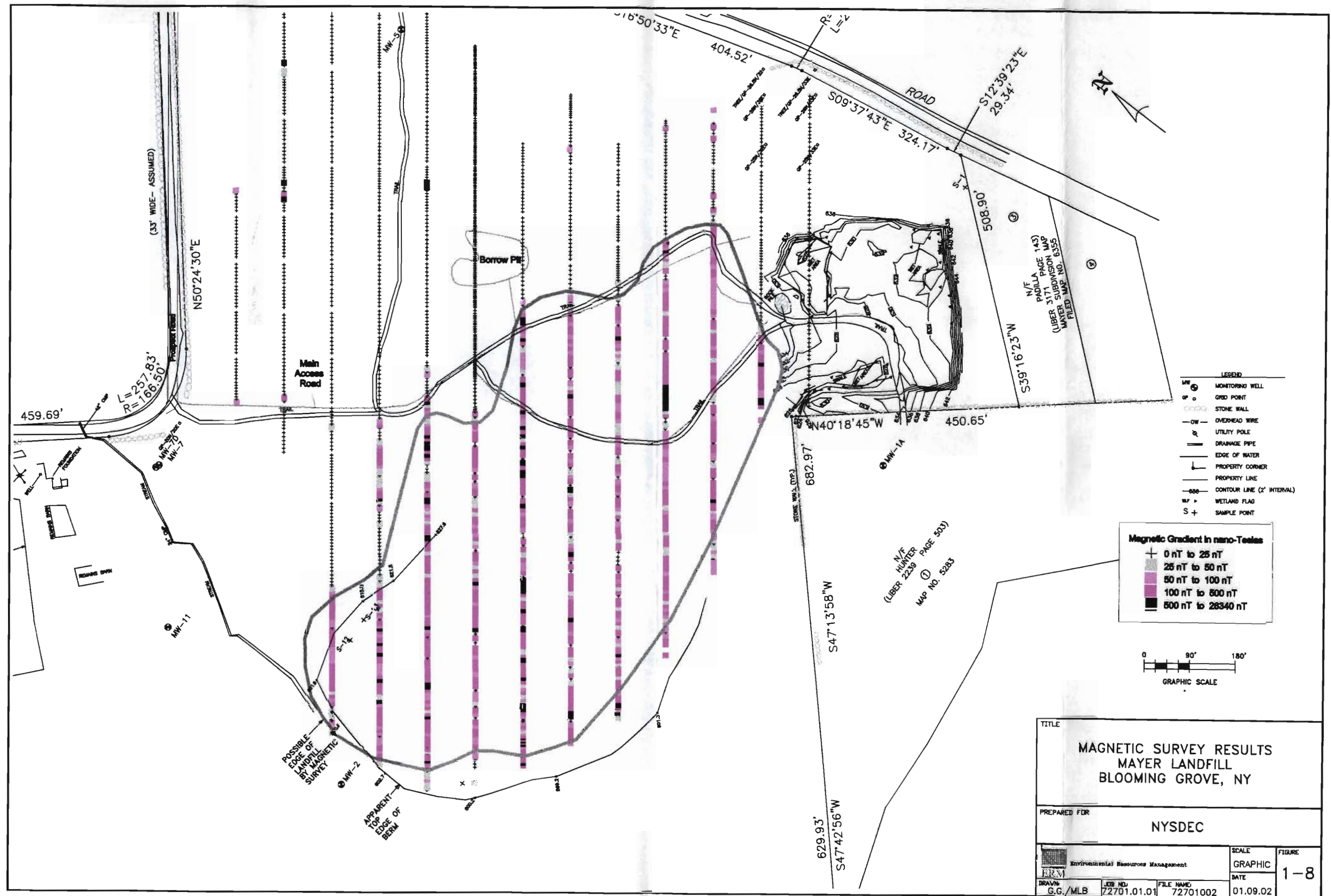
REV. NO.

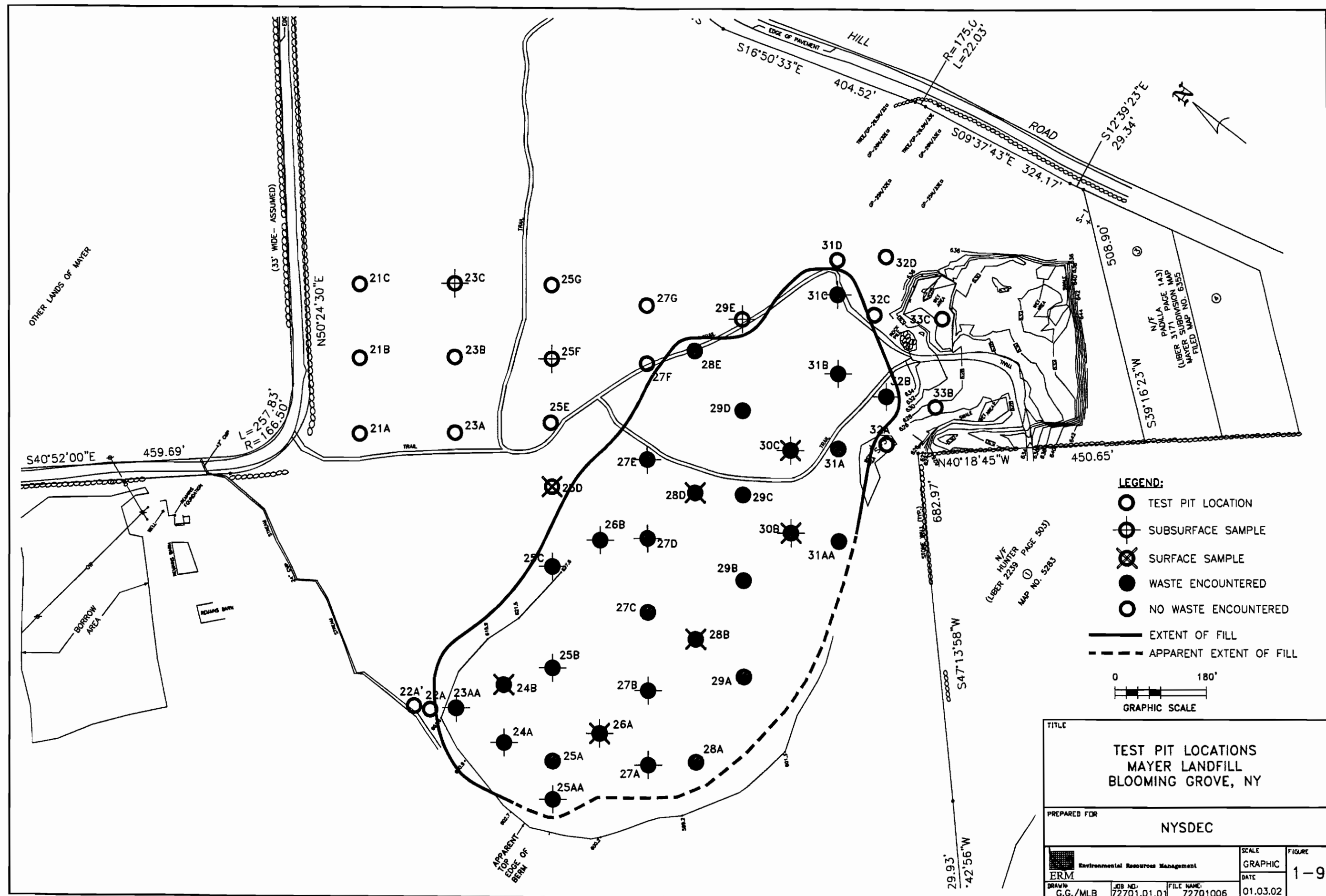


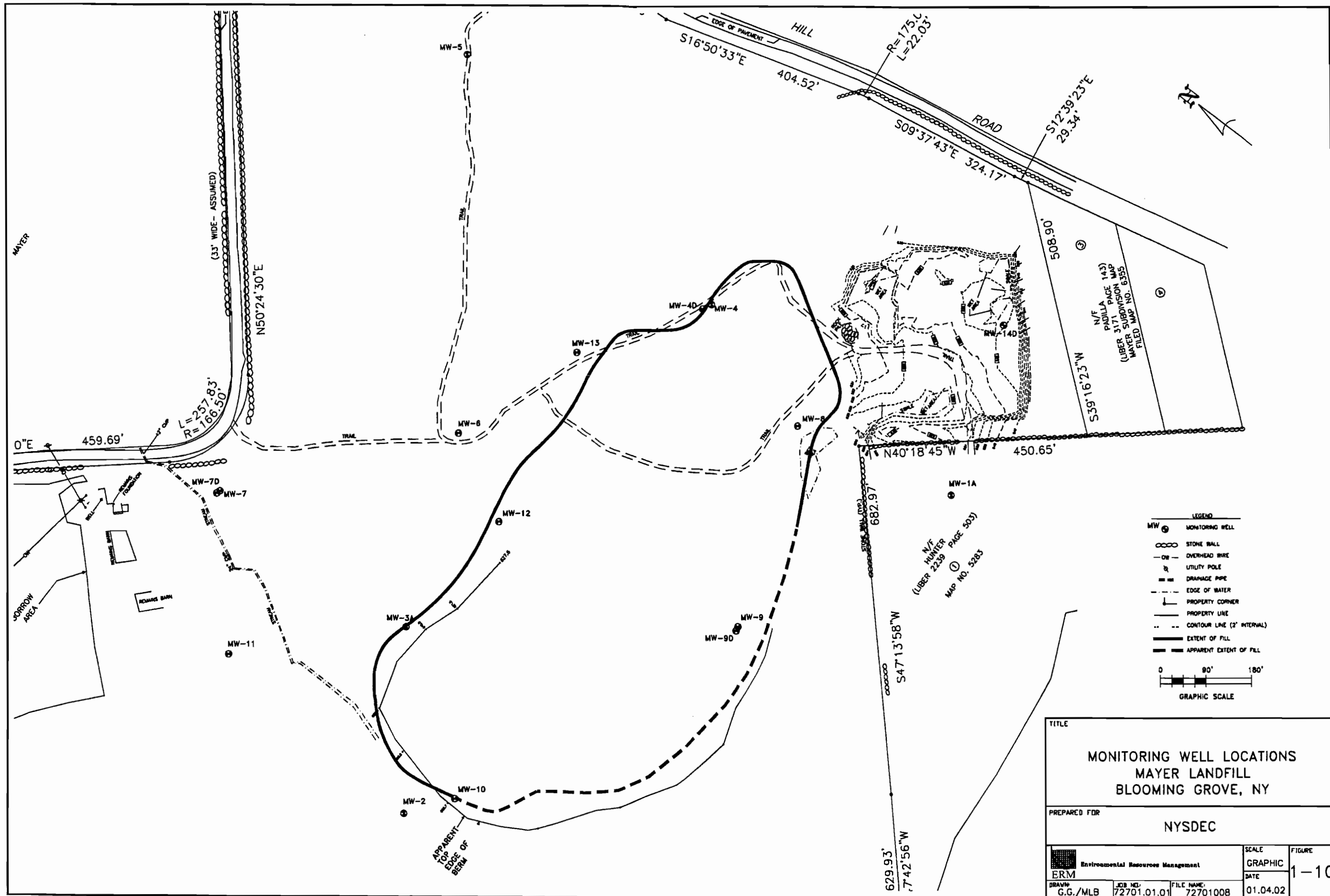


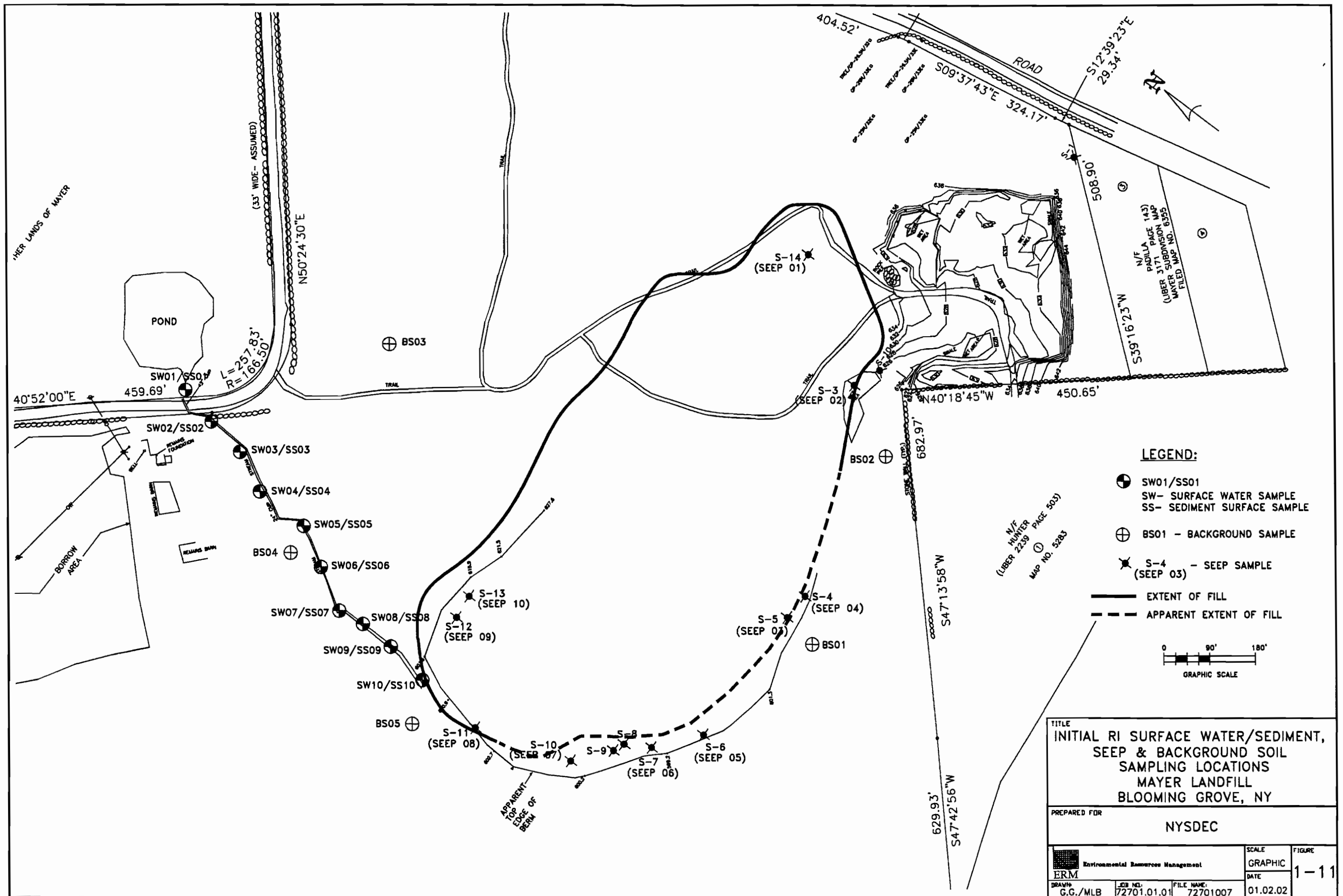


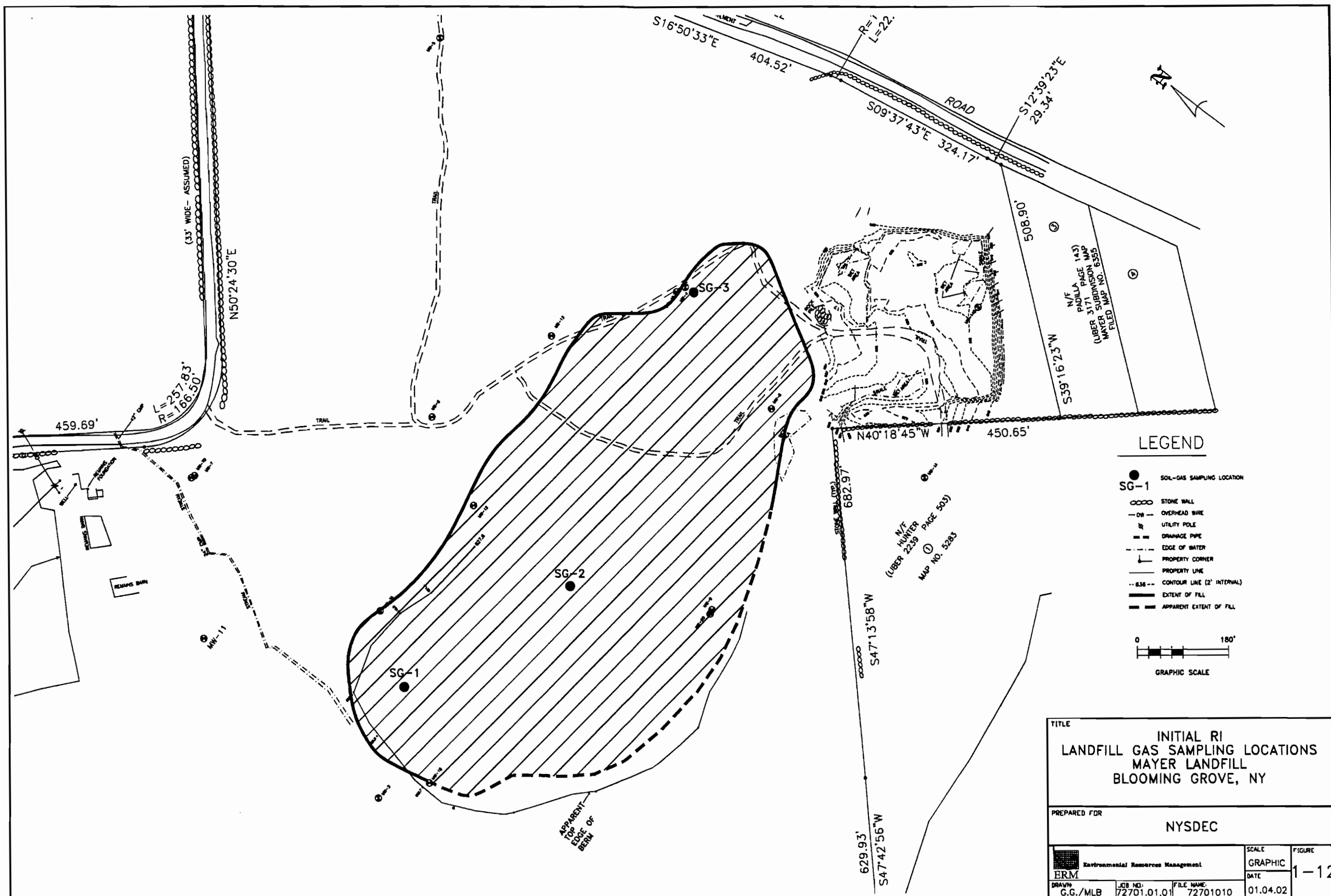












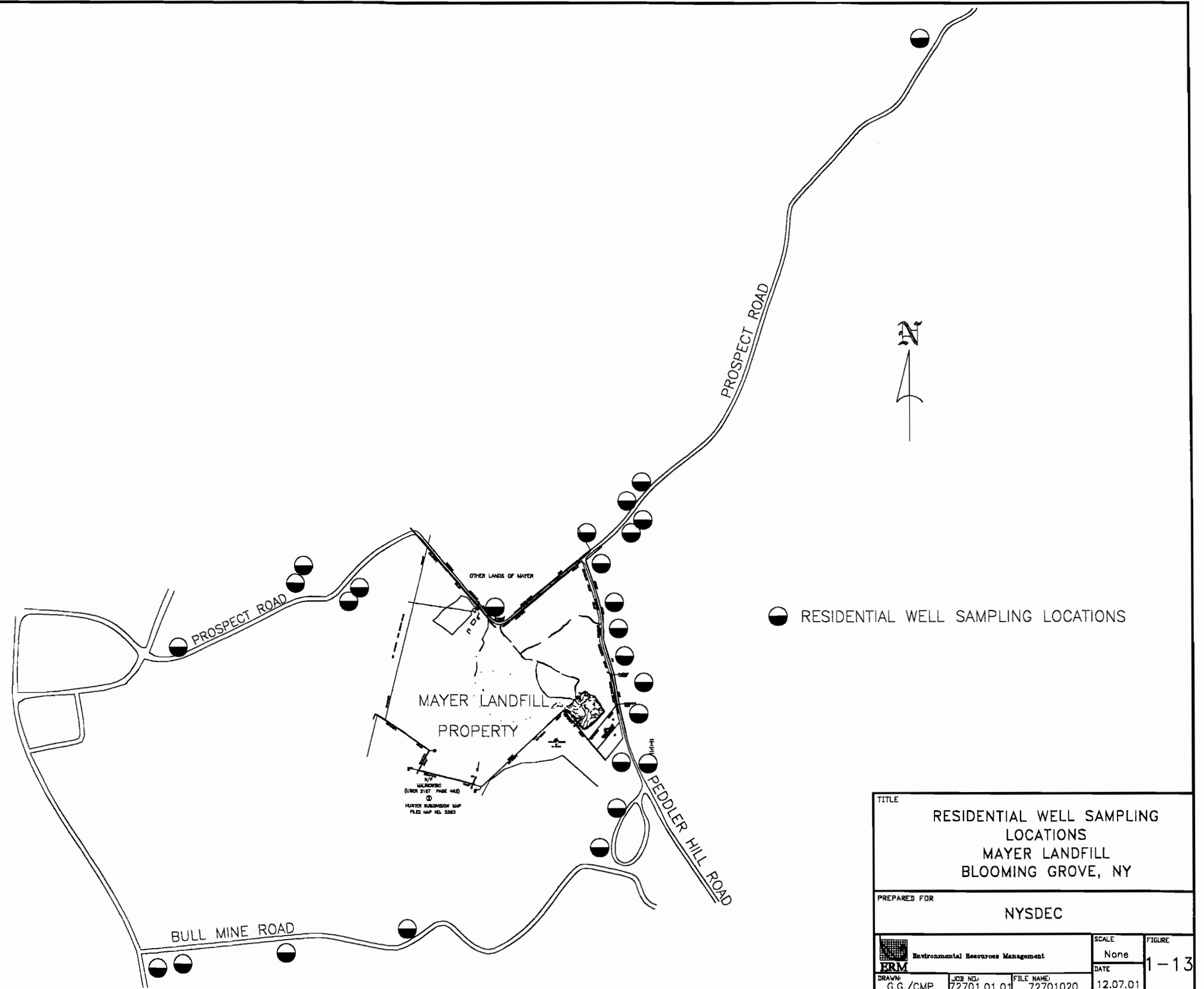
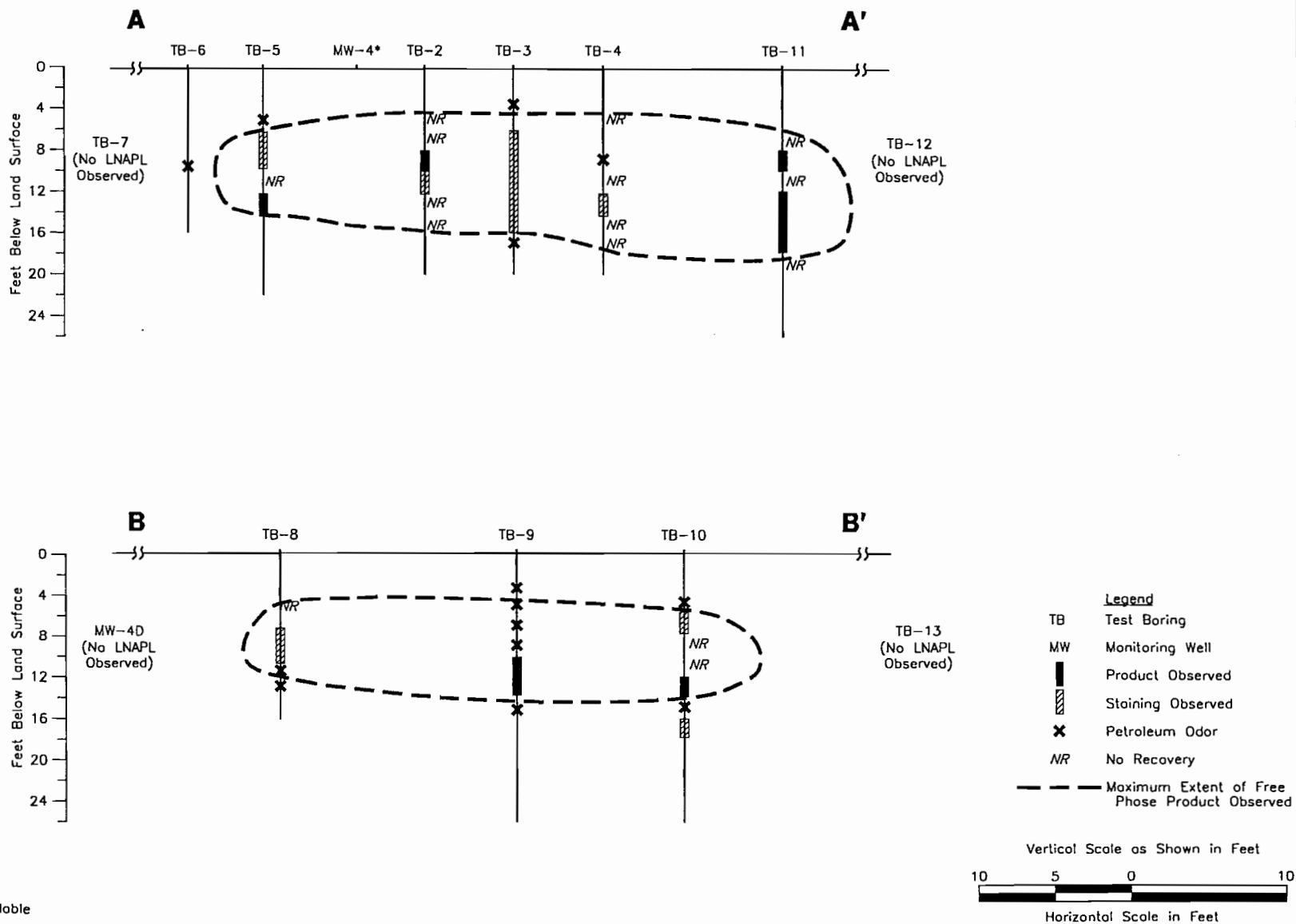
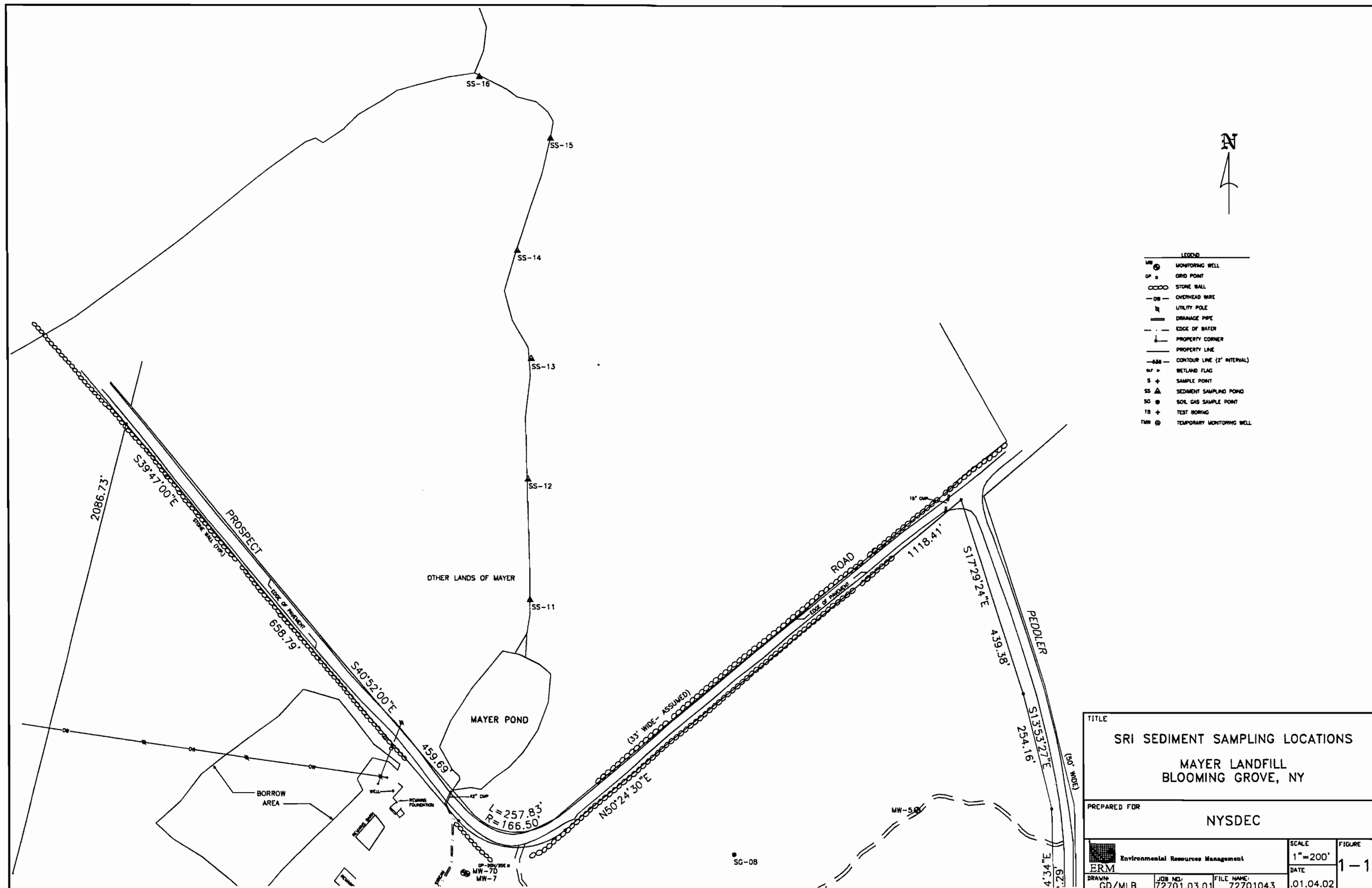


Figure 1-14B
Vertical LNAPL Delineation
Mayer Landfill for NYSDEC
Blooming Grove, New York





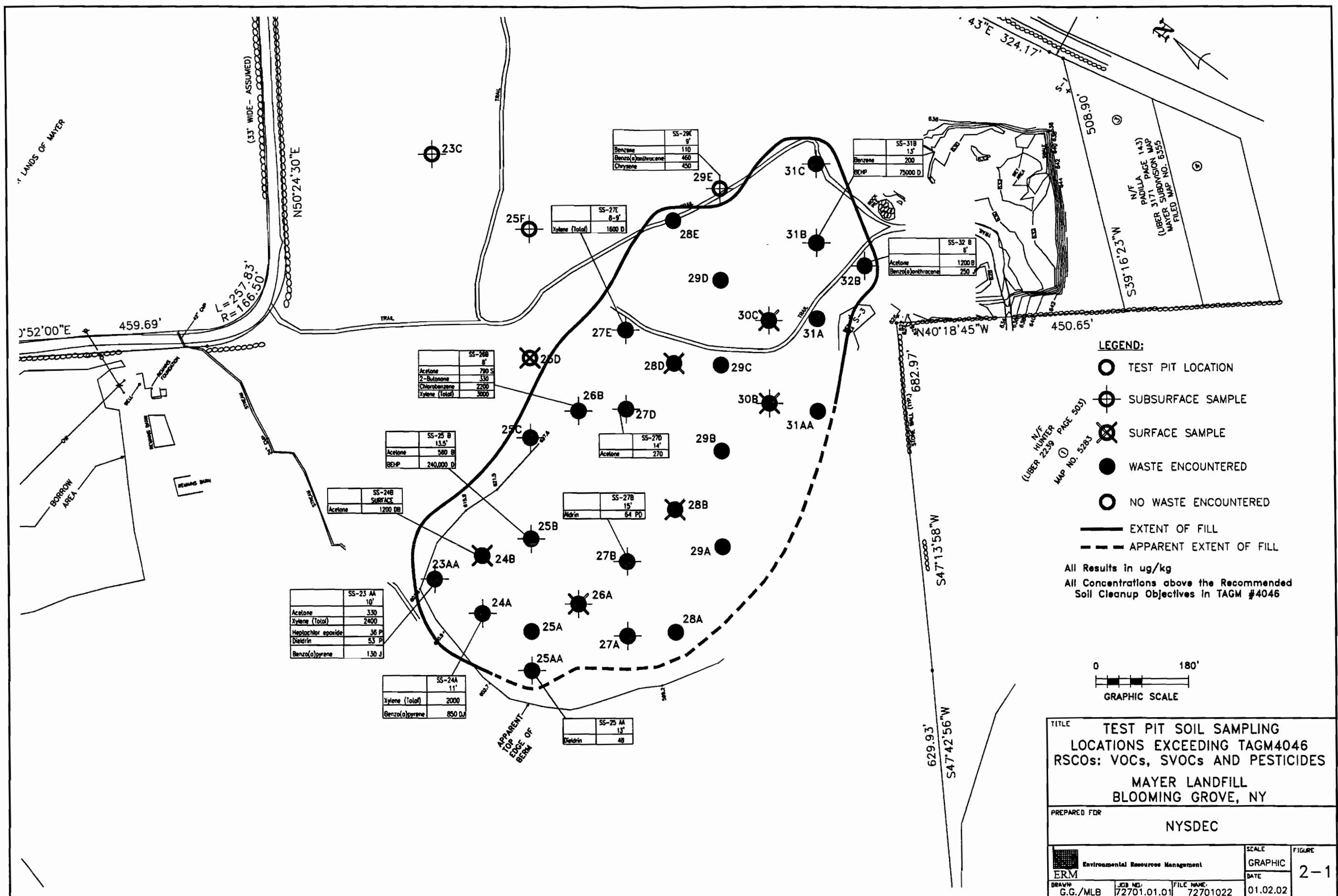
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PREPARED FOR NYSDEC			
Environmental Resources Management ERM		SCALE 1"=200'	FIGURE 1-15
DRAWN GD/MLB	JOB NO. 72701.03.01	FILE NAME 72701043	DATE .01.04.02

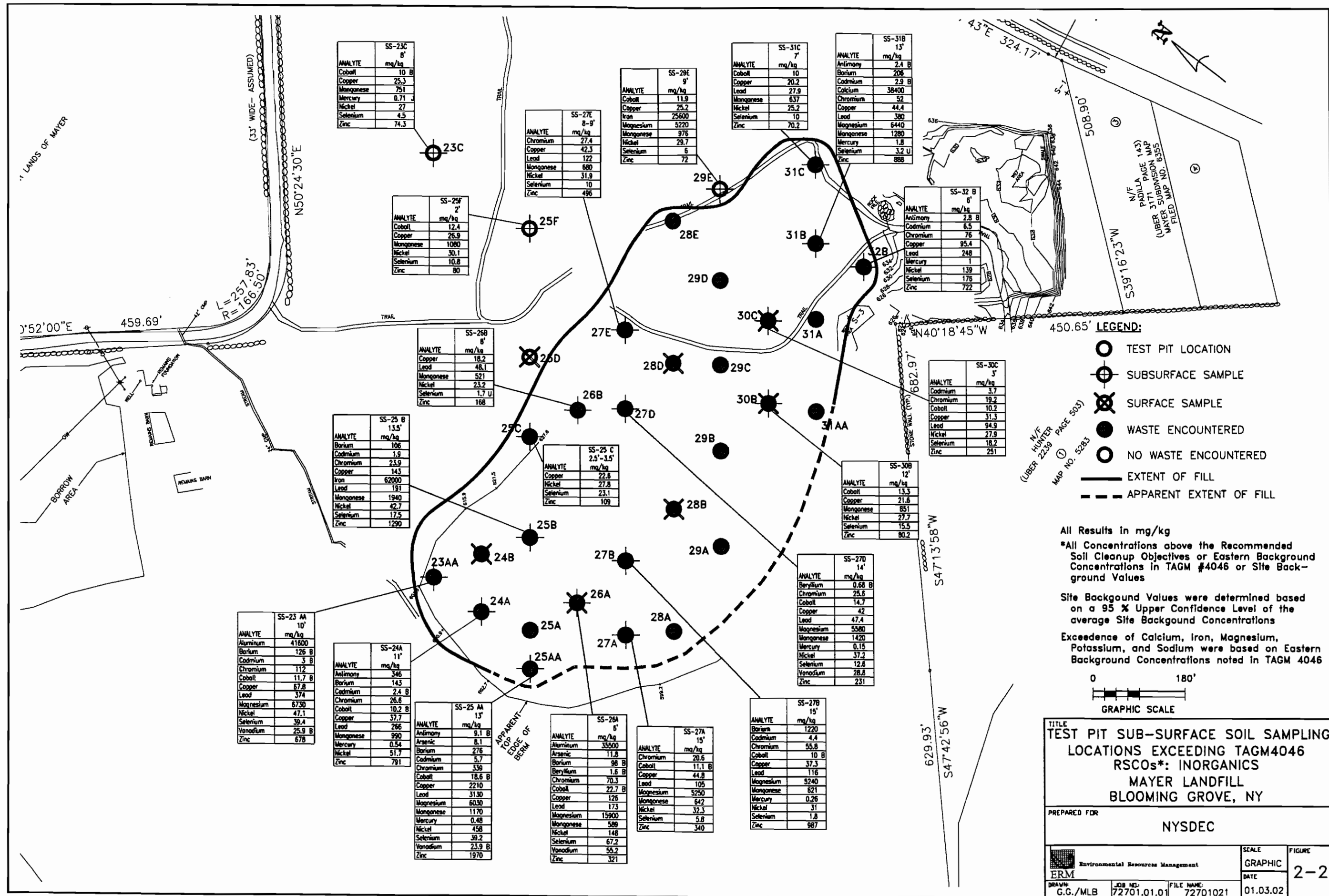


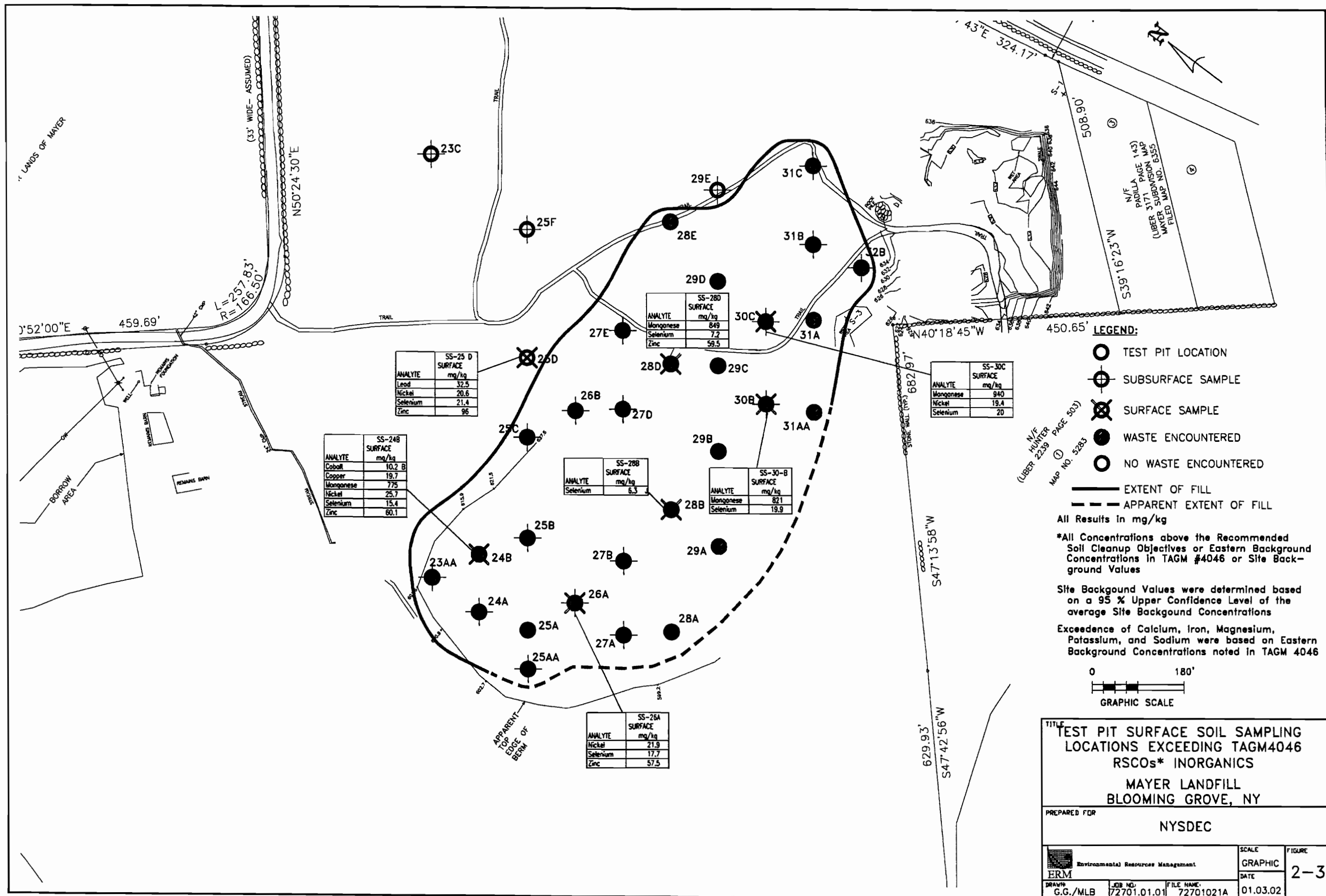
TITLE			
SOIL GAS SAMPLING LOCATIONS MAYER LANDFILL BLOOMING GROVE, NY			
PREPARED FOR			
NYSDEC			
 Environmental Resources Management ERM		SCALE 1"=200'	FIGURE 1-16
DRAWN: GD/MLB JOB NO: 72701.02.01 FILE NAME: 72701044		DATE 01.24.02	

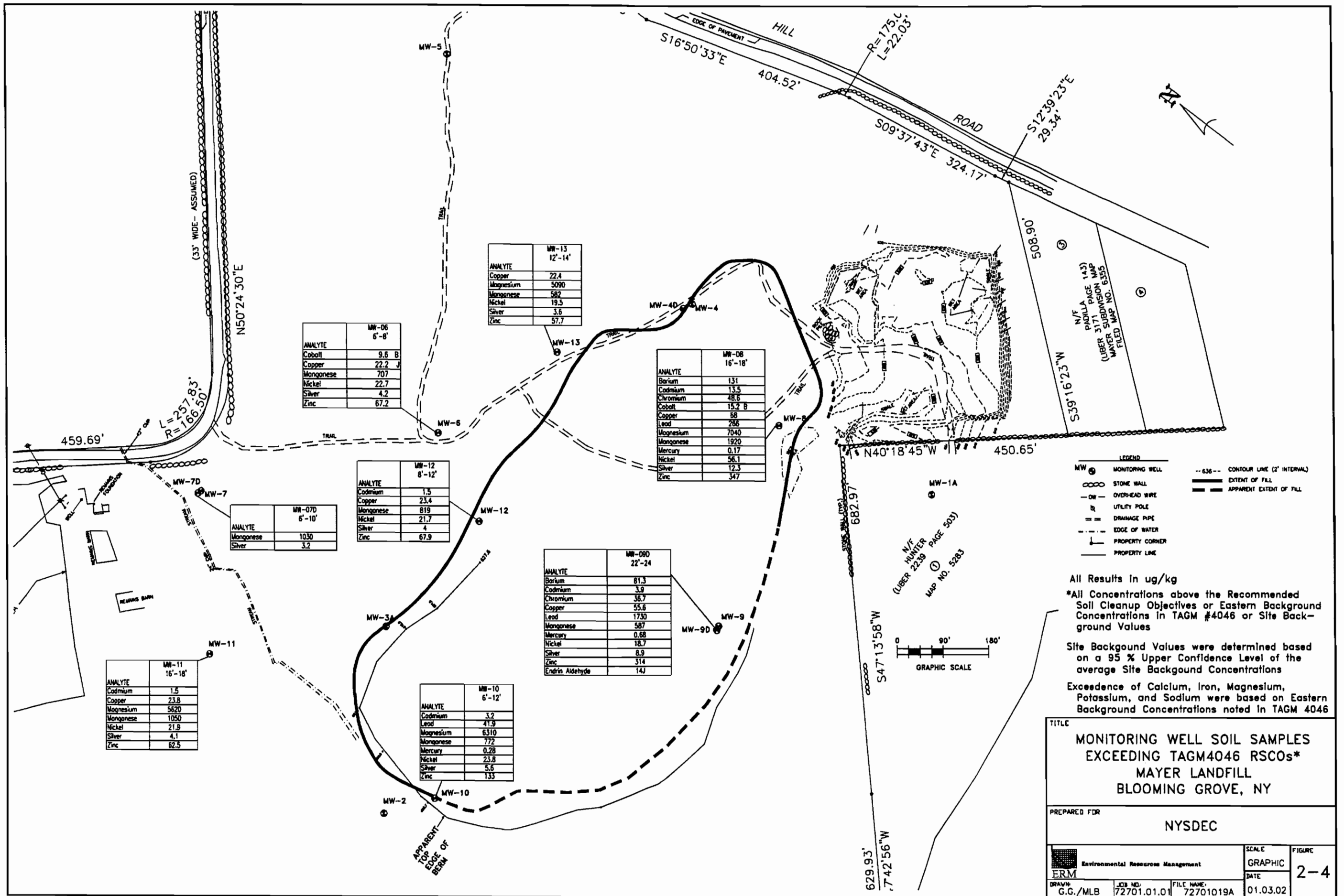
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(LIBER 2239 PAGE 503)

