REPORT

Brillo Landfill, Registry Site #706013
Town of Victory, New York
Preliminary Investigation

General Motors Corporation
Syracuse, New York

March 2004

O'BRIEN & GERE
ENGINEERS, INC.

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Douglas M. Crawford, P.E.
Vice President

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1. Introduction

This report summarizes Preliminary Investigation activities at the site on the New York State Department of Environmental Conservation (NYSDEC) Registry of Inactive Hazardous Waste Disposal Sites known as the Brillo Landfill parcel in the Town of Victory, Cayuga County, New York (Registry Site No. 706013 – the "Site") (Figure 1-1).

The site is described by NYSDEC in the Registry as comprising approximately 100-acres, but only two areas of the site, referred to as the west and east areas in this report, were reportedly used for the disposal of materials. No other disposal activities were identified to have taken place on the other approximately 92 acres of the site.

The west area was a NYSDEC approved DEC Part 360 landfill that, based on the Preliminary Investigation data, comprises approximately 2.5 acres. The landfill was in operation during the 1980s.

The east area was active in the 1960s and consists of a sludge disposal area, and an area that was reportedly used for above ground storage of drums. The Preliminary Investigation identified the sizes of the sludge disposal area and former drum storage area as approximately 2.1 and 0.5 acres, respectively. The investigation of the east area is the subject of this report.

The east area was identified by Mr. Brillo, owner of the Site, as having been used for the placement of industrial wastewater treatment sludge and paint sludge from the former GM Inland Fisher Guide facility in Syracuse, New York (the "IFG Facility"). In the early 1980s, a NYSDEC approved remediation plan (NYSDEC 1982a,b,c; Rowell Associates 1982) was implemented by Mr. Brillo to address identified environmental concerns in the east area in connection with his opening of the west area as a permitted Part 360 landfill (Appendix A).

In 2000, testing of the sludge by NYSDEC detected the presence of polychlorinated biphenyls (PCBs), and chromium above the toxicity characteristic leaching procedure (TCLP) hazardous waste threshold (the "Site Contaminants"). The Preliminary Investigation was implemented to further characterize the east area and evaluate the effectiveness of remedial activities that took place in the early 1980s.

The tasks associated with and completed for the Preliminary Investigation of the east area are described below.

1.1. Site Background

The Site is classified as a Class 2 site on the NYSDEC Registry and the location of the Site is shown on a United States Geological Survey (USGS) quadrangle map for Cato, New York (Figure 1-1). According to NYSDEC file information, the sludge comprises IFG industrial waste water treatment sludge received at the Site during the period from 1962 through 1969 and IFG paint sludge that was also reportedly received at the Site from 1968 to 1969. The NYSDEC files indicate that approximately 11,000 tons of sludge was disposed at the site (NYSDEC 2002). The sludge disposal area is located at the terminus of the east access road to the Site.

According to the Part 360 landfill permit application, the Site also received drums in the 1960s. According to Mr. Brillo, the drum storage area was located adjacent to and south of the sludge disposal area.

In the 1980's, Mr. Brillo sought a Part 360 permit to dispose of certain non-hazardous wastes on an area of his property that was separate from the sludge disposed of in the east area. A separate roadway (west access road) provided independent access to the Part 360 landfill (west area). The Part 360 construction permit issued to Mr. Brillo addressed the construction of the west area for use as a Part 360 landfill (Appendix A).

In addition, as a special condition of the permit, Mr. Brillo was required to implement a remediation plan for the east area, which addressed (among other things) the presence of the sludge. Remediation of the former drum storage area was also among those work tasks described in a NYSDEC-approved remediation work plan that was submitted by Mr. Brillo in connection with the Part 360 permitting process (Appendix A).

As a component of remediation activities, the sludge in the east area was reportedly covered with soil and then allowed to vegetate naturally. The former drum storage area was also covered with soil and then allowed to vegetate naturally. During a recent reconnaissance of the Site, the sludge disposal area and former drum storage area were vegetated with grasses, low shrubs, and small trees.

Although the sampling conducted in 2000 by NYSDEC identified PCBs and chromium in the sludge that remains in the east area of the Site, the NYSDEC data did not identify the extent of the sludge disposal area. The Preliminary Investigation provides additional information for characterizing the extent of the sludge disposal area. In addition to the investigation of the sludge disposal area which forms the basis of the NYSDEC listing of the Site, the Preliminary Investigation reviewed the potential presence of constituents associated with the former drum storage area.

Historic photographs of the Site show it as land used for agriculture in the 1960s, and in later photographs (1988 and 2000) the Site appears as

undeveloped land (Appendix B). In the 1988 photograph, two access roads and a disturbed area are visible in the aerial photograph (Appendix B).

1.2. Preliminary site conceptual model

The east access road was used to access the sludge disposal area and the former drum storage area on the east portion of the Site (Figure 1-1). The former drum storage area is located approximately 800 ft north of Route 370 via the east access road. The sludge disposal area is located beyond the former drum storage area, approximately 1,100 ft north of Route 370.

The sludge disposal area and the former drum storage area are located in clearings surrounded by trees. Grasses, shrubs, and small trees vegetate the clearings. The drainage of the Site is generally toward the northwest and the east area generally drains in that direction.

The approximate edges of the sludge disposal area are readily discerned due to the steep banks that border a low drainage area that is located west and north of it. Exposed bluish materials observed along the west and east banks of the sludge disposal area provided visual evidence of sludge materials (Appendix C). The bluish materials provide visual evidence of the extent of the sludge that can be used to assist in delineation of the sludge disposal area.

The proximity of the exposed sludge (located along the west bank of the sludge disposal area) with the low/drainage area suggests a potential pathway for migration of residuals from the sludge disposal area, if erosion were to occur. The low/drainage area located between the east area and the Part 360 landfill contains both state and federal wetlands that drain toward Sodus Creek located approximately 1,000 ft northwest of the Part 360 landfill. The approximate locations of wetland areas are indicated on Federal and State wetland maps (Appendix D). The wetland maps are intended to provide guidance on the locations of wetland areas. Consistent with regulatory guidance, the actual locations of wetlands would require field review. At the time of the field investigation, the low/drainage area between the east and west areas contained wet soils, but no areas of standing water were observed. The low/drainage area separates the east and west areas by a distance of approximately 500 ft.

The west access road was used to access the Part 360 landfill that is located approximately 1,300 ft north of Route 370 via the west access road. The Part 360 landfill generally drains toward the northwest. The approximate edges of the Part 360 landfill are readily discerned due to the steep banks that border a low drainage area that is located to the east

and north of the Part 360 landfill. There are five monitoring wells located along the edge of the Part 360 landfill that borders the low/drainage area that is west and north of the sludge disposal area (Figure 1-1). Wells adjacent to the Part 360 landfill were used for investigations completed in the past by others. Monitoring data for those wells was not available for review. Ground water data associated with the Part 360 landfill were not identified from review of NYSDEC file data. Cayuga County Department of Health has been contacted in a further attempt to locate the data (O'Brien & Gere 2004).

1.3. Preliminary Investigation objectives

The primary objectives of the Preliminary Investigation were to further characterize the sludge disposal area and assess whether the NYSDEC remediation plan was implemented and effective. To accomplish these objectives, the following tasks were defined:

- Evaluate the areal and vertical extent of the sludge disposal area.
- Identify if soils and ground water have been impacted.
- Improve understandings of the physical relationships of the access roads, the Part 360 landfill, the sludge disposal area, the former drum storage area, and the low/drainage area that separates the two former disposal areas.
- Evaluate if buried drums or residual contamination were present in the former drum storage area.

1.4. Approach

The Preliminary Investigation focused on the east area which is comprised of three subareas consisting of the sludge disposal area, the former drum storage area, and the low/drainage area that is downslope of those areas to the west. An overview of the tasks completed for the Preliminary Investigation are described below:

- An electromagnetic survey was completed to evaluate the potential presence of metallic materials in subsurface soils that might indicate the presence of buried objects such as drums.
- Sludge samples were collected and analyzed for PCBs and chromium. In addition, subsurface sludge samples were analyzed for VOCs.

- Soils from the east area were sampled and analyzed for PCBs and chromium. In addition, soil samples were collected from background locations and analyzed for chromium to support the evaluation of the occurrences of that element in site soils.

- Ground water in the vicinity of the east area was sampled and analyzed for VOCs, PCBs, and chromium.

O'Brien & Gere Laboratories in Syracuse, New York analyzed the samples, except soil samples from the drainage area that were analyzed for total organic carbon (TOC). TOC samples were analyzed by Ecology & Environment, Inc. in Lancaster, New York.

2. Methods

Observations of the site prior to initiation of the Preliminary Investigation identified that the access road to the east area was impassible. Large fallen trees were across the access road, and smaller trees and shrubs were growing in the access road. The debris in the access road made it unlikely that vehicle access to the site had occurred in recent years. Prior to sampling, the east access road was cleared to allow access for the drilling rig. Upon completion of the Preliminary Investigation, Mr. Brillo was notified and he indicated that a cable would be placed across the access road to prevent future access.

Drilling for installation of soil borings, and monitoring wells for ground water sampling was completed by Parratt-Wolff, Inc. of Syracuse, New York.

2.1. Site survey

A survey of the east and west areas of the Site was completed by Richard M. Rybinski, LLS. The survey consisted of a topographic survey and identification of sample location coordinates. The location of the access roads used to access the east and west areas were also included in the topographic survey. In addition, the locations of the existing monitoring wells associated with the Part 360 landfill were included in the survey. The topographic survey used an assumed site horizontal and vertical datum. Survey coordinates are provided in Appendix E.

2.2. Electromagnetic survey

Prior to completing the investigations of the east area, an electromagnetic survey (Geonics EM-31) was completed. A grid was established at approximate 5 ft intervals across the sludge disposal area and the former drum storage area. Electromagnetic readings were recorded at each position on the grid and the response was recorded.

2.3. Soil and sludge investigation

Sampling of soil and sludge was completed from October 21 to 24, 2003 to evaluate the presence of the Site contaminants. A hand auger and geoprobe soil survey (soil survey) was completed of the east area to observe the physical appearance, depths, and spatial extent of non-native materials. Sampling of subsurface media from the east area was completed based on results of the soil survey. A total of eight samples were collected to evaluate the sludge as described in Section 2.3.1. In addition, a total of 23 environmental soil samples were collected to evaluate the area bordering the sludge disposal area, and the soil from the former drum storage area, the low/drainage area, and background, as described in Section 2.3.2. Sludge and soil samples were collected and analyzed according to procedures presented in Section 2.3.3. Sample quantities and locations are also summarized (Table 2-1 and Figure 2-1, respectively). Soil boring logs that document field observations are provided in Appendix F.

2.3.1. Sludge investigation locations

To visually characterize the sludge and soil that is present in and around the sludge disposal area and the extent of that sludge, 27 borings were completed. Fifteen of the borings were completed west of the access road and 12 borings were completed east of the access road. Eight samples of the sludge were collected for laboratory analysis; these samples consisted of five subsurface sludge samples and three sludge samples collected from the west bank of the sludge disposal area where sludge was exposed at the surface. The sludge samples were analyzed for PCBs, and chromium. In addition, the subsurface sludge samples were analyzed for VOCs.

2.3.2. Soil investigation locations

Soil samples were collected from and in the vicinity of the sludge disposal area, the former drum storage area, the low/drainage area, and background locations as discussed below.

Soils in the vicinity of the sludge disposal area. Soil samples were collected from the borders of the sludge disposal area and from within the sludge disposal area at depths below the observed sludge layer (Table 2-1a, Figure 2-1). Fourteen soil samples were collected in the vicinity of the sludge disposal area. Twelve of the soil samples were collected from the borders of the sludge disposal area. The border samples were collected from the 0 to 1 foot interval of the surface soil to support the delineation of the spatial limits of contamination associated with materials in that area. The locations of the border samples were based on the results of the soil survey and physical characteristics of the areas. The two remaining samples were collected from soil at depths below the observed sludge layer.

Soil from the former drum storage area. To visually characterize the soil that is present in the former drum storage area, five borings were

completed. Twelve soil samples were collected for laboratory analysis of PCBs and chromium (Table 2-1b, Figure 2-1):

- Three of the samples were obtained from the borings to represent subsurface soils. The subsurface soil samples were collected at depths to evaluate the potential presence of residuals from former drum storage activities. The locations selected for analysis were based on field observations from the soil survey. The soil samples from these locations were also analyzed for VOCs.
- Three soil samples were collected from the area where anomalous electromagnetic activity was observed.
- The remaining six samples were collected along the borders of the former drum storage area. The border samples were collected as surface soils from the 0 to 1 foot interval to support the evaluation of the spatial limits of contamination associated with materials in that area. The locations of the border samples were based on the results of the soil survey and physical characteristics of the Site.

Low/drainage area soil. Three soil samples were collected from low/drainage areas downslope of the sludge disposal area (one sample) and former drum storage area (two samples), as presented in Table 2-1c. The samples were collected to evaluate the presence of site residuals in the low/drainage area in the vicinity of those areas (Table 2-1c). The soil samples from the drainage area were collected from the 0 to 6 inch depth interval.

Background soil samples. Three surface soil samples were collected from the portion of the Site that is located south of Route 370 where no known disposal activities have taken place (Table 2-1c). The samples were collected from the 0 to 1 ft soil depth interval from soil with a physical appearance (*e.g.* grain size) similar to surface soil sampled from the east area (Table 2-1c). The background samples were analyzed for chromium.

2.3.3. Sample collection and analytical procedures

Two techniques were used to collect sludge and soil samples. Soil borings were completed with split spoon sampling techniques using a drilling rig. Surface soil samples and subsurface soils collected from the former drum storage area were completed using a hand auger.

The field sampling was completed according to GM's Field Methods Guidance (GM 2001). Quality control and health and safety procedures for the investigation were completed according to the Quality Assurance Project Plan (QAPP, O'Brien & Gere 1999) and Health and Safety Plan (HASP, O'Brien & Gere 1999) approved by NYSDEC for investigation work at the former IFG Facility in Syracuse, New York, which is also a site on the NYSDEC Registry.

Samples were analyzed for PCBs and chromium, and analyses of subsurface soil and sludge also included VOCs. The analyses were completed using New York State Analytical Services Program (ASP)

Category B methods by O'Brien & Gere Laboratories. Soil samples collected from the drainage area were also analyzed for TOC using the Lloyd Kahn method. The TOC data were reported using data validatable (Contract Laboratory Program type) reporting format. The TOC samples were analyzed by Ecology & Environment, Inc. located in Lancaster, New York.

Matrix spike and matrix spike duplicate pairs, field duplicates, and equipment blanks were analyzed at a rate of at least 1 per 20 environmental samples. Laboratory analyses for confirmation of PCB results was performed on at least 10% of the PCB samples. The primary PCB analytical result is reported in the data summary tables provided in this report; however, both the primary and secondary analytical results were documented in the laboratory reports (O'Brien & Gere Laboratories 2003a,b). VOC analyses also included trip blanks in each cooler submitted to the laboratory.

2.4. Ground water investigation

Sampling of ground water was completed on November 12, 2003 to evaluate the presence of the Site residuals.

2.4.1. Locations

Four monitoring wells (MW-1 through MW-4) were constructed for collection of ground water samples (Figure 2-1). Two wells were completed downgradient of the sludge disposal area, one well was completed downgradient of the former drum storage area, and one well was installed upgradient of the area. One round of ground water samples was collected from each of the wells using low flow sampling methods.

2.4.2. Well installation and development

Drilling for installation of the wells was completed by Parratt-Wolff, Inc. of Syracuse, New York. The monitoring wells were installed using hollow-stem auger drilling techniques. The monitoring wells are constructed of schedule 40 PVC casing attached to a slotted, 0.010 inch slot, schedule 40 PVC well screen. The well screen was installed to intersect the water table.

Ground water monitoring wells MW-1 through MW-4 were developed on October 27, 2003 in order to remove fine-grained sediment in and around the well screen. Well development consisted of removing a minimum of ten well volumes of water from the each well using a bailer. Turbidity levels exceeded the scale of the turbidity field meter (>1000 nephlometric turbidity units or NTUs) throughout development (except for MW-1) due to the fine grained nature of the formation. The wells were purged with the bailer until no further improvement in turbidity was

observed. Monitoring well development logs are included in Appendix G.

2.4.3. Sample collection procedures and analyses

The field sampling was completed according to GM's Field Methods Guidance (GM 2001). Quality control and health and safety procedures for the investigation was completed according to the QAPP and HASP that was approved by NYSDEC for investigation work at the former IFG Facility (O'Brien & Gere 1999), which is also a site on the NYSDEC Registry.

Ground water samples were collected on November 12, 2003 using low flow purging and sampling techniques. Low flow purging and sampling was performed with a peristaltic pump and dedicated tubing set within the screened interval of the well and purging at a maximum rate of 0.5 liters/minute. During purging, ground water quality parameters including pH, conductivity, temperature, pH, turbidity and dissolved oxygen were monitored continuously using an in-line YSI-600xl meter. In each of the wells, turbidity improved as well purging progressed to levels ranging from 21 to 45 NTU in MW-1, MW-3, and MW-4; in MW-2, 222 NTU was observed. Once the ground water quality parameters stabilized, samples were collected directly from the dedicated tubing. Purge water was contained in 55- gallon drums for subsequent disposal. More specific information regarding the ground water sampling is included on the ground water sampling logs presented in Appendix G.

Samples were analyzed for VOCs, PCBs, and chromium using New York State ASP Category B methods by O'Brien & Gere Laboratories of Syracuse, New York. Sample quantities included analysis of field quality control samples consisting of matrix spike and matrix spike duplicate pairs, field duplicates, and equipment blanks at a rate of at least 1 per 20 environmental samples. For PCB analyses, confirmation of PCB results was performed on at least 10% of the samples. The primary PCB analytical result is reported in the data summary tables; however, both the primary and secondary analytical results are documented in the laboratory reports (O'Brien & Gere Laboratories 2003a,b). VOC samples included trip blanks that accompanied each cooler of VOC samples submitted to the laboratory.

2.5. Data interpretation approach

Data interpretation consisted of a data quality review (Section 2.5.1) and comparison of data to screening values (Section 2.5.2). Analytical data are provided in laboratory reports (O'Brien & Gere Laboratories 2003a,b).

2.5.1. Data quality

Samples were submitted to O'Brien & Gere Laboratories and analyzed according to NYSDEC approved QAPP for the Former IFG facility and Ley Creek Deferred Media (O'Brien & Gere 1999).

For a preliminary evaluation of data quality, the case narratives provided by the laboratory (O'Brien & Gere Laboratories 2003a,b) were reviewed. Data quality review was completed according to the work plan that was submitted to NYSDEC. The data quality review consisted of review of the case narratives along with the results of duplicate, matrix spike, and blank analyses to provide a preliminary evaluation of data quality. Preliminary review of the data quality indicated that the data is acceptable for the intended uses. Minor laboratory problems resulted in some data being qualified. Data qualified as estimates (J) are acceptable for intended uses.

The data quality results are summarized below:

- Duplicate data were generally in close agreement. The relative percent differences (RPD), a measure of precision, were generally within expected ranges (Table 2-2).

- Matrix spike data were generally within expected ranges as measured by the percent recovery, a measure of bias.

- Contaminants were generally not detected in equipment blanks (Table 2-3). However, an equipment blank associated with soil samples contained PCBs at 0.3 ug/L (Table 2-3). The detection of such concentrations of PCBs in rinse samples (measured at parts per billion or ppb level) is not expected to compromise soil data (measured at parts per million or ppm level). Affected samples were qualified for blank contamination (B).

- Methylene chloride was detected in trip blanks at an estimated concentration (J) of 1 ug/L (Table 2-3). One equipment blank also contained 1 ug/L (J) of methylene chloride. The detection of methylene chloride in blank samples is attributed to laboratory contamination as methylene chloride is a common solvent used in laboratory work. Affected samples were qualified for blank contamination (B).

- PCBs detected in prep blanks associated with sample dilutions at 0.02 mg/kg were qualified by the laboratory (P). While the concentration of PCBs in the prep blank was above the practical quantitiation limit, the concentration was low compared to the concentrations detected in soils.

- Concentrations of PCBs detected above the method detection limit (MDL), but below the quantification limit were reported as estimates (J).

2.5.2. Media-specific screening values

The Preliminary Investigation data were compared to screening values:

- Ground water data were evaluated using ambient water quality standards and guidance provided in the *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, Division of Water Technical and Operational Guidance Series 1.1.1* (TOGS, NYSDEC 1998). Ground water concentrations were compared to the TOGS screening values for drinking water sources. For ground water, Class GA screening values were applied. For surface water, Class AA screening values were applied. These evaluations were intended to represent the most conservative screening values, although they may not represent the intended uses for these waters on the site.

- Soil data were compared to screening levels provided in the Technical and Administrative Guidance Memorandum (TAGM) #4046 for the *Determination of Soil Cleanup Objectives and Cleanup Levels* (NYSDEC 1994). Local background concentrations of chromium in soil samples collected along a grassy area south of Route 370 were also used to evaluate potential incremental concentrations of chromium on the Brillo Site that may be related to site activities.

Results of these interpretive efforts are reported in subsequent sections of this report.

3. East area geology and hydrogeology

The topography of the east area ranges across approximately 30 ft. The high elevation occurs along the north-south trending ridge along the east edge of the east area. The east area slopes down towards the low/drainage areas to the west.

3.1. Geology

Soil borings were completed to a maximum depth of 20 ft below ground surface (bgs), as presented in field logs (Appendix F). Borings completed in the east area were completed into native material. Boring MW-1, completed upgradient of the east area in native material, encountered 16 ft of brown fine to medium grained sand with some fine to coarse grained gravel. The remaining 4 ft of the boring encountered a brown, finer grained sand and silt.

