FINAL (100%) REMEDIAL DESIGN REPORT

Waste Removal and Cap

DuPont-Stauffer Landfill
Newburgh, New York
Site #3-36-009

February 2013

O'BRIEN & GERE

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Prepared for:
DuPont-Stauffer Landfill
Newburgh, New York
Site #3-36-009

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I, James R. Heckathorne, certify that I am currently a NYS registered professional engineer and that this Remedial Design was prepared in accordance with all applicable statutes and regulations and in substantial conformance with DER Technical Guidance for Site Investigation and Remediation (DER-10).

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1. INTRODUCTION

1.1. GENERAL

This document presents the Final (100%) Remedial Design for the removal of waste and construction of a cap at the DuPont-Stauffer Landfill Site (Site) in Newburgh, New York. This document has been prepared in accordance with the Order on Consent (Index No. W3-0988-02-04) signed in August 2005 between the New York State Department of Environmental Conservation (NYSDEC), and the respondents Stauffer Management Company (SMC), Bayer Crop Science, Inc. (successor-by-merger to Stauffer Chemical Company) (BCSI), and E.I. duPont de Nemours and Company (DuPont), and the Explanation of Significant Difference (ESD) issued by the NYSDEC in June 2007 (NYSDEC, June 2007).

The Consent Order requires, among other things, that DuPont and BCSI develop a Final (100%) Remedial Design Report, the objective of which is to convey the intent of the design for implementing the remedial alternative set forth in the Record of Decision (ROD) issued by NYSDEC in August 2006 and the ESD issued in June 2007.

1.2. REPORT ORGANIZATION

The Final (100%) Remedial Design Report is organized as follows:

Section 1 – Introduction

Section 2 - Remediation Objectives

Section 3 – Waste Removal and Landfill Cap Design Basis

Section 4 – Groundwater Assessment

Section 5 – Project Staffing and Construction Contractor Plan Requirements

Section 6 – Final (100%) Remedial Design Report and Project Schedule

The report presents a description of remedial objectives and demonstrates how the elements of the design achieve these objectives. A review of existing information, along with a discussion of the results of the pre-design investigations, is presented to establish a framework for support of the design.

1.3. SITE SETTING AND HISTORY

The DuPont-Stauffer Landfill Site is located on Pierces Road in the City of Newburgh, Orange County, New York (Figure 1) in a light industrial/residential area. The Site is north of South Street and is bordered by the former Newburgh City Landfill on the east, Gidneytown Creek to the west, and Interstate I-84 to the north. The Site consists of 46.5 acres, of which approximately 17 acres is covered by waste, and is completely fenced (Figure 2).

DuPont purchased property on both the north and south side of South Street from the Fabrikoid Company of Newburgh in 1911. The main manufacturing areas were located south of South Street in what is currently the Former Creek Industrial Park (FCIP). The northern portion of the facility, which now constitutes the Site, contained two waste disposal areas referred to as the South and North Landfills. DuPont used nitrocellulose to coat fabrics until the late 1950s or early 1960s when vinyl replaced nitrocellulose as the coating agent. Coated fabric was used primarily in manufacturing car seats and interiors. Stauffer Chemical (Stauffer) purchased the properties from DuPont in 1967. Stauffer continued production of coated fabrics and also produced polyvinyl chloride (PVC) sheeting until January 1979 when operations were shut down. Records indicate that Stauffer ceased on-site disposal activities in 1974. The manufacturing facility south of South Street was purchased by Creek Industrial Center in 1979, with Stauffer retaining ownership of the Site with the two landfill areas north of South Street.

Old Pierces Road is an unused road that separates the northern and southern portions of the Site. The area south of Old Pierces Road includes the South Landfill. This portion of the Site contains a few gravel areas and concrete platforms and is overgrown with grasses, scrub brush, and small trees. The South Landfill was reportedly used for the storage, burning, and burial of various plant wastes and residual waste ash. The North

Landfill lies north of Old Pierces Road. The North Landfill contained an incinerator that was used to burn wastes and an open field that was used to evaporate waste. Some non-burnable wastes were disposed of on-site.

2. REMEDIATION OBJECTIVES

2.1. GENERAL

The ROD (NYSDEC, August 2006) for the Site lists the following remediation goals:

- Eliminate, or reduce to the extent practicable, exposure to the surface and subsurface waste and contaminated soils and other identified waste fill types in the North and South Landfill areas.
- Eliminate, or reduce to the extent practicable, the potential for exposure to on-site soil vapor and groundwater.
- Eliminate, or reduce to the extent practicable, the potential for degradation to Gidneytown Creek due to runoff from the Site.

To achieve the remediation goals described above, the ROD selected excavation, characterization, and off-site disposal of identified hazardous waste fill types; construction of an engineered cap for consolidation of all remaining non-hazardous waste fill types; and soil cover with a demarcation layer for all excavated areas and areas where surface soils would remain above SGCs/area background. Components of the NYSDEC-selected remedy presented in the ROD include:

- A remedial design program, including pre-design investigations;
- The excavation, characterization and off-site treatment/disposal of all the Type D waste fill in the North Landfill area and the South Landfill waste where the metals exceed characteristic hazardous waste regulatory levels in the ash. Disposal will be at permitted waste disposal facility;
- The excavation of all waste remaining in the South Landfill area and the waste areas in the North Landfill property where Waste Fill Types A, B, C, E, and F were historically disposed of. The waste from these areas will be consolidated to the northern portion of the North Landfill area where the Type A waste fill is currently disposed;
- The North Landfill where the wastes consolidation will occur will be capped with an engineered cap designed to the substantive requirements of 6NYCRR Part 360 solid waste regulations for landfills and caps;
- All of the waste fill type areas of the Site that are excavated, as well as all areas where surface soils would remain above SGCs/area background, will be covered with a minimum of 1 foot of soil meeting the requirements of NYSDEC TAGM 4046, or area background, with appropriate seeding and grading to establish a vegetated cover and demarcation layer from the surface and subsurface soil. New building foundations or a paving system may also be used in place of the soil cover if acceptable to the NYSDEC;
- Since the remedy results in contamination above unrestricted levels remaining at the Site, an institutional control in the form of an environmental easement will be required for the remedy. A Site Management Plan (SMP) will be developed and implemented, and will include that easement.

The NYSDEC issued an ESD in June 2007 (NYSDEC, June 2007) that modified the selected remedy to allow the excavated South Landfill waste that is characterized as hazardous waste to be treated within the South Landfill area to meet the requirements of Land Disposal Restrictions (LDRs) pursuant to 40 CFR Part 268 and 6NYCRR Part 376, with subsequent off-site disposal at a solid waste facility if testing following pre-treatment demonstrates that it meets all the criteria pursuant to these LDR regulations. If the waste remains hazardous after pre-treatment and does not meet the statutory requirements, the waste is to be disposed of off-site as a hazardous waste at an appropriate facility.

2.2. SUMMARY OF PROPOSED REMEDIAL ACTION OBJECTIVES

The Site is zoned for light industrial/commercial use and BCSI currently intends that the property use will be limited to commercial or industrial in the future consistent with the current zoning. These uses will be set forth in an environmental easement that will be recorded in the Orange County Clerk's Office. A draft environmental easement (Exhibit 1) as required by the ROD was provided to the NYSDEC on behalf of BCSI by Nixon Peabody LLP on November 28, 2006.

The NYSDEC-selected remedy requires that all waste fill areas excavated and any remaining areas of elevated surface soil above the standards, criteria, and guidance (SCG) values presented in Table 1 of the ROD, or area background, must be covered with a minimum of 1-ft of soil meeting the requirements of NYSDEC backfill guidance. The ROD requires a demarcation layer below such a soil cover, where the cover is necessary.

However, consistent with a restriction that the Site be used only for light industrial/commercial use, the NYSDEC agreed in a letter dated May 23, 2012 to the use of Restricted Use Soil Cleanup Objectives for Commercial Use Sites (RUSCO-Commercial) as presented in 6 NYCRR Part 375 on Table 375-6.8(b) as a remedial action objective (RAO), rather than the SCGs presented in Table 1 of the ROD.

The table below shows how each element of the remedy will be implemented to achieve the remedial goals contained in the ROD, as modified in part by the letter dated May 23, 2012.

Table 1 - Attainment of Remedial Goals

Remedial Goals	Remedy Elements
▪ Eliminate, or reduce to the extent practicable, exposure to the surface and subsurface waste and contaminated soils and other identified waste fill types in the North and South Landfill areas.	▪ Off-site disposal of identified hazardous waste from the Site, with the encapsulation of all remaining non-hazardous waste under an on-site Part 360 cap. Also, waste area excavations will be backfilled with a 1-ft soil cover, unless described otherwise in Section 3.
▪ Eliminate, or reduce to the extent practicable, the potential for exposure to on-site soil vapor and groundwater.	▪ Implementation of an institutional control in the form of an environmental easement to require development of a Site Management Plan (SMP) that will restrict the use and development of the property to Commercial/Industrial use only, and to prevent unauthorized use of Site groundwater. A provision to evaluate the potential for soil vapor intrusion, and implement actions recommended to address exposures related to soil vapor intrusion (if applicable), will be included in the SMP should buildings be developed on the site.
▪ Eliminate, or reduce to the extent practicable, the potential for degradation to Gidneytown Creek due to runoff from the Site.	▪ Place a 1-ft thick soil cover with a demarcation layer over areas of surface soil that exhibit residual contaminant concentrations (if any) greater than RUSCO-Commercial values listed in 6 NYCRR Table 375-6.8(b). Excavate waste from Type B, C, E, and F waste fill areas and the South Landfill area and dispose material off-site if hazardous, or consolidate and cap the material on-site if non-hazardous. Excavate waste from Type D areas and dispose of the material off-site as hazardous. Restore areas excavated or disturbed by construction using clean fill imported to the Site and placing seed, fertilizer and mulch to reestablish vegetation. Maintain erosion and sediment controls during construction until the vegetated cover is established.

Source: O'Brien & Gere

3. WASTE REMOVAL AND LANDFILL CAP DESIGN BASIS

3.1. GENERAL

This Section presents the plan for waste excavation and handling, construction of the low permeability Part 360 cap, and restoration of the site. Final (100%) Remedial Design Drawings are presented in Appendix A and include the following:

Cover Sheet

G-1	General notes and legend
G-2	Existing site plan
G-3	Clearing & sediment/erosion control plan
G-4	Site excavation plan
G-5	South landfill/Area “F” excavation plan
G-6	Area “E” excavation plan
G-7	Areas “B”. “C” and “D” excavation plan
G-7A	Point Coordinate Tables
G-8	Area “A” grading plan
G-9	Area “C” grading plan
G-10	South Landfill Waste Characterization Matrix
G-11	Miscellaneous details
G-12	Miscellaneous details
G-13	Cross sections

The drawings represent a 100% level of completion to convey the intent of the design for approval by the NYSDEC. Technical specifications, provided in Appendix B, describe the conditions under which the work is to be constructed, the materials and equipment to be incorporated into the work, and the standards of acceptance for the components of construction.

The Site can be divided into two general areas for the purposes of discussion:

- Areas where waste material or fill has been disposed (fill areas); and
- Areas where waste material or fill has not been disposed (non-fill areas).

Investigations conducted prior to 2007 generated 130 analytical samples from 95 locations. Of these samples, 57 samples were collected from fill areas and 73 samples were obtained in non-fill areas of the Site. In addition, 63 test pits for inspection of subsurface materials were excavated prior to 2007.

As a result of these investigations, seven waste fill types were identified and described as follows:

- Type A waste fill, found in the northern area of the Site, consists largely of gray-colored fine ash/cinder/soil material mixed with other inert debris (glass, wood, brick, etc.).
- Type B waste fill, found in the eastern area of the Site, consists of hardened polyvinyl chloride (PVC) sheeting, fabrics, construction and demolition (C&D) debris, fabrics, and small amounts of scrap metal scattered on the ground surface.
- Type C waste fill, located in the central area of the Site, consists of C&D debris, PVC, and fabric exposed at the ground surface.
- Type D waste fill, located in the central and eastern areas of the Site as relatively small, isolated pockets of buried fill, consists of colored paste/putty-like material intermittently mixed with fabrics and other debris.
- Type E waste fill, located in the western area of the Site, consists of shallow impacted soils.

- Type F waste fill, located in the southern area of the Site, consists of mounded waste material and impacted soils.
- South Landfill waste fill, located in the southern area of the Site, consists primarily of black ash/cinder material with some C&D debris.

During 2008, further pre-design investigations at the Site were completed in accordance with the Pre-design Work Plan (O'Brien & Gere, Revised June 2008) and the findings were presented in the Remedial Design Investigative Report (O'Brien & Gere, 2009). The purpose of the additional pre-design investigations was to:

- Delineate the areal extent of Type A waste fill so the necessary extent of the Part 360 equivalent engineered cap in the North Landfill Area could be evaluated.
- Collect and analyze samples of Type C waste fill to evaluate if this material is non-hazardous and suitable for on-site consolidation. Samples were analyzed for leachable inorganic constituents and SVOCs listed in 6NYCRR Part 371 using the Toxicity Characteristic Leaching Procedure (TCLP) method.
- Delineate the wetland in the vicinity of Type E waste fill to establish the limits and nature of wetlands that may be disturbed during the excavation of the Type E waste fill.
- Collect and analyze samples of Type E waste fill to confirm that the material is non-hazardous and suitable for on-site consolidation. Samples were analyzed for leachable inorganic constituents and SVOCs listed in 6NYCRR Part 371 using TCLP.
- Collect and analyze samples from non-fill areas of the Site to provide information regarding the potential presence of Site-related constituents within shallow soils (0 to 2- inches).

Drawing G-4 (Appendix A) presents the estimated area of each waste fill type based on the investigations conducted through 2008. The results of these investigations are summarized in Section 3.4, and the remedial action objectives presented in Section 2 of this report establish the basis for removal or capping of these waste types as shown on the Final (100%) Remedial Design Drawings, as described in Section 3.4.

The actual areas of each waste fill type removed will be based on confirmation sampling conducted during the construction, as described in Section 3.5. Also, the location where a 1 foot thick soil cap is necessary will be established during construction based on the confirmation sampling.

In addition to the confirmation samples collected in the various waste type areas described in Section 3.4, documentation samples of the top 1-foot layer of soil in the non-fill areas (NFA) will be collected for analyses. In accordance with the May 23, 2012 letter from the NYSDEC providing comments to the Preliminary Design Report, composite samples of surface soil representing the layer from the 0 to 1- ft depth will be collected from the 36 locations in the NFA previously sampled by O'Brien & Gere in August 2008 (Figures 3 and 4). These documentation samples will be collected and analyzed in accordance with the previously approved Quality Assurance Project Plan (December 2006), included as Appendix B to the Pre-Design Work Plan, either prior to mobilization or early in the construction sequence to document conditions at the 36 locations. If necessary, the construction plans could be revised to accommodate a 1-ft soil cover if the additional samples indicate that the portions of the NFA exceed the 6 NYCRR Part 375 RUSCO-Commercial SCOs.

3.2. SITE CLEARING

Drawing G-3 (Appendix A) presents the proposed limits of clearing to be performed on-site. The limits of clearing were drawn based on the following objectives and understandings:

- The North Landfill Area, where the Type A waste fill is located, will be cleared. The trees and other vegetation will be cut to the ground surface, but the area will not be grubbed except along the cap edge and areas where it is necessary to remove stumps, roots, and sharp or protruding objects that would be present within a 1-ft layer below the cap geomembrane.

- The areas where Types B, C, D, and F waste fill are located will be cleared, including the nearby surrounding areas. Within the limits of excavation shown, the surface will be grubbed and the spoil handled as waste material. Non-hazardous waste will be consolidated in the North Landfill, and hazardous waste will be disposed of off-site at an appropriate facility. The areas cleared will encompass the locations of surface soil samples NFA-6S. NFA-8S, NFA-11S, NFA-17S and NFA-18S where metals and/or SVOCs were detected above the proposed site-specific cleanup objective.
- Selective clearing will be performed where the Type E waste fill is located to minimize disturbance of the wetland. Also, selective clearing will be performed to clear a path for the construction vehicles to the Type E waste fill area through the wetland and upland wooded areas.

  Since a portion of the site work will occur within a Corps jurisdictional wetland, authorization from the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act and a 401 Water Quality Certification from the NYSDEC is necessary to complete the work. It is anticipated that the project can be completed pursuant to the Department of the Army's Nationwide Permit No. 38 (Cleanup of Hazardous and Toxic Waste) program as described in Title 33 of the Code of Federal Regulations, associated permit conditions, and applicable regional conditions added by the NYSDEC as part of their 401 Water Quality Certification.
- The South Landfill and surrounding area will be cleared. Within the limits of excavation shown, the surface will be grubbed and the spoil handled as waste material. Non-hazardous waste will be consolidated in the North Landfill in accordance with the ROD, and hazardous waste will be disposed of off-site at an appropriate facility. The area to be cleared includes the plateau area to the south of the South Landfill where surface soil samples NFA-22S and NFA-23S (Figure 3) exhibited concentrations of arsenic above the proposed site-specific cleanup objective, and the area to the east of the South Landfill where surface soil sample NFA-25S (Figure 3) exhibited metals above the proposed cleanup objectives.
- The western half of the site will not be cleared since surface soil samples collected in this area during pre-design investigations indicate compliance with RUSCO-Commercial standards as presented in 6 NYCRR 375 on Table 375-6.8(b). Compliance with these standards for the 0 to 1-ft depth interval will be verified at the same locations in accordance with the May 23, 2012 letter providing comments to the Preliminary Design Report.
- Trees will remain in place south of Old Pierces Road along Gidneytown Creek, and as a visual buffer along South Street and Pierces Road. Trees will also remain in a buffer zone along the fence east of the Type B waste fill area next to the neighboring property.

Where trees in the areas to be cleared have commercial value, the lumber may be harvested for commercial use. Otherwise, the trees will be cut and chipped, and the wood chips will be stockpiled on-site at a location designated by BCSI.

Erosion and sediment controls will be placed around the cleared areas prior to grubbing and excavation activities, as described in Section 3.3, below.

3.3. EROSION AND SEDIMENT CONTROL

Drawing G-3 (Appendix A) presents the proposed location of erosion and sediment controls to be placed around the work areas of the site, including the excavation areas and the North Landfill (Type A waste fill area) where non-hazardous material from Type B, C, E, and F waste fill areas will be consolidated and covered by a low-permeability cap. Erosion and sediment control details are presented on Drawing G-11 (Appendix A).

During construction, the Construction Contractor will be required to implement the Stormwater Pollution Prevention Plan (SWPPP) and Erosion and Sediment Control Plan (ESCP) prepared by the Engineer and to work in substantive compliance with the State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-10-001). The SWPPP and ESCP will address the following elements:

- Construction schedule and work sequencing.
- Locations of temporary measures.
- Vegetative erosion and sediment control measures (*e.g.*, seed, mulch, etc.).
- Structural erosion and sediment control measures (*e.g.*, traps, silt fences, etc.).
- Stabilized construction entrance, including provisions for vehicle decontamination pads (*e.g.*, wheel washdown).
- Stormwater (run-on and run-off) management including methods to direct clean stormwater away from the work area and to contain and minimize the amount of stormwater entering the work area which may require treatment, and provisions for containment/holding prior to treatment.

For each major construction activity, the plans will describe the appropriate erosion, sediment, run-off and run-on control measures that will be implemented, and the timing for implementation. For example, perimeter controls for one portion of the Site will be installed after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the Site. Perimeter controls will be actively maintained until final stabilization of those portions of the Site upward of the perimeter control. Temporary perimeter controls will be removed after final stabilization.

During the land disturbance phase of construction, the Contractor will be required to conduct the work in accordance with the following sequence:

- Clearing and grubbing for those areas necessary for installation of perimeter controls.
- Installation of erosion and sediment control facilities including, but not necessarily limited to, the installation and maintenance of silt fencing along the downgradient perimeter, beyond the outer limits of potential set-up and work areas.
- Remaining clearing and grubbing.
- Trenching and excavation, providing temporary stabilization/erosion/run-off/run-on controls as required.
- Final grading and permanent stabilization.
- Removal of perimeter controls.

Sediment and erosion control measures may include straw bale dikes, silt fences, earth dikes, stone check dams, stone outlet sediment traps, stabilized construction entrances, rip-rap, seeding/sodding, properly anchored mulch, or other measures as required.

The Construction Contractor will be required to maintain sediment and erosion control measures until the Site is stabilized in accordance with Permit No. GP-0-10-001. Measures that are damaged will be repaired.

Erosion from excavated material will be minimized and controlled using methods such as grading, temporary covers, and perimeter ditching. Trapped sediment will be removed from the area of deposition and consolidated below the cap being constructed in the North Landfill area. Stormwater that has come into contact with potentially contaminated sources will be collected, treated, and disposed in accordance with applicable federal, state, and local regulations.

As soon as possible after disturbance of a graded area, the use of temporary erosion control methods such as mulches will be required of the Construction Contractor.

Construction procedures that are prohibited include:

- Indiscriminate, arbitrary, or capricious operation of equipment in stream corridors, wetlands, or within the 100-year floodplain.

- Pumping of silt-laden water from trenches or other excavations into surface waters, stream corridors, or wetlands.
- Damaging vegetation beyond the extent necessary for the work of this project.
- Disposal of trees, brush, and other debris in stream corridors, surface waters, or wetland.

3.4. EXCAVATION LIMITS AND WASTE MANAGEMENT PLAN

The Final (100%) Remedial Design Drawings (G-4 through G-7A) present the proposed excavation limits (horizontal and vertical) for each of the seven waste type areas, and the subsections below provide the basis for the proposed excavation limits and describe how the waste material will be managed for each area. The limits shown will be extended during construction if waste material is observed beyond the excavation limits shown, or if necessary based on the results of confirmation sampling at the excavation limits. Section 3.5 describes the proposed confirmation sampling program to document achievement of the RAOs.

3.4.1. Type A Waste Fill Area

As specified in the ROD, the Type A waste fill material will remain in place in the North Landfill Area and will be covered with a low permeability cap constructed in accordance with the requirements of 6 NYCRR Part 360. During 2008, 10 trenches (LF-T-1 through LF-T-10) (Figure 5) were excavated approximately 200 ft apart around the perimeter of the North Landfill Area and perpendicular to the anticipated boundary of the Type A waste fill. Each test trench excavation began at a location where waste fill was anticipated and was advanced inward or outward toward the edge of the observed fill, ending once the fill edge was reached.

Based on the results of the pre-design investigations, the proposed Part 360 cap limits shown on Drawing G-8 (Appendix A) are estimated to cover an area of approximately 5.5 acres. Section 3.8 describes the components of the proposed landfill cap.

3.4.2. Type B Waste Fill Area

Type B waste fill consists of construction and demolition (C&D) debris and miscellaneous pieces of PVC and fabric scattered on the ground surface. The Supplemental Remedial Investigation (SRI, DuPont, 2004) describes Type B waste fill as being confined to the surface with no impact to underlying soils.

To further assess the boundaries of the Type B waste fill, 6 test trenches (B-T-11 through B-T-16) were excavated during 2008 and the findings presented in the Remedial Design Investigative Report (O'Brien & Gere, 2009). Each test trench excavation began at a location where waste was anticipated based on earlier investigations, and advanced inward or outward until the edge of waste was encountered. Also, two test pits (B-T-17 and B-T-18) were completed within the Type B waste fill area, where waste was observed on the surface, to assess if the waste was also present at depth. In both locations, the waste was not observed at depth, confirming the understanding that the Type B waste fill is likely present as discrete and discontinuous areas of waste material scattered on the ground surface.

Since the Type B waste fill appears to be fabric and C&D waste placed on the ground surface, rather than being placed at depth, the design (Drawing G-7) proposes to remove surface debris and soil to a minimum depth of 6 inches below ground surface (bgs). The area from which the surface soil will be scraped includes the locations of samples NFA-17S and NFA-18S (Figures 3 and 4) that exhibit metals or SVOCs above the proposed RAOs. The non-hazardous material and C&D waste removed from the Type B waste fill area will be consolidated and capped in the North Landfill Area in accordance with the ROD remedy. As shown on G-7, the volume of Type B waste fill and the surface soil to be removed is estimated to be 2,058 CY, covering an area of approximately 2.6 acres.

Subsequent to removing visible waste (either on the surface or buried if encountered) and completing removal of 6 inches of surface soil within the limits shown (Drawing G-7), confirmation samples will be collected as described in Section 3.5. If stained soil is observed that might indicate impact deeper than 6 inches bgs, a confirmation sample will be collected for analysis from the location of stained soil. If the sample results indicate the presence of waste, an additional 1 foot will be excavated and disposed of in the North Landfill Area and the new surface will be re-sampled and evaluated as previously described. Once the results of the confirmation sampling indicate that the RAOs have been achieved, then the disturbed area will be backfilled and covered with a 6-inch layer of fill soil and 6-inch layer of topsoil, satisfying the 1-ft cover requirement in the ROD. The cover soil will satisfy the NYSDEC DER-10 – Technical Guidance for Site Investigation and Remediation (DER-10) requirements for imported soil. Afterwards, the area will be graded as necessary to prevent surface water ponding and seeded, fertilized, and mulched.

If the stained soil is hazardous based on the criteria listed in 6NYCRR Part 371.3, then it will be removed and disposed of off-site as appropriate.

3.4.3. Type C Waste Fill Area

Type C waste fill consists of C&D debris, fabric, and PVC sheeting mixed with ash and cinders, as described in the SRI Report (DuPont, June 2004). To establish the Type C waste fill area boundary, 13 test pits (C-T-19 through C-T-31) were completed during 2008 to verify the previously estimated perimeter of the waste fill area. Each test pit began at a location where waste fill was anticipated based on earlier investigations and found that the boundaries are similar to those established by the SRI; however, certain boundaries have been extended to cover locations where waste was observed outside the original boundaries. This conservative approach was taken to establish the boundaries for excavation shown on Drawing G-7 (Appendix A), combining past investigation results. Based on the limits shown on Drawing G-7, the Type C waste fill area is estimated to cover approximately 3.9 acres.

Within the area, the waste fill was observed as being present from the surface to a depth of 1-ft to 4-ft, confirming observations by others that the maximum depth of the fill is approximately 4- ft below grade. Based on test pits made for the SRI, combined with information gathered during the 2008 pre-design investigation, the Type C waste fill area has been partitioned into several smaller areas with proposed excavation depths of 3-ft or 5-ft, as shown on Drawing G-7 (Appendix A). The middle section will be excavated initially to 5 ft bgs, and the northern and southern sections will be excavated initially to 3ft bgs as shown on Drawing G-7. Based on the limits of Type C waste fill shown, it is estimated that approximately 25,095 CY of Type C waste fill needs to be excavated.

Non-hazardous Type C waste fill and excavated soil will be consolidated in the North Landfill Area in accordance with the ROD. However, if waste or soil is encountered that is hazardous based on screening criteria listed in 6NYCRR Part 371.3, then the portion of material exhibiting hazardous characteristics will instead be disposed of off-site as appropriate with waste excavated from the Type D waste fill areas.

During the pre-design investigations, 13 test pits (TP-75 through TP-87) (Figure 5) were excavated and sampled to assess whether the Type C waste fill is suitable for on-site consolidation. Ten of the 13 samples of waste fill collected during the pre-design investigation were classified as non-hazardous waste based on the TCLP analyses results for metals, SVOCs, and VOCs. Three samples (TP-82, TP-83 and TP-84), however, would be classified as hazardous waste based on the TCLP concentration of cadmium detected at each of these locations: 1.01J mg/L, 3.45J mg/L, and 2.78J mg/L, respectively, compared to the 6 NYCRR Part 371.3(e)(1) threshold value of 1.0 mg/L. The three locations are in proximity to one another and one of the Type D waste fill areas designated for off-site disposal (Figure 5). Based on the findings of the pre-design investigations, waste fill from the area encompassing TP-82, TP-83, and TP-84 will be handled as Type D waste fill and designated for disposal off-site as shown on G-7.

To confirm whether the waste material in the remainder of the Type C waste fill area outside the portion encompassing TP-82, TP-83, and TP-84 is non-hazardous and suitable for on-site consolidation, composite samples will be collected during construction at a frequency of one composite sample per 200 cy of waste material (*e.g.*, waste and stained soil) encountered. Each composite sample will be made of four discrete samples representative of the material encountered, and will be analyzed for leachable inorganic constituents, SVOCs, and VOCs. The results of the waste characterization will be compared to the hazardous waste threshold criteria listed in 6NYCRR Part 371.3, and if non-hazardous the material will be consolidated in the North Landfill

Area and capped. However, if characterized as being hazardous, the material will be disposed of off-site in accordance with applicable federal, state, and local regulations.

Once the excavation is complete to the limits shown on Drawing G-7, the area will be visually inspected for waste that might indicate impact beyond the initial excavation limits. If waste is observed, the excavation will be extended to address the observed material, if practicable. After the remaining visible waste is removed, confirmation samples will be collected as described in Section 3.5. If stained soil is observed that might indicate impact beyond the excavation, a confirmation sample will also be collected for analysis from the location of stained soil.

If the results of the confirmation sampling indicate that the RAOs have been achieved, the excavation will be lined with a demarcation fabric, and backfilled with not less than 6 inches of fill soil and 6 inches of topsoil, satisfying the DER-10 requirements for imported soil, resulting in at least 1-ft of soil cover above the floor of excavation as required by the ROD. In portions of the excavation the depth of backfill placed may be greater than the required 1-ft, if necessary to make grade to prevent ponding of surface water in the completed work. However, it is not the intent of the design to restore the existing grades in the Type C waste fill area unless necessary to prevent ponding surface water, as shown on Drawing G-9 (Appendix A).

3.4.4. Type D Waste Fill Area

Prior investigations defined the Type D waste fill as being located in five relatively small areas of the North Landfill, as shown on Figure 5. One of these Type D waste fill areas has been expanded in the design to encompass the locations of test pits TP-82, TP-83, and TP-84 that were excavated during the pre-design investigation. As such, the estimated volume of Type D waste fill is 13,500 CY covering approximately 1.1 acres based on the initial excavation limits shown on Drawing G-7 (Appendix A). The Type D waste fill will be excavated and transported off-site to an appropriate disposal facility based on the waste characteristics in accordance with the ROD.

Once the excavation is complete to the limits shown on Drawing G-7, the area will be visually inspected for waste that might indicate impact beyond the initial excavation limits. If waste is observed, the excavation will be extended if practicable, but will not extend into bedrock that was observed during the test pit investigations. After the remaining visible waste is removed, confirmation samples will be collected as described in Section 3.5. Once the results of the confirmation sampling indicate that the RAOs have been achieved, the excavation will be backfilled as shown on Drawing G-9 (Appendix A).

3.4.5. Type E Waste Fill Area

Type E waste fill is characterized as impacted shallow soil (up to a depth of 1 ft) and is estimated to include approximately 500 CY of soil within an area of approximately 0.31 acres. As described in Section 3.2, the area is located within a portion of wetland, which was delineated following the procedures provided in the ACOE 1987 Wetlands Delineation Manual. As such, selective excavation is proposed to minimize disturbance of the wetland.

During the pre-design investigation, composite samples of the upper 1-ft of soil from locations TP-88 and TP-89 (Figure 5), where the surface appeared to be mounded, were collected. The two samples were analyzed for leachable inorganic constituents, SVOCs, and VOCs listed in 6NYCRR Part 371 by TCLP. Soil from TP-88 and TP-89 did not exhibit detectable VOCs or SVOCs in the TCLP extract. However, soil from TP-88 and TP-89 contained detectable concentrations of barium and cadmium in the extract, and the TP-88 extract also contained lead, but each at levels below the respective hazardous waste threshold values listed in 6 NYCRR Part 371.3(e)(1). As such, the pre-design investigation results indicate that the material is non-hazardous and could be consolidated on-site within the limits of the North Landfill Area in accordance with the ROD.

After selectively removing 1 ft of surface soil, confirmation samples will be collected as described in Section 3.5. Anticipating that the results of the confirmation sampling will indicate that the RAOs have been achieved, it is proposed that 12 inches of topsoil will then be placed on the surface and the wetland restored as described in Section 3.7 and the technical specification for wetland restoration, included in Appendix B.

3.4.6. Type F Waste Fill Area

The Type F waste fill is mounded, up to 3 ft thick based on site investigations, on the ground surface along the north side of Old Pierces Road. The mounded area is approximately 0.7 acres as shown on G-5 (Appendix A), and it is estimated that approximately 2,620 CY of waste material or impacted soil is present.

As part of the pre-design investigation, composite samples from four locations (TP-71 through TP-74) (Figure 5) were collected. The four collected samples were analyzed for leachable inorganic constituents, SVOCs, and VOCs listed in 6NYCRR Part 371 using TCLP. None of the four samples (TP-71 through TP-74) contained detectable VOCs or SVOCs in the TCLP extract. Each of the four samples, however, did contain metals in the TCLP extract. Except at location TP-74, none of the metals detected were at concentrations above the hazardous waste threshold values listed in 6NYCRR Part 371. At location TP-74, the concentration of lead in the TCLP extract was 7.15 mg/L compared to the hazardous waste threshold value of 5 mg/L.

Drawing G-5 presents the proposed limits of excavation. Based on the pre-design investigation results, the portion of the Type F waste fill area represented by location TP-74 will need to be disposed off-site, while the remainder of the Type F waste fill area should be suitable for consolidation on-site as non-hazardous waste in the North Landfill area. Waste fill from the area encompassing TP-74 will be removed and handled with lead-containing waste from the South Landfill Area as described in the next section. The remaining portion of the Type F waste fill area will be excavated and sampled to assess whether the waste material in the area encompassing TP-71, TP-72, and TP-73 is non-hazardous and suitable for on-site consolidation.