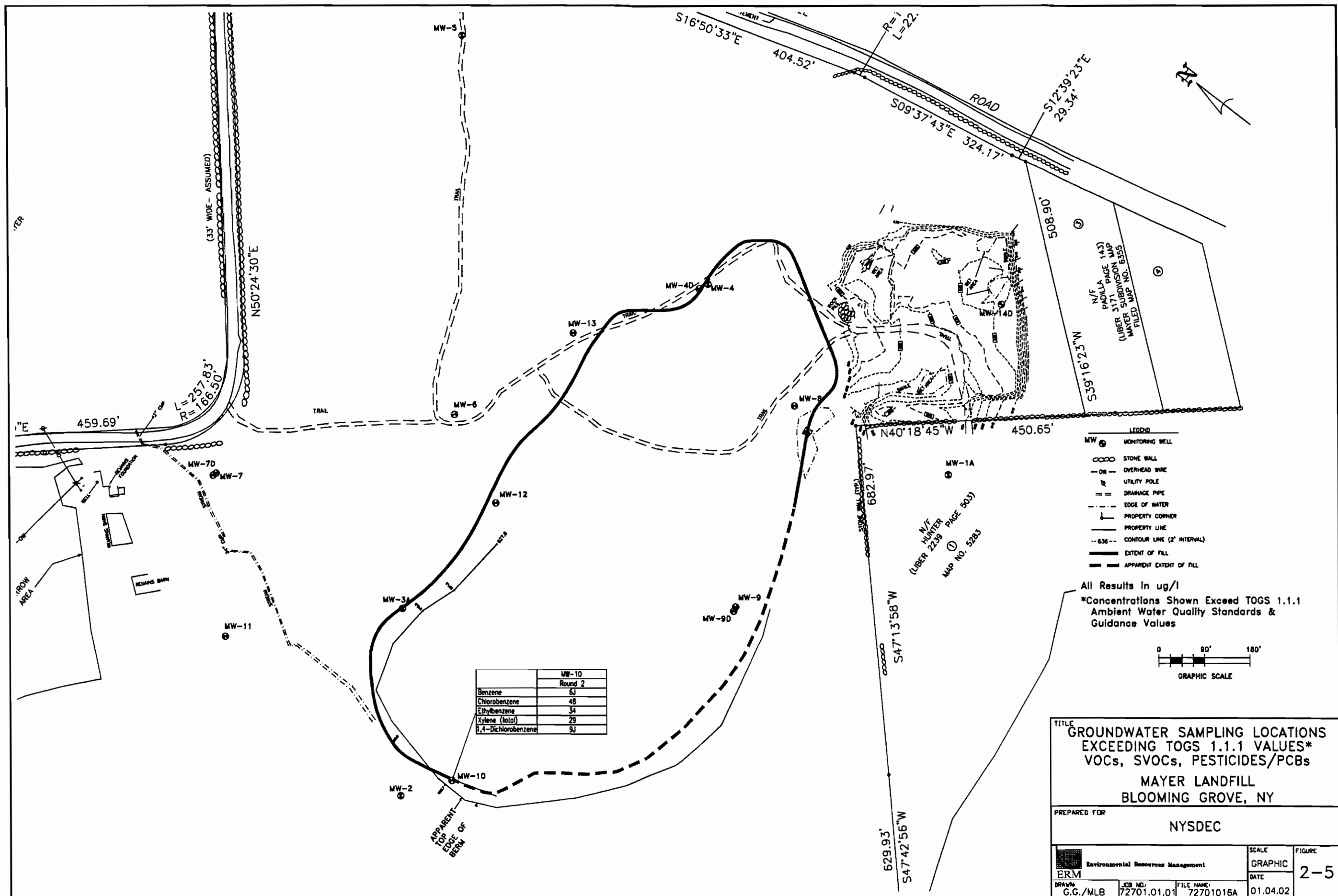
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PADILLA
(LIBER 3171 PAGE 143)
MAYER SUBDIVISION MAP
FILED MAP NO. 6355

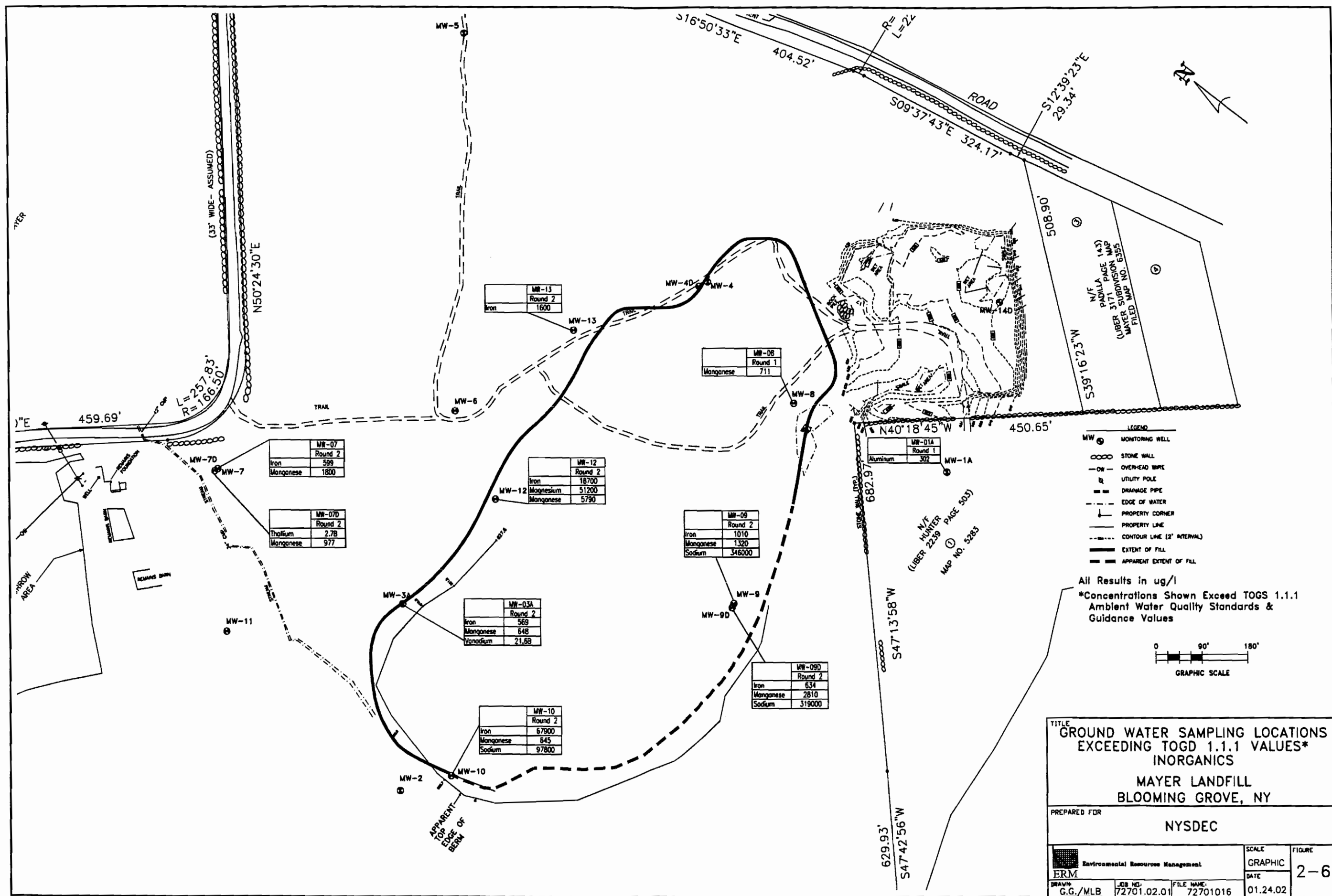












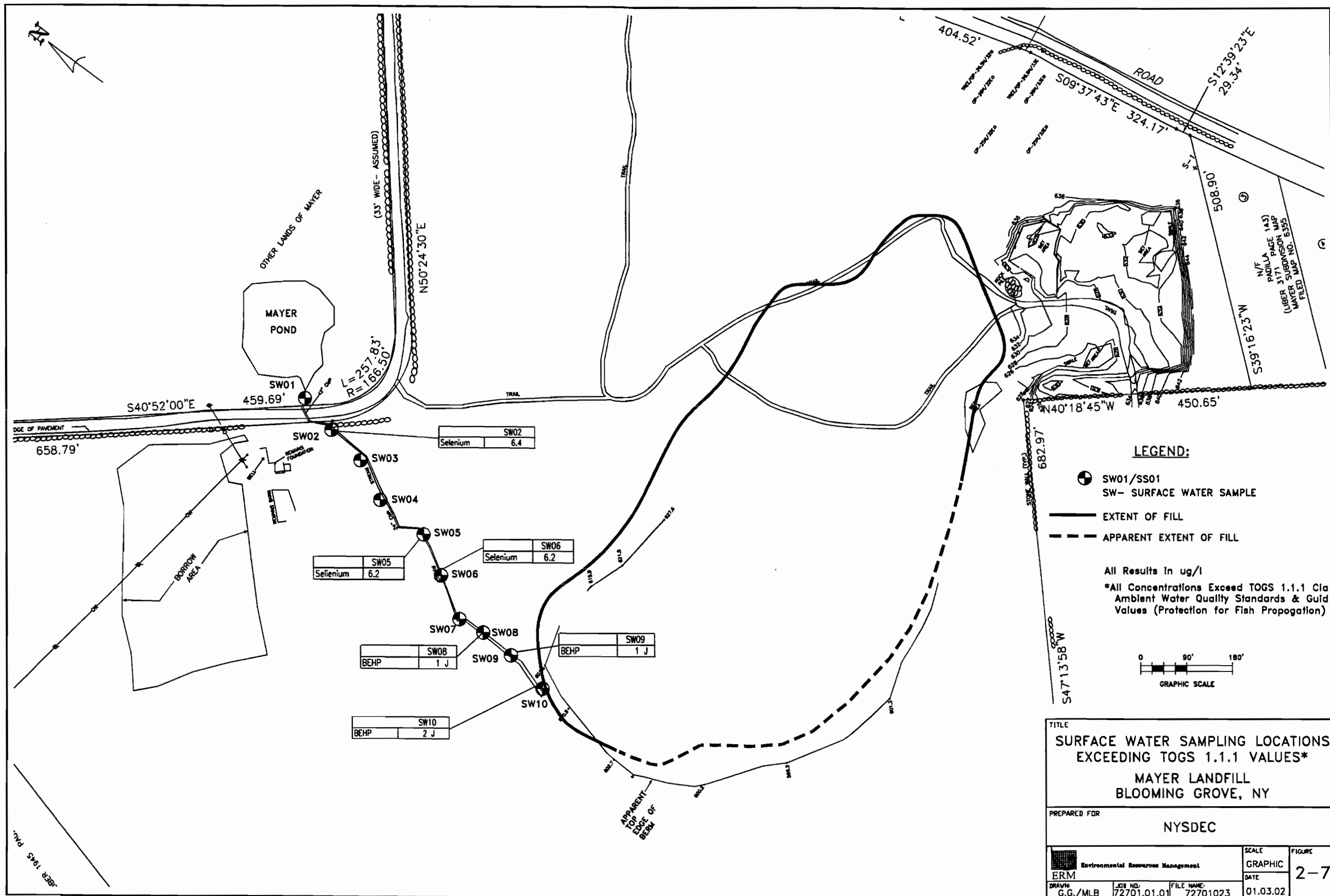


Figure 3-1
Cross-Section of a Typical NAPL-Only Recovery Trench
Mayer Landfill for NYSDEC
Blooming Grove, New York

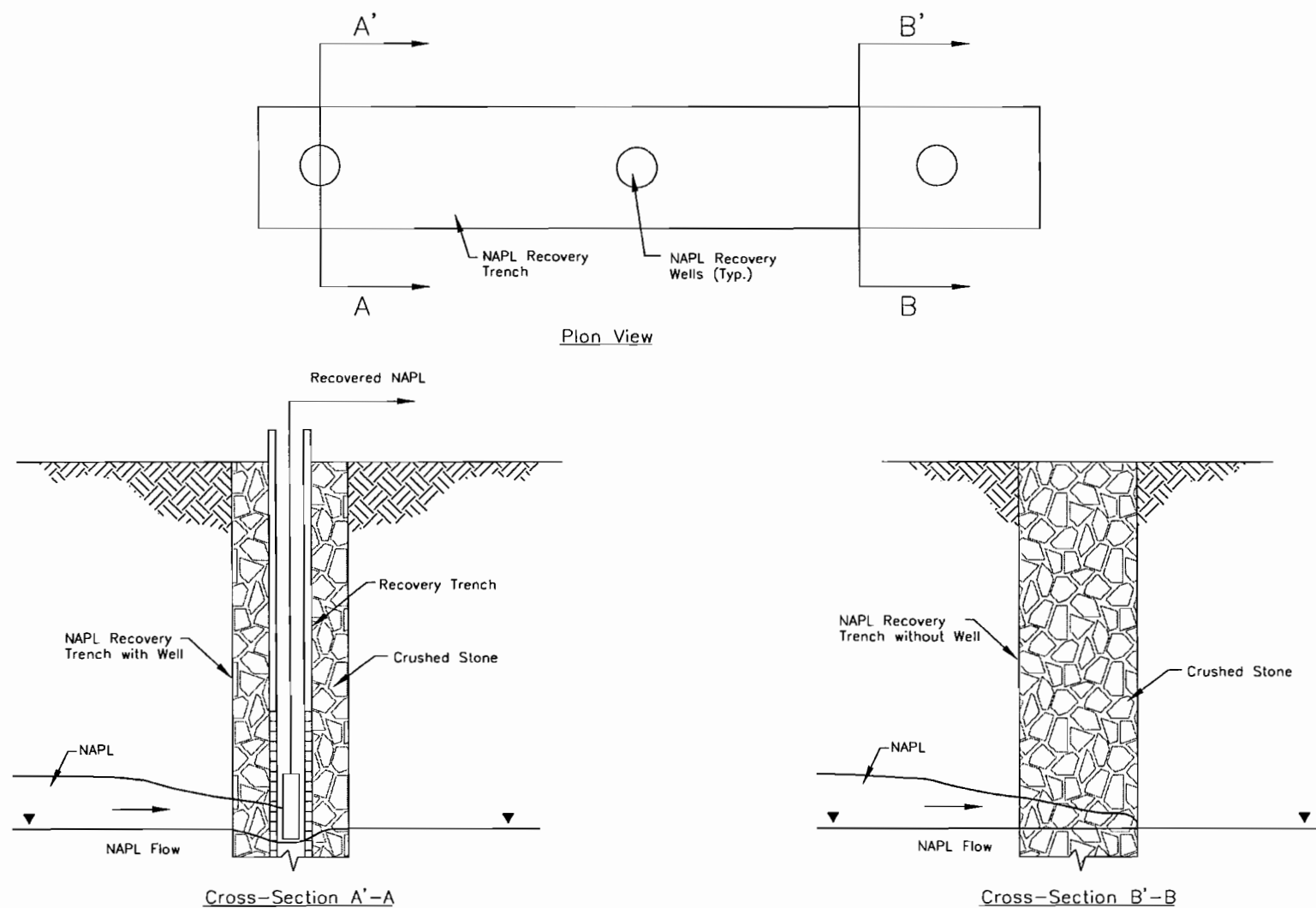
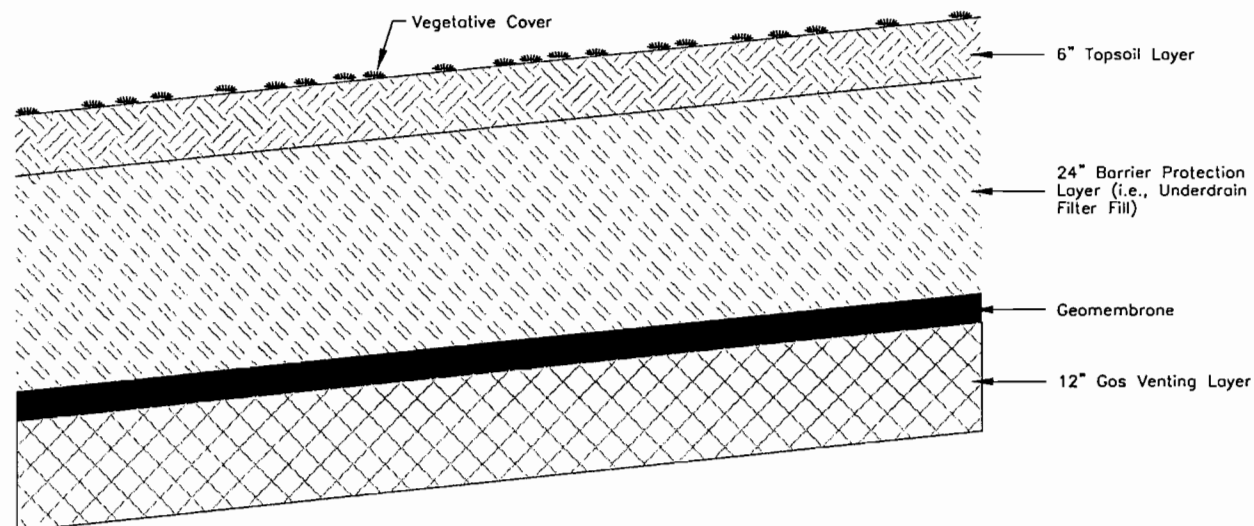


Figure 3-2
Diagram of Part 360 Cover System
Mayer Landfill for NYSDEC
Blooming Grove, New York



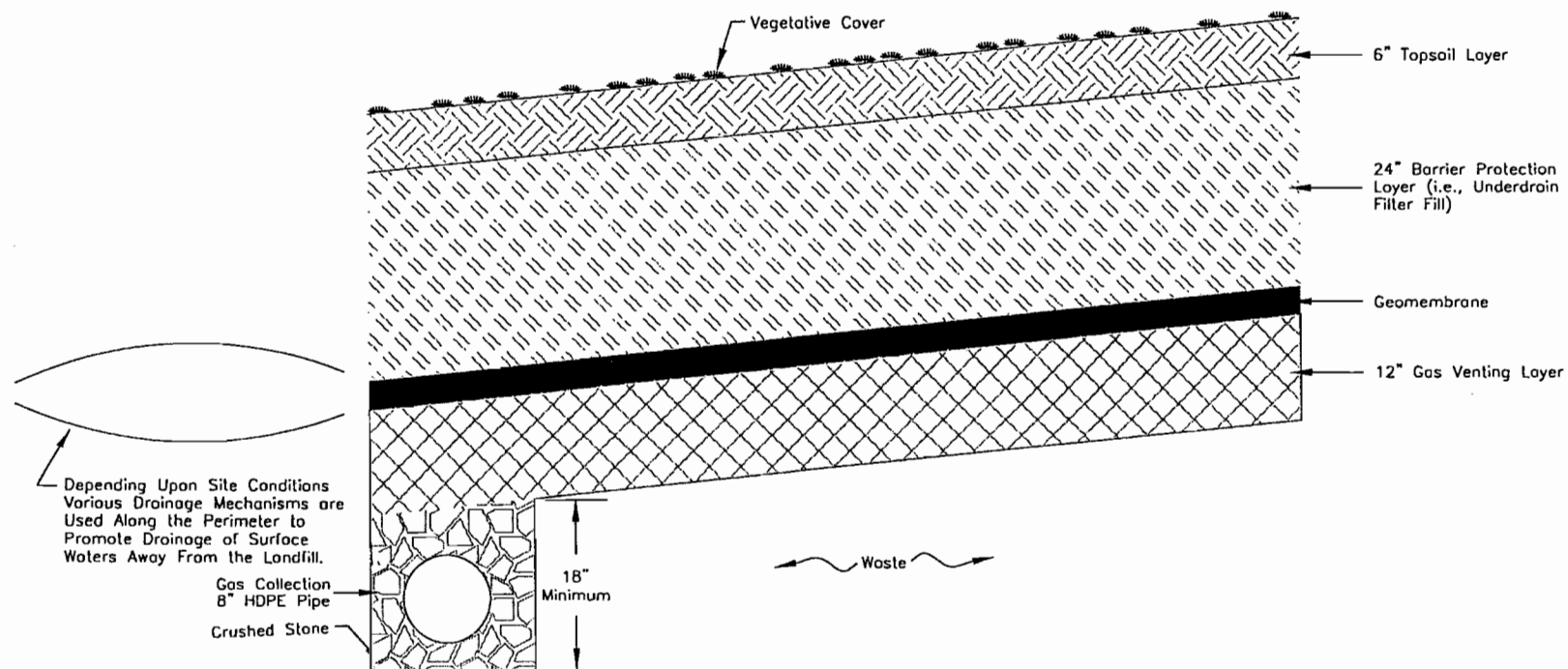
Note:

Part 360 Cover Based on 6NYCRR Part 360 Section 2.15(b)
Dated 25 April 1988

Source: New York State Department of Environmental Conservation -
Division of Solid Waste and Hazardous Waste Management

Not to Scale

Figure 4-1
Part 360 Cover with Trench Collection System
Mayer Landfill for NYSDEC
Blooming Grove, New York

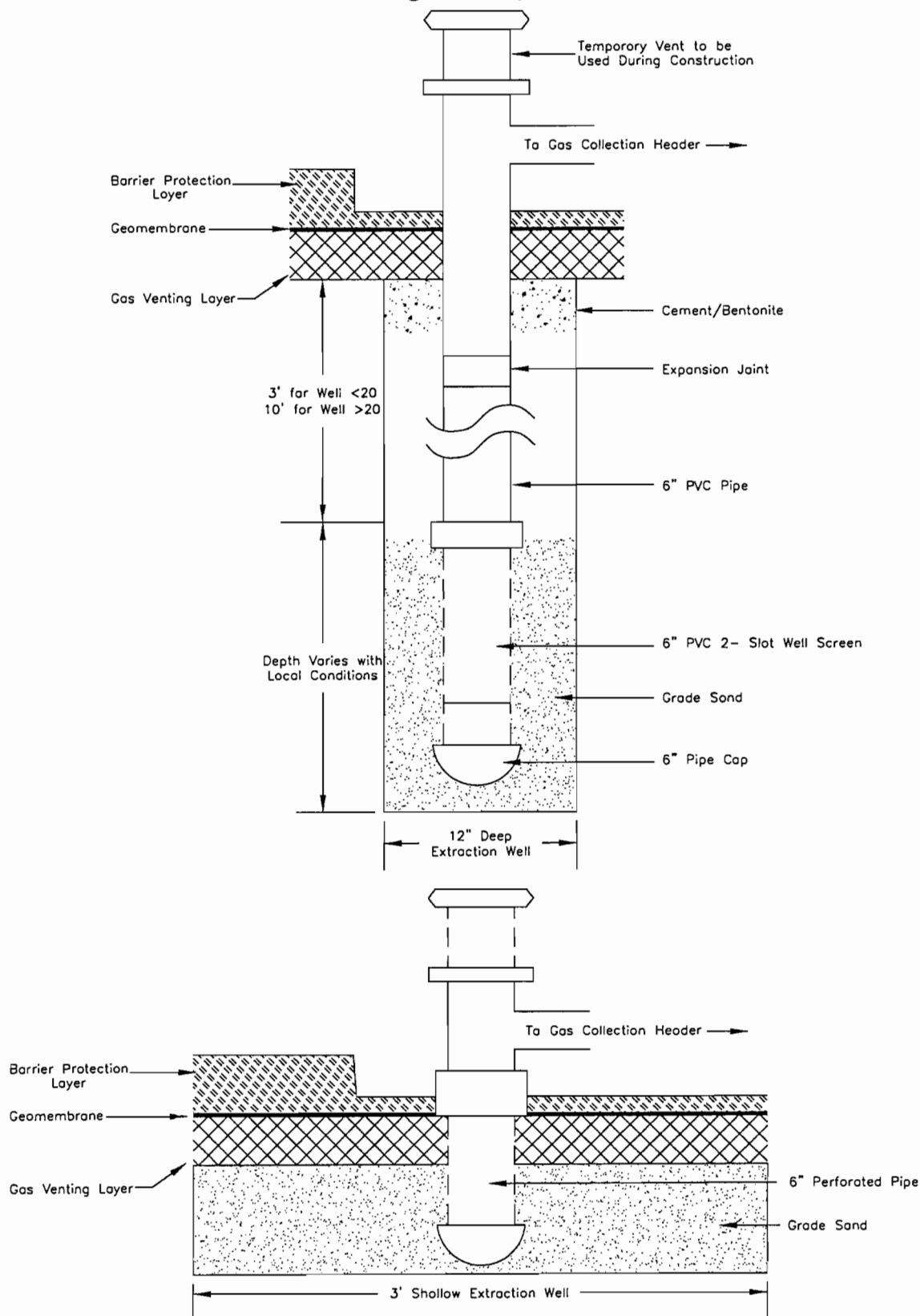
**Note:**

Part 360 Cover Based on 6NYCRR Part 360 Section 2.15(b)
 Dated 25 April 1988

Source: New York State Department of Environmental Conservation --
 Division of Solid Waste and Hazardous Waste Management

Not to Scale

Figure 4-2
Typical Cross-Section of Extraction Wells
Mayer Landfill for NYSDEC
Blooming Grove, New York



Reference: Velzy/Weston, Feasibility Study for Craton Point Sanitary Landfill, 1992

Not to Scale

Appendix

APPENDIX A

***Remedial Investigation Soil Gas Report and
Results***

EMFLUX[®] Report No. EM1159

EMFLUX[®] Passive, Non-Invasive
Soil-Gas Survey

**MAYER LANDFILL
BLOOMING GROVE, NY**

Prepared for

**ERM
175 Froehlich Farm Boulevard
Woodbury, NY 11797**

by

**BEACON Environmental Services, Inc.
19 Newport Drive
Suite 102
Forest Hill, MD 21050**

December 30, 1999

EMFLUX[®] Report No. EM1159

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Applying Results from Soil-Gas Surveys

The utility of soil-gas surveys is directly proportional to their accuracy in reflecting and representing changes in the subsurface concentrations of source compounds. An EMFLUX[®] soil-gas survey measures the mass collected from the vapor-phase of the source. The vapor-phase is merely a fractional trace of the source, so, as a matter of convenience, the units used in reporting detection values from EMFLUX[®] surveys are smaller than those employed for source-compound concentrations.

The critical fact is that, whatever the relative concentrations of source and associated soil gas, best results are realized when the ratio of soil-gas measurements to actual subsurface concentrations remains as close to constant as the real world permits. It is the reliability and consistency of this ratio, not the particular units of mass (*e.g.*, nanograms) that determine usefulness. Thus, BEACON emphasizes the necessity of conducting -- at minimum -- follow-on intrusive sampling at one or two points which show relatively high EMFLUX[®] values to obtain corresponding concentrations of soil and ground-water contaminants. These correspondent values furnish the basis for approximating the required ratio. Once that ratio is established, it can be used in conjunction with EMFLUX[®] measurements (regardless of the units adopted) to estimate subsurface contaminant concentrations across the survey field. It is important to keep in mind, however, that specific conditions at individual sample points, including soil porosity and permeability, depth to contamination, and perched ground water, can have significant impact on soil-gas measurements at those locations.

When EMFLUX[®] Surveys are handled in this way, the data provide information which can yield substantial savings in drilling costs and in time. They furnish, among other things, a checklist of compounds expected at each survey location and help to determine how and where drilling budgets can most effectively be spent.

EMFLUX® Survey Number: EM1159

**Mayer Landfill
Blooming Grove, NY**

This EMFLUX® Soil-Gas Survey Report has been prepared for ERM by BEACON Environmental Services, Inc. (BEACON) in accordance with the terms of Order Confirmation No. EM1159 dated December 21, 1999. BEACON's principal technical contacts at ERM for this project have been Mr. Andy Coenen and Mr. Greg Dunn.

1. Objectives

Soil-gas samples were collected to screen the Mayer Landfill site for the presence of selected volatile organic compounds (VOCs) and Methane. Survey results will be used to determine the distribution of contaminants and to guide further site investigation.

2. Target Compounds

Methane laboratory data is provided as **Attachment 1**. The VOC survey targeted the 33 compounds listed in **Attachment 2**, which supplies the resulting laboratory data in nanograms (ng) of specific compound per cartridge.

3. Survey Description

In this investigation, three locations were sampled for the targeted compounds. In addition, a trip blank was included as part of the VOC Survey.

4. Field Work

BEACON provided ERM an EMFLUX® Field Kit with the equipment needed to conduct a three-point EMFLUX® Soil-Gas Survey. Collectors were installed on December 7 and retrieved December 13, 1999. Methane samples were collected on December 13, 1999. **Attachment 3** describes the field procedures for the Methane Survey. **Attachment 4** describes the field procedures used in the VOC Survey. Deployment and retrieval times will be found in the Field Deployment Report (**Attachment 5**)

5. Analysis and Reporting Dates

Methane Survey

- BEACON received three samples for analysis of Methane on December 15, 1999.
- The laboratory analyzed the samples for Methane by directly injecting the gas sample into a gas chromatograph with a flame ionization detector (FID) in accordance with EPA Method 8015B (**Attachment 6**).
- The analysis of Methane samples was completed on November 17, 1999.

VOC Survey

- BEACON's contract laboratory, Maryland Spectral Services, Inc., (MSS) received four samples for analysis of VOCs on December 16, 1999.
- EMFLUX® sample cartridges were thermally desorbed, then analyzed using gas chromatography/mass spectrometry (GC/MS) equipment, in accordance with EPA Method 8260 (Modified), as described in **Attachment 7**. MSS analyzed each cartridge for the targeted compounds.
- MSS completed the analysis on December 16, 1999.

6. Report Notes and Quality Assurance/Quality Control Factors

- **Attachments 1 and 2** provide survey results by sample-point number and compound name. The quantitation levels represent values above which quantitative laboratory results can be achieved within specified limits of precision and with a high degree of confidence. The quantitation level of each compound, therefore, provides a reliable basis for comparison of the relative strength of individual detections of that compound.
- **Data Compatibility.** It is important to note that when sample locations are covered with or near the edge of an artificial surface (e.g., asphalt or concrete), sample measurements are often distorted (increased) significantly. Such distortion can be attributed to the fact that gas rising from sources beneath impermeable caps tends to reach equilibrium in relatively short periods of time and that, once equilibrium is reached, the soil-gas concentration measured at any point in a vertical line between source and cap is theoretically the same. Thus, a reading taken immediately below or near an impermeable surface is much higher than it would be in the absence of such a cap.
- The **Chain-of-Custody** forms, which were shipped with the samples for this survey, are supplied as **Attachment 8**.

- **Laboratory QA/QC procedures** consist of control blanks and verifications, as well as system calibration, as specified for EPA Methods 8015B and 8260. Laboratory personnel conducted internal control blanks and internal control verification analyses daily to ensure that the system was contaminant free and properly calibrated. The system used for analysis of the Methane samples was calibrated using external-standard procedures to at least three different concentrations for each compound targeted. The Laboratory QA/QC procedures followed for the analysis of the VOC samples included standards, surrogates, and blanks appropriate to EPA Method 8260 (Modified).
- **QA/QC Contaminant Corrections.** Following EPA guidelines, BEACON does not correct EMFLUX® laboratory data for method blank or trip blank contamination values; all contamination detected on QA/QC samples is reported in **Attachments 1 and 2**. Subsequent handling of QA/QC sample contamination depends upon the circumstances and origin of the sample; any corrective conventions noted below have proved highly useful in deriving accurate and reproducible interpretations of survey data in prior EMFLUX® Surveys. *No other methods thus far tested have produced comparable levels of quality.*

Laboratory method blanks are run each day with project samples to identify contamination present in the laboratory. If contamination is detected on a method blank, detections of identical compounds on samples analyzed the same day are considered to be suspect and are flagged in the laboratory report. The laboratory method blanks analyzed in connection with the present samples revealed no contamination.

The **trip blank** is an EMFLUX® cartridge prepared, transported, and analyzed with other samples but intentionally not exposed. Here, the trip blank (labeled Trip-1 in **Attachment 2**) recorded 39 ng of Benzene; therefore, all low-level detections of Benzene should be considered suspect during data interpretation.

- **Survey findings** are relative exclusively to this project and should not routinely be compared with results of other EMFLUX® Surveys. *To establish a relationship between reported soil-gas measurements and actual subsurface contaminant concentrations, which will indicate those detections representing significant subsurface contamination, BEACON recommends the guidelines on the inside front cover of this report.*
- The following **Attachments** are included:
 - 1- Laboratory Report — Methane Survey
 - 2- Laboratory Report — VOCs Survey
 - 3- EMFLUX® Field Procedures — Shallow Probes
 - 4- EMFLUX® Field Procedures — Adsorbent Cartridge Collectors
 - 5- Field Deployment Reports
 - 6- Laboratory Procedures — Method 8015B
 - 7- Laboratory Procedures — Method 8260
 - 8- Chain-of-Custody Forms

Attachment 1

**Laboratory Report
Methane Survey**

Attachment 1

Laboratory Report Results in Parts Per Million (ppm) Analysis Completed: December 15, 1998

Project No. EM1159

In this analysis three EMFLUX samples were analyzed under the requirements of EPA Method 8015B using an SRI 8610 Gas Chromatograph equipped with a thermal desorber, a 105 meter x 0.53 mm i.d. Rtx - 502.2 column, and a flame ionization detector. The Gas Chromatograph was held at subambient temperatures (<20 degrees C) for the analysis.

SAMPLE NO.	1	2	3
Methane	12,000	20,000	2,500

Reported Quantitation Level = 2,010 ppm

U = Below Reported Quantitation Level

Samples diluted by factor of 2,010

Attachment 2

**Laboratory Report
VOC Survey**

MARYLAND SPECTRAL SERVICES, INC.
1500 Caton Center Drive Baltimore, MD 21227

VOLATILE ORGANICS BY EPA GC/MS METHOD MODIFIED 8260

CLIENT SAMPLE ID:	SG-1	SG-2	SG-3	TRIP-1	VBLK121601
	EM1159	EM1159	EM1159	EM1159	
LAB SAMPLE ID:	99121610	99121611	99121612	99121613	METHOD BLANK
RECEIVED DATE:	12/16/99	12/16/99	12/16/99	12/16/99	
ANALYSIS DATE:	12/16/99	12/16/99	12/16/99	12/16/99	12/16/99
FILE NAME:	121610	121611	121612	121613	1216VBLKD1
INSTRUMENT ID:	MSD	MSD	MSD	MSD	MSD
UNITS:	NG/TRAP	NG/TRAP	NG/TRAP	NG/TRAP	NG/TRAP
VOLATILE COMPOUNDS					
Benzene	184	1250	38	39	25 U
Bromodichloromethane	25 U	25 U	25 U	25 U	25 U
Bromoform	25 U	25 U	25 U	25 U	25 U
Bromomethane	50 U	50 U	50 U	50 U	50 U
2-Butanone	50 U	2580	50 U	50 U	50 U
Carbon Tetrachloride	25 U	25 U	25 U	25 U	25 U
Chlorobenzene	37	1760	25 U	25 U	25 U
Chloroethane	1090	745	50 U	50 U	50 U
Chloroform	25 U	25 U	25 U	25 U	25 U
Chloromethane	760	1900	182	50 U	50 U
Dibromochloromethane	25 U	25 U	25 U	25 U	25 U
1,1-Dichloroethane	29	25 U	25 U	25 U	25 U
1,2-Dichloroethane	25 U	57	25 U	25 U	25 U
1,1-Dichloroethene	25 U	25 U	25 U	25 U	25 U
1,2-Dichloroethene (cis)	25 U	1310	25 U	25 U	25 U
1,2-Dichloroethene (trans)	25 U	107	25 U	25 U	25 U
1,2-Dichloropropane	25 U	25 U	25 U	25 U	25 U
cis-1,3-Dichloropropene	25 U	25 U	25 U	25 U	25 U
trans-1,3-Dichloropropene	25 U	25 U	25 U	25 U	25 U
Ethylbenzene	25 U	8200	25 U	25 U	25 U
2-Hexanone	50 U	50 U	50 U	50 U	50 U
4-Methyl-2-Pentanone	50 U	50 U	50 U	50 U	50 U
Styrene	25 U	486	25 U	25 U	25 U
1,1,2,2-Tetrachloroethane	25 U	25 U	25 U	25 U	25 U
Tetrachloroethene	25 U	323	25 U	25 U	25 U
Toluene	45	2030	25 U	25 U	25 U
1,1,1-Trichloroethane	25 U	25 U	25 U	25 U	25 U
1,1,2-Trichloroethane	25 U	25 U	25 U	25 U	25 U
Trichloroethene	25 U	96	25 U	25 U	25 U
1,2,4-Trimethylbenzene	25 U	2460	25 U	25 U	25 U
1,3,5-Trimethylbenzene	72	4820	25 U	25 U	25 U
Vinyl Chloride	50 U	1860	50 U	50 U	50 U
Xylenes (Total)	417	8550	69	25 U	25 U

B - Detected in lab blank. U - Below reported quantitation level. J - Estimated value.

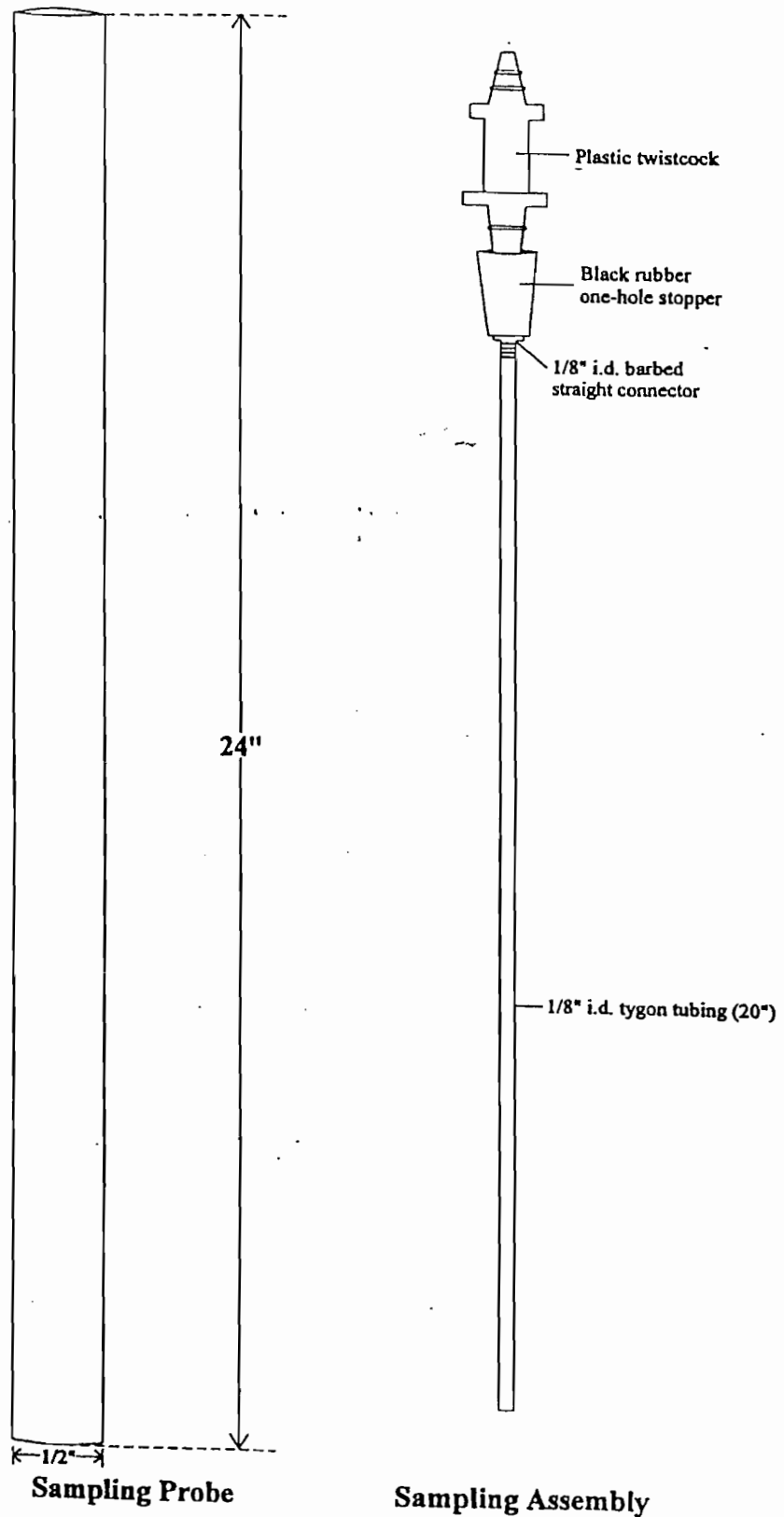
Attachment 3

FIELD PROCEDURES FOR EMFLUX® SOIL-GAS SURVEYS USING SHALLOW PROBES

The following field procedures are routinely used during EMFLUX® Soil-Gas Surveys when soil-gas is sampled from shallow probes in the ground. Modifications can be and are incorporated from time to time in response to individual project requirements. In all instances, BEACON adheres to EPA-approved Quality Assurance and Quality Control practices.

- A. At each sample location, a one-inch diameter hole is made to an 18-inch depth. A metal probe is inserted down the hole and the probe is tapped one inch into the base of the hole.
- B. A sampling assembly is lowered into the probe and the rubber stopper is pushed into the top of the probe to form a tight fit. The twistcock on the assembly is turned to the closed position. The hole surrounding the probe is then backfilled with sand.
- C. After all the probes in the survey are inserted into the ground, the gas in each of the probes is sampled sequentially. At each probe, the twistcock is turned to the open position and a 60 mL syringe is used to pierce the septum at the top of the twistcock and purge ambient air from the probe. A total of 120 mL of air is withdrawn from the probe.
- D. The syringe is then used to collect another 60 mL gas sample, which is injected into a pre-evacuated glass vial. The vial is marked with the sample number and time of collection. The vial is then stored in a shipping box out of the sunlight.
- E. After all the probes have been sampled, the samples are shipped with chain of custody documentation to BEACON's laboratory for analysis. Probes are removed from the ground and holes are backfilled as required.

EMFLUX[®] Methane Sampler



meth2.dw2

NOTE: Not to scale

Attachment 4

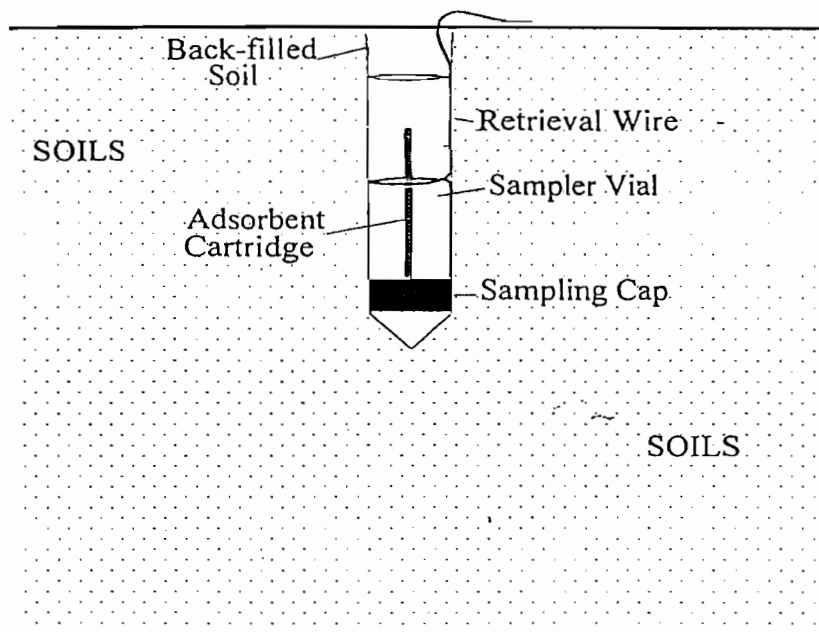
FIELD PROCEDURES FOR EMFLUX® SOIL-GAS SURVEYS USING ADSORBENT CARTRIDGES

The following field procedures are routinely used during EMFLUX® Soil-Gas Surveys. Modifications can be and are incorporated from time to time in response to individual project requirements. In all instances, BEACON adheres to EPA-approved Quality Assurance and Quality Control practices.