These overburden deposits were also encountered at the other borings. Borings in the former drum storage area encountered 10 ft of brown fine to medium grained sand with some fine to coarse grained gravel.

Above the native materials in the sludge disposal area, a discrete layer of grayish blue green silt and fine grained sand sludge was found. This sludge layer varied from 0 to approximately 7.5 ft thick (Table 3-1). The sludge layer was thickest along the southeast portion of the sludge disposal area and the west edge of the sludge disposal area. In most of the sludge disposal area, the sludge is below 0.5 to 2 ft of cover fill consisting of brown fine to medium grained sand with little vegetative matter and a trace amount of fine to coarse grained gravel. The east and west borders of the sludge disposal area were exceptions. In those border areas, the patches of sludge were exposed at the ground surface.

3.2. Hydrogeology

Ground water was encountered at approximately 13 ft bgs in the upgradient well (MW-1) and near or at the ground surface in the other three, downgradient, wells located in the low/drainage area (Table 3-2). Shallow ground water flow, in the vicinity of the sludge disposal area and former drum storage area, is to the northwest. This is consistent with

the surface topography and suggests that shallow ground water may discharge to the wetlands located north of the sludge disposal area.

4. Results

Results of the Preliminary Investigation are presented in separate subsections for the electromagnetic survey (Section 4.1), soil and sludge investigation (Section 4.2), and ground water investigation (Section 4.3).

The detection of PCBs was generally reported as Aroclor 1248. However, the PCBs detected in ground water sample MW-2 were reported as altered Aroclor 1221 and the PCBs detected in soil sample Drum-SS-3 (0 to 1 ft) were reported as altered Aroclor 1254.

4.1. Electromagnetic survey

Results of the electromagnetic survey indicated that no anomalous readings were observed in the sludge disposal area. However, in the former drum storage area, weak anomalous readings were observed in an area of approximately 6,900 ft^2 (Figure 2-1). The anomalous readings appeared to be associated with silver/bluish colored rock like materials of irregular shapes with sizes of less than 1 ft^2. The anomalous readings were weaker than would be expected if drums were buried in shallow soil at the site. No buried drums were encountered during the subsurface soil investigation.

4.2. Soil and sludge investigation

The results of the investigation of soil and sludge are presented in separate subsections consisting of background (Section 4.2.1), sludge disposal area (Section 4.2.2), soils bordering the sludge disposal area (Section 4.2.3), former drum storage area (Section 4.2.4), and the low/drainage area (Section 4.2.5). PCB concentrations were reported as Aroclor 1248, except as noted in the results presented below.

4.2.1. Background

Chromium concentrations detected in background samples ranged from 10 to 33 mg/kg (Table 4-1).

4.2.2. Sludge disposal area

The sludge disposal area is shown on the sample location map (Figure 2-1). In general, the sludge was observed below approximately 2 ft of cover material (Figure 4-2). The sludge observed consisted of a distinct blue colored material in subsurface media across the sludge disposal area as presented in site photographs (Appendix C) and documented in soil boring logs (Appendix F). Field observations of subsurface soil and sludge indicated that the sludge disposal area is a single continuous area of sludge with varying thickness (Table 3-1 and Appendix F). However, the potential presence of sludge below the access road was not specifically evaluated.

The thickness of the sludge ranged from 0 to approximately 7.5 ft (Table 3-1). A sludge thickness up to 6.5 ft was located in the vicinity of sample locations MDA-TB-10 and MDA-TB-11 next to the west slope of the sludge disposal area. The greatest thickness of sludge was found on the southeast portion of the sludge disposal area near MDA-TB-27. In the vicinity of the east access road, the sludge layer ranged in thickness from 0 to approximately 0.5 ft.

The results of exposed sludge and subsurface sludge analyses are presented below. Analytical results of soil samples collected in the vicinity of the sludge disposal area are presented separately (Section 4.2.3).

Exposed sludge

The three locations of exposed sludge material along the west embankment of the sludge disposal area that were sampled (MDA-SS1, MDA-SS-2, and MDA-SS3 and MDA-SS-3 duplicate) contained PCBs ranging from 2,100 to 7,800 mg/kg and chromium ranging from 130,000 to 157,000 mg/kg (Table 4-2). The duplicate of MDA-SS-3 was consistent with the original sample results.

Subsurface sludge

In general, total VOC concentrations of the sludge were below TAGM screening values. The total VOC concentrations of the three sludge locations sampled west of the access road (MDA-TB-5 (4 to 6 ft), MDA-TB-10 (4 to 6 ft), and MDA-TB-11 (6 to 7 ft)) ranged from 0.1 to 1.7 mg/kg (Table 4-2). The individual VOCs concentrations were below TAGM values, except for trichloroethene detected in sample MDA-TB-5 (4 to 6ft). In that sample, trichloroethene was present at 1.6 mg/kg which is marginally higher than the TAGM screening value of 0.7 mg/kg. The two sludge locations sampled east of the access road, MDA-TB-21 (3 to 5 ft) and MDA-TB-26 (4 to 6 ft), contained total VOC concentrations of 0.05 and 0.2 mg/kg, respectively. Neither sample contained VOC concentrations above TAGM values for the individual compounds.

The PCB and chromium concentrations were above TAGM screening values in the five subsurface sludge locations that were sampled. The PCB concentrations ranged from 1,000 to 12,000 mg/kg and the chromium concentrations ranged from 15,000 to 152,000 mg/kg.

4.2.3. Soils bordering the sludge disposal area

Soil samples collected outside the border of the sludge disposal area and soil below the sludge did not contain visible evidence of sludge. Border samples were collected to represent soil outside the spatial and vertical extent of the sludge, as discussed below.

Surface soil samples

The concentrations of PCBs and chromium in the 11 locations surface soil samples collected outside the borders of the sludge disposal area were variable (Table 4-3, Figure 4-1):

- Soil collected from the two locations north of the sludge disposal area (MDA-SS-6 and MDA-TB-22) exhibited PCB and chromium concentrations below the TAGM screening values.
- The soil sample collected from location Mound-SS-6 was downslope and east of the exposed sludge contained PCBs and chromium at concentrations of 7 and 64 mg/kg, respectively. At that location, both PCB and chromium concentrations were within the same order of magnitude as TAGM screening values.
- Soil samples collected from locations MDA-TB-14 and MDA-TB-15 located along the south border of the sludge disposal area contained similar concentrations of PCBs and chromium at both locations. PCB concentrations were 3.0 and 2.2 mg/kg, respectively. Chromium concentrations were 94 and 47 mg/kg, respectively.
- A sample collected along the access road (MDA-TB-18) contained PCBs below the TAGM screening value for surface soil and a chromium concentration of 56 mg/kg which is marginally above the maximum background concentration of 33 mg/kg.
- Soil sample MDA-SS-5, collected from the down-slope bank southwest of the sludge disposal area contained PCBs and chromium concentrations of 180 and 1,060 mg/kg, respectively, above TAGM screening values.
- Soil collected from three locations along the east border of the sludge disposal area, Mound-SS-3, Mound-SS-4, and Mound-SS-5, also contained elevated concentrations of PCBs and chromium in excess of the TAGM screening values. In those samples, the PCB concentrations ranged from 20 to 82 mg/kg and the chromium concentration ranged from 484 to 3,040 mg/kg. The concentrations were above TAGM screening values.

Soil below sludge

One soil sample, MDA-TB-10 (8 to 12 ft), was collected from below the visible extent of the sludge (Table 4-3). That sample contained PCBs and chromium above TAGM screening values. The PCB concentration of 14 mg/kg was slightly above the TAGM screening value of 10 mg/kg and the chromium concentration of 223 mg/kg in that sample was above the maximum background concentration of 33 mg/kg.

4.2.4. Former drum storage area

Two drums were observed on the ground surface at the north portion of the area. One of the drums contained what appeared to be melted material. Both drums were upright and bottomless with vegetation growing inside them as shown in site photographs (Appendix C).

Analytical results are presented for soil samples collected from the anomalous electromagnetic area, subsurface soil, and surface soil from the area bordering the former drum storage area, below and in Table 4-4.

Anomalous electromagnetic area

Four samples were collected from the anomalous electromagnetic area (Drum-SS-7 through Drum-SS-10) and analyzed for PCBs and chromium. VOCs were also analyzed in one of the samples. Results of the soil sampling in the anomalous electromagnetic area, presented in Table 4-4, are summarized below:

- VOCs were below TAGM screening values in Drum-SS-7 (0 to 1 ft), as well as the associated duplicate sample.
- PCB concentrations ranged from 110 mg/kg in sample Drum-SS-10 to 1,400 mg/kg in sample Drum-SS-9. Each of the five locations sampled from the anomalous electromagnetic area contained PCB concentrations in excess of the TAGM screening value.
- Chromium ranged from 67 mg/kg in Drum-SS-9 to 117 mg/kg in Drum-SS-7 (duplicate). Each of the five locations sampled from the anomalous electromagnetic area contained chromium concentrations in excess of the maximum background concentration of 33 mg/kg.

Subsurface soil

The two subsurface soil samples (Drum-TB-1 and Drum-TB-3, both 4 to 6 ft) contained VOCs and chromium at concentrations that were below TAGM screening values (Table 4-4). Total VOCs were less than 0.1 mg/kg in both samples and chromium concentrations were below the maximum background concentration of 33 mg/kg. PCB concentrations of 15 mg/kg and 0.5 mg/kg were reported for Drum-TB-1 (4 to 6 ft) and Drum-TB-3 (4 to 6 ft), respectively compared to the 10 mg/kg TAGM screening value for PCBs in subsurface soil.

Border

The six samples (Drum-SS-1 through Drum-SS-6) collected from the area bordering the former drum storage area contained PCBs above the TAGM screening value and two of the six samples contained chromium above the maximum background concentration of 33 mg/kg (Table 4-4). The PCB concentrations ranged from 5.4 to 200 mg/kg compared to the TAGM screening value of 1 mg/kg for PCBs in surface soil. The PCBs detected in sample Drum-SS-3 (0 to 1 ft) were reported as altered Aroclor 1254. The concentrations of chromium detected in samples Drum-SS-4 (0 to 1 ft) and Drum-SS-5 (0 to 1 ft) were 402 and 47 mg/kg, respectively; the concentrations at both locations were in excess of the maximum background concentration of 33 mg/kg.

4.2.5. Low/drainage area

Results of the surface soil (0 to 6 inches) sampling of the low/drainage area that is located downslope of the sludge disposal area differed from results of sampling downslope of the former drum storage area (Table 4-1). The surface soil sample collected from downslope of the sludge disposal area (Drainage-SS-1) contained PCB and chromium concentrations of 48 and 735 mg/kg, respectively. The two locations downslope of the former drum storage area (Drainage-SS-2 and Drainage-SS-3) contained PCB concentrations of 3.7 and 3.1 mg/kg, respectively. The chromium concentrations of soil samples collected downslope of the former drum storage area were 60 and 46 mg/kg, respectively. The concentrations of PCBs and chromium in soil samples collected from the low/drainage area adjacent to the east area of the site were above TAGM screening values.

4.3. Ground water investigation

The ground water concentrations of chromium were well below the 50 ug/L TOGS screening value for all four monitoring wells (Table 4-5). Chromium was detected in ground water up to 12 ug/L.

Groundwater concentrations of VOCs and PCBs in two of the four monitoring wells were below TOGS screening values (Table 4-5):

- The upgradient monitoring well (MW-1) did not contain VOCs or PCBs above the detection limits.

- In the vicinity of the sludge disposal area, results were variable. The concentrations of VOCs and PCBs in monitoring well MW-3 were generally below or near TOGS screening values. In monitoring well MW-4, total VOCs were approximately 10 ug/L, consisting of primarily trichloroethene (8 ug/L). The turbidity of the ground water during sampling of MW-3 and MW-4 was approximately 45 and 21 NTU, respectively.

- Monitoring well MW-2 located in the vicinity of the former drum storage area contained the highest concentrations of VOCs and PCBs detected in ground water at the site. Both constituents were above TOGS screening values. The total VOC concentrations of 6,800 and 7,100 ug/L were reported for the original and duplicate samples, respectively. The concentrations of VOCs were primarily attributed to cis-1,2-dichloroethene and vinyl chloride which were present at concentrations of approximately 6,000 and 1,100 ug/L, respectively. In addition, PCBs were reported as altered Aroclor 1221 at approximately 1.1 ug/L. The turbidity of the ground water during

sampling at MW-2 was also elevated at 222 NTU. The elevated turbidity may affect the representativeness of sampling data as discussed in Section 5.

5. Discussion

Although NYSDEC describes the Brillo Landfill Site as comprising approximately 100 acres (Figure 1-1), there are only two known disposal areas within this Registry Site. The east area consists of approximately 2.6 acres and contains two subareas consisting of a sludge disposal area and a former drum storage area. The Part 360 landfill that comprises the west area is approximately 2.5 acres.

The extent of the east and west areas were estimated based on observations completed during the Preliminary Investigation. The spatial extent of the east area was estimated based on visual observations of the clearings between treelines and sampling and analysis of soil samples completed for this investigation. The sludge disposal area was also delineated using observations of subsurface media. In addition, observations of the banks of the sludge disposal area and Part 360 landfill aided in the development of the estimates of surface areas.

Both the sludge disposal area and former drum storage area are sloped toward the west such that the majority of surface runoff, should it occur, would drain toward the low/drainage area that is adjacent to those areas. At the time of the field activities, the soils in the low/drainage area located west of the sludge disposal area and former drum storage area were wet, but no standing water was observed. A treeline separates the sludge disposal area from the former drum storage area.

Further discussion of the sludge disposal area (Section 5.1) and the former drum storage area (Section 5.2) are presented separately. In addition, a discussion of the low/drainage area located west of those areas provides an interpretation of surface soil and ground water data (Section 5.3).

5.1. Sludge disposal area

The sludge disposal area is located at the terminus of the east access road. The extent of the sludge disposal area was estimated by the observation of blue colored sludge. Based on area estimates (discussed above) and visual observations of the subsurface media, the approximate volume of the sludge in the sludge disposal area was estimated to be 5,600 CY (Figure 5-1). However, the depths of sludge in the sludge disposal area were variable, ranging from approximately 0 to 7.5 ft resulting in some uncertainty in the actual volume of sludge that is present in the sludge disposal area. The largest volumes of material within the sludge disposal area were found adjacent to the west bank and on the east portion of that area.

The volume of sludge estimated using Preliminary Investigation data is consistent with the amount of sludge reportedly disposed of by Mr. Brillo. As discussed in Section 1.1, NYSDEC files indicate that approximately 11,000 tons of sludge were reportedly disposed by Mr. Brillo. Assuming that the density of the sludge was approximately 1.6 tons/CY, the NYSDEC file data indicate that the volume of sludge reportedly disposed was approximately 6,900 CY. The estimate of 5,600 CY obtained by evaluation of Preliminary Investigation data corresponds with the volume estimated from NYSDEC file data, particularly if settlement and consolidation are considered. The two estimates represent approximate average depths of 2.0 and 1.7 ft, respectively across the 2.1 acre sludge disposal area. Both of these depth values are reasonable given the variability of sludge depths observed across the sludge disposal area which ranged up to 7.5 ft thick (Table 3-1).

Analysis of sludge samples confirmed the presence of elevated (*i.e.*, in excess of TAGM screening values) concentrations of PCBs and chromium that were previously identified by the NYSDEC. However, VOC concentrations detected in the sludge were generally within TAGM screening values or slightly above them suggesting that the sludge does not contain material that would be a current source of VOCs to ground water. The low concentrations of VOCs in the ground water adjacent to the sludge disposal area (MW-3 and MW-4) are consistent with this inference. In ground water collected from those wells, the concentrations of VOCs were generally within TOGS screening values, or slightly above them.

Visual observations of surface materials in the sludge disposal area indicate a layer of soil approximately 2 ft thick is present above the sludge, except along the borders of the sludge disposal area where the soil depths were thinner.

5.2. Former drum storage area

The PCB and chromium concentrations detected in the soil of the drum storage area indicated that residuals are present in the soil. Surface and subsurface soil samples from that area contained PCBs and chromium above the TAGM screening values. VOC concentrations in two subsurface samples of soil were below TAGM screening values.

In addition, a surface area of approximately 6,900 ft^2 within the former drum storage area next to the low/drainage contained weak anomalous electromagnetic readings that were apparently associated with

silver/bluish colored rock like materials observed there (Appendix C). The anomalous electromagnetic readings were weaker than would be expected if drums were buried in shallow soils. No buried drums were encountered during the Preliminary Investigation.

5.3. Low/drainage area

The low/drainage area is vegetated with trees and shade plants between the east area and Part 360 landfill. During field activities, the drainage area soils were saturated, although no standing water was observed. Analytical data for surface soils sampled adjacent to the east area contained PCBs and chromium above TAGM screening values, however the extent of elevated PCBs and chromium in the low/drainage area has not been identified. Migration of materials from the sludge disposal area or former drum storage area may have occurred via erosion. It is also possible that mechanical movement of materials may have occurred during site operations or remediation activities.

During field investigation activities completed in October 2003, ground water was located approximately at the ground surface. Downgradient of the sludge disposal area, ground water contained concentrations of PCBs and chromium below TOGS screening values. VOCs in the ground water were generally below TOGS screening values, except trichloroethene which was slightly above the TOGS screening value in MW-4 located toward the north end of the sludge disposal area. It is not clear if the sludge is the source of VOCs detected in the ground water at MW-3 and MW-4 or if it is associated with the presence of VOCs in the vicinity of MW-2.

Ground water from monitoring well MW-2, located adjacent to the former drum storage area, contained elevated concentrations of VOCs, specifically vinyl chloride and cis-1,2-dichloroethene. The presence of elevated concentrations of VOCs in ground water at MW-2, but not in the subsurface soil or sludge that were analyzed, indicates that the source of the VOCs in ground water was not identified.

There is an elevated level of uncertainty associated with the representativeness of the PCBs observed in the ground water at MW-2 which complicates the interpretation of data from that well. Generally, PCBs associate with particulate matter rather than water. The elevated turbidity in ground water collected from MW-2 (222 NTU) may be associated with high levels of particulate matter. If that were the case, the PCBs detected in the ground water may also be associated with the particulate matter leading to PCB concentrations that would be biased

high in the ground water. However, elevated levels of VOCs may also increase the presence of PCBs in ground water.

Therefore, it is unclear if migration of PCBs in ground water has occurred. While there is uncertainty in the form of the PCBs detected in the ground water (dissolved or particulate), PCBs were also detected in the surface soil sample collected from Drum-SS-2, which is the nearest surface soil sample to MW-2 approximately 30 feet away. The detection of PCBs in the surface soil sample Drum-SS-2 supports the inference that the PCBs in ground water at MW-2 may be associated with a particulate/soil source.

6. Conclusions

Overall, it is concluded that the observations completed as part of the Preliminary Investigation are consistent with available records of the Site that indicate a relatively small area of the Site, approximately 5 acres of the 100 acre site, were used for disposal or storage of materials. The Part 360 landfill, the west area, appears to be approximately 2.5 acres. The east area, consisting of the sludge disposal area and former drum storage area, appears to be approximately 2.6 acres. The east and west areas are accessed by separate roads suggesting that uses of these areas were separate as well. Specific conclusions regarding the sludge disposal area and former drum storage area are provided in separate sections, below (Sections 6.1 and 6.2, respectively).

6.1. Sludge disposal area

The following conclusions can be drawn from the investigation of the sludge disposal area and the drainage area adjacent to it. The conclusions pertaining to the characterization of the sludge disposal area and those pertaining to the effectiveness of past remedial activities are presented in separate subsections:

6.1.1. Characterization

The following conclusions apply to the characterization of the sludge disposal area:

- The sludge disposal area is located approximately 1,100 ft north of Route 370 via the east access road.

- The approximate vertical and horizontal extent of the sludge has been delineated. Based on Preliminary Investigation observations, the sludge is visually evident as blue material. The area and volume of sludge contained in the sludge disposal area consists of approximately 5,600 CY of material located on approximately 2.1 acres on the east portion of the Brillo Site. The sludge is generally covered by a soil layer that is approximately two feet thick. However, banks along the east and west edges of the sludge disposal area contain exposed sludge.

- The estimated volume of material in the sludge disposal area is generally consistent with the amount of material reportedly disposed at the site when settling over time is considered as a volume factor (Section 5.1).

- The sludge contained concentrations of PCBs and chromium that are above TAGM screening values. The concentrations of VOCs in the sludge were generally below TAGM screening values, but in some cases they were marginally above.

- Sampling of soil located approximately 50 to 75 feet west of the perimeter of the sludge disposal area identified the presence of much lower levels of PCBs and chromium in the soil compared to the sludge. However, the concentrations of these constituents were generally above TAGM screening values.

- The presence of these constituents in the low/drainage area which is downslope of the perimeter of the sludge disposal area appears to be associated with the sludge. However, the mechanism of placement is not known. Migration of materials via erosion may have occurred or, transport of materials by mechanical means may have occurred during site operations.

- Soil sampling outside of the distance of approximately 75 feet from the perimeter of the sludge disposal area was not included in this study. Further investigation is required to evaluate the extent of PCB and chromium concentrations in soil around the perimeter of the sludge disposal area.

- Ground water approximately 30 feet from the perimeter of the sludge disposal area generally contained VOCs and PCBs below or slightly above TOGS screening values. Therefore, the potential migration of VOCs and PCBs from the sludge disposal area appears limited.

- Chromium concentrations in ground water were below background reference values indicating that migration of chromium from sludge to ground water was not observed.

6.1.2. Effectiveness of past remedial activities

The following conclusions apply to the effectiveness of past remedial activities associated with the sludge disposal area:

- In general, visual inspection of the natural vegetation and soil layer over the sludge disposal area indicates that the cap appears to be in place.