Composite samples will be collected during construction on a frequency of one composite sample per 200 CY of waste material excavated. Each composite sample will be made of four discrete samples representative of the material encountered, and will be analyzed for leachable inorganic constituents, SVOCs, and VOCs. The results of the waste characterization will be compared to the screening criteria listed in 6NYCRR Part 371.3, and if non-hazardous the material will be consolidated in the North Landfill Area and capped. However, if hazardous, the material will be managed with waste from the South Landfill Area.

After removing the Type F waste fill, confirmation samples will be collected as described in Section 3.5. Anticipating that the results of the confirmation sampling will indicate that the RAOs have been achieved, it is proposed that a demarcation fabric, and 6 inches of fill soil and 6 inches of topsoil satisfying the DER-10 requirements for imported soil, will then be placed on the surface and the area seeded, fertilized, and mulched.

3.4.7. South Landfill Area

Drawing G-5 presents the proposed limits of excavation for the South Landfill Area, subject to post-excavation confirmation sampling as described in Section 3.5. The limits are based on 32 test pits (TP-44 through TP-70, TP-46nw, TP-59nw, TP-67se, TP-58sw and TP-68ne) completed during 2007 within the suspected footprint of the 2.5-acre South Landfill, as shown on Figure 6 and described in the Pilot *In Situ* Soil Stabilization Pretreatment Evaluation Program Report (O'Brien & Gere, December 2007). The depth of waste fill (including asphalt pavement [where present], ash, and material other than native soil) was measured and a composite waste fill sample was collected and analyzed for TAL and TCLP metals including mercury, and TCL SVOCs at each of the 32 test pits.

Based on the waste fill contours shown on Drawing G-5 (Appendix A), it is estimated that approximately 7,093 CY of waste fill is present within the South Landfill Area, significantly less than the 11,400 CY previously estimated in the SRI Report (DuPont Corporate Remediation Group, 2004). The 11,400 CY estimate in the SRI equates approximately to an average depth of 3 ft over 2.5 acres. The difference between the quantities is due to the refinement of the estimated depth of waste fill across the area of the South Landfill, due to the additional 32 locations at which depth was measured during the 2007 investigation.

In general, the observed depth of the waste fill is approximately less than 2 ft for most of the South Landfill as shown on Figure 6, and the maximum observed depth was approximately 4.5 ft.

South Landfill waste characteristics

Of the 32 test pits excavated, the TCLP concentration of lead in the waste fill in 20 of them exceeded the hazardous waste threshold value of 5 mg/L established by 6NYCRR Part 371 (Table 2). The total concentration of lead detected in the waste fill in these 20 test pits ranged from 3,600 mg/kg to 32,000 mg/kg. At 13 of these locations, the TCLP results for cadmium exceeded the hazardous waste threshold value of 1 ppm, and the total cadmium concentrations ranged from 70 to 620 mg/kg. At every location where the hazardous waste threshold for cadmium was exceeded, the threshold for lead was also exceeded. The test pits where hazardous waste criteria were exceeded are located primarily in the existing clear area of the South Landfill, where the waste fill was observed to have the greatest depth and vegetation was least established. This area comprises the eastern portion of the South Landfill, as shown on Figure 6.

Figure 6 also depicts the areas of the South Landfill where the waste fill is not characteristically hazardous, bound by the yellow line, based on the eleven test pits with a TCLP lead concentration less than 5 mg/L and a TCLP cadmium concentration less than 1 mg/L. It is estimated that of the approximately 7,093 CY of waste fill present in the South Landfill area, approximately 1,695 CY of the material, bound by the yellow line on Figure 6, is non-hazardous based on TCLP characteristics for metals.

As presented in the Pilot *In Situ* Soil Stabilization Pretreatment Evaluation Program Report, the South Landfill waste fill is characteristically hazardous at the test pit locations due only to lead and cadmium. No other Resource Conservation and Recovery Act (RCRA) regulated metal (*i.e.*, arsenic, barium, chromium, mercury, selenium, or silver) was detected in the waste fill TCLP above respective hazardous waste threshold values.

Some SVOCs and VOCs were detected in the waste fill at several test pit locations (Tables 3 and 4, respectively), but no SVOCs or VOCs were detected in the TCLP extract indicating that these compounds do not leach. The waste fill in several locations exhibited PCB concentrations either below the practical quantification limit (PQL) or slightly above the detection limit. Test pit locations TP-61 and TP-62 exhibit the highest PCB values with Aroclor 1254 detected at a concentration of 34.7 mg/kg in TP-61, and Aroclor 1254 detected at 3.2 mg/kg in TP-62 (Table 5). The concentrations of SVOCs, VOCs, or PCBs, where present, would not preclude disposal of the waste fill as non-hazardous waste for these particular parameters.

Underlying soil characteristics

Although the waste fill in most of the South Landfill Area exhibits lead and several other metals at elevated total levels, the underlying soil below this waste fill exhibits total metal levels (Table 2) less than the RUSCO Commercial standards established by 6 NYCRR Part 375-6.8(b), except at test pits TP-46 and TP-61. Native soil at TP-46 exhibits 20 mg/kg of cadmium compared to the RUSCO Commercial standard of 9.3 mg/kg, and TP-61 exhibits 460J mg/kg of barium compared to the RUSCO Commercial standard of 400 mg/kg.

The initial excavation limits shown on Drawing G-5 were prepared to be deep enough to address the presence of the observed ash, based on the pre-design investigations (Figure 6), and also include the upper 6-inch layer of the underlying native soil that might be impacted, although not likely based on the investigations described above.

Pre-treatment option

The NYSDEC-selected remedy as presented in the ROD requires that characteristically hazardous waste from the Site be disposed of off-site as hazardous waste, but the subsequent ESD (NYSDEC, June 2007) modified the remedy to allow South Landfill waste that is characterized as hazardous to be treated and disposed of off-site as non-hazardous waste at a solid waste facility in conformance with the LDR requirements of 40 CFR Part 268 and 6NYCRR Part 376.

An evaluation of the ability to stabilize materials from the South Landfill to render them non-hazardous prior to off-site disposal was conducted pursuant to a work plan entitled Pilot In Situ Stabilization Pretreatment Evaluation Program for the South Landfill (O'Brien & Gere, April 2007), and the report Pilot In Situ Stabilization Pretreatment Evaluation Program for the South Landfill (O'Brien & Gere, December 2007) presented the findings to the NYSDEC. The pilot *in situ* stabilization pretreatment evaluation program found that two of the products evaluated had promise for potential use (Type I Portland Cement and MT2 ECOBOND) in rendering the waste non-hazardous as defined by 6 NYCRR Part 371. DuPont and BCSI also believe these products would enable the treated waste to be disposed of off-site in compliance with 40 CFR Part 268 and 6 NYCRR Part 376.

While DuPont and BCSI have not decided to pursue on-site treatment as allowed by the ESD, they reserve the option to later propose to do so for on-site treatment of hazardous South Landfill waste. Prior to implementing on-site treatment, if the option is exercised, DuPont and BCSI will require that the Construction Contractor selected for the work prepare a protocol describing the means and methods to be utilized by them to stabilize the waste, and then conduct a demonstration test to verify the process effectiveness in rendering the waste non-hazardous, and for off-site disposal in compliance with 40 CFR Part 268 and 6 NYCRR Part 376.

The section below presents details regarding how the wastes would be sampled, characterized, and profiled for off-site disposal.

South Landfill waste profiling and handling plan

Drawing G-10 presents a South Landfill Waste Characterization matrix that details how during construction the soil/ash waste material will be sampled, characterized, and profiled for disposal. The matrix provides instruction to the Construction Contractor regarding waste profiling and characterization for the South Landfill ash and soil waste material.

Where previous data gathered during the South Landfill PDI and *In-situ* Pilot Study demonstrate that the wastes are characteristically hazardous, the material will be removed and managed as required by the ROD and ESD (e.g. disposed off-site as “hazardous waste”, or treated on site then disposed off-site). For these locations having prior analytical test results identifying the material as being hazardous, additional analyses and testing will be performed during construction only to the extent necessary to satisfy the requirements of the off-site disposal facility.

Likewise, prior data demonstrating that an area or waste in the South Landfill area is characteristically non-hazardous will be utilized in disposal options.

Material that is determined to be hazardous will be designated for either on-site treatment and subsequent disposal as appropriate based on post-treatment analyses per the ESD, or off-site disposal as hazardous waste per the ROD. Waste material that is determined to be non-hazardous and not requiring on-site treatment based on the waste characteristic analyses will be designated for consolidation within the North Landfill area as specified by the ROD.

If the untreated soil/ash waste is determined to be hazardous as defined by 6 NYCRR Part 371.3 or contains greater than 50 mg/kg of PCBs (6 NYCRR Part 371.4(e)), then treatment may be required in accordance with 40 CFR Part 268 and 6 NYCRR Part 376.4 – Land Disposal Restrictions. Treatment, if necessary, would occur either off-site at a licensed hazardous waste facility, or on-site if this option allowed by the ESD is selected. If sent off-site as hazardous waste, post-treatment sampling and analyses will be conducted by the disposal facility as required by their operating permit. However, if the material is treated on-site, then post-treatment sampling will be conducted at a frequency of one grab sample per 100 tons of material treated. A grab sample is required, rather than a composite sample, in accordance with 6 NYCRR Part 376.4(j)(1) to evaluate treatment effectiveness. Each grab sample representing a 100-ton increment of processed waste would be analyzed for TCLP metals, TCLP VOCs, TCLP SVOCs, and PCBs.

Excavated “hazardous” South Landfill Waste, whether treated (on-site or off-site at an approved Treatment Storage and Disposal Facility) or untreated, will comply with applicable LDRs presented in 40 CFR part 268 and 6NYCRR Part 375 for disposal in accordance with 6 NYCRR Part 371 and 6 NYCRR Part 376 per the ESD.

3.5. POST-EXCAVATION CONFIRMATION SAMPLING AND ANALYSES

The design includes a technical specification for confirmation sampling and analyses providing requirements for post-excavation confirmation samples to be collected and analyzed by the Contractor for comparison to the

RAOs. Confirmation samples will be collected using a grid of 50 ft spacing, with no fewer than two samples being collected from the base of each discrete excavation made (if less than 2,500 SF). Confirmation samples will also be collected at the perimeter of the excavations at 50 ft intervals with no fewer than four samples being collected from each discrete excavation (to characterize the north, south, east, and west side walls). QA/QC samples including field duplicates, matrix spike, and matrix spike duplicates will be collected at a frequency of one each for every 20 sampled locations.

The samples will be analyzed for TCL VOCs, TCL SVOCs, TAL metals, and PCBs, and the results compared to the RUSCO-Commercial values set forth in 6 NYCRR Part 375.

3.6. EXCAVATION RESTORATION

Each excavation will be backfilled with soil imported from off-site, as described in the sections above. To determine if imported fill material is acceptable for use on site, material from each off-site source will be sampled and analyzed for TAL VOCs, TAL SVOCs, TAL metals, PCBs, and pesticides in accordance with DER-10, Table 5.4(e)10, unless the material is a gravel, rock or stone, and can meet the sieve requirements in DER-10. If the material to be imported is from a virgin mine/pit or similar location, it will be sampled for chemical analyses only for the initial 100 cubic yards of material in accordance with Section 5.4(e)3.ii.1 of DER-10.

Also, areas beyond the excavations where surface soils would remain above the RAOs will be covered with a minimum of 1 ft of soil. Locations requiring a soil cover will be identified during construction based on confirmation samples collected following removal of wastes from the excavation areas, and based on the composite samples of surface soil representing the layer from 0 to 1-ft in depth collected from the 36 NFA locations previously sampled by O'Brien & Gere in August 2008.

Once the backfill is placed and graded, it will be seeded, fertilized and mulched to establish a vegetated cover.

3.7. WETLAND RESTORATION

The delineated wetland consists of a mature deciduous forested wetland with a dense understory of forbs and some shrubs. The Wetland Restoration specification provided with the design is based on the characteristics observed during the field delineation effort and includes requirements for wetland soils and a combination of seed mixes, potted plant stock, and live stakes that will be installed to restore, to the extent practicable, the impacted vegetative community. It is anticipated that this restoration will also restore the wetland values and services impacted during remediation.

3.8. LOW-PERMEABILITY CAP

Drawing G-8 (Appendix A) presents the proposed limits and grading of the cap to be constructed over the North Landfill in compliance with the substantive requirements of 6NYCRR Part 360. Substantive requirements for caps include the following:

- Permeability less than 1 x 10^{-7} cm/sec
- Surface slope equal to or greater than 4%, but no steeper than 1 vertical to 3 horizontal (1V:3H) (33%)

The grading shown on Drawing G-8 is based on the estimated 31,680 CY of non-hazardous material anticipated from the areas of Types B, C, E and F waste fill. The slopes shown, however, can be reduced or increased within the allowed range established by 6 NYCRR Part 360 if less or more non-hazardous waste is encountered in these areas requiring consolidation on-site.

The low-permeability cap constructed in accordance with 6NYCRR Part 360 will include the following components from the surface down:

- Vegetation rooting layer with a minimum thickness of 6 inches
- Soil barrier protection layer with a minimum thickness of 24 inches
- A 40-mil linear low density polyethylene (LLDPE) geomembrane

A typical cross-section of the low-permeability cap system is provided on Drawing G-11 (Appendix A).

3.8.1. Vegetation Rooting Layer

The vegetated rooting layer will consist of soil capable of supporting vegetation. The soil will be placed to a depth of 6 inches above the soil barrier protection layer.

Following placement and grading of the soil, the cap surface and areas disturbed during construction will be seeded. Fertilizer and mulch will be provided as necessary.

3.8.2. Soil Barrier Protection Layer

A 24-inch soil barrier protection layer will be installed on top of the geomembrane. The 24-inch soil barrier protection layer, in combination with 6 inches of soil supporting vegetation rooting, will serve to protect the geomembrane from frost damage and external forces such as root penetration.

The material will be installed and compacted in two 12-inch thick lifts. The bottom 12-inch lift of barrier protection material will be required to have 100% of the soil passing a ¼-inch sieve. This requirement is specified to protect the geomembrane from damage. The remaining lifts, however, will be allowed to contain material up to 2 inches in size.

Prior to acceptance by the Engineer for use at the Site, specimens of barrier layer soil from the proposed off-site source will be tested to evaluate particle size distribution (ASTM D422) and compaction characteristics (ASTM D698). The physical characteristic tests will be repeated periodically, based on volume imported to the Site, to monitor consistency of the material used in the construction. Also, specimens from each off-site source will be sampled and analyzed for TAL VOCs, TAL SVOCs, TAL metals, PCBs, and pesticides in accordance with DER-10, Table 5.4(e)10 or Section 5.4(e)3.ii.1 to confirm that the soil is acceptable for use, unless the material is a gravel, rock, or stone and can meet the sieve requirements in DER-10.

During construction, the barrier protection layer also will be tested for particle size, in-place density (ASTM 1556), and in-place moisture content (ASTM D3017). The purpose of these tests will be to monitor compliance with the technical specifications.

3.8.3. Geomembrane

A 40-mil LLDPE geomembrane will be installed to minimize infiltration of precipitation into the capped area. The permeability of geomembrane is typically about $1x10^{-14}$ cm/sec to about $1x10^{-13}$ cm/sec, which is less than the maximum permeability of $1x10^{-7}$ cm/sec required by 6 NCYRR Part 360.

The supporting layer of soil or waste fill on which the geomembrane is to be placed will be maintained in a smooth, uniform, and compacted condition during installation of the geomembrane. The surface to be covered will be inspected daily by the Construction Quality Control (CQC) Inspector and Engineer to evaluate the surface condition. Prior to installation of the geomembrane, the Contractor will be required to remove all vegetation, rocks, or debris and other deleterious materials from the surfaces to be covered. Depressions, potholes, or ruts in the surfaces to be covered will be filled and compacted by the Contractor prior to placing the geomembrane.

Where required, anchor trenches will be excavated to the line, grade, and width shown on the design drawings, or as recommended by the geomembrane manufacturer and accepted by the Engineer. Slightly rounded corners will be provided in the trench where the geomembrane adjoins the trench so as to avoid sharp bends in the geomembrane. Leading edges of the trench will be smooth and even.

The technical specifications require that the Construction Contractor deploy only those panels/rolls that can be anchored/ballasted and seamed together the same day. The Construction Contractor will be required to install the geomembrane following manufacturer-recommended methods so that the geomembrane is not scratched, crimped, or wrinkled (especially differential wrinkles between adjacent panels/rolls). The geomembrane will not be permitted to have excessive slack to the point where creases fold over upon themselves.

All geomembrane field seams will be made using double wedge welding with a void space for pressure testing as the primary method. Extrusion welding will only be used for patching and seaming around appurtenances. The specifications will require geomembrane rolls/panels to be overlapped 5 inches maximum for wedge welding, and 3 inches minimum for extrusion welding. Seams will be oriented parallel to the line of maximum slope. In corners and odd-shaped geometric locations, the number of field seams will be minimized. Seaming will extend to the outside edge of rolls/panels to be placed in anchor trenches. Horizontal seams will not be permitted within 5 feet of the toe of slope.

Prior to being accepted and covered, the geomembrane will be inspected for uniformity, damage, imperfections, tears, punctures, or blisters. Imperfections will be repaired by the Construction Contractor. The specifications will require the Contractor to non-destructively test all field seams over their full length. Testing will be performed as the seaming work progresses, not at the completion of field seaming. All geomembrane field seams will be vacuum tested or pressurized dual-seam tested (for double wedge process only). Non-destructive testing will be monitored and documented.

The specifications also require the Contractor to obtain a minimum of one destructive test sample per 500 feet of field seam length. When possible, these samples will be taken from extra material at the beginning or end of panel seams, such that the panel is not damaged and the panel geometry is not altered. Field seam specimens will be tested for shear strength and for peel adhesion in accordance with ASTM D4437 - Practice for Determining the Integrity of Field Seams Used in Joining Flexible Polymeric Sheet Geomembranes. To be acceptable, four out of five replicate test specimens are required to meet the specified property requirements.

3.8.4. Cap Stability Assessment

Slope stability analyses and sliding stability analyses were performed for the cap cross section shown, and Appendices E and F present the results of these analyses that are summarized below.

- Slope stability analysis (Appendix C) - Slope stability calculations were performed using the computer program Slope/W. The assumptions utilized to perform these calculations are detailed in Appendix C. A minimum calculated factor of safety against failure of 6.9 was obtained for the cross-sections shown for the cap, which is greater than the 1.5 minimum recommended factor of safety.
- Sliding stability analysis (Appendix D) - Stability against sliding was analyzed for the area to be covered using a cover soil slope stability design calculator from www.landfilldesign.com. The assumptions used to perform these analyses are detailed in Appendix D. The minimum calculated factor of safety against sliding was 6.4, which is greater than the 2.0 minimum value recommended by “Geosynthetic Design Guidance,” for the cross-section shown for the cap.

A soil loss analysis (Appendix E) was performed to assess the potential amount of erosion and soil loss from the capped area that might result for the slopes shown. The soil loss assessment was evaluated using the United States Department of Agriculture’s Universal Soil Loss Equation (USLE). The USLE is based on several site characteristics, such as rainfall and erosion patterns, soil erodibility, slope length and steepness, and type of cap. Based on the assumptions used, the maximum soil loss due to erosion, once grass is established, was calculated to be between 1.28 and 2.76 tons/acre/year. Generally accepted soil loss ranges between 2 to 5 tons/acre/year for soils in the United States.

Table 6 below summarizes the cap slope stability, sliding stability, and soil loss analyses:

Table 6 - Cap Slope and Stability Analyses

Appendix	Calculated Factor of Safety	Recommended Minimum Factor of Safety
C – Slope Stability	6.9	1.5
D – Sliding Stability	6.4	2.0
E – Soil Loss Equation	Between 1.28 and 2.76 tons/acre/year	2 to 5 tons/acre/year typical range in U.S.
		Source: O'Brien & Gere

An assessment of potential infiltration through the cap was also performed using the HELP model. The HELP model analysis, presented in Appendix F, indicates that the peak rate of percolation through the cap would be approximately 1.0 gpd/acre. For a comparative base, the area was also modeled with good grass cover but no cap and resulted in a baseline 889 gpd/acre peak percolation rate. As such, the cap reduces the percolation potential by more than 99%.

An assessment of stormwater runoff from the cap was performed using the computer program TR-55. The analysis was performed to evaluate both pre- and post-construction conditions. The analyses, as presented in Appendix G, indicate that the proposed low permeability cap will slightly increase the sheet flow from the capped area by approximately 4 cfs compared to existing conditions.

3.8.5. Landfill Gas Collection Layer

A gas collection layer is not included in the remedial design. The Type A waste fill to be capped consists largely of gray-colored fine ash/cinder/soil material mixed with other inert debris (glass, wood, brick, etc.). Material to be consolidated into the Type A area and capped includes C&D wastes, fabric sheets, and non-hazardous ash and soil. These wastes have minimal potential of generating landfill gas (*e.g.*, methane) as a consequence of decomposition since they are relatively inert or have already largely decomposed in the almost 40 years since disposal activities have ceased. Since the material to be capped is not expected to generate gas through decomposition, a landfill gas collection layer below the geomembrane is not included as an element of the Final (100%) Remedial Design.

4. GROUNDWATER ASSESSMENT

4.1. GENERAL

As described in the ROD, non-hazardous waste from the site will be consolidated in the North Landfill Area where Type A waste fill is presently located. Following consolidation of the non-hazardous waste, the area will be covered with a cap meeting the substantive requirements of 6NYCRR Part 360.

Groundwater quality data was collected from the vicinity of the consolidation area during Fall 2008 and Spring 2009 to establish baseline groundwater conditions in accordance with the Pre-Design Work Plan (O'Brien & Gere, Revised June 2008).

4.2. SITE GEOLOGY AND HYDROGEOLOGY

As described in the Proposed Remedial Action Plan (PRAP) (NYSDEC, February 2006), the Site is underlain by two main geologic units: glacial till and carbonate bedrock of the Cambrian-Ordovician Age Wappinger Group. Boring logs indicate that the glacial till is up to 20 feet thick and consists of sand, silt, gravel, cobbles, and boulders. Bedrock is encountered at depths ranging from exposed at the surface to 20 ft bgs. The bedrock is highly fractured gray dolomitic limestone with some calcite deposits and shale bands that generally dips towards the south. The middle and eastern portions of the Site contain a thin overburden layer that has limited groundwater. Recharge of the overburden aquifer is mostly attributed to seasonal precipitation.

On the Site, the groundwater is predominately found in the bedrock aquifer as evidenced by the installation of bedrock wells installed during the SRI (DuPont Corporate Remediation Group, June 2004). The overburden groundwater fluctuates across the Site and is influenced by seasonal precipitation events. The overburden and bedrock groundwater flows are predominantly toward the west and to the south of the Site. Some hydraulic evaluations were conducted that indicated Gidneytown Creek may function as a groundwater divide for the Site, thereby limiting recharge to the overburden.

4.3. NORTH LANDFILL MONITORING WELL NETWORK

Review of the existing information pertaining to the Site indicates that the North Landfill Area is located in an area of the Site where overburden groundwater is only present on the western and northwestern side. Historic water levels suggest that overburden groundwater flows generally toward Gidneytown Creek, and then flows to the south along the creek. Groundwater within the bedrock generally flows radially to the north, west and south from the Type A waste fill area (Figure 7).

Six wells were present on-site in the vicinity of the North Landfill (Type A waste fill area) prior to 2008. Three of the wells, LF-1, LF-8, and LF-9, are located upgradient and side gradient of the North Landfill Area and monitor the bedrock aquifer. Three of the wells, TMW-1, TMW-2, and TMW-3, are located downgradient of the landfill area and monitor the overburden aquifer. Review of information on well construction indicates that the TMW wells will not be adequate for long-term monitoring as they are driven well points and lack sealant within the annulus between the well casing and the screens. In addition, well LF-1 is periodically dry. As such, the only wells installed prior to 2008 to be used for landfill monitoring will be LF-8 and LF-9. These wells are on the order of 60 to 70 ft deep and completed as open-hole wells within the bedrock unit.

In accordance with 6NYCRR Part 360, wells used to monitor the landfill need to be within 50 ft of the toe of the fill material and cap. Downgradient wells should be spaced no more than 500 ft apart and upgradient or side-gradient wells can be up to 1,500 ft apart. The wells should monitor the water bearing unit or units most likely to be impacted.

Based on the groundwater characteristics at the Site and the Part 360 requirements, 10 wells were constructed during 2008 to make up the monitoring well network for the landfill, at the locations shown on G-8 (Appendix A). Table 7 presents a well construction summary for the North Landfill monitoring well network.

4.4. GROUNDWATER QUALITY

As presented in the ROD:

> Four rounds of groundwater monitoring were conducted during the SRI with 14 wells selected for sampling. In 2001, both sampling of groundwater in the overburden and bedrock zones was conducted. Inorganic metals and one SVOC (bis(2-ethylhexyl)phthalate [BEHP]) were detected at or above state groundwater standards in the overburden groundwater. BEHP was identified above groundwater standards at 60 ppb. The bedrock data indicated that five VOCs (chlorobenzene, 1,2-dichloroethane, tetrachloroethene, toluene, and trichloroethene) were identified above SCGs of 5 ppb at 36 ppb, 16 ppb, 8 ppb, 12 ppb, and 61 ppb respectively.

Subsequent overburden groundwater sampling during 2003 resulted in BEHP concentrations that did not exceed groundwater standards. Four inorganic constituents (iron, magnesium, manganese, and sodium) were identified above their SCGs in many of the wells. These four metals are predominantly naturally occurring and their presence is not believed to be due to landfill waste disposal activities. Several other metals (antimony, arsenic, beryllium, chromium, copper, lead, mercury, nickel, thallium, and zinc) were also identified above SCGs in two temporary overburden wells: TMW-1 and TMW-6. Lead was above SCGs in TMW-4 and zinc above SCGs in TMW-5. Barium was above SCGs in Well LF-2B.

As part of the pre-design investigations, additional groundwater samples were collected during September 2008 and May 2009. The collected groundwater samples were analyzed for VOCs, SVOCs, and TAL metals.

- Phenanthrene, detected at 1 µg/L in well LF-9 during the May 2009 sampling event, was the only SVOC detected in the groundwater during the September 2008 and May 2009 sample events.
- VOCs were detected at two locations (LF-14D and LF-9) during the May 2009 groundwater sampling event. The VOCs detected during May 2009 in LF-14D, 1,1 dichloroethane and 1,2 dichloroethane, were also detected at similar concentrations during the September 2008 sampling event.

  Chlorobenzene was detected in LF-9 during May 2009 at 7 µg/L which is above the groundwater standard of 5 µg/L. VOCs were not detected in LF-9 during the September 2008 sampling event, although chlorobenzene was detected in this well during the Remedial Investigation.
- Inorganic constituents were detected in each of the wells. Consistent with the September 2008 sampling event, the constituents identified above the groundwater SCGs in most of the wells were iron, magnesium and manganese. Concentrations were generally the same for both the September 2008 and May 2009 sampling events, with the exception of wells MW-15S and MW-16S. In these two wells, the concentrations of inorganic constituents were higher during the second sampling event, which in some cases resulted in exceedance of groundwater SCGs. Review of the sampling logs suggests that the samples collected from these wells were turbid. As such, the inorganics are likely related to the suspended solids that were present in the samples, and concentrations will vary between sampling events.

Since the results from the May 2009 round of sampling appear to be skewed by presence of suspended solids observed in the unfiltered water samples, a third round of sampling was conducted during the week of December 19, 2011 for the 12 monitoring wells (LF-08, LF-09, LF-12D, LF-13D, LF-14S , LF-14D, LF-15S , LF-15D, LF-16S, LF-16D, LF-17S and LF-17D), after monitoring wells LF-15S and LF-16S were redeveloped. The collected groundwater samples were analyzed by Lancaster Laboratories, Inc. for VOCs, SVOCs, and TAL metals (both unfiltered and filtered samples). Table 8 provides a summary of the groundwater quality data. The laboratory reports for the December 2011 sampling round are provided as Exhibit 2 and the Data Usability Summary Report (DUSR) is provided as Appendix H.

Table 9 below presents a summary of the five metals that exhibited concentrations in groundwater greater than the Class GA groundwater standards during at least one of the rounds of monitoring that have occurred since 2008. The results support the theory that the May 2009 round of sampling was skewed by suspended solids observed in the unfiltered water samples, and that there is in all probability not an inorganic plume (lead and chromium) in the overburden wells located at LF-15S and LF-16S in the Northern Landfill area.

Table 9 - Groundwater Quality: Metals in LF-15S and LF-16S

Parameter	Class GA GW Std	LF-15S 9/17/08	LF-15S 5/6/09	LF-15S 12/20/11	LF-15S Dissolved 12/20/11	LF-16S 9/16/08	LF-16S 5/5/09	LF-16S 12/20/11	LF-16S Dissolved 12/20/11
Beryllium	3	0.17 J	1.9	0.13U	0.13U	0.13 U	**3.1**	0.13U	0.13U
Chromium	50	10.7 J	**61.1**	1.7J	1.7J	7.7 J	**94**	6.7J	1.1U
Iron	300	**15400**	**115000 J**	65.7J	14.1U	**7110**	**158000 J**	**2320**	14.1U
Lead	25	6.9 U	**70.3**	2.2U	2.2U	6.9 J	**122**	2.8J	2.2U
Magnesium	35000	**51300**	**66300**	27700	26600	**42300**	**67800**	34400	33100

Notes:

1. Concentrations presented in units of µg/l.

2. Values shown as bold type exceed the Class GA groundwater standard

Source: O'Brien & Gere

5. PROJECT STAFFING AND CONSTRUCTION CONTRACTOR PLAN REQUIREMENTS

5.1. GENERAL

As described in the Remediation (RD/RA) Work Plan (O'Brien & Gere, Revised 2008), a number of work plans will be required of the Construction Contractor selected to complete the work. These work plans are described below and the requirements for each are addressed in the technical specifications prepared as part of the design (Appendix B).

Also presented below is a general description of the project staffing and responsibilities for the construction phase, which would be updated as appropriate once a Construction Contractor is selected to complete the work.

5.2. CONSTRUCTION QUALITY CONTROL PLAN

The specifications require that the Contractor prepare and implement a Construction Quality Control (CQC) Plan for the work to outline quality control procedures and protocols to be implemented during construction, incorporating the detailed procedures and requirement incorporated in the specifications. The CQC Plan will include:

- *Responsibility and Authority:* The responsibility and authority of organizations and key personnel involved in regulating, design, and construction of the remedial system will be presented. Appropriate lines of communication between involved parties will be delineated.
- *Construction Quality Control Personnel Qualifications*: The qualifications of the CQC personnel, including required training and experience, will be presented in the CQC Plan.
- *On-Site Observation:* The observations and tests that will be used to document that the construction meets the design criteria, plans, and specifications will be detailed.
- *Sampling and Testing Methods*: Sampling and testing methods, frequencies, acceptance and rejection criteria, and corrective measures detailed in the technical specifications will be addressed in the CQC Plan.
- *Documentation:* Reporting requirements for construction quality control activities will be described. These will include daily summary reports, data sheets, meeting minutes, photographs, record drawings, problem identification and corrective measure reports, and final documentation.

5.3. CONSTRUCTION SITE MANAGEMENT PLAN

The Contractor will be required to prepare a Construction Site Management Plan prior to the commencement of work that includes methods, plans and drawings necessary to show site infrastructure, excavation, soil/waste management, staging pads, and decontamination pads. The Construction Site Management Plan will include methods, plans, and drawings necessary for staging trailers and equipment, soil, waste management, staging pads, stockpiling materials, waste containers, and designating work zones and requirements for other construction activities. The Contractor will be responsible for all elements of work areas security to prevent unauthorized entry to persons onto the Site.

5.4. TRAFFIC CONTROL PLAN

The Contractor will be required to prepare a Traffic Control Plan (on-site and off-site) including, but not limited to, the designation of haul roads to and from the Site, developed in consultation with the City of Newburgh. The Contractor will be required to provide for all on-site and off-site traffic control as necessary according to federal, state and local requirements. The Contractor will be required to keep main public roads to the Site open at all times unless prior arrangements for temporary closing are made with the appropriate authorities. Prior to the start of construction activities, the Contractor and the Engineer will make a joint condition survey of road at the entrance(s) to the Site to be utilized by the Contractor. The condition survey will be performed using a video camera. During the video survey, the Engineer and Contractor will verbally document any existing damage to the roadways and the location of the damage.

5.5. EROSION AND SEDIMENT CONTROL/STORMWATER POLLUTION PREVENTION PLAN

The Contractor will be required to work in compliance with the project-specific ESCP and SWPPP, and also in substantive compliance with Permit No. GP-0-10-001 since construction activities for this project include disturbance of an area in excess of 1 acre.

5.6. FUGITIVE DUST AND EMISSION ENGINEERING CONTROLS PLAN

The Contractor will be required to prepare and implement a program for suppressing fugitive dust. The plan will include provisions for community protection and community air monitoring that will be implemented in accordance with the New York State Department of Health Generic Community Air Monitoring Plan included as Appendix 1A to DER-10, and complies with Appendix 1B – Fugitive Dust and Particulate Monitoring included as part of DER-10.

In the plan, the Construction Contractor will discuss potential control methods to be implemented if work practices are not adequate to address exceedances of the specified action levels. Control methods may range from management practices (*e.g.*, sequencing work to minimize exposed surface areas potentially causing emissions) to active control measures that might include use of tarps or plastic sheeting, vapor suppressing foam, temporary enclosure, or other types of control depending on conditions likely to be encountered during construction.

5.7. CONSTRUCTION WATER MANAGEMENT PLAN

The Construction Contractor will be required to prepare a Construction Water Management Plan identifying:

- Methods for minimizing the generation of construction water and associated treatment residuals
- Methods for handling, sampling, and analysis of construction water
- Methods for storage (if necessary), treatment (if necessary), and disposal of water generated during construction

Acceptable methods of handling construction water include, but are not limited to:

- Collection, on-site treatment (if necessary), and discharge in accordance with all applicable laws, rules, regulations, orders and requirements including, but not limited to, a State Pollutant Discharge Elimination System (SPDES) permit or permit to discharge to the sanitary sewers, as applicable.
- Collection, transport, off-site treatment, and disposal at a Publicly Owned Treatment Works (POTW) or licensed waste disposal facility in accordance with all applicable local, state, and federal laws, rules, regulations, and orders.