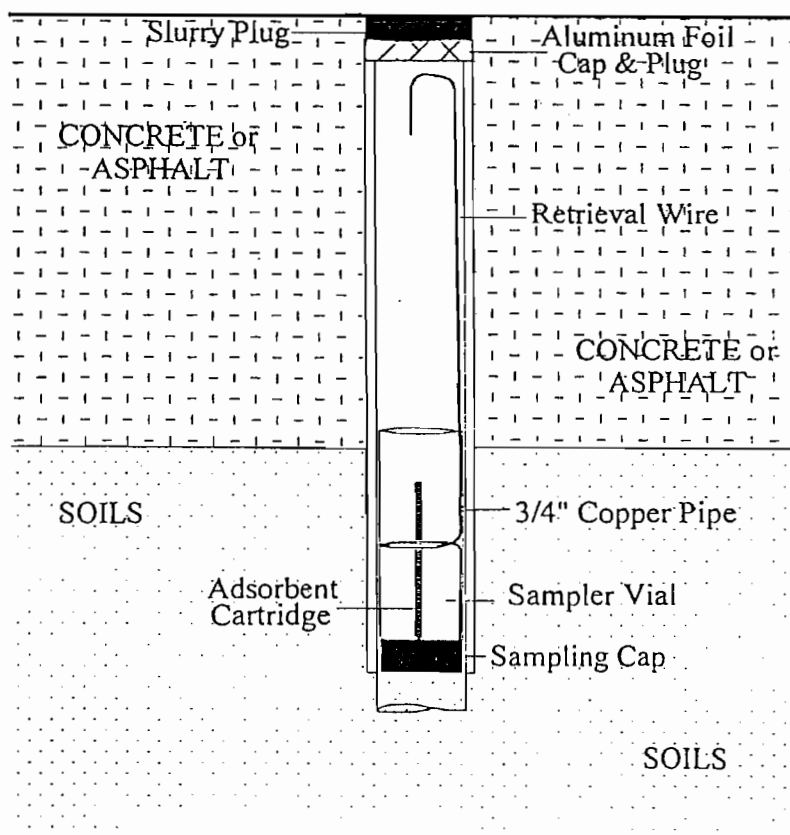
- A. Field personnel carry EMFLUX® system components and support equipment to the site and deploy the EMFLUX® Collectors in a prearranged survey pattern. Although EMFLUX® Collectors require only one person for emplacement and retrieval, the specific number of field personnel required depends upon the scope and schedule of the project. Each Collector emplacement generally takes less than two minutes.
- B. For those sample locations covered with soils or vegetation, a field technician clears vegetation and debris exposing the ground surface. Using a hammer and a ¾-inch-diameter pointed metal stake, the technician creates a hole approximately three inches deep. For those locations covered with an asphalt or concrete cap, the field technician drills a 1½-inch-diameter hole through the cap to the soils beneath. (If necessary, the Collector can be sleeved with a ¾-inch i.d. copper pipe for either capped or uncapped locations and when freezing and thawing of the soil during a survey may occur).
- C. The technician then removes the solid plastic cap from an EMFLUX® Collector (a glass vial containing an adsorbent cartridge with a length of wire attached to the vial for retrieval) and replaces it with a Sampling Cap (a plastic cap with a hole covered by screen meshing). The technician inserts the Collector, with the Sampling Cap end facing down, into the hole (see attached figure). The Collector is then covered with either local soils for uncapped locations or, for capped locations, aluminum foil and a concrete patch. The Collector's location, time and date of emplacement, and other relevant information are recorded on the Field Deployment Form.
- D. One or more trip blanks are included as part of the quality-control procedures.
- E. Once all EMFLUX® Collectors have been deployed, field personnel schedule Collector recovery (approximately 72 hours after emplacement) and depart, taking all no-longer-needed equipment and materials with them).
- F. Field personnel retrieve the Collectors at the end of the 72-hour exposure period. At each location, a field technician withdraws the Collector from its hole and wipes the outside of the vial clean using a clean towel; following removal of the Sampling Cap, the threads of the vial are also cleaned with gauze cloth. A solid plastic cap is screwed onto the vial and the sample location number is written on the label. The technician then records sample-point location, date, time, etc. on the Field Deployment Form.
- G. Sampling holes are refilled with soil, sand, or other suitable material. If Collectors have been installed through asphalt or concrete, the hole is filled to grade with a plug of cold patch or cement.
- H. Following retrieval, field personnel ship or carry the EMFLUX® Collectors to a specified analytical laboratory. The remaining equipment is returned to BEACON's preparation facility.

EMFLUX[®] COLLECTOR

DEPLOYMENT THROUGH SOILS



DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP



Attachment 5

Field Deployment Reports

BEACON ENVIRONMENTAL SERVICES, INC. FIELD DEPLOYMENT REPORT

PROJECT #: 1159

CLIENT: *ERM*

SITE: MAYER LANDFILL

INDIVIDUAL SAMPLE INFORMATION

EMPLACEMENT DATE: 12/7/99

RETRIEVAL DATE: 12/13/99

[illegible]

Attachment 6

LABORATORY PROCEDURES FOR ANALYSIS OF SOIL-GAS SAMPLES

EPA Method 8015B

Following are laboratory procedures used with the EMFLUX® Soil-Gas System, a screening technology for expedited site investigation. After exposure, EMFLUX® cartridges are analyzed using U.S. EPA Method 8015B as described in the Solid Waste Manual (SW-846) for screening purposes, which involves a capillary gas chromatographic/flame ionization detection (GC/FID) method, modified to accommodate thermal desorption screening of the adsorbent cartridges. This procedure is summarized below:

- A. A 1mL aliquot of the soil-gas sample collected in an evacuated septum vial is drawn using a 1 mL syringe and injected directly on-column.
- B. The laboratory uses a 105-m, 0.53-mm-i.d., 3 µm-film-thickness Rtx-502.2 capillary column for separation during analysis.
- C. On the flame ionization detector the hydrogen is set at 23 psi, the air is set at 10 psi and the sensitivity is set on high gain.
- D. Lab personnel conduct initial control blank and initial control verification before analysis to ensure that the system is contaminant free and properly calibrated. The system is calibrated using the external standard calibration procedure to at least three different concentration levels for each compound targeted, with the lowest concentration level at or near the method detection limit.
- E. The instrumentation used for these analyses is an SRI 8610 Gas Chromatograph, with an on-column injection port, a capillary column and a flame ionization detector.

Attachment 7

LABORATORY PROCEDURES FOR EMFLUX® ADSORBENT CARTRIDGES

EPA Method 8260

Following are laboratory procedures used with the EMFLUX® Soil-Gas System, a screening technology for expedited site investigation. After exposure, EMFLUX® cartridges are analyzed using U.S. EPA Method 8260 as described in the Solid Waste Manual (SW-846), a purge-and-trap capillary gas chromatographic/mass spectrometric method, modified to accommodate high-temperature thermal desorption of the adsorbent cartridges. This procedure is summarized as follows:

- A. The adsorbent cartridges are thermally desorbed at 300°C for 11 minutes in a 40 mL/min helium flow, through 5 mL of reagent water spiked with 250 ng of internal standards and surrogates held in the sparging vessel. Any analytes in the helium stream are adsorbed onto a standard three-component trap (Tenax, silica gel, coconut charcoal).
- B. Following cryofocusing, the three-component trap is thermally desorbed at 220°C onto a Supelco VOCOL 105 m, 0.5 mm ID, 3.00 micron filament thickness capillary column, per the U.S. EPA CLP Statement of Work (SOW) for the method.
- C. Following the SOW, the GC/MS is scanned between 35 and 260 Atomic Mass Units (AMU) at one second per scan.
- D. BFB tuning criteria and initial calibration are per the EPA CLP 2/88 guidelines, with an 18-hour tune window. A laboratory blank is analyzed after the daily standard to determine that the system is contaminant-free.
- E. The instrumentation used for these analyses includes:
 - Finnigan Model OWA 1050 Gas Chromatograph/Mass Spectrometer;
 - Tekmar Model 6016 Aero Trap Autosampler;
 - Tekmar Model LSC 2000 Liquid Sample Concentrator; and
 - Tekmar Model ALS 2016 Autosampler.

Attachment 8

Chain-of-Custody Forms

BEACON ENVIRONMENTAL SERVICES, INC. CHAIN-OF-CUSTODY FORM

PROJECT NUMBER:

1159

PROJECT NAME:

MAYER LANDFILL

LOCATION: BLOOMING GRAVE, NY

CLIENT: *ERM*

ERM

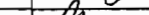
TARGET COMPOUNDS:

8260

6 Methane

Methane

[illegible]

RELINQUISHED BY		DATE	TIME	RECEIVED BY	
Signature	Printed Name			Signature	Printed Name
	Steve Thornley	12-03-99	2000		Gregory Dunn
	Gregory Dunn	12/06/99	1830		Steve Thornley
	Gregory Dunn	12/14/99	1115		Gregory Dunn
		12-15-99	1515		Steve Thornley

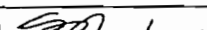
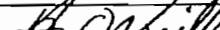
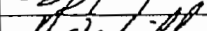
BEACON ENVIRONMENTAL SERVICES, INC. CHAIN-OF-CUSTODY FORM	
PROJECT NUMBER: EM1159	PROJECT NAME: MAYER LANDFILL
LOCATION: BLOOMING GROVE, NY	CLIENT: ERM
TARGET COMPOUNDS: 8260 LIST	

PROJECT NAME: MAYER LANDFILL

CLIENT: *ERM*

TARGET COMPOUNDS: 8260 LIST

[illegible]

RELINQUISHED BY		DATE	TIME	RECEIVED BY	
Signature	Printed Name			Signature	Printed Name
	Steve Thornley	12-16-99	11:00		H. O'Neill
	H. O'Neill	12-16-99	1345		S. Ham

APPENDIX B

LNAPL Analytical Results

October 02, 2001

Mr. Greg Dunn
Environmental Resources Management
855 Springdale Drive
Exton, PA 19341

Project: Mayer Landfill

Dear Mr. Dunn,

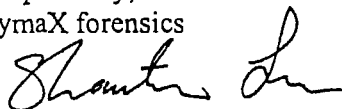
Enclosed are analytical results for two product samples ID MW-4 and TB-04 (16-18) submitted to ZymaX on September 18, 2001. The data were obtained from GC/MS full scan analysis for the aliphatic and aromatic fraction of both product samples. Furthermore, the mass chromatograms of terpanes (m/z 191) and steranes (m/z 217) were obtained from GCMS-SIM (no charge).

Our preliminary conclusion based on the analytical data, indicates that both product samples are a mixture of a highly degraded No.2 fuel oil (or diesel #2) and degraded creosote (coal tar oil), with a small amount of heavy hydrocarbons. Furthermore, a mildly degraded Mid-distillated fuel is also present in sample MW-4.

The project was performed at ZymaX forensics as Laboratory No.25132.

Please call us at 805.544.4696 if you have any questions regarding the analytical results.

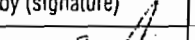
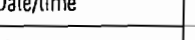
Respectfully,
ZymaX forensics



Shantan Lu, Ph.D.
Director of Petroleum Geochemistry

Client: <u>NYSDDEC</u>	Project name: <u>Managers Landfill II</u>	Lot:	Parameters for Analysis							
Work order number: <u>777040301</u>	Project manager/contact: <u>60-524-3402</u>									
Installation code: <u> </u>	Project manager/contact phone: <u>Greg Dunn</u>	of sers	<u>10/15/2011</u> <u>10/15/2011</u> <u>10/15/2011</u>							
Samplers: <u>T. Kubiak</u>	Sample program: <u> </u>									

[illegible]

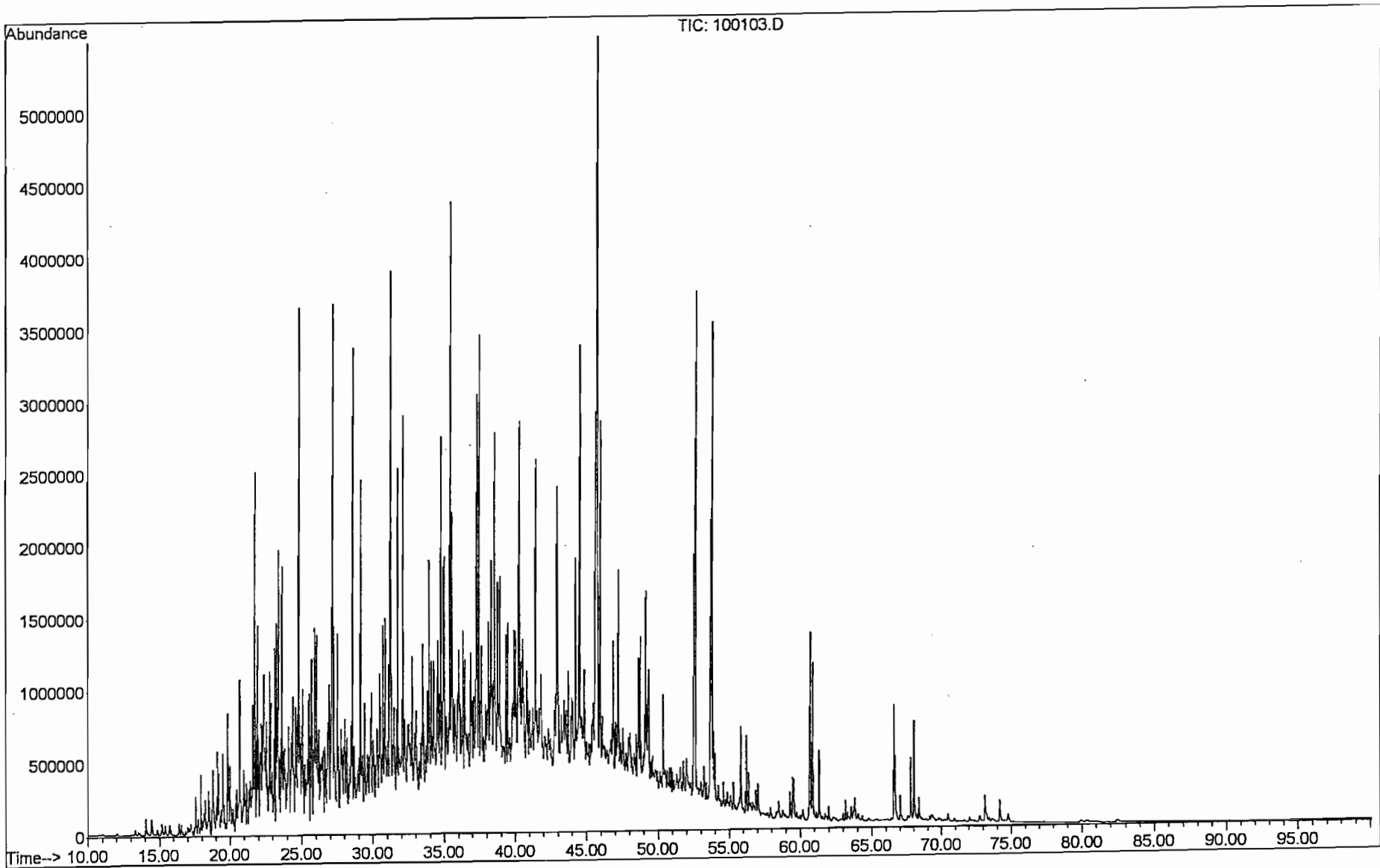
Relinquished by (signature)	Date/time	Received by (signature)	Date/time	Shipped to:
	4/13/01 1100		4/13/01 1358	Zymax Forensics 71 Zaca Lane San Luis Obispo, CA 93401
				Date/time: 4/13/01
				Carrier/airbill number: Fed Ex
Cooler Temperature: °C	pH: ☐ Yes ☐ No	Comments: 5574723280		

Hydrocarbon fractions for sample submitted by
Environmental Resources Management

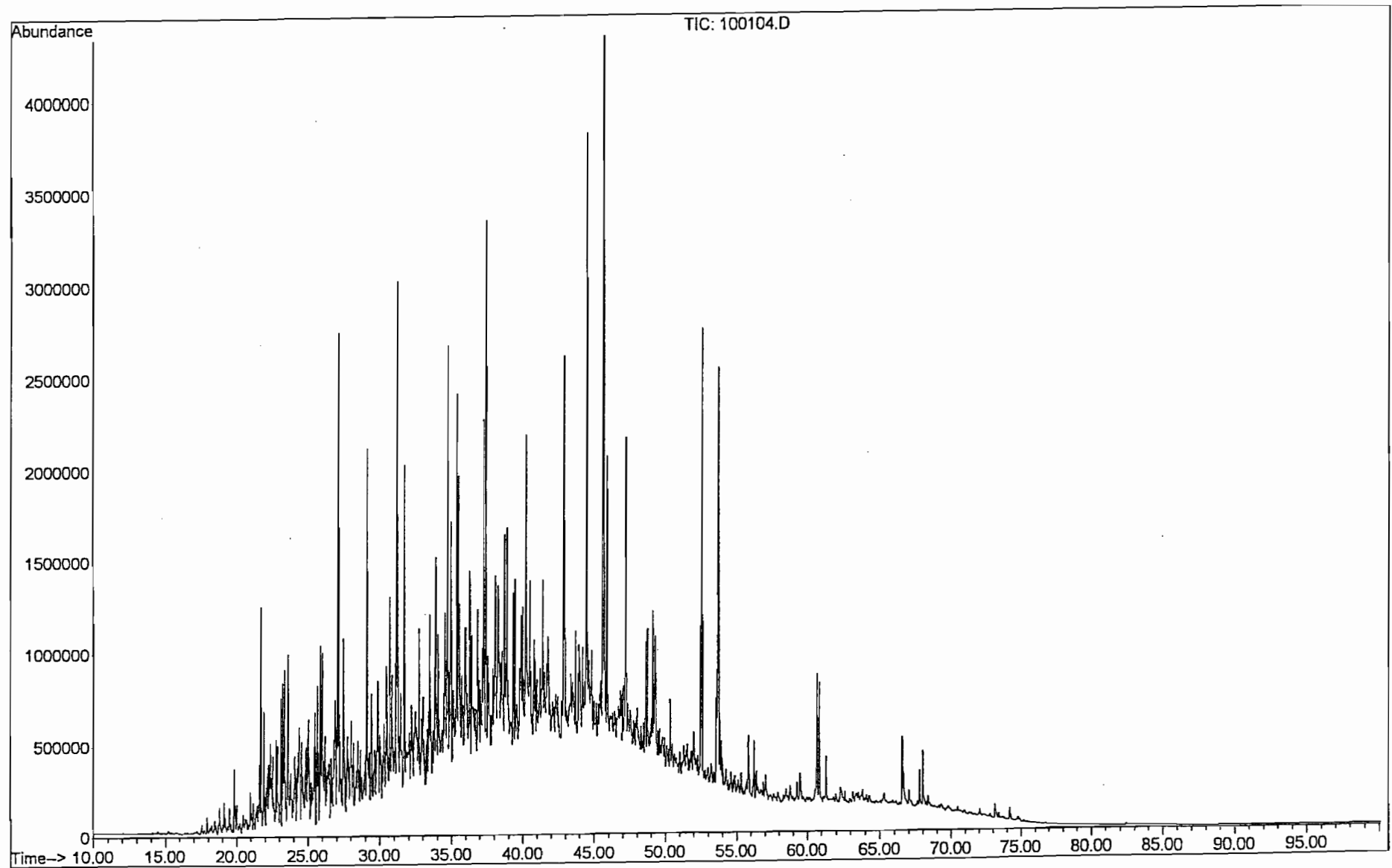
Sample ID	Zymax ID	Saturated Aromatic (%)	Polar Asphaltenes (%)
MW-4	25132-1	68.0	32.0
TB-04 (16-18)	25132-2	60.0	40.0


Supervisor

Sample Name: MW-4 (25132-1) Product (ali + aro)
Misc Info : Mayer Landfill



Sample Name: TB-04 (16-18) 25132-2 Product (ali + aro)
Misc Info : Mayer Landfill

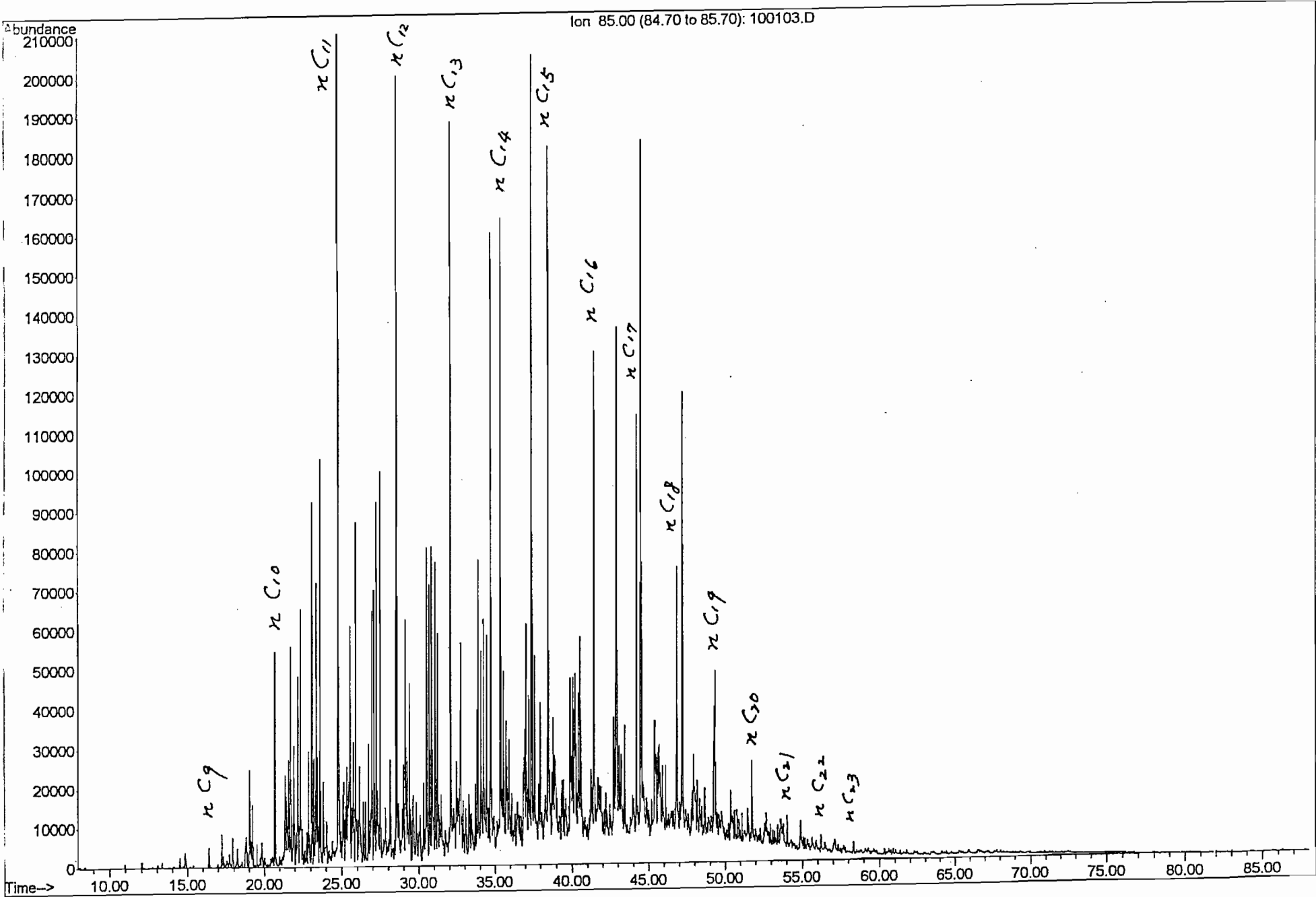


Table

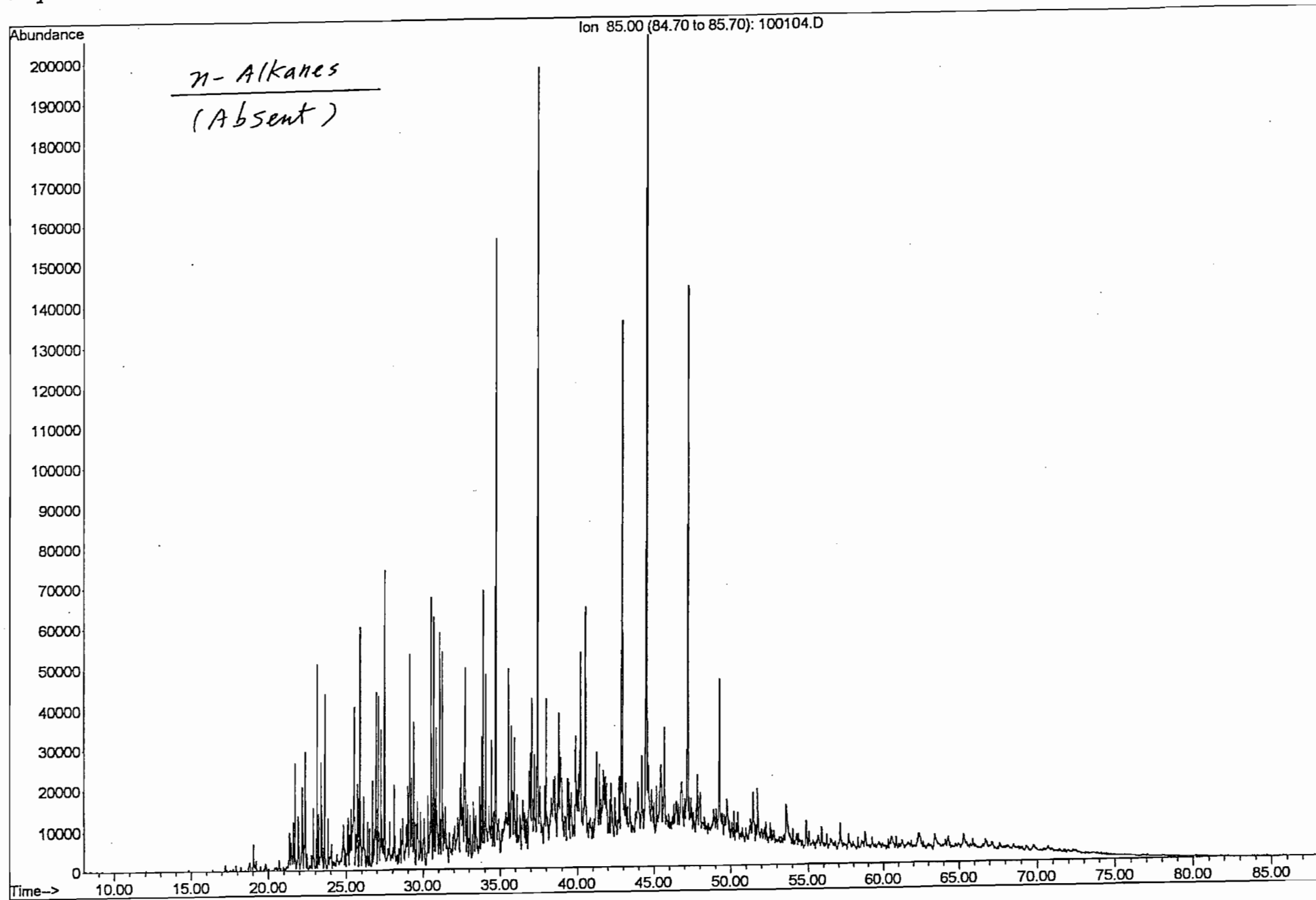
**Key to Chromatogram Symbol Identification
for m/z 85 and m/z 113 Paraffins and Isoparaffins**

Symbol	Detail
i-10	Iso-alkane with 10 carbon atoms
i-15	Farnesane (isoprenoid with 15 carbon atoms)
i-16	Isoprenoid with 16 carbon atoms
Pr	Pristane (isoprenoid with 19 carbon atoms)
Ph	Phytane (isoprenoid with 20 carbon atoms)
nC ₈	n-C ₈ normal alkane
nC ₁₅	n-C ₁₅ normal alkane
i-8	2,5-(2,4)-Dimethylhexane
i-8'	2,3,4-Trimethylpentane
i-8"	2,3-Dimethylhexane
CH- <i>n</i>	Alkylcyclohexane (where <i>n</i> indicates number of carbon atoms in the side chain)

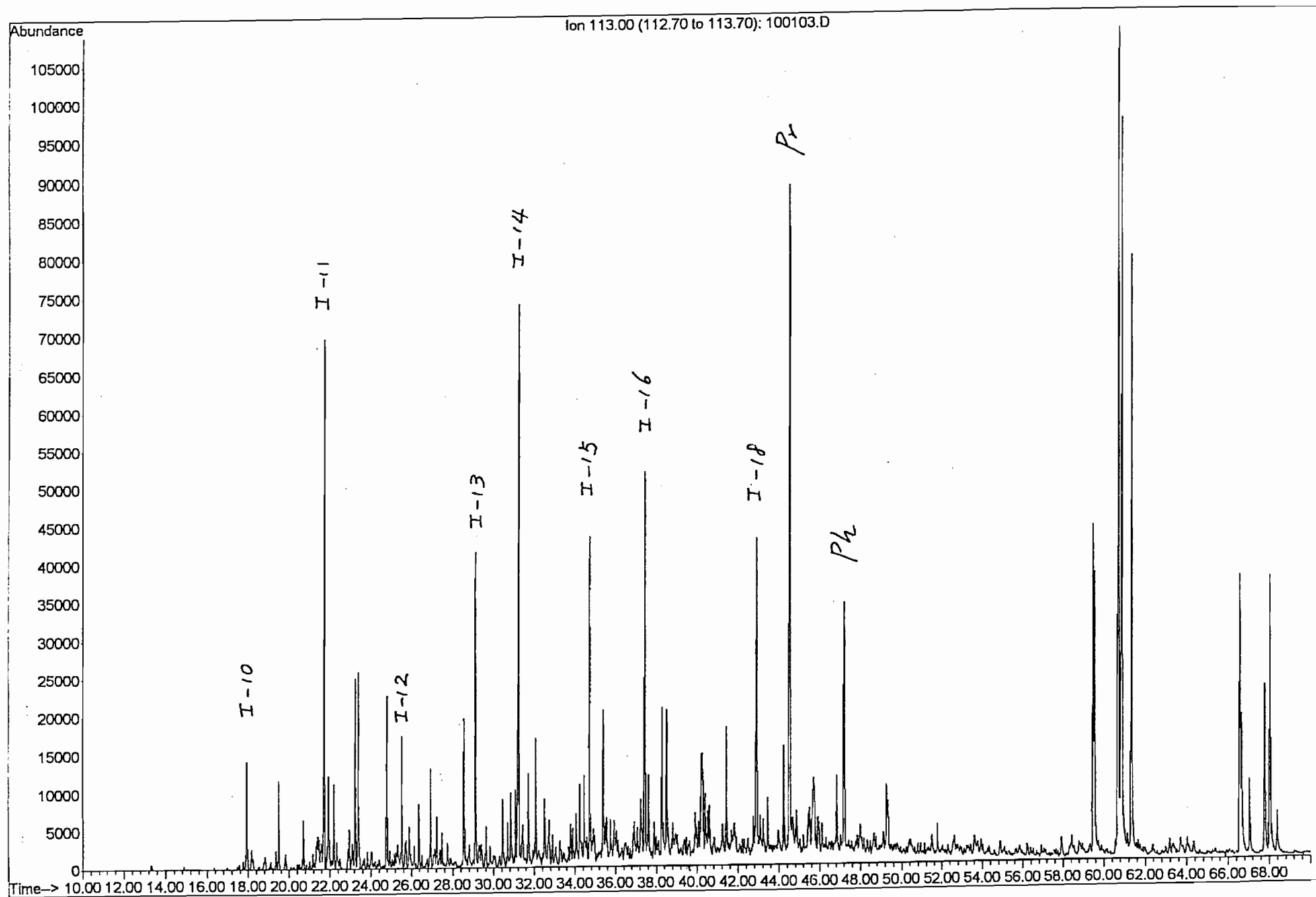
MW-4 (25132-1) Product (ali + aro)
Mayer Landfill



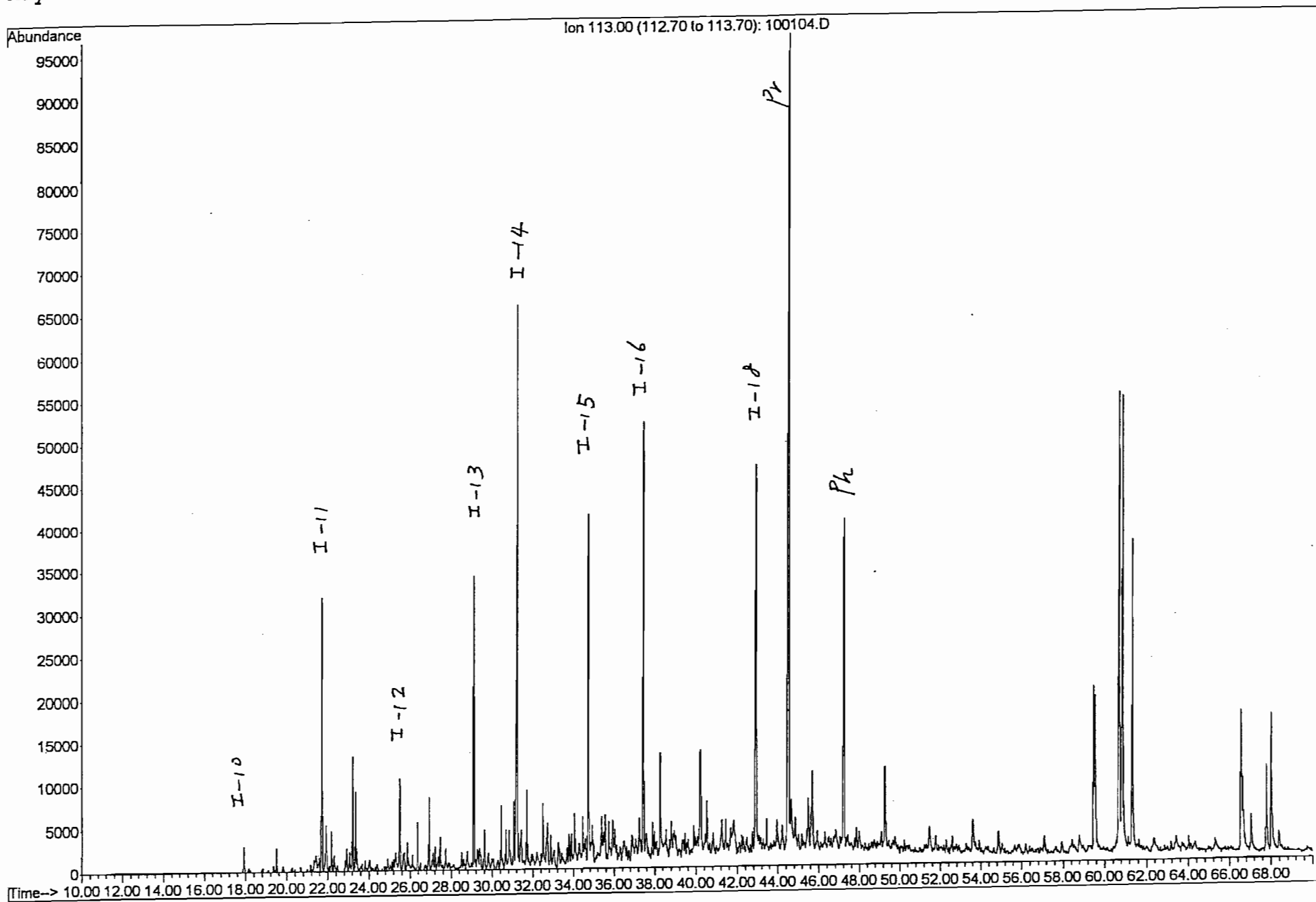
TB-04 18, 15132 2 Product, Ali Bro
Mayer Landfill



MW-4 (25132-1) Product (ali + aro)
Mayer Landfill



TB-04 (18) 45134-2 Product ,ali . aro,
Mayer Landfill

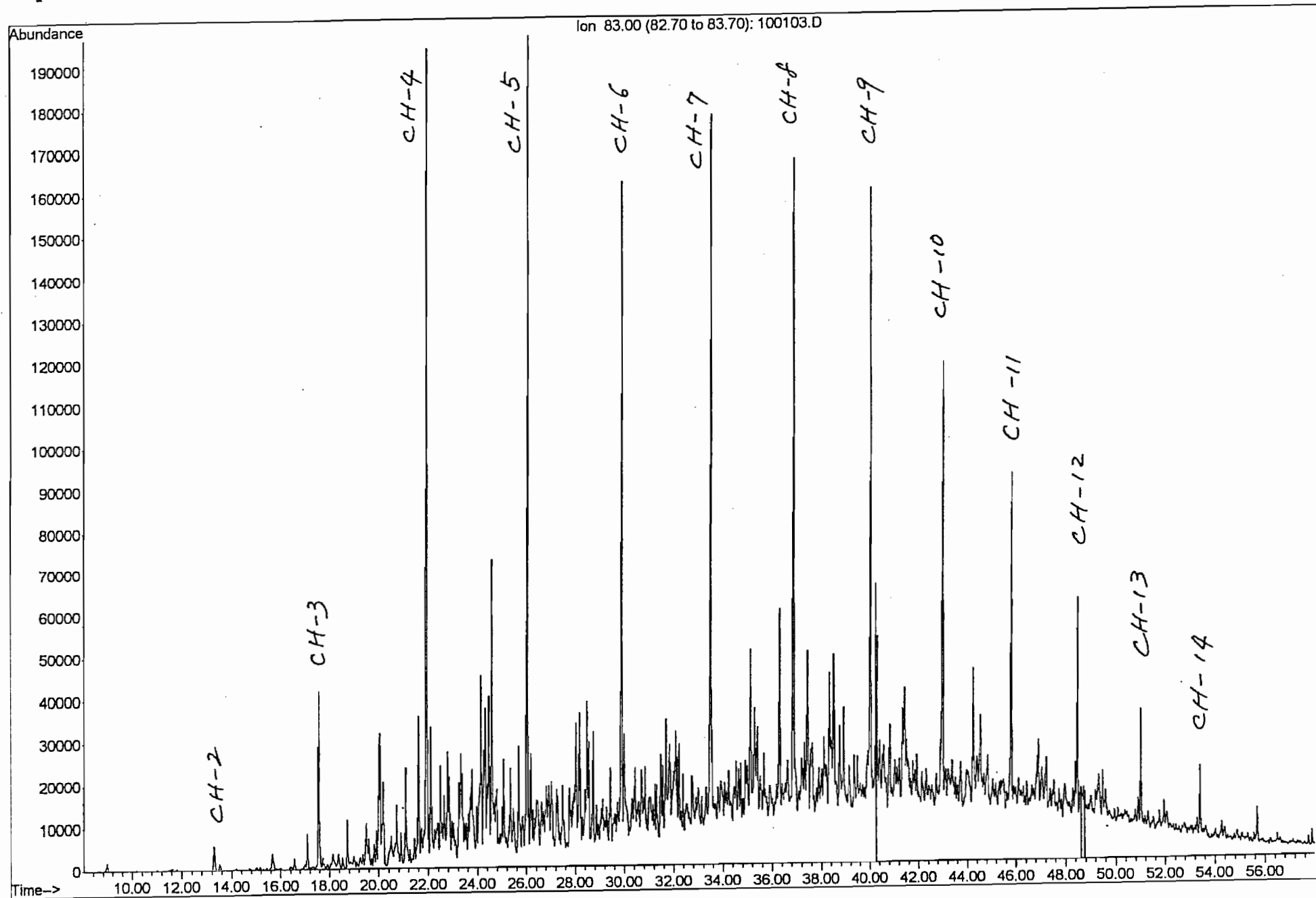


Table

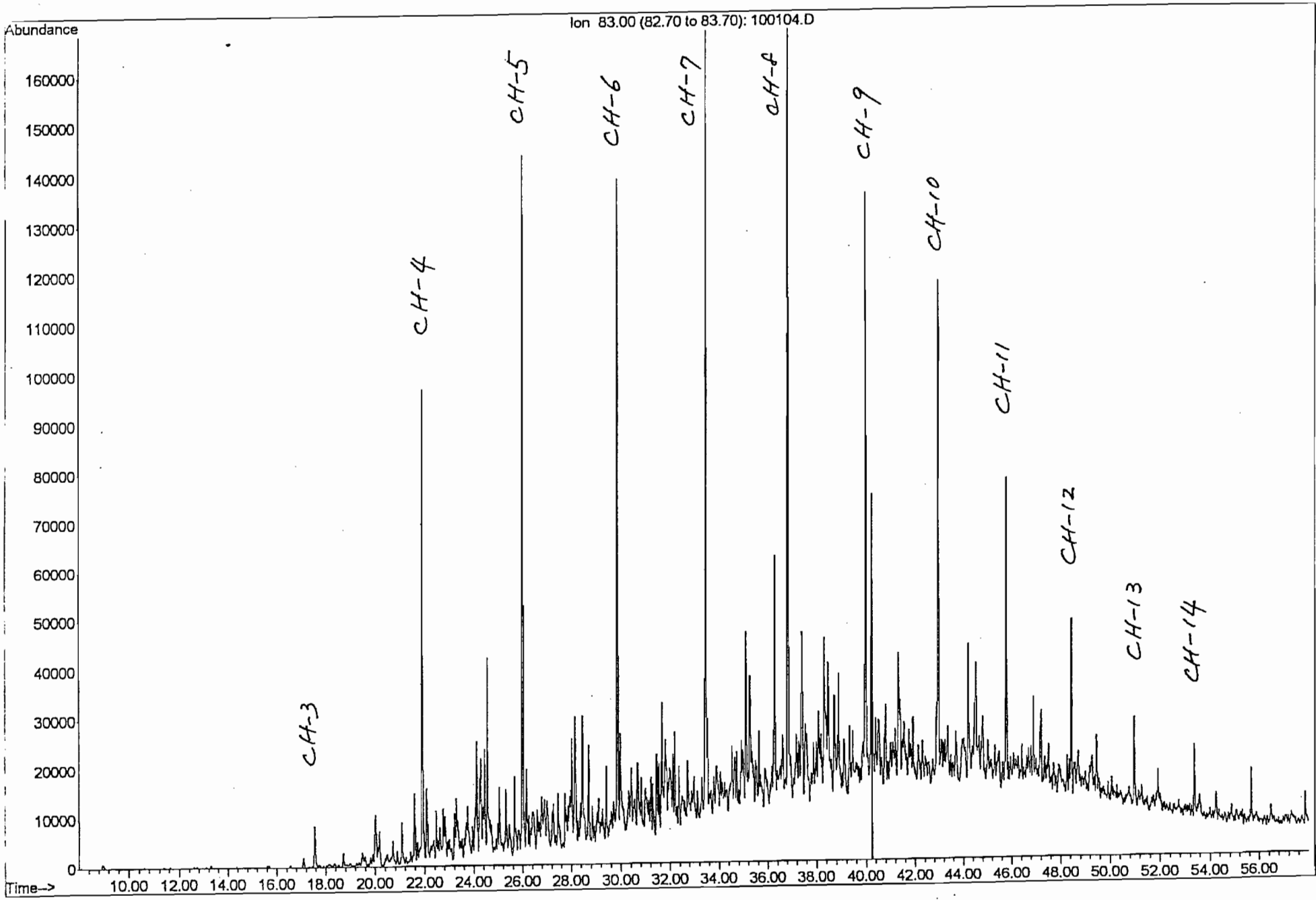
Key for Alkylcyclohexanes at m/z 83

Symbol	Detail
CH-1:	Methylcyclohexane
CH-2:	Ethylcyclohexane
CH-3:	Propylcyclohexane
CH-4:	Butylcyclohexane
CH-5:	Pentylcyclohexane
CH-6:	Hexylcyclohexane
CH-7:	Heptylcyclohexane
CH-8:	Octylcyclohexane
CH-9:	Nonylcyclohexane
CH-10:	Decylcyclohexane
CH-11:	Undecylcyclohexane
CH-12:	Dodecylcyclohexane
CH-13:	Tridecylcyclohexane
CH-14:	Tetradecylcyclohexane