- Borders of the sludge disposal area along the east and west banks contain exposed sludge that requires maintenance.

- Elevated concentrations of PCBs and chromium observed in soils of the low/drainage area adjacent to the sludge disposal area require further investigation to evaluate the extent of contamination.

6.2. Former drum storage area

The following conclusions can be drawn from the investigation of the former drum storage area and the drainage area adjacent to it. The conclusions pertaining to the characterization of the former drum storage area and those pertaining to the effectiveness of past remedial activities are presented in separate subsections:

6.2.1. Characterization

The following conclusions apply to the characterization of the former drum storage area.

- The former drum storage area is located to the west of the east access road. The spatial extent of the former drum storage area was estimated from the size of the clearing bordered by trees. From those observations, the former drum storage area is approximately 0.5 acres.

- In a 6900 ft^2 portion of the area, weak anomalous electromagnetic readings were observed that appeared to be associated with silver/bluish rock like materials present in the area.

- No evidence of buried drums was observed during the Preliminary Investigation. Anomalous electromagnetic readings that were observed were weaker than would be expected if drums were buried in shallow soils. Two drums were observed on the ground surface in the former drum storage area.

- Soils within the drum storage area contain PCBs and chromium above TAGM screening values. VOCs were detected at concentrations below TAGM screening values in soil samples collected from the former drum storage area.

- Further delineation of the former drum storage area would be required to identify the extent of the PCBs and chromium in soils. In addition, sampling of the soil from this area should include analysis of VOCs based on the presence of VOCs in ground water nearby.

- Soil samples collected from the low/drainage area approximately 30 feet west of the former drum storage area contained PCBs and chromium above TAGM screening values. The presence of these constituents in the low/drainage area downslope from the perimeter of the former drum storage area appears to be associated with that area. Migration of materials may have occurred or, transport of materials by mechanical means may have occurred during site operations.

- Sampling of soil outside of the distance of approximately 30 feet from the perimeter of the former drum storage area was not included in this study. Further investigation is required to evaluate the extent of PCB and chromium concentrations in soil around the perimeter of the former drum storage area.

- Ground water contains concentrations of VOCs downgradient of the former drum storage area suggesting the presence of a source that has not been characterized. The nature of the VOC source and the extent of the ground water impacts associated with the VOCs detected in MW-2 have not been identified.

- The presence of PCBs detected in ground water at MW-2 may be biased due to the potential presence of particulate matter. Such matter would misrepresent actual PCB concentrations in the water. While the presence of PCBs in soil at this location is expected based on results of nearby sampling, before conclusions can be made regarding the concentration of PCBs in ground water, further evaluation is required.

6.2.2. Effectiveness of past remedial activities

The following conclusions apply to the effectiveness of past remedial activities associated with the former drum storage area:

- Except for two drums, the removal of drums from the former drum storage area appears complete.

- The ground surface is well vegetated which should limit potential migration of materials from the area.

- The extent of VOCs in ground water and identification of the source of the VOCs requires further evaluation.

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TABLES

Table 2-1a. - Sludge disposal area - sludge and soil sample quantities, analyses, and analytical methods

		Analysis	Method	Env Samples	MS	MSD	Dup	total
Borings								
	West of access road							
		VOCs	8260	3	1	1	1	7
		PCBs	8082	3	---	---	---	3
		Cr	6010	3	---	---	---	3
	East of access road							
		VOCs	8260	2	---	---	---	2
		PCBs	8082	2	---	---	---	2
		Cr	6010	2	---	---	---	2
Exposed slope - west of access road								
		PCBs	8082	3	1	1	1	6
		Cr	6010	3	1	1	1	6
Border								
	West of access road							
		PCBs	8082	6	---	---	---	6
		Cr	6010	6	---	---	---	6
	East of access road							
		PCBs	8082	6	---	---	---	6
		Cr	6010	6	---	---	---	6
	Below sludge							
		PCBs	8082	2	---	---	---	2
		Cr	6010	2	---	---	---	2
Sludge disposal area Summary		VOCs	8260	5	1	1	1	9
		PCBs	8082	22	1	1	1	25
		Cr	6010	22	1	1	1	25

Table 2-1b. Former drum storage area - soil sample quantities, analyses, and analytical methods

	Analysis	Method	Env Samples	MS	MSD	Dup	total
Borings							
	VOCs	8260	3	---	---	---	3
	PCBs	8082	3	1	1	1	6
	Cr	6010	3	1	1	1	6
Area of anomalous electromagnetic readings							
	PCBs	8082	3	---	---	---	3
	Cr	6010	3	---	---	---	3
Border							
	PCBs	8082	6	---	---	---	6
	Cr	6010	6	---	---	---	6
Former drum storage area Summary	VOCs	8260	3	---	---	---	3
	PCBs	8082	12	1	1	1	15
	Cr	6010	12	1	1	1	15

Table 2-1c. - Low/drainange area and background - soil sample quantities, analyses, and analytical methods

	Analysis	Method	Env Samples	MS	MSD	Dup	total
Low/drainage - downslope of sludge disposal area							
	PCBs	8082	1	---	---	---	1
	Cr	6010	1	---	---	---	1
	TOC	L. Kahn	1	1	1	1	4
Low/drainage - downslope of former drum storage area							
	PCBs	8082	2	---	---	---	2
	Cr	6010	2	---	---	---	2
	TOC	L. Kahn	2	---	---	---	2
Background							
	Cr	6010	3	---	---	---	3
Low/drainage area and background summary							
	PCBs	8082	3	---	---	---	3
	Cr	6010	6	---	---	---	6
	TOC	L. Kahn	3	1	1	1	6

Table 2-1d. Project totals: sample quantities, analyses, and analytical methods

	Analysis	Method	Env Samples	MS	MSD	Dup	total
Soil samples							
	VOCs	8260	8	1	1	1	12
	PCBs	8082	37	2	2	2	43
	Cr	6010	40	2	2	2	46
	TOC	L. Kahn	3	1	1	1	6
Ground water samples							
	VOCs	8260	4	1	1	1	7
	PCBs	8082	4	1	1	1	7
	Cr	6010	4	1	1	1	7

Notes:
Total number of PCB samples presented in table does not include 10% confirmation analyses
Rinse blanks of equipment were also analyzed.
Trip blanks were also analyzed for VOCs.

Table 2-2a. Duplicate quality control - Sludge and soil data (mg/kg).

Parameter / Sample Depth (ft):	MDA-SS-3 0-1	MDA-SS-3 0-1 (DUP)	RPD	MDA-TB-10 4-6	MDA-TB-10 4-6 (DUP)	RPD	Drum-SS-7 0-1	Drum-SS-7 0-1 (DUP)	RPD
Volatile organic compounds (USEPA 8260B)									
Acetone	---	---	---	0.008	---	---	---	---	---
Methylene chloride	---	---	---	0.004	---	---	0.0007	0.001	35
trans-1,2-Dichloroethene	---	---	---	---	---	---	---	---	---
cis-1,2-Dichloroethene	---	---	---	0.003	0.004	29	0.08	0.06	31
Chloroform	---	---	---	0.002	0.002	0	---	---	---
Trichloroethene	---	---	---	0.2	0.2	10	0.1	0.1	10
Tetrachloroethene	---	---	---	0.003	0.002	40	---	---	---
PCBs (USEPA 8082)									
Aroclor 1248	7200	7800	8	3500	---	---	820	970	17
Chromium (USEPA 6010B)	156000	157000	1	152000	---	---	73	117	46
Percent solids (2540G)	36	35	1	25	39	43	80	79	1
				35	---	---			

Table 2-2b. Duplicate quality control - Ground water data (ug/L).

Parameter / Sample ID:	MW-2	MW-2 (DUP)	RPD
Volatile organic compounds (USEPA 8260B)			
Vinyl chloride	1100	1100	0
cis-1,2-Dichloroethene	5700	6000	5
PCBs (USEPA 8082)			
Aroclor 1221	1.1	0.99	11
Chromium (USEPA 6010B)	7.6	6.9	10

Notes:
RPD = relative percent difference calculated as:
RPD = (absolute value (C1-C2))/((C1+C2)/2)*100
where C1 is the original sample analysis and C2 is the duplicate sample analysis.
DUP = duplicate sample.

Table 2-3. Soil QA/QC data:
blank samples associated with soil and sludge analyses

	Equipment Blank		Equipment Blank	Equipment Blank	Trip Blank		Trip Blank	
Volatile organic compounds								
Acetone	---		---	---	---		---	
Methylene chloride	1	J	---	---	1	J	1	J
trans-1,2-Dichloroethene	---		---	---	---		---	
cis-1,2-Dichloroethene	---		---	---	---		---	
Chloroform	---		---	---	---		---	
Trichloroethene	---		---	---	---		---	
Tetrachloroethene	---		---	---	---		---	
PCBs								
Aroclor 1248	0.3	P	---	---	---		NA	
Chromium	---		---	---	---		NA	

Notes:
Results reported as ug/L; data has not been validated.
Qualifiers reported by laboratory:
J = Estimated concentration; P = Relative percent difference (RPD) > 40%;
-- = Not detected or no data collected.
NA = Not applicable.

Table 3-1. Observations of subsurface materials in sludge disposal area.

Boring ID	Surface Elevation (ft)	Cover Fill Top (ft bgs)	Cover Fill Bottom (ft bgs)	Sludge Top (ft bgs)	Sludge Bottom (ft bgs)	Native Top (ft bgs)	Total Depth (ft bgs)	Total Sludge Thickness (ft)	Notes
West portion of sludge disposal area									
MDA-TB-1		0	0.25	0.25	6	6	8	5.8	
MDA-TB-2		0	2	2	3.5	3.5	4	1.5	
MDA-TB-3		0	2	2	4	4	6	2	
MDA-TB-4		0	2	2	4.5	4.5	6	2.5	
MDA-TB-5		0	2	2	5.5	5.5	6	3.5	
MDA-TB-6		0	2	2	3.5	3.5	4	1.5	
MDA-TB-7		0	2	2	3.8	3.8	6	1.8	
MDA-TB-8		0	1.9	1.9	3.75	3.75	4	1.9	
MDA-TB-9		0				0	4	0	off west edge of sludge disposal area
MDA-TB-10		0	1.5	1.5	8	8	12	6.5	next to western slope
MDA-TB-11		0	0.5	0.5	7	7	10	6.5	next to western slope
MDA-TB-12		0	2	2	3	3	6	1	intermixed sludge/soil
MDA-TB-13		0				0	4	0	along access rd
MDA-TB-14		0				0	4	0	off S edge of sludge disposal area
MDA-TB-15		0				0	4	0	off S edge of sludge disposal area
East portion of sludge disposal area									
MDA-TB-16		0	1.25	1.25	1.75	1.75	4	0.5	
MDA-TB-17		0	2	2	2.2	2.2	4	0.2	intermixed sludge/soil
MDA-TB-18		0				0	4	0	
MDA-TB-19		0				0	4	0	
MDA-TB-20		0	1.75	1.75	3	3	4	1.3	
MDA-TB-21		0	0.25	0.25	5	5	8	4.8	0.25 to2 ft mixed sludge/soil
MDA-TB-22		0				0	2	0	Off northern edge of area
MDA-TB-23		0	1	1	2.5	2.5	4	1.5	
MDA-TB-24		0	0.75	0.75	1	1	4	0.3	
MDA-TB-25		0	1.8	1.8	2	2	4	0.2	
MDA-TB-26		0	2	2	7	7	8	5	
MDA-TB-27		0	2	2	9.5	9.5	10	7.5	

Table 3-2. Monitoring well location coordinates and elevation data

	Northing (ft)	Easting (ft)	Elevation Ground Surface (ft)	Elevation Top of PVC Casing (ft)	Depth to Ground Water (ft)	Elevation of Ground Water (ft) 11/12/03
MW-1	11011.9479	10381.5057	179.3	181.81	12.51	169.30
MW-2	11076.2203	9985.3361	152.5	154.71	3.21	151.50
MW-3	11287.6367	10140.3266	151.6	153.60	2.30	151.30
MW-4	11453.2097	10134.4406	151.2	154.04	3.10	150.94

Note: Assumed on-site horizontal and vertical datum.

Table 4-1. Soil data: background and drainage areas

	TAGM Value	Sample ID: Sample Depth:	Background Samples					Drainage Area Samples				
			Background-SS-1 0-1		Background-SS-2 0-1		Background-SS-3 0-1	Drainage-SS-1 0-0.5		Drainage-SS-2 0-0.5		Drainage-SS-3 0-0.5
PCBs (USEPA 8082) Aroclor 1248	1/10		---		---		---	48	P	3.7		3.1
Chromium (USEPA 6010B)	SB = 33		11	D	10		33	735	D	60	D	46
Total organic carbon (Lloyd Kahn)			---		---		---	255000		86500 (88400)		202000
Percent solids (2540G)			74		83		78	21		35		27
Sample description:			South of Route 370					Downgradient from Sludge Area		Downgradient from Former Drum Storage Area		

Notes:
Results reported as mg/Kg, dry weight; data has not been validated.
Qualifiers reported by laboratory:
J = Estimated concentration; D = Dilution value is reported;
Soil TAGM Value: NYSDEC 1994. Determination of Soil Cleanup Objectives and Cleanup Levels. Technical & Administrative Guidance Memorandum #4046.
SB = Site maximum background concentration
-- = No data collected.
Total organic carbon data presented in parentheses ( ) is the result of a duplicate analysis.
PCB criteria: 1 mg/Kg in surface soil/10 mg/Kg in subsurface soil.

Table 4-2 Data for sludge characterization

Parameter	TAGM Value	Sample ID: / Sample Depth (ft):	West portion												East portion			
			MDA-SS-1 0-1	MDA-SS-2 0-1	MDA-SS-3 0-1	MDA-SS-3 0-1 (DUP)	MDA-TB-5 4-6		MDA-TB-10 4-6		MDA-TB-10 4-6 (DUP)		MDA-TB-11 6-7		MDA-TB-21 3-5		MDA-TB-26 4-6	
Volatile organic compounds (USEPA 8260B)																		
Acetone	0.2		---	---	---	---	---	U	0.008	J	---	U	---	U	---	U	---	U
Methylene chloride	0.1		---	---	---	---	---	U	0.004	J	---	U	---	U	0.001	J	---	U
trans-1,2-Dichloroethene	0.3		---	---	---	---	0.003	J	---	U	---	U	0.002	J	---	U	---	U
cis-1,2-Dichloroethene	None		---	---	---	---	0.03		0.003	J	0.004	J	0.002	J	---	U	0.002	J
Chloroform	0.3		---	---	---	---	---	U	0.002	J	0.002	J	0.002	J	---	U	0.002	J
Trichloroethene	0.7		---	---	---	---	1.6	D	0.2	D	0.2	D	0.1	D	0.05	JD	0.2	D
Tetrachloroethene	1.4		---	---	---	---	0.07		0.003	J	0.002	J	0.004	J	---	U	0.005	J
PCBs (USEPA 8082)																		
Aroclor 1248	1/10		3900	2100	7200	7800	12000		3500		---		2900		4000		1000	
Chromium (USEPA 6010B)	SB = 33		152000	130000	156000	157000	113000		152000				51200		15000		66600	
Percent solids (2540G)			29	43	36	35	28		25		39		47		42		54	
							30		35				25		44		25	
Sample Description:			Exposed Sludge				Subsurface Sludge											

Notes:
Results reported as mg/Kg, dry weight; data has not been validated.
Qualifiers reported by laboratory:
J = Estimated concentration
P = Relative percent difference (RPD) > 40%;
D = Dilution value is reported.
Soil TAGM Value: NYSDEC 1994. Determination of Soil Cleanup Objectives and Cleanup Levels. Technical & Administrative Guidance Memorandum #4046.
SB = Site maximum background concentration
-- = No data collected; -- U = Analyzed, but not detected.
DUP = Results of duplicate analysis
PCB criteria: 1 mg/Kg in surface soil/10 mg/Kg in subsurface soil.

Table 4-3. Soil data: soil bordering the sludge disposal area

Parameter	TAGM Value	Sample ID: / Sample Depth (ft):	West portion							
			MDA-SS-4 0-1	MDA-SS-5 0-1	MDA-SS-6 0-1	MDA-TB-14 0-2	MDA-TB-15 0-2	MDA-TB-9 2-4	MDA-TB-10 8-12	MDA-TB-18 2-4
PCBs (USEPA 8082) Aroclor 1248	1/10		1.8	180 P	0.1 P	3.0	2.2	4.5	14	0.7
Chromium (USEPA 6010B)	SB = 33		130	1060	30	94	47	26	223	56
Percent solids (2540G)			65	63	51	87	86	89	86	86
Sample Description:			West border			West border			Below Sludge	Bordering access road

Notes:
Results reported as mg/Kg, dry weight; data has not been validated.
Qualifiers reported by laboratory:
J = Estimated concentration
P = Relative percent difference (RPD) > 40%;
B = Blank contamination reported.
D = Dilution value is reported.
Soil TAGM Value: NYSDEC 1994. Determination of Soil Cleanup Objectives and Cleanup Levels. Technical & Administrative Guidance Memorandum #4046.
SB = Site maximum background concentration
-- = No data collected; -- U = Analyzed, but not detected.
DUP = Results of duplicate analysis
PCB criteria: 1 mg/Kg in surface soil/10 mg/Kg in subsurface soil.

Table 4-3. Soil data: soil bordering the sludge disposal area

Parameter	TAGM Value	Sample ID: Sample Depth (ft):	East portion											
			Mound-SS-3 0-1		Mound-SS-4 0-1		Mound-SS-5 0-1		Mound-SS-6 0-1		MDA-TB-22 0-2		MDA-TB-21 5-7	
PCBs (USEPA 8082)														
Aroclor 1248	1/10		20	BP	41	BP	82	BP	7	BP	0.8		44	
Chromium (USEPA 6010B)	SB = 33		484		975	D	3040	D	64	D	25		511	D
Percent solids (2540G)			62.1		65 80		63 68		51 82		90		87.5	
Sample Description:			East border								North border		Below Sludge	

Notes:
Results reported as mg/Kg, dry weight; data has not been validated.
Qualifiers reported by laboratory:
J = Estimated concentration
P = Relative percent difference (RPD) > 40%;
B = Blank contamination reported.
D = Dilution value is reported.
Soil TAGM Value: NYSDEC 1994. Determination of Soil Cleanup Objectives and Cleanup Levels. Technical & Administrative Guidance Memorandum #4046.
SB = Site maximum background concentration
-- = No data collected; -- U = Analyzed, but not detected.
DUP = Results of duplicate analysis
PCB criteria: 1 mg/Kg in surface soil/10 mg/Kg in subsurface soil.

Table 4-4. Soil data:
former drum storage area

	TAGM	Sample ID:	Drum-SS-1		Drum-SS-2		Drum-SS-3		Drum-SS-4		Drum-SS-5		Drum-SS-6		Drum-TB-1		Drum-TB-3	
	Value	Sample Depth (ft):	0-1		0-1		0-1		0-1		0-1		0-1		4-6		4-6	
Volatile organic compounds (USEPA 8260B)																		
Acetone	0.2		---		---		---		---		---		---		0.02		---	U
carbon disulfide	2.7		---		---		---		---		---		---		0.0006	J	---	U
Methylene chloride	0.1		---		---		---		---		---		---		---	U	---	U
trans-1,2-Dichloroethene	0.3		---		---		---		---		---		---		---	U	---	U
2-Butanone	0.3		---		---		---		---		---		---		0.003	J	---	U
cis-1,2-Dichloroethene	None		---		---		---		---		---		---		---	U	0.02	
Chloroform	0.3		---		---		---		---		---		---		---	U	---	U
Trichloroethene	0.7		---		---		---		---		---		---		0.002	J	0.08	
Tetrachloroethene	1.4		---		---		---		---		---		---		---	U	---	U
Xylene	1.2		---		---		---		---		---		---		0.001	J	---	U
PCBs (USEPA 8082)																		
Aroclor 1248	1/10		13	B	200	B	---	U	8.7	BP	53	B	5.4	BP	15		0.5	B
altered Aroclor 1254	1/10		---	U	---	U	8.8		---	U	---	U	---	U	---	U	---	U
Chromium (USEPA 6010B)	SB = 33		15	D	28		20		402		47		13		13		7.8	
Percent solids (2540G)			73		61		80		84		83		80		85		83	
Sample description:			Border												Subsurface Soil			

Notes:
Results reported as mg/Kg, dry weight; data has not been validated.
Qualifiers reported by laboratory:
J = Estimated concentration; P = Relative percent difference (RPD) > 40%;
D = Dilution value is reported; B = Analyte detected above practical quantitation limit (PQL) in the associated preparation blank.
Soil TAGM Vallue: NYSDEC 1994. Determination of Soil Cleanup Objectives and Cleanup Levels. Technical & Administrative Guidance Memorandum #4046.
SB = Site maximum background concentration
-- = No data collected; -- U = Analyzed, but not detected.
DUP = Results of duplicate analysis
PCB criteria: 1 mg/Kg in surface soil/10 mg/Kg in subsurface soil.