5.8. WASTE MANAGEMENT PLAN

The Construction Contractor will be required to prepare a Waste Management Plan to address all wastes generated for off-site disposal or on-site consolidation. The Waste Management Plan will outline the proposed sequence and methods for waste excavation, on-site placement, or off-site disposal. The Waste Management Plan will include:

- Waste sampling requirements
- Methods for determining waste disposal requirements
- The name and location of the off-site disposal facility to which the waste is to be shipped
- The type and quantity of waste to be shipped to each facility
- The expected schedule for the shipment of the waste material
- The method of transportation
- The names of licensed waste haulers
- Procedures for manifest management

5.9. CONSTRUCTION PHASE HEALTH AND SAFETY PLAN

The Construction Contractor will be required to have a Certified Industrial Hygienist (CIH) prepare a Health and Safety Plan (HASP) in accordance with requirements presented in 29 CFR parts 1910 and 1926, the USEPA's standard Operating Safety Guides, NIOSH "Occupational Safety and Health Guidance for Hazardous Waste Activities," local regulations, and DuPont and BCSI health and safety requirements. In the site-specific HASP, the Contractor will establish a monitoring program and action levels in accordance with 29 CFR 1910.120(h) in order to select and maintain proper administrative and engineering controls, work practices, and personal protective equipment (PPE) to protect on-site personnel. Air monitoring will be performed to identify and quantify airborne levels of hazardous substances.

Also, the HASP will include provisions for community protection and separate community air monitoring that will be implemented in accordance with the New York State Department of Health Generic Community Air Monitoring Plan included as Appendix 1A to DER-10. Also, a program for suppressing fugitive dust and particulate matter monitoring will be prepared in accordance with Appendix 1B to DER-10. The level of particulate leaving the downwind side of the Site will be monitored and shall be maintained below 150 $\mu g/m^3$ above the upwind particulate level, as required by these appendices to DER-10.

The site-specific HASP will establish action levels for monitored parameters and describe the actions which will be implemented if an established action level for either on-site worker protection or community protection is exceeded.

The Contractor will establish a Site control program as part of the site-specific HASP to reduce the possibility of contact with contaminants present before work begins, and will modify this program as new information becomes available.

5.10. PROJECT STAFFING AND RESPONSIBILITIES

Several organizations will be involved prior to, during, and following construction as depicted on the Project Staffing Chart (Figure 8). These include the following:

- NYSDEC as the regulatory agency.
- BCSI and DuPont as Respondents named in the Order on Consent (Index No. W3-0988-02-04).
- SMC as current Owner of the Site.
- O'Brien & Gere as the Engineer to monitor that work is constructed in accordance with the approved plans and specifications.
- Construction Contractor (Contractor) (to be determined)

The responsibilities of these organizations are delineated in the following subsections.

Regulatory agency responsibilities. As the regulatory agency, the NYSDEC will perform the following functions:

- Review and approve original designs and provide oversight of construction activities
- Review project submittals for compliance with regulations and approved design drawings and specifications
- Issue approval to construct the project once an approved design has been submitted
- Review and approve design modifications or requests for variances from the regulatory conditions during construction.

Respondents' responsibilities. BCSI and DuPont will:

- Bear responsibility for the design, construction, construction inspection and operation of the project
- Comply with NYSDEC requirements to obtain approvals and/or permits
- Bear responsibility for all communications with the NYSDEC
- Provide documentation to the NYSDEC that construction activities associated with the project are proceeding in accordance with the approved design (and approved design modifications)
- Select organizations charged with design and construction activities
- Accept or reject design plans and specifications, reports and recommendations of the Engineer, and the materials and workmanship of the Contractor
- Provide the Construction Certification Report to the NYSDEC for review and acceptance.

Owner's responsibilities. SMC will:

- Attach an environmental easement to the property as required by the ROD.
- Apply for permits as Owner of the Site, as applicable.

Engineer's responsibilities. O'Brien & Gere will perform the following:

- Prepare design modifications during construction if necessitated by unexpected site conditions or
- Coordinate the review of the Contractor's shop drawing submittals
- Provide daily on-site inspection of the work in progress to assess compliance with design plans and specifications
- Visually inspect materials brought to the Site for conformance with the specifications and for variations from material that was tested
- Observe field sampling and testing performed by the Contractor and review the results
- Observe whether materials are being properly handled and stored on-site
- Accept methods employed by the Contractor to perform construction quality control (CQC) testing services.
- Confirm that regular calibration of testing equipment is properly conducted and recorded by the Contractor
- Confirm that testing laboratories conform to Quality Assurance Project Plan (QAPP) requirements and procedures, and that sample custody procedures are followed
- Confirm that testing equipment, personnel, and procedures do not change over time, or if changes are made, insuring that any changes do not adversely impact inspection processes
- Confirm that test data inspection reports are accurately recorded and maintained
- Provide reports on testing and inspection results
- Notify the Contractor of deficiencies based on results of field inspections
- Schedule and attend project progress meetings during construction
- Prepare the Construction Certification Report and Record Drawings
- Certify that the facility was constructed in accordance with the plans and specifications approved by the regulatory agency

Construction Contractor's responsibilities. The general Contractor selected by the Respondents will perform the following:

- Construct the project in accordance with the design plans and specifications using appropriate construction procedures and techniques
- Retain and oversee qualified subcontractors to perform specialized components of construction
- Develop a CQC implementation plan for CQC to assure compliance with the design plans and specifications
- Schedule and coordinate CQC inspection and testing activities
- Retain testing laboratories to provide CQC testing services
- Submit required reports, results, shop drawings, etc. to the Engineer for distribution, review and acceptance
- Prepare a construction activity schedule using the Critical Path Method (CPM) or a bar graph and update it monthly
- Provide the Engineer marked-up drawings for Record Drawing preparation

The Contractor's CQC manager, or designee, will have overall responsibility for CQC and providing daily reports to the Construction Engineer. Other related duties may include coordinating shop drawings submittals, providing required samples, and coordinating with the Engineer. The Contractor's CQC manager will be responsible for onsite inspection of work, performing tests to assess compliance with the contract documents, and reporting results of all tests and inspections to the Engineer.

6. FINAL (100%) REMEDIAL DESIGN REPORT

6.1. GENERAL

As described in the Remediation (RD/RA) Work Plan (O'Brien & Gere, Revised 2008), the design drawings and technical specifications included as part of this Final (100%) Remedial Design Report are "biddable quality" documents. The Technical Specifications (Appendix B) describe the conditions under which the work is to be constructed, the materials and equipment to be incorporated into the work, and the standards of acceptance for the components of construction. The Contractor will be required to provide submittals demonstrating compliance with the requirements of the Technical Specifications.

Figure 9 presents a tentative schedule for solicitation of bids and award of Contract for construction. Based on the benchmark events and dates shown, it is anticipated that mobilization to start construction will likely occur during the Spring 2013.

REFERENCES

DuPont Corporate Remediation Group, June 2004; *Supplemental Remedial Investigation Report, DuPont-Stauffer Landfill, Newburgh New York.*

New York State Department of Environmental Conservation; February 2006; *Proposed Remedial Action Plan, DuPont-Stauffer Landfill*, Newburgh, Orange County, New York, Site No. 3-36-009.

New York State Department of Environmental Conservation; August 2006; *Record of Decision, DuPont-Stauffer Landfill, Newburgh (C), Orange County, New York, Site No. 3-36-009.*

New York State Department of Environmental Conservation, June 2007, Explanation of Significant Differences DuPont Stauffer Site.

New York State Department of Environmental Conservation, July 19, 2007 correspondence from David Crosby to Amanda DeSantis of DuPont and Robert Shay of BCSI.

New York State Department of Environmental Conservation, November 30, 2007, correspondence from David Crosby to Amanda DeSantis of DuPont and Robert Shay of BCSI.

New York State Department of Environmental Conservation, May 2010; *DER-10 – Technical Guidance for Site Investigation and Remediation.*

New York State Department of Environmental Conservation, July 21, 2011, letter from NYSDEC to Stauffer Management Company and E.I. duPont de Nemours and Company regarding Pilot In-situ Stabilization Pre-Treatment Evaluation Program for the South Landfill Report.

New York State Department of Environmental Conservation, May 23, 2012, letter to Stauffer Management Company and EI DuPont de Nemours and Company, re: Draft Preliminary Remedial Design Report (50%) for DuPont-Stauffer Landfill, Site #3-36-009, Newburgh, New York

O'Brien & Gere, December 2006 (revised June 2008); *Predesign Work Plan, DuPont-Stauffer Landfill, Newburgh, York*.

O'Brien & Gere, April 2007; *Pilot In Situ Stabilization Pretreatment Evaluation Program for the South Landfill, DuPont-Stauffer Landfill, Newburgh New York.*

O'Brien & Gere, December 2007; *Pilot In Situ Stabilization Pretreatment Evaluation Program for the South Landfill*.

O'Brien & Gere, Revised June 2008; *Remediation (RD/RA) Work Plan.*

Remedial Engineering P.C and Roux Associates, Inc; March 15, 2006; *Focused Feasibility Study, DuPont-Stauffer Landfill, Newburgh New York.*

Table 2 - South Landfill Metals Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID			TP44 (Duplicate)			TP44			TP45			TP46			TP46NWA		
Units	Part 371 Criteria[1] (mg/L)	Part 375 Criteria[2] (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)
Sample Date			6/20/2007			6/20/2007			6/21/2007			6/21/2007			6/21/2007		
Chemical Name																	
Aluminum	NA	NA	10000	---	18000	13000	---	17000	9100	---	19000	23000	---	20000	24000	---	19000
Antimony	NA	NA	34	---	0.27 J	28 J	---	0.36 J	12 J	---	7.1 UJ	70 J	---	0.93 J	40 J	---	0.4 J
Arsenic	5	16	7.7	0.5 U	6.3	11	0.5 U	6	15	0.5 UJ	5.2	13	0.5 UJ	6.2	12	0.5 UJ	6.2
Barium	100	400	13000	5	47 J	15000	6	47 J	9000	7.3	140	9400	7.9	120	7200	7.5	150
Beryllium	NA	590	0.78 J	---	0.49 J	0.9 J	---	0.48 J	0.61 J	---	0.64 J	0.59 J	---	0.54 J	0.57 J	---	0.51 J
Cadmium	1	9.3	70	**1.4**	1.2 U	120	**1.6**	1.2 U	40	0.32	1.2 U	330	**2.5**	**20**	480	**2.9**	1.1 U
Calcium	NA	NA	12000	---	830	14000	---	830	11000	---	1100 J	33000	---	770 J	29000	---	1100 J
Chromium	5	800*	330	0.088 J	18	1000 J	0.033 J	18	350 J	0.5 U	21	1100 J	0.5 U	20	760 J	0.5 U	19
Cobalt	NA	NA	10	---	11	11 J	---	11	10 J	---	9.5	20 J	---	9.1	19 J	---	8.4
Copper	NA	270	1400	---	17	2500	---	15	1500	---	17	3300	---	13	2500	---	20
Iron	NA	NA	44000	---	28000	34000	---	27000	48000	---	24000	26000	---	26000	38000	---	27000
Lead	5	1000	6400	**47**	13 J	17000	**57**	13 J	9300	**11**	40	30000	**37**	13	25000	**26**	28
Magnesium	NA	NA	2100	---	4000	2200	---	3800	2200	---	3800	3000	---	3800	3100	---	3600
Manganese	NA	10000	270	---	460	260	---	400	520	---	610	430	---	530	410	---	660
Mercury	0.2	2.8	0.18	0.0004 U	0.036 J	0.19	0.0004 UJ	0.041 J	2.6 J	0.0004 U	0.06 J	2.2 J	0.002 U	0.04 J	0.82 J	0.0004 U	0.044 J
Nickel	NA	310	48	---	17	45	---	17	35	---	17	110	---	32	95	---	17
Potassium	NA	NA	640	---	590 J	630	---	530 J	470 J	---	540 J	880	---	680	1200	---	580
Selenium	1	1500	13	0.0093 J	2.1	24	0.1 U	2.2	7.9	0.1 UJ	1.8	46	0.1 UJ	2.6	55	0.1 UJ	1.7
Silver	5	1500	130	0.5 U	1.2 U	290	0.5 U	1.2 U	56	0.5 U	0.2 J	200	0.5 U	1.2 U	170	0.5 U	0.42 J
Sodium	NA	NA	310	---	25 J	390 J	---	25 J	250 J	---	30 J	3500 J	---	34 J	3600 J	---	37 J
Thallium	NA	NA	2.3 U	---	2.5 U	2.3 U	---	2.4 U	2.5 U	---	2.4 U	1.2 J	---	2.5 U	1.1 J	---	2.3 U
Vanadium	NA	NA	18	---	25	21	---	24	21	---	24	24	---	27	28	---	25
Zinc	NA	10000	12000	---	95	25000	---	110	16000	---	260	35000	---	2900	35000	---	150

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimated value
NA - Not applicable
SB - Site Background
* - Hexavalent Chromium
--- Not submitted for analysis per work plan.
[1] 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics
[2] 6 NYCRR Part 375-6.8(b), Table 375-6.8(b) Restricted Use Soil Cleanup Objectives, Protection of Public Health, Commercial
bold Yellow shaded values exceed 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic
bold Orange shaded values exceed the Restricted Use Commercial screening criteria (6NYCRR Part 375), as well as the previously used Supplemental Remedial Investigation screening criteria.
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
Ash total values not compared to standard.

Table 2 - South Landfill Metals Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID			TP47			TP48			TP49			TP50			TP51 (Duplicate)		
Units	Part 371 Criteria[1] (mg/L)	Part 375 Criteria[2] (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)
Sample Date			6/20/2007			6/20/2007			6/20/2007			6/20/2007			6/20/2007		
Chemical Name																	
Aluminum	NA	NA	18000	---	17000	14000	---	17000	7500	---	18000	5000	---	19000	13000	---	16000
Antimony	NA	NA	8.1 J	---	6.8 UJ	11 J	---	20 J	1.5 J	---	6.9 UJ	3.4 J	---	6.7 UJ	15	---	6.7 U
Arsenic	5	16	53	0.5 U	14	23	0.5 U	5.5	18	0.5 U	6.3	9.9	0.5 U	6.4	79	0.034 J	5.8
Barium	100	400	7500	7.3 J	75	280	1.2 J	65	510	1.6	42 J	370	1.3	42 J	510	1.8	60 J
Beryllium	NA	590	0.78 J	---	0.54 J	0.77 J	---	0.64 J	0.88 J	---	0.52 J	0.69 J	---	0.6 J	0.65 J	---	0.51 J
Cadmium	1	9.3	74	0.81	1.1 U	2	0.0062 J	1.1 U	1.3	0.1 U	1.2 U	1.5	0.1 U	1.1 U	3.3	0.011 J	1.1 U
Calcium	NA	NA	3600	---	230 J	3100	---	670 J	3300	---	840	3400	---	700	3100	---	790
Chromium	5	800*	140 J	0.5 U	18	31	0.055 J	17	12	0.5 U	18	14	0.5 U	19	28	0.5 U	16
Cobalt	NA	NA	10 J	---	11	8.1 J	---	8.4	6 J	---	11	5.4 J	---	10	7.5	---	7.4
Copper	NA	270	570	---	42	33	---	14	74	---	16	45	---	23	33	---	14
Iron	NA	NA	24000	---	26000	22000	---	24000	21000	---	30000	19000	---	29000	24000	---	24000
Lead	5	1000	3600	**5.8**	17	180	0.084 J	16	80	0.5 U	13 J	150	0.063 J	12 J	210	0.12 J	12 J
Magnesium	NA	NA	2700	---	4000	3400	---	3600	1800	---	4300	1200	---	4500	4000	---	3200
Manganese	NA	10000	570	---	460	940	---	500	210	---	650	140	---	300	530	---	410
Mercury	0.2	2.8	0.65 J	0.000087 J	0.044 J	0.17 J	0.0004 U	0.049 J	0.11	0.0004 UJ	0.04 J	0.16	0.000068 J	0.042 J	0.24	0.0004 U	0.042 J
Nickel	NA	310	57	---	29	19	---	19	13	---	19	14	---	22	20	---	15
Potassium	NA	NA	600 J	---	590	720	---	520 J	370 J	---	530 J	320 J	---	620	580	---	350 J
Selenium	1	1500	10	0.1 U	1.7	1.7	0.1 U	1.7	1.5	0.1 U	1.8	1.6	0.1 U	1.6	1.6	0.1 U	1.5
Silver	5	1500	79	0.015 J	0.45 J	9.5	0.5 U	0.39 J	12	0.5 U	1.2 U	93	0.023 J	1.1 U	9.4	0.5 U	1.1 U
Sodium	NA	NA	87 J	---	21 J	41 J	---	28 J	32 J	---	32 J	58 J	---	23 J	29 J	---	20 J
Thallium	NA	NA	2.5 U	---	2.3 U	2.2 U	---	2.2 U	2.2 U	---	1.1 J	2.2 U	---	2.2 U	2.2 U	---	2.2 U
Vanadium	NA	NA	24	---	23	23	---	22	16	---	24	15	---	23	23	---	21
Zinc	NA	10000	6200	---	140	960	---	83	370	---	59	270	---	75	1100	---	66

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimated value
NA - Not applicable
SB - Site Background
* - Hexavalent Chromium
--- Not submitted for analysis per work plan.
[1] 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics
[2] 6 NYCRR Part 375-6.8(b), Table 375-6.8(b) Restricted Use Soil Cleanup Objectives, Protection of Public Health, Commercial
bold Yellow shaded values exceed 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic
bold Orange shaded values exceed the Restricted Use Commercial screening criteria (6NYCRR Part 375), as well as the previously used Supplemental Remedial Investigation screening criteria.
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
Ash total values not compared to standard.

Table 2 - South Landfill Metals Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID			TP51			TP52			TP53			TP54			TP55		
Units	Part 371 Criteria[1] (mg/L)	Part 375 Criteria[2] (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)
Sample Date			6/20/2007			6/20/2007			6/20/2007			6/20/2007			6/20/2007		
Chemical Name																	
Aluminum	NA	NA	14000	---	16000	6800	---	17000	16000	---	20000	12000	---	18000	17000	---	17000
Antimony	NA	NA	18 J	---	0.31 J	22 J	---	6.6 UJ	43 J	---	0.6 J	63 J	---	6.7 UJ	27 J	---	7 UJ
Arsenic	5	16	100	0.063 J	5.7	19	0.5 U	5.5	18	0.5 U	5.7	16	0.5 U	4.8	13	0.5 U	5.4
Barium	100	400	350	1.4	59 J	1400	2.1	62 J	16000	5.9	250 J	11000	4.4	230 J	16000	7.5	110 J
Beryllium	NA	590	0.72 J	---	0.51 J	0.89 J	---	0.57 J	0.72 J	---	1 J	0.62 J	---	0.75 J	0.66 J	---	0.7 J
Cadmium	1	9.3	2.7	0.0075 J	1.1 U	12	0.049 J	1.1 U	320	**2.3**	5.5	10	0.071 J	1.1 U	84	0.45	1.2 U
Calcium	NA	NA	3000	---	780	2500	---	610	29000	---	1300	43000	---	1600	14000	---	920
Chromium	5	800*	31	0.5 U	15	43	0.5 U	18	590 J	0.5 U	21	660 J	0.5 U	21	390 J	0.5 U	17
Cobalt	NA	NA	7.4 J	---	8	9.4 J	---	8.7	17 J	---	7.9	10 J	---	9.2	17 J	---	9.7
Copper	NA	270	33	---	15	210	---	16	4300	---	180	4100	---	17	1100	---	13
Iron	NA	NA	25000	---	24000	47000	---	25000	25000	---	25000	100000	---	24000	41000	---	26000
Lead	5	1000	200	0.083 J	12 J	710	2.9	12 J	20000	**38**	62 J	27000	**28**	140 J	9400	4.8	19 J
Magnesium	NA	NA	3400	---	3400	1200	---	3700	5400	---	3300	3800	---	3300	3000	---	3600
Manganese	NA	10000	540	---	380	420	---	330	440	---	1800	630	---	530	700	---	690
Mercury	0.2	2.8	0.21	0.0004 UJ	0.04 J	0.29	0.0004 UJ	0.044 J	1.3	0.0004 UJ	0.085 J	0.24	0.0004 UJ	0.043 J	2.8	0.0004 UJ	0.038 J
Nickel	NA	310	20	---	16	62	---	18	91	---	23	29	---	17	51	---	16
Potassium	NA	NA	550 J	---	420 J	390 J	---	460 J	960	---	510 J	1800	---	560	490 J	---	370 J
Selenium	1	1500	1.8	0.1 U	1.3	6.2	0.1 U	1.6	55	0.1 U	3.4	4.3	0.1 U	1.7	11	0.1 U	2
Silver	5	1500	12	0.5 U	0.19 J	6.3	0.5 U	1.1 U	170	0.5 U	12	2.6	0.5 U	1.1 U	92	0.5 U	1.2 U
Sodium	NA	NA	31 J	---	22 J	32 J	---	24 J	2800 J	---	35 J	3100 J	---	53 J	260 J	---	25 J
Thallium	NA	NA	2.3 U	---	2.2 U	2.4 U	---	2.2 U	2.7 U	---	7.4 J	2.5 U	---	1.1 J	2.5 U	---	2.3 U
Vanadium	NA	NA	25	---	21	16	---	23	26	---	23	22	---	24	21	---	23
Zinc	NA	10000	690	---	71	1800	---	60	28000	---	510	31000	---	91	22000	---	83

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimated value
NA - Not applicable
SB - Site Background
* - Hexavalent Chromium
--- Not submitted for analysis per work plan.
[1] 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics
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bold Yellow shaded values exceed 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic
bold Orange shaded values exceed the Restricted Use Commercial screening criteria (6NYCRR Part 375), as well as the previously used Supplemental Remedial Investigation screening criteria.
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
Ash total values not compared to standard.

Table 2 - South Landfill Metals Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID			TP56			TP57			TP58			TP58SWA			TP59		
Units	Part 371 Criteria[1] (mg/L)	Part 375 Criteria[2] (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)
Sample Date			6/20/2007			6/19/2007			6/19/2007			6/21/2007			6/19/2007		
Chemical Name																	
Aluminum	NA	NA	14000	---	18000	15000	---	16000	12000	---	16000	16000	---	17000	33000	---	15000
Antimony	NA	NA	130 J	---	7 UJ	10 J	---	6.7 UJ	27 J	---	0.19 J	45 J	---	6.7 UJ	19 J	---	7.1 UJ
Arsenic	5	16	11	0.5 U	5.8	24	0.5 U	7.9	25	0.5 U	7.3	23	0.5 UJ	6	9	0.5 U	4.5
Barium	100	400	12000	2.5	98 J	15000	3.4	58 J	11000	3	47 J	6000	4.2	53	16000	2.8	60 J
Beryllium	NA	590	0.66 J	---	0.45 J	0.88 J	---	0.68 J	0.62 J	---	0.56 J	0.43 J	---	0.5 J	0.4 J	---	0.46 J
Cadmium	1	9.3	100	0.73	1.2 U	8.6	0.39	1.1 U	58	0.4	1.2 U	500	**5.8**	1.1 U	450	**3.5**	1.2 U
Calcium	NA	NA	14000	---	770	39000	---	930	27000	---	960	28000	---	940 J	28000	---	1400
Chromium	5	800*	960 J	0.069 J	19	470 J	0.5 U	18 J	730 J	0.5 U	19 J	1100 J	0.5 U	19	1100 J	0.5 U	18 J
Cobalt	NA	NA	12 J	---	7.9	12 J	---	13	14 J	---	12	17 J	---	8.7	20 J	---	6.1
Copper	NA	270	2100	---	14	3900	---	25	4900	---	20	9300	---	17	920	---	56
Iron	NA	NA	38000	---	26000	44000	---	34000	150000	---	30000	39000	---	25000	39000	---	23000
Lead	5	1000	15000	**30**	27 J	20000	**20**	19 J	20000	**17**	14 J	29000	**50**	10	30000	**25**	13 J
Magnesium	NA	NA	3000	---	3500	5300	---	5200	3300	---	4600	2900	---	3900	2200	---	3600
Manganese	NA	10000	490	---	230	650	---	750	1800	---	590	430	---	260	350	---	390
Mercury	0.2	2.8	1.3	0.0004 UJ	0.041 J	0.56	0.0004 UJ	0.025 J	0.99	0.0004 UJ	0.028 J	2.2 J	0.0004 U	0.032 J	0.16 J	0.002 UJ	0.042 J
Nickel	NA	310	43	---	15	29	---	25	170	---	20	500	---	19	140	---	16
Potassium	NA	NA	700	---	740	1300	---	840	1200	---	710	1400	---	680	640 J	---	480 J
Selenium	1	1500	16	0.1 U	1.5	2.9	0.1 U	2	16	0.017 J	1.8	55	0.014 J	1.8	46	0.026 J	2.5
Silver	5	1500	98	0.5 U	1.2 U	5.3	0.5 U	1.1 U	13	0.5 U	1.2 U	190	0.5 U	1.1 U	530	0.5 U	31
Sodium	NA	NA	1000 J	---	160	1200 J	---	68 J	2800 J	---	45 J	3700 J	---	41 J	6500 J	---	92 J
Thallium	NA	NA	2.4 U	---	1.6 J	2.9 U	---	2.2 U	2.7 U	---	0.84 J	0.78 J	---	2.2 U	3.4 U	---	2.4 U
Vanadium	NA	NA	18	---	24	23	---	23	21	---	23	20	---	22	19	---	19
Zinc	NA	10000	19000	---	59	16000	---	68	23000	---	100	35000	---	66	97000	---	67

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimated value
NA - Not applicable
SB - Site Background
* - Hexavalent Chromium
--- Not submitted for analysis per work plan.
[1] 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics
[2] 6 NYCRR Part 375-6.8(b), Table 375-6.8(b) Restricted Use Soil Cleanup Objectives, Protection of Public Health, Commercial
bold Yellow shaded values exceed 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic
bold Orange shaded values exceed the Restricted Use Commercial screening criteria (6NYCRR Part 375), as well as the previously used Supplemental Remedial Investigation screening criteria.
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
Ash total values not compared to standard.

Location ID			TP59NWA			TP60			TP61			TP62			TP63		
Units	Part 371 Criteria[1] (mg/L)	Part 375 Criteria[2] (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)
Sample Date			6/21/2007			6/20/2007			6/20/2007			6/21/2007			6/21/2007		
Chemical Name																	
Aluminum	NA	NA	17000	---	18000	15000	---	17000	13000	---	13000	4600	---	18000	13000	---	17000
Antimony	NA	NA	19 J	---	7.4 UJ	14 J	---	2.5 J	2.3 J	---	0.81 J	0.86 J	---	7 UJ	2.3 J	---	6.5 UJ
Arsenic	5	16	10	0.5 UJ	4.2	12	0.5 U	4.2	9.3	0.5 U	8	5.7	0.5 U	5.6	99	0.12 J	5.9
Barium	100	400	7100	2.5	86	15000	5.9	110	370	2	**460 J**	170	1.3	45 J	170	1.1	110
Beryllium	NA	590	0.45 J	---	0.56 J	0.7 J	---	0.6 J	0.68 J	---	0.6 J	0.47 J	---	0.49 J	0.58 J	---	0.6 J
Cadmium	1	9.3	500	**4.2**	4.1	140	**1.4**	1.1 U	0.89 J	0.1 U	1.2	1.4	0.1 U	1.2 U	1.5	0.1 U	1.1 U
Calcium	NA	NA	33000	---	1300 J	12000	---	3900 J	1900	---	1800	1900	---	590	3000	---	840 J
Chromium	5	800*	1000 J	0.5 U	18	270 J	0.5 U	17	19	0.5 U	20	11	0.5 U	18	21	0.5 U	19
Cobalt	NA	NA	19 J	---	7.4	13 J	---	7.7	9.7 J	---	10	4.6 J	---	11	9.9 J	---	12
Copper	NA	270	1800	---	41	1000	---	97	34	---	35	25	---	19	55	---	29
Iron	NA	NA	41000	---	21000	31000	---	21000	24000	---	25000	12000	---	26000	25000	---	27000
Lead	5	1000	23000	**21**	14	7200	**8.8**	38	110	0.042 J	96 J	62	0.04 J	12 J	110	0.5 U	32
Magnesium	NA	NA	2300	---	3000	3000	---	3300	3800	---	4600	1300	---	4300	4800	---	4900
Manganese	NA	10000	490	---	560	720	---	280	510	---	710	190	---	940	670	---	770
Mercury	0.2	2.8	0.63 J	0.0004 U	0.041 J	0.68	0.0004 UJ	0.066 J	0.069 J	0.0002 J	0.06 J	0.16	0.0004 UJ	0.049 J	0.2 J	0.0004 U	0.043 J
Nickel	NA	310	160	---	30	81	---	52	20	---	21	11	---	19	23	---	23
Potassium	NA	NA	1400	---	620 J	540 J	---	540 J	660	---	810	320 J	---	490 J	930	---	880
Selenium	1	1500	58	0.052 J	1.7	20	0.1 U	1.4	1.3	0.1 U	1.6	1.1	0.1 U	1.9	1.3	0.1 UJ	1.4
Silver	5	1500	230	0.5 U	53	480	0.019 J	31	63	0.5 U	48	32	0.5 U	1.2 U	4.4	0.5 U	1.1 U
Sodium	NA	NA	6400 J	---	110 J	250 J	---	70 J	35 J	---	35 J	28 J	---	38 J	31 J	---	36 J
Thallium	NA	NA	1.5 J	---	2.5 U	2.6 U	---	2.3 U	2.2 U	---	2.3 U	2.1 U	---	2.3 U	2.2 U	---	2.2 U
Vanadium	NA	NA	16	---	26	20	---	21	21	---	19	14	---	23	29	---	21
Zinc	NA	10000	56000	---	1600	17000	---	280	220	---	280	150	---	52	440	---	170

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimated value
NA - Not applicable
SB - Site Background
* - Hexavalent Chromium
--- Not submitted for analysis per work plan.
[1] 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics
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bold Orange shaded values exceed the Restricted Use Commercial screening criteria (6NYCRR Part 375), as well as the previously used Supplemental Remedial Investigation screening criteria.
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
Ash total values not compared to standard.

Location ID			TP64			TP65			TP66			TP67			TP67SE Special		TP67SE		
Units	Part 371 Criteria[1] (mg/L)	Part 375 Criteria[2] (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)
Sample Date			6/21/2007			6/20/2007			6/20/2007			6/19/2007			6/21/2007		6/21/2007		
Chemical Name																			
Aluminum	NA	NA	14000	---	18000	9200	---	18000	13000	---	16000	18000	---	14000	17000	---	11000	---	14000
Antimony	NA	NA	R	---	7 UJ	0.79 J	---	6.8 UJ	0.34 J	---	6.7 UJ	140 J	---	7.2 UJ	38 J	---	39 J	---	6.9 UJ
Arsenic	5	16	5.5	0.5 UJ	4	22	0.5 UJ	6.5	7.3	0.5 UJ	4.4	13	0.5 U	4.9	20	0.5 UJ	13	0.5 UJ	4.3
Barium	100	400	62	0.41 J	66	630	2.1	42	250	0.92	48	9400	4.7 J	56 J	7200	4.2	8400	4.3	150
Beryllium	NA	590	0.63 J	---	0.63 J	0.82 J	---	0.58 J	0.68 J	---	0.58 J	0.6 J	---	0.44 J	0.46 J	---	0.38 J	---	0.49 J
Cadmium	1	9.3	0.39 J	0.1 U	1.2 U	2.3	0.011 J	1.1 U	0.92 J	0.1 U	1.1 U	350	**5**	1.2 U	1500	**8.4**	620	**7.5**	6.8
Calcium	NA	NA	1100	---	880 J	8300	---	830 J	25000	---	1300 J	23000	---	2800	40000	---	30000	---	800 J
Chromium	5	800*	16	0.5 U	17	21	0.5 U	20	27	0.5 U	17	730 J	0.5 U	17 J	1200 J	0.5 U	830 J	0.5 U	18
Cobalt	NA	NA	9.9 J	---	8.6	7 J	---	12	8.1 J	---	9.8	17 J	---	7.1	16 J	---	15 J	---	9.8
Copper	NA	270	25	---	9.9	110	---	34	110	---	18	1400	---	27	1700	---	2600	---	22
Iron	NA	NA	23000	---	20000	16000	---	29000	24000	---	23000	39000	---	23000	43000	---	33000	---	23000
Lead	5	1000	21	0.5 U	14	160	0.033 J	13	450	0.36 J	10	20000	**53**	12 J	25000	**6.7**	22000	**41**	27
Magnesium	NA	NA	3900	---	3200	2900	---	4800	11000	---	4300	2800	---	3800	1900	---	1600	---	4400
Manganese	NA	10000	560	---	410	420	---	360	550	---	300	450	---	320	510	---	310	---	370
Mercury	0.2	2.8	0.042 J	0.0004 U	0.033 J	0.28 J	0.0004 U	0.054 J	0.24 J	0.0004 U	0.041 J	0.42 J	0.0004 U	0.024 J	0.56 J	0.0004 U	0.5 J	0.0004 U	0.033 J
Nickel	NA	310	20	---	14	18	---	26	21	---	18	120	---	16	170	---	160	---	23
Potassium	NA	NA	800	---	550 J	640	---	770	780	---	580	860	---	590 J	1900	---	870	---	750
Selenium	1	1500	1.1 J	0.1 UJ	1.3	1.4	0.1 UJ	1.4	1.2	0.1 UJ	1.3	58	0.026 J	60	130	0.058 J	72	0.026 J	1.6
Silver	5	1500	0.36 J	0.5 U	1.2 U	210	0.01 J	28	10	0.5 U	1.1 U	200	0.5 U	15	240	0.5 U	260	0.5 U	2.5
Sodium	NA	NA	28 J	---	32 J	71 J	---	44 J	65 J	---	29 J	3800 J	---	70 J	5000 J	---	3900 J	---	54 J
Thallium	NA	NA	2.2 U	---	2.3 U	2.1 U	---	2.3 U	2.2 U	---	2.2 U	2.9 U	---	2.4 U	3.1 U	---	0.99 J	---	2.3 U
Vanadium	NA	NA	19	---	23	16	---	23	20	---	20	19	---	19	15	---	14	---	19
Zinc	NA	10000	87	---	52	330	---	66	440	---	53	47000	---	110	34000	---	35000	---	440

Notes:
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J - Estimated value
NA - Not applicable
SB - Site Background
* - Hexavalent Chromium
--- Not submitted for analysis per work plan.
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mg/kg - milligrams per kilogram
mg/L - milligrams per liter
Ash total values not compared to standard.