Mw-4 (2 2-1, Product (a1 + a10))
Mayer Landfill



TB-04 (16-18) 25132-2 Product (ali + aro)
Mayer Landfill

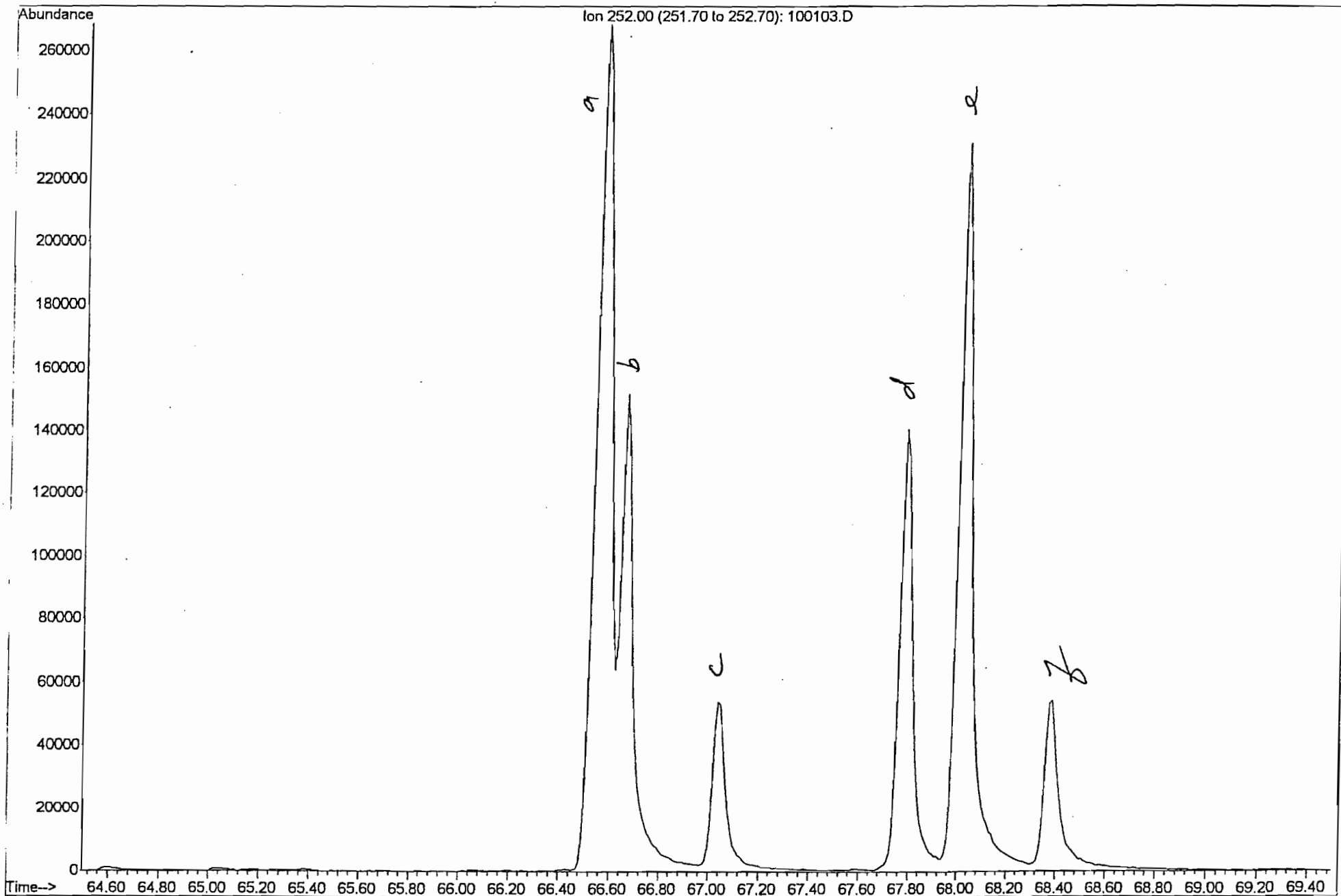


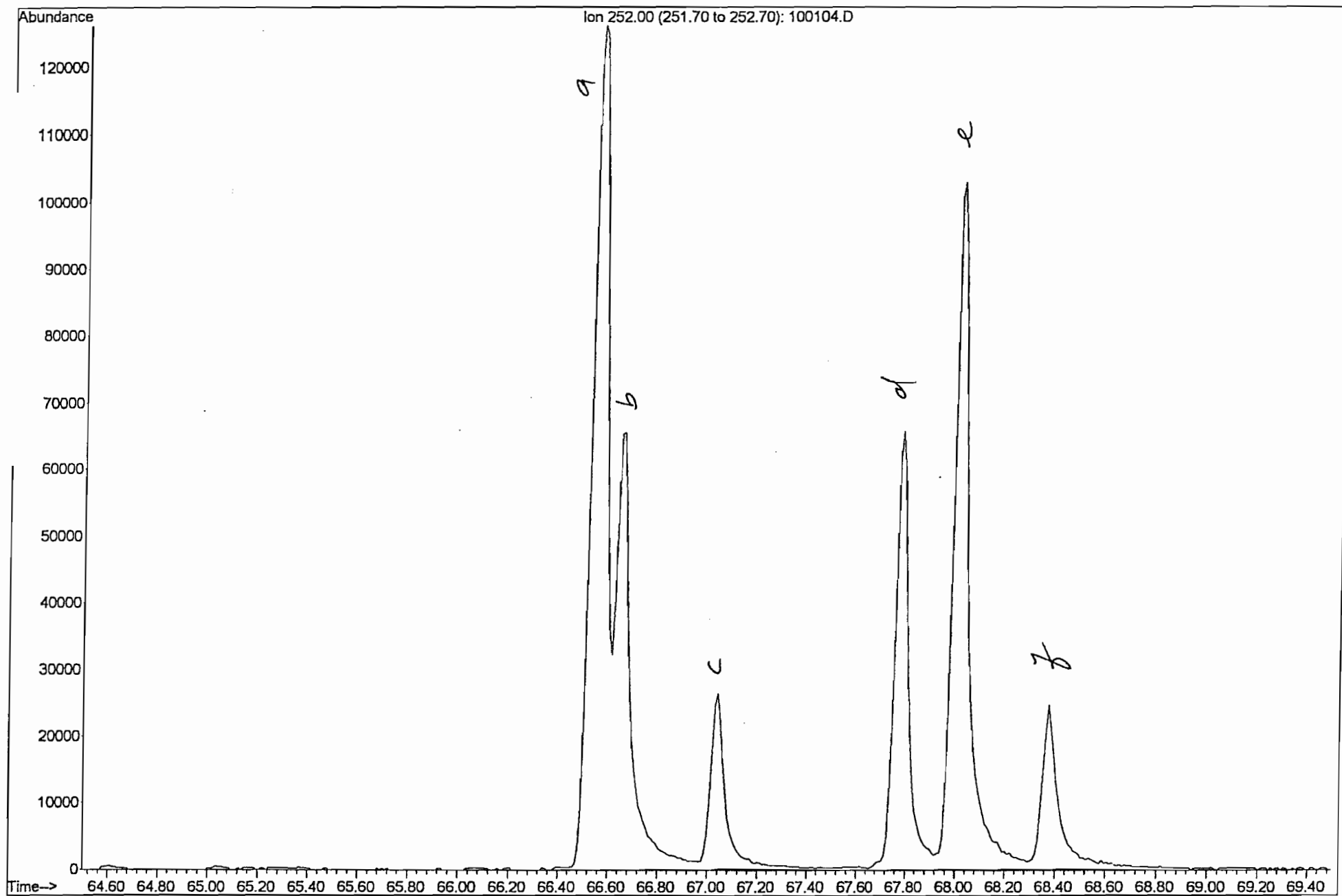
Table

Key for Identification for Six Pyrogenic PAH (m/z 252)

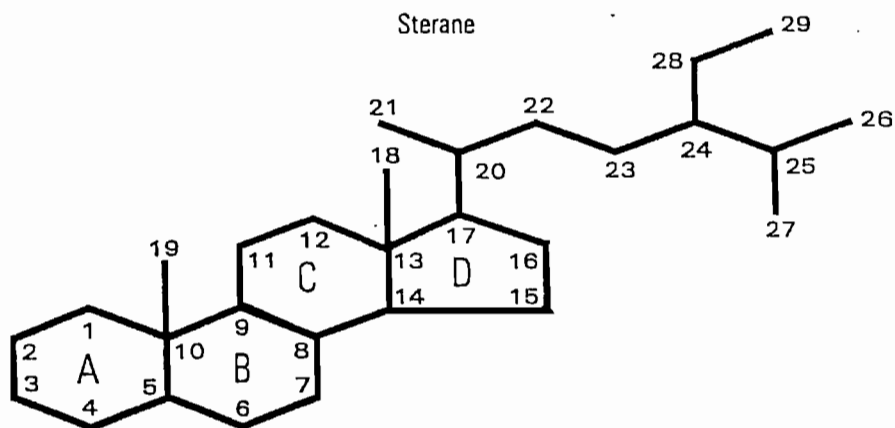
Peak No.	Identity
a	Benzo(B)fluoranthene
b	Benzo(K)fluoranthene
c	Benzo(A)fluoranthene
d	Benzo(E)pyrene
e	Benzo(A)pyrene
f	Perylene

MW-4 (25132-1) Product (ali + aro)
layer Landfill

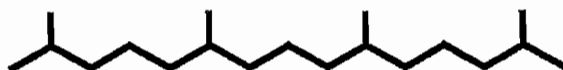




m/z 217



m/z 113

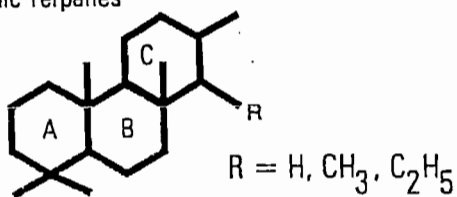


C₁₉

Pristane

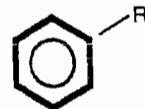
m/z 191

Tricyclic Terpanes



m/z 134

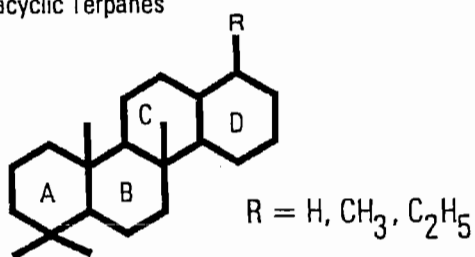
C₄-Alkylbenzenes



R = C₄H₉

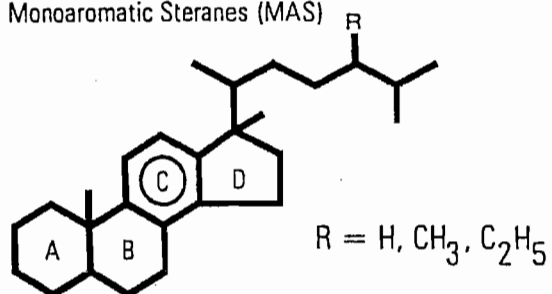
m/z 191

Tetracyclic Terpanes



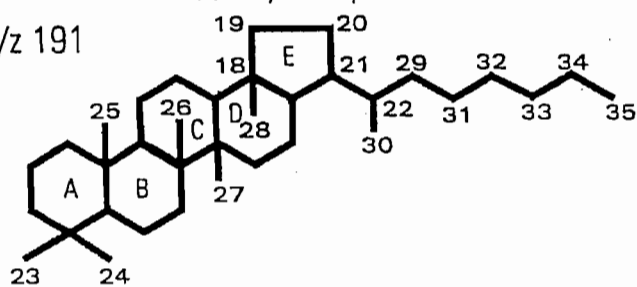
m/z 253

Monoaromatic Steranes (MAS)



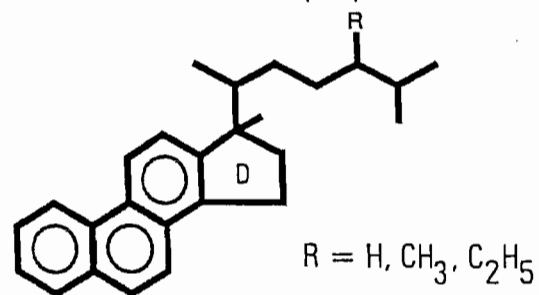
m/z 191

Pentacyclic Terpane



m/z 231

Triaromatic Steranes (TAS)



The compound structures of pristane, C₄-alkylbenzenes, sterane; terpanes; monoaromatic and triaromatic steranes

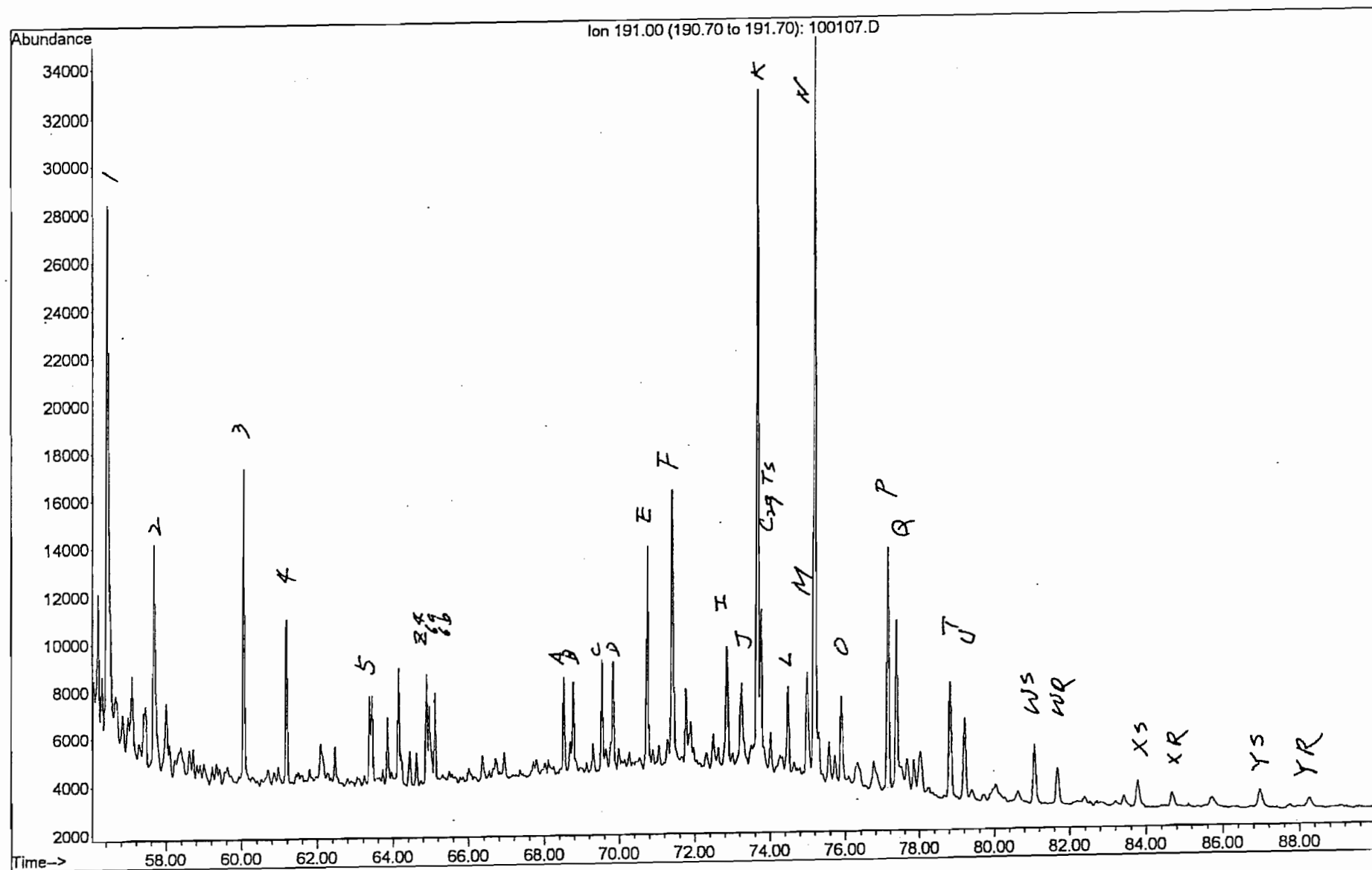
Key for Tricyclic, Tetracyclic, and Pentacyclic Terpanes
Identification (m/z 191 mass chromatograms)

Code	Identity	Carbon #
0	C ₂₀ -Tricyclic Terpene	20
1	C ₂₁ -Tricyclic Terpene	21
2	C ₂₂ -Tricyclic Terpene	22
3	C ₂₃ -Tricyclic Terpene	23
4	C ₂₄ -Tricyclic Terpene	24
5	C ₂₅ -Tricyclic Terpene	25
Z4	C ₂₄ -Tetracyclic Terpene	24
6a	C ₂₆ -Tricyclic Terpene	26
6b	C ₂₆ -Tricyclic Terpene	26
7	C ₂₇ -Tricyclic Terpene	27
A	C ₂₈ -Tricyclic Terpene #1	28
B	C ₂₈ -Tricyclic Terpene #2	28
C	C ₂₉ -Tricyclic Terpene #1	29
D	C ₂₉ -Tricyclic Terpene #2	29
E	18 α -22,29,30-Trisnorneohopane (Ts)	27
F	17 α -22,29,30-Trisnorhopane (Tm)	27
G	17 β -22,29,30-Trisnorhopane	27
H	17 α -23,28-Bisnorlupane	28
10a	C ₃₀ -Tricyclic Terpene #1	30
10b	C ₃₀ -Tricyclic Terpene #2	30
I	17 α -28,30-Bisnorhopane	28
11a	C ₃₁ -Tricyclic Terpene #1	31
J	17 α -25-Norhopane	29
11b	C ₃₁ -Tricyclic Terpene #2	31
K	17 α ,21 β -30-Norhopane	29
C ₂₉ Ts	18 α -30-Norneohopane	29
C ₃₀ *	17 α -Diahopane	30
L	17 β -21 α -30-Normoretane	29
Ma	18 α -Oleanane	30
Mb	18 β -Oleanane	30
N	17 α ,21 β -Hopane	30
O	17 β ,21 α -Moretane	30
13a	C ₃₃ -Tricyclic Terpene #1	33
13b	C ₃₃ -Tricyclic Terpene #2	33
P	22S-17 α ,21 β -30-Homohopane	31
Q	22R-17 α ,21 β -30-Homohopane	31
R	Gammacerane	30
14a	C ₃₄ -Tricyclic Terpene #1	34
S	17 β ,21 α -Homomoretane	31
14b	C ₃₄ -Tricyclic Terpene #2	34
T	22S-17 α ,21 β -30-Bishomohopane	32
U	22R-17 α ,21 β -30-Bishomohopane	32
15a	C ₃₅ -Tricyclic Terpene #1	35
15b	C ₃₅ -Tricyclic Terpene #2	35
V	17 β ,21 α -C ₃₂ -Bishomomoretane	32
WS	22S-17 α ,21 β -30,31,32-Trishomohopane	33
WR	22R-17 α ,21 β -30,31,32-Trishomohopane	33
16a	C ₃₆ -Tricyclic Terpene #1	36
16b	C ₃₆ -Tricyclic Terpene #2	36
XS	22S-17 α ,21 β -30,31,32,33-Tetrahomohopane	34
XR	22R-17 α ,21 β -30,31,32,33-Tetrahomohopane	34
YS	22S-17 α ,21 β -30,31,32,33,34-Pentahomohopane	35
YR	22R-17 α ,21 β -30,31,32,33,34-Pentahomohopane	35

Chromatogram plot showing Abundance vs Time (min). The plot displays numerous peaks labeled with letters and numbers. The y-axis (Abundance) ranges from 0 to 24,000. The x-axis (Time) ranges from 58.00 to 90.00 minutes. The title is 'Ion 191.00 (190.70 to 191.70): 100108.D'.

Label	Approximate Time (min)	Approximate Abundance
2	58.5	8000
3	60.0	13500
4	61.5	8000
5	63.5	5500
6	64.5	5000
7	65.0	5000
8	65.5	5000
9	66.0	5000
10	66.5	5000
11	67.0	5000
12	67.5	5000
13	68.0	5000
14	68.5	5000
15	69.0	5000
16	69.5	5000
17	70.0	5000
18	70.5	5000
19	71.0	5000
20	71.5	5000
21	72.0	5000
22	72.5	5000
23	73.0	5000
24	73.5	5000
25	74.0	5000
26	74.5	5000
27	75.0	5000
28	75.5	5000
29	76.0	5000
30	76.5	5000
31	77.0	5000
32	77.5	5000
33	78.0	5000
34	78.5	5000
35	79.0	5000
36	79.5	5000
37	80.0	5000
38	80.5	5000
39	81.0	5000
40	81.5	5000
41	82.0	5000
42	82.5	5000
43	83.0	5000
44	83.5	5000
45	84.0	5000
46	84.5	5000
47	85.0	5000
48	85.5	5000
49	86.0	5000
50	86.5	5000
51	87.0	5000
52	87.5	5000
53	88.0	5000
54	88.5	5000
55	89.0	5000
56	89.5	5000
57	90.0	5000

Sample Name: TB-04 (16-18) 25132-2 Product (ali + aro)
Misc Info : Mayer Landfill

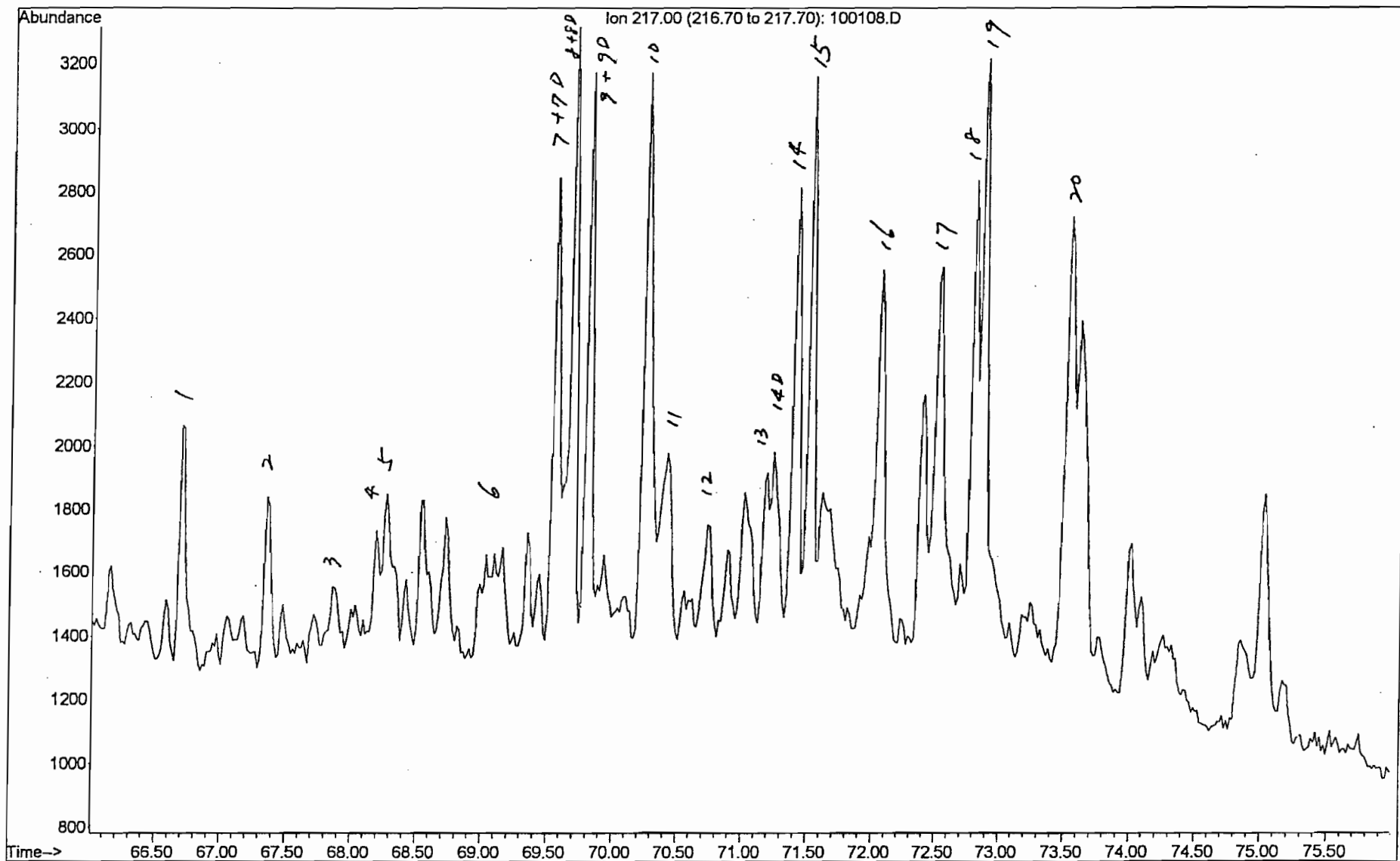


Table

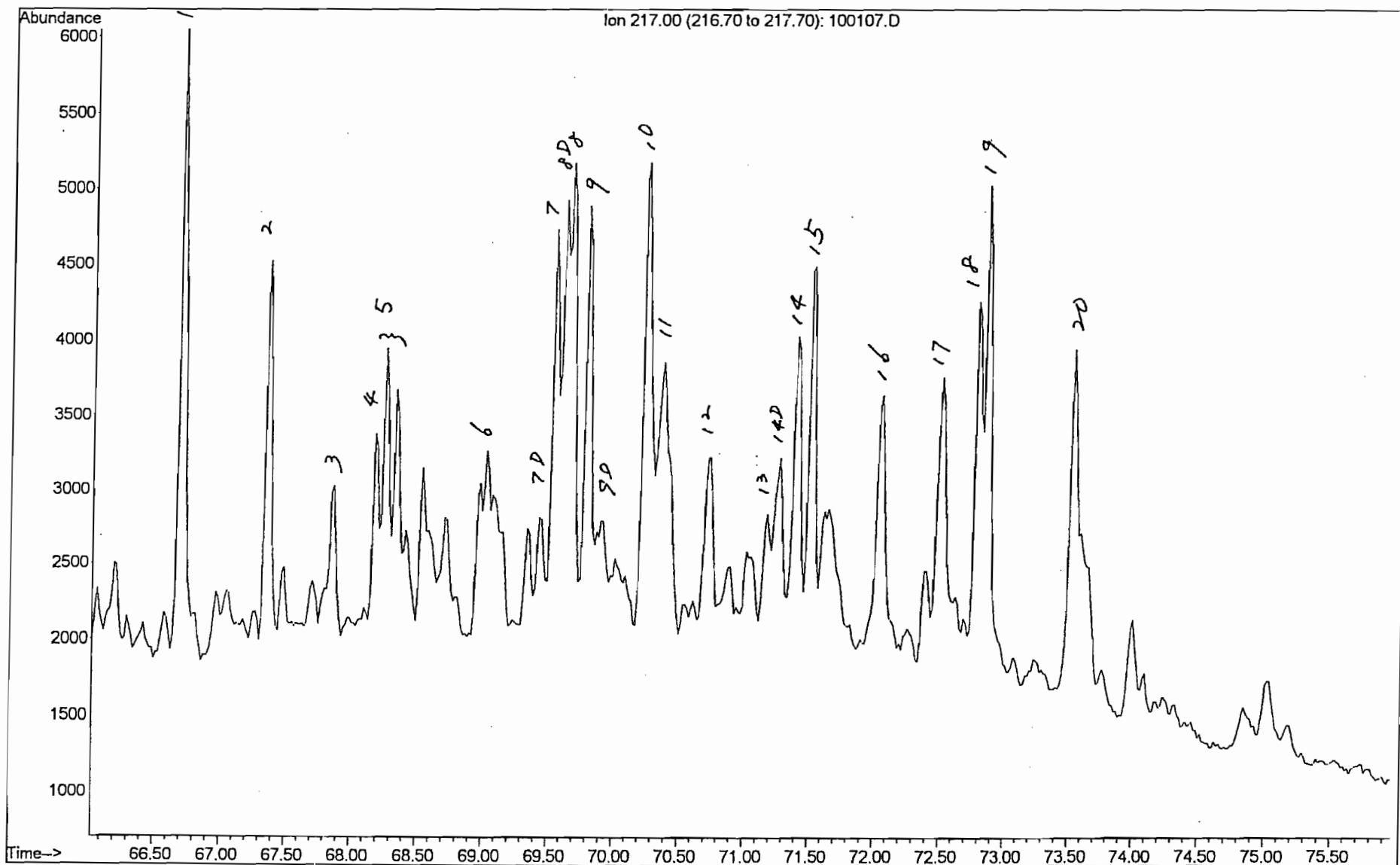
Key for Steranes Identification (m/z 217 Mass Chromatogram)

Code	Identity	Carbon #
1	13 β ,17 α -diacholestane (20S)	27
2	13 β ,17 α -diacholestane (20R)	27
3	13 α ,17 β -diacholestane (20S)	27
4	13 α ,17 β -diacholestane (20R)	27
5	24-methyl-13 β ,17 α -diacholestane (20S)	28
6	24-methyl-13 β ,17 α -diacholestane (20R)	28
7D	24-methyl-13 α ,17 β -diacholestane (20S)	28
7	14 α ,17 α -cholestane (20S)	27
8D	24-ethyl-13 β ,17 α -diacholestane (20S)	29
8	14 β ,17 β -cholestane (20R)	27
9	14 β ,17 β -cholestane (20S)	27
9D	24-methyl-13 α ,17 β -diacholestane (20R)	28
10	14 α ,17 α -cholestane (20R)	27
11	24-ethyl-13 β ,17 α -diacholestane (20R)	29
12	24-ethyl-13 α ,17 β -diacholestane (20S)	29
13	24-methyl-14 α ,17 α -cholestane (20S)	28
14D	24-ethyl-13 α ,17 β -diacholestane (20R)	29
14	24-methyl-14 β ,17 β -cholestane (20R)	28
15	24-methyl-14 β ,17 β -cholestane (20S)	28
16	24-methyl-14 α ,17 α -cholestane (20R)	28
17	24-ethyl-14 α -cholestane (20S)	29
18	24-ethyl-14 β ,17 β -cholestane (20R)	29
19	24-ethyl-14 β ,17 β -cholestane (20S)	29
20	24-ethyl-14 α ,17 α -cholestane (20R)	29
21A	24-n-Propylcholestane (20S)	30
21B	4-methyl-24-ethylcholestane (20S)	30
22A	4 α -methyl-24-ethyl-14 β ,17 β -cholestane(20S)	30
22B	24-n-propyl-14 β ,17 β -cholestane (20S)	30
23A	4 α -methyl-24-ethyl-14 β ,17 β -cholestane(20R)	30
23B	24-n-propyl-14 β ,17 β -cholestane (20R)	30
24A	4 α -methyl-24-ethylcholestane(20R)	30
24B	24-n-propylcholestane (20R)	30

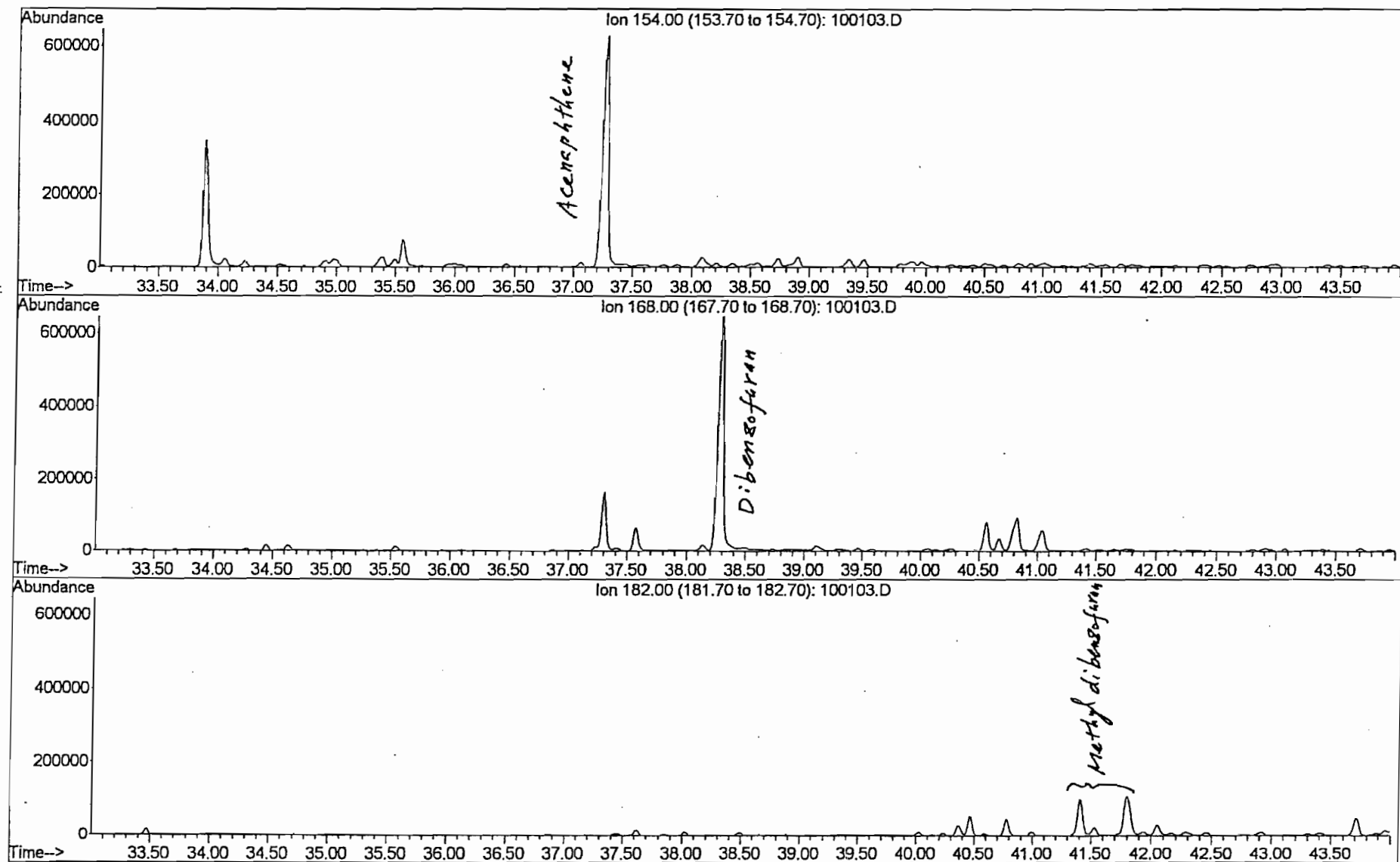
Sample Name: MW-4 (25132-1) Product (ali + aro)
Misc Info : Mayer Landfill



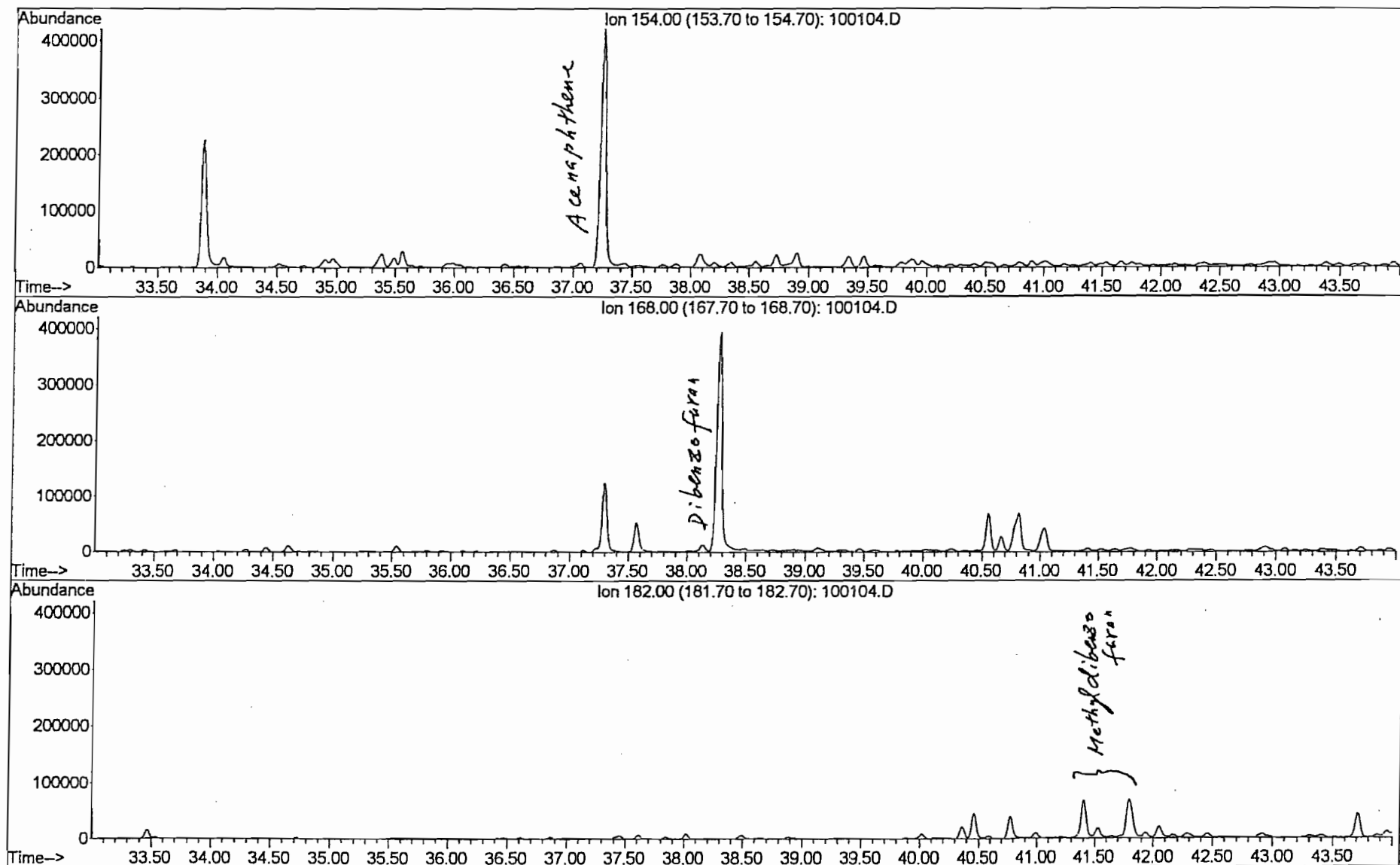
Sample Name: TB-04 (16-18) 25132-2 Product (ali + aro)
Misc Info : Mayer Landfill



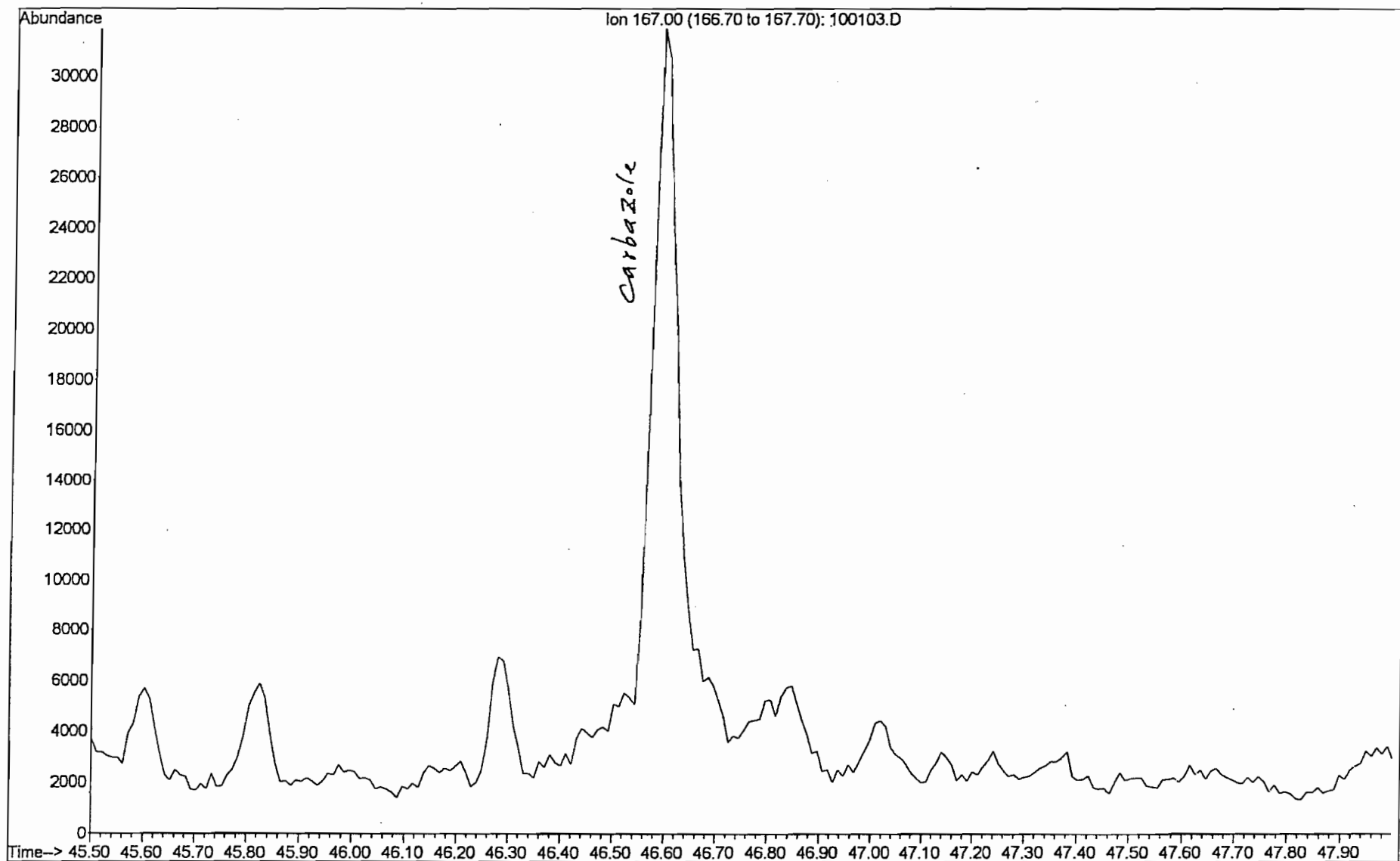
Sample Name: MW-4 (25132-1) Product (ali + aro)
Misc Info : Mayer Landfill



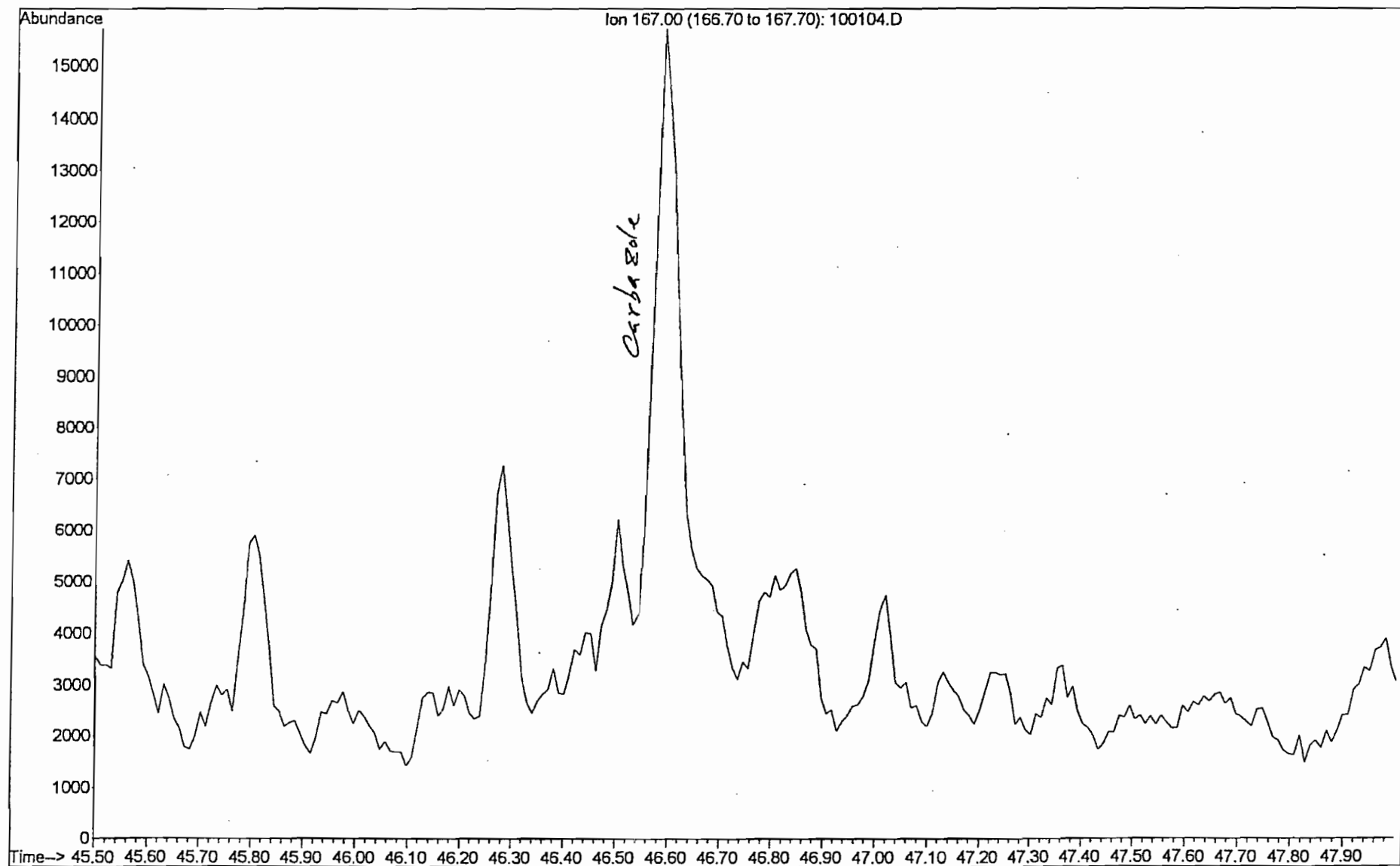
Sample Name: TB-04 (16-18) 25132-2 Product (ali + aro)
Misc Info : Mayer Landfill