Table 4-4. Soil data:
former drum storage area

	TAGM	Sample ID:	Drum-SS-7		Drum-SS-7		Drum-SS-8		Drum-SS-9		Drum-SS-10	
	Value	Sample Depth (ft):	0-1		0-1 (DUP)		0-1		0-1		0-1	
Volatile organic compounds (USEPA 8260B)												
Acetone	0.2		---	U	---	U	---		---		---	
carbon disulfide	2.7		---	U	---	U	---		---		---	
Methylene chloride	0.1		0.0007	J	0.001	J	---		---		---	
trans-1,2-Dichloroethene	0.3		---	U	---	U	---		---		---	
2-Butanone	0.3		---	U	---	U	---		---		---	
cis-1,2-Dichloroethene	None		0.08		0.06		---		---		---	
Chloroform	0.3		---	U	---	U	---		---		---	
Trichloroethene	0.7		0.1		0.1		---		---		---	
Tetrachloroethene	1.4		---	U	---	U	---		---		---	
Xylene	1.2		---	U	---	U	---		---		---	
PCBs (USEPA 8082)												
Aroclor 1248	1/10		820	B	970	B	150	B	1400	B	110	B
altered Aroclor 1254	1/10		---	U	---	U	---	U	---	U	---	U
Chromium (USEPA 6010B)	SB = 33		73		117		68	D	67		96	D
Percent solids (2540G)			80		79		78		80		69	
Sample description:			Area with Anomalous electromagnetic (EM) readings									

Notes:
Results reported as mg/Kg, dry weight; data has not been validated.
Qualifiers reported by laboratory:
J = Estimated concentration; P = Relative percent difference (RPD) > 40%;
D = Dilution value is reported; B = Analyte detected above practical quantitation limit (PQL) in the associated preparation blank.
Soil TAGM Vallue: NYSDEC 1994. Determination of Soil Cleanup Objectives and Cleanup Levels. Technical & Administrative Guidance Memorandum #4046.
SB = Site maximum background concentration
-- = No data collected; -- U = Analyzed, but not detected.
DUP = Results of duplicate analysis
PCB criteria: 1 mg/Kg in surface soil/10 mg/Kg in subsurface soil.

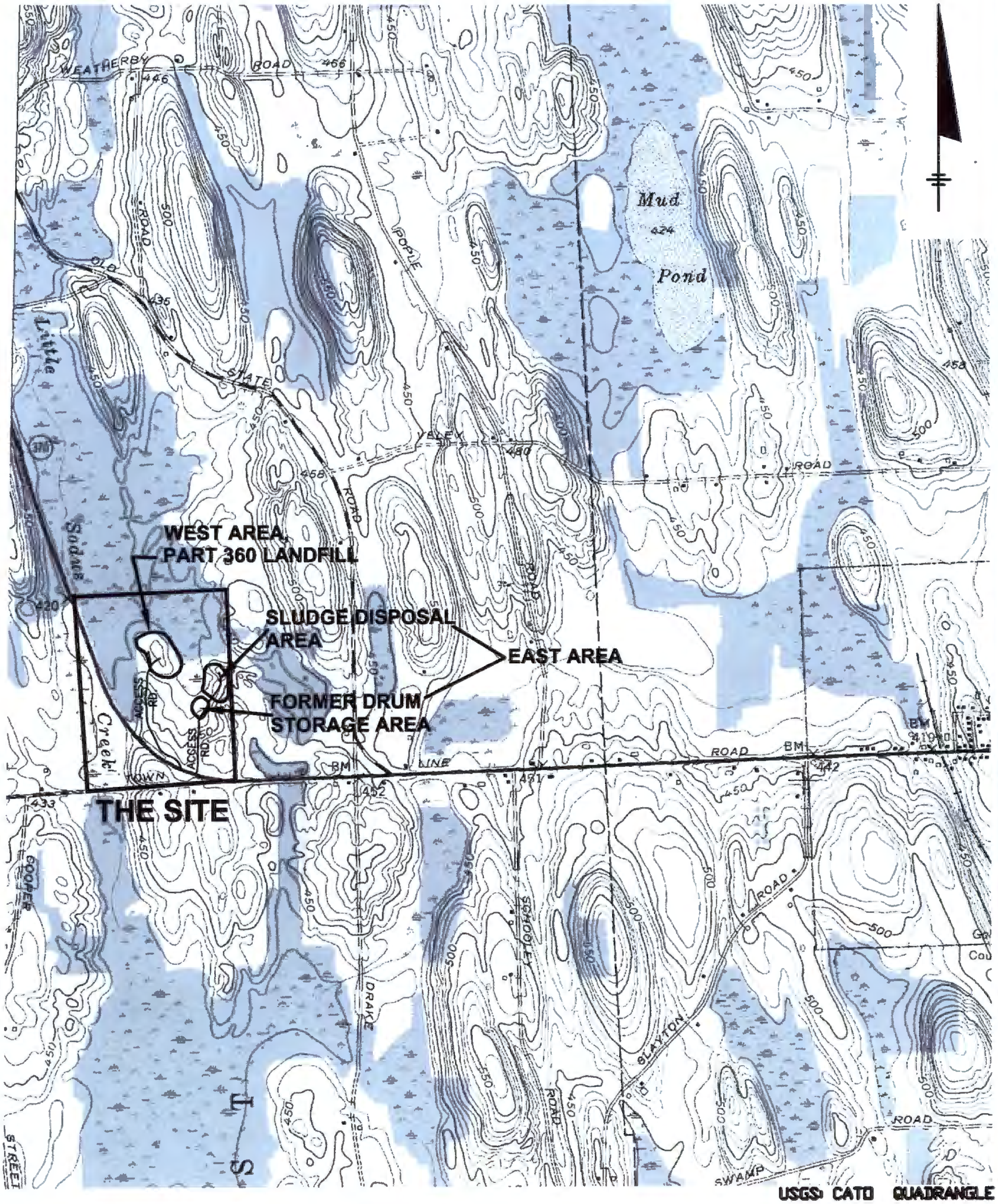
Table 4-5. Ground water data

Parameter	TOGS Value	Sample ID:	MW-1		MW-2		DUP MW-2		MW-3		MW-4		Quality Control EQBL	Quality Control Trip
Volatile organic compounds (USEPA 8260B)														
Vinyl chloride	2		---		1100		1100		---		0.2	J	---	---
1,1-Dichloroethene	5		---		---		---		---		0.1	J	---	---
cis-1,2-Dichloroethene	5		---		5700		6000		0.6		1		---	---
Trichloroethene	5		---		---		---		4		8		---	---
Chlorobenzene	5		---		---		---		0.4	J	0.5		---	---
PCBs (USEPA 8082)														
altered Aroclor 1221	0.09		---		1.1		0.99		---		---		---	NA
Aroclor 1248	0.09		---		---		---		0.35	JP	---		---	NA
Chromium (USEPA 6010B)	50		4.8	J	7.6	J	6.9	J	12		4.3	J	---	NA

Notes:
Concentrations reported as ug/L; data has not been validated.
Qualifiers reported by laboratory:
J = Esimated concentration;
P = Relative percent difference (RPD) > 40% between primary and confirmation analysis.
TOGS Value - New York state Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Division of Water Technical and Operational Guidance Series (1.1.1). June 1998.
-- = Not detected.
NA = Not applicable
DUP = Results of duplicate analysis
Quality control blank samples consisted of an equipment blank (EQBL) and trip blank (trip).

FIGURES

FIGURE 1-1



BRILLO LANDFILL
TOWN OF VICTORY, N.Y.
SITE LOCATION PLAN

4966.33640
MARCH 2004

2000 0 2000'
1"=2000'

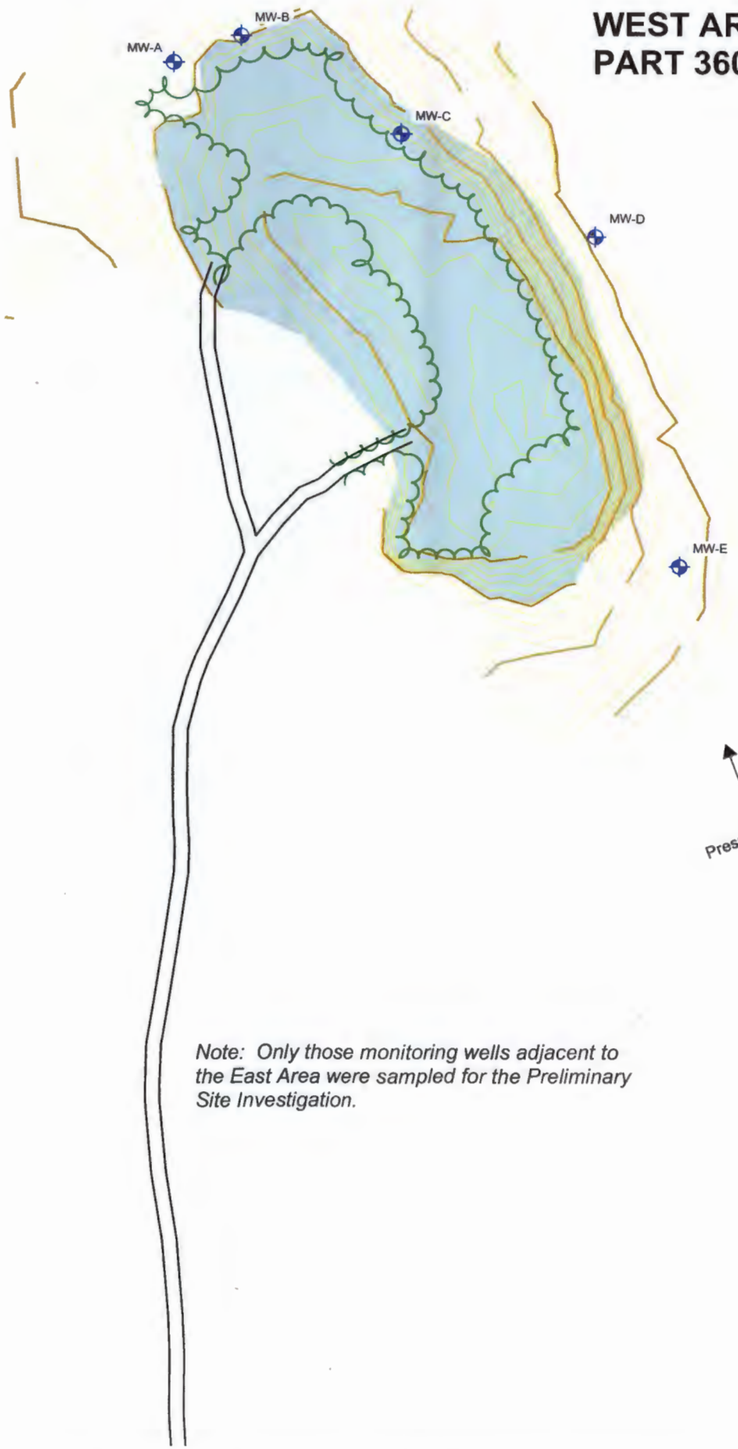
O'BRIEN & GERE ENGINEERS INC.

I:\DIV71\PROJECTS\4966\33640DWGS\FIG1.dwg
PLOT DATE: 03/05/04

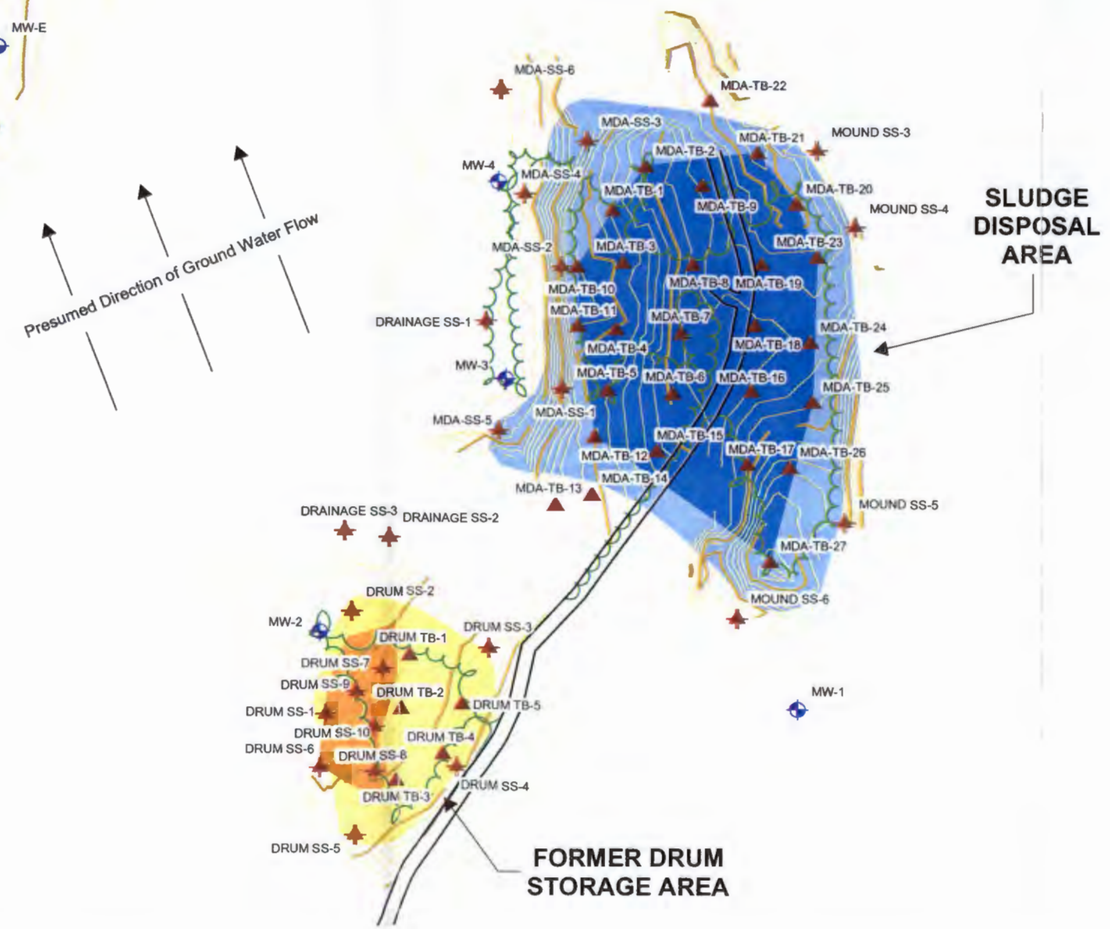
T:\4966_GM\BRILLO\MXD\33640\SITE_PLAN_2.MXD

FIGURE 2-1

WEST AREA, PART 360 LANDFILL



EAST AREA



Note: Only those monitoring wells adjacent to the East Area were sampled for the Preliminary Site Investigation.

LEGEND

- OBSERVED EXTENT - SLUDGE DISP. AREA
- ESTIMATED EXTENT - SLUDGE DISP. AREA
- FORMER DRUM STORAGE AREA
- ANOMALOUS ELECTROMAGNETIC AREA
- PART 360 LANDFILL

SAMPLE TYPE

- MONITORING WELL
- SURFACE SOIL
- SOIL BORING

ELEVATION

- 5-FT CONTOUR INTERVAL
- 1-FT CONTOUR INTERVAL

BRILLO LANDFILL SITE
TOWN OF VICTORY, NEW YORK

SAMPLE LOCATIONS

0 50 100 200
Feet

MARCH 2004
4966.33640

O'BRIEN & GERE ENGINEERS, INC

PLOT DATE: 03/15/04 DIV. 84 KAT

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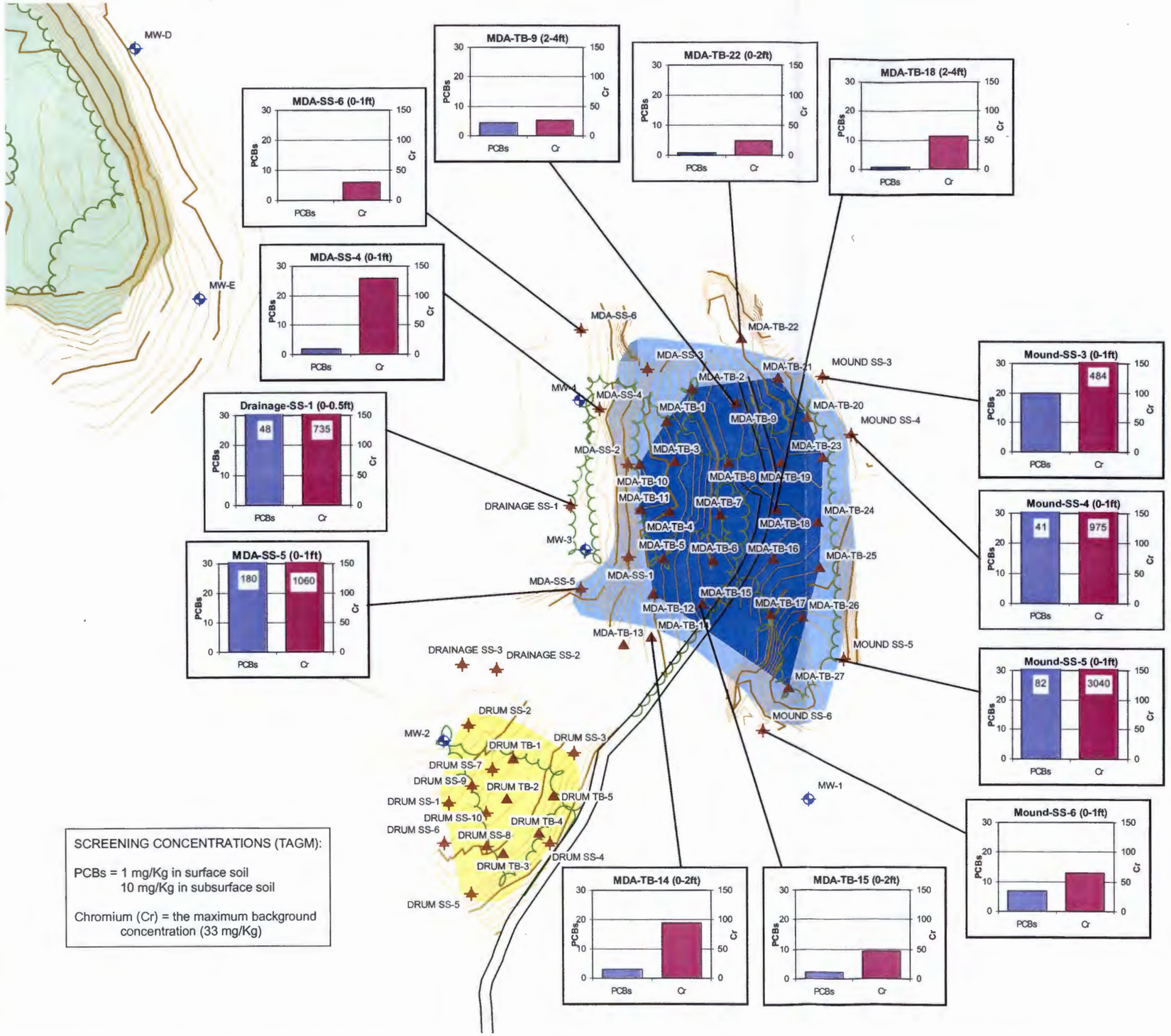
T:\4966_GM\BRILLO\MXD\33640\SLUDGE_GRAPHS.MXD

FIGURE 4-1



SCREENING CONCENTRATIONS (TAGM):

PCBs = 1 mg/Kg in surface soil
10 mg/Kg in subsurface soil

Chromium (Cr) = the maximum background concentration (33 mg/Kg)

LEGEND

- OBSERVED EXTENT - SLUDGE DISP. AREA
- ESTIMATED EXTENT - SLUDGE DISP. AREA
- FORMER DRUM STORAGE AREA
- PART 360 LANDFILL

SAMPLE TYPE

- MONITORING WELL
- SURFACE SOIL
- SOIL BORING

ELEVATION

- 5FT CONTOUR INTERVAL
- 1FT CONTOUR INTERVAL

BRILLO LANDFILL SITE
TOWN OF VICTORY, NEW YORK

SLUDGE DISPOSAL AREA: PCB AND CHROMIUM CONCENTRATIONS IN SOIL (MG/KG)

0 50 100 200
Feet

MARCH 2004
4966.33640

O'BRIEN & GERE ENGINEERS, INC

PLOT DATE: 03/04/04 DIV. 84 KAT

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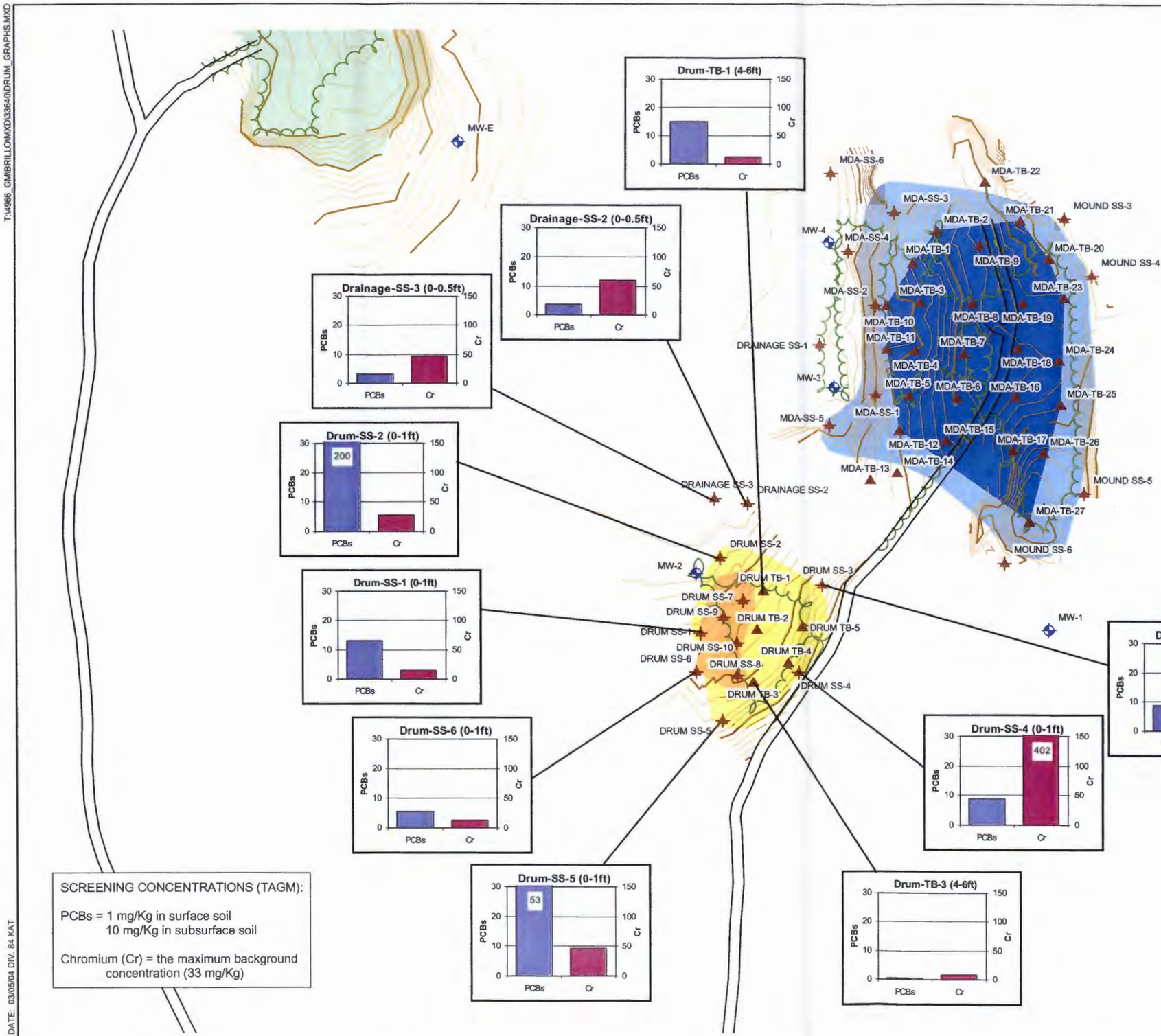