Table 2 - South Landfill Metals Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID			TP68			TP68NE Special		TP68NE			TP69			TP70		
Units	Part 371 Criteria[1] (mg/L)	Part 375 Criteria[2] (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)	Ash Total (mg/kg)	Ash TCLP (mg/L)	Native Soil Total (mg/kg)
Sample Date			6/19/2007			6/21/2007		6/21/2007			6/19/2007			6/19/2007		
Chemical Name																
Aluminum	NA	NA	13000	---	16000	5600	---	11000	---	15000	14000	---	9200	16000	---	13000
Antimony	NA	NA	12 J	---	6.9 UJ	2.1 J	---	10 J	---	6.7 UJ	9.6 J	---	6.4 UJ	40 J	---	6.8 UJ
Arsenic	5	16	10	0.5 U	5.9	18	0.5 UJ	15	0.5 UJ	5.6	11	0.5 U	3.8	11	0.5 U	5
Barium	100	400	10000	4.6	100 J	6700	2.2	5900	2.7	71	13000	3.2	41 J	15000	4.4	68 J
Beryllium	NA	590	0.58 J	---	0.5 J	0.2 J	---	0.43 J	---	0.49 J	0.64 J	---	0.39 J	0.46 J	---	0.5 J
Cadmium	1	9.3	87	0.65	1.2 U	69	0.54	130	**1.4**	1.1 U	140	**1.7**	6.9	380	**3.8**	9.2
Calcium	NA	NA	20000	---	830	13000	---	19000	---	700 J	12000	---	12000	32000	---	740
Chromium	5	800*	910 J	0.5 U	18 J	230 J	0.5 U	850 J	0.5 U	17	640 J	0.044 J	14 J	970 J	0.5 U	16 J
Cobalt	NA	NA	15 J	---	8.8	12 J	---	22 J	---	10	11 J	---	7.5	17 J	---	9.6
Copper	NA	270	2400	---	32	300000	---	51000	---	26	1300	---	26	2500	---	35
Iron	NA	NA	55000	---	28000	22000	---	59000	---	27000	31000	---	21000	34000	---	24000
Lead	5	1000	32000	**33**	70 J	12000	**24**	22000	**44**	17	12000	**33**	12 J	31000	**33**	46 J
Magnesium	NA	NA	3000	---	4900	3200	---	3000	---	5100	2800	---	5100	2600	---	4300
Manganese	NA	10000	490	---	400	260	---	560	---	630	680	---	420	480	---	670
Mercury	0.2	2.8	0.63	0.0004 UJ	0.025 J	0.41 J	0.0004 U	0.85 J	0.0004 U	0.038 J	1.7	0.0004 UJ	0.013 J	2.1	0.0004 UJ	0.022 J
Nickel	NA	310	90	---	21	45	---	89	---	22	68	---	20	150	---	35
Potassium	NA	NA	1200	---	700	410 J	---	850	---	950	620 J	---	820	740	---	770
Selenium	1	1500	8.7	0.1 U	1.5	2.3 J	0.1 UJ	12	0.1 UJ	1.1 J	14	0.016 J	1.1	46	0.037 J	7.2
Silver	5	1500	15	0.5 U	1.2 U	120	0.5 U	120	0.5 U	1.1 U	220	0.5 U	1.1 U	270	0.5 U	15
Sodium	NA	NA	2900 J	---	43 J	310 J	---	2900 J	---	31 J	280 J	---	26 J	3700 J	---	42 J
Thallium	NA	NA	2.8 U	---	1.5 J	6.5 J	---	2.7 U	---	2.2 U	2.6 U	---	2.1 U	2.8 U	---	2.3 U
Vanadium	NA	NA	15	---	20	5.9 J	---	13	---	19	15	---	12	16	---	17
Zinc	NA	10000	28000	---	160	66000	---	32000	---	74	24000	---	830	36000	---	1600

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimated value
NA - Not applicable
SB - Site Background
* - Hexavalent Chromium
--- Not submitted for analysis per work plan.
[1] 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics
[2] 6 NYCRR Part 375-6.8(b), Table 375-6.8(b) Restricted Use Soil Cleanup Objectives, Protection of Public Health, Commercial
bold Yellow shaded values exceed 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristic
bold Orange shaded values exceed the Restricted Use Commercial screening criteria (6NYCRR Part 375), as well as the previously used Supplemental Remedial Investigation screening criteria.
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
Ash total values not compared to standard.

Table 3 - South Landfill SVOCs Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID	Part 371 Criteria* (mg/L)	TP44		TP44 (Duplicate)		TP45	TP46		TP46NW	TP47	TP48		TP49		TP50		TP51	TP51 (Duplicate)	TP52		TP53	TP54		TP55
Units		Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)
Sample Date		6/20/2007		6/20/2007		6/21/2007	6/21/2007		6/21/2007	6/20/2007	6/20/2007		6/20/2007		6/20/2007		6/20/2007	6/20/2007	6/20/2007		6/20/2007	6/20/2007		6/20/2007
Chemical Name																								
(3+4)-Methylphenol	200	---	0.1 U	---	0.1 U	---	---	0.1 U	---	---	---	0.1 U	---	0.1 U	---	0.1 U	---	---	---	0.1 U	---	---	0.1 U	---
1,1'-Biphenyl	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
1,2,4,5-TETRACHLOROBENZENE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
1,2-BENZPHENANTHRACENE	NA	330 J	---	430	---	3900	5400	---	540 J	890	21000	---	470	---	1100	---	14000	22000	1000	---	11000 U	3100	---	1500
1,4-DICHLOROBENZENE	7.5	---	0.1 U	---	0.1 U	---	---	0.1 U	---	---	---	0.1 U	---	0.1 U	---	0.1 U	---	---	---	0.1 U	---	---	0.1 U	---
1,4-Dioxane	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
2,2'-oxybis(1-Chloropropane)	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
2,4,5-TRICHLOROPHENOL	400	770 U	0.5 U	390 U	0.5 U	2100 U	2600 U	0.5 U	2300 U	830 U	7300 U	0.5 U	360 U	0.5 U	720 U	0.5 U	7700 U	18000 U	390 U	0.5 U	22000 U	830 U	0.5 U	420 U
2,4,6-Trichlorophenol	2	400 U	0.1 U	200 U	0.1 U	1100 U	1300 U	0.1 U	1200 U	430 U	3800 U	0.1 U	190 U	0.1 U	370 U	0.1 U	3900 U	9500 U	200 U	0.1 U	11000 U	430 U	0.1 U	220 U
2,4-DICHLOROPHENOL	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
2,4-DIMETHYLPHENOL	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
2,4-DINITROPHENOL	NA	1500 U	---	770 U	---	4100 U	5100 U	---	4700 U	1700 U	15000 U	---	730 U	---	1400 U	---	15000 U	37000 U	780 U	---	44000 U	1700 U	---	840 U
2,4-DINITROTOLUENE	0.13	400 U	0.1 U	200 U	0.1 U	1100 U	1300 U	0.1 U	1200 U	430 U	3800 U	0.1 U	190 U	0.1 U	370 U	0.1 U	3900 U	9500 U	200 U	0.1 U	11000 U	430 U	0.1 U	220 U
2,6-DINITROTOLUENE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
2-CHLORONAPHTHALENE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
2-CHLOROPHENOL	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
2-METHYLNAPHTHALENE	NA	370 J	---	880	---	240 J	1300 U	---	1200 U	430 U	890 J	---	54 J	---	370 U	---	3900 U	9500 U	310	---	11000 U	430 U	---	82 J
2-Methylphenol	200	400 U	0.1 U	200 U	0.1 U	1100 U	1300 U	0.1 U	1200 U	430 U	3800 U	0.1 U	190 U	0.1 U	370 U	0.1 U	3900 U	9500 U	200 U	0.1 U	11000 U	430 U	0.1 U	220 U
2-NITROANILINE	NA	770 U	---	390 U	---	2100 U	280 J	---	2300 U	830 U	7300 U	---	360 U	---	720 U	---	7700 U	18000 U	390 U	---	6800 J	830 U	---	420 U
2-NITROPHENOL	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
3,3'-DICHLOROBENZIDINE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
3-NITROANILINE	NA	770 U	---	390 U	---	2100 U	2600 U	---	2300 U	830 U	7300 U	---	360 U	---	720 U	---	7700 U	18000 U	390 U	---	22000 U	830 U	---	420 U
4,6-Dinitro-2-methylphenol	NA	1500 U	---	770 U	---	4100 U	5100 U	---	4700 U	1700 U	15000 U	---	730 U	---	1400 U	---	15000 U	37000 U	780 U	---	44000 U	1700 U	---	840 U
4-BROMOPHENYL PHENYL ETHER	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
4-Chloro-3-methylphenol	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
4-CHLOROPHENYL PHENYL ETHER	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
4-Methylphenol	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
4-NITROPHENOL	NA	1500 U	---	770 U	---	4100 U	5100 U	---	4700 U	1700 U	15000 U	---	730 U	---	1400 U	---	15000 U	37000 U	780 U	---	44000 U	1700 U	---	840 U
Acenaphthene	NA	400 U	---	41 J	---	290 J	650 J	---	1200 U	430 U	3100 J	---	190 U	---	370 U	---	2300 J	4600 J	200 U	---	11000 U	430 U	---	120 J
ACENAPHTHYLENE	NA	400 U	---	50 J	---	220 J	1300 U	---	1200 U	430 U	1200 J	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	62 J
ACETOPHENONE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
ANTHRACENE	NA	400 U	---	71 J	---	860 J	3700	---	1200 U	130 J	7600	---	190 U	---	180 J	---	6600	12000	52 J	---	11000 U	410 J	---	270
ATRAZINE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
BENZALDEHYDE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	800	---	370 U	---	3900 U	9500 U	220	---	11000 U	430 U	---	220 U
Benzo[a]anthracene	NA	250 J	---	310	---	3600	5200	---	490 J	830	22000	---	100 J	---	770	---	16000	26000	310	---	11000 U	3000	---	1100
Benzo[a]pyrene	NA	230 J	---	300	---	3500	4600	---	520 J	830	20000	---	94 J	---	790	---	11000	20000	250	---	11000 U	2900	---	1300 J
Benzo[b]fluoranthene	NA	480 J	---	530	---	5100	6700	---	800 J	1200	28000	---	250	---	1900	---	17000	25000	660	---	11000 U	4600	---	3100 J
Benzo[g,h,i]perylene	NA	400 UJ	---	150 J	---	1500	1900	---	240 J	370 J	8500	---	69 J	---	350 J	---	2900 J	10000	130 J	---	11000 U	1200	---	730 J
Benzo[k]fluoranthene	NA	140 J	---	160 J	---	1900	2500	---	270 J	460	9100	---	47 J	---	540	---	6300	10000	150 J	---	11000 U	1600	---	1000 J
BENZYL BUTYL PHTHALATE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
bis(2-Chloroethoxy)methane	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
bis(2-chloroethyl)ether	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
bis(2-Ethylhexyl)phthalate	NA	880	---	1400	---	710 J	540 J	---	830 J	3900	870 J	---	190 U	---	160 J	---	1100 J	9500 U	47 J	---	3800 J	140 J	---	1500
CAPROLACTAM	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
CARBAZOLE	NA	400 U	---	61 J	---	480 J	1200 J	---	1200 U	84 J	4000	---	190 U	---	90 J	---	2900 J	6100 J	46 J	---	3800 J	150 J	---	120 J
Dibenz[a,h]anthracene	NA	400 UJ	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	320	---	11000 U	430 U	---	220 UJ
DIBENZOFURAN	NA	110 J	---	210	---	220 J	450 J	---	1200 U	430 U	1700 J	---	190 U	---	370 U	---	1100 J	2600 J	200 U	---	11000 U	430 U	---	88 J
DIETHYL PHTHALATE	NA	92 J	---	56 J	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
DIMETHYL PHTHALATE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
Di-n-butyl phthalate	NA	5700 J	---	1800 J	---	710 J	1300 U	---	10000	420 J	3800 U	---	150 J	---	650	---	3000 J	8300 J	200 U	---	7500 J	430 U	---	1400
Di-n-octyl phthalate	NA	400 U	---	58 J	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
FLUORANTHENE	NA	500	---	650	---	6300	12000	---	750 J	1300	45000	---	220	---	1600	---	34000	58000	570	---	11000 U	6000	---	2200
FLUORENE	NA	400 U	---	42 J	---	290 J	990 J	---	1200 U	430 U	3300 J	---	190 U	---	370 U	---	2500 J	5000 J	140 J	---	11000 U	430 U	---	110 J
HEXACHLORO-1,3-BUTADIENE	0.5	400 U	0.1 U	200 U	0.1 U	1100 U	1300 U	0.1 U	1200 U	430 U	3800 U	0.1 U	190 U	0.1 U	370 U	0.1 U	3900 U	9500 U	200 U	0.1 U	11000 U	430 U	0.1 U	220 U
HEXACHLOROBENZENE	0.13	400 U	0.1 U	200 U	0.1 U	1100 U	1300 U	0.1 U	1200 U	430 U	3800 U	0.1 U	190 U	0.1 U	370 U	0.1 U	3900 U	9500 U	200 U	0.1 U	11000 U	430 U	0.1 U	220 U
HEXACHLOROCYCLOPENTADIENE	NA	400 U	---	200 U	---	1100 UJ	1300 UJ	---	1200 UJ	430 UJ	3800 UJ	---	190 U	---	370 UJ	---	3900 UJ	9500 U	200 UJ	---	11000 U	430 UJ	---	220 UJ
HEXACHLOROETHANE	3	400 U	0.1 U	200 U	0.1 U	1100 U	1300 U	0.1 U	1200 U	430 U	3800 U	0.1 U	190 U	0.1 U	370 U	0.1 U	3900 U	9500 U	200 U	0.1 U	11000 U	430 U	0.1 U	220 U
Indeno[1,2,3-cd]pyrene	NA	400 U	---	92 J	---	1300 J	1700 J	---	1200 UJ	320 J	7700 J	---	54 J	---	240 J	---	4500 J	11000	100 J	---	11000 U	1100 J	---	420 J
NAPHTHALENE	NA	330 J	---	770	---	320 J	290 J	---	1200 U	430 U	2000 J	---	60 J	---	92 J	---	3900 U	2200 J	160 J	---	11000 U	99 J	---	160 J
NITROBENZENE	2	400 U	0.1 U	200 U	0.1 U	1100 U	1300 U	0.1 U	1200 U	430 U	3800 U	0.1 U	190 U	0.1 U	370 U	0.1 U	3900 U	9500 U	200 U	0.1 U	11000 U	430 U	0.1 U	220 U
N-Nitroso-di-n-propylamine	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
N-NITROSODIPHENYLAMINE	NA	160 J	---	120 J	---	1400	2100	---	2700	180 J	3800 U	---	190 U	---	73 J	---	3900 U	9500 U	270	---	180000	430 U	---	100 J
P-CHLOROANILINE	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
PENTACHLOROPHENOL	100	1500 U	0.5 U	770 U	0.5 U	4100 U	5100 U	0.5 U	4700 U	1700 U	15000 U	0.5 U	730 U	0.5 U	1400 U	0.5 U	15000 U	37000 U	780 U	0.5 U	44000 U	1700 U	0.5 U	840 U
PHENANTHRENE	NA	480	---	740	---	4500	9000	---	430 J	640	38000	---	330	---	1200	---	24000	47000	1400	---	11000 U	1500	---	1500
PHENOL	NA	400 U	---	200 U	---	1100 U	1300 U	---	1200 U	430 U	3800 U	---	190 U	---	370 U	---	3900 U	9500 U	200 U	---	11000 U	430 U	---	220 U
P-NITROANILINE	NA	770 U	---	390 U	---	2100 U	2600 U	---	2300 U	830 U	7300 U	---	360 U	---	720 U	---	7700 U	18000 U	390 U	---	22000 U	830 U	---	420 U
PYRENE	NA	510	---	640	---	5700	9500	---	850 J	1200	39000	---	200	---	1500	---	24000	44000	510	---	11000 U	5700	---	1900
PYRIDINE	5	---	0.1 U	---	0.1 U	---	---	0.1 U	---	---	---	0.1 U	---	0.1 U	---	0.1 U	---	---	---	0.1 U	---	---	0.1 U	---

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimate value
H - Sample analyzed outside holding time
B - Compound detected in associated method blank.
R - Rejected
NA - Not Applicable
ug/kg - micrograms per kilogram
mg/L - milligrams per liter
--- Not analyzed per work plan
*- 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics

Location ID	Part 371 Criteria* (mg/L)	TP56		TP57	TP58		TP58SW	TP59	TP59NW	TP60		TP61		TP62		TP63	TP64		TP65	TP66	
Units		Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)
Sample Date		6/20/2007		6/19/2007	6/19/2007		6/21/2007	6/19/2007	6/21/2007	6/20/2007		6/20/2007		6/20/2007		6/21/2007	6/21/2007		6/21/2007	6/21/2007	
Chemical Name																					
(3+4)-Methylphenol	200	---	0.1 U	---	---	0.1 U	---	---	---	---	0.1 U	---	0.1 U	---	0.1 U	---	---	0.1 U	---	---	0.1 U
1,1'-Biphenyl	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
1,2,4,5-TETRACHLOROBENZENE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 U	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
1,2-BENZPHENANTHRACENE	NA	1300	---	760	20000	---	230 J	190 J	400 J	3100	---	200	---	620	---	210	3600	---	530 J	380	---
1,4-DICHLOROBENZENE	7.5	---	0.1 U	---	---	0.1 U	---	---	---	---	0.1 U	---	0.1 U	---	0.1 U	---	---	0.1 U	---	---	0.1 U
1,4-Dioxane	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
2,2'-oxybis(1-Chloropropane)	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
2,4,5-TRICHLOROPHENOL	400	400 U	0.5 U	480 U	8900 U	0.5 U	460 U	1100 U	500 UJ	840 U	0.5 U	370 U	---	350 U	---	360 U	1800 U	---	3500 U	360 U	---
2,4,6-Trichlorophenol	2	200 U	0.1 U	250 U	4600 U	0.1 U	240 U	570 U	260 UJ	430 U	0.1 U	190 U	0.1 U	180 U	0.1 U	190 U	920 U	0.1 U	1800 U	190 U	0.1 U
2,4-DICHLOROPHENOL	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
2,4-DIMETHYLPHENOL	NA	53 J	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
2,4-DINITROPHENOL	NA	790 U	---	960 U	1800 U	---	920 U	R	1000 UJ	1700 U	---	740 U	---	710 U	---	720 U	3600 U	---	7000 U	720 U	---
2,4-DINITROTOLUENE	0.13	200 U	0.1 U	250 U	4600 U	0.1 U	240 U	570 U	260 UJ	430 U	0.1 U	190 U	0.1 U	180 U	0.1 U	190 U	920 U	0.1 U	1800 U	190 U	0.1 U
2,6-DINITROTOLUENE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
2-CHLORONAPHTHALENE	NA	85 J	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
2-CHLOROPHENOL	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
2-METHYLNAPHTHALENE	NA	120 J	---	54 J	4600 U	---	240 U	570 U	260 UJ	87 J	---	190 U	---	70 J	---	190 U	240 J	---	1800 U	190 U	---
2-Methylphenol	200	48 J	0.1 U	250 U	4600 U	0.1 U	240 U	570 U	260 UJ	430 U	0.1 U	190 U	0.1 U	180 U	0.1 U	190 U	920 U	0.1 U	1800 U	190 U	0.1 U
2-NITROANILINE	NA	390 J	---	480 U	8900 U	---	460 U	220 J	130 J	200 J	---	370 U	---	350 U	---	360 U	1800 U	---	3500 U	360 U	---
2-NITROPHENOL	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
3,3'-DICHLOROBENZIDINE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
3-NITROANILINE	NA	400 U	---	480 U	8900 U	---	460 U	1100 U	500 U	840 U	---	370 U	---	350 U	---	360 U	1800 U	---	3500 U	360 U	---
4,6-Dinitro-2-methylphenol	NA	790 U	---	960 U	18000 U	---	920 U	2200 U	1000 U	1700 U	---	740 U	---	710 U	---	720 U	3600 U	---	7000 U	720 U	---
4-BROMOPHENYL PHENYL ETHER	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
4-Chloro-3-methylphenol	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
4-CHLOROPHENYL PHENYL ETHER	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
4-Methylphenol	NA	190 J	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
4-NITROPHENOL	NA	790 U	---	960 U	18000 U	---	920 U	2200 U	1000 U	1700 U	---	740 U	---	710 U	---	720 U	3600 U	---	7000 U	720 U	---
Acenaphthene	NA	45 J	---	120 J	4600 U	---	240 U	570 U	260 UJ	300 J	---	190 U	---	180 U	---	190 U	400 J	---	1800 U	190 U	---
ACENAPHTHYLENE	NA	83 J	---	250 U	4600 U	---	240 U	570 U	260 UJ	150 J	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	49 J	---
ACETOPHENONE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
ANTHRACENE	NA	150 J	---	230 J	2300 J	---	240 U	570 U	68 J	660	---	190 U	---	41 J	---	190 U	760 J	---	1800 U	51 J	---
ATRAZINE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
BENZALDEHYDE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
Benzo[a]anthracene	NA	930	---	760	17000	---	170 J	570 U	340 J	2600	---	110 J	---	160 J	---	140 J	3300	---	1800 U	280	---
Benzo[a]pyrene	NA	1200 J	---	610 J	29000	---	180 J	110 J	360 J	2600	---	150 J	---	170 J	---	180 J	3200	---	1800 U	320	---
Benzo[b]fluoranthene	NA	2500 J	---	1400 J	40000	---	370	270 J	610 J	4500	---	320	---	380	---	290	4500	---	440 J	500	---
Benzo[g,h,i]perylene	NA	690 J	---	340 J	20000	---	120 J	570 UJ	140 J	1000	---	79 J	---	100 J	---	110 J	1300	---	1800 U	140 J	---
Benzo[k]fluoranthene	NA	600 J	---	270 J	12000	---	110 J	570 UJ	210 J	1500	---	98 J	---	89 J	---	94 J	1700	---	1800 U	170 J	---
BENZYL BUTYL PHTHALATE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
bis(2-Chloroethoxy)methane	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
bis(2-chloroethyl)ether	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
bis(2-Ethylhexyl)phthalate	NA	110 J	---	100 J	4600 U	---	680	220 J	260 UJ	1300	---	77 J	---	110 J	---	780	680 J	---	1800 U	130 J	---
CAPROLACTAM	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
CARBAZOLE	NA	55 J	---	100 J	1000 J	---	240 U	150 J	58 J	490	---	190 U	---	180 U	---	190 U	400 J	---	1800 U	87 J	---
Dibenz[a,h]anthracene	NA	200 UJ	---	250 UJ	4600 U	---	240 U	570 UJ	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
DIBENZOFURAN	NA	66 J	---	64 J	4600 U	---	240 U	570 U	260 UJ	130 J	---	190 U	---	180 U	---	190 U	190 J	---	1800 U	190 U	---
DIETHYL PHTHALATE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
DIMETHYL PHTHALATE	NA	200 U	---	250 U	4600 U	---	240 U	330 J	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
Di-n-butyl phthalate	NA	970	---	250 U	4600 U	---	690	7400 J	1400 J	3800	---	460	---	660	---	590	720 J	---	15000	270	---
Di-n-octyl phthalate	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
FLUORANTHENE	NA	900	---	1300	20000	---	260	250 J	160 J	5300	---	210	---	400	---	300	6100	---	610 J	600	---
FLUORENE	NA	200 U	---	97 J	4600 U	---	240 U	570 U	260 UJ	260 J	---	190 U	---	180 U	---	190 U	340 J	---	1800 U	190 U	---
HEXACHLORO-1,3-BUTADIENE	0.5	200 U	0.1 U	250 U	4600 U	0.1 U	240 U	570 U	260 UJ	430 U	0.1 U	190 U	0.1 U	180 U	0.1 U	190 U	920 U	0.1 U	1800 U	190 U	0.1 U
HEXACHLOROBENZENE	0.13	200 U	0.1 U	250 U	4600 U	0.1 U	240 U	570 U	260 UJ	430 U	0.1 U	190 U	0.1 U	180 U	0.1 U	190 U	920 U	0.1 U	1800 U	190 U	0.1 U
HEXACHLOROCYCLOPENTADIENE	NA	200 U	---	250 U	4600 UJ	---	240 U	570 U	260 UJ	430 UJ	---	190 UJ	---	180 U	---	190 UJ	920 UJ	---	1800 UJ	190 UJ	---
HEXACHLOROETHANE	3	200 U	0.1 U	250 U	4600 U	0.1 U	240 U	570 U	260 UJ	430 U	0.1 U	190 U	0.1 U	180 U	0.1 U	190 U	920 U	0.1 U	1800 U	190 U	0.1 U
Indeno[1,2,3-cd]pyrene	NA	450	---	220 J	20000	---	84 J	570 U	120 J	600 J	---	42 J	---	54 J	---	57 J	1100 J	---	1800 UJ	120 J	---
NAPHTHALENE	NA	250	---	96 J	4600 U	---	240 U	130 J	260 UJ	150 J	---	190 U	---	79 J	---	190 U	250 J	---	1800 U	190 U	---
NITROBENZENE	2	95 J	0.1 U	250 U	4600 U	0.1 U	240 U	570 U	260 UJ	430 U	0.1 U	190 U	0.1 U	180 U	0.1 U	190 U	920 U	0.1 U	1800 U	190 U	0.1 U
N-Nitroso-di-n-propylamine	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
N-NITROSODIPHENYLAMINE	NA	540	---	170 J	4600 U	---	240 U	4200 J	260 UJ	4600	---	60 J	---	92 J	---	40 J	900 J	---	1800 U	1700	---
P-CHLOROANILINE	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	430 U	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
PENTACHLOROPHENOL	100	790 U	0.5 U	960 U	18000 U	0.5 U	920 U	2200 U	1000 U	1700 U	0.5 U	740 U	0.5 U	710 U	0.5 U	720 U	3600 U	0.5 U	7000 U	720 U	0.5 U
PHENANTHRENE	NA	630	---	1200	10000	---	190 J	280 J	380 J	4400	---	170 J	---	300	---	160 J	4900	---	440 J	340	---
PHENOL	NA	200 U	---	250 U	4600 U	---	240 U	570 U	260 UJ	330 J	---	190 U	---	180 U	---	190 U	920 U	---	1800 U	190 U	---
P-NITROANILINE	NA	400 U	---	480 U	8900 U	---	460 U	1100 U	500 UJ	840 U	---	370 U	---	350 U	---	360 U	1800 U	---	3500 U	360 U	---
PYRENE	NA	1100	---	1500	19000	---	260	230 J	530 J	5800	---	200	---	370	---	390	5600	---	570 J	630	---
PYRIDINE	5	---	0.1 U	---	---	0.1 U	---	---	---	---	0.1 U	---	0.1 U	---	0.1 U	---	---	0.1 U	---	---	0.1 U

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimate value
H - Sample analyzed outside holding time
B - Compound detected in associated method blank.
R - Rejected
NA - Not Applicable
ug/kg - micrograms per kilogram
mg/L - milligrams per liter
--- Not analyzed per work plan
*- 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics

Table 3 - South Landfill SVOCs Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID	Part 371 Criteria* (mg/L)	TP67		TP67SE (Special)		TP67SE	TP68	TP68NE Special		TP68NE	TP69		TP70	
Units		Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)
Sample Date		6/19/2007		6/21/2007		6/21/2007	6/19/2007	6/21/2007		6/21/2007	6/19/2007		6/19/2007	
Chemical Name														
(3+4)-Methylphenol	200	---	0.1 U	---	0.1 U	---	---	---	0.1 U	---	---	0.1 U	---	0.1 U
1,1'-Biphenyl	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
1,2,4,5-TETRACHLOROBENZENE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
1,2-BENZPHENANTHRACENE	NA	340	---	220 J	---	340	970	68 J	---	660	2600	---	1500	---
1,4-DICHLOROBENZENE	7.5	---	0.1 U	---	0.1 U	---	---	---	0.1 U	---	---	0.1 U	---	0.1 U
1,4-Dioxane	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
2,2'-oxybis(1-Chloropropane)	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
2,4,5-TRICHLOROPHENOL	400	480 U	---	510 U	---	450 U	460 U	410 U	---	440 U	870 U	---	940 U	---
2,4,6-Trichlorophenol	2	250 U	0.1 U	260 U	0.1 U	230 U	240 U	210 U	0.1 U	230 U	450 U	0.1 U	480 U	0.1 U
2,4-DICHLOROPHENOL	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
2,4-DIMETHYLPHENOL	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
2,4-DINITROPHENOL	NA	960 U	---	1000 U	---	890 U	920 U	830 U	---	880 U	1700 U	---	1900 U	---
2,4-DINITROTOLUENE	0.13	250 U	0.1 U	260 U	0.1 U	230 U	240 U	210 U	0.1 U	230 U	450 U	0.1 U	480 U	0.1 U
2,6-DINITROTOLUENE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
2-CHLORONAPHTHALENE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
2-CHLOROPHENOL	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
2-METHYLNAPHTHALENE	NA	250 U	---	260 U	---	230 U	130 J	210 U	---	230 U	180 J	---	480 U	---
2-Methylphenol	200	250 U	0.1 U	260 U	0.1 U	230 U	240 U	210 U	0.1 U	230 U	450 U	0.1 U	480 U	0.1 U
2-NITROANILINE	NA	480 U	---	510 U	---	450 U	460 U	410 U	---	92 J	210 J	---	940 U	---
2-NITROPHENOL	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
3,3'-DICHLOROBENZIDINE	NA	R	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
3,5,5-TRIMETHYL-2-CYCLOHEXENE-1-ONE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
3-NITROANILINE	NA	480 U	---	510 U	---	450 U	460 U	410 U	---	440 U	870 U	---	940 U	---
4,6-Dinitro-2-methylphenol	NA	960 U	---	1000 U	---	890 U	920 U	830 U	---	880 U	1700 U	---	1900 U	---
4-BROMOPHENYL PHENYL ETHER	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
4-Chloro-3-methylphenol	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
4-CHLOROPHENYL PHENYL ETHER	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
4-Methylphenol	NA	250 U	---	260 U	---	230 U	83 J	210 U	---	230 U	450 U	---	480 U	---
4-NITROPHENOL	NA	960 U	---	1000 U	---	890 U	920 U	830 U	---	880 U	1700 U	---	1900 U	---
Acenaphthene	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	330 J	---	140 J	---
ACENAPHTHYLENE	NA	250 U	---	260 U	---	230 U	80 J	210 U	---	230 U	140 J	---	480 U	---
ACETOPHENONE	NA	250 U	---	260 U	---	380	240 U	210 U	---	230 U	450 U	---	480 U	---
ANTHRACENE	NA	250 U	---	260 U	---	73 J	170 J	210 U	---	100 J	810	---	430 J	---
ATRAZINE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
BENZALDEHYDE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
Benzo[a]anthracene	NA	270	---	150 J	---	280	790	210 U	---	560	2400	---	1500	---
Benzo[a]pyrene	NA	280	---	150 J	---	250	910	42 J	---	570	2000 J	---	1200 J	---
Benzo[b]fluoranthene	NA	510	---	300	---	470	1900	84 J	---	930	3700 J	---	2400 J	---
Benzo[g,h,i]perylene	NA	160 J	---	110 J	---	140 J	720	46 J	---	300	800 J	---	490 J	---
Benzo[k]fluoranthene	NA	160 J	---	77 J	---	130 J	450	210 U	---	290	900 J	---	650 J	---
BENZYL BUTYL PHTHALATE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
bis(2-Chloroethoxy)methane	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
bis(2-chloroethyl)ether	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
bis(2-Ethylhexyl)phthalate	NA	320	---	1600	---	1000	340	210 U	---	82 J	450 U	---	340 J	---
CAPROLACTAM	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
CARBAZOLE	NA	250 U	---	260 U	---	64 J	88 J	210 U	---	54 J	320 J	---	270 J	---
Dibenz[a,h]anthracene	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 UJ	---	480 UJ	---
DIBENZOFURAN	NA	250 U	---	260 U	---	230 U	120 J	210 U	---	230 U	190 J	---	140 J	---
DIETHYL PHTHALATE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
DIMETHYL PHTHALATE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
Di-n-butyl phthalate	NA	1200	---	2700	---	2500	650	210 U	---	220 J	650	---	6800	---
Di-n-octyl phthalate	NA	250 U	---	240 J	---	280	240 U	210 U	---	230 U	450 U	---	480 U	---
FLUORANTHENE	NA	380	---	280	---	510	1100	66 J	---	890	4500	---	3100	---
FLUORENE	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	340 J	---	130 J	---
HEXACHLORO-1,3-BUTADIENE	0.5	250 U	0.1 U	260 U	0.1 U	230 U	240 U	210 U	0.1 U	230 U	450 U	0.1 U	480 U	0.1 U
HEXACHLOROBENZENE	0.13	250 U	0.1 U	260 U	0.1 U	230 U	240 U	210 U	0.1 U	230 U	450 U	0.1 U	480 U	0.1 U
HEXACHLOROCYCLOPENTADIENE	NA	250 U	---	260 UJ	---	230 U	240 U	210 UJ	---	230 U	450 U	---	480 U	---
HEXACHLOROETHANE	3	250 U	0.1 U	260 U	0.1 U	230 U	240 U	210 U	0.1 U	230 U	450 U	0.1 U	480 U	0.1 U
Indeno[1,2,3-cd]pyrene	NA	140 J	---	87 J	---	110 J	480	45 J	---	240 J	530	---	330 J	---
NAPHTHALENE	NA	73 J	---	260 U	---	74 J	190 J	210 U	---	230 U	300 J	---	190 J	---
NITROBENZENE	2	250 U	0.1 U	260 U	0.1 U	230 U	240 U	210 U	0.1 U	230 U	450 U	0.1 U	480 U	0.1 U
N-Nitroso-di-n-propylamine	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
N-NITROSODIPHENYLAMINE	NA	520	---	79 J	---	850	400	210 U	---	810	4500	---	620	---
P-CHLOROANILINE	NA	R	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
PENTACHLOROPHENOL	100	960 U	0.5 U	1000 U	0.5 U	890 U	920 U	830 U	0.5 U	880 U	1700 U	0.5 U	1900 U	0.5 U
PHENANTHRENE	NA	240 J	---	180 J	---	430	990	85 J	---	580	4000	---	2400	---
PHENOL	NA	250 U	---	260 U	---	230 U	240 U	210 U	---	230 U	450 U	---	480 U	---
P-NITROANILINE	NA	480 U	---	510 U	---	450 U	460 U	410 U	---	440 U	870 U	---	940 U	---
PYRENE	NA	380	---	260 J	---	510	1000	60 J	---	890	4900	---	3300	---
PYRIDINE	5	---	0.1 U	---	0.1 U	---	---	---	0.1 U	---	---	0.1 U	---	0.1 U