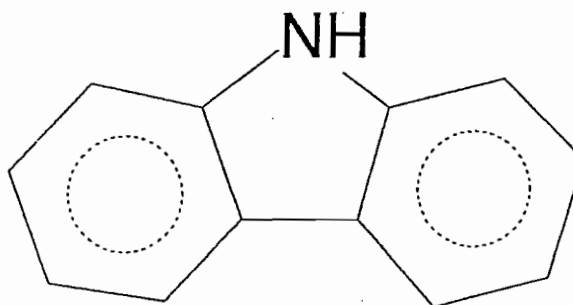
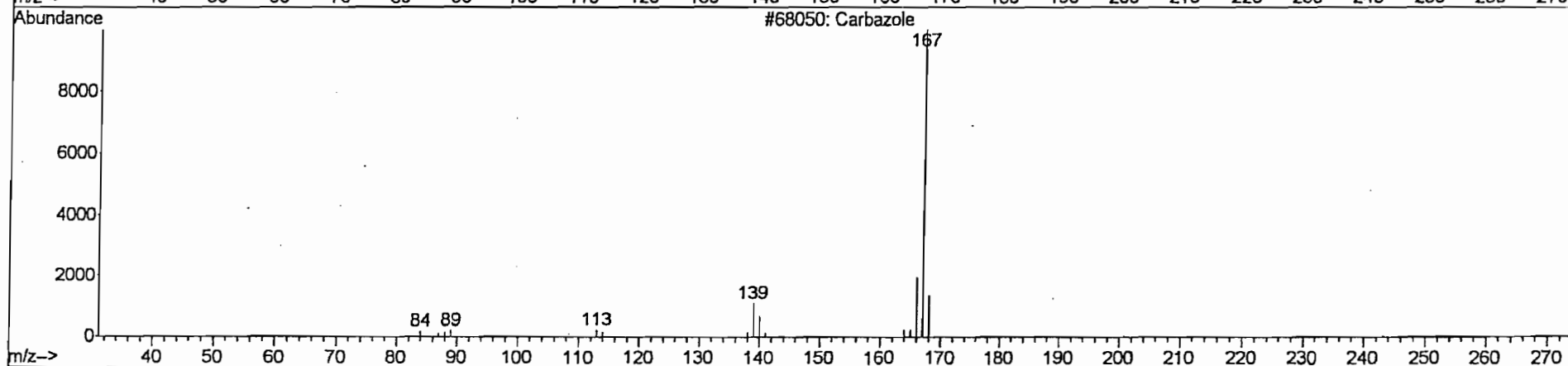
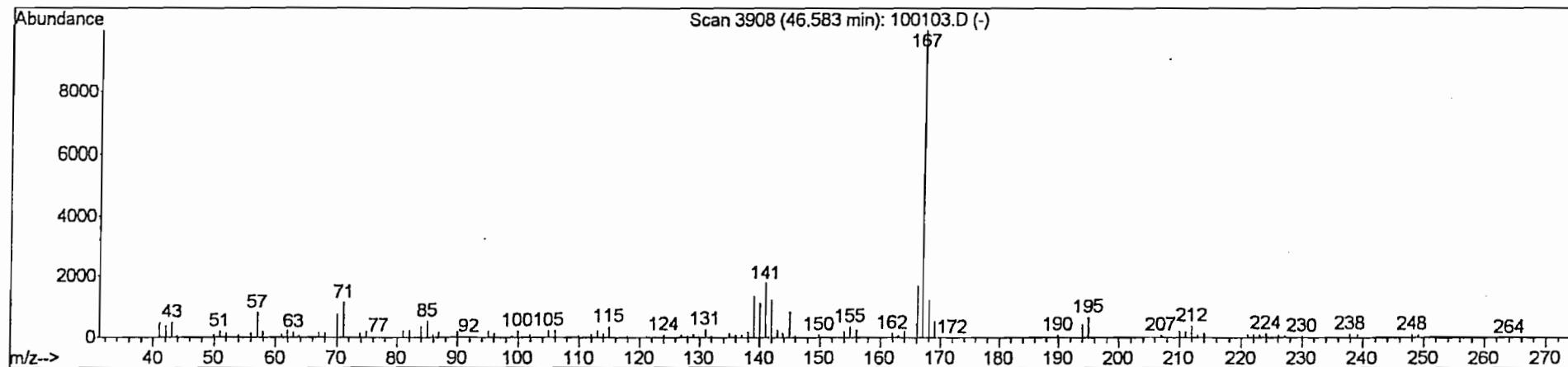
Sample Name: MW-4 (25132-1) Product (ali + aro)
Misc Info : Mayer Landfill



Sample Name: TB-04 (16-18) 25132-2 Product (ali + aro)
Misc Info : Mayer Landfill



Library searched : C:\DATA\BASE\MS7\...
Quality : 81
ID : Carbazole



Table

Key for Aromatic Compounds Identification in Bar Diagram

AB:	C ₃ -C ₆ Alkylbenzenes
NAPH:	C ₀ -C ₄ Naphthalenes
FL:	C ₀ -C ₄ Fluorenes
BP:	C ₀ -C ₂ BP Biphenyl/Dibenzofuran
PHEN:	C ₀ -C ₄ Phenanthrenes
PY:	C ₀ -C ₄ Pyrenes/Fluoranthenes
CHR:	C ₀ -C ₄ Chrysenes
BT:	C ₁ -C ₅ Benzothiophenes
DBT:	C ₀ -C ₄ Dibenzothiophenes
NBT:	C ₀ -C ₄ Naphthobenzothiophenes
MAS:	Monoaromatic Steranes
TAS:	Triaromatic Steranes

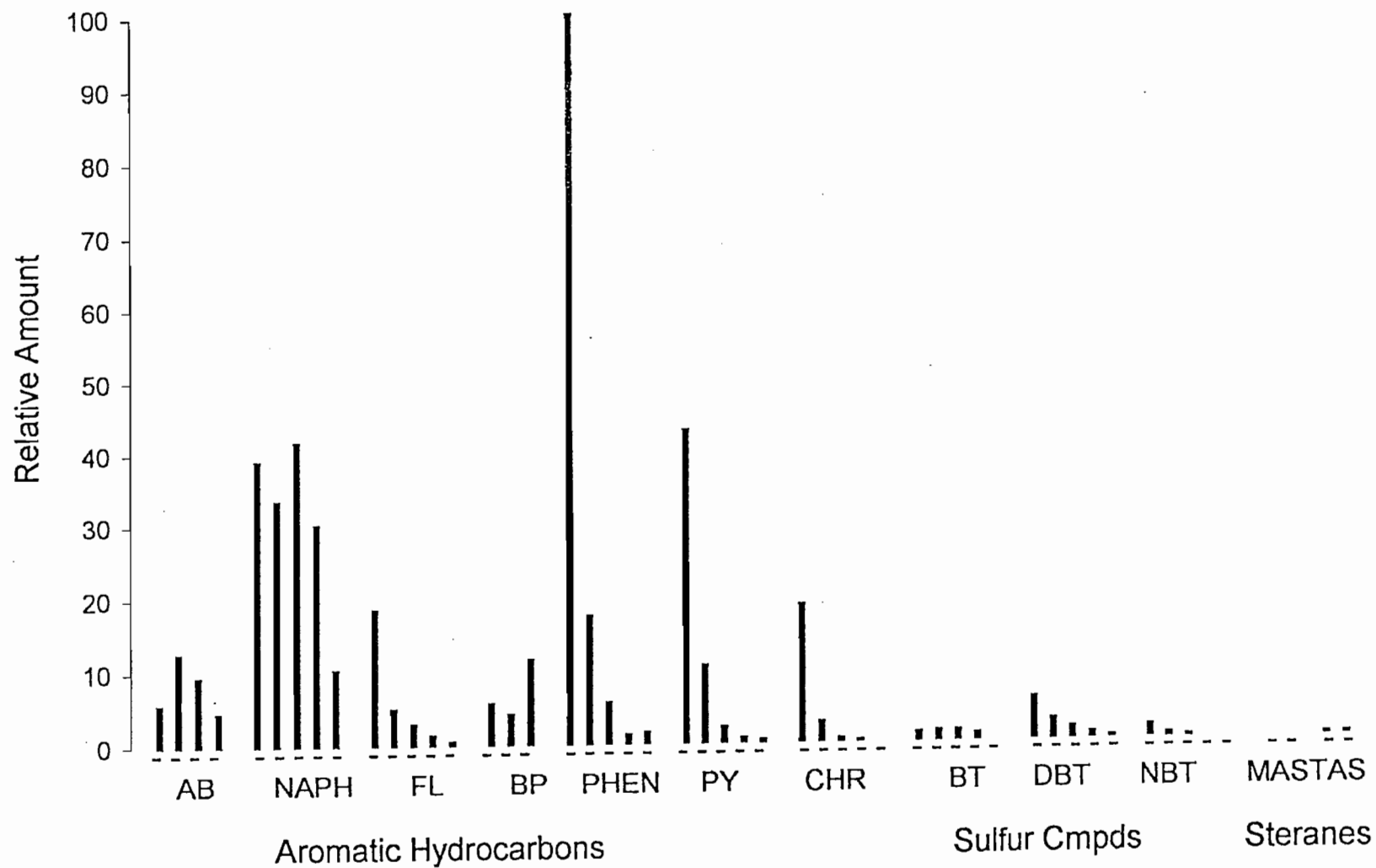
Table

Key for Identifying Aromatic Hydrocarbons at Various m/z Units

No.	m/z	Compound
1	120	C ₃ -alkylbenzenes
2	134	C ₄ -alkylbenzenes
3	148	C ₅ -alkylbenzenes
4	162	C ₆ -alkylbenzenes
5	128	C ₀ -naphthalene
6	142	C ₁ -naphthalenes
7	156	C ₂ -naphthalenes
8	170	C ₃ -naphthalenes
9	184	C ₄ -naphthalenes
10	166	C ₀ -fluorene
11	180	C ₁ -fluorenes
12	194	C ₂ -fluorenes
13	208	C ₃ -fluorenes
14	222	C ₄ -fluorenes
15	154	C ₀ -biphenyl
16	168	C ₁ -biphenyls + dibenzofuran
17	182	C ₂ -biphenyls + C ₁ -dibenzofuran
18	178	C ₀ -phenanthrene
19	192	C ₁ -phenanthrenes
20	206	C ₂ -phenanthrenes
21	220	C ₃ -phenanthrenes
22	234	C ₄ -phenanthrenes
23	202	C ₀ -pyrene/fluoranthene
24	216	C ₁ -pyrenes/fluoranthenes
25	230	C ₂ -pyrenes/fluoranthenes
26	244	C ₃ -pyrenes/fluoranthenes
27	258	C ₄ -pyrenes/fluoranthenes
28	228	C ₀ -chrysene
29	242	C ₁ -chrysenes
30	256	C ₂ -chrysenes
31	270	C ₃ -chrysenes
32	284	C ₄ -chrysenes
33	148	C ₁ -benzothiophenes
34	162	C ₂ -benzothiophenes
35	176	C ₃ -benzothiophenes
36	190	C ₄ -benzothiophenes
37	204	C ₅ -benzothiophenes
38	184	C ₀ -dibenzothiophene
39	198	C ₁ -dibenzothiophenes
40	212	C ₂ -dibenzothiophenes
41	226	C ₃ -dibenzothiophenes
42	240	C ₄ -dibenzothiophenes
43	234	C ₀ -naphthobenzothiophene
44	248	C ₁ -naphthobenzothiophenes
45	262	C ₂ -naphthobenzothiophenes
46	276	C ₃ -naphthobenzothiophenes
47	290	C ₄ -naphthobenzothiophenes
48	253	Monoaromatic steranes
49	267	Monoaromatic steranes
50	239	Monoaromatic steranes
51	231	Triaromatic steranes
52	245	Triaromatic steranes

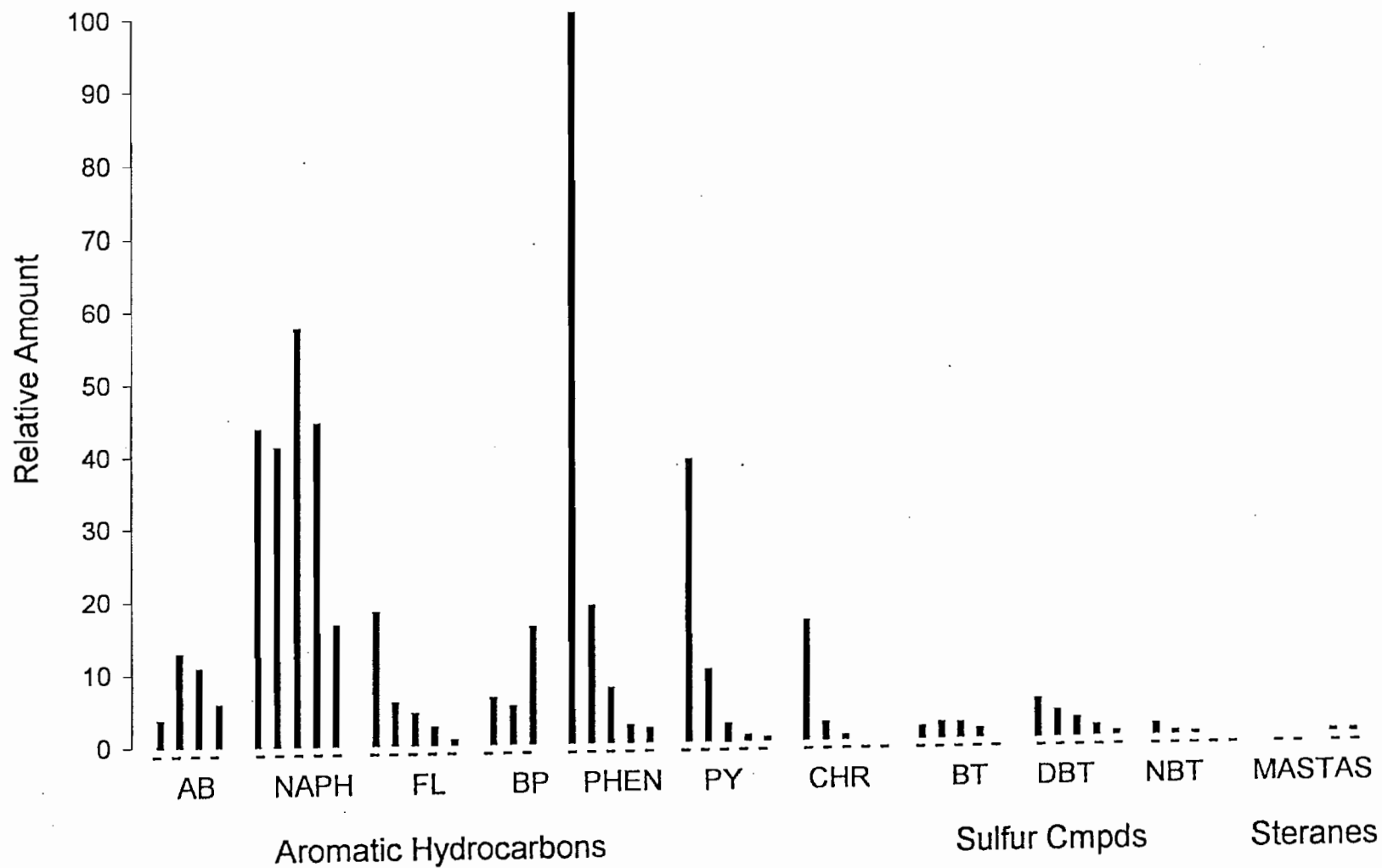
Aromatic Hydrocarbon Distribution

MW-4



Aromatic Hydrocarbon Distribution

TB-04 (16-18)



APPENDIX C

*NYSDEC's List of Standards, Criteria, and
Guidelines, Revised 7/95*



New York State Department of Environmental Conservation

MEMORANDUM

TO: Regional Hazardous Waste Remediation Engineers, Bureau Directors and Section Chiefs
FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation
SUBJECT: Revised Index of New York State Standards, Criteria and Guidelines (SCGs)

DATE: JUL 28 1995

Attached please find a copy of the revised New York State Standards, Criteria and Guidelines (equivalent to ARARs) index. The Standards, Criteria and Guidelines (SCGs) listed in the index should be obtained directly from the program unit that has issued the SCGs. Also attached is a list of SCGs in tabular form that can be used as quick reference.

Major changes in this revision are the inclusion of:

1. The Division of Hazardous Substances Regulation's TAGM #3028 titled, "Contained-in Criteria for Environmental Media."
2. The DHWR's TAGM on Interim Remedial Measures.
3. The Division of Water's Technical and Operations Guidance Series (TOGs) 1.1.2 titled, "Groundwater Effluent Limitations" and TOGs 1.3.8 titled, "New Discharges to POTWs."
4. The Division of Fish and Wildlife's technical guidance for screening contaminated sediments.
5. Federal (USEPA, U.S. Army Corps of Engineers, OSHA/PESH and U.S.) requirements.

If you have any questions, please feel free to contact Mr. Ajay Shroff, of my staff, at (518)485-8792.

Attachment

INDEX
NEW YORK STATE SCGs

revised 7/95

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

- Division of Solid Waste
 - *6 NYCRR Part 360 - Solid Waste Management Facilities (effective October 9, 1993)
- Division of Hazardous Substances Regulation
 - *6 NYCRR Part 370 - Hazardous Waste Management System: General (revised January 14, 1995)
 - Part 371 - Identification and Listing of Hazardous Wastes (revised January 14, 1995)
 - ✓ Part 372 - Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (revised January 14, 1995)
 - 6 NYCRR Subpart 373-1 - Hazardous Waste Treatment, Storage and Disposal Facility Permitting Requirements (revised January 14, 1995)
 - 373-2 - Final Status Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities (revised January 14, 1995)
 - 373-3 - Interim Status Standards for Owners and Operators of Hazardous Waste Facilities (revised January 14, 1995)
 - 373-4 - Facility Standards for the Collection of Household Hazardous Waste and Hazardous Waste from Conditionally Exempt Small Quantity Generators (January 14, 1995)
 - 6 NYCRR Subpart 374-1 - Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Management Facilities (revised January 14, 1995)
 - 6 NYCRR Subpart 374-2 - Standards for the Management of Used Oil (January 14, 1995)
 - 6 NYCRR Part 376 - Land Disposal Restrictions (January 14, 1995)
 - **Technical and Administrative Guidance Memorandum (TAGM) 3028 - "Contained-In" Criteria for Environmental Media (November 1992)
- Division of Hazardous Waste Remediation
 - 6 NYCRR Part 375 - Inactive Hazardous Waste Disposal Site Remedial Program (May 1992)

*revised

** newly added

NEW YORK STATE SCGs (cont'd)

revised 7/95

- Technical and Administrative Guidance Memorandum (TAGM)
 - ✓ HWR-92-4046 Determination of Soil Cleanup Objectives and Cleanup Levels. (November 1992)
 - ✓ HWR-92-4030 Selection of Remedial Actions at Inactive Hazardous Waste Sites. (May 1990)
 - ** HWR-94-4027 Assistance for Contaminated Private and Public Water Supplies (April 1994)
 - ** ✓ HWR-89-4031 Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites (October 1989)
 - ** ✓ HWR-92-4042 Interim Remedial Measures (June 1992)
 - ** HWR-92-4048 Interim Remedial Measures - Procedures (December 1992)

- Division of Water

- 6 NYCRR Part 700 - 705 - NYSDEC Water Quality Regulations for Surface Waters and Groundwater
- 6 NYCRR Part 750-757 - Implementation of NPDES Program in NYS
- 6 NYCRR Part 702.15(a),(b),(c),(d) and (e) Empowers DEC to Apply and Enforce Guidance where there is no Promulgated Standard
- Technical and Operations Guidance Series (TOGS)
 - ** November 1991 - Analytical Services Protocols (ASP)
 - 1.1.1; October 1993 - Ambient Water Quality Standards and Guidance Values
 - ** 1.1.2; August 1994 - Groundwater Effluent Limitations
 - 1.2.1; April 1990 - Industrial SPDES Permit Drafting Strategy for Surface Waters
 - 1.3.1; May 1990 - Waste Assimilative Capacity Analysis and Allocation for Setting Water Quality Based Effluent Limits
 - 1.3.1 C; August 1991 - Development of Water Quality Based Effluent Limits for Metals Amendment
 - 1.3.2; May 1990 - Toxicity Testing in the SPDES Permit Program
 - 1.3.4; April 1, 1987 - BPJ Methodologies
 - 1.3.4.a; November 3, 1988 - BPJ Methodologies/Amendments
 - 1.3.7; July 1990 - Analytical Detectability and Quantitation Guidelines for Selected Environmental Parameters
 - ** 1.3.8; October 1994 - New Discharges to Publicly Owned Treatment Works
 - 2.1.2; July 1990 - Underground Injection/Recirculation (UIR) at Groundwater Remediation Sites
 - 2.1.3; October 1990 - Primary and Principal Aquifer Determinations

* revised

** newly added

NEW YORK STATE SCGs (cont'd)

revised 7/95

** Fish & Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA). (October 1994)

** Freshwater Wetlands Regulations, Guidelines on Compensatory Mitigation. (October 1993)

** Niagara River Biota Contamination Project: Fish Flesh Criteria for Piscivorous Wildlife. (July 1987)

• Division of Regulatory Affairs

- 6 NYCRR Part 361 - Siting of Industrial Hazardous Waste Facilities
- 6 NYCRR Part 364 - Waste Transporter Permits (revised January 12, 1990)
- Article 27, Title II of the ECL - Industrial Siting Hazardous Waste Facilities
- 6 NYCRR Part 621 - Uniform Procedures
- 6 NYCRR Part 624 - Permit Hearing Procedures

• Division of Marine Resource, Bureau of Marine Habitat Protection

- Chapter 10 of 6 NYCRR Part 661 Tidal Wetlands - Land Use Regulations

• Division of Mineral Resources

- Article 23, Title 27 - NYS Mined Land Reclamation Law

** - Article 23, and Article 71, Title 13-oil, Gas and Solution Mining Law

- 6 NYCRR Part 420 - General

421 - Permits

422 - Mined Land - Use Plan

423 - Reclamation Bond

424 - Enforcement

425 - Civil Penalties

** 550 - Promulgations and Enforcement of Rules and Regs.

** 551 - Reports and Financial Security

** 552 - Permits to Drill, Deepen, Plug Back or Convert Wells

** 553 - Well Spacing

** 554 - Drilling Practices and Reports

** 555 - Plugging and Abandonment

** 556 - Operating Practices

** 557 - Secondary Recovery and Pressure Maintenance

** 558 - Transportation

** 559 - "Bass Island" Regulations

• revised

** newly added

NEW YORK STATE SCGs (cont'd)

revised 7/95

NEW YORK STATE DEPARTMENT OF HEALTH

- NYSDOH PWS 68 - Blending Policy for Use of Sources of Drinking Water
- NYSDOH PWS 69 - Organic Chemical Action Steps for Drinking Water
- NYSDOH PWS 152 - Procedure for Handling Community Water System Emergencies
- NYSDOH PWS 159 - Responding to Organic Chemical Concerns at Public Water Systems
- NYSDOH PWS 160 - Public Notification of Organic Chemical Incidents Regarding Public Water Supplies
- The 10 ppt criterion for 2,3,7,8 - TCDD in fish flesh
- The Binghamton State Office Building cleanup criteria for PCDDs, PCDFS and PCBs
- Part 5 of the State Sanitary Code, Drinking Water Supplies (effective March 11, 1992)
- Part 170 of title 10 of the NYCRR, Water Supply Sources
- Appendix 5-A of Part 5 of the State Sanitary code (Recommended Standards for Water Works)
- Appendix 5-B of Part 5 of the State Sanitary Code (Rural Water Supply)
- NYSDOH Interim Report on Point-of-Use Activated Carbon Treatment
- Part 16 draft limits on the disposal of radioactive materials into sewer systems
- Criteria for the development of health advisories for sport fish consumption
- Tolerance levels for EDB in food

NEW YORK STATE DEPARTMENT OF LABOR

- 12 NYCRR 50 - Lasers
- 12 NYCRR 38 - Ionizing Radiation Protection

NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS

- 1 NYCRR Part 371 - Notice of Intent

COASTAL MANAGEMENT

- Part 600 - Department of State, Waterfront Revitalization and Coastal Resources Act
- State Coastal Policies
- State Consistency Process
- Federal Consistency Process
- NYS Coastal Policies
- NYS Coastal Management Program
- Federal Register, June 25, 1979 - Part V - Department of Commerce - Federal Consistency Regulation

* revised

** newly added

NEW YORK STATE SCGs (cont'd)

revised 7/95

****FEDERAL REQUIREMENTS**US ENVIRONMENTAL PROTECTION AGENCY

- Guidance on Residential Lead-Based Paint, Lead-Contaminated Dust, and Lead-Contaminated Soil, July 14, 1994
- 16 USC 661 - Fish and Wildlife Coordination Act
- Risk Assessment Guidance for Superfund - Volume 1 - Human Health Evaluation Manual; December 1989
- 40 CFR Part 60 Subpart WWW: Standards of Performance for Municipal Solid Waste Landfills; December 1994
- 40 CFR Part 280; Guidelines for Specifications of disposal Sites for Dredged or Fill Material

US ARMY CORPS OF ENGINEERS

- Executive Order 11990 - Protection of Wetlands; May 1977
- 33 USC 466 Section 404 - Clean Water Act
- 33 CFR Parts 320-330; Regulatory Programs of the Corps of Engineers

OSHA/PESH

- 29 CFR Part 1910.120; Hazardous Waste Operations and Emergency Response ✓

US

- 16 USC 470 - National Historic Preservation Act

STANDARDS, CRITERIA, & GUIDANCE

Div./ Agcy.*	Title	Std./ Guid.	Requirements
BMHP	6 NYCRR Part 661 (Cp. 10) - Tidal Wetlands Land Use Regulations	S	▸ limit/preclude excavation, filling, regrading in vegetated tidal wetlands or portions of adjacent areas
DAM	1 NYCRR Part 371 - Notice of Intent	S	▸ filing necessary if impact > 10 acres within an agricultural district
DAR	Air Guide 1 - Guidelines for the Control of Toxic Ambient Air Contaminants	G	▸ control of toxic air contaminants ▸ screening analysis for ambient air impacts ▸ toxicity classifications ▸ ambient standards - short term/annual
DAR	6 NYCRR Part 200 (200.6) - General Provisions; 1/29/93	S	▸ prohibits contravention of AAQS or causes air pollution
DAR	6 NYCRR Part 201 - Permits & Certificates; 3/31/93	S	▸ prohibits construction/operation w/o permit/certificate
DAR	6 NYCRR Part 211 (211.1) - General Prohibitions	S	▸ prohibits emissions which are injurious to human, plant, or animal life or causes a nuisance
DAR	6 NYCRR Part 212 - General Process Emission Sources	S	▸ establishes control requirements
DAR	6 NYCRR Part 227 - Stationary Combustion Installations	S	▸ requirement for stationary combustion installations
DAR	6 NYCRR Part 231 - new source review in non-attainment areas and ozone transport regions	S	▸ requirements for non-attainment areas and ozone transport regions
DAR	6 NYCRR Part 257 - Air Quality Standards	S	▸ applicable air quality standards
DFW	Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA); 10/94	G	▸ habitat assessments ▸ contaminant impact assessments ▸ ecological effects of remedies ▸ remedial requirements ▸ monitoring ▸ checklist
DFW	ECL Article 24 & Article 71, Title 23 - Freshwater Wetlands Act	S	▸ preserve, protect, and conserve freshwater wetlands ▸ regulate use and development
DFW	6 NYCRR Part 182 - Endangered & Threatened Species of Fish & Wildlife	S	▸ lists endangered, threatened species and species of special concern and prohibits taking except under permit
DFW	6 NYCRR Part 608 - Use and Protection of Waters	S	▸ protect certain classified streams ▸ permits for impoundments, structures, dredge, and fill

DHSR	6 NYCRR Subpart 373-1 - Hazardous Waste Treatment, Storage and Disposal Facility Permitting Requirements; 1/14/95	S	hazardous waste permitting requirements: includes substantive requirements
DHSR	6 NYCRR Subpart 373-2 - Final Status Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities; 1/14/95	S	hazardous waste management standards e.g., contingency plan; releases from SWMUs; closure/post-closure; container/management; tank management; surface impoundments; waste piles; landfills; incinerators; etc.
DHSR	6 NYCRR Subpart 373-3 - Interim Status Standards for Owners and Operators of Hazardous Waste Facilities - 1/14/95	S	similar to 373-2
DHSR	6 NYCRR Subpart 373-4 - Facility Standards for the collection of household hazardous waste and hazardous waste from conditionally exempt small quantity generators; 1/14/95	S	hazardous waste management standards collection of household hazardous waste hazardous waste from cond. except small quantity generators
DHWR	TAGM HWR-92-4046 Determination of Soil Cleanup Objectives and Cleanup Levels; 1/24/94	G	soil cleanup goals
DHWR	TAGM HWR-92-4030 Selection of Remedial Actions at Inactive Hazardous Waste Sites; 5/90	G	remedy selection criteria/evaluations
DHWR	TAGM HWR-94-4027 - Assistance for Contaminated Private and Public Water Supplies; 4/18/94	G	when DEC can supply potable water
DHWR	TAGM HWR-89-4031 Fugitive Dust Suppression and Particulate Monitoring Program at Inactive Hazardous Waste Sites; 10/27/89	G	dust suppression during IRM/RA
DHWR	TAGM HWR-92-4042 Interim Remedial Measures; 6/1/92	G	define and track IRMs
DHWR	TAGM HWR-92-4048 Interim Remedial Measures - Procedures; 12/9/92	G	identifying and implementing IRMs
DHWR	6 NYCRR Part 375 - Inactive Hazardous Waste Disposal Site Remedial Program; 5/92	S	requirements regarding remedial programs private party programs, state funded programs, state assistance to municipalities
DMR	Title 27 - NYS Mined Land Reclamation Law	S	permit required for mining > 1000 tons in < 12 months (e.g. clay for cover)
DMR	6 NYCRR Part 420 - General	S	definitions and scope
DMR	6 NYCRR - Part 421 - Permits	S	requirements for mining permits

DMR	6 NYCRR Part 422 - Mined Land - Use Plan	S	▸ mining and reclamation plans
DMR	6 NYCRR Part 423 - Reclamation Bond	S	▸ requirements for reclamation bonds
DMR	6 NYCRR Part 424 - Enforcement	S	▸ violations of mining regulations
DMR	6 NYCRR Part 425 - Civil Penalties	S	▸ assessing penalties
DMR	6 NYCRR Part 426 - Hearings	S	▸ hearings regarding mining permits/penalties
DMR	6 NYCRR Part 550- Promulgations and Enforcement of Rules and Regs.	S	▸ Promulgations and enforcement of the mining rules and regs.
DMW	6 NYCRR Part 551 - Reports and Financial Security	S	▸ mining related reports and requirements for financial security
DMR	6 NYCRR Part 552 - Permits to drill, deepen, plug back or convert wells	S	▸ permit requirements of various mining operations
DMR	6 NYCRR Part 553 - Well Spacing	S	▸ requirements on well spacing
DMR	6 NYCRR Part 554 - Drilling Practices and Reports	S	▸ various drilling practices
DMR	6 NYCRR Part 555 - Plugging and Abandonment	S	▸ procedural requirements for plugging and abandonment
DMR	6 NYCRR Part 556 - Operating Practices	S	▸ various operating methods
DMR	6 NYCRR Part 557 - Secondary Recovery and Pressure Maintenance	S	▸ various methods for secondary recovery and pressure maintenance
DMR	6 NYCRR Part 558 - Transportation	S	▸ transportation methods
DMR	6 NYCRR Part 559 - "Bass Island" Regulations	S	▸ regulations related to "Bass Island"
DMR	Article 23 and Article 71, Title 13 - Oil, Gas and Solution Mining Law	S	▸ procedural requirements for oil, gas, and solution mining
DOH	Appendix 5-B of Part 5 of the State Sanitary Code (Rural Water Supply)	S	▸ requirements for wells, springs, cisterns, etc. in rural areas
DOH	The Binghamton State Office Building cleanup criteria for PCDDs, PCDFs & PCBs	G	▸ building cleanup criteria
DOH	The 10 ppt criterion for 2,3,7,8-TCDD in fish flesh	C	▸ < 10 ppt in fish flesh
DOH	Tolerance levels for EDB in food	G	▸ possible use in risk assessments
DOH	Criteria for the development of health advisories for sport fish consumption	G	▸ for use in risk assessments and for known problems

DOH	Part 16 draft limits on the disposal of radioactive materials into sewer systems	G	discharge to sewers of radioactive materials
DOH	NYSDOH Interim Report on Point-of-Use Activated Carbon Treatment Systems	G	guidance on the use of activated carbon treatment systems for drinking water
DOH	Appendix 5-A of Part 5 of the State Sanitary code (Recommended Standards for Water Works)	S	standards for construction/operation of public water systems
DOH	Part 170 of title 10 of the NYCRR, Water Supply Sources	S	protecting public water supplies
DOH	Part 5 of the State Sanitary Code, Drinking Water Supplies; 3/11/92	S	drinking water standards
DOH	NYSDOH PWS 68 - Blending Policy for Use of Sources of Drinking Water	G	conditions under which blending is allowed
DOH	NYSDOH PWS 69 - Organic Chemical Action Steps for Drinking Water	G	actions to take when the concentration of organic contaminants exceed specified levels in a public water system
DOH	NYSDOH PWS 152 - Procedure for Handling Community Water System Emergencies	G	identifies emergencies and what steps to take at public water systems
DOH	NYSDOH PWS 159 - Responding to Organic Chemical Concerns at Public Water Systems	G	steps to take when organic chemical concentrations exceed action levels
DOH	NYSDOH PWS 160 - Public Notification of Organic Chemical Incidents Regarding Public Water Supplies	G	requirements for notifying users
DOL	12 NYCRR 38 - Ionizing Radiation Protection	S	protection and licensing requirements for handling materials that produce ionizing radiation
DOL	12 NYCRR 50 - Lasers	S	laser users must have a certificate of competence licensed land surveyors excepted
DOS	Federal Consistency Process	G	federal "actions" must be consistent with the NYS coastal management program
DOS	State Consistency Process	G	proposed "actions" in the coastal area must be evaluated to determine consistency with NYS coastal policies. If action may have a significant effect, must prepare an EIS. Dept. of State must approve a Certificate of Consistency.
DOS	State Coastal Policies	G	44 policies regarding development, fish & wildlife, recreation, energy & ice management, water/air resources, etc.

DOS	Federal Register - Part V - Department of Commerce - Federal Consistency Regulation; 6/25/79	G	impacts federal actions (e.g. NPL sites) in the coastal zone
DOS	Part 600 - Department of State, Waterfront Revitalization and Coastal Resources Act	S	"Coastal Area" includes Lakes Erie and Ontario, the St. Lawrence and Niagara rivers, the Hudson river south of the federal dam at Troy, the East river, the Harlem river, the Kill van Kull and Arthur Kill, Long Island sound, and the Atlantic ocean, etc.
DOS	NYS Costal Management Program	G	program summary: promote the use of coastal resources; protect coastal resources; control major activities;
DOW	Analytical Services Protocols (ASP); 11/91	G	analytical procedures
DOW	TOGS 2.1.2 - Underground Injection/Recirculation (UIR) at Groundwater Remediation Sites; 7/90	G	guidance of the applicability of SPDES permits and groundwater effluent standards to the use of UIR as a remediation measure
DOW	TOGS 1.3.8 - New Discharges to Publicly Owned Treatment Works; 10/26/94	G	limits on new or changed discharges to POTWs strict requirements regarding bioaccumulative and persistent substances plus other considerations
DOW	TOGS 1.3.7 - Analytical Detectability & Quantitation Guidelines for Selected Environmental Parameters; 7/90	G	guidance on selection of analytical detection limits and quantitation limits in SPDES permits
DOW	TOGS 1.3.4.a - BPI Methodologies/Amendments; 11/3/88	G	amends TOGS 1.3.4 regarding BPI for PCBs.
DOW	TOGS 1.3.4 - BPI Methodologies; 4/1/87	G	guidance for the application of BPI to the determination of effluent limits
DOW	TOGS 1.3.2 - Toxicity Testing in the SPDES Permit Program; 5/90	G	procedures for when effluent toxicity testing is required
DOW	TOGS 1.1.1 - Ambient Water Quality Standards & Guidance Values; 10/93	G	compilation of ambient water quality stds. and guidance values
DOW	TOGS 1.3.1C - Development of Water Quality Based Effluent Limits for Metals Amendment; 8/91	G	as stated
DOW	TOGS 1.3.1 - Waste Assimilative Capacity Analysis & Allocation for Setting Water Quality Based Effluent Limits; 5/90	G	guidance for determining maximum allowable loadings and corresponding effluent limitations for point sources to surface water
DOW	TOGS 1.2.1 - Industrial SPDES Permit Drafting Strategy for Surface Waters; 4/90	G	guidance for developing effluent and monitoring limits for point source releases to surface water
DOW	TOGS 2.1.3 - Primary & Principal Aquifer Determinations; 10/90	G	clarifies the meaning of "primary water supply aquifer" and "principal aquifer."

DOW	TOGS 1.1.2 - Groundwater Effluent Limitations; 8/94	G	guidance for developing effluent limits for groundwater
DOW	6 NYCRR Part 702-15(a), (b), (c), (d) & (e) -	S	Empowers DEC to Apply and Enforce Guidance where there is no Promulgated Standard
DOW	6 NYCRR Part 700-705 - NYSDEC Water Quality Regulations for Surface Waters and Groundwater; 9/1/91	S	700 - Definitions, Samples and Tests; 701 - Classifications Surface Waters and Groundwaters; 702 - Derivation and Use of Standards and Guidance Values; 703 - Surface Water and Groundwater Quality Standards and Groundwater Effluent Standards;
DOW	6 NYCRR Part 750-757 - Implementation of NPDES Program in NYS	S	regulations regarding the SPDES program
DRA	Article 27, Title II of the ECL - Industrial Siting Hazardous Waste Facilities	S	enabling statute; must be used with Part 361
DRA	6 NYCRR Part 364 - Waste Transporter Permits; 1/12/90	S	regulates collection, transport, and delivery of regulated waste
DRA	6 NYCRR Part 621 - Uniform Procedures	S	permit processing requirements
DRA	6 NYCRR Part 624 - Permit Hearing Procedures	S	procedures for hearings to resolve permit issues
DSM	STARS #1 - Petroleum-Contaminated Soil Guidance Policy; 8/92	G	remedial guidance for petroleum spill cleanups
DSW	6 NYCRR Part 360 - Solid Waste Management Facilities; 10/9/93	S	solid waste management facility requirements landfill closures; C&D landfill requirements; used oil; medical waste; etc.
OSHA/ PESH	29 CFR Part 1910.120; Hazardous Waste Operations and Emergency Response	S	health and safety
US	16 USC 470 - National Historic Preservation Act	S	determine if site may have significance mitigate impacts
USACE	Executive Order 11990 - Protection of Wetlands; 5/24/77	G	minimize destruction, loss, or degradation of wetlands
USACE	33 USC 466 Section 404- Clean Water Act	S	control disturbances in wetlands
USACE	33 CFR Parts 320-330; Regulatory Programs of the Corps of Engineers	S	wetlands permits
USEPA	Hydrologic Evaluation of Landfill Performance (HELP) Model Hydrologic Simulation of Solid Waste Disposal Sites	G	cover system performance/hydrology

USEPA	Solidification/Stabilization and its Application to Waste Materials; 6/93	G	soil treatment
USEPA	16 USC 661 - Fish and Wildlife Coordination Act	S	mitigate impacts to wetlands
USEPA	Integrated Risk Information System (IRIS)	G	verified RfDs and cancer slope factors
USEPA	Risk Assessment Guidance for Superfund - Volume 1 - Human Health Evaluation Manual; 12/89	G	human health risk assessments
USEPA	40 CFR Part 60 Subpart WWW: Standards of Performance for Municipal Solid Waste Landfills; 12/94	S	landfill gas collection/treatment
USEPA	40 CFR Part 280; Guidelines for Specifications of Disposal Sites for Dredged or Fill Material	G	restoration of wetlands
USEPA	40 CFR Part 761; Toxic Substances Control Act	S	PCB disposal and management Spill Response Policy
USEPA	Guidance on Residential Lead-Based Paint, Lead Contaminated Dust and Lead Contaminated Soil; 7/94	G	soil cleanup guidance for lead-contaminated media

*
 BMHP: Division of Marine Resources, Bureau of Marine Habitat Protection
 DAM: Department of Agriculture and Markets
 DAR: Division of Air Resources
 DFW: Division of Fish and Wildlife
 DHSR: Division of Hazardous Substances Regulation
 DHWR: Division of Hazardous Waste Remediation
 DMR: Division of Mineral Resources
 DOH: Department of Health
 DOL: Department of Law
 DOS: Department of State
 DOW: Division of Water
 DRA: Division of Regulatory Affairs
 DSM: Division of Spills Management
 DSW: Division of Solid Waste
 USEPA: US Environmental Protection Agency
 USSACE: US Army Corps of Engineers

APPENDIX D

Test Pit, Boring, and Well Construction Logs

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>21A</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 25-35</u>	Date: <u>11/30/1999</u>
Time Start: <u>0840</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>0855</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist/Frozen</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2				
3				
4				
5	SS-21A	0.1	Brown to reddish brown sandy clay w/ abundant bedrock fragments (shale) and boulders (6" to 2' in diameter)	
6				Refusal due to boulders
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>21B</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Sunny 25</u>	Date: <u>11/30/1999</u>
Time Start: <u>0902</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>0920</u>	Wind: <u>Variable</u>	Water Level: <u>6.5</u>
Note: _____	Ground Conditions: <u>Moist/Frozen</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Brown to reddish brown sandy clay and boulders (6" to 2' in diameter)	
1				
2				
3				
4				
5				
6				
7	SS-21B	2.7		Refusal due to large boulders
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>21C</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 35</u>	Date: <u>11/30/1999</u>
Time Start: <u>0932</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>0950</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist/Frozen</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2				
3	SS-21C	8.4	Reddish brown clay w/ some sand, gravel and boulders (6" to 2' in diameter)	Water seep (perched)
4				
5				
6				
7				
8				Refusal due to boulders
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 22A'
 Operator: Roy Terlaga PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Greg Dunn _____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: _____
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (pym)	FIELD IDENTIFICATION	COMMENTS
0			Brown to black topsoil	Pit was approximately 15-20' off creek
1				
2				
3			Grey clay silt	End of test pit, no trash encountered, therefore moved towards landfill to determine edge of fill
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>22A</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Brown silt, little clay cobbles and larger	Pit was approximately 15' east of 22A'
1				
2				
3			Grey clay, little silt and rocks, couple 2-3' boulders	End of test pit
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure: PROJECT NUMBER: 72701.02</u>		Pit No.: <u>23AA</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 30-35</u>	Date: <u>11/30/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>10'</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Topsoil Brown	
1			Gray clay silt with rock	
2				
3				
4				
5			Garbage fill: tires, glass, paper, plastic bottles (domestic), aresol can, drum lid (~30 gallon, no identification)	
6				
7				
8				
9				
10	SS-23AA	7.1		
11				
12				
13				
14			Backhoe bringing up grey clay from bottom of excavation with no trash	End of test pit
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>23A</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: <u>1510</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1520</u>	Wind: <u>Variable</u>	Water Level: <u>10</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2				
3				
4			Light reddish brown sandy clay w/ some boulders (6" to 2" in diameter)	
5				
6				
7				
8				
9	SS-23A	4.6		
10				Refusal due to boulders.
11				Water percolating into pit @ 10'
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>23B</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: <u>1530</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1545</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2			Light brown to reddish brown sandy clay w/ boulders (6" to 2' in diameter)	
3				
4	SS-23B	4.7		
5			Grey clay wet	
6			Light brown to reddish brown sandy clay w/ boulders	Refusal due to bedrock/boulders
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u>		PROJECT NUMBER: <u>72701.02</u>	Pit No.: <u>23C</u>
Operator: <u>Tony Iaria</u>		PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>		Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: <u>1550</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1600</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2				
3				
4				
5				
6				
7				
8	SS-23C	5.0	Light brown to reddish brown sand clay w/ some boulders	Sample sent for laboratory analysis Refusal due to boulders/bedrock
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 24A
 Operator: Roy Terlaga PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Greg Dunn _____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>11'</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			0-3" Topsoil	
1			Grey clay little silt	
2				
3				
4				
5				
6			Garbage similar to other pits, mainly household material, one five gallon bucket, no staining or odor.	
7				
8				
9				
10				
11	SS-24A- 11'	16.3		Sample sent for laboratory analysis
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>24B</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0	22-24B-3-5"	0.0	0-3" Topsoil brown Grey clay silt with rocks	No vegetation, seep area Sample sent for laboratory analysis
1				
2				
3				
4				
5			Garbage similar to other pits, old hot water heater (household), refrigerator, large pieces of sheet metal.	
6				
7				
8				
9				
10				
11	SS-24B	9.4		
12			Grey clay silt with rocks	
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 25AA
 Operator: Roy Terlaga PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Greg Dunn

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 30-35</u>	Date: <u>11/30/1999</u>
Time Start: <u>1507</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1535</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Topsoil brown	
1				
2			Grey clay silt with rocks	
3				
4				
5				
6			Garbage: domestic glass and plastic bottles, plastic bags, aluminum cans, wood panelling, cardboard, newspaper, tires, shingles.	
7				
8				
9				
10	SS-25AA- 10'	7	Air filter from car	
11				
12				
13	SS-25AA- 13'			End of test pit
14				Sample sent for laboratory analysis
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>25A</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 30-35</u>	Date: <u>11/30/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Topsoil brown	Area of bare vegitaion, possible seep
1	SS-25A 1'	6.4	30 gallon drum, crushed, sampled material in and around drum	
2				
3				
4				
5				
6			Garbage similar to other pits	
7				
8				
9				
10				
11				
12				
13				
14	SS-25A- 14'	19.0		End of test pit
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u>		PROJECT NUMBER: <u>72701.02</u>	Pit No.: <u>25B</u>
Operator: <u>Roy Terlaga</u>		PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>		Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 30-35</u>	Date: <u>11/30/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS	
0			Topsoil brown		
1					
2			Grey clay silt with rock		
3					
4					
5					
6					
7					
8					Garbage similar to previous pits Odor similar to other pits(decomposition) Mostly household debris, couple tires
9					
10					
11					
12					
13	SS-25B	36.5	End of test pit		
14			Sample sent for laboratory analysis		
15					

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>25C</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 30-35</u>	Date: <u>11/30/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS	
0			Topsoil	visually looked like possible plating waste as per G. Shkuda. Sample sent for laboratory analysis	
1					
2					
3	SS-25C- 2.5-3.5'	0.0	Garbage		
			Grey clay silt with rocks		
4			Garbage similar to orther pits, considerably more paper products		
5					
6					
7					
8					
9					
10					
11	SS-25C- 11'	11.6			End of test pit, Hard digging and unstable soil at outriggers
12					
13					
14					
15					

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 25D
 Operator: Roy Terlaga PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Greg Dunn

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Cloudy 30-35</u>	Date: <u>11/30/1999</u>
Time Start: <u>1507</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1535</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0	SS-25D- surface	0.0	Topsoil brown	Sample sent for laboratory analysis
1				
2				
3				
4				
5			Grey-green clay, little silt, some gravel few cobbles/boulders	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

TEST PIT LOG

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 25F
 Operator: Tony Iaria PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Jacob Elder