SCREENING CONCENTRATIONS (TAGM):

PCBs = 1 mg/Kg in surface soil
10 mg/Kg in subsurface soil

Chromium (Cr) = the maximum background concentration (33 mg/Kg)

PLOT DATE: 03/05/04 DIV: 84 KAT

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FIGURE 4-2

LEGEND

- OBSERVED EXTENT - SLUDGE DISP. AREA
- ESTIMATED EXTENT - SLUDGE DISP. AREA
- FORMER DRUM STORAGE AREA
- ANOMALOUS ELECTROMAGNETIC AREA
- PART 360 LANDFILL

SAMPLE TYPE

- MONITORING WELL
- SURFACE SOIL
- SOIL BORING

ELEVATIONS

- 5FT CONTOUR INTERVAL
- 1FT CONTOUR INTERVAL

BRILLO LANDFILL SITE
TOWN OF VICTORY, NEW YORK

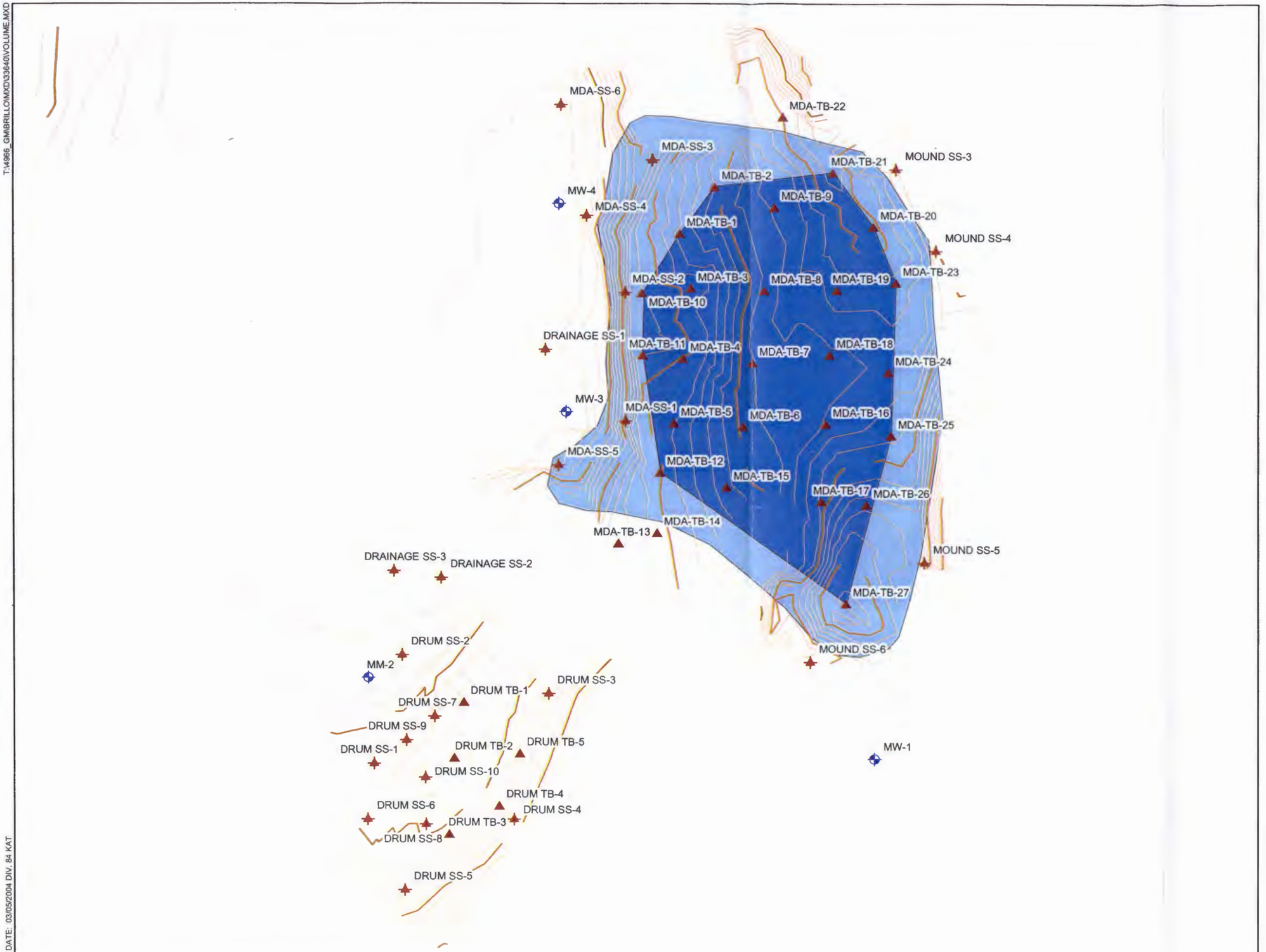
FORMER DRUM STORAGE AREA: PCB AND CHROMIUM CONCENTRATIONS IN SOIL (MG/KG)

0 50 100 200
Feet

MARCH 2004
4966.33640

O'BRIEN & GERE ENGINEERS, INC.

T:\4966_GM\BRILLO\MXD\33640\VOLUME.MXD



PLOT DATE: 03/05/2004 DIV. 84 KAT

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FIGURE 5-1

LEGEND

OBSERVED EXTENT OF SLUDGE DISPOSAL AREA (APPROX. 4000 CY)

ESTIMATED EXTENT OF SLUDGE DISPOSAL AREA (APPROX. 1600 CY)

SAMPLE TYPE

- MONITORING WELL
- SURFACE SOIL
- SOIL BORING

ELEVATION

- 5FT CONTOUR INTERVAL
- 1FT CONTOUR INTERVAL

BRILLO LANDFILL SITE
TOWN OF VICTORY, NEW YORK

SLUDGE VOLUME ESTIMATES

0 50 100 200
Feet

MARCH 2004
4966.33640

O'BRIEN & GERE ENGINEERS, INC

APPENDICES

Appendix A
Part 360 landfill references

Region 7, Environmental Quality Office
7481 Henry Clay Boulevard, Liverpool, New York 13088

(315) 428-4494

May 21, 1992

Mr. Joseph Brillo
Coon Hill Road
Skaneateles, New York 13152

Re: 360 Permit to Construct
Town of Victory Site, Cayuga County

Dear Mr. Brillo:

Attached is your Permit to Construct the subject facility. Please be aware of the Special Condition calling for a site remediation plan. Also note the need for fencing your current operating pits and several other necessary submissions to this Department. The conditions listed in the Permit to Construct must be satisfied before the permit to go into full operation will be issued.

I look forward to hearing from you and your engineer regarding the necessary submissions outlined in the Permit to Construct. If you have any questions in regard to this matter, please do not hesitate to contact me at (315) 428-4484.

Very truly yours,

Charles J. Branagh, P.E.
Regional Solid Waste Engineer

Att.
cc: Mr. Medrek
Mr. Carr
[redacted]
Mr. O'Toole

CJB/ch

Plan not included.

RECEIVED
JUL 13 1982
DEPT. ENVIRONMENTAL CONSERVATION, SYRACUSE

REMEDIATION PLAN
for
BRILLO'S
SOLID WASTE MANAGEMENT FACILITY
TOWN OF VICTORY, CAYUGA CO., N. Y.

July 2, 1982

Joseph Brillo has been asked to prepare a site remediation plan to fulfill the special conditions, as stated on his Permit to Construct at his Solid Waste Management Facility located in the Town of Victory, Cayuga County, N. Y.

REMOVAL AND STAGING OF BARRELS

Barrels found sticking out of an embankment located in the central part of the property, as seen on the attached map (Sheet 4 of 8), are to be removed with a backhoe, and materials, if found in them, shall be disposed of in a proper manner. Empty barrels will be crushed and stored for later removal from the site. If liquid is found in a barrel or pail, the liquid will be vacuumed up into a holding tank and the empty barrel will then be crushed. Empty barrels will probably be sold as junk metal.

Barrels or pails found to contain solid material will be stored on a gravel pad (see Sheet 4 of 8 for location). Samples will be taken for each different solid material before proper disposal will take place.

The owner/operator of the site will scan probable locations of past barrel burial with a metal detector. If barrels are found they will then be removed and handled, as stated on the previous page.

If spillage occurs due to the above operation the liquid will be absorbed with absorbent pads. These pads and contaminated dirt will be placed in a barrel and disposed of in a proper manner.

BARREL WASTES TESTING AND DISPOSAL

Samples of solid material will be taken to CECOS, in Niagara Falls, N. Y., for testing. A leachate toxicity test will be performed. If the material is found to be hazardous it will be disposed of at CECOS. If the material is inert it will then be stored in a P.V.C.-lined pit at "Site A", as shown on Sheet 4 of 8.

All liquid material and materials collected due to spillage clean-up will be tested and disposed of by Chem-Clear, in Chester, Pennsylvania, or Waste Conversion, in Hatfield, Pennsylvania.

RESIDUAL SURFACE WASTES

Residual surface waste such as the turnsted sludge and the polishing sand will be covered by earth and graded to smooth lines at the waste's present location (see Sheet 4 of 8). Turnsted sludge will be moved, if necessary, a minimum of 50 feet from the property line before covering.

CONTAMINATED SOIL TESTING AND REMOVAL

Remediation plan will be submitted after New York State Department of Environmental Conservation's testing results are confirmed and the area defined.

CONTINGENCY PLAN

In the event there is a chemical spill, fire, explosion, etc., the proper individuals listed on the following page shall be contacted.

CONCLUSION

It is anticipated that Joseph Brillo will be able to start removing and staging barrels using methods previously stated, and cover the turnsted sludge and polishing wastes as previously stated, within 10 days of acceptance of remediation plan, and will complete the above by September 30, 1982.

Report prepared by:

Sidney C. Kaine

Sidney C. Kaine
Project Coordinator

Approved by:

William H. Rowell

William H. Rowell, P.E.
President

Approved by:

Joseph P. Brillo

Joseph P. Brillo
Site Owner/Operator

Mr. Joseph [illegible]
Region 7, Environmental Quality Office
7481 Henry Clay Boulevard
Liverpool, NY 13088

July 21, 1982 [illegible] work as outlined under
[illegible] plan.

Mr. Joseph Brillo
P. O. Box 4 [illegible]
Coon Hill Road [illegible]
Skaneateles, NY 13152

Re: Remediation Plan for Town of Victory Waste Management Facility, Cayuga County, NY

Dear Mr. Brillo:

Your remediation plan submitted to us on July 13, 1982, is approved with the following conditions and comments:

cc: Mr. [illegible], Cayuga County Health Department
[illegible] Lloyd J. Milford

1. Personal safety protection should be provided for your workers to offer safety from spillage, inhalation, skin contact, and eye contact with waste materials.

2. Liquid material that is vacuumed into empty tanks or barrels should not be done so as to create problems with fire, explosions or reactivity that will cause deterioration and leakage from the container.

3. The gravel holding area containing barrels or pails should be lined with an impervious material to prevent any migration of waste to groundwaters. Storage and holding areas should also be berned and spill absorbent material available at these locations.

4. The covering of the non-hazardous solids should be graded to promote surface runoff and seeded to establish a cover crop.

5. The DEC should be notified in the event of any chemical spill at the site.

6. The Victory Fire Department must be notified of your work and the schedule for remediation.

7. Only those containers as defined by the regulations as empty (all material removed by practical means and less than one each residue remaining) and not containing such material as PCBs which would need to be triple rinsed will be allowed to be sold as scrap or junk metal.

The DEC must be notified when work begins at the site and be kept informed on a daily basis if necessary as to what work is being done on the site at that time and an opportunity for inspection provided. The metal detection scan of the site must be done with a DEC person present.

RECEIVED
JUL 19 1982
DIVISION OF SOLID WASTE

It is expected that you will proceed with the remediation work as outlined under the conclusion portions of your remediation plan.

If you have any questions regarding this letter or further work at the Victory site, please do not hesitate to contact me.

Very truly yours,

Charles J. Branagh, P.E.
Regional Solid Waste Engineer

cc: Mr. Hedrek, Cayuga County Health Department
Mr. Carr, Cayuga County Planning Board
Mr. Richardson, Town of Victory
Assemblyman Lloyd S. Riford
Senator H. Douglas Barclay

CJB/lms

[illegible] asked to prepare a site re[illegible] the special conditions, as stated [illegible] to Construct at his Solid Waste Management Faci[illegible] located in the Town of Victory, Cayuga County, N. [illegible]

[illegible] AND STAGI[illegible]

[illegible] encountered located in [illegible] on the property, as seen on the attached [illegible] of it, and to be remov[illegible] with a backhoe, and [illegible], if found in them, shall be disposed of in a [illegible] Empty barrels will be crushed and stored [illegible] from the site. If liquid is found in a [illegible] and the empty barrel will then be crushed. Empty barrels may be sold as junk metal.

[illegible] found to contain solid material will be [illegible] pad (see Sheet 4 of 8 for location). [illegible] for each different solid material before [illegible] will take place.

PERMIT

Under the Environmental Conservation Law, Article 27, Title 7, Part 360

1710

EXPIRATION DATE: December 1, 1982

☒ CONSTRUCTION ☐ INITIAL ISSUE ☐ REISSUANCE
☐ OPERATION ☐ RENEWAL ☐ MODIFICATION

PERMIT ISSUED TO	ADDRESS OF PERMITTEE	TELEPHONE NO.
Joseph Brillo	Coon Hill Road, Skaneateles, New York	(315) 685-5946

LOCATION OF PROJECT Town	County	Environmental Conservation Regional Office
Victory	Cayuga	Region 7 7481 Henry Clay Blvd., Liverpool, New York

DESCRIPTION OF PROJECT	ON-SITE SUPERVISOR
Solid Waste Management Facility	

GENERAL CONDITIONS

1. The permittee shall file in the office of the Environmental Conservation Region specified above, a notice on intention to commence work at least 48 hours in advance of the time of commencement and shall also notify said office promptly in writing of the completion of the work.
2. The permitted work shall be subject to inspection by an authorized representative of the Department of Environmental Conservation who may order the work suspended if the public interest so requires.
3. As a condition of the issuance of this permit, the applicant has accepted expressly, by the execution of the application, the full legal responsibility for all damages, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and has agreed to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from the said project.
4. All work carried out under this permit shall conform to the approved plans and specifications. Any amendments must be approved by the Department of Environmental Conservation prior to their implementation.
5. The permittee is responsible for obtaining any other permits, approvals, easements and rights-of-way which may be required for this project.
6. By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with Part 360 and the special conditions. Any variances granted by the Department of Environmental Conservation to Part 360 must be in writing and attached hereto.

SPECIAL CONDITIONS

1. The only waste permitted at this landfill are polishing compound of Welch Allyn Corporation grease and scum from the Syracuse Metropolitan Treatment Plant, and waste grain from the Multi Foods Corporation.

2. The operation of this 360 facility must follow the engineering reports, plans and addenda submitted by Rowell Associates of August 1981 and February 18, 1982 and must be in conformance with Part 360 of the Environmental Conservation Law.

3. A site remediation and closure plan approved by this Department shall be enacted upon if a release of substances either hazardous to the public health or the environment has occurred or when conditions as outlined in 360.8(a)(21) exists. Other than 360.8(a)(21) a comprehensive remediation plan must be submitted to the Department which must include as a minimum the following:

   a.) A plan for removing and staging barrels that are currently visible and those that may be found in the process of removing the visible barrels.
   b.) Locations for staging both empty barrels and barrels with materials in them.
   c.) Locations and manner of burial of residual waste left on the surface of the ground from past activities including the Tamsted sludge and the open area formerly used for deposition of polishing compound.
   d.) A protocol for sampling and determination of a proper disposal location for materials that are found to be hazardous waste or not compatible with other materials at the Victory site.
   e.) Specify a contingency plan which will contain a list of individuals and actions to be performed in case of events such as fire, explosion, chemical spills, etc.
   f.) Propose a means to check for the past burial of wastes in barrels that may be hazardous.

ISSUE DATE	ISSUING OFFICER	SIGNATURE
[illegible]	Charles J. Branagh	X

FIELD COPY

This entire remediation plan should be submitted to the Region 7 office within 30 days of the issuance of this construction permit.

A site remediation and closure bond in the amount of $50,000 using the attached closure bond form shall be kept in force during the entire life of this facility.

The approval of an oil, water storage facility as detailed in the February 10, 1982 submission by Rowell Associates is not approved at this time as the information previously requested regarding details of the source, quantity, and character of waste oil to be stored at this facility has not been submitted to the Department.

Quarterly monitoring will be conducted at an upgradient and two downgradient well locations for total organic carbon, total lead, total arsenic, total iron, hexavalent chrome, total cadmium, pH, total alkalinity, specific conductivity, and total nitrate. Records shall also be kept and submitted quarterly regarding elevations of water in the various wells at the site. If wells are checked for a quarterly monitoring and bound to be deficient in water, then the monitoring wells must be checked monthly until such time as enough water is available for sampling.

7. Leachate sumps should be checked weekly and pumped if necessary. Leachate should be disposed of at an approved facility..

8. This office must be notified at the start of construction and remediation and be kept informed of the progress of such construction and remediation. At the conclusion of the construction or remediation phase, a licensed engineer must certify that all work was completed in accordance with the engineering plans and specifications and remediation documents.

9. Any leachate breakouts from past or present activities must be abated by either collection and treatment or removal of waste causing the leachate problem.

10. Prepare and submit to the Department a general contingency plan for the general operation of the facilities in accordance with the engineers' report and any such events as fire, explosion, spills, etc.

11. Operations of the facility in Victory will be limited to daylight hours only. Use of the sight other than daylight hours will be with permission of the DEC.

12. Waste grain may be stored separately from other wastes and spread on areas of the facility no closer than 100 feet to the wetland. Tilling of the ground or spreading of waste grain should not be done in such a fashion as to cause erosion, excessive sedimentation in the wetland, or blowing dust.

13. The number of pits operating at any one time will be limited to three.

14. All open pits, whether from past activities, ongoing activities, or new operations as designed in the engineering report, must be completely surrounded by a snow fence as described in the Rowell Associates' submission of February 18, 1982. The only time when fencing will be removed will be for actual filling of the pits when personnel are on-site. At the conclusion of placing a load in the pit, the fencing must be restored in good condition around the entire perimeter of each pit before personnel leave the site for that load.