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimate value
H - Sample analyzed outside holding time
B - Compound detected in associated method blank.
R - Rejected
NA - Not Applicable
ug/kg - micrograms per kilogram
mg/L - milligrams per liter
--- Not analyzed per work plan
*- 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics

Table 4 - South Landfill VOCs Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID	Part 371 Criteria* (mg/L)	TP44		TP44 (Duplicate)		TP46		TP48		TP49		TP50		TP52		TP54		TP56		TP58		TP60		TP61	
Units		Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)
Sample Date		6/20/2007		6/20/2007		6/21/2007		6/20/2007		6/20/2007		6/20/2007		6/20/2007		6/20/2007		6/20/2007		6/19/2007		6/20/2007		6/20/2007	
Chemical Name																									
1,1,1-Trichloroethane	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
1,1,2,2-TETRACHLOROETHANE	NA	2.9 UJ	---	R	---	3.9 UJ	---	2.8 UJ	---	R	---	R	---	R	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
1,1,2-TRICHLOROETHANE	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
1,1-DICHLOROETHANE	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
1,1-DICHLOROETHYLENE	0.7	2.9 U	0.01 U	2.9 U	0.01 U	3.9 U	R	2.8 U	0.01 U	2.8 U	0.01 U	2.7 U	0.01 U	3 U	0.01 U	3.1 U	0.01 U	3 U	0.01 U	3.4 U	0.01 U	3.2 U	0.01 U	2.8 U	0.01 U
1,2,3-TRICHLOROBENZENE	NA	2.9 UJ	---	R	---	3.9 UJ	---	2.8 UJ	---	R	---	R	---	R	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
1,2,4-TRICHLOROBENZENE	NA	5.9 UJ	---	R	---	7.8 UJ	---	5.6 UJ	---	R	---	R	---	R	---	6.3 UJ	---	6 UJ	---	6.8 UJ	---	6.4 UJ	---	5.6 UJ	---
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	NA	5.9 UJ	---	R	---	7.8 UJ	---	5.6 UJ	---	R	---	R	---	R	---	6.3 UJ	---	6 UJ	---	6.8 UJ	---	6.4 UJ	---	5.6 UJ	---
1,2-Dibromoethane	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
1,2-DICHLOROBENZENE	NA	2.9 UJ	---	R	---	3.9 UJ	---	2.8 UJ	---	R	---	R	---	R	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
1,2-DICHLOROETHANE	0.5	2.9 U	0.01 U	2.9 U	0.01 U	3.8 J	R	2.8 U	0.01 U	2.8 U	0.01 U	2.7 U	0.01 U	3 U	0.01 U	3.1 U	0.01 U	3 U	0.01 U	3.4 U	0.01 U	3.2 U	0.01 U	2.8 U	0.01 U
1,2-Dichloropropane	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
1,4-DICHLOROBENZENE	7.5	2.9 UJ	---	R	---	3.9 UJ	---	2.8 UJ	---	R	---	R	---	R	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
2-Butanone	200	12 U	0.04 U	12 U	0.04 U	16 U	R	11 U	0.04 U	11 U	0.04 U	11 U	0.04 U	12 U	0.04 U	13 U	0.04 U	12 U	0.04 U	14 U	0.04 U	13 U	0.04 U	11 U	0.04 U
4-Methyl-2-pentanone	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
ACETONE	NA	12 U	---	12 U	---	16 U	---	11 U	---	11 U	---	11 U	---	12 U	---	13 U	---	12 U	---	14 U	---	13 U	---	11 U	---
BENZENE	0.5	2.9 U	0.01 U	0.69 J	0.01 U	3.9 U	R	2.8 U	0.01 U	2.8 U	0.01 U	2.7 U	0.01 U	3 U	0.01 U	3.1 U	0.01 U	3 U	0.01 U	3.4 U	0.01 U	3.2 U	0.01 U	2.8 U	0.01 U
BROMODICHLOROMETHANE	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
BROMOMETHANE	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
CARBON DISULFIDE	NA	2.9 U	---	0.93 J	---	3.9 U	---	2.8 U	---	0.96 J	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
CARBON TETRACHLORIDE	0.5	2.9 U	0.01 U	2.9 U	0.01 U	3.9 U	R	2.8 U	0.01 U	2.8 U	0.01 U	2.7 U	0.01 U	3 U	0.01 U	3.1 U	0.01 U	3 U	0.01 U	3.4 U	0.01 U	3.2 U	0.01 U	2.8 U	0.01 U
CFC-11	NA	5.9 U	---	5.9 UJ	---	7.8 UJ	---	5.6 UJ	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
CFC-12	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
CHLORINATED FLUOROCARBON (FREON 113)	NA	2.9 U	---	2.9 U	---	3.9 UJ	---	2.8 UJ	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
CHLOROBENZENE	100	2.9 UJ	0.01 U	2.9 UJ	0.01 U	3.9 UJ	R	2.8 U	0.01 U	2.8 UJ	0.01 U	2.7 UJ	0.01 U	3 UJ	0.01 U	3.1 UJ	0.01 U	3 UJ	0.01 U	3.4 UJ	0.01 U	3.2 UJ	0.01 U	2.8 UJ	0.01 U
CHLOROBROMOMETHANE	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
CHLORODIBROMOMETHANE	NA	2.9 UJ	---	2.9 UJ	---	3.9 UJ	---	2.8 U	---	2.8 UJ	---	2.7 UJ	---	3 UJ	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
CHLOROETHANE	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
CHLOROFORM	6	2.9 U	0.01 U	2.9 U	0.01 U	3.9 U	R	2.8 U	0.01 U	0.66 J	0.01 U	2.7 U	0.01 U	3 U	0.01 U	3.1 U	0.01 U	3 U	0.01 U	3.4 U	0.01 U	3.2 U	0.01 U	2.8 U	0.01 U
CHLOROMETHANE	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
cis-1,2-Dichloroethene	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
cis-1,3-Dichloropropene	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
CYCLOHEXANE	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
DICHLOROMETHANE	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
ETHYLBENZENE	NA	2.9 UJ	---	0.62 J	---	3.9 UJ	---	2.8 U	---	2.8 UJ	---	2.7 UJ	---	3 UJ	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
Isopropylbenzene	NA	2.9 UJ	---	R	---	3.9 UJ	---	2.8 UJ	---	R	---	R	---	R	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
M-DICHLOROBENZENE	NA	2.9 UJ	---	R	---	3.9 UJ	---	2.8 UJ	---	R	---	R	---	R	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
METHYL ACETATE	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
METHYL N-BUTYL KETONE	NA	5.9 U	---	5.9 U	---	7.8 U	---	5.6 U	---	5.5 U	---	5.5 U	---	5.9 U	---	6.3 U	---	6 U	---	6.8 U	---	6.4 U	---	5.6 U	---
Methyl tert-butyl ether	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
METHYLBENZENE	NA	0.65 J	---	1.9 J	---	3.9 U	---	2.8 U	---	3.7	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
METHYLCYLOHEXANE	NA	2.9 U	---	2.9 U	---	3.9 UJ	---	2.8 UJ	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
STYRENE (MONOMER)	NA	2.9 UJ	---	2.9 UJ	---	3.9 UJ	---	2.8 U	---	2.8 UJ	---	2.7 UJ	---	3 UJ	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
Tetrachloroethene	0.7	2.9 UJ	0.01 U	2.9 UJ	0.01 U	3.9 UJ	R	2.8 U	0.01 U	2.8 UJ	0.01 U	2.7 UJ	0.01 U	3 UJ	0.01 U	3.1 UJ	0.01 U	3 UJ	0.01 U	3.4 UJ	0.01 U	3.2 UJ	0.01 U	2.8 UJ	0.01 U
trans-1,2-Dichloroethene	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
trans-1,3-Dichloropropene	NA	2.9 U	---	2.9 U	---	3.9 U	---	2.8 U	---	2.8 U	---	2.7 U	---	3 U	---	3.1 U	---	3 U	---	3.4 U	---	3.2 U	---	2.8 U	---
TRIBOMOMETHANE	NA	2.9 UJ	---	2.9 UJ	---	3.9 UJ	---	2.8 U	---	2.8 UJ	---	2.7 UJ	---	3 UJ	---	3.1 UJ	---	3 UJ	---	3.4 UJ	---	3.2 UJ	---	2.8 UJ	---
TRICHLOROETHYLENE	0.5	2.9 U	0.01 U	2.9 U	0.01 U	3.9 U	R	2.8 U	0.01 U	2.8 U	0.01 U	2.7 U	0.01 U	3 U	0.01 U	3.1 U	0.01 U	3 U	0.01 U	0.92 J	0.01 U	3.2 U	0.01 U	2.8 U	0.01 U
Vinyl chloride	0.2	5.9 U	0.02 U	5.9 U	0.02 U	7.8 U	R	5.6 U	0.02 U	5.5 U	0.02 U	5.5 U	0.02 U	5.9 U	0.02 U	6.3 U	0.02 U	6 U	0.02 U	6.8 U	0.02 U	6.4 U	0.02 U	5.6 U	0.02 U
Xylenes (total)	NA	0.72 J	---	3.9 J	---	1 J	---	5.6 U	---	5.5 UJ	---	0.59 J	---	5.9 UJ	---	6.3 UJ	---	6 UJ	---	6.8 UJ	---	6.4 UJ	---	5.6 UJ	---

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimate value
B - Compound detected in associated method blank.
H - Sample analyzed outside holding time
R- Rejected
NA - Not Applicable
ug/kg - micrograms per kilogram
mg/L - milligrams per liter
--- Not analyzed per work plan
*- 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics

Table 4 - South Landfill VOCs Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID	Part 371 Criteria* (mg/L)	TP62		TP64		TP66		TP67		TP67SE Special		TP68NE Special		TP69		TP70	
Units		Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)	Ash Total (ug/kg)	Ash TCLP (mg/L)
Sample Date		6/20/2007		6/21/2007		6/21/2007		6/19/2007		6/21/2007		6/21/2007		6/19/2007		6/19/2007	
Chemical Name																	
1,1,1-Trichloroethane	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
1,1,2,2-TETRACHLOROETHANE	NA	R	---	2.7 U	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	R	---	3.3 UJ	---	R	---
1,1,2-TRICHLOROETHANE	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
1,1-DICHLOROETHANE	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
1,1-DICHLOROETHYLENE	0.7	2.7 U	0.01 U	2.7 U	0.01 U	2.7 U	0.01 U	3.6 U	0.01 U	3.9 U	0.01 UJ	3.1 UJ	0.01 U	3.3 U	0.01 U	3.6 UJ	0.01 U
1,2,3-TRICHLOROBENZENE	NA	R	---	2.7 UJ	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	R	---	3.3 UJ	---	R	---
1,2,4-TRICHLOROBENZENE	NA	R	---	5.4 U	---	5.5 UJ	---	7.3 UJ	---	7.8 UJ	---	R	---	6.6 UJ	---	R	---
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	NA	R	---	5.4 UJ	---	5.5 UJ	---	7.3 UJ	---	7.8 UJ	---	R	---	6.6 UJ	---	R	---
1,2-Dibromoethane	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
1,2-DICHLOROBENZENE	NA	R	---	2.7 U	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	0.66 J	---	3.3 UJ	---	R	---
1,2-DICHLOROETHANE	0.5	2.7 U	0.01 U	2.7 U	0.01 U	2.7 U	0.01 U	2.8 J	0.01 U	8.7	0.01 UJ	3.1 UJ	0.01 U	3.3 U	0.01 U	3.6 UJ	0.01 U
1,2-Dichloropropane	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	1.3 J	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
1,4-DICHLOROBENZENE	7.5	R	---	2.7 U	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	1.1 J	---	3.3 UJ	---	R	---
2-Butanone	200	11 U	0.04 U	11 U	0.04 U	11 U	0.04 U	15 U	0.04 U	16 U	0.04 UJ	2.6 J	0.04 U	13 U	0.04 U	14 UJ	0.04 U
4-Methyl-2-pentanone	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	6.3 UJ	---	6.6 U	---	7.1 UJ	---
ACETONE	NA	11 U	---	11 U	---	11 U	---	15 U	---	16 U	---	32 J	---	13 U	---	14 UJ	---
BENZENE	0.5	2.7 U	0.01 U	2.7 U	0.01 U	2.7 U	0.01 U	3.6 U	0.01 U	3.9 U	0.01 UJ	1.5 J	0.01 U	3.3 U	0.01 U	0.83 J	0.01 U
BROMODICHLOROMETHANE	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
BROMOMETHANE	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	6.3 UJ	---	6.6 U	---	7.1 UJ	---
CARBON DISULFIDE	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	21 J	---	3.3 U	---	3.6 UJ	---
CARBON TETRACHLORIDE	0.5	2.7 U	0.01 U	2.7 U	0.01 U	2.7 U	0.01 U	3.6 U	0.01 U	3.9 U	0.01 UJ	3.1 UJ	0.01 U	3.3 U	0.01 U	3.6 UJ	0.01 U
CFC-11	NA	5.4 U	---	5.4 UJ	---	5.5 UJ	---	7.3 UJ	---	7.8 UJ	---	0.69 J	---	6.6 U	---	7.1 UJ	---
CFC-12	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	6.3 UJ	---	6.6 U	---	7.1 UJ	---
CHLORINATED FLUOROCARBON (FREON 113)	NA	2.7 U	---	2.7 UJ	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
CHLOROBENZENE	100	2.7 UJ	0.01 U	2.7 U	0.01 U	2.7 U	0.01 U	3.6 UJ	0.01 U	3.9 UJ	0.01 UJ	5.8 J	0.01 U	3.3 U	0.01 U	0.95 J	0.01 U
CHLOROBROMOMETHANE	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	6.3 UJ	---	6.6 U	---	7.1 UJ	---
CHLORODIBROMOMETHANE	NA	2.7 UJ	---	2.7 U	---	2.7 U	---	3.6 UJ	---	3.9 UJ	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
CHLOROETHANE	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	6.3 UJ	---	6.6 U	---	7.1 UJ	---
CHLOROFORM	6	2.7 U	0.01 U	2.7 U	0.01 U	2.7 U	0.01 U	3.6 U	0.01 U	3.9 U	0.01 UJ	3.1 UJ	0.01 U	3.3 U	0.01 U	3.6 UJ	0.01 U
CHLOROMETHANE	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	6.3 UJ	---	6.6 U	---	7.1 UJ	---
cis-1,2-Dichloroethene	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
cis-1,3-Dichloropropene	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
CYCLOHEXANE	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
DICHLOROMETHANE	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	62 J	---	6.6 U	---	7.4 UJ	---
ETHYLBENZENE	NA	2.7 UJ	---	2.7 U	---	2.7 U	---	3.6 UJ	---	3.9 UJ	---	0.88 J	---	3.3 U	---	3.6 UJ	---
Isopropylbenzene	NA	R	---	2.7 U	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	R	---	3.3 UJ	---	R	---
M-DICHLOROBENZENE	NA	R	---	2.7 U	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	R	---	3.3 UJ	---	R	---
METHYL ACETATE	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
METHYL N-BUTYL KETONE	NA	5.4 U	---	5.4 U	---	5.5 U	---	7.3 U	---	7.8 U	---	6.3 UJ	---	6.6 U	---	7.1 UJ	---
Methyl tert-butyl ether	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
METHYLBENZENE	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	1 J	---
METHYLCYLOHEXANE	NA	2.7 U	---	2.7 UJ	---	2.7 UJ	---	3.6 UJ	---	3.9 UJ	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
STYRENE (MONOMER)	NA	2.7 UJ	---	2.7 U	---	2.7 U	---	3.6 UJ	---	3.9 UJ	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
Tetrachloroethene	0.7	2.7 UJ	0.01 U	2.7 U	0.01 U	2.7 U	0.01 U	3.6 UJ	0.01 U	3.9 UJ	0.01 UJ	5.3 J	0.01 U	3.3 U	0.01 U	3.6 UJ	0.01 U
trans-1,2-Dichloroethene	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
trans-1,3-Dichloropropene	NA	2.7 U	---	2.7 U	---	2.7 U	---	3.6 U	---	3.9 U	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
TRIBOMOMETHANE	NA	2.7 UJ	---	2.7 U	---	2.7 U	---	3.6 UJ	---	3.9 UJ	---	3.1 UJ	---	3.3 U	---	3.6 UJ	---
TRICHLOROETHYLENE	0.5	2.7 U	0.01 U	2.7 U	0.01 U	1.8 J	0.01 U	3.6 U	0.01 U	3.9 U	0.01 UJ	1.5 J	0.01 U	3.3 U	0.01 U	3.6 UJ	0.01 U
Vinyl chloride	0.2	5.4 U	0.02 U	5.4 U	0.02 U	5.5 U	0.02 U	7.3 U	0.02 U	7.8 U	0.02 UJ	6.3 UJ	0.02 U	6.6 U	0.02 U	7.1 UJ	0.02 U
Xylenes (total)	NA	0.56 J	---	5.4 U	0.02 U	5.5 U	---	7.3 UJ	---	7.8 UJ	---	2.6 J	---	6.6 U	---	0.81 J	---

Notes:
U - Compound analyzed but not detected above the method detection limit.
J - Estimate value
B - Compound detected in associated method blank.
H - Sample analyzed outside holding time
R- Rejected
NA - Not Applicable
ug/kg - micrograms per kilogram
mg/L - milligrams per liter
--- Not analyzed per work plan
*- 6NYCRR Part 371.3 (e)(1) Table 1 - Maximum Concentration of Contaminants for the Toxicity Characteristics

Table 5 - South Landfill PCBs Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill
Newburgh, NY

Location ID	TP44	TP44 (Duplicate)	TP46	TP48	TP49	TP50	TP52	TP54
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Date	6/20/2007	6/20/2007	6/21/2007	6/20/2007	6/20/2007	6/20/2007	6/20/2007	6/20/2007
Chemical Name								
Aroclor 1016	0.02 U	0.02 U	0.0264 U	0.0189 U	0.0188 U	0.0187 U	0.0201 U	0.0214 U
Aroclor 1221	0.02 U	0.02 U	0.0264 U	0.0189 U	0.0188 U	0.0187 U	0.0201 U	0.0214 U
Aroclor 1232	0.02 U	0.02 U	0.0264 U	0.0189 U	0.0188 U	0.0187 U	0.0201 U	0.0214 U
Aroclor 1242	0.02 U	0.02 U	0.0264 U	0.0189 U	0.0188 U	0.0187 U	0.0201 U	0.0214 U
Aroclor 1248	0.02 U	0.02 U	0.0264 U	0.0189 U	0.0188 U	0.0187 U	0.0201 U	0.0214 U
Aroclor 1254 (note 1)	0.106	0.0706 J	0.0264 U	0.0678 J	0.0188 U	0.11	0.0201 U	0.0214 U
Aroclor 1260 (note 1)	0.02 U	0.02 U	0.0409 J	0.0189 U	0.00724 J	0.0187 U	0.00464 J	0.0214 U

Location ID	TP56	TP58	TP60	TP61	TP62	TP64	TP66	TP67
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Date	6/20/2007	6/19/2007	6/20/2007	6/20/2007	6/20/2007	6/21/2007	6/21/2007	6/19/2007
Chemical Name								
Aroclor 1016	0.0408 U	0.023 U	0.109 U	3.82 U	0.364 U	0.0185 U	0.0186 UJ	0.496 U
Aroclor 1221	0.0408 U	0.023 U	0.109 U	3.82 U	0.364 U	0.0185 U	0.0186 UJ	0.496 U
Aroclor 1232	0.0408 U	0.023 U	0.109 U	3.82 U	0.364 U	0.0185 U	0.0186 UJ	0.496 U
Aroclor 1242	0.0408 U	0.023 U	0.109 U	3.82 U	0.364 U	0.0185 U	0.0186 UJ	0.496 U
Aroclor 1248	0.0408 U	0.023 U	0.109 U	3.82 U	0.364 U	0.0185 U	0.0186 UJ	0.496 U
Aroclor 1254 (note 1)	0.0408 U	0.023 U	0.946	34.7	3.2	0.0185 U	0.174 J	2.49
Aroclor 1260 (note 1)	0.159 J	0.0285	0.109 U	3.82 U	0.364 U	0.0185 U	0.0186 UJ	0.496 U

Location ID	TP67SE Special	TP68NE Special	TP69	TP70
Units	mg/kg	mg/kg	mg/kg	mg/kg
Sample Date	6/21/2007	6/21/2007	6/19/2007	6/19/2007
Chemical Name				
Aroclor 1016	0.264 U	0.0213 U	0.112 U	1.21 U
Aroclor 1221	0.264 U	0.0213 U	0.112 U	1.21 U
Aroclor 1232	0.264 U	0.0213 U	0.112 U	1.21 U
Aroclor 1242	0.264 U	0.0213 U	0.112 U	1.21 U
Aroclor 1248	0.264 U	0.0213 U	0.112 U	1.21 U
Aroclor 1254 (note 1)	1.35	0.0213 U	0.112 U	6.07
Aroclor 1260 (note 1)	0.264 U	0.0178 J	0.719	1.21 U

Notes:
J - Analyte detected below the practical quantification limit (PQL).
U - Compound analyzed but not detected above the method detection limit.
P- Percent difference between the primary and confirmation analysis exceeded 25%
mg/kg - milligrams per kilogram

(1) Although Aroclor 1254 and Aroclor 1260 were detected at low levels in several samples of the waste fill, the total concentration of PCBs is well below the Toxic Substance Control Act (TSCA) threshold value of 50 mg/kg. As such, the waste fill would be permitted to be disposed as non-hazardous material.

Table 7
North Landfill Monitoring Well Network - Construction Summary
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill Site
Newburgh, New York

Well No.	Date Completed	Ground Elevation	Top of Casing Elevation	Measuring Point Elevation	Boring Depth	Screen Depth		Screen Elevation		Sand Pack Depth		Sand Pack Elevation		Ground Wate Elevations	
						Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	9/5/2008	9/15/2008
LF-14S	21-Aug-08	238.16	240.41	240.14	21.0	11.0	20.6	227.2	217.6	10.0	21.0	228.2	217.2	224.96	225.55
LF-15S	21-Aug-08	238.78	241.02	240.85	14.0	8.9	13.9	229.9	224.9	8.0	14.0	230.8	224.8	225.04	225.78
LF-16S	20-Aug-08	237.62	239.70	239.56	17.0	9.9	16.9	227.7	220.7	8.5	17.0	229.1	220.6	225.75	226.40
LF-17S	25-Aug-08	239.91	242.25	242.00	20.0	10.1	19.5	229.8	220.4	9.0	20.0	230.9	219.9	226.50	227.08

Well No.	Date Completed	Ground Elevation	Top of Casing Elevation	Measuring Point Elevation	Boring Depth	Open Hole Depth		Open Hole Elevation		Ground Water Elevations	
						Top	Bottom	Top	Bottom	9/5/2008	09/15-17/2008
LF-8	05-Dec-01	248.43	251.51	251.51	60.0	3.0	60.0	245.4	188.4	NA	234.71
LF-9	10-Dec-01	261.10	264.25	264.25	69.3	6.0	69.3	255.1	191.8	NA	236.78
LF-12D	04-Sep-08	246.99	249.31	249.31	19.0	3.0	19.0	244.0	228.0	233.5	233.06
LF-13D	04-Sep-08	240.15	242.11	242.11	34.0	6.9	34.0	233.3	206.2	226.1	228.42
LF-14D	26-Aug-08	238.40	240.27	240.08	39.6	23.5	37.0	214.9	201.4	224.9	225.41
LF-15D	03-Sep-08	238.69	240.65	240.65	27.0	15.5	27.0	223.2	211.7	225.2	225.76
LF-16D	03-Sep-08	237.68	239.61	239.61	31.3	20.0	29.5	217.7	208.2	226.0	226.6
LF-17D	27-Aug-08	238.74	241.17	241.17	44.0	23.0	43.4	215.7	195.3	226.5	227.06

Notes:

1. All depths in feet below ground surface
2. All elevations in feet above mean sea level.

Table 8

North Landfill Groundwater Analytical Results

Dupont-Stauffer Landfill Site
Newburgh, NY

	Location:	LF-8	LF-8	LF-8	LF-8	LF-8 Dissolved	LF-9	LF-9	LF-9	LF-9 Dissolved	LF-12D	LF-12D	LF-12D	LF-12D Dissolved
	Sample Code:	LF-8-091508	FD-091508	GW-LF-8-050609	GW-LF-8-122111	GW-LF-8-122111	LF-9-091508	GW-LF-9-050609	GW-LF-9-122211	GW-LF-9-122211	LF-12D-091708	GW-LF-12D-050609	GW-LF-12D-122211	GW-LF-12D-122211
	Sample Date:	09/15/2008	09/15/2008	05/06/2009	12/21/2011	12/21/2011	09/15/2008	05/06/2009	12/22/2011	12/22/2011	09/17/2008	05/06/2009	12/22/2011	12/22/2011
	Sample Type Code:	N	FD	N	N	N	N	N	N	N	N	N	N	N
Analyte Name	NYS Class GA*													
		Inorganics												
Aluminum	NC	143 J	126 J	80.200002 U	80.1U	80.1U	80.200002 U	80.200002 U	80.1U	80.1U	534	834	465	80.1U
Arsenic	25	10.2 U	10.2 U	10 U	6.1J	5.1U	10.2 U	10 U	5.1U	5.1U	10.2 U	10 U	5.1U	5.1U
Barium	1000	83.4	84.7	83.1	94.5	93.8	64.4	58.8	26.6	27.1	23.2	23	13.1	10.5
Beryllium	3	0.13 U	0.13 U	0.13 U	0.13U	0.13U	0.13 U	0.13 U	0.13U	0.13U	0.13 U	0.13 U	0.13U	0.13U
Cadmium	5	0.21 U	0.21 U	0.21 U	0.2U	0.2U	0.21 U	0.21 U	0.2U	0.2U	0.21 U	0.23 J	0.2U	0.2U
Calcium	NC	206000	211000	236000	234000	234000	139000	132000	119000	122000	121000	118000	83200	77500
Chromium	50	3.3 J	3.6 J	3 U	3.1J	2.8J	5 J	3 U	2.7J	1.5J	3 U	4.6 J	3.4J	1.1U
Cobalt	NC	2.1 U	2.2 J	11.2	2.8J	2.9J	2.1 U	2.1 U	0.62U	0.62U	2.1 U	2.1 U	0.62U	0.62U
Copper	200	6.1 J	6.1 J	5.5 J	0.94U	0.94U	5.6 J	2.7 U	1.3J	2.3J	5 J	8.5 J	2.6J	0.94U
Iron	300	**664**	**615**	**422 J**	**1470**	**1140**	**416**	192 J	88.4J	14.1U	**653**	**7690 J**	**973**	14.1U
Lead	25	6.9 U	6.9 U	6.9 U	2.2U	2.2U	6.9 U	6.9 U	2.2U	2.2U	6.9 U	6.9 U	2.2U	2.2U
Magnesium	35000	**62500**	**63600**	**56500**	**58200**	**58300**	**74000**	**68400**	**64000**	**65400**	**52500**	**53700**	**42000**	**39000**
Manganese	300	183	176	150	238	236	158	206	22.9	22.2	59.3	86.5	25.4	1J
Nickel	100	7.2 J	6.7 J	5.6 U	6.9J	5.9J	11.3	5.6 U	2.2J	1.7J	5.6 U	5.6 U	3.4J	2J
Potassium	NC	29300	29900	22400	23900	24000	22000	16000	4730	4850	2460	2380	1470	1150
Selenium	10	0.3 U	0.3 U	0.99 U	0.27U	0.27U	0.3 U	0.99 U	0.27U	0.27U	0.3 U	0.99 U	0.27U	0.27U
Sodium	20000	**62800**	**63300**	**53200**	**49400**	**49600**	**39100**	**31700**	12000	12300	11100	9730	4410	4280
Thallium	0.5	0.15 U	0.15 U	0.15 U	0.15U	0.15U	0.4 J	0.46 J	0.15U	0.15U	0.15 U	0.15 U	0.15U	0.15U
Vanadium	NC	2.5 UJ	2.5 UJ	2.5 U	0.96U	0.96U	2.5 UJ	2.5 U	0.96U	0.96U	2.5 UJ	2.5 U	0.96U	0.96U
Zinc	2000	8.1 U	8.1 U	8.1 U	3.2U	8.3J	13.8 J	8.1 U	3.2U	3.2U	9 J	8.1 U	3.6J	3.2U
		Volatile Organic Compounds												
1,1-Dichloroethane	5	1 U	1 U	1 U	1U	na	1 U	1 U	1U	na	1 U	1 U	1U	na
1,2-Dichloroethane	0.6	1 U	1 U	1 U	1U	na	1 U	1 U	1U	na	1 U	1 U	1U	na
Chlorobenzene	5	0.8 U	0.8 U	0.8 U	0.8U	na	0.8 U	**7**	0.8U	na	0.8 U	0.8 U	0.8U	na
		Semivolatile Organic Compounds												
Naphthalene	10	1 U	1 U	1 U	0.1U	na	1 U	1 U	0.1U	na	0.9 U	1 U	0.09U	na
Phenanthrene	50	1 U	1 U	1 U	0.1U	na	1 U	1 J	0.1U	na	0.9 U	1 U	0.09U	na

Notes:
Results in ug/L
N - Normal
FD - Field Duplicate
NC - No Criteria
U - Compound not detected above the reporting limit
J - Compound detected but the reported value may not be accurate or precise. Qualified as approximate based on excursions from QA/QC criteria.
UJ - Compound not detected above the reporting limit and the quantitation limit may be estimated. Qualified as approximate based on excursions from QA/QC criteria.
* - New York State Department of Environmental Conservation, Technical and Operational Guidance Series (1.1.1), Class GA Standards and Guidance Values, Revised June 1998.
BOLD - Exceeds Criteria