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: <u>1430</u>	Precipitation: <u>Snow</u>	Time: <u>-</u>
Time Finish: <u>1440</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2	SS-25F	4.0	Medium brown sandy clay w/ some gravel and boulders (upto 1' in diameter)	Sample sent for laboratory analysis
3				
4				Refusal due to bedrock/boulders
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

TEST PIT LOG

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>26A</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0	SS-26A-3-5"	0.0	Topsoil	Sample sent for laboratory analysis
1				
2				
3				
4				
5				
6	SS-26A-6'	0.0	Freon container (DuPont) 12" dia by 18"	Sample sent for laboratory analysis
7				
8			Garbage similar to other pits, mainly household debris	
9				
10				
11				
12				
13				
14	SS-26A-14'	9.1		
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>26B</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS	
0			Brown topsoil	Sample sent for laboratory analysis	
1					
2			Grey rock fragments, little clay and silt		
3					
4			Garbage similar to previous pits, tire, plastic, plastic and glass bottles		
5					
6					
7					
8	SS-26B-8'	15.6			
9			Grey clay and silt		
10			Similar household debris		
11					
12	SS-26B-12'	5.7	Obstruction which could not go through or identify		End of test pit
13					
14					
15					

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 27A
 Operator: Roy Terlaga PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Greg Dunn

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: _____	Precipitation: <u>Snow showers</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2			Brown Topsoil	
3			Gray silty clay	
4				
5				
6				
7				
8			Garbage fill: glass, plastic, paper, bed springs, wood, fabric, styrafoam cups	
9				
10				
11				
12				
13				
14				
15	SS-27A	43.8		Sample to laboratory for analysis End of Test Pit 15'

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>27B</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: _____	Precipitation: <u>Snow showers</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1			Brown topsoil	
2			Rock, Grey silt and sand	
3				
4				
5				
6				
7				
8				
9			Garbage: glass, plastic, wood, fabric, styrafoam couple metal five gallon bucket lids (no identification)	
10				
11				
12				
13				
14				
15	SS-27B	57.5		Sample sent for laboratory analysis End of test pit

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>27C</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: _____	Precipitation: <u>Snow showers</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Topsoil Brown	
1				
2			Grey, rock fragments, silt and sand	
3				
4				
5				
6				
7			Garbage: galss, plastic containers, grass	
8			clippings plastic bags, paper products,	
9			household items, wood paneling, electrical	
10			conduit, mangled 35 gallon drum	
11			(no identification), several tires	
12				
13				
14	SS-27C	9.8		End of test pit
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>27D</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: _____	Precipitation: <u>Snow showers</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1			Topsoil Brown	
2			Grey rock fragments silt and sand	
3				
4				
5				
6				
7			Garbage: wood debris, cardboard, paper, tires, leaves, trash can, styrafoam, odor of decomposing debris (similar odor in all pits)	
8				
9				
10				
11				
12				
13				
14	SS-27D	26.3		Sample sent for laboratory analysis End of test pit
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>27E</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: <u>1230</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1255</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2				
3				
4				
5			Trash: newspaer, tires, glass/plastic bottles, wood, intermixed with clayey soil	
6				
7				
8	SS-27E- 09-Aug	26.7	Drum lid	Sample sent for laboratory analysis
9				
10				
11				
12	SS-27E-12	7.3		Refusal due to bedrock/boulders
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u>		PROJECT NUMBER: <u>72701.02</u>	Pit No.: <u>27F</u>
Operator: <u>Tony Iaria</u>		PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>		Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/30/1999</u>
Time Start: <u>1000</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1019</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist/Frozen</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10	SS-32B	2.2	Reddish brown clay w/ some sand, gravel and boulders upto 2' in diameter	Refusal due to Bedrock
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 27G
 Operator: Tony Iaria PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Jacob Elder

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/30/1999</u>
Time Start: <u>1030</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1040</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Light brown/tan clayey sand w/ abundant shale fragments (gravel to boulder size)	
1				
2				
3				
4	SS-27G	0.0		
5			Refusal due to Bedrock	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>28A</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: _____	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>4'</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Topsoil brown	
1			Grey clay silt with rocks	
2				
3			Garbage similar to other pits	
4				
5				
6	SS-32B	0.0		
7			Grey clay silt	
8				
9				
10			Garbage, difficult to determine depth, similar household debris	
11				
12				
13				
14				
15				End of test pit

water filled pit to 4' however, each bucket contained trash the deeper the pit was excavated

Signature: _____

Date: _____

TEST PIT LOG

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ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>28D</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: <u>1135</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1150</u>	Wind: <u>Variable</u>	Water Level: <u>9.5</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0	SS-28B	0		Sample sent for laboratory analysis
	Surface			
1			Brown silty, sandy caly with roots	
2			Grey clay, very tight	
3				
4				
5				
6				
7			Trash: newspaper, cardboard, glass/plastic bottles, cotton cloth, plastic bags, tires, automobile axle	
8				
9				
10	SS-28D	0		
11				
12				End of test pit due to water
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 28E
 Operator: Tony Iaria PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Jacob Elder

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: <u>1305</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: _____	Wind: <u>Variable</u>	Water Level: <u>5.5</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Brown silty clay with gravel	
1				
2			Grey clay with gravel, boulders (1.5' diameter) and shale fragments	
3				
4			Trash: Plastic bags, wood	
5	SS-28E	4		
6				End of test pit due to presence of water
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

TEST PIT LOG

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>29B</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: <u>1015</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1038</u>	Wind: <u>Variable</u>	Water Level: <u>11.5</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS	
0			Brown sandy clay		
1					
2			Grey clay		
3			Trash: bottles, wood, palstic, tires, paper, aerosol cans		
4					
5					
6					
7					
8					
9					
10			Grey clayey soil		
11	SS-29B	2.8			
12					
13					End of test pit, pit collapsing due to water
14					
15					

End of test pit, pit collapsing due to water

Signature: _____

Date: _____

TEST PIT LOG

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>29D</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/29/1999</u>
Time Start: <u>1120</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1150</u>	Wind: <u>Variable</u>	Water Level: <u>10</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Reddish brown sandy clay w/ some gravel	
1				
2			Grey Clay	
3			Trash: plastic bags, newspaper, wood	
4				
5				
6				
7				
8				
9	SS-29D	0		
10				
11			End of test pit	
12				
13				
14				
15				

Signature: _____

Date: _____

TEST PIT LOG

Contractor: <u>Environmental Closure</u>		PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>29E</u>	
Operator: <u>Tony Iaria</u>		PROJECT NAME: <u>Mayer Landfill</u>		Location: _____	
Equipment: <u>Backhoe</u>		Geologist: <u>Jacob Elder</u>		_____	

DATE/TIME		WEATHER OBSERVATIONS		GROUND WATER OBSERVATIONS		
Date: <u>11/29/99</u>		Temperature: <u>Sunny 35</u>		Date	<u>11/29/1999</u>	
Time Start: <u>1200</u>		Precipitation: <u>N/A</u>		Time	<u>-</u>	
Time Finish: <u>1220</u>		Wind: <u>Variable</u>		Water Level	<u>9</u>	
Note: _____		Ground Conditions: <u>Moist</u>		Note	_____	_____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS	
0			Brown sandy clay with roots	Sample sent for laboratory analysis	
1					
2					
3			Brown sandy clay		
4					
5					
6					
7			Grey clay		
8			Brown sandy clay w/ gravel and boulders (6" to 1' in diameter)		
9	SS-29E	86.3			
10					
11					End of test pit
12					
13					
14					
15					

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>30B</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: <u>1000</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1020</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0	SS-30B Surface	12.2	Brown silty clay with roots and some gravel	Sample sent for laboratory analysis
1			Grey clay, very tight	
2				
3				
4				
5				
6			Trash: Plastic bags, wood, glass bottles, tires, newspaper, trash intermingled with grey clay, drum lid, no soil surrounding or drum itself	
7				
8				
9				
10				
11				
12	SS-30B	3.8		Sample sent for laboratory analysis
13				
14				
15				Limit of backhoe

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure: PROJECT NUMBER: 72701.02</u>		Pit No.: <u>30C</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: <u>1035</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1105</u>	Wind: <u>Variable</u>	Water Level: <u>9.5</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				Sample sent for laboratory analysis
1				
2				
3	SS-30C	9.7		Very strong odor detected Sample sent for laboratory analysis
4				
5				
6				
7				
8			Trash: tires, metal cans, plastic bags, corrugated cardboard, wood, newspaper, similar to other test pits	
9				
10				
11				
12			Trash mixed with wet grey clay	
13				Limit of backhoe
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>31A</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 40</u>	Date: <u>11/29/1999</u>
Time Start: <u>-</u>	Precipitation: <u>Snow Showers</u>	Time: <u>-</u>
Time Finish: <u>-</u>	Wind: <u>Variable</u>	Water Level: <u>8 ft</u>
Note: _____	Ground Conditions: <u>Muddy</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1			Cover, Brown gray sand w/ rock fragments	
2			Glass and plastic bottles, household garbage,	
3			two tires	
4				
5				
6			Gray silt some clay	
7				
8	SS-31A	0.0	Garbage, plastic bags, plastic containers	Water at 8'. Hole collapsing
9				Appears that fill continues into water
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>31B</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 40</u>	Date: <u>11/29/1999</u>
Time Start: <u>-</u>	Precipitation: <u>Snow Showers</u>	Time: <u>-</u>
Time Finish: <u>-</u>	Wind: <u>Variable</u>	Water Level: <u>13 ft</u>
Note: _____	Ground Conditions: <u>Muddy</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1			Cover, Topsoil and Rock fragments, Gray silty	
2			. sand, some clay	
3				
4				
5				
6				
7				
8			Garbage, glass bottles, plastic bottles, leaves,	
9			hay, newspaper, paper, cloth material	Minimal odor (decomposing garbage)
10				
11				
12				
13	SS-31B	357		Sample sent for laboratory analysis
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>31C</u>
Operator: <u>Roy Terlaga</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Greg Dunn</u>	

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/29/99</u>	Temperature: <u>Sunny 40</u>	Date: <u>11/29/1999</u>
Time Start: <u>-</u>	Precipitation: <u>Snow Showers</u>	Time: <u>-</u>
Time Finish: <u>-</u>	Wind: <u>Variable</u>	Water Level: <u>7 ft</u>
Note: _____	Ground Conditions: <u>Muddy</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1				
2			Cover, Rock fragments, gray silty sand, some clay	
3				
4				
5				
6			Fill, plastic, wood timbers, glass, rock, household	
7	SS-31C	41.2	debris	Sample sent for laboratory analysis
8				Hole collapsing @ 8' due to water
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

TEST PIT LOG

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>32A</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>12/01/1999</u>
Time Start: <u>0815</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>0825</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Brown/Reddish brown sandy, silty clay with gravel and boulders (6" to 1' in diameter)	
1				
2				
3				
4				
5	SS-32A	0.0		
6				Refusal due to bedrock/Boulders
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: Environmental Closure PROJECT NUMBER: 72701.02 Pit No.: 32B
 Operator: Tony Iaria PROJECT NAME: Mayer Landfill Location: _____
 Equipment: Backhoe Geologist: Jacob Elder _____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS		
Date: <u>11/30/99</u>	Temperature: <u>Sunny 35</u>	Date	<u>11/30/1999</u>	
Time Start: <u>1507</u>	Precipitation: <u>N/A</u>	Time	<u>-</u>	
Time Finish: <u>1535</u>	Wind: <u>Variable</u>	Water Level	<u>N/A</u>	
Note: _____	Ground Conditions: <u>Moist</u>	Note		

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
			Brown Topsoil w/ Roots	
0				
1				
2			Trash: Plastic bags, glass, tin cans, wood	
3				
4				
5				
6	SS-32B	0.0	35 gallon steel drum	Sample obtained from material around drum. Sample sent for laboratory analysis
7				
8				
9				
10			Very tight grey clay	
11				
12				Refusal due to tight clay
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u> PROJECT NUMBER: <u>72701.02</u>		Pit No.: <u>32C</u>
Operator: <u>Tony Iaria</u>	PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>	Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>11/30/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>11/30/1999</u>
Time Start: <u>1445</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>1455</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Grey clay w/ shale fragments-gravel size	
1				
2			Light Brown sandy clay w/ shale fragments, gravel and boulders	
3				
4	SS-32C	0.0		
5			Bedrock	
6				Refusal due to bedrock
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

Contractor: <u>Environmental Closure</u>		PROJECT NUMBER: <u>72701.02</u>	Pit No.: <u>33B</u>
Operator: <u>Tony Iaria</u>		PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>		Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/1/99</u>	Temperature: <u>Sunny 35</u>	Date: <u>12/01/1999</u>
Time Start: <u>0737</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>0745</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0			Ligth brown sandy clay with abudant shale fragments (gravel to boulder size)	
1				
2				
3	SS-33B	0.0		Refusal due to bedrock
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____

ERM, Inc.

TEST PIT LOG

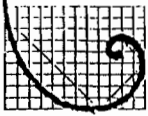
Contractor: <u>Environmental Closure</u>		PROJECT NUMBER: <u>72701.02</u>	Pit No.: <u>33C</u>
Operator: <u>Tony Iaria</u>		PROJECT NAME: <u>Mayer Landfill</u>	Location: _____
Equipment: <u>Backhoe</u>		Geologist: <u>Jacob Elder</u>	_____

DATE/TIME	WEATHER OBSERVATIONS	GROUND WATER OBSERVATIONS
Date: <u>12/01/99</u>	Temperature: <u>Clear 25-30</u>	Date: <u>12/01/1999</u>
Time Start: <u>0800</u>	Precipitation: <u>N/A</u>	Time: <u>-</u>
Time Finish: <u>0825</u>	Wind: <u>Variable</u>	Water Level: <u>N/A</u>
Note: _____	Ground Conditions: <u>Moist</u>	Note: _____

DEPTH (ft below grade)	SAMPLE	PID (ppm)	FIELD IDENTIFICATION	COMMENTS
0				
1			Brown-reddish brown sandy clay with shale fragments (gravel to boulders)	
2				
3	SS-33C	0.0		Refusal due to Bedrock
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Signature: _____

Date: _____



ERM

ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-4D

BORING LOG

Project Name & Location Mayer Landfill		Project Number 72701.02	Date & Time Started: 2/14/00, 1705 / 2/17/00, 1420	
Drilling Company Nothnagle		Foreman Neal Short	Sampler(s) NS, DW (core)	Sampler Hammer N/A
Drilling Equipment Hollow Stem Augers, Air Rotary, Core		Method	Elevation & Datum	Drop N/A
Bit Size(s) 4.25" HSA, 5 7/8" AR, 3 5/8" AR		Core Barrel(s)	Completion Depth -99.5' bgs	Rock Depth 59.5' b.
		Geologist(s) JAKE ELDER		

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
0	LOCATION: MW-4D				SURFACE DESCRIPTION: West Side of Road, 16' NW of MW-4	
	N/A	N/A	N/A	N/A	No Samples taken	
2						
4						
6						
8						
10						
12					Strong odor at 120' bgs	
13'					Trash at 130' bgs Plastic bags, paper	Contained in 55
14					Trash	gallon drum for disposal
16					Trash	
18					Trash	
20					Notice Material at 180' bgs,	Resistance to drilling
					Grey Tight Till Boulder at 200'	

Page 1 of 1

Signature: J. M. Elder

Date: 2/14/00



ERM, Inc.
175 Froehlich Farm Blvd., Woodbury, New York 11797
BORING LOG

Boring Number
MW-4A

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/ PID (ppm)	Blow Counts		
20	N/A	N/A	N/A	N/A	Cuttings appear to be grey	Switch to Air Rotary
22					till - Silty w/ gravel	Dry
24						
26						
28						
30						Boulder at 30'
32						
34						
36						
38						
40	✓	✓	✓	✓	✓	



ERM

ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number

MW-4D

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
40	N/A	N/A	N/A	N/A	Till - Silty w/ gravel	Dry
42						
44						
46						
48						
50						
52						
54						
56						
58						
59'					Bedrock between 59-60' bgs	Shale chips with
60	✓	✓	✓	✓	Advanced to 61' for verification	some calcite, Dry



ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number

MW-41

1000

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
60	NA	NA	NA	NA	Shale-Black- with calcite, dry	Description from
61					Core run start at 61' bgs	Cuttings
62						
64.5	✓	✓	✓	✓	Core Run to start at 64' bgs 64.5' bgs	(Competent Rock)
64.5-70.3	Core Sample MW-41			NA	Black-Grey Shale, Abundant	Rate 0.5'/Minute 64.5'
66	4'9"				Calcite veins (1-1.5" thick) Cored from	Recovery 64.5-70.3
					Recovery Average Dip ~ 30°	Wet at 66'
68					fractured/Bedding Planes at between	Wet
					1" and 2". Possible fracture zone	
70	X			NA	at 1' 1/2" (65.5' bgs) and 2' 3/4"	
					(66.7' bgs)	Rate: 0.2'/Min. Core
72	4'9"				Black to Grey Shale, Abundant	from 70.3'-75.0'
					Calcite Veins (1mm-3mm thick) Avg.	Wet Highly fractured
74					Dip 30°, Some vertical fractures, seams	Poor recovery from
75	✓			✓	Calcite Dissolution (Vugs)	1'2" to 2'5"
76	4'5 1/2"			NA	Black to Grey Shale, Abundant	Core 75-79.5'
					Calcite Seams (1mm-1cm thick)	Wet
78					Badly Fractured, Dip 30°	Poor recovery from
79.5	✓	✓	✓	✓		2'6" - 2'8" and
80						3'8" to 3'10"



ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-6

BORING LOG

Project Name & Location Mayer Landfill		Project Number 72701.02	Date & Time Started: 0805 02/03/00	
Drilling Company Nothnagle		Foreman New	Date & Time Completed: Abandoned at 1145 2/11/00	
Drilling Equipment Hollow Stem Augers/Air Rotary Split Spoon		Method NA	Sampler(s) GD 3E	Sampler Hammer 145 lb
Bit Size(s) 4.25" ID 25" 3 5/8" AR		Core Barrel(s) 2" x 2"	Elevation & Datum NA	Drop 30"
			Completion Depth 60.0	Rock Depth Not Reached
			Geologist(s) GD JE	

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/ PID (ppm)	Blow Counts		
	LOCATION:				SURFACE DESCRIPTION:	
0					Snow - Frozen	
	3"	Net	5.7		Topsoil, Roots	
2			17, 12			
	1.0	0.3	12, 10		Brown - Grey S.H. Clay w/	
			10, 8		some angular gravel	
4						
	1.0	0.0	11, 7		Brown - Grey Silty Clay w/	
			8, 8		some angular gravel, Rock Frag.	
6	SS Mo-c	2.0	14.5	11, 21	Brown - Grey Gravelly, Clayey	Moist
	6'-8'		31, 44		Silt. Moist	
8						
	1.0	1.1	31		Brown - Grey Gravelly Silt	Moist
			12 1/2"		w/ some clay, 7-10' Boulder	9' Switching to Air Rotary
10						11' Continuing w/ Air R
	0.5	0.3	10 1/6"		Very Tight Brown Gravelly	
					S.H w/ some clay, Dry/Moist	Dry to Moist
12						
	0.5	0.0	10 1/5"		Very Tight Brown Gravelly	Dry to Moist
					Silt w/ trace clay	
14						
	4"	0.0	12 1/4"		Very Tight Brown Gravelly	Dry to Moist
					Silt w/ Trace Clay 15.5-16' Boulder	
16					No Sampled	Drilling Very Hard Separate Sample Due to Tight Soil
18						
	0.5	0.0	10 1/6"		Dry Tight, Light Brown Gravelly	Dry to Moist
					Silt	
20						



ERM, Inc.
175 Froehlich Farm Blvd., Woodbury, New York 11797
BORING LOG

Boring Number
MW-6

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/ PID (ppm)	Blow Counts		
20					Not Sampled	Color change at
						Drilling Extremely Hard
						Skipping Sample Due
						to Hard Interval
22					20.5 to Grey, Softer Material	
1325		10"	0.0	100/6"	Dark Grey Coarsely Silt w/	Dry to Moist
					Rock Fragments Tight	
24					Not Sampled due to tight	Less Resistance at
					formation	24.5'
26						
1335		1.0	0.0	39/44	Very Tight Dark Grey Silt	Dry to Moist
				45/65	w/ Gravel & Rock Fragments	
28						
1620		1.0	3.1	44/60	Grey Very Tight Silt	Moist to Wet
				100/3"	w/ some gravel some oily sheen	
30					water when drilling	Water Blows when
1655		1.0	0.0	44/59	Very Tight Silt w/ Some	compressor
				100/6"	gravel & Rock fragments	Dry to Moist
32						
1700		1.0	0.0	33/70	Very Tight S.H. w/ Some	Moist to Wet
				100/6"	gravel and Rock Fragments	Abundant water when
34						
1725		1.0	0.0	34/50	Very Tight Grey S.H. w/	Dry to Moist
				100/6"	Gravel and RF	
36						
1740		1.0	0.2	28/40	Very Tight Dark Grey Silt	Moist to Wet
				50/54	w/ Gravel and RF	
38						
0750		10"		29/43	Very Tight, Dark Grey Silt	Moist to Wet
				43/50	w/ Gravel & RF	
40						

Page 2 of 4

Signature: J. W. Smith

Date: 02/08/00

3.5 ppm

02/07/00



ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number

MW-6

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
320 40		1"	N/A	45	No Little Recovery due to	
42				100/11	Rock Obstruction	
44		1'	0.5	39/50	Very Tight Grey Silt w/	Moist - Wet
				55/55	Gravel & RF	
46		8"	4.0	39	Very Tight Grey Silt w/	Moist To Wet
				100/6"	Gravel & RF	
48		10"	1.9	27	Very Tight Grey Silt w/	Moist to Wet
				100/6"	Gravel & RF	Abundant Water in Sp
50		10"	3.8	39/43	Very Tight, Grey Silt w/ Gravel	Moist to Wet, Abund
				44/50	& RF. Fibrous Substance Resembling Hair	Present & Water in Sp
52		1.0	1.9	34/34	Very Tight, Grey Silt w/ Gravel	Moist to Wet
				50/55	& RF. Fibrous Substance	Moist to Moist, Abundant W
54		6"	3.9	21/50	Very Tight, Grey Silt w/ Subangular to Rounded	Dry to Moist
				100/3"	Gravel. Fibrous Material has wet cuttings sloughing to borehole. Resistance (d)	
56		8"	3.2	55/59	Very Tight, Grey Silt w/ Subangular to	Dry to Moist
				100/6"	Gravel	
58		8"	5.2	27/48	Very Tight, Grey Silt w/ Subangular	Dry to Moist
				60/6"	Sub Rounded Gravel	
60		C	N/A	47	No Recovery, Lodged Gravel	N/A
				100/5"	In Spec	



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175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number

MW-9D

Project Name & Location Mayer Landfill		Project Number 72701.02	Date & Time Started: 2/23/00, 1200		2/23/00 1620	
Drilling Company Nothnagle		Foreman Neal Short	Sampler(s) JAKE EDER	Sampler Hammer 140 lb	Drop 30"	
Drilling Equipment 6" ID Hollow Stem Augers		Method	Elevation & Datum	Completion Depth - 29.5' bgs	Rock Depth: 29.5' 14.2'	
Bit Size(s) 9"		Core Barrel(s) 3 x 2"	Geologist(s) JAKE EDER			

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FIID/ PID (ppm)	Blow Counts		
0	LOCATION: Wet site gate near creek				SURFACE DESCRIPTION: Wet, Marshy grass Some Snow	
2	0.1	1.1	1	2	Grey clay with sand, some organic matter	Wet
4	0.2	0.4	22	12	Grey Clay with Sand, and Gravel	Poor Recovery - Gravel
6	0.3	0.2	2	2	0.1 Grey Clay as above, 0.1 Med. - Coarse angular Sand w/ Clay, 0.1 Clay as above	Wet
8	2.0	0.3	14	8	0.4 angular sand as above, 1.4 grey clay as above 0.2 clay and gravel	Wet
10	1.4	1.2	5	7	1.0 Grey Clay with sand and Gravel, 0.4 Med-Coarse angular sand, 1.0 Silt clay, 0.2 clay	Wet
12	1.2	0.1	7	14	1.0 Sand as above grading to Mid-Fine Sand w/ Clay 0.2 RF and Clay	Wet
14	2.0	0.2	15	15	1.0 Med-Coarse Sand w/ Clay 1.0 Mixed w/ Shale RF	Wet
16						Moist bedrock ~ 14
18						Rate: 3.5' / 18 min. 14.7-18.2'
20						

Page 1 of 2

Signature: *[Signature]*

Date: 3/28/00

Rate: 4' / 15 min. 18.2-19.7-23.7'



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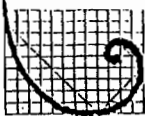
175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-7D

BORING LOG

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FD/ PID (ppm)	Blow Counts		
20					Same as 14.7' - 18.2'	
		5.7			↓	
22						
23.7						Abundant water at 23.1'
24					Highly broken horizontally, some calcite veins (some discolored)	23.7' - 25.7' Rate: 2.0' / 15 min.
		6.2				
26						25.7' - 27.5' Rate: 3.8' / 8 min.
28						
29.5						
30						
32						
34						
36						
38						
40						



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ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-8

BORING LOG

Project Name & Location Mayer Landfill		Project Number 72701.02	Date & Time Started: 2/17/00 1315	Date & Time Completed: 2/17/00 1440
Drilling Company Nothnagle		Foreman Neal Short	Sampler(s) JAKE ELDER	Sampler Hammer 140 lb
Drilling Equipment Hollow Stem Auger		Method Split Spoon	Elevation & Datum -	Completion Depth 21.5' bgs
Bit Size(s) 9"		Core Barrel(s) 2' x 2"	Geologist(s) JAKE ELDER	

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
0	LOCATION: Not Surface Borehole Near Wet Area TP 31A				SURFACE DESCRIPTION: Partly Frozen, Brown Topsoil Grassy	Some Trash in Vicinity from Test Pit 31A
1	1.0	0.0		3/3	Brown to Red Clayey Silt with	Wet - Moist
2				6/3	Some Rounded Gravel / Angular Rock F	No Odor
3	0.5	0.0		3/5	Brown to Red Clayey Silt with	Wet - Moist
4				3/2	Some Rounded Gravel / Rock F	Poor Recovery - Labeled gms
5	0.5	0.0		2/4	2" Grey Silty Clay w/ Angular Gravel	Wet - Moist
6				27/20	4" Trash (Plastic, Glass)	Poor Recovery - Trash
7	0.0	N/A		25/5	No Recovery (Auger pull up grey)	Contained in 55 gal Dr
8				14/6	Silty Sand Soil w/ Plastic, Wood, Glass)	Wet - Wet?
9	0.0	N/A		7/5	No Recovery (Auger pull up)	Wet
10				5/5	Same as 6'-8' →	No Odor
11	0.0	N/A		9/3	No Recovery (Auger Pull up)	Wet Very Wet (Sat)
12				3/3	Same as 6'-8' →	No Odor
13	0.0	N/A		6/3	No Recovery (Auger Pull up)	Wet Very Wet (Sat)
14				3/3	Same as 6'-8' →	No Odor
15	0.0	N/A			No Recovery (Auger Pull up)	Wet Very Wet (Sat)
16					Same as 6'-8' →	No Odor
17	8"	4.1		4/5	Silty Sandy (cont'd Trash (Plastic	Very Wet (Sat)
18				6/6	Rubber, Glass)	
19	0.0	N/A		2/3	No Recovery (Auger pull up)	Very Wet (Sat)
20				9/17		



ERM, Inc.
175 Froehlich Farm Blvd., Woodbury, New York 11797
BORING LOG

Boring Number

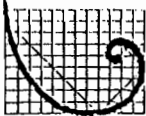
MW-8

1437

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
20		2"	A/A	6/13	Poor Recovery Due to Plastic in	Very Wet (Saturated)
22				100/6"	Split Spoon (Fingers pull up wet grey silty material w/ plastic, glass)	Refused at 21.5' bgs
						Some shale pieces in cuttings
24						
26						
28						
30						
32						
34						
36						
38						
40						

JLM/sh

2/17/00



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175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-9 D

BORING LOG

Project Name & Location Mayer Landfill		Project Number 72701.02		Date & Time Started: 2/21/00, 1350 2/22/00, 0935	
Drilling Company Nothnagle		Foreman Neal Short		Sampler(s) JAKE ELDER	
Drilling Equipment Hollow Stem Augers, NX Core		Method		Sampler Hammer 140 lb	
Bit Size(s) 9"		Core Barrel(s) 2' x 2"		Elevation & Datum Completion Depth 64.0'	
				Drop 30"	
				Rock Depth 50.2'	
				Geologist(s) JAKE ELDER	

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FTD/ PID (ppm)	Blow Counts		
0	LOCATION: S side of landfill Near Creek/Marshy Area.				SURFACE DESCRIPTION: Snow, Dead Brush	Could not get Rig to Proposed Location (off by 55 ft)
1	0.8	0.0		5/5	Brown Silt with some clay, sand	Moist
2	0.2			4/2	Pebbles (Rounded) / Grey Clay	Moist
3	N/A	0.3	N/A	4/2	Trash - Glass, paper, wood,	Moist
4				3/2	Plastic	Not Sampled - Low Recovery
5	0.4	0.5		3/2	Trash as above	Moist
6	0.3			3/2	Grey Clay	Moist
7	0.9	1.5		1/3	Grey Clay w/ some trash as above	Moist - wet
8	0.1			7/10	Trash as above	Moist - wet
9	N/A	0.1	N/A	9/3	Brown Gravelly Sand	Moist - wet
10				4/9	w/ Shale Fragments	Not Sampled
11	0.1			9/10	Red/Brown Silty Clay with	Wet
12		4.6		6/4	Sand - Strong Odor - Trash	Not Sampled
13	0.7	4.6		3/2	Grey - Sand w/ some Silt/	Wet
14				3/2	Trash	Sample Compacted
15	N/A	0.4	N/A	7/2	Grey Clay w/ Trash (Plastic,	Wet
16				2/3	Glass)	Not Sampled
17	0.0	1.5		3/3	Trash as above with grey	Wet
18				3/3	clay	
19	0.0	N/A		5/2	No Recovery	
20				1/4		



ERM, Inc.

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BORING LOG

Boring Number

NW-9D

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
1432	N/A	0.1	N/A	3/3	Trash Wood, Glass	Wet
				3/3		Not Sampled
1434	55 MW 1434 34'	1.2	4.0	3/3	0.3 Grey Clay, 0.3 Trash	Wet
				7/5	0.3 Grey Clay 0.3 Trash	
1444	N/A	0.0	N/A	3/3	No Recovery	Water in Split
				4/3		Spoon
1446		1.2	0.0	4/4	Brown/Red Organic Material	Wet
				5/6	intermixed w/ Trash	OM Maybe Peet M.
1454	N/A	0.0	N/A	2/2	No Recovery	Wet Water in
				3/2		Split Spoon
1459		1.0	0.0	3/3	Brown/Red Organic Matter	Moist
				4/5	Mixed w/ Plastic Bags	
1503		1.8	0.0	5/6	Same as above	Moist
				6/8		
1525		0.5	0.0	2/3	Brown/Red Organic Matter,	Moist
				3/4	Plastic	
1527		0.7	0.0	2/3	Brown/Red OM, No Plastic	Moist
				3/4	2" Grey Clay	Moist
1536		1.8	0.0	1/1	0.2 Brown/Red OM	Moist (Sample that contains 38')
				1/1	1.6 Grey Clay	Moist - wet
40						

Page 2 of 4

Signature: J.M. [Signature]

Date: 2/21/00



ERM, Inc.
175 Froehlich Farm Blvd., Woodbury, New York 11797
BORING LOG

Boring Number
MW-9D

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
40	N/A	0.0	N/A	1/1	No Recovery	No Sample
42		2.0	0.0	1/2	Grey Clay	Wet
44				7/10	Shale chips at near 44'	
46	N/A	0.3	0.0	12/15	Weathered Bedrock clay w/	Wet
48				16/17	Shale fragments	Not Sampled
50	N/A	0.3	0.0	5/7	Weathered Bedrock Clay w/	Erratic Quartz
52				7/9	Shale fragments	Cobble-Sub rounded
54		1.5	0.0	1/2	Medium-Coarse Sand w/	Wet
56		0.3	0.0	17/54	Some small shale chips/clay w/ shale chips	Wet
58		0.2	0.0	100/42"	Medium-Coarse Sand w/	Wet
60					Some clay and shale chips	Not Sampled
62		2.4'		N/A	Highly fractured Horizontally	Aug. Rate: 4'/15 min.
64					Some Vertical	Core Rn 54.3' - 60'
66					Fractures, Dip ~ 30°, Some Calcite veins	Aug. Rate: 6'/30 min.
68					(0.5cm),	
70					0.0 - 10' Fractured Horiz. (0.2-0.4)	
72					Dip 30°, Calcite Veins (0.5cm).	
74					10' - 1.2' Fracture Zone, Horiz; Vert.	
76					1.2' - 20' Fractured Horizontally (0.2-0.4)	



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175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-10

BORING LOG

Project Name & Location Mayer Landfill		Project Number 72701.02		Date & Time Started: 2/24/00 0935 2/24/00 141300	
Drilling Company Nothnagle		Foreman Neal Short		Date & Time Completed:	
Drilling Equipment Hollow Stem Augers, Air Rotary		Method		Sampler(s) JAKE ELDER	
Bit Size(s) 9" and 3 5/8"		Core Barrel(s) 2' x 2"		Sampler Hammer 140 lb	
				Drop 30"	
				Elevation & Datum	
				Completion Depth 54.5'	
				Rock Depth 53.0'	
				Geologist(s) JAKE ELDER	

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FTD/ PID (ppm)	Blow Counts		
0	LOCATION: East of MW-2, across from Creek				SURFACE DESCRIPTION: Snow, wet,	Very soft Topsoil
		0.8	1.8	1/4	Brown/Red Sandy Silt with OM	Wet
2		0.3		15/15	Grey Silt w/ Gravel - rounded - subangular	Moist
	N/A	N/A	N/A	2/8	No Recovery	
4				7/6		
		0.1	N/A	1/52	Little recover due to piece of	Wet
6				89/1	auto tire	
	↑	0.4	0.4	2/2	Grey Till as above	Moist
8	1/2	0.3		2/2	Black Silt w/ OM, Plastic	Moist
	6 1/2	0.8	0.0	4/14	Grey Till as above with some	Moist
10				22/18	intermixed Black Silt	
	SS-MW-10	1.4	0.0	2/19	Very Tight Till as above	Moist
12	SS-MW-10			22/19		
	N/A	0.0	N/A	100/2"	No Recovery / Boulder at 12.0'	Auger Refusal at 12.0'
14					Boulder cleared w/ AR then Augers	Switching to Air Rotary
		0.9	0.0	6/6	Grey Till (S.H w/ Subrounded to	Moist
16				23/24	Sub Angular Gravel, Trace Sand	Very Tight
		1.7	0.0	25/60	Till as above	Moist
18				100/6"		Very Tight
		1.5	0.0	18/36	Grey Silt w/ Angular - Sub rounded	Moist
20				43/61	Gravel / Shale chips, Trace Sand	Very Tight



ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

BORING LOG

Boring Number

MW-10

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/ PID (ppm)	Blow Counts		
1000 20		1.2	0.0	10/35	Grey Till as above	Moist
				52/55		Very Tight
22						
24						
1030 25		1.1	0.0	43/77	Grey Till (Silt w/ Cobbles)	Moist
26				100/6"	Pebble Size Gravel, Sub Ang-Sub R	Very Tight
27						
28						
30		1.2	0.0	30/70	Grey Till as above	Moist
32				100/6"		Very Tight
34						
1040 35		0.3	0.0	100/4"	Poor Recovery Due to lodged	Moist
1057 36	Not Sampled				Cobble - Grey Till as above	Very Tight
37						Switch to Air Rotary
38						
1135 39		0.3	0.0	100/6"	Poor Recovery Due to Large Gravel	Moist - Tight
40						



ERM, Inc.
175 Froehlich Farm Blvd., Woodbury, New York 11797
BORING LOG

Boring Number

MW-10

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
40						
41	Not Sampled				Pieces - Till as above	
42						
44						
44	0.2	0.0	100	6"	Till as above w/ shale fragments	Poor Recovery Due to
46					Abundant - Not Sampled	Shale Frag. Most fine
48						
49	0.3	0.0	47	60	Till as above	Poor Recovery Due to
50			100	6"	Not Sampled	Gravel
51						
52						
53					Fractured Bedrock at 53'	
54					Advanced to 54.5' to verify	Shale Bedrock
56						
58						
60						



ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-11

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BORING LOG

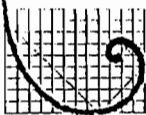
Project Name & Location Mayer Landfill		Project Number 72701.02		Date & Time Started: 3/2/00 0906, 3/2/00	
Drilling Company Nothnagle		Foreman Neal Short		Sampler(s) JAKE ELDER	
Drilling Equipment Hollow Stem Augers		Method Split Spoon		Sampler Hammer 140 lb	
Bit Size(s) 9" OD		Core Barrel(s) 2' x 2"		Elevation & Datum 19.5'	
				Completion Depth 19.5'	
				Geologist(s) JAKE ELDER	

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
0	LOCATION: West of Creek in between 9th and 10th St				SURFACE DESCRIPTION: Saturated, Grassy -	Rig stuck getting to bottom
0.9	6.4	4	8	Brown Sandy Clay with some Med. coarse	Wet	had to move west of original sp
2			7/8	Gravel		
1.1	6.7	3	4	Brown Med-Coarse Sand with	Wet	
			3/4	Clay and gravel		
0.0	NA	2	9	No Recovery	Poor Recovery due to	
			21/21		lodged gravel	
1.3	5.1	31	21	0.6 Brown Clayey Sand (Med-Coarse)	Wet	
			17/18	with Gravel 0.7 Brown SS fragments and Shale Fragments		
1.2	5.9	15	10	0.2 Shale fragment, 0.6 Brown	Wet to Moist	
			15/10	Clayey Sand (Med-C) w/ gravel 0.4 Red-Brown F-M Sand w/ Clay		
1.3	5.4	8	13	Brown Med-Coarse Sand with silt and	Moist-Wet	
			15/21	gravel 0.6 Brown Gravel as above		
1.8	4.7	41	50	1.0 Brown Sand as above	Moist-Wet	
			10/4"	0.8 Brown Sand as above w/ abundant	Shale Pieces (lodged)	
0.3	11.2	38	35	Shale Pieces with some Clayey	Poor Recovery due to	
			53/60	Silt	gravel in spoon	
2.0	10.3	62	100	Brown to Grey silt with abundant	Spoon may be filled w/ silt	
			100/4"	Shale pieces and chips - Moist-Wet	material from above (14-11)	
1.0	5.4	30	27	0.8 Med-Coarse angular Sand w/ clay	→ BK 0.8 Bedrock	
			24/51	0.8 clay w/ Med-Coarse Sand 0.8 weathered	Bedrock at 19.5'	

Page 1 of 1

Signature: J. M. Elder

Date: 3/2/00



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ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MW-12

BORING LOG

Project Name & Location Mayer Landfill		Project Number 72701.02	Date & Time Started: 3/1/00 0910
Drilling Company Nothnagle		Foreman Neal Short	Sampler(s) SAKE ELDER
Drilling Equipment Hollow Stem Augers CME Rig, truck mounted		Method	Sampler Hammer 140 lb
Bit Size(s) 9"		Core Barrel(s)	Drop 30"
		Elevation & Datum	Completion Depth 37.0'
		Geologist(s) SAKE ELDER	Rock Depth Not reached

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
Sample Number	Recovery (feet)	FID/ PID (ppm)	Blow Counts			
LOCATION: Deer Survey					SURFACE DESCRIPTION: Grassy, Moist, Silt	
0	Augers 18.0 25C					
	1.0	~~2.7~~	~~8~~ 30		0.5 Organic Matter with - Sandy	Moist
2		2.7	~~12~~ 13		Coarsely Silt 0.5 Sandy Gravelly Silt	→ ~~Brown~~ / Grey
	0.7	6.9	~~30~~ 20		0.4 shale Fragments with some	Moist
4			~~15~~ 15		Sandy Gravelly Silt 0.3 Shale	→ Grey
	1.2	8.0	~~7~~ 14		0.6 Silt as above Grey	Wet
6			~~7~~ 6		0.6 Silt as above Grey	Moist - Dry
	0.8	~~2.7~~	~~9~~ 4		Silt as above More Sand	Moist
8			~~5~~ 6		less gravel - ~~Silt~~ Grey	
	1.3	6.8	~~9~~ 5		Silt with Sand, Some gravel	Saturated
10			~~5~~ 8		Grey trace clay	
	0.8	7.0	~~7~~ 8		Silt as above	Saturated
12			~~14~~ 16		trace clay	
	2.0	5.0	~~17~~ 8		Silt as above with	Saturated
14			~~31~~ 21		Sand and gravel trace clay	
	1.0	9.1	~~23~~ 100		Silt with abundant Sand and	Moist No Cl
16					gravel/Rock Fragments (shale) Grey with	
	N/A	N/A	N/A		reddish oxidized Matting - Some Reddish S.	
18					No Sample due to Boulder at 16.0'	Boulder at 16.0'
20	1.5	5.2	~~22~~ 50		Brown Silt w/ Sand, Gravel, and	Moist - Dry
			~~100~~ 60		Shale Rock fragments	No Color

Page 1 of 1

Signature: *[Signature]*

Date: 3/1/00

ERM, Inc.



ERM, Inc.
175 Froehlich Farm Blvd., Woodbury, New York 11797
BORING LOG

Boring Number
MW-12

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/PID (ppm)	Blow Counts		
1018 20		1.6	13.6	27/54	Brown Silt with Sand, Gravel	Moist-Dry
				40/49	and Shale R&K Fragments	No Odor
22		1.0	5.3	59	0.7 Silt as above	Moist-Dry (Beaker at 23-23)
				100/6"	0.3 Grey Silt w/ Sand, Gr., RF trace clay	Moist-Dry
24		1.7	3.5	9/14	Grey Silt with Clay, Sand	Moist
				17/21	Gravel and RF (Shale) Same iron staining	No Odor
26		1.6	4.0	13/18	Grey Silt with Clay, Sand, Gravel	Moist
				23/28	Shale RF Same Iron Staining	No Odor
28		1.1	3.3	10/16	Grey Silt as above	Moist
				24/19		No Odor
30		0.6	1.1	30/29	Grey Silt as above	Moist
				29/31	Shale RF edged in spec	No Odor
32					No Sample	
34						
35		0.3	0.0	13/22	Silt as above with Abundant Shale	Moist-Dry, No Odor
36				26/25	RF	Poor Recovery Due to lodged G.
37						
38						
40						



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ERM, Inc.

175 Froehlich Farm Blvd., Woodbury, New York 11797

Boring Number

MRD-13

BORING LOG

Project Name & Location Mayer Landfill		Project Number 72701.02		Date & Time Started: 3/2/00, 1250		Date & Time Completed: 3/2/00 1415	
Drilling Company Nothnagle		Foreman Nial Shest		Sampler(s) JAKE ELDER		Sampler Hammer 14016	
Drilling Equipment Hollow Stem Augers		Method Split Spins		Elevation & Datum		Completion Depth 26.0'	
Bit Size(s) 9" OD		Core Barrel(s) 2' x 2"		Geologist(s) JAKE ELDER		Drop 34"	
						Rock Depth No Test	

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/ PID (ppm)	Blow Counts		
	LOCATION:				SURFACE DESCRIPTION:	
0		0.7	49	3/6	Brown Clay with Gravel	Moist
2				7/8	Organic matter to 0.4	
		1.0	3.5	5/6	Brown Clay with Trace	Moist
				8/8	Gravel, Some Silt and Sand	
4		0.2	2.6	16/	Brown Clay with Silt, Sand.	Wet to Moist
				100/0.2	Gravel	
6		0.4	11.4	16/20	Brown Clay with Some Sand	Moist + Wet
				20/20	and Gravel, Some Iron Staining	
8		1.0	6.2	8/14	Brown Clay as above	Moist to Wet
				18/20		
10		N/A	N/A		Boulder at 10.0' No	
					Sample	
12	SS-MW-13 13-14'	1.8	11.6	13/16	Brown Clay as above no sand	Moist
				21/23	with iron staining	Very Tight
14		0.8	9.5	17	Brown Clay as above. no	Moist
				100/6	Sand	Very Tight
16		1.6	12.2	25/31	↑	
		~~1.0~~		30/36	Brown Clay w/ Silt Sand and Gravel	Moist
18		1.0	12.0	20/22	According to Core Log with Silt and Gravel	Very Tight
				20/25	Gray Silt as above	Moist - Very Tight



ERM, Inc.