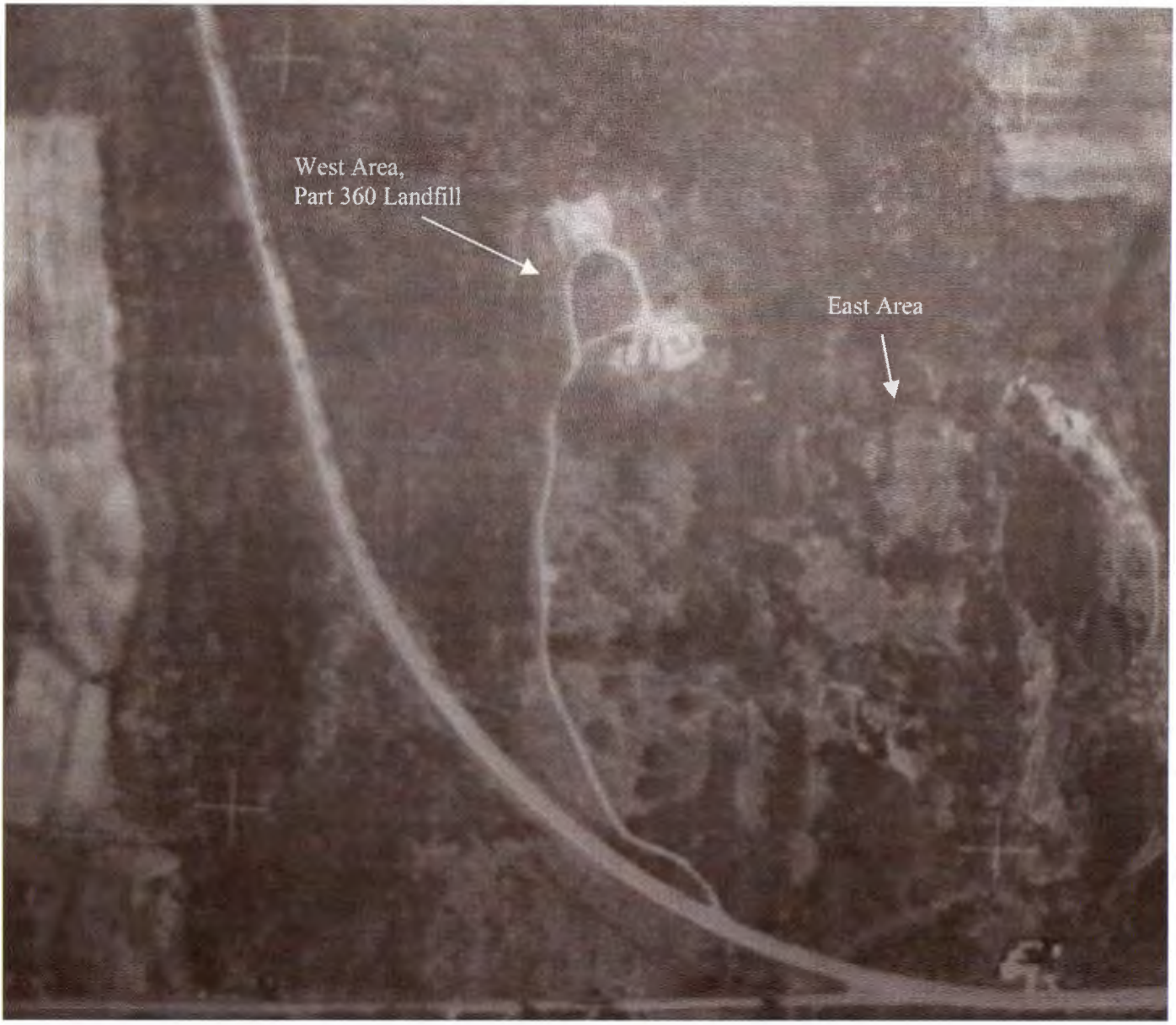
15. Propose a new plan for improving the two cables across both entrance roads so that unauthorized entrance by vehicle to the facility will be prohibited.

Appendix B
Historic aerial photographs

1. 1938 Aerial Photograph (USDA Soil Conservation Service)

2. 1954 Aerial Photograph (USDA Soil Conservation Service)

3. 1963 Aerial Photograph (USDA Soil Conservation Service)



4. 1988 Aerial Photograph (Cayuga County Real Property Tax Department)

5. 2000 Aerial photograph (Cayuga County Real Property Tax Department)

Appendix C
Photographs of site investigation activities

Contents

Sludge Disposal Area:
West portion

Photograph 1a. Panoramic view (northwest to southwest) looking at sludge disposal area from east access road.

Photograph 1b. Panoramic view (northwest to southwest) looking at sludge disposal area from east access road.

Photograph 1c. Panoramic view (northwest to southwest) looking at sludge disposal area from east access road.

Photograph 2. Sludge disposal area facing south from the northwest portion of area.

Photograph 3. Soil boring sample MDA-TB5 (4 to 6 ft) collected from sludge disposal area.

Photograph 4. Close-up of sludge near path to drainage area.

Photograph 5. Exposed sludge bank at northwest portion of sludge disposal area.

Photograph 6. View of downgradient monitoring well MW-4 facing west.

Photograph 7. Downgradient monitoring well MW-4 located in the drainage area near the northwest portion of the sludge disposal area. View facing the northeast with well head in foreground and path used to access drainage area from the sludge disposal area shown in background.

Photograph 8. Downgradient monitoring well MW-3 located in the drainage area near the southwest portion of the sludge disposal area. View with monitoring well in foreground and sludge embankment in background.

Sludge Disposal Area:
East portion

Photograph 1. East edge of sludge disposal area with sludge exposed. NYSDEC sample location

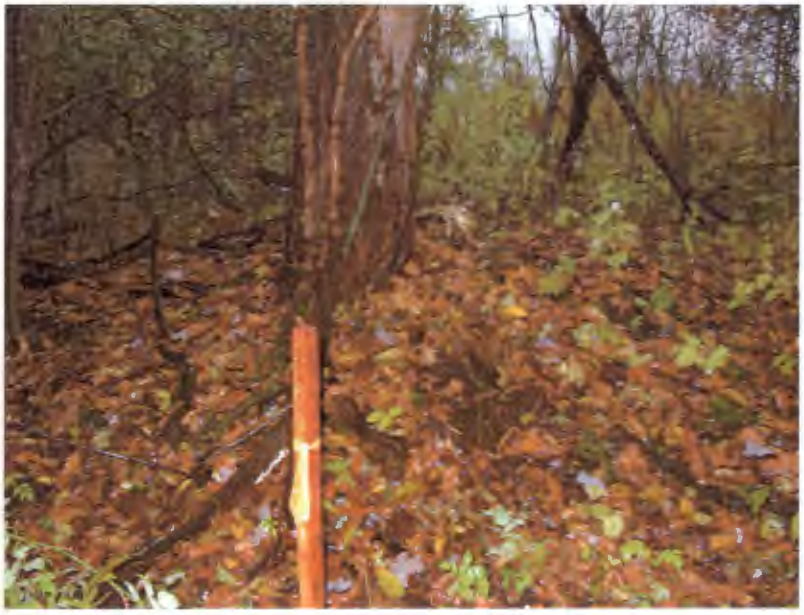
Photograph 2. Looking southeast from east access road onto southeast portion of the sludge disposal area.

Photograph 3. Looking east toward east portion of the sludge disposal area.

Photograph 4. Looking northeast toward north portion of sludge area. MDA-TB-19 in foreground.

Photograph 5a. Panoramic view (north moving south) looking at east edge of sludge disposal area.

Photograph 5b. Panoramic view (north moving south) looking at east edge of the sludge disposal area.



Photograph 5c. Panoramic view (north moving south) looking east edge of the sludge disposal area. Mound-SS-3 located off the edge of the sludge disposal area in foreground of photograph.

Former drum storage area

Figure 1a Panoramic view from south to north of former drum storage area showing tape that marks the extent of the anomalous electromagnetic (EM) survey observations.

Photograph 1b. Panoramic view from south to north of former drum storage area showing tape that marks the extent of the anomalous EM survey observations.

Photograph 1c. Panoramic view from south to north of former drum storage area showing tape that marks the extent of the anomalous EM survey observations.

Photograph 1d. Panoramic view from south to north of former drum storage area showing tape that marks the extent of the anomalous EM survey observations.

Figure 2. View of the former drum storage area showing the section where anomalous EM readings were observed. View is from north portion of the area.

Photograph 3. View of the former drum storage area showing the section where anomalous EM readings were observed. View is from north portion of the area.

Photograph 4. View of the former drum storage area showing the section where anomalous EM readings were observed. View is from north portion of the area.

Photograph 5. Two drums located on the north portion of the former drum storage area. View is facing east.

Photograph 6. Drum (north) containing three miscellaneous plastic parts. Drum Bottom was missing.

Photograph 7. Drum (south) containing silver colored material on inside wall of drum. Material appeared to have been melted. Vegetation observed in drum, bottom of drum missing.

Photograph 8. Silver/Blue colored hard material found within anomalous EM section of former drum storage area. The material was found approximately six inches to a foot below grade.

Photograph 9. Stake marking location of silver/blue colored hard material with respect to downgradient well MW-2.

Photograph 10a. Panoramic view (east to west) looking north towards former drum storage area. Flagged stakes show test boring/surface soil locations. Flagged area in the background shows front edge of anomalous EM area.

Photograph 10b. Panoramic view (east to west) looking north towards former drum storage area. Flagged stakes show test boring/surface soil locations. Flagged area in the background shows front edge of anomalous EM area.

Photograph 10c. Panoramic view (east to west) looking north towards former drum storage area. Flagged stakes show test boring/surface soil locations. Flagged area in the background shows front edge of anomalous EM area.

Photograph 11. Looking north up east access road from former drum storage area toward sludge disposal area.

Photograph 12. Drainage area downgradient from the former drum storage area where cattails were removed during remediation activities. View is from north portion of the former drum storage area facing south. Soil sample location Drainage-SS-2 is in foreground and soil sample location Drainage-SS-3 is located in the background.

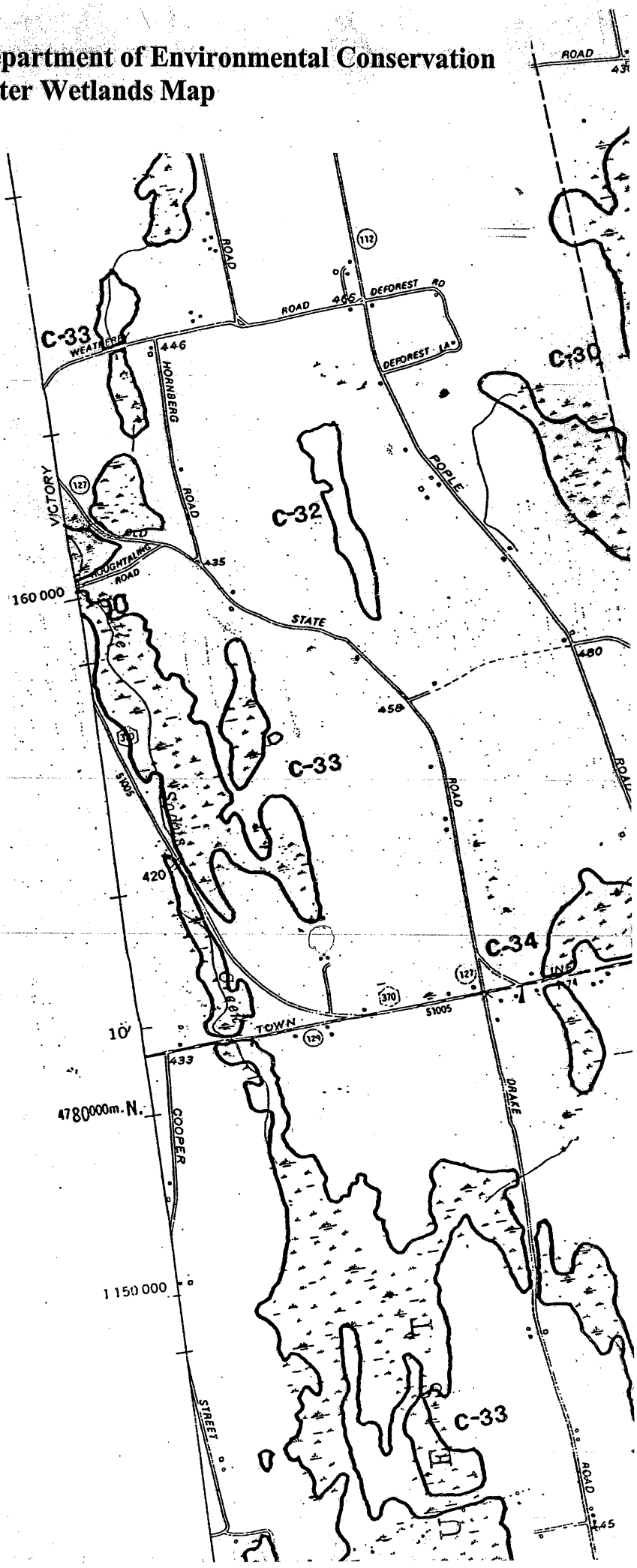
Background monitoring well location

Photograph 1. Upgradient monitoring well MW-1, view facing former drum storage area.

Photograph 2. View from upgradient monitoring well MW-1, facing former drum storage area

Appendix D
Wetland Maps

New York State Department of Environmental Conservation
Article 24 Freshwater Wetlands Map



United States Fish & Wildlife Service
National Wetlands Inventory Map

Appendix E
Survey coordinate data

Catomw.prn

BRILLO SITE, CATO, NY

Project: 10126 Fri Nov 14 09:41:22 2003
Point statistics:
Starting point number: 1
Current point number: 771 ('L' indicates locked point)

Current Coordinate Listing (All)

Point	Northing	Easting	Elevation	Description
137	11012.8826	10382.8734	179.28	MW-1 GRD
138	11011.9478	10381.6434	181.99	MW-1 6STL
139	11011.9479	10381.5057	181.81	MW-1 2PVC
64	11076.8845	9987.5459	152.52	MW-2 GRD
65	11076.1526	9985.2407	154.92	MW-2 6STL
66	11076.2203	9985.3361	154.71	MW-2 2PVC
332	11287.8977	10137.2794	151.58	MW-3 GRD
333	11287.7353	10140.2799	153.82	MW-3 6STL
334	11287.6367	10140.3266	153.60	MW-3 2PVC
338	11452.1411	10135.3935	151.23	MW-4 GRD
339	11453.2166	10134.3153	154.20	MW-4 6STL
340	11453.2097	10134.4406	154.04	MW-4 2PVC
685	11990.3671	9298.9232	163.13	MW-A GRD
686	11990.0834	9298.7687	165.03	MW-A 4-4STL
683	12012.0570	9355.1875	164.44	MW-B GRD
684	12012.0009	9354.9792	165.48	MW-B 4PVC
612	11929.8370	9488.7780	167.74	MW-C GRD
613	11929.1395	9489.1510	169.33	MW-C 4PVC
720	11842.8068	9650.4877	153.73	MW-D GRD
721	11843.0500	9649.5829	156.23	MW-D 4-4STL
734	11567.4385	9718.4796	157.02	MW-E GRD
735	11566.4867	9719.1275	159.99	MW-E 4-4STL
37	10498.2119	9090.1311	167.19	BKGRD-SS-1
34	10148.6262	9611.9505	198.13	BKGRD-SS-2
33	10073.1805	9742.2138	195.35	BKGRD-SS-3
336	11338.2191	10123.8295	151.48	DRAINAGE-SS-1
128	11156.7800	10042.5739	150.97	DRAINAGE-SS-2
127	11162.3867	10005.6294	151.19	DRAINAGE-SS-3
78	11009.5072	9989.9676	156.50	DRUM-SS-1
67	11095.3004	10011.8958	152.71	DRUM-SS-2
70	11064.5258	10126.4534	161.22	DRUM-SS-3
72	10965.2573	10099.5638	163.86	DRUM-SS-4
81	10909.9294	10014.0979	161.99	DRUM-SS-5
80	10965.2754	9984.9852	158.86	DRUM-SS-6
76	11046.6185	10037.2780	157.06	DRUM-SS-7
74	10961.5520	10030.8296	159.68	DRUM-SS-8
77	11027.9372	10015.3383	156.54	DRUM-SS-9
75	10998.2984	10030.3388	158.53	DRUM-SS-10
273	11281.2838	10187.0879	160.04	MOA-SS-1
264	11383.6893	10186.6327	160.87	MOA-SS-2
255	11488.7333	10207.7177	161.39	MOA-SS-3
337	11444.9324	10156.0112	151.98	MOA-SS-4
335	11246.2925	10134.6039	152.60	MOA-SS-5
365	11532.6272	10135.9225	151.26	MOA-SS-6
221	11481.2069	10398.2290	171.06	MOUND-SS-3

325	11416.9062	10429.5482	170.05	MOUND-SS-4
170	11168.5465	10420.8336	177.68	MOUND-SS-5
419	11089.3334	10331.6374	174.30	MOUND-SS-6
68	11057.0512	10060.0537	157.66	DRUM-TB-1
79	11013.1268	10052.7924	158.58	DRUM-TB-2
73	10952.9943	10048.7040	160.30	DRUM-TB-3
71	10975.3031	10087.7716	161.92	DRUM-TB-4
69	11016.4998	10104.0096	161.39	DRUM-TB-5
261	11429.8998	10228.7519	167.40	MOA-TB-1
260	11466.6765	10255.9506	168.99	MOA-TB-2
262	11386.0166	10237.5154	165.26	MOA-TB-3
266	11330.2183	10231.4545	165.06	MOA-TB-4
428	11278.7495	10224.5323	165.95	MOA-TB-5
269	11276.1477	10278.6515	170.21	MOA-TB-6
268	11326.7372	10285.8940	170.92	MOA-TB-7
211	11384.2861	10295.3766	171.43	MOA-TB-8
218	11450.4677	10303.1874	172.18	MOA-TB-9
263	11382.3878	10199.5525	163.97	MOA-TB-10
265	11332.8279	10200.3005	164.01	MOA-TB-11
270	11239.2351	10213.7604	164.76	MOA-TB-12
271	11183.1161	10182.0341	162.75	MOA-TB-13
153	11191.6332	10211.4146	164.52	MOA-TB-14
158	11227.8946	10265.6612	168.66	MOA-TB-15
164	11278.0747	10344.0332	172.12	MOA-TB-16
165	11216.4275	10340.5972	174.31	MOA-TB-17
162	11333.0771	10347.0020	171.81	MOA-TB-18
163	11384.7515	10352.6358	173.55	MOA-TB-19
199	11435.1299	10380.8333	175.39	MOA-TB-20
220	11477.9726	10349.0985	176.75	MOA-TB-21
219	11521.9633	10309.3873	174.95	MOA-TB-22
171	11390.5929	10398.4043	173.71	MOA-TB-23
166	11319.0490	10392.7786	172.24	MOA-TB-24
167	11268.7672	10394.8275	173.66	MOA-TB-25
168	11213.9028	10375.6782	177.46	MOA-TB-26
169	11135.4134	10359.6966	181.49	MOA-TB-27

Appendix F
Soil/sludge investigation field logs

Sludge disposal area

Former drum storage area

Monitoring wells

Sludge disposal area

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 1
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-2	2'/8"	3	3" moist and loose, pale yellowish brown (10 YR 2/2), Silt, some f. sand, some veg. matter (roots), 3", wet, mod. dense, grayish green (5G 5/2), Silt, some f. sand, little veg. matter, no odor.(waste)	3" waste		0	
			1-1							
1										
2	2	4	1-1	2'/18"	1	6" , wet, mod. dense, light brown (5YR 5/0), Silt, f. sand. 12", wet, mod. Dense, grayish green (5G 5/2), Silt, f. sand (waste).			0	
			0-1							
3										
4	3	6	1-1	2'/9"	3	Poor Recovery, waste as above	Waste		0	
			2-1							
5										
6	4	8	3-6	2'/1'	12	Wet, mod. dense, mod. Yellowish brown (10 YR 5/4), f. Sand, some silt.	6' native f. sand		0	
			6-6							
7										
8						BOB @ 8'				
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 2
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-1	2'/4"	2	Poor recovery, moist, mod. Loose, dark yellowish brown (10YR 4/2), f. Sand, some silt, some veg. matter (roots), greenish waste material in nose of spoon.			0	
			1-1							
1										
							2'			
2	2	4	2-7	2'/1'	15	6" wet, mod. dense, Grayish green (5G 5/2), f. Sand, silt (waste material), 6" wet, mod. dense, mod.yellowish brown (10 YR 5/2),f. Sand some silt, little f/m, gravel embedded (native)			0	
			8-11				Waste			
3							3.5'			
							Native			
4						B.OB @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 3
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-2	2'/6"	3	Moist, mod. Yellowish brown (10YR 5/2), f. Sand, some silt, little veg. matter (roots),waste (greenish) in tip of nose, no odor	Cover Soil		0	
			1-0							
1										
							2'			
2	2	4	2-6	2'/3"	11	Poor recovery, wet, very loose grayish green (5G 5/2), Silt, some f. sand, no odor (waste), nose of spoon has mod. Yellowish brown (10YR 5/2), f. Sand, some silt, little f/m gravel.	Waste		0	
			5-6							
3										
							4'			
4	3	6	6-8	2'/1'	16	Wet, very dense, mod. Yellowish brown (10 YR 5/2), f. Sand, some embedded f/m gravel, little silt. No odor. (Native)	native sand & gravel		0	
			8-8							
5										
6						B.O.B @ 6'				
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 4
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Sludge disposal area Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-2	2'/8"	3	Moist, mod. loose, dusky yellowish brown (10YR 2/2), f. Sand and salt, little veg matter(roots/grasses), trace f/m gravel (cover fill) ,No odor.			0	
			1-1							
1										
2	2	4	woh/1	2'/2"	1	Poor recovery, grayish green (5G 5/2), waste material in nose of spoon., Silt and f. Sand, no odor, spoon covered in greenish blue.	2' Waste		0	
			woh/1							
3							Waste			
4	3	6	woh-6	2'/9"	14	Wet, mod. loose, mod. yellowish brown (10 YR 5/2), f. Sand and Silt, little f/c gravel. No odor (native)	4.5'		0	
			8-14				Native			
5										
6						B.O.B @ 6'				
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 5
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen [=] Riser [ ] Grout [\] Sand Pack [ ] Bentonite [ ]