Table 8

North Landfill Groundwater Analytical Results

Dupont-Stauffer Landfill Site
Newburgh, NY

Analyte Name	Location: / Sample Code: / Sample Date: / Sample Type Code: / NYS Class GA*	LF-13D LF-13D-091708 09/17/2008 N	LF-13D GW-LF-13D-050609 05/06/2009 N	LF-13D GW-LF-13D-122211 12/22/2011 N	LF-13D Dissolved GW-LF-13D-122211 12/22/2011 N	LF-14D LF-14D-091708 09/17/2008 N	LF-14D GW-LF-14D-050609 05/06/2009 N	LF-14D LF-14D-122011 12/20/2011 N	LF-14D Dissolved LF-14D-122011 12/20/2011 N	LF-14D GW-X-1-122011 12/20/2011 FD	LF-14D Dissolved GW-X-1-122011 12/20/2011 FD	LF-14S LF-14S-091708 09/17/2008 N	LF-14S GW-LF-14S-050609 05/06/2009 N	LF-14S LF-14S-122011 12/20/2011 N
		Inorganics												
Aluminum	NC	83.3 J	965	93.3J	80.1U	97.5 J	839	819	80.1U	113J	80.1U	477	174 J	846
Arsenic	25	10.2 U	10 U	5.1U	5.1U	10.2 U	10 U	6.8J	5.1U	5.3J	5.1U	10.2 U	10 U	5.1U
Barium	1000	49.6	34.9	32	31	60.1	67.1	61.6	54.9	58.7	56.1	23.3	19.5	24.4
Beryllium	3	0.13 U	0.13 U	0.13U	0.13U	0.13 U	0.13 U	0.13U	0.13U	0.13U	0.13U	0.13 U	0.13 U	0.13U
Cadmium	5	0.21 U	0.21 U	0.2U	0.2U	0.21 U	0.21 U	0.2U	0.2U	0.2U	0.2U	0.21 U	0.21 U	0.2U
Calcium	NC	114000	103000	102000	103000	135000	160000	157000	141000	151000	143000	112000	105000	85400
Chromium	50	6.5 J	8.2 J	2.5J	1.1U	3.7 J	8.4 J	6.7J	1.1U	4.1J	1.3J	6.2 J	3 U	2.7J
Cobalt	NC	2.1 U	2.1 U	1.2J	0.62U	2.1 U	2.1 U	1.9J	0.97J	1.4J	0.96J	2.1 U	2.1 U	0.62U
Copper	200	11.6	4.8 J	5J	0.98J	2.7 U	13.2	8.8J	0.94U	1.6J	2J	7 J	2.7 U	3.8J
Iron	300	157 J	**1740 J**	**2410**	14.1U	**1520**	**3100 J**	**2360**	**372**	**829**	**374**	**943**	**337 J**	**1770**
Lead	25	6.9 U	6.9 U	2.2U	2.2U	6.9 U	6.9 U	2.2U	2.2U	2.2U	2.2U	6.9 U	6.9 U	2.2U
Magnesium	35000	**55200**	**44300**	**41300**	**41800**	**56100**	**61500**	**54300**	**47300**	**51100**	**48200**	28900	25900	20200
Manganese	300	61.5	43.2	53.4	3.4J	**662**	**1050**	**870**	**877**	**845**	**894**	184	26.3	102
Nickel	100	11	5.6 U	3.6J	1J	5.9 J	6.4 J	8.1J	4.5J	6.1J	4.9J	5.8 J	5.6 U	1.6J
Potassium	NC	5230	4890	4560	4590	7770	6460	5060	4780	4940	4840	4120	2750	2890
Selenium	10	0.72 J	0.99 U	0.44J	0.36J	0.3 U	0.99 U	0.28J	0.27U	0.29J	0.27U	1.8 J	2.1	1.4J
Sodium	20000	13700	5430	5050	5190	**25900**	**21600**	16600	15800	16800	16100	8960	9390	6450
Thallium	0.5	0.15 U	0.15 U	0.15U	0.15U	0.15 U	0.15 U	0.15U	0.15U	0.15U	0.15U	0.15 U	0.15 U	0.15U
Vanadium	NC	2.5 UJ	2.5 U	0.96U	0.96U	2.5 UJ	2.5 U	1.2J	0.96U	0.96U	0.96U	2.5 UJ	2.5 U	2.7J
Zinc	2000	22.5	8.1 U	3.2U	3.2U	8.1 U	17.8 J	10.3J	3.2U	3.7J	3.2U	14.3 J	8.1 U	7.7J
		Volatile Organic Compounds												
1,1-Dichloroethane	5	1 U	1 U	1U	na	**6**	5	4J	na	**5J**	na	1 U	1 U	1U
1,2-Dichloroethane	0.6	1 U	1 U	1U	na	**1 J**	**1 J**	**1J**	na	**1J**	na	1 U	1 U	1U
Chlorobenzene	5	0.8 U	0.8 U	0.8U	na	0.8 U	0.8 U	0.8U	na	0.8U	na	0.8 U	0.8 U	0.8U
		Semivolatile Organic Compounds												
Naphthalene	10	1 U	1 U	0.1U	na	0.9 U	1 U	0.1J	na	0.1U	na	0.9 U	1 U	0.1U
Phenanthrene	50	1 U	1 U	0.1U	na	0.9 U	1 U	0.1U	na	0.1U	na	0.9 U	1 U	0.1U

Notes:
Results in ug/L
N - Normal
FD - Field Duplicate
NC - No Criteria
U - Compound not detected above the reporting limit
J - Compound detected but the reported value may not be accurate or precise. Qualified as approximate based on excursions from QA/QC criteria.
UJ - Compound not detected above the reporting limit and the quantitation limit may be estimated. Qualified as approximate based on excursions from QA/QC criteria.
* - New York State Department of Environmental Conservation, Technical and Operational Guidance Series (1.1.1), Class GA Standards and Guidance Values, Revised June 1998.
BOLD - Exceeds Criteria

Table 8

North Landfill Groundwater Analytical Results

Dupont-Stauffer Landfill Site
Newburgh, NY

Analyte Name	Location: Sample Code: Sample Date: Sample Type Code: NYS Class GA*	LF-14S Dissolved GW-LF-14S-122011 12/20/2011 N	LF-15D LF-15D-091608 09/16/2008 N	LF-15D GW-LF-15D-050609 05/06/2009 N	LF-15D GW-LF-15D-122011 12/20/2011 N	LF-15D Dissolved GW-LF-15D-122011 12/20/2011 N	LF-15S LF-15S-091708 09/17/2008 N	LF-15S GW-LF-15S-050609 05/06/2009 N	LF-15S LF-15S-122011 12/20/2011 N	LF-15S Dissolved GW-LF-15S-122011 12/20/2011 N	LF-16D LF-16D-091608 09/16/2008 N	LF-16D GW-LF-16D-050509 05/05/2009 N	LF-16D GW-LF-16D-122011 12/20/2011 N	LF-16D Dissolved GW-LF-16D-122011 12/20/2011 N
		Inorganics												
Aluminum	NC	80.1U	261	80.200002 U	80.1U	80.1U	7190	42100	80.1U	80.1U	80.200002 U	134 J	109J	80.1U
Arsenic	25	5.1U	10.2 U	10 U	5.1U	5.1U	10.2 U	**43.2**	7.5J	5.1U	10.2 U	10 U	5.6J	5.1U
Barium	1000	18.1	57.5	27.8	27	26.3	89	301	26.3	25.9	39.7	38.2	35	34.5
Beryllium	3	0.13U	0.13 U	0.13 U	0.13U	0.13U	0.17 J	1.9	0.13U	0.13U	0.13 U	0.13 U	0.13U	0.13U
Cadmium	5	0.2U	0.21 U	0.21 U	0.2U	0.2U	0.21 U	1.5	0.2U	0.2U	0.21 U	0.21 U	0.2U	0.2U
Calcium	NC	81600	161000	124000	120000	112000	163000	143000	117000	111000	142000	134000	138000	131000
Chromium	50	1.1U	6.7 J	3.4 J	1.7J	1.1U	10.7 J	**61.1**	1.7J	1.7J	3 U	3.2 J	3.3J	1.2J
Cobalt	NC	0.62U	2.1 U	2.1 U	0.62U	0.62U	7.1	54.7	0.62U	0.62U	2.1 U	2.1 U	0.62U	0.62U
Copper	200	0.94U	6.2 J	5.4 J	0.94U	0.94U	29	**213**	1.4J	0.94U	3.3 J	5.3 J	2.4J	1J
Iron	300	14.1U	**2250**	**4230 J**	**2160**	14.1U	**15400**	**115000 J**	65.7J	14.1U	**865**	**5750 J**	**1020**	32.6J
Lead	25	2.2U	6.9 U	6.9 U	2.2U	2.2U	6.9 U	**70.3**	2.2U	2.2U	6.9 U	6.9 U	2.2U	2.2U
Magnesium	35000	19200	**54400**	31100	27900	26300	**51300**	**66300**	27700	26600	**51500**	**40300**	**39500**	**37200**
Manganese	300	0.67J	28	18.1	7.2	0.87J	**991**	**6060**	7	0.44U	22.8	45.5	18.4	11.2
Nickel	100	0.95U	5.6 U	5.6 U	0.95U	0.95U	13.3	**106**	0.95U	0.95U	5.6 U	5.6 U	3.2J	0.95J
Potassium	NC	2660	9850	3220	3220	3160	7310	9280	3250	3160	8500	21500	14900	14100
Selenium	10	1.5J	0.3 U	0.99 U	1.4J	1.2J	0.93 J	1.1 J	1.1J	1J	0.3 U	0.99 U	0.51J	0.65J
Sodium	20000	6310	**33400**	10900	8390	8080	14600	11200	8660	8440	18900	**28300**	19600	18800
Thallium	0.5	0.15U	0.15 U	0.15 U	0.15U	0.15U	0.15 U	0.45 J	0.15U	0.15U	0.15 U	0.15 U	0.15U	0.15U
Vanadium	NC	0.96U	2.5 UJ	2.5 U	0.96U	0.96U	13.2	71.5	0.96U	0.96U	2.5 UJ	2.5 U	0.96U	0.96U
Zinc	2000	3.2U	8.1 U	10.7 J	3.2U	3.2U	57	432	3.2U	3.2U	9.1 J	8.1 U	3.2U	3.2U
		Volatile Organic Compounds												
1,1-Dichloroethane	5	na	1 U	1 U	1U	na	1 U	1 U	1U	na	1 U	1 U	1U	na
1,2-Dichloroethane	0.6	na	1 U	1 U	1U	na	1 U	1 U	1U	na	1 U	1 U	1U	na
Chlorobenzene	5	na	0.8 U	0.8 U	0.8U	na	0.8 U	0.8 U	0.8U	na	0.8 U	0.8 U	0.8U	na
		Semivolatile Organic Compounds												
Naphthalene	10	na	0.9 U	1 U	0.09U	na	1 U	0.9 U	0.1U	na		1 U	0.1U	na
Phenanthrene	50	na	0.9 U	1 U	0.09U	na	1 U	0.9 U	0.1U	na		1 U	0.1U	na

Notes:
Results in ug/L
N - Normal
FD - Field Duplicate
NC - No Criteria
U - Compound not detected above the reporting limit
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* - New York State Department of Environmental Conservation, Technical and Operational Guidance Series (1.1.1), Class GA Standards and Guidance Values, Revised June 1998.
BOLD - Exceeds Criteria

Table 8

North Landfill Groundwater Analytical Results

Dupont-Stauffer Landfill Site
Newburgh, NY

Analyte Name	Location: Sample Code: Sample Date: Sample Type Code: NYS Class GA*	LF-16S LF-16S-091608 09/16/2008 N	LF-16S GW-LF-16S-050509 05/05/2009 N	LF-16S GW-LF-16S-122011 12/20/2011 N	LF-16S Dissolved GW-LF-16S-122011 12/20/2011 N	LF-17D LF-17D-091608 09/16/2008 N	LF-17D GW-LF-17D-050509 05/05/2009 N	LF-17D GW-X-1-050509 05/05/2009 FD	LF-17D GW-LF-17D-122111 12/21/2011 N	LF-17D Dissolved GW-LF-17D-122111 12/21/2011 N	LF-17S LF-17S-091608 09/16/2008 N	LF-17S GW-LF-17S-050509 05/05/2009 N	LF-17S GW-LF-17S-122111 12/21/2011 N	LF-17S Dissolved GW-LF-17S-122111 12/21/2011 N
		Inorganics												
Aluminum	NC	3310	64300	1060	80.1U	80.200002 U	80.200002 U	90 J	80.1U	80.1U	379	773	1060	80.1U
Arsenic	25	10.2 U	15.5 J	5.3J	5.1U	10.2 U	10 U	10 U	5.1U	5.1U	10.2 U	10 U	5.8J	6.4J
Barium	1000	55.7	396	28.5	22.3	47.2	42.5	28.3	30.8	29.3	48.1	34.6	31.2	26.1
Beryllium	3	0.13 U	**3.1**	0.13U	0.13U	0.13 U	0.13 U	0.13 U	0.13U	0.13U	0.13 U	0.13 U	0.13U	0.13U
Cadmium	5	0.21 U	2.2	0.2U	0.2U	0.21 U	0.26 J	0.21 U	0.2U	0.2U	0.21 U	0.32 J	0.2U	0.2U
Calcium	NC	137000	197000	135000	130000	195000	161000	159000	155000	157000	141000	139000	145000	144000
Chromium	50	7.7 J	**94**	6.7J	1.1U	3 U	10.5 J	3.4 J	3.7J	1.3J	7.4 J	6 J	9.9J	2J
Cobalt	NC	4.2 J	89.3	1.9J	0.62U	2.3 J	2.1 U	2.1 U	0.96J	0.62U	2.1 U	2.1 U	1.2J	0.62U
Copper	200	15.3	**283**	4J	1.2J	4.7 J	9.1 J	6.1 J	4.5J	0.94U	3.3 J	9.6 J	3.4J	0.94U
Iron	300	**7110**	**158000 J**	**2320**	14.1U	**514**	**49700 J**	**9180 J**	**26800**	97.6J	**726**	**1460 J**	**2100**	14.1U
Lead	25	6.9 J	**122**	2.8J	2.2U	6.9 U	6.9 U	6.9 U	2.2U	2.2U	6.9 U	6.9 U	2.2U	2.2U
Magnesium	35000	**42300**	**67800**	34400	33100	**57000**	**42200**	**41900**	**38200**	**38800**	**42900**	**37500**	34600	34300
Manganese	300	**394**	**7090**	**508**	**412**	**1300**	119	77	59.8	15.6	**761**	133	83.1	1.3J
Nickel	100	10.4	**151**	6.1J	1.7J	12.8	8 J	5.6 U	6.7J	1.1J	9.5 J	5.6 U	6J	1.5J
Potassium	NC	9560	9300	2330	2080	19300	6930	6920	6610	6660	6950	5590	4730	4530
Selenium	10	0.45 J	0.99 U	0.56J	0.49J	0.3 U	1.2 J	1.2 J	1.2J	1J	0.57 J	1.2 J	1.3J	1.4J
Sodium	20000	18000	16500	12000	11800	**29400**	15600	15400	13300	13500	12400	9840	9350	9260
Thallium	0.5	0.15 U	0.28 J	0.15U	0.15U	0.3 J	0.15 U	0.15 U	0.15U	0.15U	0.15 U	0.15 U	0.15U	0.15U
Vanadium	NC	5.1	101	1.9J	0.96U	2.5 UJ	2.5 U	2.5 U	0.96U	0.96U	2.5 UJ	2.5 U	2J	0.96U
Zinc	2000	31.5	578	12.9J	4.5J	8.1 U	13.4 J	8.1 U	3.2U	3.2U	8.1 U	15.4 J	7.4J	3.2U
		Volatile Organic Compounds												
1,1-Dichloroethane	5	1 U	1 U	1U	na	1 U	1 U	1 U	1U	na	1 U	1 U	1U	na
1,2-Dichloroethane	0.6	1 U	1 U	1U	na	1 U	1 U	1 U	1U	na	1 U	1 U	1U	na
Chlorobenzene	5	0.8 U	0.8 U	0.8U	na	0.8 U	0.8 U	0.8 U	0.8U	na	0.8 U	0.8 U	0.8U	na
		Semivolatile Organic Compounds												
Naphthalene	10	1 U	10 U	0.1U	na	0.9 U	1 U	1 U	0.1J	na	0.9 U	0.9 U	0.2J	na
Phenanthrene	50	1 U	10 U	0.1U	na	0.9 U	1 U	1 U	0.1U	na	0.9 U	0.9 U	0.1U	na

Notes:
Results in ug/L
N - Normal
FD - Field Duplicate
NC - No Criteria
U - Compound not detected above the reporting limit
J - Compound detected but the reported value may not be accurate or precise. Qualified as approximate based on excursions from QA/QC criteria.
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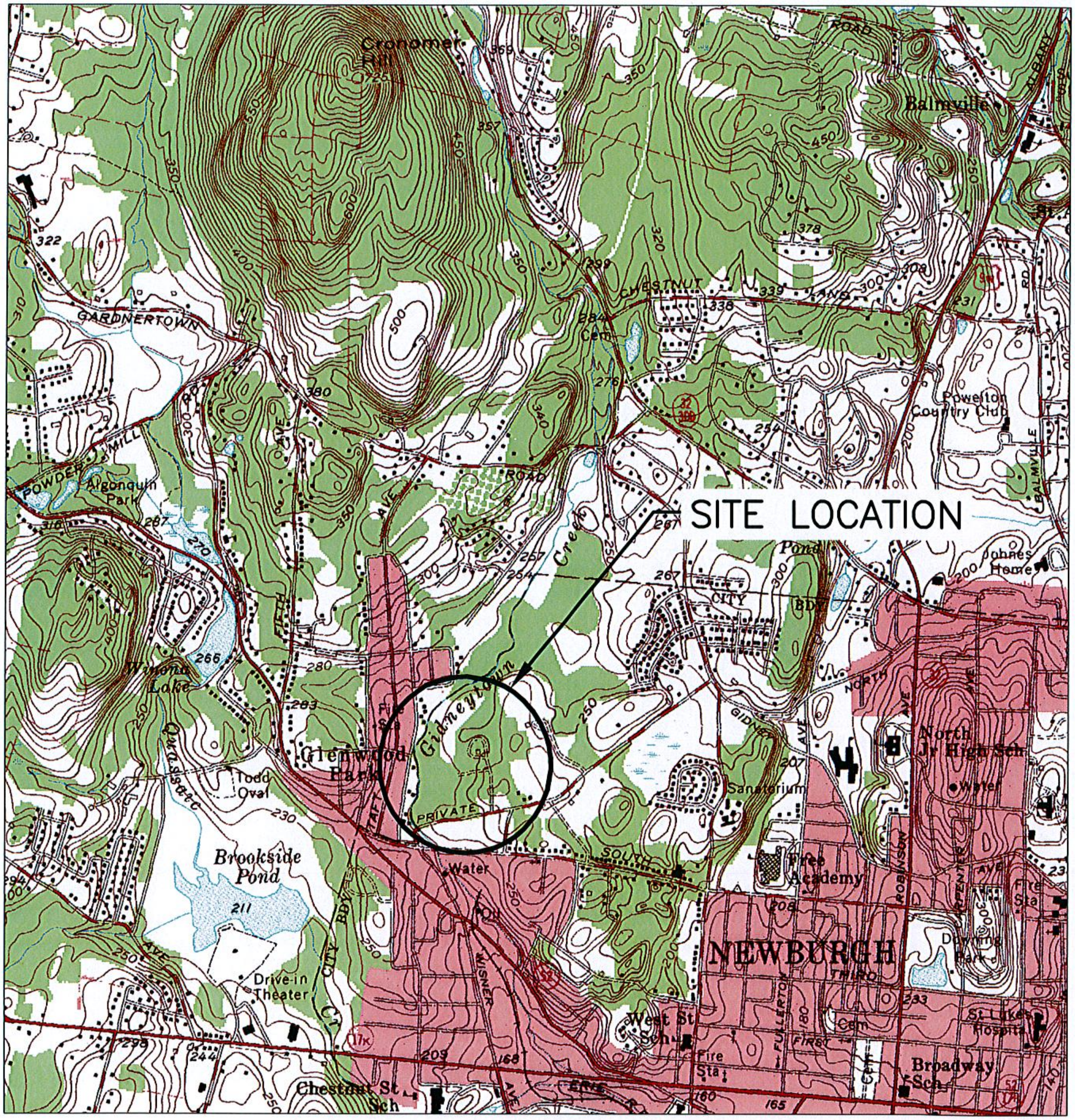
* - New York State Department of Environmental Conservation, Technical and Operational Guidance Series (1.1.1), Class GA Standards and Guidance Values, Revised June 1998.
BOLD - Exceeds Criteria

FIGURE 1



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DUPONT – STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

SITE LOCATION MAP

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

FILE NO. 5618.39860.111
NOVEMBER 2011

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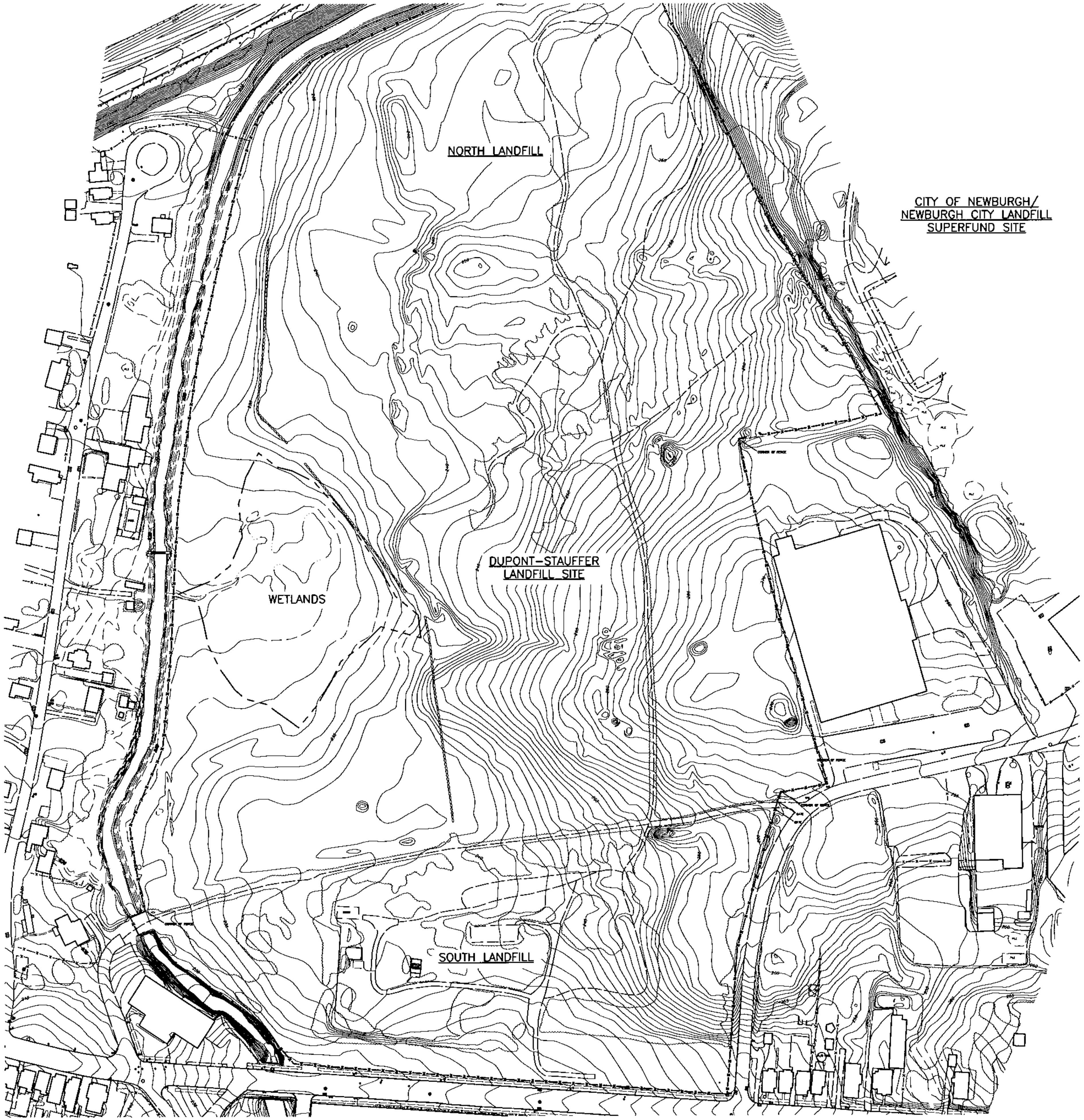

FIGURE 2

DUPONT–STAUFFER
LANDFILL SITE
NEWBURGH, NEW YORK

SITE PLAN

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NOVEMBER 2011

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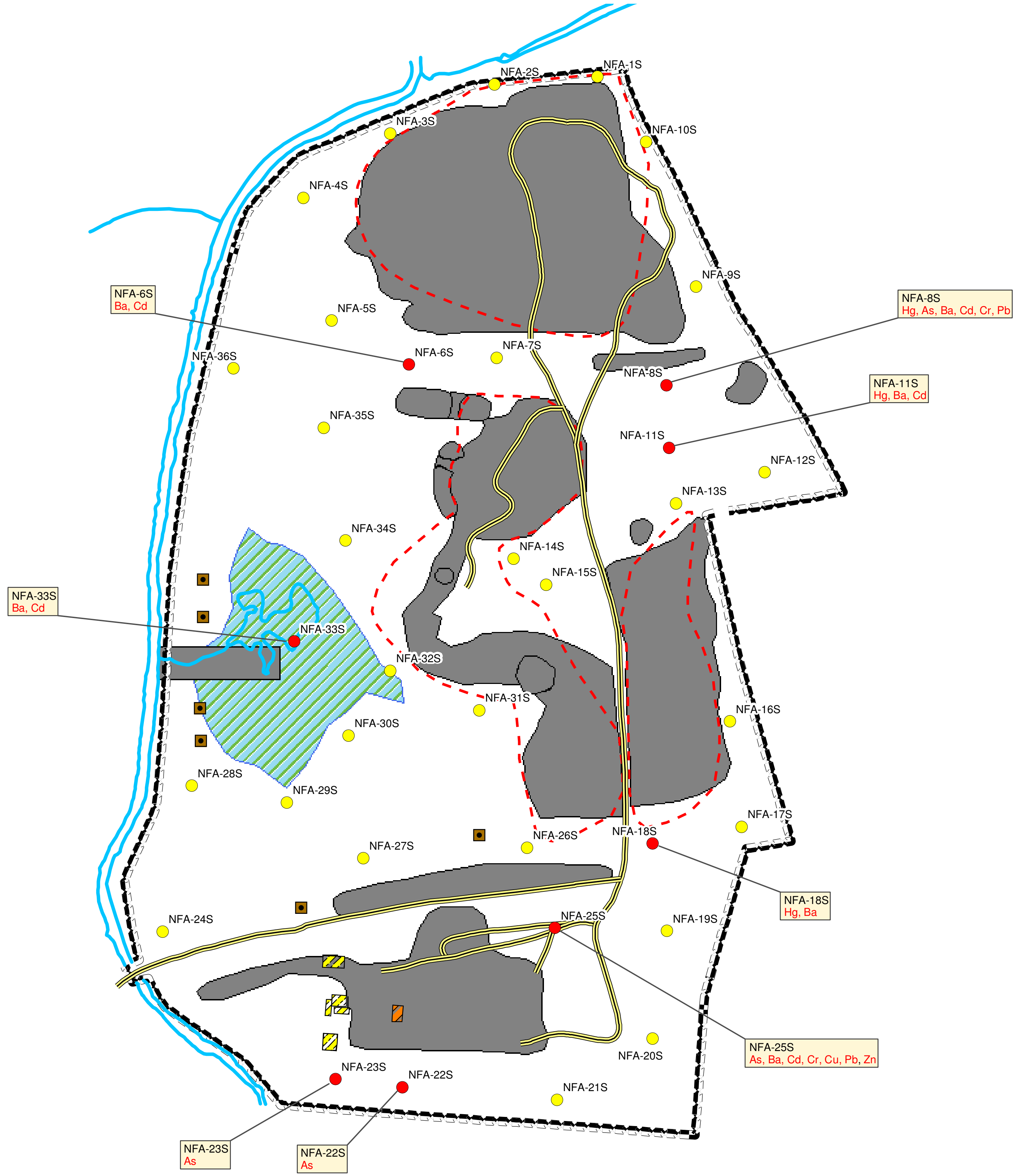

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FIGURE 3

N

LEGEND

Pre-Design Non-Fill 0-2" Sample Location

- One or more metals
- ROD SCG
- Prev Non-Fill 0-2" Sample Locations
- Water Features
- Unpaved Roads
- 2008_fill_limits
- Concrete Pads
- Brick Buildings
- Fence
- Fill Areas
- DELINEATED WETLAND

Note:

- Pre-Design sample locations were analyzed for SVOC and Metal Constituents
- Constiuents listed next to location represent values exceeding referenced criteria

DuPont Stauffer Landfill
Newburgh, New York

2008 Non-Fill Area Metals Sample Locations

0 125 250 500
Feet

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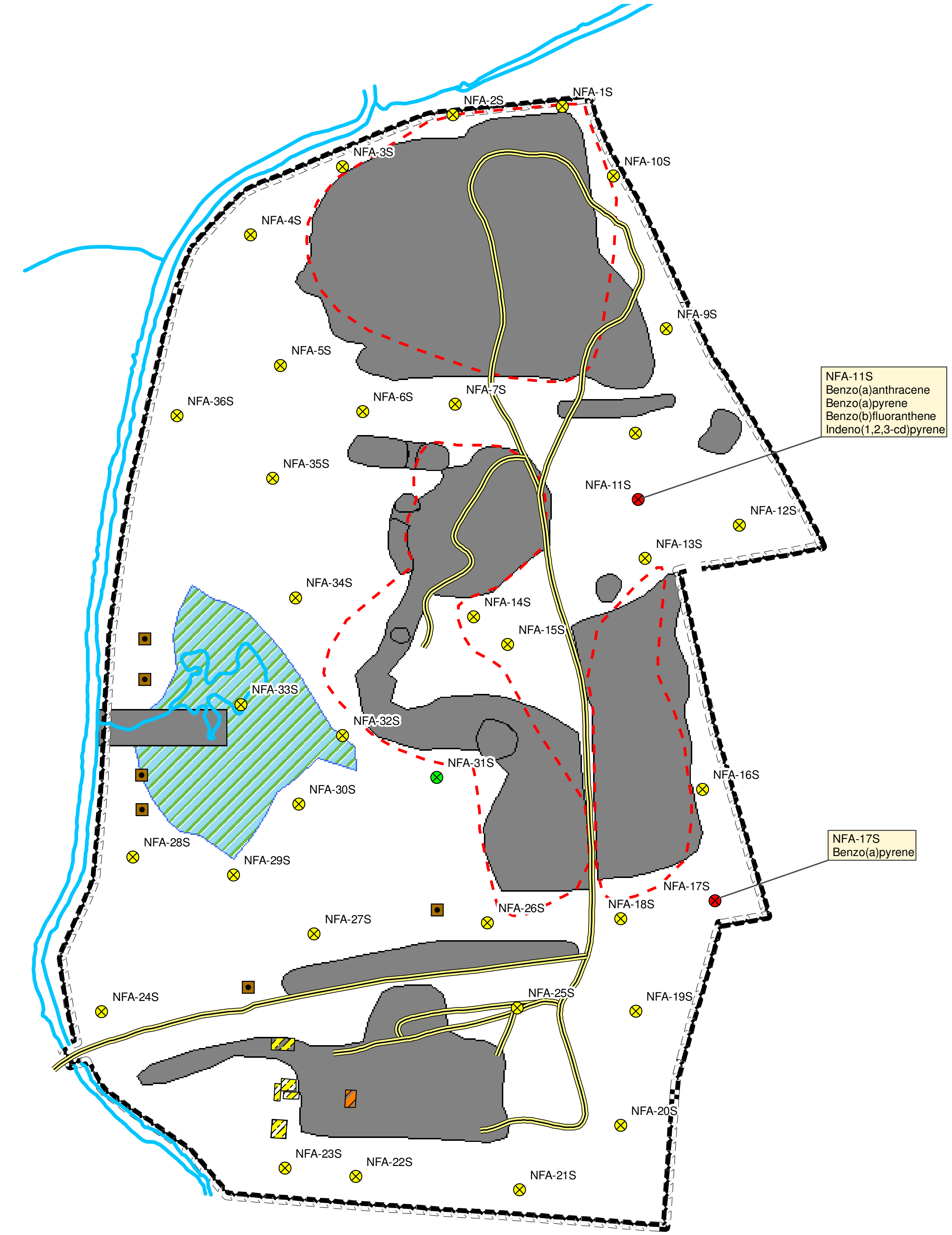

FIGURE 4

N

LEGEND

Pre-Design Non-Fill 0-2" Sample Locations

- Part 375
- ROD SCG
- Prev Non-Fill 0-2" Sample Locations
- Water Features
- Unpaved Roads
- 2008_fill_limits
- Concrete Pads
- Brick Buildings
- Fence
- Fill Areas
- DELINEATED WETLAND

Note:

- Pre-Design sample locations were analyzed for SVOC and Metal Constituents
- Constiuents listed next to location represent values exceeding referenced criteria

DuPont Stauffer Landfill
Newburgh, New York

2008 Non-Fill Area SVOC Sample Locations

0 125 250 500
Feet

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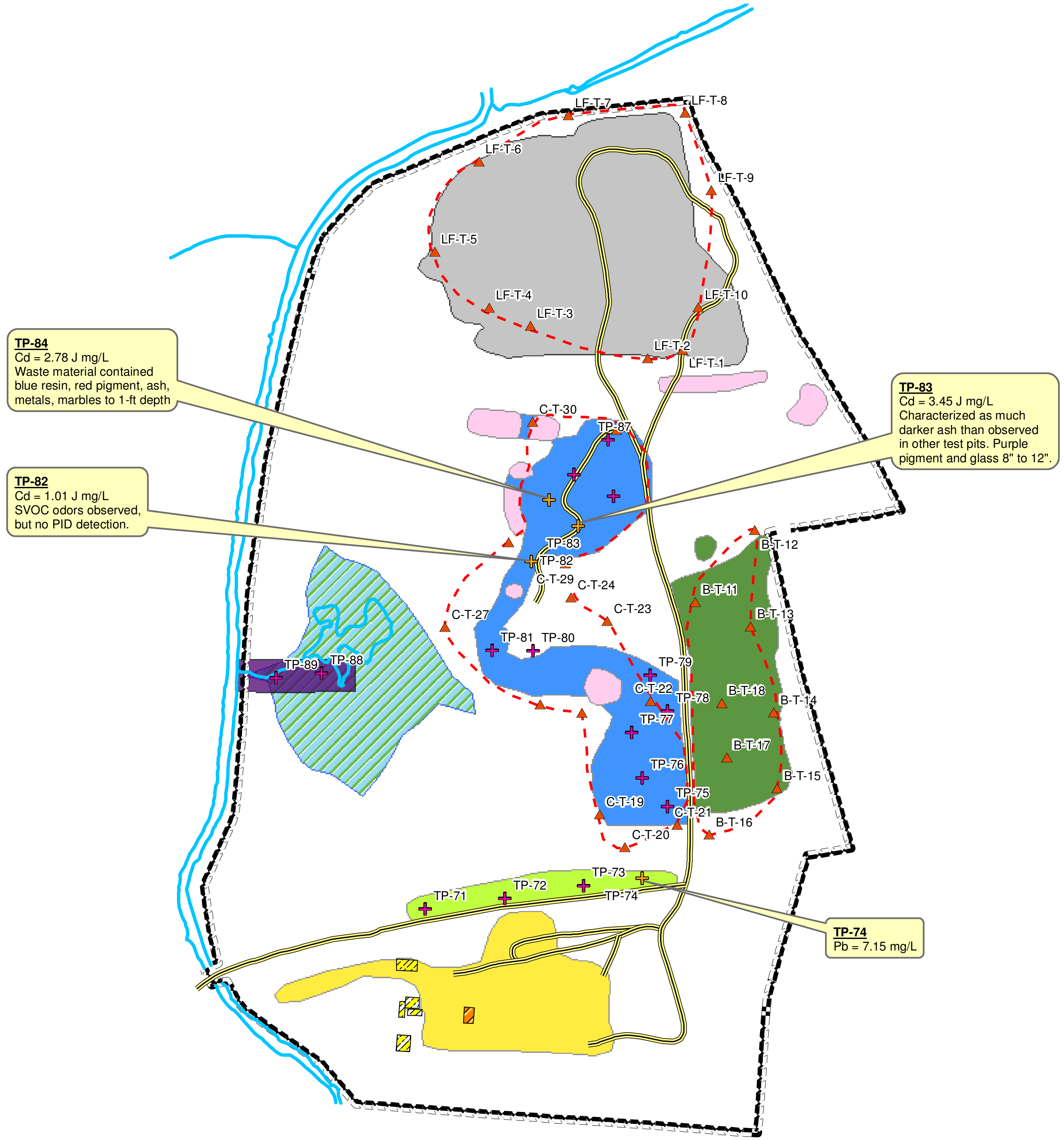