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BORING LOG

Boring Number

MW-13

DEPTH (ft below grade)	SAMPLES				SOIL DESCRIPTION	REMARKS
	Sample Number	Recovery (feet)	FID/ PID (ppm)	Blow Counts		
1352 20		0.3	10.6	19/22	Grey Silt w/ fine Sand	Moist
				23/23	Some gravel	Very Tight
1400 22		1.5	8.6	21/21	Grey Silt w/ fine Sand and	Moist
				24/25	Gravel	Very Tight
1412 24		1.6	7.9	5/8	Grey Silt w/ fine Sand and	Moist
				14/10	Gravel	Very Tight
26						
28						
30						
32						
34						
36						
38						
40						

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WELL: MW-41D

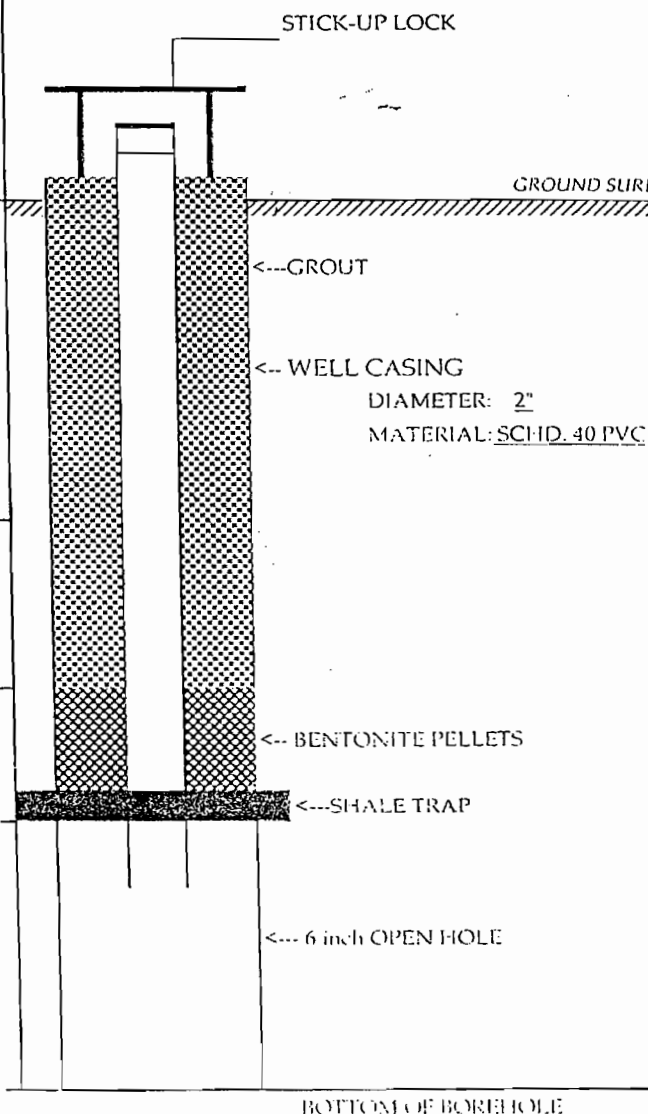
175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location	Project No.	Water Level(s)			Site Elevation Datum
MAYER LANDFILL	72701.02.01	(ft below top of PVC casing)			
Drilling Company	Foreman	Date	Time	Level (feet)	Ground Elevation
NOTHNAGLE	NEAL SHORT				626.07
Surveyor		02/17/00			Top of Protective Steel Cap Elevation
Y.E.C.					629.59
Date and Time of Completion	Geologist				Top of Riser Pipe Elevation
02/17/2000	JAKE ELDER			28.14	629.59

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth	
	629.59		
	629.59		
	626.07	0.0	
TILL			
	567.07	59.0	
WEATHERED BEDROCK			
	564.07	62.0	
	561.57	64.5	
SHALE BEDROCK			
	516.57	79.5	



REMARKS

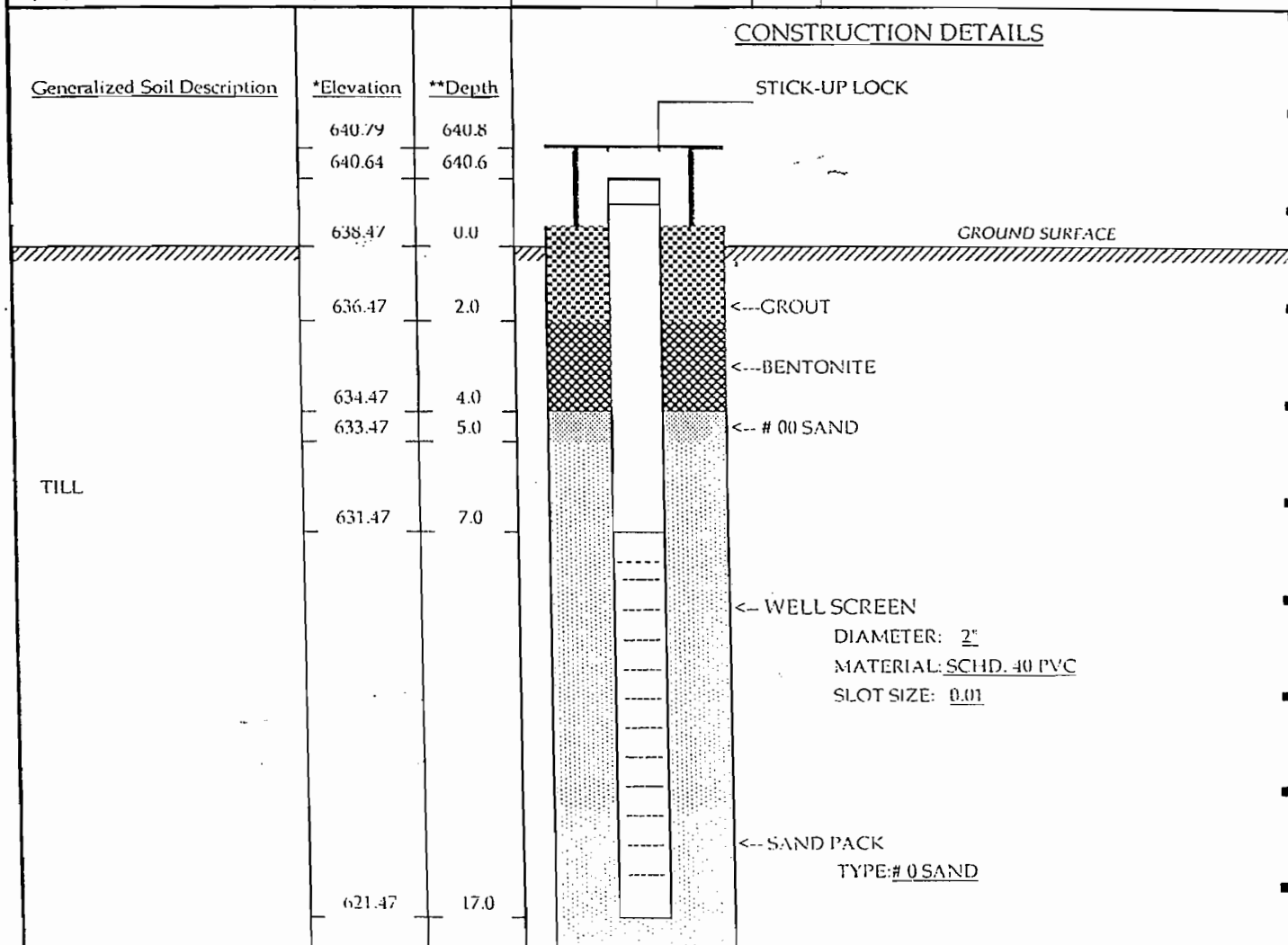
DTW 28.14 FROM TOP OF 1" FLUSH JOINT CASING

* Elevation (feet) above mean sea level unless noted ** Depth (feet) below grade

WELL: MW-6

175 Froehlich Farm Blvd., Woodbury, NY 11797

Project Name & Location	Project No.	Water Level(s)			Site Elevation Datum
Mayer Landfill	72701.02.01	(ft below top of PVC casing)			
Drilling Company	Foreman			Level	Ground Elevation
NOTHNAGLE	NEAL SHORT	Date	Time	(feet)	638.47
Surveyor		2/11/00	-		Top of Protective Steel Cap Elevation
Y.E.C.					640.79
Date and Time of Completion	Geologist				Top of Riser Pipe Elevation
02/11/2000	JAKE ELDER				640.64



REMARKS

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

ERM

WELL : MW-7

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location		Project No.		Water Level(s)		Site Elevation Datum	
Mayer Landfill		72701.02.01		(ft below top of PVC casing)			
Drilling Company		Foreman		Date	Time	Level (feet)	Ground Elevation
NOTHNAGLE		NEAL SHORT					590.35
Surveyor				02/29/2000		0.20	Top of Protective Steel Cap Elevation
Y.E.C.							592.5
Date and Time of Completion		Geologist					Top of Riser Pipe Elevation
02/29/2000		JAKE ELDER					592.37

CONSTRUCTION DETAILS		
Generalized Soil Description	*Elevation	**Depth
	592.50	
	592.37	
	590.35	0.0
GREY CLAY WITH I SAND AND GRAVEL	588.35	2.0
	587.35	3.0
	586.85	3.5
M-C SAND		
GREY CLAY WITH GRAVEL	585.85	4.5
M-C SAND		
GREY CLAY WITH GRAVEL		
MIXED FINE-MED COARSE SAND STIRRINGS INTERBEDDED WITH I CLAY LENSES		
WEATHERED SHALE	575.85	14.5
SHALE BEDROCK		

STICK-UP LOCK

GROUND SURFACE

-- GROUT

-- BENTONITE

-- # 00 SAND

-- WELL SCREEN
DIAMETER: 2"
MATERIAL: SCHD. 40 PVC
SLOT SIZE: 0.01

-- SAND PACK
TYPE: # 0 SAND

BOTTOM OF BOREHOLE

REMARKS

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

ERM

175 Froehlich Farm Blvd., Woodbury, NY 11797

WELL: MW-7D

MONITORING WELL CONSTRUCTION

Project Name & Location Mayer Landfill		Project No. 72701.02.01		Water Level(s) (ft below top of PVC casing)		Site Elevation Datum	
Drilling Company NOTHNAGLE		Foreman NEAL SHORT		Date	Time	Level (feet)	Ground Elevation 590.11
Surveyor Y.E.C.							Top of Protective Steel Cap Elevation 592.39
Date and Time of Completion 02/29/2000		Geologist JAKE ELDER					Top of Riser Pipe Elevation 592.33

Generalized Soil Description	*Elevation	**Depth	CONSTRUCTION DETAILS	
	592.39		STICK-UP LOCK GROUND SURFACE ← GROUT ← WELL CASING DIAMETER: 2" MATERIAL: <u>SCHD. 40 PVC</u> ← BENTONITE PELLETS ← SHALE TRAP ← 6 inch OPEN HOLE BOTTOM OF BOREHOLE	
	592.33			
	590.11	0.0		
GREY CLAY WITH SAND AND GRAVEL				
M-C ANGULAR SAND				
GREY CLAY WITH SAND AND GRAVEL				
	577.81	12.3		
ANGULAR SAND (FIRE-COARSE) WITH CLAY				
CLAY WITH SHALE RF	575.41	14.7		
SHALE BEDROCK	570.41	19.7		
	560.61	29.5		

REMARKS

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

ERM

WELL : MW-8

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location Mayer Landfill		Project No. 72701.02.01		Water Level(s) (ft below top of PVC casing)		Site Elevation Datum	
Drilling Company NOTHNAGLE		Foreman NEAL SHORT		Date	Time	Level (feet)	Ground Elevation 623.74
Surveyor Y.E.C.						DTW 8.15	Top of Protective Steel Cap Elevation 625.84
Date and Time of Completion 02/17/2000		Geologist JAKE ELDER					Top of Riser Pipe Elevation 626.00

Generalized Soil Description	*Elevation	**Depth	CONSTRUCTION DETAILS	
FILL	625.84			STICK-UP LOCK GROUND SURFACE
	626.00			
	623.74	0.0		
CLAY-SILT WITH GRAVEL AND RF CEMENT				
RUBBISH PLASTIC, WOOD GLASS, SILT SAND/SOIL	617.24	6.5		
	615.20	8.5		
	614.24	9.5		
	612.24	11.5		
	602.24	21.5		
			BOTTOM OF BOREHOLE	

REMARKS

* Elevation (feet) above or below sea level unless noted ** Depth in feet below grade

ERM

WELL: MW-9

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location Mayer Landfill		Project No. 72701.02.01		Water Level(s) (ft below top of PVC casing)		Site Elevation Datum	
Drilling Company NOTHNAGLE		Foreman NEAL SHORT		Date	Time	Level (feet)	Ground Elevation 609.94
Surveyor Y.E.C.							Top of Protective Steel Cap Elevation 612.31
Date and Time of Completion 02/23/2000		Geologist JAKE ELDER		02/23/2000		10.82	Top of Riser Pipe Elevation 612.30

Generalized Soil Description	*Elevation	**Depth	CONSTRUCTION DETAILS	
TOP SOIL	612.31 612.30		STICK-UP LOCK	
	609.94	0.0	GROUND SURFACE	
TRASH				
BROWN/RED ORGANIC MATER	578.44 573.94 571.94	31.5 36.0 38.0	<-- BENTONITE PELLETS <-- # 00 SAND	
GREY CLAY	569.74	40.2	<-- WELL SCREEN DIAMETER: 2" MATERIAL: SCHD. 40 PVC SLOT SIZE: 0.01	
WEATHERED BEDROCK				
SHALE BEDROCK				
MED-COARSE SAND LENSE			<-- SAND PACK TYPE: # 0 SAND	
	559.74	50.2	BOTTOM OF BOREHOLE	

REMARKS

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

ERM

WELL: MW-91D

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location Mayer Landfill		Project No. 72701.02.01		Water Level(s) (ft below top of PVC casing)		Site Elevation Datum	
Drilling Company NOTHNAGLE		Foreman NEAL SHORT		Date 02/23/2000	Time	Level (feet) 10.06	Ground Elevation 610.08
Surveyor Y.E.C.							Top of Protective Steel Cap Elevation 612.49
Date and Time of Completion 02/22/2000		Geologist JAKE ELDER					Top of Riser Pipe Elevation 612.36

CONSTRUCTION DETAILS		
Generalized Soil Description	*Elevation	**Depth
	612.49	
	612.36	
	610.08	0.0
TRASH		
BROWN/RED ORGANIC MATER		
GREY CLAY	562.08	48.0
WEATHERED BEDROCK		
SAND LENSE	559.88	50.2
SHALE BEDROCK	554.88	55.2
	545.88	64.2

STICK-UP LOCK

GROUND SURFACE

GROUT

WELL CASING
DIAMETER: 2"
MATERIAL: SCHD. 40 PVC

BENTONITE PELLETS

SHALE TRAP

6 inch OPEN HOLE

BOTTOM OF BOREHOLE

REMARKS

* Elevation in feet above mean sea level unless noted ** Depth in feet below grade

ERM

WELL : MW-10

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location Mayer Landfill		Project No. 72701.02.01		Water Level(s) (ft below top of PVC casing)		Site Elevation Datum	
Drilling Company NOTHNAGLE		Foreman NEAL SHORT		Date	Time	Level (feet)	Ground Elevation 602.04
Surveyor Y.E.C.				02/29/2000			Top of Protective Steel Cap Elevation 603.8
Date and Time of Completion 02/24/2000		Geologist JAKE ELDER					

Generalized Soil Description	*Elevation	**Depth	CONSTRUCTION DETAILS	
	603.80*		STICK-UP LOCK	
	603.61			
	602.04	0.0	GROUND SURFACE	
	600.04	2.0	← GROUT	
	598.04	4.0	← BENTONITE	
	597.04	5.0	← # 00 SAND	
	596.04	6.0	← WELL SCREEN DIAMETER: <u>2"</u> MATERIAL: <u>SCHD. 40 PVC</u> SLOT SIZE: <u>0.01</u>	
			← SAND PACK TYPE: <u># 0 SAND</u>	
	586.04	16.0	BOTTOM OF BOREHOLE	
REMARKS				

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

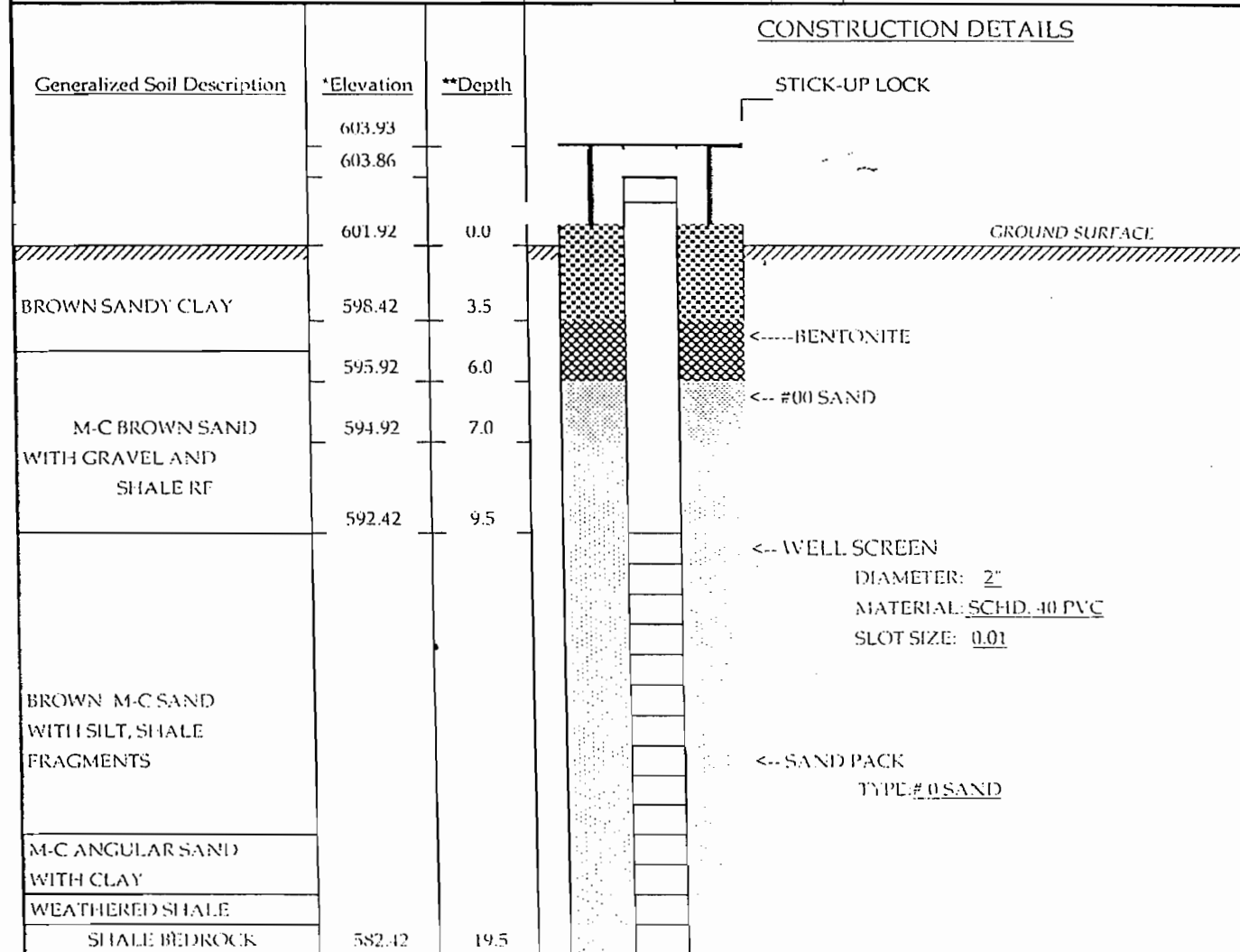
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WELL: MW-11

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location Mayer Landfill	Project No. 72701.02.01	Water Level(s) (ft below top of PVC casing)			Site Elevation Datum
Drilling Company NOTHNAGLE	Foreman NEAL SHORT	Date	Time	Level (feet)	Ground Elevation 601.92
Surveyor Y.E.C.					Top of Protective Steel Cap Elevation 603.93
Date and Time of Completion 03/02/2000	Geologist JAKE ELDER	03/02/2000		2.65	Top of Riser Pipe Elevation 603.86



REMARKS

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

ERM

WELL: MW-12

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location Mayer Landfill		Project No. 72701.02.01		Water Level(s) (ft below top of PVC casing)		Site Elevation Datum	
Drilling Company NOTHNAGLE		Foreman NEAL SHORT		Date	Time	Level (feet)	Ground Elevation
Surveyor Y.E.C.							633.45
Date and Time of Completion 03/01/2000		Geologist JAKE ELDER		03/01/2000		15.39	Top of Protective Steel Cap Elevation 635.88
							Top of Riser Pipe Elevation 635.88

Generalized Soil Description	*Elevation	**Depth	CONSTRUCTION DETAILS	
TOP SOIL	635.88			
	635.88			
	633.45	0.0		
SILT WITH SAND AND GRAVEL	630.95	2.5		<-- GROUT
	628.45	5.0		<-- BENTONITE
	626.45	7.0		<-- #00 SAND
	625.45	8.0		<-- WELL SCREEN DIAMETER: 2" MATERIAL: SCHED. 40 PVC SLOT SIZE: 0.01
				<-- SAND PACK TYPE: # 0 SAND
SATURATED SILT WITH SAND AND GRAVEL	615.45	18.0		
	614.95	18.5		
				BOTTOM OF BOREHOLE
REMARKS				

* Elevation in feet above or below mean sea level unless noted ** Depth in feet below grade

ERM

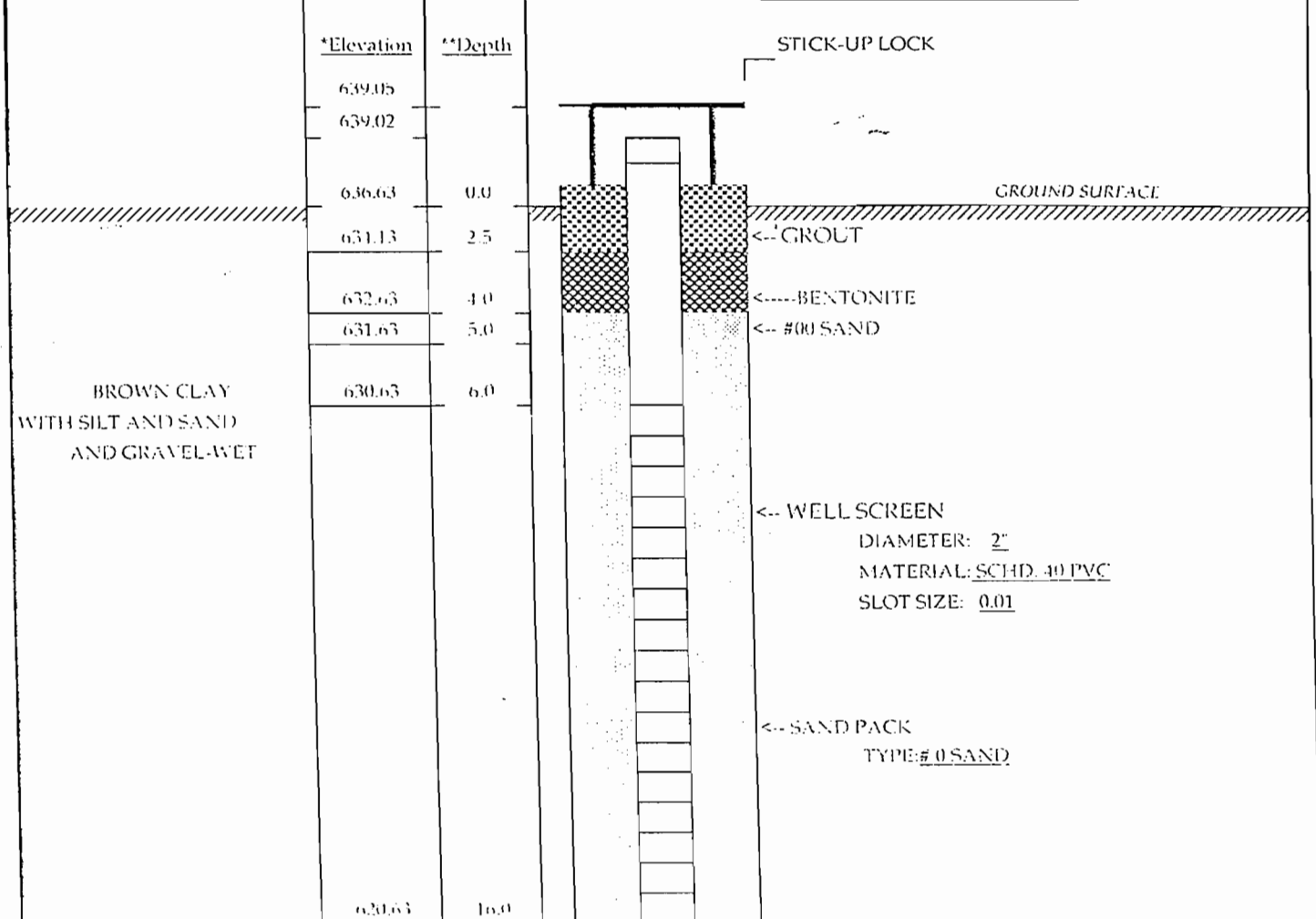
WELL: MW-13

175 Froehlich Farm Blvd., Woodbury, NY 11797

MONITORING WELL CONSTRUCTION

Project Name & Location	Project No.	Water Level(s)			Site Elevation Datum
Mayer Landfill	72701.02.01	(ft below top of PVC casing)			
Drilling Company	Foreman	Date	Time	Level (feet)	Ground Elevation
NOTHNAGLE	NEAL SHORT				636.63
Surveyor					Top of Protective Steel Cap Elevation
Y.E.C.					639.05
Date and Time of Completion	Geologist	03/02/2000		12:29	Top of Riser Pipe Elevation
03/02/2000	JAKE ELDER				639.02

CONSTRUCTION DETAILS



REMARKS

GREY SILT WITH SAND AND GRAVEL, VERY TIGHT.

* Elevation from mean sea level unless noted ** Depth in feet below grade

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-01
Date Completed: 09/12/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

Page 1

Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	3,10	ND	0.0-1.0	SILT and SAND. Orange to tan, fine grained, with fine to coarse gravel, dry, no staining, no odor.
NC	25,19	ND	1.0-2.0	Unconsolidated Fill Material. Blue-gray shale fragments with little fine grained sand silt, hard-packed, dry, no staining, no odor.
NC	8,6,5	ND	2.0-3.5	SILT. Gray to orange, with little fine grained sand and fine to medium gravel, hard-packed, dry, no staining, no odor.
NC	8	ND	3.5-4.0	SILT. Emerald green, with little fine grained sand and fine to medium gravel, with trace clay, slightly moist, no odor.
NC	4,4,4,4	ND	4.0-6.0	CLAY, SILT, and SAND. Emerald green, fine grained, with little fine to medium angular gravel, moist, cohesive, musty odor.
NC	4,4,3,4	NC	6.0-8.0	No recovery.
NC	woh,2,3,4	<8	8.0-10.0	CLAY, SILT, and SAND. Emerald green, fine grained, with little fine to medium angular gravel, moist, cohesive, slight petroleum odor present.
NC	3,2,2,2	NC	10.0-12.0	No recovery.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-01
Date Completed: 09/12/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

Page 2

Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	1,2,1,1	ND	12.0-14.0	CLAY, SILT, and SAND. Emerald green, fine grained, with little fine to medium angular gravel, with trash (white plastic chips), wet, cohesive, very slight odor.
NC	4,8,8,3	ND	14.0-16.0	SAND and SILT. Dark gray-green, fine grained, with trash (newspaper, etc), wet to saturated, slight garbage odor.
NC	2,3,4,8	ND	16.0-18.0	SAND and SILT. Olive-green and gray, fine grained, with trace clay, wet to saturated, with trash, garbage odor present.
NC	2,2,5,3	ND	18.0-20.0	SAND and SILT. Olive-green and gray, fine grained, with little to some clay, wet to saturated, with trash (garbage odor present.)

NC: Not Collected.

ND: Not Detected.

b.g.s.: Below Ground Surface.

woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-02
Date Completed: 09/12/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

Page 1

Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	3,10	ND	0.0-1.0	SILT and SAND. Orange to tan, fine grained, with fine to coarse gravel, dry, no staining, slight musty garbage odor.
NC	25,19	ND	1.0-2.0	Unconsolidated Fill Material. Blue-gray shale fragments with little fine grained sand silt, hard-packed, dry, no staining, no odor.
NC	8,6,5	ND	2.0-3.5	SILT. Gray to orange, with little fine grained sand and fine to medium gravel, hard-packed, dry, no staining, no odor.
NC	8	ND	3.5-4.0	SILT. Emerald green, with little fine grained sand and fine to medium gravel, with trace clay, slightly moist, no odor.
NC	NC	NC	4.0-6.0	No recovery.
NC	NC	NC	6.0-8.0	No recovery.
NC	woh,woh,2,7	<102	8.0-10.0	CLAY, SILT, and SAND. Emerald green, fine grained, with little fine to medium angular gravel, wet, cohesive, brown-red free-phase material present, strong petroleum odor.
NC	10,10,8,6	<221	10.0-12.0	SILT and SAND. Brown to gray, fine grained, with fine to medium gravel, with heavy black staining and strong petroleum odor (black material is sticky/ tarry and is bound up in soil matrix.)

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-02
Date Completed: 09/12/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki
Page 2

Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	4,3,3,4	NC	12.0-14.0	No recovery. Split spoon has petroleum odor.
NC	2,2,3,4	NC	14.0-16.0	No recovery. Spoon is wet.
NC	2,21,100,7,3	ND	16.0-18.5	SILT and SAND. Olive-green to gray, fine grained, with trace clay, trash present through out interval, saturated, musty odor.
NC	3	ND	18.5-19.0	SAND and SILT. Gray, fine grained, with trace coarse gravel, saturated, no apparent staining, musty odor.
NC	3,4	ND	19.0-20.0	SAND and SILT. Orange-brown, fine grained, with trace coarse gravel, saturated, no apparent staining, garbage odor.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
wh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-03
Date Completed: 09/12/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	3,7,9,12	ND	0.0-2.0	SAND, SILT, and GRAVEL. Tan to light brown, sand is fine grained, gravel is fine to coarse, with sandstone fragments, loose, dry, no staining, no odor.
NC	6,5	ND	2.0-3.0	SAND, SILT, and GRAVEL. Tan to light brown, sand is fine grained, gravel is fine to coarse, with sandstone fragments, loose, dry, no staining, no odor.
NC	6,7	ND	3.0-4.0	SAND, SILT, and GRAVEL. Gray to black, gravel is shale fragments, slightly moist, very slight petroleum odor, trash at bottom of interval.
NC	4,5,7,6	ND	4.0-6.0	SILT. Emerald green, with little fine grained sand and fine to medium gravel, with trace clay, slightly moist, no odor.
NC	2,3,3,3	169/60	6.0-8.0	SAND and SILT. Olive-green, fine grained, with trace clay, slightly moist, heavy black staining (black material is bound up in soil matrix), strong petroleum odor.
NC	woh,woh,3,3	<624	8.0-10.0	SAND and SILT. Olive-green, fine grained, with trace clay, slightly moist, very heavy black staining (black material is bound up in soil matrix), strong petroleum odor (driveway sealer.)
NC	NC	<772	10.0-12.0	SAND and SILT. Tan to light brown, fine grained, with trace clay, dry, very heavy black staining (black material is bound up and stringy), strong petroleum odor (driveway sealer.)

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-03
Date Completed: 09/12/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	NC	<178	12.0-14.0	SAND and SILT. Olive-green, fine grained, with trace clay, slightly moist, heavy black staining (black material is bound up in soil matrix), strong petroleum odor.
NC	2,2,4,5	<275	14.0-16.0	SAND and SILT. Olive-green, fine grained, with trace clay, wet to saturated, with intermittent black staining within soil matrix, trash present from 15.0 to 16.0 ft b.g.s. (paper and cardboard).
NC	2,3,8,10	<5	16.0-18.0	TRASH (paper and plastic). Wet to saturated, no staining, slight odor.
NC	4,4,5,5	ND	18.0-20.0	TRASH (glass and plastic). Wet to saturated, no staining, slight landfill odor.

NC: Not Collected.

ND: Not Detected.

b.g.s.: Below Ground Surface.

woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
 Project: Supplemental Remedial Investigation
 Client: NYSDEC
 Location: Blooming Grove, NY

Boring Location: TB-04
 Date Completed: 09/12/2001
 Borehole Diameter: 8"
 Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
 Driller: Neal Short
 Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	5,8,10,5	ND	0.0-2.0	SAND. Tan/buff, fine grained, with sandstone fragments, dry, loose, no staining, no odor.
NC	5,5	ND	2.0-3.0	SAND. Tan/buff, fine grained, with sandstone fragments, dry, loose, no staining, no odor.
NC	4,6	ND	3.0-4.0	TRASH (rubber and plastic). No apparent staining, no odor.
NC	3,3,2,2	NC	4.0-6.0	No recovery.
NC	4,4,7,8	ND	6.0-8.0	SILT and SAND. Tan and gray-green, fine grained, with trace gravel, blue-gray coloration at end of interval, no odor.
NC	3,6,5,3	262/31	8.0-10.0	SILT and SAND. Gray-green to silvery-gray, fine grained, very moist, sticky/cohesive, strong odor.
NC	2,2,2,4	NC	10.0-12.0	No recovery.
NC	3,4,6,10	<348	12.0-14.0	SILT and SAND. Black-brown and dark olive-green, fine grained, with glass fragments, moist to wet, black staining intermittent through out (material is sticky and bound up in soil matrix), strong petroleum odor.
NC	3,7,3,8	NC	14.0-16.0	No recovery. Wood chips and free phase material at end of interval.

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-04
Date Completed: 09/12/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
16.0-18.0	NC	NC	16.0-18.0	No recovery. Spoon completely covered with free-phase material, with trace trash at end of interval.
NC	3,7,3,8	NC	18.0-20.0	No recovery. Wood chips and garbage at end of interval.

NC: Not Collected.

ND: Not Detected.

b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-05
Date Completed: 09/13/2001
Borehole Diameter: 8"
Total Depth: 22 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

Page 1

Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	10,26,38,28	NC	0.0-2.0	SILT. Brown and gray, with little fine grained sand, with fine to coarse shale fragments through out, very hard-packed, dry, no staining, no odor.
NC	18,18,16,11	<2.5	2.0-4.0	SILT. Brown and gray, with little fine grained sand, with fine to coarse shale fragments through out, very hard-packed, dry, no staining, no odor, PID <2.5 ppm from 3.5 to 4.0 ft b.g.s.
NC	2,2,7,7	ND	4.0-6.0	SILT and SAND. Emerald green, fine grained, moist, very slight petroleum odor.
NC	5,4,2,2	<436	6.0-8.0	SILT and SAND. Emerald green, fine grained, moist, with residual material (brown to red-brown) present, strong petroleum odor.
NC	4,4,4,5	<65	8.0-10.0	SILT and SAND. Emerald green, fine grained, wood chips at bottom of interval, very moist to wet, with residual material (brown to red-brown) present, strong petroleum odor.
NC	3,2,3,2	NC	10.0-12.0	Very little recovery. Trash at bottom of interval, wet.
NC	3,2,2,4	<65	12.0-14.0	TRASH (wood and white plastic chips). Free-phase material through out, wet, strong petroleum odor.
NC	woh,2,8,11	<3	14.0-16.0	TRASH (wood, metal, styrofoam). With sandstone fragments, saturated,

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-05
Date Completed: 09/13/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	3,2,3,woh	<1	16.0-18.0	very slight garbage odor. TRASH, SILT, and SAND. Olive-green, fine grained, with trace clay, shale fragments present, saturated, no significant odor.
NC	8,3,2,3	<1	18.0-20.0	SILT and SAND. Dark olive-green, fine grained, with trace clay and coarse angular gravel, saturated (somewhat viscous consistency), no significant odor.
NC	7,12,18,20	ND	20.0-22.0	TILL (sand, silt, and gravel). Dark olive-green, sand is fine grained, gravel is fine to coarse, with trace clay, very hard-packed (tight), moist, no significant odor.

NC: Not Collected.

ND: Not Detected.

b.g.s.: Below Ground Surface.

woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
 Project: Supplemental Remedial Investigation
 Client: NYSDEC
 Location: Blooming Grove, NY

Boring Location: TB-06
 Date Completed: 09/13/2001
 Borehole Diameter: 8"
 Total Depth: 16 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
 Driller: Neal Short
 Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	16,32,33,34	ND	0.0-2.0	SHALE FRAGMENTS. Blue-gray, with little silt, loose, hard-packed, dry, no staining, no odor.
NC	23,17,15,13	ND	2.0-4.0	SILT, SAND, and SHALE FRAGMENTS. Rust-orange to gray to olive-green, slightly moist at bottom of interval, no apparent staining, no odor.
NC	2,3,3,4	ND	4.0-6.0	SILT, SAND, and SHALE FRAGMENTS. Teal to olive-green to emerald green, sand is very fine grained, fragments are fine to coarse, with trace clay, moist to very moist, cohesive, no apparent staining, no odor.
NC	3,3,2,2	ND	6.0-8.0	SILT, SAND, and SHALE FRAGMENTS. Teal to olive-green to emerald green, sand is very fine grained, fragments are fine to coarse, with trace clay, moist to very moist, cohesive, no apparent staining, no odor.
NC	woh,woh	ND	8.0-9.0	SILT, SAND, and SHALE FRAGMENTS. Teal to olive-green to emerald green, sand is very fine grained, fragments are fine to coarse, with trace clay, moist to very moist, cohesive, no apparent staining, no odor.
NC	woh,5	<2	9.0-10.0	TRASH (plastic bags and paper). Moist, very slight petroleum odor.
NC	100/2	<4	10.0-12.0	TRASH. Shale fragment at bottom of interval, moist to wet, no staining, no odor.

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.
 woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-06
Date Completed: 09/13/2001
Borehole Diameter: 8"
Total Depth: 16 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	1	ND	12.0-12.5	SILT and SAND. Dark green, with gravel and some trash, saturated, no odor.
NC	3,100/0.2	ND	12.5-13.0	SHALE FRAGMENTS. No staining, no odor.
NC	26,8,9,11	ND	14.0-16.0	SILT and SAND. Dark green, fine grained, with trace clay, saturated, slightly cohesive, slight garbage odor.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-07
Date Completed: 09/13/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	16,32,33,34	ND	0.0-2.0	SHALE FRAGMENTS. Blue-gray, with little silt, loose, hard-packed, dry, no staining, no odor.
NC	23,17,15,13	ND	2.0-4.0	SILT, SAND, and SHALE FRAGMENTS. Rust-orange to gray to olive-green, slightly moist at bottom of interval, no apparent staining, no odor.
NC	2,3,3,4	ND	4.0-6.0	SILT, SAND, and SHALE FRAGMENTS. Teal to olive-green to emerald green, sand is very fine grained, fragments are fine to coarse, with trace clay, moist to very moist, cohesive, no apparent staining, no odor.
NC	3,3,2,2	ND	6.0-8.0	SILT, SAND, and SHALE FRAGMENTS. Teal to olive-green to emerald green, sand is very fine grained, fragments are fine to coarse, with trace clay, moist to very moist, cohesive, no apparent staining, no odor.
NC	3,3	ND	8.0-9.0	SILT, SAND, and SHALE FRAGMENTS. Teal to olive-green to emerald green, sand is very fine grained, fragments are fine to coarse, with trace clay, moist to very moist, cohesive, no apparent staining, no odor.
NC	3,4	ND	9.0-10.0	TRASH (plastic bags and paper). Moist, very slight petroleum odor.
NC	3,100/0.5	<5	10.0-10.5	TRASH. Shale fragment at bottom of interval, moist to wet, no staining, slight petroleum odor.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-07
Date Completed: 09/13/2001
Borehole Diameter: 8"
Total Depth: 20 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	8,5,3,8	ND	12.0-14.0	No recovery.
NC	7,6,5,4	<1	14.0-16.0	SILT and SAND. Dark olive-green, fine grained, with trace clay and coarse angular gravel, saturated (somewhat viscous consistency), no significant odor.
NC	8,8,16,24	ND	16.0-18.0	TILL (sand, silt, and gravel). Dark olive-green, sand is fine grained, gravel is fine to coarse, with trace clay, very hard-packed (tight), moist, no significant odor.
NC	NC	NC	18.0-20.0	TILL (sand, silt, and gravel). Dark olive-green, sand is fine grained, gravel is fine to coarse, with trace clay, very hard-packed (tight), moist, no significant odor.

NC: Not Collected.

ND: Not Detected.

b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-08
Date Completed: 09/13/2001
Borehole Diameter: 8"
Total Depth: 16 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

Page 1

Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	3	ND	0.0-0.5	SILT, SAND, and GRAVEL. Orange-brown, sand is very fine grained, gravel is fine to coarse, loose, dry, no staining, no odor.
NC	24,25,30	ND	0.5-2.0	SHALE FRAGMENTS. Gray, dry, no staining, no odor.
NC	15,11,8,8	ND	2.0-4.0	SILT. Gray to orange, with little fine grained sand and fine to medium gravel, hard-packed, dry, no staining, no odor.
NC	2,2,3,3	ND	4.0-6.0	No recovery.
NC	4,4	ND	6.0-7.0	SILT and SAND. Teal and brown, fine grained, dry to slightly moist, no staining, no odor.
NC	44,45	<374	7.0-8.0	SILT and SAND. Teal and brown, fine grained, moist, sticky/cohesive, black staining intermittent through out, residual material is bound up in soil matrix, strong petroleum odor; very coarse quartzite cobble at bottom of interval.
NC	2,2,4,6	<357	8.0-10.0	SILT and SAND. Dark olive-green and black, moist to very moist, residual material is bound up in soil matrix, sticky/cohesive, strong petroleum odor.
NC	2,2	<261	10.0-11.0	SILT and SAND. Dark olive-green and black, moist to very moist, residual material is bound up in soil matrix, sticky/cohesive, strong petroleum odor.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-08
Date Completed: 09/13/2001
Borehole Diameter: 8"
Total Depth: 16 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	4,4	<5	11.0-12.0	SILT and SAND. Olive-green to yellow-brown, fine grained, with trash at bottom of interval (white plastic chips), wet, cohesive, petroleum/garbage odor present.
NC	7,7,11,11	<15	12.0-14.0	TRASH (white plastic chips). Saturated, petroleum/garbage odor present.
NC	5,8,8,100/0.3	ND	14.0-16.0	TRASH (rubber, paper, plastic). Saturated, garbage odor.
NC	100/0	NC	16.0-18.0	No recovery.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
 Project: Supplemental Remedial Investigation
 Client: NYSDEC
 Location: Blooming Grove, NY

Boring Location: TB-9
 Date Completed: 09/18/2001
 Borehole Diameter: 8"
 Total Depth: 26 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
 Driller: Neal Short
 Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	5,5,12,12	ND	0.0-2.0	SILT, SAND, and GRAVEL. Tan, sand is fine grained, loose, with root material at top of interval, dry, no staining, no odor.
NC	8,4	ND	2.0-3.0	SILT, SAND, and GRAVEL. Tan, sand is fine grained, loose, with root material at top of interval, dry, no staining, no odor.
NC	8,8	<3.5	3.0-4.0	SHALE FRAGMENTS. Blue-gray, with fine grained sand, silt, and trash, sticky, slightly cohesive, slight petroleum odor.
NC	3,4,8,10	<9	4.0-6.0	SILT. Olive-green, brown, and metallic silver, with fine grained sand, hard-packed, friable, slightly moist, no staining, with trace petroleum odor.
NC	8,5,3,4	<12	6.0-8.0	SILT and SAND. Green-gray, fine grained, with trace clay, moist, cohesive, somewhat sticky at bottom of interval, petroleum odor.
NC	woh,woh,2,3	NC	8.0-10.0	Very little recovery. Trash, sand, and silt at bottom of spoon, strong odor.
NC	woh,woh,3,12	<280	10.0-12.0	SILT and SAND. Black, with free-phase material through out interval, sticky/tarry, strong asphalt sealer odor.
NC	19,19,20,11	<430	12.0-14.0	SILT and SAND. Olive-green; with black, tarry material at bottom of interval, moist, sticky, very strong odor.

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.
 woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-09
Date Completed: 09/18/2001
Borehole Diameter: 8"
Total Depth: 26 ft b.g.s

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	3,3,2,2	<450	14.0-16.0	SILT and SAND. Olive-green, with trash at bottom of interval, moist to wet, sticky, petroleum and garbage odor.
NC	2,2,7,7	<8	16.0-18.0	SILT and SAND. Olive-green, with trash (glass and wire) present, saturated, no apparent staining, strong garbage odor.
NC	2,10,12,12	<25	18.0-20.0	SILT and SAND. Olive-green, with trash (glass, paper, and wire) present, saturated, no apparent staining, strong garbage odor.
NC	15,9,17,5	<10	20.0-22.0	TRASH (plastic). Saturated.
NC	2,2,3,4	<10	22.0-24.0	SILT and SAND. Dark gray-green, with trash (black stained wood chips, metal, white plastic chips) through out, sticky/ cohesive, saturated, petroleum and garbage odor.
NC	4	ND	24.0-24.5	TRASH.
NC	16,16,8	ND	24.5-26.0	SILT and SAND. Gray-green, fine grained, with fine to coarse shale fragments (blue-gray), hard-packed, wet to saturated, no apparent staining, slight petroleum odor.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
 Project: Supplemental Remedial Investigation
 Client: NYSDEC
 Location: Blooming Grove, NY

Boring Location: TB-10
 Date Completed: 09/18/2001
 Borehole Diameter: 8"
 Total Depth: 26 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
 Driller: Neal Short
 Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	4,11,7,3	ND	0.0-2.0	SILT, SAND, and GRAVEL. Tan, sand is fine grained, loose, with root material at top of interval, dry, no staining, no odor.
NC	2,2,2,2	ND	2.0-4.0	TRASH (plastic bags, paper, newspaper). Garbage odor.
NC	10,6,4,3	ND	4.0-6.0	SILT and SAND. Dark olive-green to black-green, fine grained, with trash, moist to wet, slightly sticky/ cohesive, petroleum and garbage odor.
NC	4,6,10,11	ND	6.0-8.0	SILT, SAND, and TRASH. Dark olive-green to black-green, fine grained, moist to wet, slightly sticky/ cohesive, slight sheen on spoon, petroleum and garbage odor.
NC	5,4,3,3,	NC	8.0-10.0	No recovery.
NC	2,1,1,1	NC	10.0-12.0	No recovery.
NC	3,4,5,5	<1050	12.0-14.0	SILT and SAND. Dark olive-green and silvery-gray, fine grained, with trash (wood chips and plastic bags), wet to saturated, with black free-phase material (sticky/ cohesive) through out interval, very strong odor.
NC	10,4,8,8	ND	14.0-16.0	SILT and SAND. Olive-green and gray-green, fine grained, with trash (wood chips and glass), slightly moist, slight petroleum odor.