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Field Testing Warm PID
0	1	2	woh/1.5	2'/6"	1	Moist, mod. loose, dusky yellowish brown (10YR 2/2), f. Sand, some silt, some veg matter. No odor.			0	
			1							
1										
							2'			
2	2	4	woh/2	2'/6"	1	Moist, mod. Loose, grayish green (5G 5/2), f. Sand, some silt, no odor, sludge			0	
3										
4	3	6	woh-3	2'/1'	9	6", Wet, mod. Dense, dusky green (5G 3/2), Silt, little clay, minor odor. 6", wet, mod. Dense, mod. Yellowish brown (10 YR 5/2), f. Sand, some silt, little embedded f/m gravel	Waste		0	
			6-6							
5							5.5'			
							Native			
6						B.O.B @ 6'				
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 6
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Sludge disposal area Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser \ Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-woh	2'/6"	0	Moist, mod. Loose, dark yellowish brown (10 YR 4/2), f. Sand, some veg. matter (roots, grass), waste material in nose of spoon.			0	
			woh-woh							
1										
2	2	4	woh-7	2'/18"	16	1', moist, mod. Dense, grayish green (5G 5/2), Silt, some f. sand, no odor (waste). 6", moist, mod. Dense,mod. Yellowish brown (10 YR 5/2), f. Sand, some silt, little f/m gravel.	2' Waste		0	
			9-10							
3							3.5' Native sand & gravel			
4						B.O.B ~ 4'			0	
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 7
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1 Location: Sludge disposal area
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Start Date: 10/22/03
File No.:	Fall: 30"	End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-5	2'/4"	7	Moist, mod. Loose, dusky yellowish brown (10YR 2/2), f. Sand, some veg. matter (roots, grasses), no odor			0	
			2-2							
1										
2	2	4	1-2	2'/6"	7	2" as above, 4" wet, mod. Dense, grayish green (10G 4/2) Silt, some f. sand, waste material, nose of spoon, mod. Yellowish brown (10 yr 5/2), f. Sand, some f. gravel, no odor.	2' Waste		0	
			5-8							
3							3.8' Native sand & gravel			
4	3	6	10-17	2'/1'	45	Moist, mod. Dense, mod. Yellowish brown (10YR 5/2), f. Sand, little f/m gravel, no odor.			0	
			28-29							
5										
6						B.O.B @ 6'				
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 8
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser \ Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-5	2'/10'	7	2", moist, mod loose, dusky yellowish brown (10 YR 2/2), f. Sand and silt. 7", moist, mod. Dense, mod. Yellowish brown (10 YR 5/2), f. Sand, some silt, little f/m gravel. 1", moist, grayish green (5G 5/2), Silt and f. sand (waste matter).			0	
			2-0							
1							1.9' waste			
2	2	4	1-0	2'/1'	1	8" as above, moist, mod. Soft, grayish green (5G 5/2), Silt, little f. sand, slight odor (PCBs). 4" , moist, mod. Dense, mod. Yellowish brown (10 YR 5/2), f. Sand, little silt, little f/m embedded gravel, no odor (native)			0	
			1-1							
3							3.75' Native			
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 9
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Sludge disposal area Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser \ Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	4-16	2'/1'	56	6', moist, mod loose, dusky yellowish brown (10 YR 2/2), f. Sand , some veg. matter (roots, grass), little f. gravel, 6", moist, very dense, mod. Yellowish brown (10 YR 5/2), f. Sand, some f/m gravel, no odor.			0	
			40-13							
1										
2	2	4	13-17	2'/10"	31	Moist, very dense, mod. Yellowish brown (10 YR 5/2), f. Sand, some f/m gravel, little silt, no odor (native).			0	
			14-15							
3										
4						B.O.B. 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 10
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 2
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/22/03
		End Date: 10/22/03
Boring Company: Parratt-Wolff		Screen = \ Grout
Foreman: Ron Bush		Riser Sand Pack
OBG Geologist: Joseph Button		Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1/1'	2'/1'	2	4"', moist, mod loose, dusky yellowish brown (10 YR 4/2), f. Sand , some veg. matter (leaves,roots, grass),2", moist, mod. Soft, grayish blue green (5BG 5/2), Silt, some f. sand, (waste)			0	
			1/1'							
1							1.5'			
							Waste			
2	2	4	1/1'	2'/8"	2	Moist, mod. Soft, grayish blue green (5BG 5/2), Silt, little f. sand, little odor (Waste)			0	
			1/1'							
3										
4	3	6	1/1'	2'/1'	2	As above, little mod. Yellowish brown (10 YR 5/2), Silt intermixed throughout. No odor.	Waste		0	
			1/1'							
5										
6	4	8	2-4	2'/18"	9	Wet, mod. Soft, dusky blue green (5BG 3/2), Silt, trace clay, little odor, nose of spoon has waste material.			0	
			5-7							
7										
8	5	10	2-4	2'/6"	9	Wet,mod. Loose, mod. Yellowish brown (10 YR 5/2), f. Sand, little embedded f. gravel, no odor. Native	8'		0	
			5-7				Native			
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 10
Client: General-Motors	Sampler: 2" Split Spoon	Page 2 of 2
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/21/03 End Date: 10/21/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
10	6	12	6-9	2'/1'	30	Wet, mod. Dense, mod. Yellowish brown			0	
			21-24			(10 YR 5/2), f. Sand, some f/m gravel, little silt.				
11										
12						B.OB @ 12'				
13										
14										
15										
16										
17										
18										
9										
20										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 11
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Sludge disposal area Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-0	2'/4"	1	Moist, very loose, dark yellowish brown (10YR 4/5), f. Sand, some veg. matter (roots, grass), nose of spoon grayish blue green (5BG 5/2), Silt/f. sand, waste material.			0	
			1-0							
1							0.5'			
							Waste			
2	2	4	woh-2	2'/2"	1	poor recovery, nose of spoon, wet, grayish blue green (5BG 5/2), Silt, some f. sand, trace f. gravel. (waste)			0	
3										
4	3	6	1/1'	2'/4"	2	Poor recovery, as above	Waste		0	
			1/1'							
5										
6	4	8	1-2	2'/18"	6	12" as above, slightly fine. 6", wet mod. Yellowish brown (10YR 5/2), f. Sand, some f/m gravel, little silt (native).			0	
			4-5							
7							7'			
							Native			
8						B.O.B. @ 8'				
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 12
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser \ Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1/1'	2'/6"	1	Moist, mod. Loose, dark yellowish brown (10 YR 4/1),f. Sand, veg. matter (roots,grasses), nose of spoon contains dusky blue green (5BG 5/2), Silt and f. Sand mixed w/ brown f. sand (waste material)			0	
			1/1'							
1							2'			
2	2	4	2-1	2'/6"	1	2" mixed gray greenish (10 GY 5/2), Silt, mod. Yellowish brown (10 YR 5/1),f. Sand and Silt, very little waste material. 4", moist and dense, mod. Yellowish brown (10 YR 5/2), f. Sand some silt.	Waste 2.5-3'		0	
			0-1							
3							Native			
4	3	6	4-4	2'/1'	7	Moist, Slightly dense, dusky yellowish brown (10YR 2/2), f. Sand , some silt, little f/m gravel (native)			0	
			3-4							
5										
6						B.O.B @ 6'				
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 13
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Sludge disposal area Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-3	2'/8"	6	Moist, mod. Loose, mod. Brown (5YR			0	
			3-4			3/4), f. Sand, little veg. matter (grasses),				
						little f/m gravel.				
1										
2	2	4	5-2	2'/6"	6	Moist, mod. Dense, mod. Brown (5YR			0	
			4-4			3/4),f. Sand and Silt, some f/c gravel.				
						(native).				
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 14
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1 Location: Sludge disposal area
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Start Date: 10/23/03
File No.:	Fall: 30"	End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	3-8	2'/1'	16	Moist, mod. Loose, mod. Yellowish brown (10YR 5/2), f. Sand, some f/m gravel, little veg. material (upper 2-3"), no odor (appears native)			0	
			8-10							
1										
2	2	4	8-8	2'/1'	27	As above (native)			0	
			19-15							
3										
4										
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 15
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	3-5	2'/1.3'	15	Moist, mod. Dense,dark yellowish brown (10 YR 4/2), f. Sand, some f/m gravel, little silt, little veg. matter (upper 4")			0	
			10-8							
1										
2	2	4	19-19	2'/1'	45	Moist, very dense, mod. Yellowish brown (10YR 5/2), f. Sand, some f/c gravel, little silt (native)			0	
			25-17							
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 16
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03
		End Date: 10/23/03
Boring Company: Parratt-Wolff		Screen = Grout
Foreman: Ron Bush		Riser Sand Pack
OBG Geologist: Joseph Button		Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-1	2'/1'	2	3", moist, mod. Yellowish brown (10YR 5/2), f. Sand, some veg. matter (grass, roots), 6", moist, mod. Soft , dusky blue green (5GB 3/2),Silt and f. Sand (waste). 3", moist, mod. Yellowish brown (10YR 5/2), f.Sand,some f/m gravel (appears native)			0	
			1-7							
1							1.25' Waste 1.75'			
2	2	4	7-8	2'/1.8"	16	Moist, mod. dense,mod. Yellowish brown (10YR 5/2), f. Sand and Silt, trace f. gravel (embedded), no odor (native)			0	
			8-12				Native			
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 17
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	woh-1	2'/1.2'	2	Moist, mod. Loose, mod. Yellowish brown (10YR 5/2), f. Sand, little f/m gravel, little veg. matter (upper 6") (grass,roots)			0	
			1-3							
1										
2	2	4	3-21	2'/1'	37	As above, trace very little waste material intermixed in upper 2".			0	
			16-11							
3										
4	3	6				B.O.B @ 4'				
5										
6	4	8								
7										
8	5	10								
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 18
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-8	2'/1'	16	Moist, mod. Dense, mod. Yellowish brown (10YR 5/2), f. Sand,some silt, little f/m gravel, little veg. matter (upper 3") (roots,grass)			0	
			8-5							
1										
2	2	4	5-7	2'/1.5'	13	Moist,mod. Dense, mod. Yellowish brown (10YR 5/2), f. Sand, some silt, trace f. gravel (embedded) (native)			0	
			6-7							
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 19
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Sludge disposal area Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	3-4	2/12"	16	Moist,mod. Dense, mod. Yellowish brown			0	
			7-10			(10YR 5/2), f. Sand, little silt, little f/c				
						gravel, little veg. matter (upper 4"), native.				
1										
2	2	4	12-12	2'/0.8"	27	Moist,very dense, mod. Yellowish brown			0	
			15-21			(10 YR 5/2), f. Sand, some f/c gravel,				
						large piece of gravel in nose of spoon.				
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 20
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-1	2'/1"		9", moist, mod. Loose, mod. Yellowish brown (10YR 5/2), f. Sand, some silt, little veg. matter (roots, grass),little f. gravel			0	
			1-1				1.75'			
							waste			
1										
2	2	4	1/1'	2'/1.5"		3", moist, mod. Loose, dusky blue green (5BG 3/2), Silt, little f. sand. 1' as above, slightly finer. 6', moist and dense, mod. Brown (12YR 5/2), f. Sand, some f/m gravel.			0	
			9-50							
3							3.0'			
							Native			
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 21
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-2	2'/1'	3	3", moist, very loose, dusky yellowish brown (10YR 2/3), f. Sand, some silt,some veg. matter (roots, grasses), 9", moist and loose, mod. Yellowish brown (10YR 5/2), f. Sand , some silt, f. gravel, little grayish blue green (5GB) 5/2 Intermixed	0.25 mixed soil waste		0	
			1-1							
1	2	4	woh-1	2'/8"	2	Moist, mod. Soft, grayish green (5G 5/2), Silt, little f. sand (waste)	2' waste		0	
			1-1							
3							waste			
4	3	6	1/1	2'/7"	6	3", as above. 4", moist, mod. Loose, mod. Yellowish brown (10YR 5/2), f. Sand, little f/m gravel (native)			0	
			5-9							
5							5'			
6	4	8	6-5	2'/2'	14	As above, native	Native		0	
			9-10							
7										
8						B.O.B @ 8'				
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 22
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	5-10	2'/2"	38	Moist, very dense, mod. Yellowish brown (10YR 5/2), f. Sand, some f/c gravel, trace silt, little veg. matter (top 3") (Native)	Native		0	
			8-60							
1										
2						B.O.B 2'			0	
3										
4									0	
5										
6									0	
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 23
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	woh-woh	2/8"	1	Moist, mod. Loose, dusky yellowish brown (10YR 5/2), f. Sand and veg. matter , little silt, 6", moist, mod. Soft and loose, dusky blue green (5GB 3/2), Silt, little f. sand			0	
			1-1				~1' Waste			
1										
2	2	4	2-4	2/1.4'	8	Top 5" as above. 6', moist, mod. Dense, mod. Yellowish brown (10YR 5/2), f. Sand.	2.5' Native		0	
			4-5							
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 24
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser \ Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-2	2'/1'	4	8", wet, mod. Loose, dusky yellowish brown (10YR 2/2), f. Sand, some silt, little veg. matter (roots, grasses). 2" intermixed, moist, mod. Loose, mod. Yellow brown (10 YR 5/2),f. Sand, little silt, dusky blue green (5BG 3/2),Silt. 2" moist, mod. Yellow brown (10YR 5/2), f. Sand and Silt			0	
			2-4							
1							0.75 waste material 1			
2	2	4	3-2	2'/1'	4	As above, native material			0	
			2-4							
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 25
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Sludge disposal area Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-0	2'/8"	2	6" moist, mod. Loose, dusky yellowish brown (10YR 2/2), f. Sand, some silt. Little veg. matter (roots, grasses). 2" moist, mod. Loose, dusky blue green (5BG 3/2), f. Sand and Silt.			0	
			3-4							
1							1.8'			
2	2	4	4-3	2'/6"	5	6", moist, mod. Loose, mod. Yellowish brown (10YR 5/2), f. Sand, some silt, little f/c gravel, no odor (native)	Waste 2.6' Native		0	
			2-4							
3										
4						B.O.B @ 4'				
5										
6										
7										
8										
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 26
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-1	2'/6"	2	Moist, mod. Loose, mod. Yellowish brown (10YR 5/2), f. Sand, little silt, little veg. matter (roots,grass)			0	
			1-1							
1							2'			
2	2	4	1/2'	2'/2'	4	Moist,mod. Soft, dusky blue green (5BG 3/2), Silt, little f. sand, slight odor	Waste material		0	
3										
4	3	6	1/2'	2'/1'	4	As above			0	
5										
6	4	8	1-2	2'/2'	6	1' as above, slightly finer,1' moist, mod. Dense, mod. Yellowish brown (10YR 5/2), f. Sand, little silt, little f. gravel (native)			0	
			4-11							
7							7' Native			
8						B.O.B @ 8'				
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MDA- TB- 27
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Sludge disposal area
File No.:	Fall: 30"	Start Date: 10/23/03 End Date: 10/23/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-4	2'/.75"	6	Moist, mod. Loose, mod. Yellowish brown (10YR 5/2), f. Sand,little veg. matter upper 3" (roots, grasses)			0	
			2-1							
1							2'			
							Waste			
2	2	4	1-2	2'/1.8'	3	Moist, mod. Soft/loose, dusky yellowish brown (5GB 3/2), Silt, little f. sand, slight odor (waste)			0	
			1-1							
3										
4	3	6	1-1	2'/2'	3	As above, (waste), little odor			0	
			2-2							
5										
6	4	8	1-1	2'/1.5'	1	As above, (waste/sludge), little odor			0	
			0-1							
7										
8	5	10	1-1	2'/2'	1	1.5' as above. 0.5', wet, mod. Dense, mod. Yellowish brown (10YR 5/2), f. Sand, trace silt, trace f/c gravel. (Native)	Waste/sludge		0	
			1-8							
9							9.5' Native			
10						B.O.B. @ 10'				

Former drum storage area

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING Drum- TB-1
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Former drum storage area
File No.:	Fall: 30"	Start Date: 10/24/03
		End Date: 10/24/03
Boring Company: Parratt-Wolff		Screen = Grout
Foreman: Ron Bush		Riser Sand Pack
OBG Geologist: Joseph Button		Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-5	2'/1'	11	Moist,mod. Dense, mod. Brown (5YR 4/4), f. Sand,little f/c gravel (large reddish rock fragments), little veg. material (roots,grass) (in upper 4") No odor			0	
			6-7							
1										
2	2	4	1-5	2'/1'	14	Moist, mod. Loose,dusky yellowish brown(10YR 2/2), f. Sand, little silt grades into mod. Loose, mod. Brown (5YR 4/4), f. Sand, little f. gravel (embedded)			0	
			9-14							
3										
4	3	6	12-14	2'/1'	21	Moist, mod. Loose,dark yellowish brown (10YR 4/2), f. Sand , little f/c gravel, trace clay, some areas w/ minor coloring, slight burnt odor			0	
			7-9							
5										
6	4	8	7-10	2'/8'	18	Moist, mod. Loose, mod. Yellowish brown (10YR 5/4), f. Sand, little silt, little f. gravel. (native)	Water @ ~8'		0	
			8-7							
7										
8	5	10	5-4	2'/1'	7	Wet, mod. Loose, mod. Yellowish brown (10YR 5/4), f. Sand, some f/m gravel, little silt			0	
			3-4							
9										
10						B.O.B @ 10'				

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING Drum- TB-2
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Former drum storage area
File No.:	Fall: 30"	Start Date: 10/24/03
		End Date: 10/24/03
Boring Company: Parratt-Wolff		Screen = Grout
Foreman: Ron Bush		Riser Sand Pack
OBG Geologist: Joseph Button		Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-5	2'/1'	15	Moist,mod. Loose, dusky yellowish brown			0	
			10-7			(10YR 2/2), f. Sand, little silt, little veg.				
						matter (upper 3"), little f/m gravel.				
1										
2	2	4	6-6	2'/.2'	16	Poor recovery, as above.			0	
			10-14							
3										
4	3	6	5-5	2'/.4'	12	Moist, mod. Loose, mod. Yellowish brown			0	
			7-12			(10YR 5/4), f. Sand, little f/m gravel, little				
						silt. No odor.				
5										
6	4	8	21-9	2'/1.5'	18	1' as above, 0.5', moist, mod. Dense, dark	Water @ ~8'		0	
			9-9			yellowish brown (10YR 4/2), f. Sand, little				
						f/c gravel, trace clay. No odor.				
7										
8	5	10	10-14	2'/2'	24	Wet, mod. Dense, mod. Yellowish(10YR			0	
			10-10			5/4), f. Sand, some f/c gravel (embedded).				
						No odor. (native)				
9										
10						B.O.B @ 10'				

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING Drum- TB-3
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Former drum storage area
File No.:	Fall: 30"	Start Date: 10/24/03
		End Date: 10/24/03
Boring Company: Parratt-Wolff		Screen = Grout
Foreman: Ron Bush		Riser Sand Pack
OBG Geologist: Joseph Button		Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-3	2'/1.2'	6	Moist,mod. Loose, mod.yellowish brown (10YR 5/4), f. Sand, little f/m gravel, little veg. matter (upper 6")			0	
			3-3							
1										
2	2	4	3-6	2'/1'	12	Moist, mod. Dense, mod. Brown (5YR 4/4), f. Sand, some f/c gravel, no odor.			0	
			10-12							
3										
4	3	6	11-9	2'/1.2'	12	Moist, mod. Dense,dark yellowish brown (10YR 4/2), f. Sand, little f/c gravel, trace clay, no odor.			0	
			9-9							
5										
6	4	8	8-11	2'/1.5'	26	Wet, mod. Loose, mod. Brown (5YR 4/4), f. Sand, some f/c gravel (embedded). No odor.	Water @ ~8'		0	
			15-25							
7										
8						B.O.B @ 8'				
9										
10										

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING Drum- TB-4
Client: General-Motors Proj. Loc: Victory, NY Brillo Landfill Site File No.:	Sampler: 2" Split Spoon Hammer: 140 lb drop Fall: 30"	Page 1 of 1 Location: Former drum storage area Start Date: 10/24/03 End Date: 10/24/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser \ Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	3-6	2'/1'	11	3", moist, dusky yellowish brown (10YR 4/2), f. Sand, little veg. matter (roots,grasses) 3" moist, mod. Loose, mod. Brown (5YR 4/4),f. Sand, little f. gravel. 3", moist, mod. Loose, mod.yellowish brown (10YR5/4), f. Sand, little f. gravel. No odor.			0	
			5-5							
1										
2	2	4	4-2	2'/6"	6	Moist, mod. Loose,Dark yellowish brown (10YR 4/2), f. Sand, little f/c gravel. No odor.			0	
			4-6							
3										
4	3	6	6-9	2'/1.4'	18	As above, slightly higher gravel content			0	
			9-10							
5										
6	4	8	10-12	2'/.4'	23	Moist,mod. Dense, mod. Brown (10YR 4/4), f. Sand, some f/c gravel. No odor.			0	
			11-12							
7										
8	5	10	8-8	2'/.2'	16	Poor recovery, as above.			0	
			8-8							
9							Water @ 9.5			
10						B.O.B. @10'				

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING Drum- TB-5
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Former drum storage area
File No.:	Fall: 30"	Start Date: 10/24/03
		End Date: 10/24/03
Boring Company: Parratt-Wolff		Screen = Grout
Foreman: Ron Bush		Riser Sand Pack
OBG Geologist: Joseph Button		Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	2-3	2'/.2'	6	Poor recovery, Dark yellowish brown (10YR 2/2), f. Sand, some veg. material (grasses,roots). No odor.			0	
			3-2							
1										
2	2	4	4-5	2'/1'	12	Moist, mod. Dense, dark yellowish brown (10YR 4/2), f. Sand, some f/c gravel. No odor.			0	
			7-7							
3										
4	3	6	11-22	2'/1'	47	As above, no odor.			0	
			25-21							
5										
6	4	8	14-12	2'/1.5'	23	Moist,mod. Dense, mod. Yellowish brown (10YR 5/4), f. Sand, some f/c gravel (embedded) No odor			0	
			11-13							
7										
8						B.O.B @ 8'				
9										
10										

Monitoring wells

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-1
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 2
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Upgradient Well
File No.:	Fall: 30"	Start Date: 10/21/03 End Date: 10/21/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1-2	2'/.5'	5	Moist, mod. loose, mod. brown (5 Y 4/4), f.Sand, little f/m gravel, little veg. matter. No odor.			0	
			3-4							
1										
2	2	4	4-6	2'/1'	13	Dry, mod. Loose, mod. Yellowish brown (10 YR5/4), f/m Sand, trace f. gravel, trace veg. matter. No odor.			0.2	
			7-13							
3										
4	3	6	7-11	2'/1'	25	Dry, mod loose, mod yellowish brown (10 YR5/4), f. Sand, some f/m gravel, little silt, no odor, cobbles in cuttings.			0.1	
			14-13							
5							f/m sand & gravel			
6	4	8	16- 50/5	11"/10"	refusal	2" as above.7", moist, mod. dense, dark yellowish brown (10 YR 4/2), f. Sand , some silt, some embedded, f/m gravel (sub rounded), 1" broken rock fragments, Refusal @ ~7'.			0	
7										
8	5	10	19-29	2'/10"	56	Moist, very dense, mod. Yellowish brown (10 YR 5/4), f. Sand, some f/m gravel, little silt, little cobbles in cuttings, no odor. 3" of broken stone in nose of stone.			0.1	
			27-32							
9										
10										

0.2-1.1 Background PID (Moisture)

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-1
Client: General-Motors	Sampler: 2" Split Spoon	Page 2 of 2
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Upgradient Well
File No.:	Fall: 30"	Start Date: 10/21/03 End Date: 10/21/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen / Riser / Grout / Sand Pack / Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
10	6	12	20-35	2'/14"	48	As above, slightly higher moisture content,			0	
			13-8			slightly less dense @ 11'.				
							f/m sand & gravel			
11										
12	7	14	28-25	2'/18"	50	Moist, mod. dense, mod. Yellowish brown			0.1	
			25- 14			(10 YR 5/4), f/m Sand, little f/c gravel, little silt, no odor, water @ 13.5'.				
							f/m sand, little gravel, water @ ~13' 5'			
13										
14	8	16	19-15	2'/15"	40	Wet, very dense, mod. Yellowish brown			0.2	
			25-21			(10 YR 5/4), f/m Sand, some silt, little f. gravel (embedded, trace m/c gravel throughout, no odor.				
15										
16	9	18	10-9	2'/5"	17	1" as above. 4 ", wet, mod. dense, pale			0	
			8-15			brown (5YR 5/2), Silt, some f. sand, trace embedded f/c gravel, trace clay, no odor.	16.2'			
17										
18	10	20	woh-2	2'/6"	4	as above, no odor.			0	
			2-3							
9							Silt & f. sand, trace gravel			
20						B.O.B @20'				

Background PID 0.0- 0.9 - Moisture.