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FIGURE 5

N

LEGEND

- Pre-Design TCLP Sample (Exceeds Hazardous Waste Criteria)
- Pre-Design TCLP Sample (Does Not Exceed Hazardous Waste Criteria)
- Test Pit Location for waste fill observation (No Sample)
- 2008_fill_limits
- Water Features
- Unpaved Roads
- Concrete Pads
- Brick Buildings
- Fence

Previously Defined Fill Areas

- Type A: Grey Incinerator Ash & Cinders
- Type B: C&D Debris, PVC, Fabrics Scattered
- Type C: C&D Debris, Ash, Cinders, PVC, Fabrics
- Type D: PVC & Fabrics with VOCs detected
- Type E: Shallow Soils
- Type F: Mounded Soils
- South Landfill Ash/Cinders
- Delineated Wetlands

Hazardous waste threshold values:
Pb = 5 mg/L
Cd = 1 mg/L

DuPont Stauffer Landfill
Newburgh, New York

Fill Type A, B, C, E, and F Pre-Design Test Pit and Sample Locations

0 125 250 500
Feet

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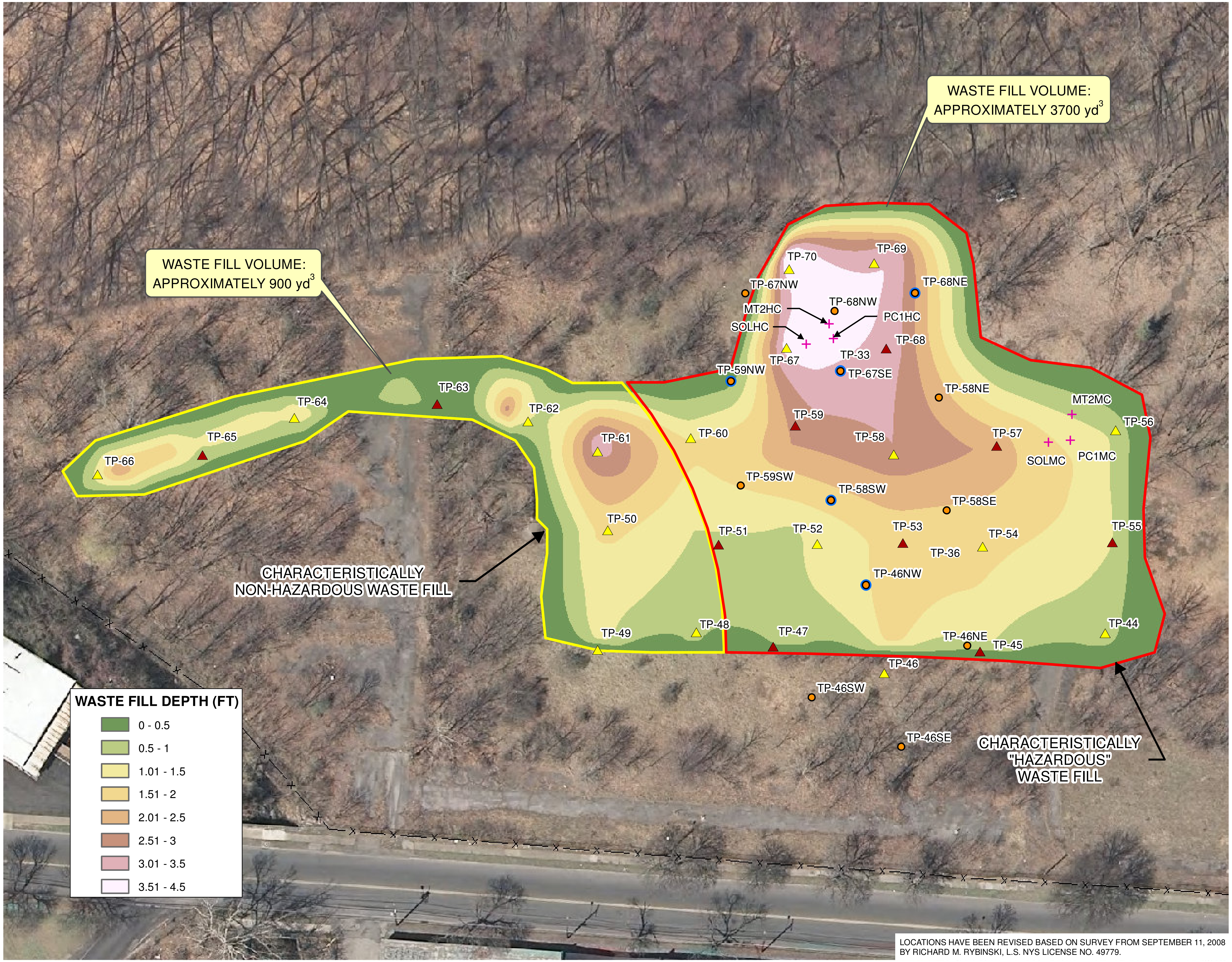

FIGURE 6

N

LEGEND

SAMPLE TYPE

- STABILIZATION TESTS TEST PIT
- SOUTH LANDFILL SAMPLE LOCATIONS FOR FULL-SUITE OF ANALYSES
- SOUTH LANDFILL SAMPLE LOCATION FOR TAL AND TCLP METALS, AND Hg ONLY
- SRI SAMPLING LOCATION
- "STEP-OUT" NODE XRF SCREENED AT 6-12" (NOT SELECTED FOR TEST PIT)
- "STEP-OUT" NODE SELECTED FOR TEST PIT AND SAMPLING FOR TAL AND TCLP METALS AND Hg ONLY
- PROPERTY FENCE
- APPROXIMATE LIMITS OF "HAZARDOUS" WASTE FILL BASED ON SRI AND TEST PIT ANALYSES
- APPROXIMATE LIMITS OF "NON-HAZARDOUS" WASTE FILL BASED ON SRI AND TEST PIT ANALYSES

NOTE: TP-67NW AND TP-58NE NOT INSTRUMENT SURVEYED. LOCATION SHOWN IS APPROXIMATE

DuPont - Stauffer Landfill
Newburgh, New York

SOUTH LANDFILL WASTE CHARACTERIZATION AND DEPTH SUMMARY

0 30 60 120
Feet

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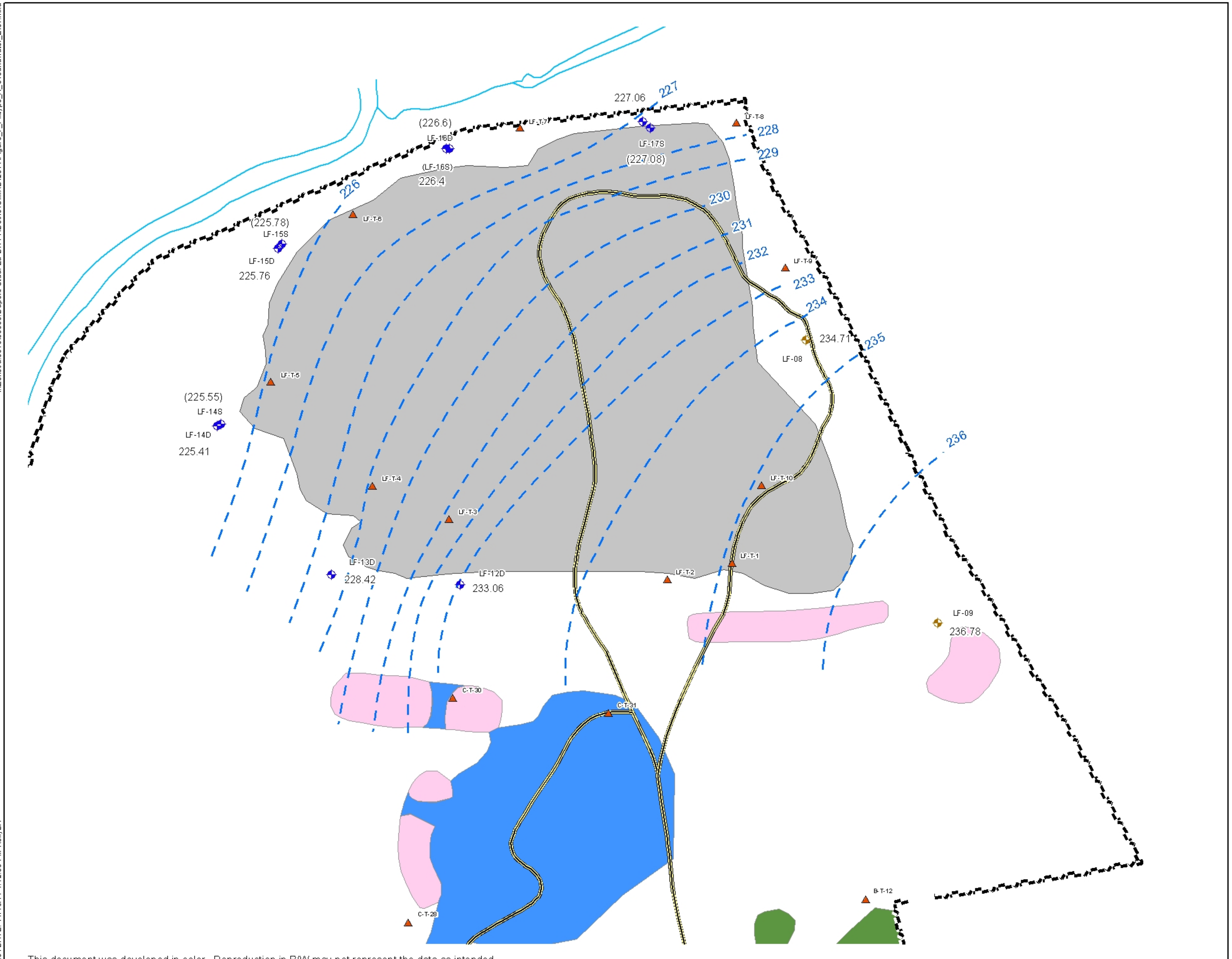

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FIGURE 7

N

LEGEND

Sample Locations

- Test Pit Location for waste fill observation (No Sample)
- New Monitoring Well
- Previously Existing Monitoring Well
- Ground Water Potentiometric Surface
- Water Features
- Unpaved Roads
- Fence

Previously Defined Fill Areas

- Type A: Grey Incinerator Ash & Cinders
- Type B: C&D Debris, PVC, Fabrics Scattered
- Type C: C&D Debris, Ash, Cinders, PVC, Fabrics
- Type D: PVC & Fabrics with VOCs detected

DuPont Stauffer Landfill
Newburgh, New York

Fill Type A Ground Water Elevations

0 50 100 200
Feet

JANUARY 2012
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FIGURE 8 - PROJECT STAFFING PLAN
FINAL (100%) DESIGN REPORT
DUPONT/STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

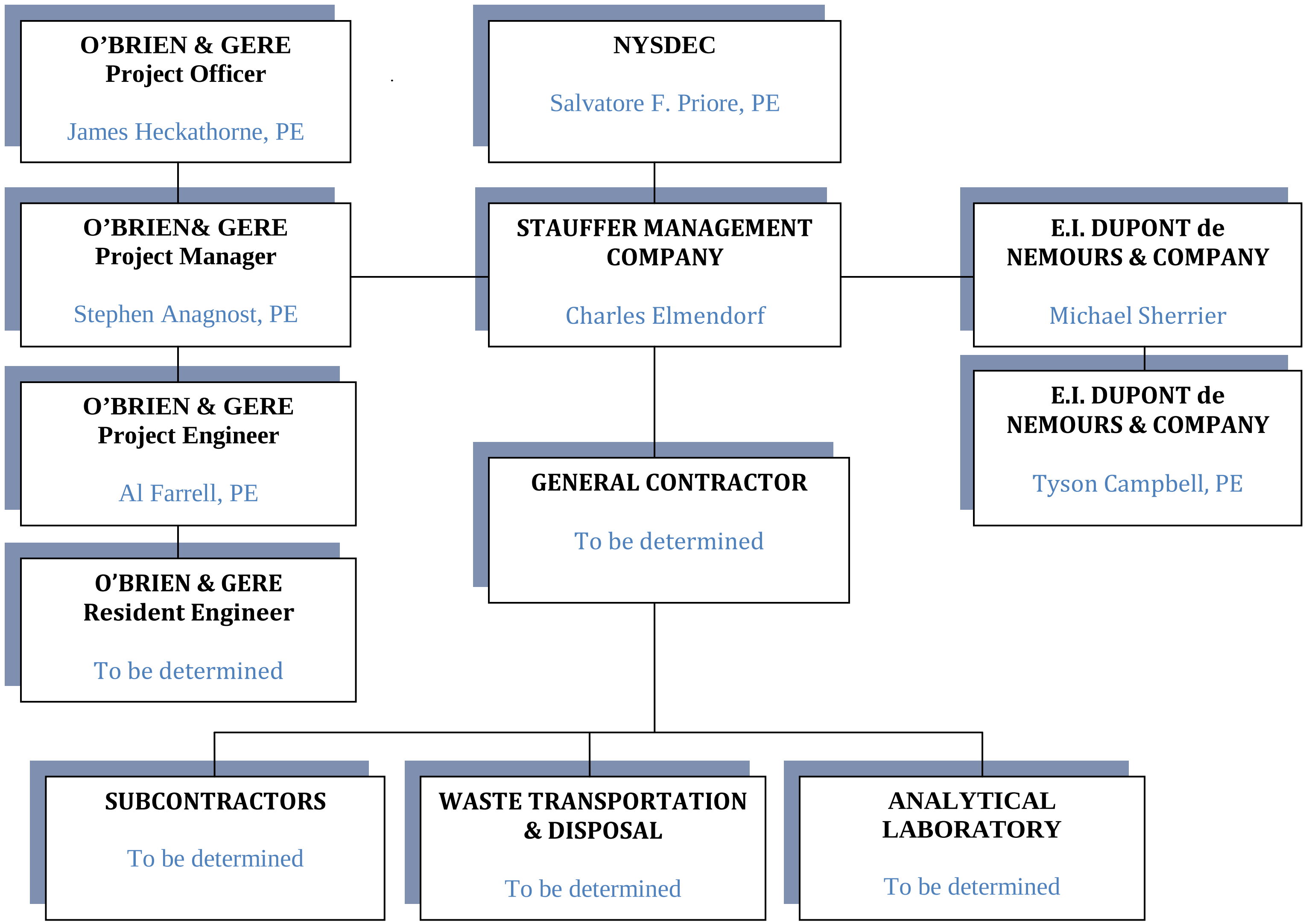
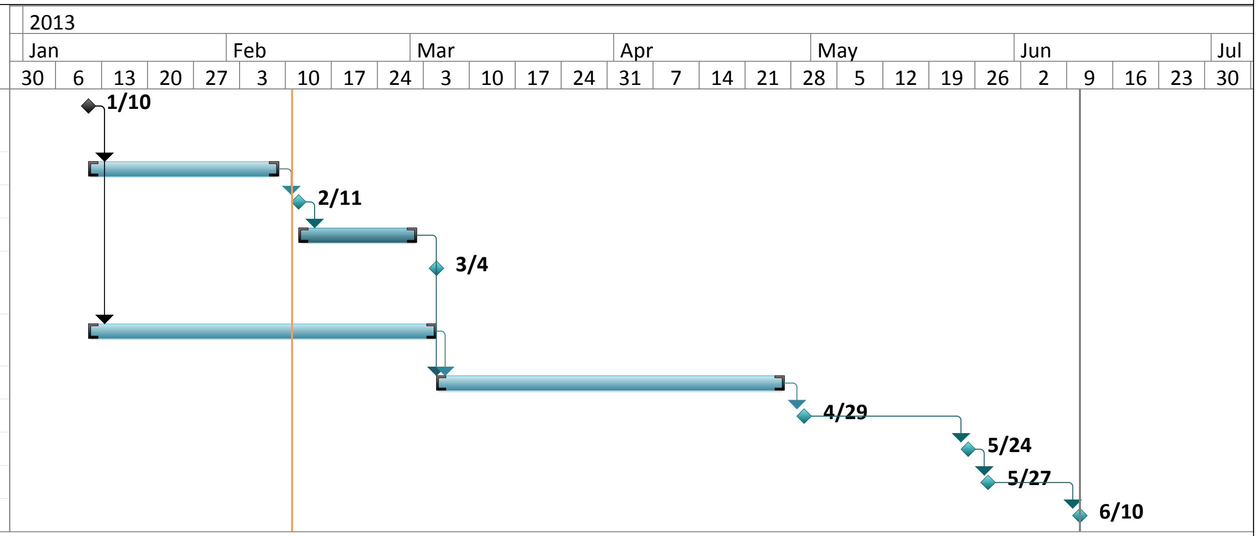


Figure 9 - Tentative Project Schedule
Final (100%) Remedial Design Report

DuPont-Stauffer Landfill Site
Newburgh, New York

ID	Task Name	Duration	Start	Finish
1	NYSDEC Comments to Pre-Final Design	1 day	Thu 1/10/13	Thu 1/10/13
2	Prepare Final Design	1.1 mons	Fri 1/11/13	Fri 2/8/13
3	Final Design Report to NYSDEC	1 day	Mon 2/11/13	Mon 2/11/13
4	NYSDEC Review of Final Design Report	14 days	Tue 2/12/13	Fri 3/1/13
5	NYSDEC Approval of Final Design Report	1 day	Mon 3/4/13	Mon 3/4/13
6	Preparation of Contract Documents	38 days	Fri 1/11/13	Mon 3/4/13
7	Procurement Period	39 days	Tue 3/5/13	Fri 4/26/13
8	Award Contract	1 day	Mon 4/29/13	Mon 4/29/13
9	Contractor Work Plans/Submittals	19 days	Tue 4/30/13	Fri 5/24/13
10	Notice to Proceed	1 day	Mon 5/27/13	Mon 5/27/13
11	Mobilization	1 day	Mon 6/10/13	Mon 6/10/13

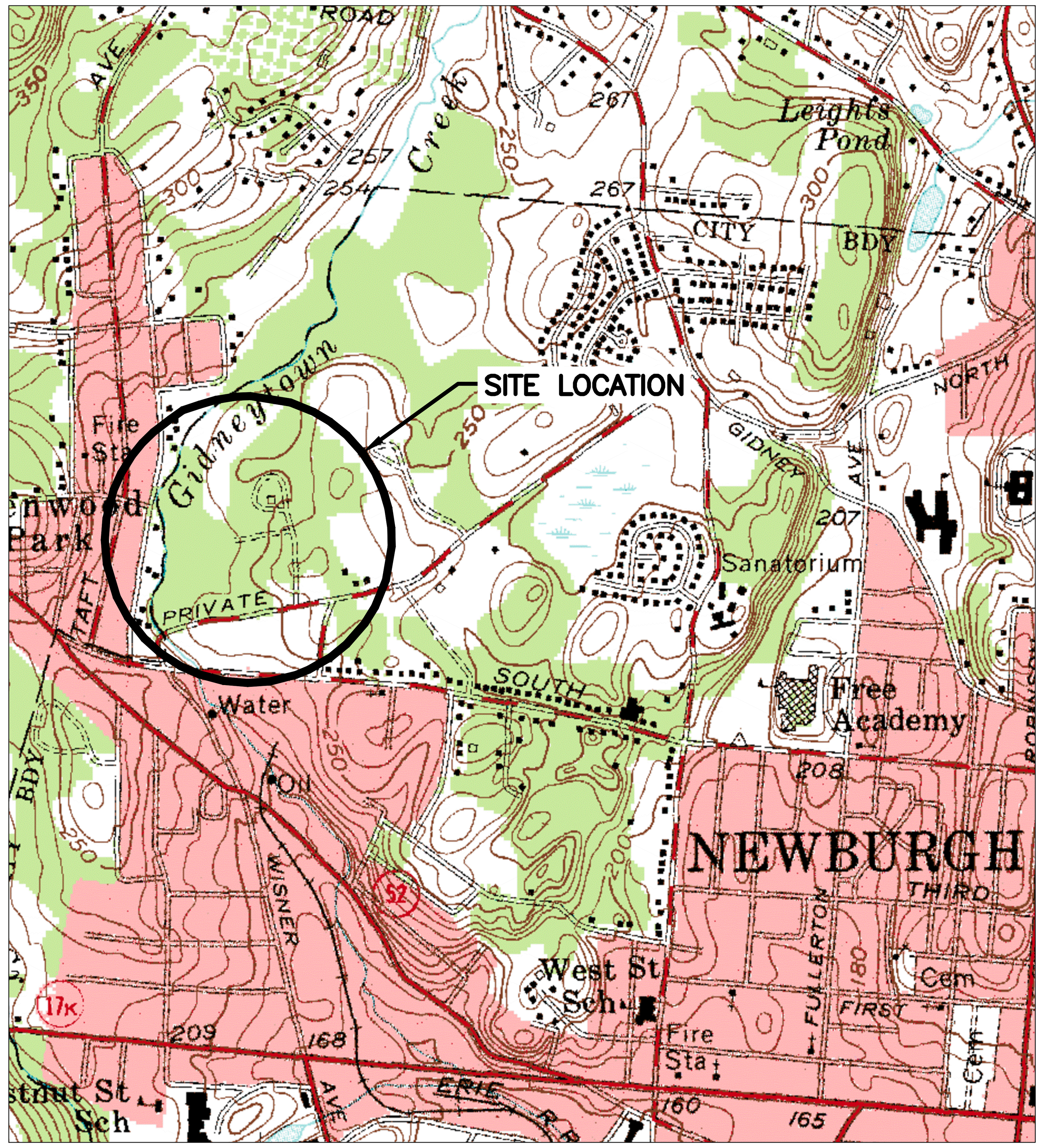


Task		External Milestone		Manual Summary Rollup	
Split		Inactive Task		Manual Summary	
Milestone		Inactive Milestone		Start-only	
Summary		Inactive Summary		Finish-only	
Project Summary		Manual Task		Deadline	
External Tasks		Duration-only		Progress	

Project: DuPont-Stauffer
Date: Mon 2/11/13

Final (100%) Remedial Design Drawings

Friday, August 05, 2005 9:58:42 AM



PLAN
NOT TO SCALE

Remedial Design Drawings

DUPONT-STAUFFER LANDFILL SITE SITE NO. 3-36-009

REMEDIAL DESIGN PROJECT

DUPONT-STAUFFER LANDFILL
NEWBURGH, NEW YORK

FEBRUARY 2013

O'BRIEN & GERE

I JAMES R. HECKATHORNE CERTIFY THAT I AM CURRENTLY A NYS REGISTERED PROFESSIONAL ENGINEER OR QUALIFIED ENVIRONMENTAL PROFESSIONAL AS DEFINED IN 6 NYCRR PART 375 AND THAT THIS REMEDIAL DESIGN WAS PREPARED IN ACCORDANCE WITH ALL APPLICABLE STATUES AND REGULATIONS AND IN SUBSTANTIAL CONFORMANCE WITH THE DER TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION (DER–10).

STATE OF NEW YORK
JAMES R. HECKATHORNE
56609
LICENSED PROFESSIONAL ENGINEER

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INDEX TO DRAWINGS

5618.39860.100

I:\ZENECA.5618\39860.DUPONT-STAUF-LD-DIV71\DOC\DRAWINGS\CONTRACT DRAWINGS\SHEETS\39860-100-TS.DWG

GENERAL NOTES – ALL DRAWINGS:

1. EXISTING SITE INFORMATION PRESENTED HERE WAS OBTAINED FROM ROUX ASSOCIATES, INC. ENVIRONMENTAL CONSULTANTS & MANAGEMENT, AND SHOULD BE CONSIDERED APPROXIMATE ONLY.
2. EXACT DIMENSIONS AND LOCATIONS OF ALL STRUCTURES AND UTILITIES ARE CONSIDERED APPROXIMATE ONLY AND SHALL BE VERIFIED AS REQUIRED IN THE FIELD BY THE CONTRACTOR.
3. OTHER UNDERGROUND UTILITIES MAY EXIST, THE LOCATIONS, DEPTHS AND EXTENT OF WHICH ARE UNKNOWN. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND ELEVATION OF ALL UTILITIES IN THE FIELD AS IT MAY PERTAIN TO THE CONTRACTORS WORK PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SUPPORT OF ALL UNDER AND ABOVE GROUND UTILITIES AS IT PERTAINS TO HIS WORK, DURING CONSTRUCTION.
5. FOR INFORMATION: DIG SAFELY NEW YORK PHONE NUMBER: 1-800-962-7962. WEBSITE: WWW.DIGSAFETYNEWYORK.COM
6. THE CONTRACTOR SHALL COORDINATE WITH THE APPROPRIATE UTILITY COMPANIES FOR THE TEMPORARY DE-ENERGIZING, OR INTERRUPTION OF SERVICE, REMOVAL, RELOCATION, REPLACEMENT OF ANY UTILITIES POLES, GUY WIRES, UNDERGROUND UTILITIES AND/OR OVERHEAD WIRES WITHIN THE LIMITS OF WORK, OR THAT COULD OTHERWISE INTERFERE WITH THE REMEDIAL ACTIONS.
7. THE CONTRACTOR SHALL FURNISH AND PLACE PROPER GUARDS FOR PREVENTION OF ACCIDENTS, PROVIDE ALL TRENCH SHORING, SCAFFOLDING, SHIELDING, DUST/FUME PROTECTION, MECHANICAL/ELECTRICAL PROTECTION, SPECIAL GROUNDING, SAFETY RAILINGS, BARRIERS, OR OTHER SAFETY FEATURES REQUIRED.
8. ROADWAYS ARE TO REMAIN OPEN AT ALL TIMES UNLESS OTHERWISE NOTED.
9. THE CONTRACTOR SHALL COORDINATE ANY NECESSARY TRAFFIC CONTROLS AND OBTAIN ANY NECESSARY PERMITS THAT MAY BE REQUIRED TO PERFORM THE WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SURVEY CONTROL DURING THE PERFORMANCE OF WORK AND TO VERIFY EXISTING GRADES. THE OWNER WILL PROVIDE THE CONTRACTOR WITH THE CONTRACT DRAWINGS IN ELECTRONIC FORMAT FOR THE CONTRACTOR'S USE.
11. PROPER EROSION CONTROL TECHNIQUES SHALL BE IMPLEMENTED AS REQUIRED IN ACCORDANCE WITH SPDES PERMIT NO. GP-0-10-001, THE APPROVED ESCP AND SWPPP.
12. THE CONTRACTOR SHALL RESTORE TO PRECONSTRUCTION CONDITIONS OR BETTER ALL SUPPORT AREAS THAT ARE IMPACTED BY REMEDIAL ACTIVITIES, INCLUDING BUT NOT LIMITED TO, EQUIPMENT AND MATERIAL STORAGE AREAS, MATERIAL LOADING AND STAGING AREAS, PARKING AREAS, AND LOCATIONS OF OFFICE TRAILERS, UNLESS OTHERWISE NOTED.
13. ALL SURFACES DAMAGED OR DESTROYED AS A RESULT OF WORK PERFORMED BY THE CONTRACTOR SHALL BE RESTORED TO PRECONSTRUCTION CONDITIONS OR BETTER IN A TIMELY MANNER AND PRIOR TO CONTRACTOR DEMOBILIZATION.
14. ALL EQUIPMENT OPERATED WITHIN THE LIMITS OF WORK SHALL BE CLEANED IN ACCORDANCE WITH SPECIFICATION 02302 "OFF-SITE TRANSPORTATION AND DISPOSAL" PRIOR TO TRANSPORT OFFSITE AND/OR TRANSPORTING/HANDLING CLEAN BACKFILL MATERIALS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILIZATION, CHARACTERIZATION, LOADING, TRANSPORTATION, AND OFFSITE DISPOSAL OF WASTE MATERIAL GENERATED AS A RESULT OF EXCAVATION ACTIVITIES AT A PRE-APPROVED DISPOSAL FACILITY AS DETERMINED BY THE OWNER.
16. WATER GENERATED DURING EXCAVATION ACTIVITIES, INCLUDING, BUT NOT LIMITED TO, THE DEWATERING OF EXCAVATIONS AND DECONTAMINATION FLUIDS SHALL BE COLLECTED AND TREATED/DISPOSED OF IN ACCORDANCE WITH SPECIFICATION 02202 "CONSTRUCTION WATER MANAGEMENT".

EXCAVATION/BACKFILL TABLE

AREA NAME	SURFACE AREA (SF)	EXCAVATION/FILL DEPTH (FT)	TOTAL EXCAVATION (CY)	TOTAL FILL (CY)	BACKFILL MATERIAL (CY) (EMBANKMENT MATERIAL)	TOPSOIL & SEED (CY)
A	241,105	3.5 (FILL)		31,195	N/A	4,465
B	111,154	0.5	2,058	2,058	0	2,058
C1	42,663	3	4,740	1,580	790	790
C2	81,917	5	15,170	3,034	1,517	1,517
C3	46,664	3	5,185	1,728	864	864
D1	833	5	154*	93*	78	15
D2	23,724	7	6,151	4,393*	3,954	439
D3	2,653	7.5	737*	737*	688	49
D4	8,779	8.5	2,764	1,853*	1,690	163
D5	6,843	7.5	1,901	1,901*	1,774	127
D6	6,287	7.5	1,746	1,039*	923	116
E	13,775	1	510	510	NOTE 2	NOTE 2
F1	20,301	2	1,504	1,504	1,128	376
F2	5,503	4	815	815	713	102
F3	4,038	2	299	299	224	75
SOUTH LANDFILL	88,411	VARIES	7,093	7,093	5,456	1,637

* FILL DEPTH VARIES. REFER TO AREA "C" GRADING PLAN.

NOTE:

1. ALL QUANTITIES SHOWN HERE ARE APPROXIMATE.
2. SEE REQUIREMENTS OF TECHNICAL SPECIFICATIONS SECTION 02981 – WETLAND RESTORATION.