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-10
Date Completed: 09/18/2001
Borehole Diameter: 8"
Total Depth: 26 ft b.g.s

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	5,10,5,5	ND	16.0-18.0	SILT and SAND. Olive-green and gray-green, fine grained, with trash (wood chips and glass), slightly moist, black staining, slight petroleum odor.
NC	6,4,2,4	NC	18.0-20.0	TRASH.
NC	3,9,3,4	NC	20.0-22.0	TRASH.
NC	4,2,2,4	NC	22.0-24.0	TRASH.
NC	27	NC	24.0-24.5	TRASH.
NC	100/0.2	NC	24.5-25.0	TILL (sand, silt, and shale fragments). Blue-green to gray-blue, sand is fine grained, with coarse shale fragments and little sandstone fragments, moist, no apparent staining, slight garbage odor.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
 Project: Supplemental Remedial Investigation
 Client: NYSDEC
 Location: Blooming Grove, NY

Boring Location: TB-11
 Date Completed: 09/18/2001
 Borehole Diameter: 8"
 Total Depth: 26 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
 Driller: Neal Short
 Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki
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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	5,4,5,2	ND	0.0-2.0	SILT, SAND, and GRAVEL. Tan and brown, sand is fine grained, loose, with root material at top of interval, dry, no staining, no odor.
NC	2,4,4,4	ND	2.0-4.0	TRASH. Moist, strong garbage odor.
NC	33,37,8,6	ND	4.0-6.0	SHALE FRAGMENTS.
NC	5,4,5,10	ND	6.0-8.0	No recovery. Liquid inside spoon, no odor.
NC	2,2,2,2	<30	8.0-10.0	SILT and SAND. Olive-green to gray-green, fine grained, moist to very moist, with little black free-phase material and garbage, slight petroleum odor.
NC	woh,3,2,2	ND	10.0-12.0	No recovery. Spoon is saturated.
NC	woh,2,3,3	<200	12.0-14.0	SILT and SAND. Black, fine grained, with trash (rags, wood chips, and plastic), saturated, free-phase material through out, petroleum odor.
NC	3,3,5,8	<30	14.0-16.0	SILT and SAND. Dark olive-green, with trash occurring intermittently, saturated, with some free-phase material present (dark red-brown), petroleum odor.
NC	4,4,5,5	<12	16.0-18.0	SILT, SAND, and TRASH. Dark olive-green, saturated, with some free-

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.
 woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
 Project: Supplemental Remedial Investigation
 Client: NYSDEC
 Location: Blooming Grove, NY

Boring Location: TB-11
 Date Completed: 09/18/2001
 Borehole Diameter: 8"
 Total Depth: 26 ft b.g.s

Method: Hollow Stem Auger (4.25-inch ID)
 Driller: Neal Short
 Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

Page 2

Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
				phase material present through out interval, petroleum odor.
NC	woh,3,5,5	<10	18.0-20.0	No recovery. Spoon saturated with water, garbage odor.
NC	2,woh,woh,5	<17	20.0-22.0	TRASH. With very little soil matrix (silt and sand), saturated, petroleum and garbage odor.
NC	5,5,5,5	<5	22.0-24.0	TRASH (glass, plastic bags, wood chips). With very little soil matrix (silt and sand), saturated, petroleum and garbage odor present.
NC	5	NC	24.0-24.5	TRASH.
NC	19,25,25	NC	24.5-26.0	TILL (sand, silt, and shale fragments). Blue-green to gray-blue, sand is fine grained, with coarse shale fragments and little sandstone fragments, moist, no apparent staining, slight garbage odor, PID <13 from 24.0 to 25.0 ft b.g.s. and ND from 25.0 to 26.0 ft b.g.s.

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.
 woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01
Project: Supplemental Remedial Investigation
Client: NYSDEC
Location: Blooming Grove, NY

Boring Location: TB-12
Date Completed: 09/18/2001
Borehole Diameter: 8"
Total Depth: 26 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)
Driller: Neal Short
Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	3,7,4,3	ND	0.0-2.0	SILT, SAND, and GRAVEL. Tan and brown, sand is fine grained, loose, with root material at top of interval, dry, no staining, no odor.
NC	1,2,3,4	ND	2.0-4.0	TRASH. With trace soil matrix (sand and silt), slight petroleum odor.
NC	woh,woh,woh,woh	ND	4.0-6.0	TRASH and SILT. Olive-green, wet, black staining present, slight petroleum odor.
NC	17,10,8,7	ND	6.0-8.0	TRASH (wood chips and glass). Black coloration through out, with no soil matrix, slight odor.
NC	NC	ND	8.0-10.0	No recovery.
NC	3,4,3,4	ND	10.0-12.0	TRASH and SILT. Dark olive-green to gray-green, garbage odor.
NC	7,4,4,7	ND	12.0-14.0	TRASH. Dark olive-green, with some soil (silt) matrix, saturated, garbage odor.
NC	3,3,4,6	ND	14.0-16.0	SAND and SILT. Dark olive-green to brown-green, with trace clay and trash (copper wire and plastic) intermittent through out interval, wet to saturated, with little to some gray-black staining, garbage odor.
NC	8,7,5,5	ND	16.0-18.0	No recovery.

NC: Not Collected.
ND: Not Detected.
b.g.s.: Below Ground Surface.
woh: Weight of Hammer.

Environmental Resources Management, Inc.

WO No: 72701.03.01
 Project: Supplemental Remedial Investigation
 Client: NYSDEC
 Location: Blooming Grove, NY

Boring Location: TB-12
 Date Completed: 09/18/2001
 Borehole Diameter: 8"
 Total Depth: 26 ft b.g.s

Method: Hollow Stem Auger (4.25-inch ID)
 Driller: Neal Short
 Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	2,woh,3,3	ND	18.0-20.0	No recovery.
NC	6,4,3,4	ND	20.0-22.0	TRASH. Strong garbage odor.
NC	5,4,3,6	ND	22.0-24.0	TRASH. Strong garbage odor.
NC	5	ND	24.0-24.5	TRASH.
NC	6,5,6	ND	24.5-26.0	TILL (sand, silt, and shale fragments). Blue-green to gray-blue, sand is fine grained, with coarse shale fragments and little sandstone fragments, moist, no apparent staining, slight garbage odor.

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.
 woh: Weight of Hammer.

Soil Boring Log

Environmental Resources Management, Inc.

WO No: 72701.03.01

Project: Supplemental Remedial Investigation

Client: NYSDEC

Location: Blooming Grove, NY

Boring Location: TB-13

Date Completed: 09/19/2001

Borehole Diameter: 8"

Total Depth: 26 ft b.g.s.

Method: Hollow Stem Auger (4.25-inch ID)

Driller: Neal Short

Drilling Co: Nothnagle Drilling

Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (peak/steady), ppm	Depth (ft. bgs.)	Sample Description/Classification
NC	5,12,7,12	<2	0.0-2.0	SILT, SAND, and GRAVEL. Tan and brown, sand is fine grained, loose, with root material at top of interval and trash at bottom of interval, dry, no staining, no odor.
NC	2,2,2,2	<1.5	2.0-4.0	TRASH. Olive-green, with trace to little sand and silt matrix, moist, garbage odor.
NC	1,2,5,7	<1	4.0-6.0	TRASH. Black coloration through out, very strong petroleum odor.
NC	4,3,3,4	<1	6.0-8.0	TRASH. With heavily black-stained wood chips, strong petroleum odor.
NC	4,2,2,2	<3	8.0-10.0	TRASH. With trace olive-green sand and silt matrix, wet to saturated, heavy black staining present, strong petroleum odor (same as 6.0 to 8.0 ft.)
NC	4,6,10,12	<2	10.0-12.0	TRASH (paper, plastic, and wood chips). Heavy black staining through out interval, wet to saturated, strong odor (same as 6.0 to 8.0 ft.)
NC	5,4,12,12	<5	12.0-14.0	TRASH. With trace to little soil matrix, saturated, strong odor (same as 6.0 to 8.0 ft.)
NC	4,4,8,6	<2	14.0-16.0	SAND and SILT. Dark olive-green and green-brown, fine grained, with trash present through out interval, saturated, black staining present, strong odor (same as 6.0 to 8.0 ft.)

NC: Not Collected.

ND: Not Detected.

b.g.s.: Below Ground Surface.

Environmental Resources Management, Inc.

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Geologist: J. Rybacki

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Sampled Interval (ft. bgs.)	Blow counts	OVA Response (ppm)	Depth (ft. bgs.)	Sample Description/Classification
NC	11,10,2,2	<2	16.0-18.0	SAND and SILT. Dark olive-green and green-brown, fine grained, with trash present through out interval, saturated, black staining present, strong odor (same as 6.0 to 8.0 ft.)
NC	2,4,1,1	<1	18.0-20.0	TRASH (rags, plastic bags, and glass). Black through out, saturated, garbage odor.
NC	2,7,2,3	<3	20.0-22.0	TRASH (plastic). Saturated, garbage odor.
NC	3,4,5,5	<1	22.0-24.0	TRASH. With silt and fine gravel, saturated, garbage odor.
NC	3	NC	24.0-24.5	TRASH.
NC	6,19,20	NC	24.5-26.0	TILL (sand, silt, and shale fragments). Blue-green to gray-blue, sand is fine grained, with coarse shale fragments and little sandstone fragments, moist, no apparent staining, slight garbage odor.

NC: Not Collected.
 ND: Not Detected.
 b.g.s.: Below Ground Surface.

ERM, INC.

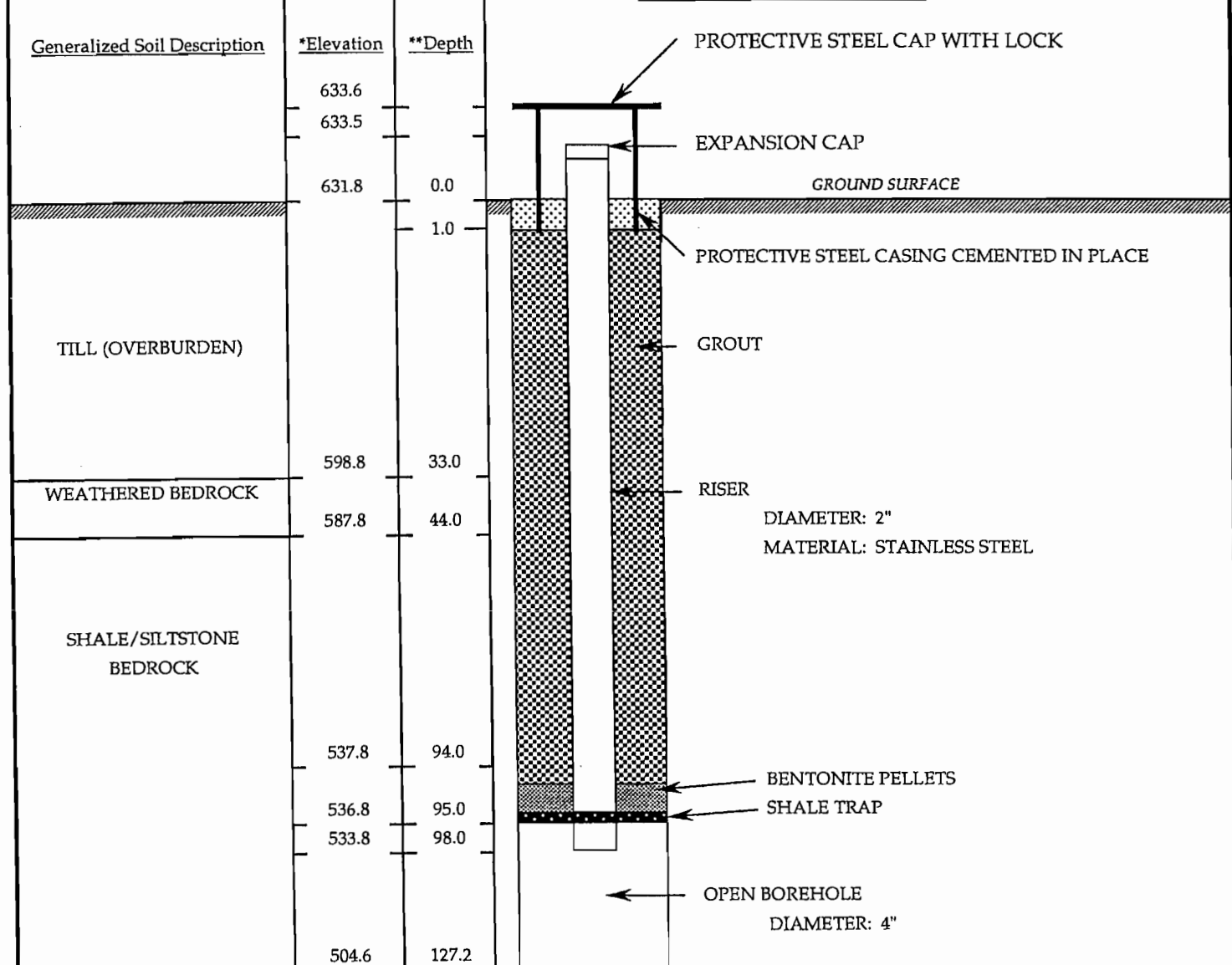
855 Springdale Drive, Exton, PA 19341

WELL : MW-14D

MONITORING WELL CONSTRUCTION

Project Name & Location	Project No.	Water Level(s)			Site Elevation Datum
MAYER LANDFILL	72701.03.01	(ft below top of PVC casing)			
Drilling Company	Foreman	Date	Time	Level (feet)	Ground Elevation
NOTHNAGLE	NEAL SHORT				631.82
Surveyor					Top of Protective Steel Cap Elevation
Y.E.C., Inc.		9/17/01	1129	119.2	633.63
Date and Time of Completion	Geologist				Top of Riser Pipe Elevation
09/17/2001	J. RYBACKI				633.54

CONSTRUCTION DETAILS



BOTTOM OF BOREHOLE

REMARKS DTW RECORDED FROM TOP OF STAINLESS STEEL RISER STICKUP.

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

TMW-01

NA: Not Analyzed

Environmental Resources Management, Inc.

TMW-02

WO No: <u>72701.03.01</u>	Date Completed	<u>13 September 2001</u>	
Project <u>Supplemental Remedial</u>	Owner	<u>NYSDEC</u>	
Location <u>Blooming Grove, NY</u>	Boring Depth (ft)	<u>20.0</u>	Diameter <u>8 inches</u>
Lat. _____	Surface Elevation	<u>627.17</u>	feet msl
Long. _____	Riser Elevation	<u>626.33</u>	feet msl
Screen <u>Schedule 40 PVC</u>	Length (ft)	<u>15</u>	Diameter <u>2 inches</u>
Slot Size <u>0.010 inches</u>	Stabilized DTW	<u>10.21</u>	feet TOC
Riser <u>Schedule 40 PVC</u>	Length (ft)	<u>5</u>	Diameter <u>2 inches</u>
Method <u>Hollow Stem Auger</u>	Driller	<u>Neal Short</u>	Geologist <u>J. Rybacki</u>
Drilling Company <u>Nothnagle Drilling</u>			Location Sketch Map

Elevation (MSL)	Depth (feet BGS)	Well Construction Schematic	Split-Spoon #	Recovery (inches)	Blows per 0.5 feet	OVA (ppm)	Sample (feet BGS)	Sample Description/Classification
	0						0.0-20.0	Same as soil boring TB-07 log.
	5							
	10							
	15							
	20							
	25							

NA: Not Analyzed

TMW-03

[illegible]

NA: Not Analyzed

WO No: 72701.03.01	Date Completed	18 September 2001		
Project Supplemental Remedial	Owner	NYSDEC		
Location Blooming Grove, NY	Boring Depth (ft)	24.0		Diameter 8 inches
Lat. _____	Surface Elevation	629.18		feet msl
Long. _____	Riser Elevation	628.9		feet msl
Screen Schedule 40 PVC	Length (ft)	15		Diameter 2 inches
Slot Size 0.010 inches	Stabilized DTW	10.38		feet TOC
Riser Schedule 40 PVC	Length (ft)	5		Diameter 2 inches
Method Hollow Stem Auger	Driller	Neal Short		Geologist J. Rybacki
Drilling Company Nothnagle Drilling				Location Sketch Map

Elevation (MSL)	Depth (feet BGS)	Well Construction Schematic	Split-Spoon #	Recovery (inches)	Blows per 0.5 feet	OVA (ppm)	Sample (feet BGS)	Sample Description/Classification
	0						0.0-26.0	Same as soil boring TB-12 log.
	5							
	10							
	15							
	20							
	25							

APPENDIX E

Alternative Cost Tables

TABLE E-1
Alternative II Cost Estimate:
Access and Use Restrictions
Mayer Landfill
Blooming Grove, NY

Task No. 1: Common Actions

a. Groundwater Monitoring for Thirty Years

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
O&M: Groundwater Sampling Initial Five Years	year	\$53,100	1	\$53,100	(1)
	(5 yrs, discount rate of 5%, PWF = 4.329)			<u>\$229,870</u>	
O&M: Annual Groundwater Sampling subsequent 25 years	year	\$32,300	1	\$32,300	
	(25 yrs, discount rate of 5%)			<u>\$356,688</u>	
	O&M Subtotal 1.a:			\$586,558	O&M

b. Residential Well Head Treatment for 30 Years

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
b1. Capital Cost:Installation of Filter/Treatment Systems	LS	\$1,000	1	\$1,000	(2)
Capital Subtotal				\$1,000	
b2. O&M: Maintenance of Filter/Treatment Sytem	year	\$125	1	\$125	(3)
(30 yrs, discount rate of 5%, PWF = 15.372)				\$1,921.50	
O&M Subtotal				\$1,922	O&M

c. Surface Waste Removal

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Loading, Transportation and Disposal	LS	\$10,000	1	\$10,000	(4)
Capital Subtotal:				\$10,000	
TASK TOTAL				\$599,479	

Task No. 2: Posting No Trespassing Signs

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Post signs	LS	\$5,000	1	\$5,000	(5)
Capital Task Total:				\$5,000	

Task No. 3: Access Restrictions

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Fencing	LS	\$20,000	1	\$20,000	(6)
Capital Task Total:				\$20,000	

Task No. 4: Use Restrictions

Obtain deed restriction	LS	\$15,000	1	\$15,000	(7)
Capital Subtotal				\$15,000	
O&M: Annual Certification of Deed Restiction for 30 years	year	\$1,000	1	\$1,000	(8)
(25 yrs, discount rate of 5%, PWF = 15.372)				\$15,372	
O&M Subtotal				\$15,372	O&M
TASK TOTAL				\$30,372	

SUBTOTAL, CAPITAL COSTS: \$51,000
CONTINGENCY (20%) \$10,200
SUBTOTAL \$61,200

Project Management (8%) \$4,896
Construction Management (10%) \$6,120
TOTAL CAPITAL COSTS \$72,216

SUBTOTAL, O&M COSTS: \$603,851
CONTINGENCY (20%) \$120,770
SUBTOTAL \$724,622

Project Management (8%) \$57,970
TOTAL O&M COSTS \$782,592

ALTERNATIVE III COST: \$854,808

TABLE E-1
Alternative II Cost Estimate:
Access and Use Restrictions
Mayer Landfill
Blooming Grove, NY

- (1) Cost assumes eleven on-Site wells are sampled per quarter and 10 off-Site wells annually. For on-Site wells, TAL metals analyzed each quarter, SVOCs and VOCs analyzed annually. For off-Site wells, only TAL metals are analyzed. For years 6 through 30, eleven on-Site wells and 10 off-Site wells are sampled annually. Cost includes preparation of an annual report.
- (2) Cost for CAI Technologies Automatic Backwashing Manganese Greensand Filter, Model # MG-1 assumed (www.caitechnologies.com). Cost includes: \$710 purchase, \$290 installation.
- (3) An annual maintenance cost of 10% of the capital cost assumed. This maintenance cost would include replacement filters in years 20 through 30. (15 replacement filters at \$25/filter and filter installation every 2 years for a 30-year period.)
- (4) Cost assumes: 28 tons of surface waste - mostly comprised of vehicles; vehicles are intact and of poor recyclable quality; and the surface waste materials are readily accessible. Cost includes: Loading, transportation, and disposal. Source: Weinert Recycling and Co., Middletown, NY; (845) 692-4640, contact: Kenny Weinert
- (5) Cost based on similar projects.
- (6) Cost includes installation of a 4,320 linear feet of 6-foot high, 11 gauge wire fence and two driveway gates.
- (7) Based on past experience obtaining deed restrictions.
- (8) Cost to certify deed annually to DEC is to provide a notarized letter certifying that the county still holds the deed restriction on file.

TABLE E-2
Alternative III Cost Estimate:
Consolidation and Containment Part 360 Cover
Mayer Landfill
Blooming Grove, NY

Task No. 1: Common Actions

a. Groundwater Monitoring for Thirty Years

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
O&M: Groundwater Sampling Initial Five Years	year	\$53,100	1	\$53,100	(1)
	(5 yrs, discount rate of 5%, PWF = 4.329)			<u>\$229,870</u>	
O&M: Annual Groundwater Sampling subsequent 25 years	year	\$32,300	1	\$32,300	
	(25 yrs, discount rate of 5%)			<u>\$356,688</u>	
1.a. O&M Subtotal:				\$586,558	O&M

b. Residential Well Head Treatment for 30 Years

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Capital Cost: Installation of Filter/Treatment Systems	LS	\$1,000	1	\$1,000	(2)
	1.b. Capital Subtotal:			\$1,000	
O&M: Maintenance of Filter/Treatment Sytem	year	\$125	1	\$125	(3)
	(30 yrs, discount rate of 5%, PWF = 15.372)			<u>\$1,922</u>	
1.b. O&M Subtotal				\$1,922	O&M

c. Surface Waste Removal

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Loading, Transportation and Disposal	LS	\$10,000	1	\$10,000	(4)
	1.c. Capital Subtotal:			\$10,000	
TASK TOTAL				\$599,479	

Task No. 2: Site Preparation and Mobilization

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Mobilization/Demobilization	LS	\$40,000	1	\$40,000	(5)
	Task Total:			\$40,000	

Task No. 3: Ambient Air Monitoring for Particulates and Methane during Site Activities

Labor	day	\$700	220	\$154,000	(6)
Equipment	LS	\$5,500	1	\$5,500	(7)
	Task Total:			\$159,500	

Task No. 4: LNAPL Removal

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Excavation of 0-15 ft bgs of landfill waste and soil	yd3	\$20	1,300	\$26,000	(9)(10)
Off-Site Disposal of 6-15 ft bgs of LNAPL-stained soil	ton	\$75	333	\$24,975	(11)(12)
Disposal sample	samples	\$1,500	2	\$3,000	(13)
	Task Total:			\$53,975	

TABLE E-2
Alternative III Cost Estimate:
Consolidation and Containment Part 360 Cover
Mayer Landfill
Blooming Grove, NY

Task No. 5: Excavation of Outlying Wastes, Filling and Grading

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Excavation of Outlying Wastes and Consolidation	yd3	\$25	31,500	\$787,500	(14)(15)
Grading	yd3	\$15	45,000	\$675,000	(16)(15)
Task Total:				\$1,462,500	

Task No. 6: Landfill Gas Collection System and Treatment

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
<u>Vapor Monitoring Points</u>					
Fittings	LS	\$2,506	1	\$2,506	(17)
Installation of 6" vent wells	well	\$4,500	10	\$45,000	(18)
Permitting	LS	\$15,000	1	\$15,000	(19)
Task Total:				\$62,506	

Task No. 7: Installation of Final Cover

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
12-Inch Gas Venting Layer	cy	\$24	16,667	\$400,000	(20)
18-Inch Clay Layer (or GCL equivalent)	cy	\$30	25,000	\$750,000	
Geomembrane Liner	sf	\$0.60	450,000	\$270,000	
24-Inch Barrier Protection/Drainage Layer	cy	\$22	33,333	\$733,333	
6-Inch Topsoil Layer	cy	\$27	8,333	\$225,000	
Task Total:				\$2,378,333	

Task No. 8: Construction of Surface Water Runoff System

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
<u>Channels</u>					
Stone Fill	cy	\$27	1,100	\$29,700	(21)
Stone Walk	cy	\$23	275	\$6,325	
Select Fill Berm	cy	\$21	3,000	\$63,000	
FML	sy	\$6	4,400	\$26,400	
Geotextile	sy	\$0.60	4,400	\$2,640	
Perforated 6" Pipe	lf	\$5	7,200	\$36,000	
Drainage Pipe	lf	\$4	3,600	\$14,400	
Detention Basin	LS	\$45,000	1	\$45,000	
Sampling of Detention Basin	sample	\$500	1	\$500	
Task Total:				\$223,965	

Task No. 9: Institutional Controls to Protect Cover System

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
File Deed Notice	LS	\$5,000	1	\$5,000	(21)
Fencing	LF	\$15	5,000	\$75,000	
Signs	LS	\$5,000	1	\$5,000	
Task Total:				\$85,000	

TABLE E-2
Alternative III Cost Estimate:
Consolidation and Containment Part 360 Cover
Mayer Landfill
Blooming Grove, NY

Task No. 10: Site Restoration

	Unit	Unit Cost	Quantity	Total Cost	(21)
Seeding	sf	\$0.15	450,000	\$67,500	
Plantings	LS	\$10,000	1	\$10,000	
Task Total:				\$77,500	

Task No. 11: Engineered Systems Monitoring

	Unit	Unit Cost	Quantity	Total Cost	(22)
12a) <u>Installation of three monitoring wells</u>	LS	\$15,000	1	\$15,000	
12.a. Capital Subtotal:				\$15,000	
12b) <u>Preparation of O&M Manual</u>	LS	\$15,000	1	\$15,000	(21)
12.b. Capital Subtotal:				\$15,000	
12c) <u>O&M of gas venting system</u>	LS	\$2,800	1	\$2,800	(21)
Expenses and Equipment	LS	\$5,000	1	\$5,000	
Subtotal:				\$7,800	
(30 yrs, discount rate of 7%, PWF =15.372)				\$119,902	
12.c. O&M Subtotal:				\$119,902	O&M
12d) <u>Quarterly air monitoring</u>	LS	\$3,000	4	\$12,000	(23)
(30 yrs, discount rate of 7%, PWF =15.372)				\$184,464	
12.d. O&M Subtotal:				\$184,464	O&M
12e) <u>Erosion Repair Cost</u>	acre	\$150	10.3	\$1,545	(26)
(30 yrs, discount rate of 7%, PWF =15.372)				\$23,750	
12.e. O&M Subtotal:				\$23,750	O&M
12f) <u>Mowing Costs</u> (mow one-third of cover each year)	acre	\$160	3.4	\$544	(26)
(30 yrs, discount rate of 7%, PWF =15.372)				\$8,362	
12.f. O&M Subtotal:				\$8,362	O&M
Task Total:				\$366,478	

SUBTOTAL, CAPITAL COSTS: \$4,584,280
CONTINGENCY (20%) \$916,856
SUBTOTAL \$5,501,136

Project Management (5%) \$275,057
Construction Management (6%) \$330,068
TOTAL CAPITAL COSTS \$6,106,261

SUBTOTAL, O&M COSTS: \$924,957
CONTINGENCY (20%) \$184,991
SUBTOTAL \$1,109,949

Project Management (5%) \$55,497.43
TOTAL O&M COSTS \$1,165,446

ALTERNATIVE III COST: \$7,271,707

TABLE E-2
Alternative III Cost Estimate:
Consolidation and Containment Part 360 Cover
Mayer Landfill
Blooming Grove, NY

- (1) Cost assumes eleven wells are sampled per sampling event. TAL metals analyzed each quarter, SVOCs and VOCs analyzed annually. Cost includes preparation of an annual report.
- (2) Cost for CAI Technologies Automatic Backwashing Manganese Greensand Filter, Model # MG-1 assumed (www.caitechnologies.com). Cost includes: \$710 purchase, \$290 installation.
- (3) An annual maintenance cost of 10% of the capital cost assumed. This maintenance cost would include replacement filters in years 20 through 30. (15 replacement filters at \$25/filter and filter installation every 2 years for a 30-year period.)
- (4) Cost assumes: 28 tons of surface waste - mostly comprised of vehicles; vehicles are intact and of poor recyclable quality; and the surface waste materials are readily accessible. Cost includes: Loading, transportation, and disposal. Source: Weinert Recycling and Co., Middletown, NY; (845) 692-4640, contact: Kenny Weinert
- (5) Cost includes site clearing, setup of temporary construction support facilities, and sedimentation control. Cost based on experience with similar projects.
- (6) Unit cost includes one on-site health and safety monitor to monitor methane. This person would also monitor particulate levels. Quantity assumes that continuous monitoring is needed during the 11 month period when excavation, grading, and filling activities are being conducted prior to the placement of the gas venting layer, clay layer, geomembrane and construction of gas venting wells. i.e., 11 months x 20 workdays per month.
- (7) Cost of purchasing an MIE particulate monitor and a methane monitor.
- (8) = 2,000 sf ; NAPL is located between 9 and 15 ft bgs; Soil is impacted with NAPL from 6 to 15 feet.
- (9) Quantity: Soil and NAPL Excavated: (2,000 sf)(15 ft depth)/27 cf/cy = 1,110 + volume for sloping excavation sides
- (10) Cost based on previous experience.
- (11) Quantity = (9)(2000) = 666 cy or approximately 333 tons, based on est. 1000 lbs/cy higher fill density (i.e., greater than the 750 lb/cy assumes to account for addition of dewatering agents); LNAPL disposal cost is for non-hazardous material at CWM
- (12) Unit Cost: Disposal of NAPL impacted soil as a non-hazardous waste at the CWM landfill.
- (13) Unit Cost: includes analysis for VOCs, SVOCs, metals, PCBs and pesticides, and RCRA disposal characteristics.
- (14) Quantity: Assumes that 7% of landfill volume (0.07)(450,000) will be need to be excavated. This does not include relocation from any wetlands areas or wetlands remediation. Unit cost includes sheeting cost.
- (15) Unit Cost: Based on previous experience
- (16) Quantity: Assumes 10% of the landfill volume requires regrading to establish slopes less than 3 to 1.
- (17) Assumes 4 gas vent wells per acre for total of 40 gas vent wells. Cost derived from similar projects.
- (18) Assumes: 24' st. steel screen, 27' bgs depth, 4' risers. Basis for quantity of wells is from DAR-1 analysis calculation.
- (19) Permitting cost may be waived for consent decree sites.
- (20) Cost based on similar projects. A 10.3 acre area was assumed for cover area.

TABLE E-2
Alternative III Cost Estimate:
Consolidation and Containment Part 360 Cover
Mayer Landfill
Blooming Grove, NY

- (21) Cost based on similar projects.
- (22) Based on installing wells of similar specifications to MW-9,9D, and 10.
- (23) Cost based on collection of six samples for methane and TO-15 analysis.
- (24) Based on sample cost for VOCs, SVOCs, TAL inorganics, BOD, and TSS.
- (25) Cost to certify deed restriction annually to DEC is to provide a notarized letter certifying that the county still holds the deed restriction on file.
- (26) Source: Virginia Department of Environmental Quality.

TABLE E-3
Alternative IV Cost Estimate:
Excavation and Reclamation
Mayer Landfill
Blooming Grove, NY

Task No. 1: Common Actions

a. Groundwater Monitoring for Five Years

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Quarterly Groundwater Sampling	year	\$53,100	1	\$53,100	(1)
	(5 yrs, discount rate of 7%, PWF = 4.329)			\$229,870	
				<u>\$229,870</u>	
O&M: Annual Groundwater Sampling subsequent 25 years	year	\$32,300	1	\$32,300	
	(25 yrs, discount rate of 5%)			\$356,688	
	Task 1.a. O&M Subtotal:			\$586,558	O&M

b. Residential Well Head Treatment for 30 Years

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Installation of Filter/Treatment Systems	LS	\$1,335	1	\$1,335	(2)
	Capital Subtotal:			\$1,335	
Maintenance of Filter/Treatment System	year	\$134	1	\$134	(3)
	(30 yrs, discount rate of 5%, PWF = 15.372)			\$2,052	
	O&M Subtotal:			\$2,052	O&M

c. Surface Waste Removal

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Loading, Transportation and Disposal	LS	\$10,000	1	\$10,000	(4)
	Capital Subtotal:			\$10,000	
	TASK TOTAL			\$599,945	

Task No. 2: Site Preparation and Mobilization

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Mobilization/Demobilization	LS	\$1	40,000	\$40,000	(5)
	Capital Subtotal:			\$40,000	

Task No. 3: Excavation of Soil/Fill Waste

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Excavation of Soil/Fill Waste	cy	\$20	450,000	\$9,000,000	(6)
	Capital Subtotal:			\$9,000,000	

Task No. 4: Ambient Air Monitoring for Particulates and Methane during Excavation

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Labor	day	\$700	220	\$154,000	(7)
Equipment	LS	\$5,500	1	\$5,500	(8)
	Capital Subtotal:			\$159,500	

Task No. 5: Off-Site Disposal of Excavated Soil/Fill Waste

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Non-Hazardous Waste Off-Site Disposal	ton	\$75	143,438	\$10,757,813	(9)
Hazardous Waste Off-Site Disposal	ton	\$210	25,313	\$5,315,625	(9)
Off-Site Disposal of 6-15 ft bgs of LNAPL-stained soil	ton	\$75	333	\$25,000	(10)
Disposal sample	samples	\$900	450	\$405,000	(11)
	Capital Subtotal:			\$16,503,438	

Task No. 6: Backfilling and Regrading

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
Backfill	cy	\$24	25,000	\$600,000	(12)
Grading	LS	\$60,000	1	\$60,000	
	Capital Subtotal:			\$660,000	

TABLE E-3
Alternative IV Cost Estimate:
Excavation and Reclamation
Mayer Landfill
Blooming Grove, NY

Task No. 7: Runoff/Erosion Control

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
<u>Channels</u>					
Stone Fill	cy	\$27	550	\$14,850	(13)
Stone Walk	cy	\$23	138	\$3,163	
Select Fill Berm	cy	\$21	1,500	\$31,500	
FML	sy	\$6	2,200	\$13,200	
Geotextile	sy	\$0.60	2,200	\$1,320	
Perforated 6" Pipe	lf	\$5	3,500	\$17,500	
Drainage Pipe	lf	\$4	1,800	\$7,200	
Detention Basin	LS	\$45,000	1	\$45,000	
Capital Subtotal:				\$133,733	

Task No. 8: Site Restoration

	<u>Unit</u>	<u>Unit Cost</u>	<u>Quantity</u>	<u>Total Cost</u>	
6-Inch Topsoil	cy	\$27	8,333	\$225,000	(14)
Seeding	sf	\$0.15	450,000	\$67,500	
Plantings	LS	\$10,000	1	\$10,000	
Capital Subtotal:				\$302,500	

SUBTOTAL, CAPITAL COSTS:	\$26,810,505
CONTINGENCY (20%)	\$5,362,101
SUBTOTAL	\$32,172,606

<i>Project Management (5%)</i>	\$1,608,630
<i>Construction Management (6%)</i>	\$1,930,356
TOTAL CAPITAL COSTS	\$35,711,593

SUBTOTAL, O&M COSTS:	\$588,610
CONTINGENCY (20%)	\$117,722
SUBTOTAL	\$706,332

<i>Project Management (5%)</i>	\$35,316.61
TOTAL O&M COSTS	\$741,649

ALTERNATIVE IV COST: \$36,453,241

TABLE E-3
Alternative IV Cost Estimate:
Excavation and Reclamation
Mayer Landfill
Blooming Grove, NY

- (1) Cost assumes eleven on-Site wells are sampled per quarter and 10 off-Site wells annually. For on-Site wells, TAL metals analyzed each quarter, SVOCs and VOCs analyzed annually. For off-Site wells, only TAL metals are analyzed. For years 6 through 30, eleven on-Site wells and 10 off-Site wells are sampled annually. Cost includes preparation of an annual report.
- (2) Cost for CAI Technologies Automatic Backwashing Manganese Greensand Filter, Model # MG-1 assumed (www.caitechnologies.com). Cost includes: \$710 purchase, \$290 installation.
- (3) An annual maintenance cost of 10% of the capital cost assumed. This maintenance cost would include replacement filters in years 20 through 30. (15 replacement filters at \$25/filter and filter installation every 2 years for a 30-year period.)
- (4) Cost assumes: 28 tons of surface waste - mostly comprised of vehicles; vehicles are intact and of poor recyclable quality; and the surface waste materials are readily accessible. Cost includes: Loading, transportation, and disposal. Source: Weinert Recycling and Co., Middletown, NY; (845) 692-4640, contact: Kenny Weinert
- (5) Cost includes site clearing, setup of temporary construction support facilities, and sedimentation control. Based on costs for similar type projects.
- (6) Assumes that landfill volume is 450,000 cy. i.e. 10.3 acres area x 27 feet depth.
- (7) Cost of purchasing an MIE particulate monitor and a methane monitor.
- (8) Cost to have health and safety monitor on-Site daily and per diem to monitor methane from start of excavation to completion.
- (9) Assumes that 85% of waste will be disposed of as non-hazardous waste and 15% will be disposed of as a hazardous waste. Assumes a landfill mass normally compacted soil density of 750 lbs/cy (Tchobanoglous, 1993). Unit costs obtained from Chemical Waste Management, Model City, NY.
- (10) Assumptions: Approximate LNAPL excavation area = 50 ft x 40 ft = 2000 sf based on LNAPL delineation; Free product is located between a maximum of 6-15 ft bgs; 9 ft x 2000 sf = 666 cy or approximately 333 tons, based on est. 1000 lbs/cy; LNAPL disposal cost is for non-hazardous material
- (11) Assumes one sample per thousand cubic yard of excavated material.
- (12) Assumes that all excavated volume will not have to be replaced. Accounts for 25,000 cy of backfill to restore the Site.
- (13) Assumes 3,600 foot perimeter and 2 ft x 2 ft drainage channel.
- (14) Cost based on similar projects.

APPENDIX F

USDI Memorandum



OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages 3

To	Rich Koepficus	From	Michael Clementson
Dept./Agency	NVSDFC	Phone C	732 321 6712
Fax #	518 485 8424	Fax #	732 501 6824
NSN 75-10-01-017 7360		5099-101 GENERAL SERVICES ADMINISTRATION	

United States Department of the Interior

Chesapeake Bay Field Office
U.S. Fish and Wildlife Service
177 Admiral Cochrane Dr.
Annapolis MD 21401

February 16, 1996

MEMORANDUM

TO: BTAG

FROM: Chris Guy, Al Rizzo and Cherry Keller

SUBJECT: RECOMMENDATIONS FOR THE VEGETATIVE COVER ON THE PATUXENT NAVAL
AIR STATION FORMER SANITARY LANDFILL (SITE 11)

Rationale

The vegetative cover of landfills is often the last and least discussed aspect of the total creation of the final cap. The vegetation on the cap must provide immediate soil stabilization, but over the long term it could provide other values. In the past, most landfill caps have been vegetated with a monoculture of cool season turf grasses such as Tall Fescue (Kentucky 31). This species provides quick cover that can stabilize soils, but requires regular mowing and periodic fertilizing to maintain plant vigor. Tall Fescue also provides little food or cover for grassland birds or other wildlife, and it essentially wastes land that could be productive for wildlife. This is especially critical when the Breeding Bird Survey notes declining populations of many grassland birds (e.g., Field Sparrows, Grasshopper Sparrows, and Henslows Sparrows). There are alternative strategies that will produce a vegetative cover that can stabilize the soil, but also provide habitat for a wide range of wildlife, and have lower maintenance costs than what is currently used. By striving for a diverse grassland community, we can provide habitat for several species of grassland birds that have declining populations in the midwest and the east.

The objectives for the vegetative cover of this site should be as follows:

- 1) to stabilize the soils,
- 2) to provide a structurally diverse grassland habitat for birds and other wildlife,
- 3) to provide a low maintenance long-term plant community.
- 4) to use plant species native to Maryland (presently occur in Maryland and are distributed on their own), whose seeds are available commercially.

The Service recommends that the cap be planted with a mix of native warm and cool season grasses described below. Cool season grasses grow and flower in the early and cooler part of the summer, warm season grasses grow in the later and warmer part of the summer. Warm season grasses are better adapted to poor soils and drier conditions making them well suited for landfill caps. They have a different photosynthetic pathway that enables them to be more efficient in their use of water and nutrients during photosynthesis. Warm season grasses dominate the prairies of the midwest, but several species also

dominated several eastern grasslands such as the Hempstead Plains of Long Island.

While they do require some mowing/haying to prevent woody species invasion and to maintain plant vigor, the grasses can often be managed on a 3 year mowing rotation. Conversely Kentucky 31 requires mowing and fertilization at least twice a year. Thus the long term mowing cost of Kentucky 31, the traditional landfill cover, are 6 times the cost of mowing a warm-season grass community. At current estimates it costs \$50/acre to mow a RCRA cap. Using Kentucky 31 as a cap seed mixture on a thirty acre landfill and mowing twice a year for 6 years costs \$18,000. However, managing the same site planted in native grasses for 6 years costs \$3000.

Establishing a community of native grasses does take more effort, planning, and care initially. Seeding must be done at appropriate times, and sometimes requires different equipment. It also take 2 years to establish the warm season grass plants. But the long term maintenance costs will pay off, and the difference in habitat value is substantial.

Seed Mix

These species are available from commercial vendors, but orders should allow sufficient time for delivery. All seeding rates are per acre of **pure live seed (PLS)**; please specify PLS when ordering seed.

	<u>lbs/acre PLS</u>
Big Blue-stem (<u>Andropogon virgatum</u>)	4
Little Blue-stem (<u>Schizachyrium scoparium</u>)	6
Switch Grass (<u>Panicum virgatum</u>)	2
Indian Grass (<u>Sorghastrum nutans</u>)	6
Canada Wild Rye (<u>Elymus canadensis</u>)	10
Partridge Pea (<u>Cassia fasciculata</u>)	2
Annual rye grass (<u>Lolium multiflorum</u>)	25

Site Prep

If the top 6" of soil on the present site are used as the topsoil for the final cap, we recommend using Round Up or another herbicide to kill the existing Fesque and other weeds. Otherwise the Fesque will take over again. This should be done before removing the soil. After the final cap is in place, the area must be properly prepared before seeding begins to establish a firm seed bed.

Application of seed

Seeding should be done in early spring (April or May) and should not be done during periods of severe drought, high winds, excessive moisture, frozen grounds, or other conditions that preclude satisfactory results.

Seeding can be accomplished using a Brillion drill seeder or a 3,000 gallon hydroseeder. If a Brillion drill seeder is chosen, seed is to be planted no deeper than 1/4". After seeding, with a drill, compact with a landroller, such as a cultipacker. With proper equipment, sowing seed and cultipacking in one operation is satisfactory.

If a Hydroseeder/Mulcher is used, it should have a minimum 3,000 gallon capacity with two paddle agitators, and one cutter agitator for complete shredding of mulch, capable of maintaining a homogeneous slurry. Recirculating type slurry agitation is not acceptable as this type of agitation reduces seed viability.

Management of the cap

First growing season: The Canada Wild Rye and Partridge Pea will be the first plants to come up. The warm season grasses (Blue-stems, switch and Indian Grass) will establish roots during this season. The

area should be mowed periodically to reduce annual weed invasion and enable light to reach some of the warm season grass seedlings.

Second growing season: Mow once depending on climate.

Third and subsequent growing seasons: Mow 1/3 of the site once a year and rotate so that each area of the site is mowed approximately once every 3 years. Mowing should not be done during the nesting season (April 15- August 15).

APPENDIX G

E-mail Correspondence with NYSDEC



"Crystal Montroy"
<clmontro@gw.dec.state.ny.us>

To: <Cathy.Weber@erm.com>
cc:
Subject: Re: 5% discount rate; report copies

07/30/02 12:13 PM

Cathy,

I have not been able to locate the memo that specifies 5% as the discount to use in the FS. However, it should still be used even though there isn't a specific reference.

We need only one unbound and four bound - we'll use some of those copies for the document repositories once the FS has final approval. Extra copies won't need to be made at a later date for this purpose.

Also, one bound copy should be provided to the DOH. You have the correct address.

Thanks,
Crystal

>>> <Cathy.Weber@erm.com> 07/30/02 10:23AM >>>
Hi Crystal,

I just wanted to check with you that a reference on the 5% discount rate for feasibility study cost estimating has not surfaced. If possible, I had wanted to include this in the references section of the Mayer FS. The report is on target to arrive on Friday to the DEC. Please confirm the following for the number of reports:

one (1) unbound to DEC
three (3) bound to DEC
two (2) bound to DOH (where should this be mailed? -> Bridget Callaghan at Flanigan Square, 547 River Street, Troy, NY 12180?)

What about public comment copies? How many, and should these be sent at this time?

Thanks,
Cathy

ERM, Inc.
475 Park Avenue South, Floor 29
New York, NY 10016
(212) 447-1900
(212) 447-1904 (Fax)