Well installed. 2" diameter PVC screen from 10 20' bgs. Sand pack installed from 8-20' bgs. 2' bentonite seal installed from 6-8' bgs. Grout to top. Finished with above ground protective surface casing.

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-2
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Drum Storage Area
File No.:	Fall: 30"	Start Date: 10/21/03 End Date: 10/21/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen / Riser / Grout / Sand Pack / Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	woh-2	2'/9"	8	Moist,mod. dense, mod yellowish brown			0	
			6-10			(10 YR 5/4), Silt, little clay, little f. sand.				
						trace veg. matter, no odor.				
1										
2	2	4	8-8	2'/2"	16	Poor recovery, large black limestone			0	
			8-7			fragment in nose, loose material, as				
						above, no odor. Water @ 2.5' & open bore				
						hole.				
3										
4	3	6	3-3	2'/9"	5	Wet, very loose, mod. Yellowish brown			0.3	
			2-4			(10 YR 5/4), f. Sand, some f/m				
						subrounded gravel, no odor.				
5										
6	4	8	4-4	2'/8"	6	Wet,mod. loose, mod. Yellowish brown			0.4	
			2-1			(10 YR 5/4), f/m Sand, some f/c gravel				
						(subrounded), no odor.				
7										
8	5	10	6-8	2'/8"	16	6" as above, 2", wet, mod. dense, pale			0.1	
			8-7			brown (5yr 5/2), f. Sand, little embedded f.				
						gravel (angular), no odor.				
9										
10						Bottom @ 10'				

Background PID 0.0- 0.9 -Rain-

Well installed. 2" ID PVC screen set from 0-10' bgs. Sandpack installed from1.5 to 10' bgs. Bentonite seal installed from 0.5 to 1.5'. Protective surface casing installed.

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-3
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Main Disposal Area
File No.:	Fall: 30"	Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = \ Grout Riser Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	woh-18	2'/4"	<1	Moist, mod. loose, dusky yellowish brown (10 YR 2/2), f. Sand, some silt, some veg. matter (root structure) ,no odor			0	
1										
2	2	4	woh-woh 1-3	2'/10'	1	Wet, mod. soft, mod. yellowish brown (10 YR 5/4), Silt, some f. sand, little clay, no odor.	Water @ ~2.0'		0	
3										
4	3	6	14-17 17-20	2'/8"	34	2" as above. 6", Wet, mod. dense, mod. Yellowish brown (10 YR 5/4), f. Sand, some f/m gravel (subangular), little silt, trace rock fragments throughout (l. cobbles), no odor.			0	
5										
6	4	8	21-23 22-14	2'/1'	45	Wet, mod. dense, mod. yellowish brown (10 YR 5/4), f. Sand and f/m gravel (angular), little silt, no odor.	Sand & Gravel		0	
7										
8	5	10	8-10 5-11	2'/1'	15	8" as above. 4", wet, mod. loose, mod. Yellowish brown (10 YR 5/4), f. Gravel (angular), f/m sand, trace silt.	Gravel & Sand		0	
9										
10						Bottom @ 10'				

Well installed. 2" ID PVC screen set from 0-10' bgs. Sandpack installed from1.5 to 10' bgs. Bentonite seal installed from 0.5 to 1.5'. Protective surface casing installed.

O'BRIEN & GERE ENGINEERS, INC.	TEST BORING LOG	REPORT OF BORING MW-4
Client: General-Motors	Sampler: 2" Split Spoon	Page 1 of 1
Proj. Loc: Victory, NY Brillo Landfill Site	Hammer: 140 lb drop	Location: Main Disposal Area
File No.:	Fall: 30"	Start Date: 10/22/03 End Date: 10/22/03
Boring Company: Parratt-Wolff Foreman: Ron Bush OBG Geologist: Joseph Button		Screen = Riser Grout Sand Pack Bentonite

Depth Below Grade	No.	Depth (feet)	Blows /6"	Penetr/ Recovery	"N" Value	Sample Description	Stratum Change General Descript	Equip. Installed	Field Testing PID (ppm)	Warm PID
0	1	2	1/18"	2'/10"	1	8', Moist, mod. soft, dusky yellowish brown			0	
			-2			(10 YR 2/2), Silt, some f. sand, some veg.				
						matter (roots), 2", Mosit, mod. soft , mod.				
						Yellowish brown (10 YR 5/4), f. Sand, silt,				
1						little f. gravel, no odor.				
2	2	4	2-3	2'/2'	6	6" as above. 16", Wet, mod. soft, mod.	Water @ ~2'		0	
			3-6			cohesive, mod. Yellowish brown (10 YR				
						5/4), Silt, some clay, little f. sand, some				
						zones (2-3") w/ more f. sand, no odor.				
3										
4	3	6	16-30	2'/1'	47	2" as above. 10", Wet, mod. dense, mod.			0	
			17-34			yellowish brown (10 YR 5/4), f. Sand,				
						some silt, some f/m gravel (angular to				
5						subrounded), no odor.				
6	4	8	11-11	2'/14"	21	As above, Wet , mod. loose, mod.			0	
			10-8			Yellowish brown (10YR 5/4), f. Sand,				
						angular f/m gravel, some silt, no odor.				
7										
8	5	10	10-15	2'/1'	23	6" as above. 6", Wet, mod. dense, mod.			0	
			8-11			Yellowish brown (10YR 5/4), f. Sand,				
						some silt, little embedded, f/m gravel				
9						(angular), no odor.				
10						Bottom @ 10'				

Well installed. 2" ID PVC screen set from 0-10' bgs. Sandpack installed from1.5 to 10' bgs. Bentonite seal installed from 0.5 to 1.5'. Protective surface casing installed.

Appendix G
Monitoring well development and sampling logs

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT NAME: GM Brillo Landfill Site ISI
PROJECT NO.: _____
DATE OF WELL DEVELOPMENT: 10/27/03
DEVELOPMENT CREW MEMBERS: JSB
PURGING METHOD: Dedicated Bailer
SAMPLE NO.: —
SAMPLE TIME: — 1130

WELL INFORMATION

WELL NUMBER: MW-1
WELL TYPE (diameter/material) 2" PVC 0.010 Screen
MEASURING POINT ELEVATION: TBD
STATIC WATER DEPTH: 12.87
ELEVATION: _____
BOTTOM DEPTH: 22.47
ELEVATION: _____
WATER COLUMN LENGTH: 9.6'
SCREENED INTERVAL: 10-20' bgs
WELL VOLUME: ~1.5 gallons

Note: For 2-inch diameter well: 1 foot = 0.14 gallons (Imp) or 0.16 gallons (US)
1 meter = 2 liters

UNITS	1	2	3	4	5	~~TOTAL~~/ AVERAGE 6	7	8
VOLUME PURGED (volume/total volume):	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12
FIELD pH:	7.18	7.23	7.25	7.32	7.34	7.36	7.36	7.37
°F FIELD TEMPERATURE:	54.9	54.1	53.7	53.4	53.2	53.3	53.4	53.2
mS/cm FIELD CONDUCTIVITY:	1.02	0.83	0.76	0.75	0.77	0.75	0.76	0.77
ntu CLARITY/TURBIDITY VALUES:	>999	>999	>999	>999	>999	850	845	125
~~Light~~ brown COLOR:	light brown	light brown	light brown	—	—	tinted light brown	—	tinted light brown
~~None~~ ODOR:	none	none	none	—	—	none	—	none
COMMENTS:			Clearing slightly	—	—	Clearing slightly	—	Clearer as much as it will appears it will

COPIES TO: _____

9.6
x .16

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT NAME: GM Bello **PROJECT NO.:** ____

DATE OF WELL DEVELOPMENT: 10/27/03

DEVELOPMENT CREW MEMBERS: JSB

PURGING METHOD: Inertial Baler

SAMPLE NO.:

SAMPLE TIME: 1300

WELL INFORMATION

WELL NUMBER: MW-2

WELL TYPE (diameter/material) 2" PVC

MEASURING POINT ELEVATION: TOD

STATIC WATER DEPTH: 3.05' **ELEVATION:** ____

BOTTOM DEPTH: 12.18 **ELEVATION:** ____

WATER COLUMN LENGTH: ~9'

SCREENED INTERVAL: 0 – 10'

WELL VOLUME: ~1.4

Note: For 2-inch diameter well: 1 foot = 0.14 gallons (Imp) or 0.16 gallons (US)
1 meter = 2 liters

	UNITS	1	2	3	5	7	TOTAL/ AVERAGE 9
VOLUME PURGED (volume/total volume):							
FIELD pH:		6.94	6.88	6.82	6.80	6.78	6.77
FIELD TEMPERATURE:	°F	52.2	52.5	52.7	52.6	52.6	52.6
FIELD CONDUCTIVITY:	mS/cm	1.34	1.14	0.96	0.95	0.94	0.94
CLARITY/TURBIDITY VALUES:	ntu	7999	7999	—	—	—	—
COLOR:		Dark brown	—	—	—	—	—
ODOR:		none	—	—	—	—	—
COMMENTS:		—					not clearing any further – became stable

10

COPIES TO: ____

17300 (2) Part C FMG 3.7-01
REVISION 0, NOVEMBER 20, 2001

REALM/ENCORE

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT NAME: GM Bristol

PROJECT NO.:

DATE OF WELL DEVELOPMENT: 10/27/03

DEVELOPMENT CREW MEMBERS: JSB

PURGING METHOD: Dedicated ~~Bailer~~ Bailer

SAMPLE NO.:

SAMPLE TIME:

WELL INFORMATION

WELL NUMBER: MW-4

WELL TYPE (diameter/material): PVC - 2" diameter

MEASURING POINT ELEVATION: TBD

STATIC WATER DEPTH: 2.97 ELEVATION:

BOTTOM DEPTH: 11.60 - soft (silt/sand) ELEVATION:

WATER COLUMN LENGTH: ~8.6'

SCREENED INTERVAL:

WELL VOLUME:

Note: For 2-inch diameter well: 1 foot = 0.14 gallons (Imp) or 0.16 gallons (US)
1 meter = 2 liters

	UNITS	1	2	3	4	5 7	TOTAL/ AVERAGE 10
VOLUME PURGED (volume/total volume):							
FIELD pH:		7.13	7.10	7.08	7.07	[illegible]	7.19
FIELD TEMPERATURE:	°F	52.1	52.3	52.6	52.7	52.3	52.1
FIELD CONDUCTIVITY:	mS/cm	0.81	0.65	0.64	0.61	0.62	0.64
CLARITY/TURBIDITY VALUES:	NTU	Dark yell brown	—	—	—	—	—
COLOR:		[illegible]	—	—	—	—	—
ODOR:		None	—	—	—	—	—
COMMENTS:		—					Not changing any further became stable

COPIES TO:

17300 (2) Part C FMG 3.7-01
REVISION 0, NOVEMBER 20, 2001

REALM/ENCORE

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

WELL DEVELOPMENT AND STABILIZATION FORM

PROJECT NAME: GM Barilla — PROJECT NO.: _____

DATE OF WELL DEVELOPMENT: 10/27/03

DEVELOPMENT CREW MEMBERS: JSB

PURGING METHOD: Peristaltic pump

SAMPLE NO.: _____

SAMPLE TIME: _____

WELL INFORMATION

WELL NUMBER: MW-3

WELL TYPE (diameter/material) _____

MEASURING POINT ELEVATION: _____

STATIC WATER DEPTH: 2.28 — ELEVATION: _____

BOTTOM DEPTH: 12.20 - soft — ELEVATION: _____

WATER COLUMN LENGTH: ~10

SCREENED INTERVAL: _____

WELL VOLUME: ~1.6 gallons

Note: For 2-inch diameter well: 1 foot = 0.14 gallons (Imp) or 0.16 gallons (US)
1 meter = 2 liters

UNITS	1	2	3	4	5	TOTAL/ AVERAGE
VOLUME PURGED (volume/total volume):	1.5	3.0	1.5	6.0	~~9.5~~ 10.5	~~10~~ 15
FIELD pH:	7.23			7.30	7.31	7.32
FIELD TEMPERATURE: °F	50.9			51.2	51.5	51.6
FIELD CONDUCTIVITY: ms/cm	203	1.24	1.01	0.98	0.96	0.95
CLARITY/TURBIDITY VALUES: ntu	>999	—	—	—	—	—
COLOR:	Dk brown	—	—	—	—	—
ODOR:	None	—	—	—	—	—
COMMENTS:						Not temp-wise but stable

COPIES TO: _____

2.28
12.20

Form FMG 5.1-01	**GROUNDWATER LEVEL MONITORING REPORT**	WELL NUMBER AM Page 1 of 1

PROJECT	CoM - Bulk	PROJECT MANAGER	Bill Ayers
LOCATION	Victory, NY	FIELD REP.	Joseph B. Hm
CLIENT	CoM	DATE	11/12/03
ELEVATION REFERENCED TO:			

Date	Time	Elapsed Time (days)	Depth of Water from (TOC) in ft	Elevation of Water	Remarks	Read By
11/12/03	0930	MW-1	12.51		—	JSB
	1217	MW-2	3.21		—	JSB
		MW-4	3.10		—	JSB

FMG MODIFICATIONS MUST BE ACCOMPANIED BY A REVISION REQUEST FORM APPROVED BY THE PROJECT MANAGER

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: GM - Brillo Landfill Site
Ref. No.:

Date: 11/2/03
Personnel: Joseph D. [illegible]

Monitoring Well Data:

Well No.: MW-1
Measurement Point: TOC
Constructed Well Depth (ft): ~20'
Measured Well Depth (ft): 22.47
Depth of Sediment (ft): —

Screen Length (ft): 10'
Depth to Pump Intake (ft)(1): 15'
Well Diameter, D (in): 2
Well Screen Volume, V_s (mL)(2): ~~[illegible]~~ 3~~18~~ 3180
Initial Depth to Water (ft): 12.51

~~10:00~~ 10:05 Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level (3) (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged (4)
Start	300	12.60	0.09	7.09	12.00	1.22	144	3.62	7999	—	—
5	300 ↓	12.60	0.07	6.98	12.03	1.16	144	3.28	7999	~1500	
10	225 ↓	12.58	0.07	7.00	12.10	1.10	138	3.22	7999	~3000	1
15	175	12.58	0.07	7.10	12.26	1.09	128	3.28	7999	~4000	
20	200	12.58	0.07	7.14	12.19	1.12	123	3.07	621	~5000	
25	200	12.58	0.07	7.18	12.12	1.12	119	2.39	~~321~~ 521	~6000	2
30	200	12.58	0.07	7.20	12.06	0.99	117	2.59	163	7000	
35	200	12.58	0.07	7.24	12.07	0.658	112	2.46	60.1	8000	
40	200	12.58	0.07	7.26	12.11	0.649	112	2.55	34.5	9000	3
~~45~~	200	12.58	0.07	7.28	12.11	0.651	111	2.52	34.4	10000	
				Collect sample	@ 10,5[illegible]						

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length, $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing), No. of Well Screen Volumes Purged= Vp/Vs.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: GM Brillo
Ref. No.:

Date: 11/12/03
Personnel: Joseph Button

Monitoring Well Data:

Well No.: MW-2
Measurement Point: TOC
Constructed Well Depth (ft): ~10'
Measured Well Depth (ft): 12.18
Depth of Sediment (ft): 12.18

Screen Length (ft): ~10'
Depth to Pump Intake (ft)[1]: ~9'
Well Diameter, D (in): 2in
Well Screen Volume, V_s (mL)[2]: 3680
Initial Depth to Water (ft): 3.21

1215 Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
Start	320	3.21	—	6.95	11.59	0.835	64	8.39	7979	1600	
5	300	3.25	0.04	6.79	11.48	0.823	44	1.46	7999	1600	
10	300	3.25	0.04	6.71	11.51	0.819	39	1.05	7999	3100	1
15	300	3.26	0.05	6.66	11.51	0.815	34	0.86	995	4600	
20	300	3.26	0.05	6.66	11.57	0.809	31	0.74	577	6100	2
25	300	3.27	0.06	6.69	11.65	0.807	27	0.69	334	7600	
30	300	3.27	0.06	6.70	11.61	0.806	25	0.68	212	9100	3
35	300	3.27	0.06	6.69	11.67	0.803	26	0.68	205	10600	
40	300	3.27	0.06	6.70	11.72	0.803	28	0.68	222	12100	4
			Collect	Sample	@ 12:55						

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length, $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing), No. of Well Screen Volumes Purged= Vp/Vs.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: GM- Brillo
Ref. No.:

Date: 11/12/03
Personnel: Joseph Buffon

Monitoring Well Data:

Well No.: MW-4
Measurement Point: TOC
Constructed Well Depth (ft): 10' bgs
Measured Well Depth (ft): 11.60
Depth of Sediment (ft): 11.60

Screen Length (ft): 10
Depth to Pump Intake (ft)[1]: ~9'
Well Diameter, D (in): 2
Well Screen Volume, V_s (mL)[2]: 3180
Initial Depth to Water (ft): 3.10

1500 Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
Start	350	3.10	—	7.03	12.01	0.671	D/	3.31	>999	—	
5	350	3.18	0.08	7.00	11.97	0.660	59	1.03	>999	1750	
10	350	3.20	0.10	6.97	11.92	0.657	59	0.88	>999	3500	1
15	350	3.21	0.11	6.97	11.82	0.653	59	0.67	664	5250	
20	350	3.21	0.11	6.98	11.85	0.655	59	0.61	222.1	7000	2
25	350	3.21	0.11	7.00	11.92	0.654	59	0.55	28.6	8750	
30	350	3.21	0.11	7.00	11.85	0.655	59	0.53	20.5	10500	3
35	350	3.21	0.11	7.01	11.85	0.655	60	0.52	22.8	12250	4
40	350	3.21	0.11	7.01	11.89	0.655	60	0.52	20.7	14000	
45										105750	5
			Collect	Sample	@ 1545						

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length, $V_s = p^*(D/2)^{2*}(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing), No. of Well Screen Volumes Purged= Vp/Vs.

MONITORING WELL RECORD FOR LOW-FLOW PURGING

Project Data:

Project Name: GM Bcillo
Ref. No.:

Date: 11/13/03
Personnel: Joseph B-Hz

Monitoring Well Data:

Well No.: MW-3
Measurement Point: TOC
Constructed Well Depth (ft): ~10 bgs
Measured Well Depth (ft): 12.20
Depth of Sediment (ft): 12.20

Screen Length (ft): 10'
Depth to Pump Intake (ft)[1]: ~9.0
Well Diameter, D (in): 2
Well Screen Volume, V_s (mL)[2]: 3180
Initial Depth to Water (ft): 2.30

0825 Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level[3] (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, Vp (mL)	No. of Well Screen Volumes Purged[4]
Start	220	2.30	—	6.92	9.92	0.677	134	10.11	130.0	—	
5	200	2.70	0.10	6.96	9.83	0.723	127	1.71	118.0	1000	
10	200	2.69	0.39	6.97	9.83	0.783	123	1.13	192.0	2000	
15	200	2.69	0.39	6.97	9.80	0.747	121	0.94	101.0	3000	1
20	200	2.69	0.39	6.97	9.72	0.728	118	0.81	49.1	4000	
25	200	2.69	0.39	6.98	9.73	0.717	114	0.77	46.1	5000	
30	200	2.69	0.39	6.98	9.75	0.741	117	0.79	43.7	6000	2
35	200	2.69	0.39	6.98	9.76	0.745	115	0.73	44.7	7000	
40											
				Collect Sample @ 9:00							

Notes:

(1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.

(2) The well screen volume will be based on a 5-foot screen length, $V_s = p*(D/2)^2*(5*12)*(2.54)^3$

(3) The drawdown from the initial water level should not exceed 0.3 ft.

(4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stablization criteria and appear to be stablizing), No. of Well Screen Volumes Purged= Vp/Vs.