LEGEND

410	CONTOUR ELEVATION
395.5	PROPOSED ELEVATION CONTOUR
	FENCE/PROPERTY BOUNDARY
SF	SILT FENCE
E 616500 / N 976000	NORTHING/EASTING COORDINATES
	TREE OR BRUSH LINE
	TREE
	DELINEATED WETLAND BOUNDARY
	UNPAVED ROAD
LF-14D	MONITORING WELL
TP-53	TEST PIT
C-T-24	TEST TRENCH
NFA-6S	NON-FILL AREA SURFACE SOIL SAMPLE LOCATION
	LIMITS OF CLEARING
	AREA "A" LANDFILL AREA
	AREA "B" EXCAVATION
	AREA "C" 3-FT EXCAVATION
	AREA "C" 5-FT EXCAVATION
	AREA "D" EXCAVATION
	AREA "E" EXCAVATION
	AREA "F" EXCAVATION
	SOUTH LANDFILL

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O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

GENERAL NOTES AND LEGEND

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

FILE NO. 10747.39860-101
DATE AUGUST 2012

G-1

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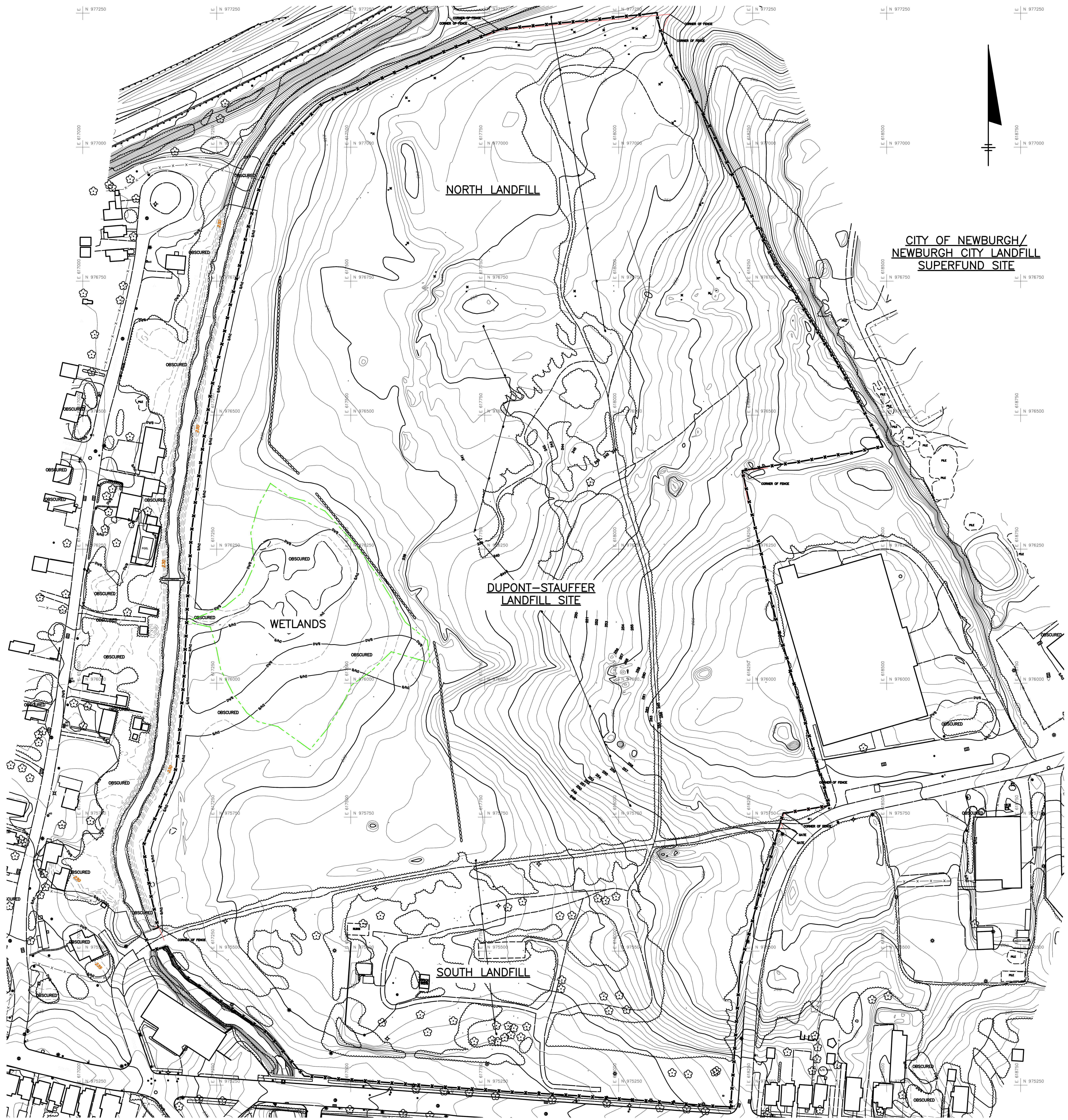

LEGEND

DELINEATED WETLAND BOUNDARY

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STATE OF NEW YORK JAMES R. HECKATHORNE 56609 LICENSED PROFESSIONAL ENGINEER

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1"=100' 100 0 100 200

O'BRIEN & GERE

OU–1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT–STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

EXISTING SITE PLAN

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

FILE NO. 10747.39860–102

DATE AUGUST 2012

G–2

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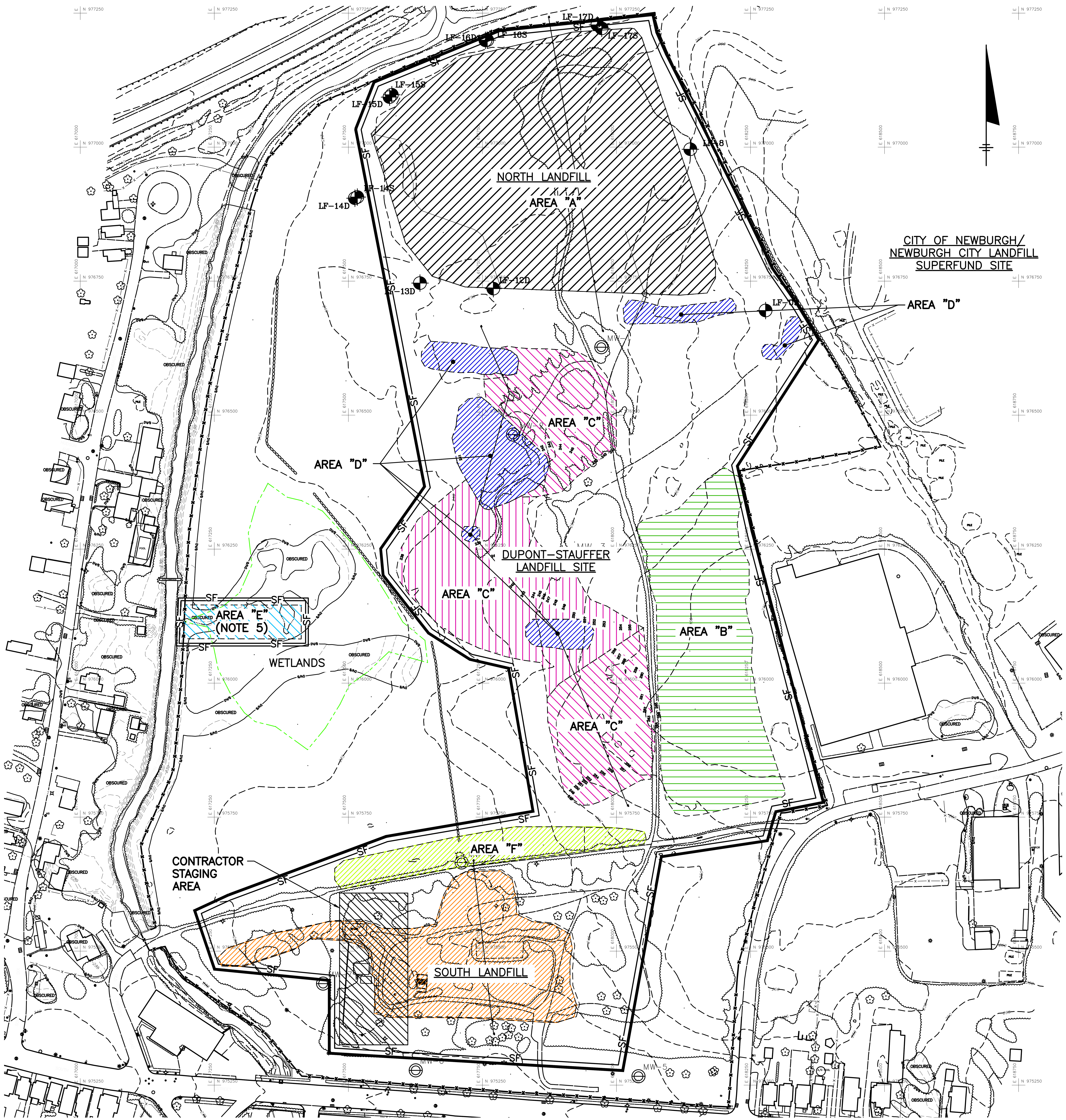

DRAWING NOTES:

1. ALL SILT FENCE LOCATIONS SHOWN HERE ARE APPROXIMATE ONLY AND SHALL BE PROVIDED BY THE CONTRACTOR AT A MINIMUM. THE CONTRACTOR SHALL MAINTAIN OR PROVIDE BYPASS OF FLOW FROM EXISTING DRAINAGE CHANNELS AT ALL TIMES. PROPER EROSION CONTROL TECHNIQUES SHALL BE IMPLEMENTED AS REQUIRED IN ACCORDANCE WITH SPDES GENERAL PERMIT GP-0-10-001, THE APPROVED EROSION AND SEDIMENT CONTROL PLAN, SPECIFICATION 02200 "EROSION AND SEDIMENT CONTROL", SPECIFICATION 02201 "STORMWATER POLLUTION PREVENTION" AND THE "STORMWATER POLLUTION PREVENTION PLAN".
2. THE CONTRACTOR SHALL INSTALL EROSION AND CONTROL MEASURES PRIOR TO ANY CLEARING AND GRUBBING OR OTHERWISE DISTURBING EXISTING SITE SOILS AND VEGETATION.
3. REFER TO SHT. G-11 FOR EROSION AND SEDIMENT CONTROL DETAILS.
4. CLEARING AND GRUBBING SHALL BE PERFORMED AS REQUIRED IN ACCORDANCE WITH SPECIFICATION 02110 "CLEARING AND GRUBBING" PRIOR TO ANY EXCAVATION ACTIVITIES TAKING PLACE. CLEARING AND GRUBBING SHALL BE LIMITED TO THE EXCAVATION AND SUPPORT AREAS.
5. CLEARING AND GRUBBING (NOT SHOWN HERE) SHALL TAKE PLACE AS REQUIRED IN AREA "E". THE CONTRACTOR SHALL TAKE EVERY POSSIBLE PRECAUTION AS NOT TO DISTURB THE WETLAND AREAS LOCATED OUTSIDE THE LIMITS OF EXCAVATION AND TO MINIMIZE CLEARING FOR CONSTRUCTION ACCESS TO AREA "E".
6. CONTRACTOR SHALL CONSTRUCT A GRAVEL ACCESS ROAD FROM THE INTERSECTION WITH OLD PIERCES ROAD, NEAR EAST END OF AREA "F", AND RUNNING NORTH BETWEEN AREAS "B" AND "C" TO CONNECT LATER WITH THE MAINTENANCE ROAD (SHEET G-8) ON THE NORTH LANDFILL CAP. THE GRAVEL ACCESS ROAD SHALL BE CONSTRUCTED AS SHOWN BY THE MAINTENANCE ROAD DETAIL ON SHEET G-11 AND SHALL REMAIN IN PLACE.

LEGEND

AREA "A" LANDFILL AREA
AREA "B" EXCAVATION
AREA "C" 3-FT EXCAVATION
AREA "C" 5-FT EXCAVATION
DELINEATED WETLAND BOUNDARY
SF — SILT FENCE
LIMITS OF CLEARING
AREA "D" EXCAVATION
AREA "E" EXCAVATION
AREA "F" EXCAVATION
SOUTH LANDFILL EXCAVATION
MW-1 EXISTING MONITORING WELLS TO BE ABANDONED
LF-12D EXISTING MONITORING WELLS TO REMAIN

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1"=100' 100 0 100 200

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OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION DUPONT-STAUFFER LANDFILL SITE NEWBURGH, NEW YORK

GENERAL

SITE PREPARATION PLAN

STATE OF NEW YORK · JAMES R. HECKATHORNE · 56609 · LICENSED PROFESSIONAL ENGINEER

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

FILE NO. 10747.39860-103
DATE AUGUST 2012

G-3

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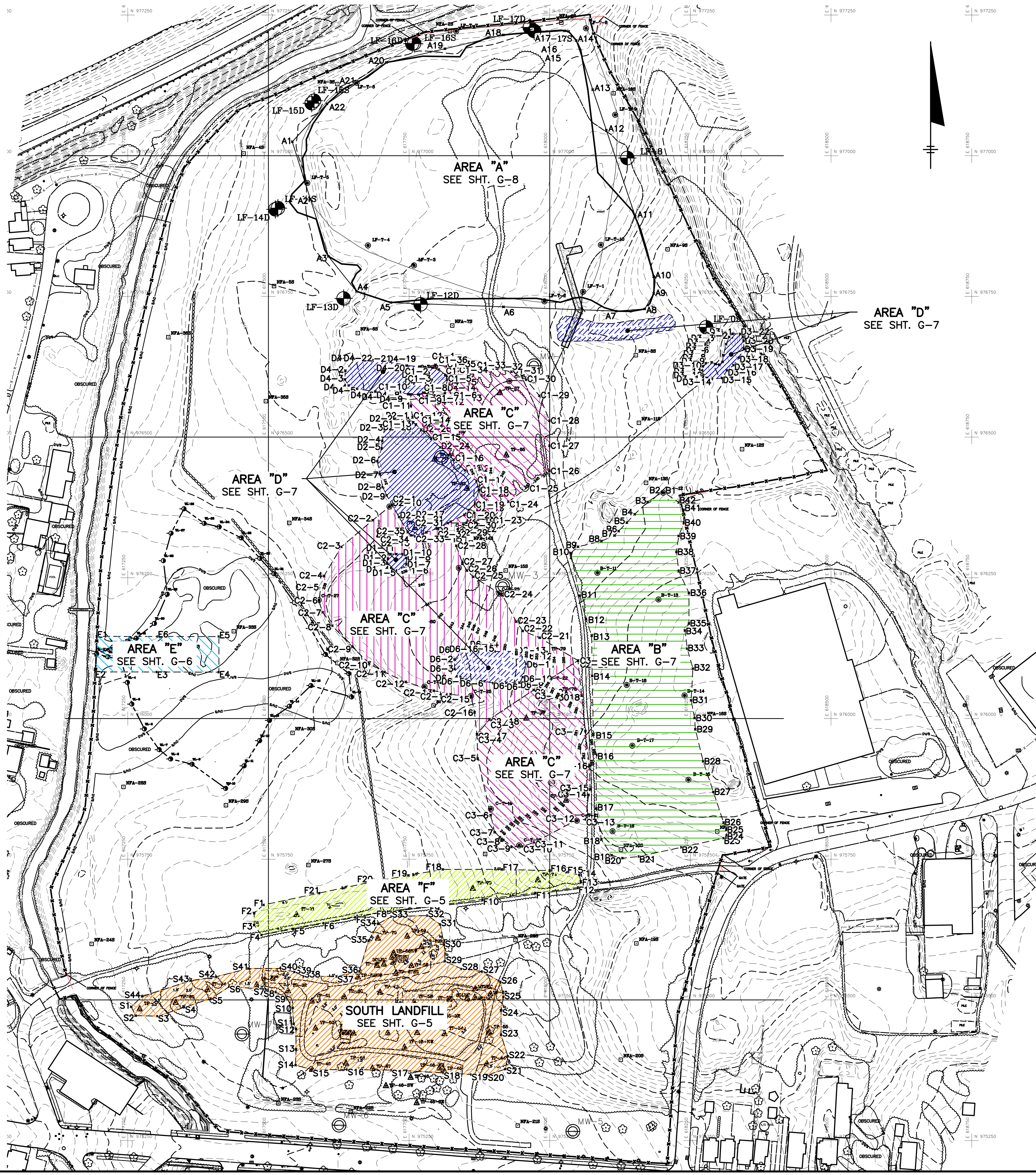

DRAWING NOTES – ALL EXCAVATIONS:

1. EXCAVATION FOOTPRINT AREAS AND DEPTHS ARE ESTIMATED AND SUBJECT TO POST–EXCAVATION CONFIRMATION OF CLEAN UP. THE ENGINEER MAY DIRECT THE CONTRACTOR TO EXPAND THE EXCAVATION HORIZONTALLY AND/OR VERTICALLY AS NECESSARY TO ACHIEVE THE REMEDIAL ACTION OBJECTIVES.
2. CONTRACTOR SHALL PROVIDE SCHEDULE OF WORK DETAILING ACTIVITIES AND PERIOD ANTICIPATED FOR EACH EXCAVATION AREA.
3. EACH EXCAVATION SHALL BE BACKFILLED WITH CLEAN MATERIAL IMPORTED FROM AN OFF–SITE SOURCE APPROVED BY THE ENGINEER. BACKFILL SHALL BE PLACED AND COMPACTED TO MATCH EXISTING GRADE UNLESS OTHERWISE SHOWN.

LEGEND

AREA "A" LANDFILL AREA
AREA "B" EXCAVATION
AREA "C" 3–FT EXCAVATION
AREA "C" 5–FT EXCAVATION
AREA "D" EXCAVATION
AREA "E" EXCAVATION
AREA "F" EXCAVATION
SOUTH LANDFILL
DELINEATED WETLAND BOUNDARY
MW–1 EXISTING MONITORING WELLS TO BE ABANDONED
LF–12D EXISTING MONITORING WELLS TO REMAIN

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1"=100' 100 0 100 200

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STATE OF NEW YORK · JAMES R. HECKATHORNE · 56609 · LICENSED PROFESSIONAL ENGINEER

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OU–1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT–STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

SITE EXCAVATION PLAN

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

FILE NO. 10747.39860-104
DATE AUGUST 2012

G–4

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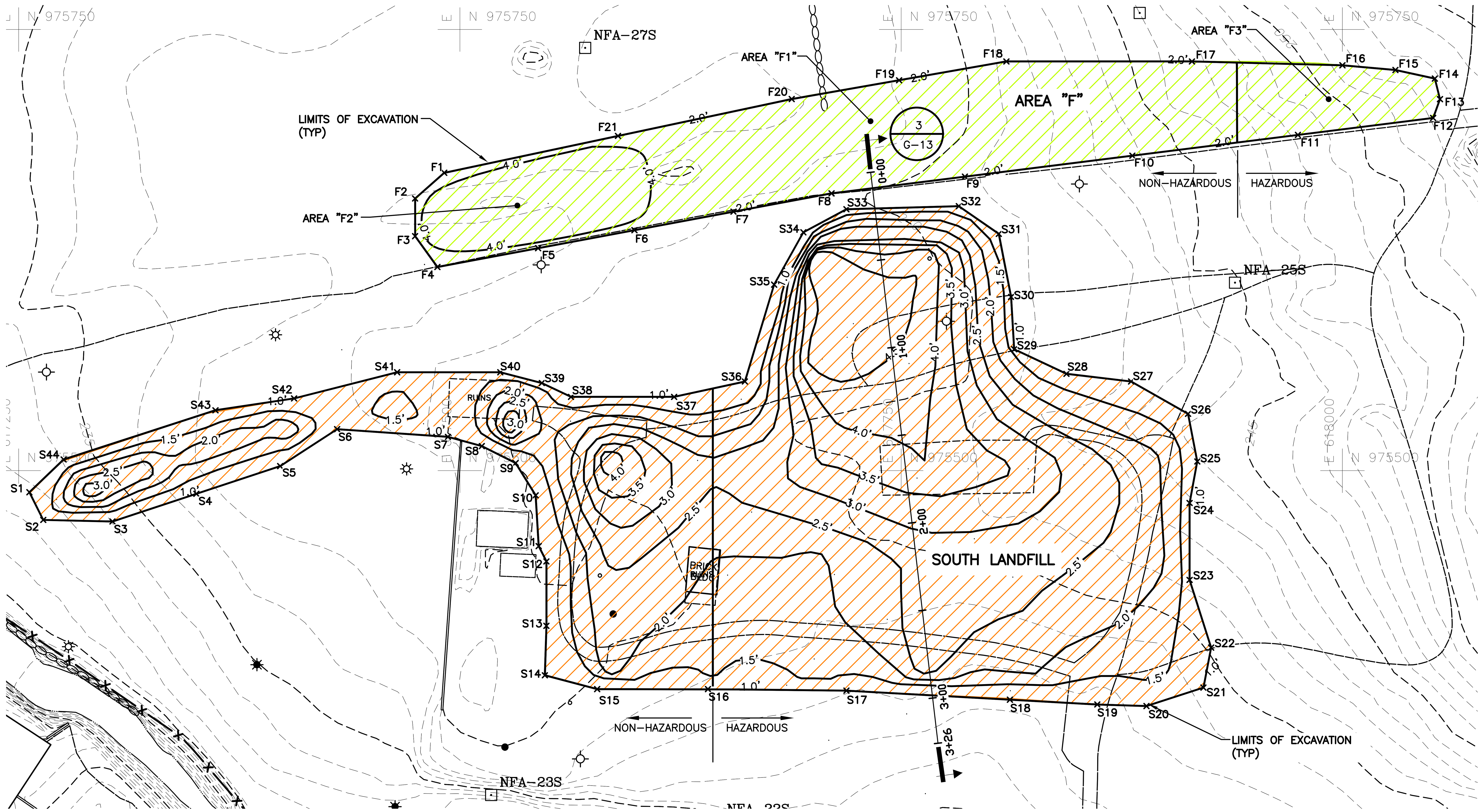
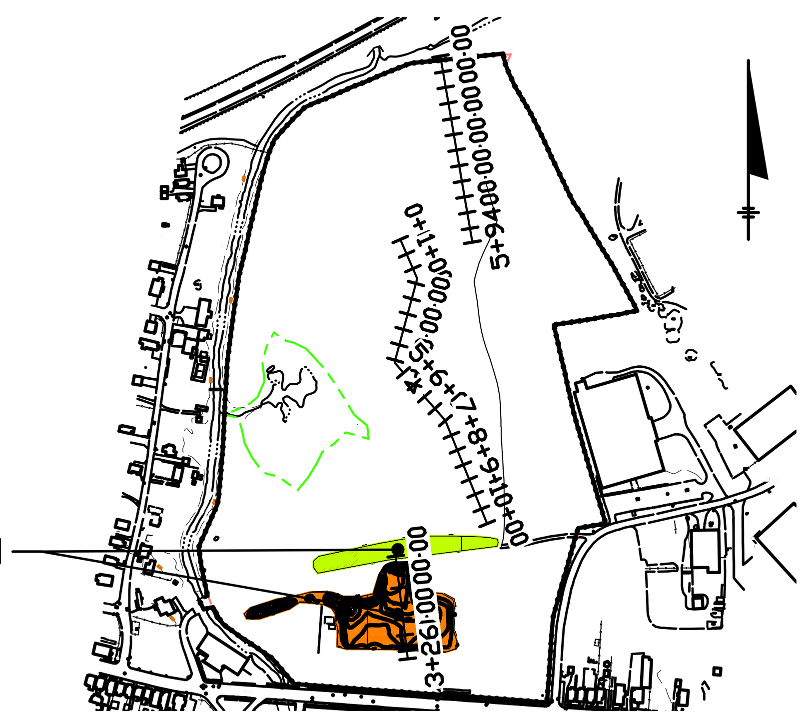


SOUTH LANDFILL/AREA "F" EXCAVATION PLAN

SCALE: 1"=40'



KEY MAP

DRAWING NOTES:

1. NON-HAZARDOUS MATERIAL EXCAVATED FROM AREA "F" AND THE SOUTH LANDFILL SHALL BE PLACED IN AREA "A" AND CAPPED. HAZARDOUS MATERIAL FROM AREA "F" AND THE SOUTH LANDFILL SHALL BE DISPOSED OF OR TREATED IN ACCORDANCE WITH SPECIFICATION 02221 "EARTHWORK".
2. ALL AREAS SHOWN HERE TO BE EXCAVATED SHALL BE BACKFILLED TO MEET PRE-EXISTING GRADE ELEVATIONS UNLESS SHOWN OR DIRECTED OTHERWISE.

LEGEND:

2.0' — EXCAVATION CUT CONTOUR

AREA "F" EXCAVATION

SOUTHERN LANDFILL

TP-60 — PRE-DESIGN TEST PIT LOCATION

SOUTH LANDFILL COORDINATE TABLE

POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
S1	975487.7606	617256.0883	S23	975438.0804	617913.404
S2	975472.0721	617263.9343	S24	975481.6595	617913.404
S3	975471.2005	617303.164	S25	975505.1922	617917.7628
S4	975486.889	617350.6755	S26	975532.2113	617912.5322
S5	975502.5775	617398.1871	S27	975550.5146	617880.2767
S6	975523.4955	617430.4426	S28	975554.8725	617843.6623
S7	975519.1376	617493.2101	S29	975568.8178	617814.022
S8	975513.9081	617512.3891	S30	975598.4516	617812.2785
S9	975504.3207	617531.5681	S31	975634.1865	617805.3043
S10	975486.0174	617542.9011	S32	975649.875	617782.6383
S11	975457.2552	617544.6447	S33	975648.1318	617718.9989
S12	975448.5393	617549.0035	S34	975635.0581	617694.5893
S13	975412.0464	617549.0156	S35	975605.4243	617678.0257
S14	975384.0422	617548.1317	S36	975550.5146	617661.462
S15	975376.198	617577.772	S37	975541.7987	617621.3605
S16	975376.198	617640.5395	S38	975541.7987	617562.9519
S17	975375.3264	617718.9989	S39	975549.643	617546.3882
S18	975370.214	617811.6101	S40	975555.744	617522.8504
S19	975367.4821	617861.0977	S41	975555.744	617464.4417
S20	975366.6105	617888.9944	S42	975540.9271	617406.033
S21	975377.0695	617921.2499	S43	975534.2102	617361.5128
S22	975399.7307	617925.6088	S44	975506.3379	617275.4751

AREA "F" COORDINATE TABLE

POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
F1	975668.7905	617491.1192	F12	975699.8559	618051.3876
F2	975654.2286	617474.6121	F13	975710.5346	618055.2716
F3	975632.8712	617474.6121	F14	975722.1841	618052.3586
F4	975615.3969	617487.2352	F15	975727.0381	618030.0255
F5	975626.0645	617544.3068	F16	975729.7064	618000
F6	975636.269	617598.9004	F17	975731.892	617914.7376
F7	975646.7543	617654.9971	F18	975731.892	617809.608
F8	975657.141	617710.5657	F19	975721.2327	617748.8065
F9	975666.6085	617786.1071	F20	975710.5733	617688.005
F10	975678.4984	617880.9766	F21	975689.6819	617589.5621
F11	975690.2542	617974.7758			

AREA "F" AND SOUTH LANDFILL VOLUME TABLE

AREA NAME	SURFACE AREA (SF)	EXCAVATION/FILL DEPTH (FT)	TOTAL EXCAVATION (CY)	TOTAL FILL (CY)	BACKFILL MATERIAL (CY) (EMBANKMENT MATERIAL)	TOPSOIL & SEED (CY)
F1	20,301	2	1,504	1,504	1,128	376
F2	5,503	4	815	815	713	102
F3	4,038	2	299	299	224	75
SOUTH LANDFILL	88,411	VARIES	7,093	7,093	5,456	1,637

NOTE:

1. EXCAVATION DEPTHS MEASURED FROM EXISTING GROUND SURFACE. ALL QUANTITIES SHOWN HERE ARE APPROXIMATE.

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NO.	DATE	REVISION	INIT.
C	01/31/2013	FINAL DESIGN FOR NYSDEC APPROVAL AND BID	
B	08/31/2012	PRE-FINAL DESIGN FOR NYSDEC REVIEW	
A	01/02/2012	PRELIMINARY DESIGN FOR NYSDEC REVIEW	

1"=40' 40 0 40 80

O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

SOUTH LANDFILL/ AREA "F" EXCAVATION PLAN

IN CHARGE OF ____

DESIGNED BY ____ CHECKED BY ____

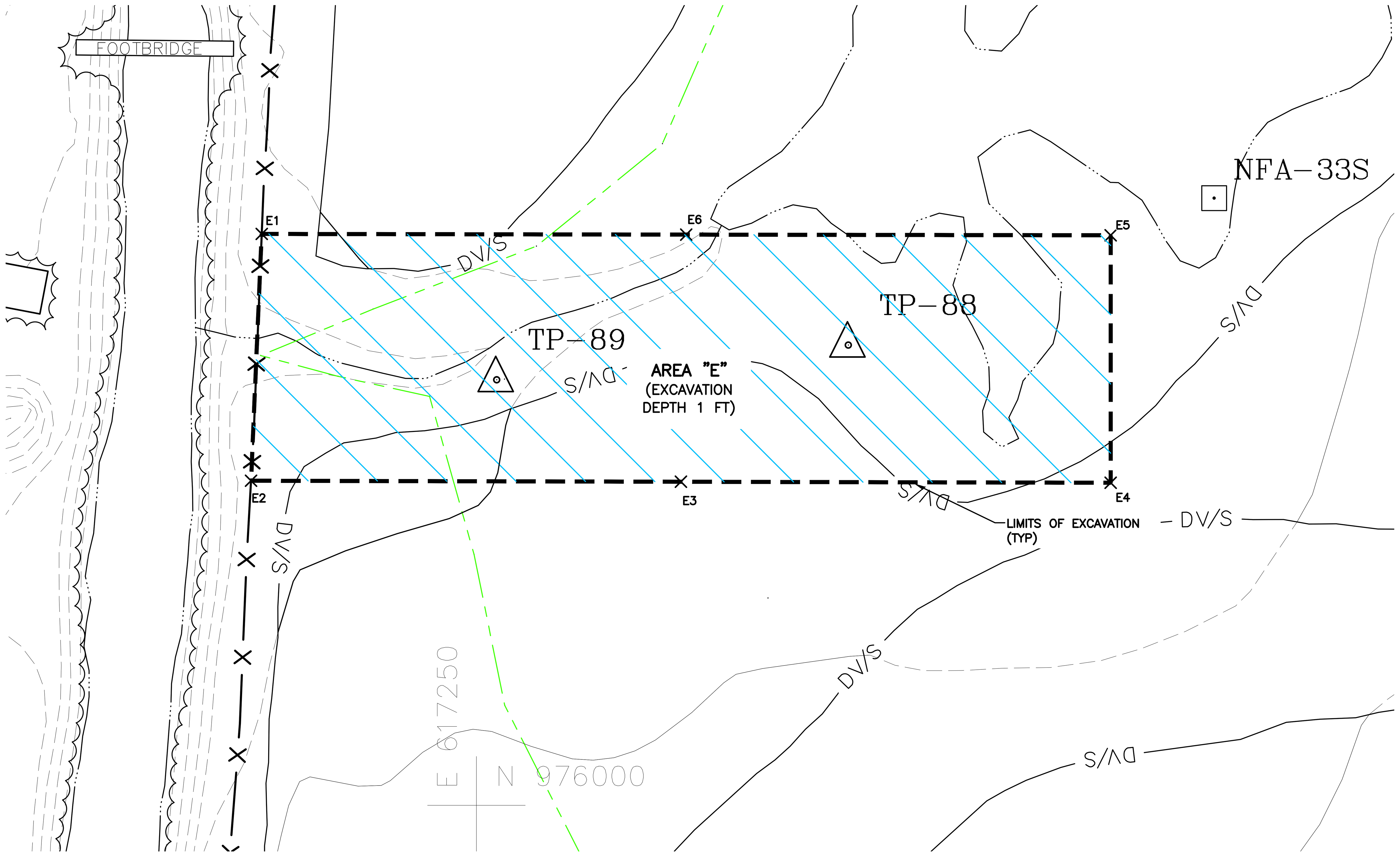
DRAWN BY ____

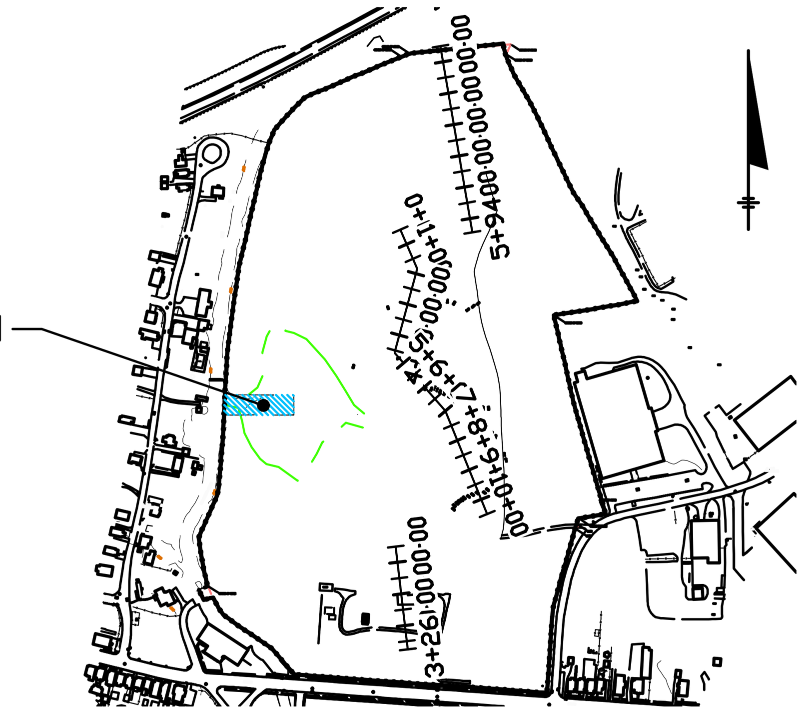
FILE NO. 10747.39860-105

DATE AUGUST 2012

G-5

I:\ZENECA.5618\39860.DUPONT-STAUF-LD-DIV71\DOC\DRAWINGS\CONTRACT DRAWINGS\SHEETS\39860-105-G5.DWG





KEY MAP

DRAWING NOTES:

1. LIMITS OF EXCAVATION SHOWN HERE ARE APPROXIMATE AND SHALL BE SUBJECT TO VISUAL OBSERVATION AND CONFIRMATION SAMPLING AND ANALYSES.
2. AREA "E" SHOWN HERE SHALL BE EXCAVATED TO A DEPTH OF ONE FOOT BELOW EXISTING GRADE. ALL MATERIAL EXCAVATED FROM AREA "E" SHALL BE PLACED IN AREA "A" AND CAPPED.
3. EXCAVATED AREAS SHOWN HERE SHALL BE RESTORED IN ACCORDANCE WITH THE "TYPICAL WETLAND RESTORATION DETAIL" SHT. G-11 AND SPECIFICATION 02981 "WETLAND RESTORATION".

LEGEND

AREA "E" EXCAVATION

DELINEATED WETLAND BOUNDARY

AREA "E" EXCAVATION PLAN

SCALE: 1"=20'

AREA "E" COORDINATE TABLE		
POINT ID.	NORTHING	EASTING
E1	976145.9194	617195.1372
E2	976082.8934	617192.4181
E3	976082.6344	617302.2338
E4	976082.3755	617412.0495
E5	976145.5673	617412.0495
E6	976145.7433	617303.5933

AREA "E" VOLUME TABLE					
AREA NAME	SURFACE AREA (SF)	EXCAVATION/FILL DEPTH (FT)	TOTAL EXCAVATION (CY)	TOTAL FILL (CY)	BACKFILL MATERIAL SPECIFICATION
E	13,775	1	510	510	02981 – WETLAND RESTORATION

NOTE:

1. ALL QUANTITIES SHOWN HERE ARE APPROXIMATE.

THIS DOCUMENT WAS MEANT TO BE VIEWED IN COLOR. REPRODUCTION IN BLACK AND WHITE MAY NOT REPRESENT THE DATA AS INTENDED.

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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

STATE OF NEW YORK — JAMES R. HECKATHORNE — 56609 — LICENSED PROFESSIONAL ENGINEER

NO.	DATE	REVISION	INIT.
C	01/31/2013	FINAL DESIGN FOR NYSDEC APPROVAL AND BID	
B	08/31/2012	PRE-FINAL DESIGN FOR NYSDEC REVIEW	
A	01/02/2012	PRELIMINARY DESIGN FOR NYSDEC REVIEW	

1"=20' 20 0 20 40

O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

AREA "E" EXCAVATION PLAN

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

FILE NO. 10747.39860-106
DATE AUGUST 2012

G-6

SAVED: 2/8/13 9:20 AM

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SAVED: 2/8/13 9:20 AM

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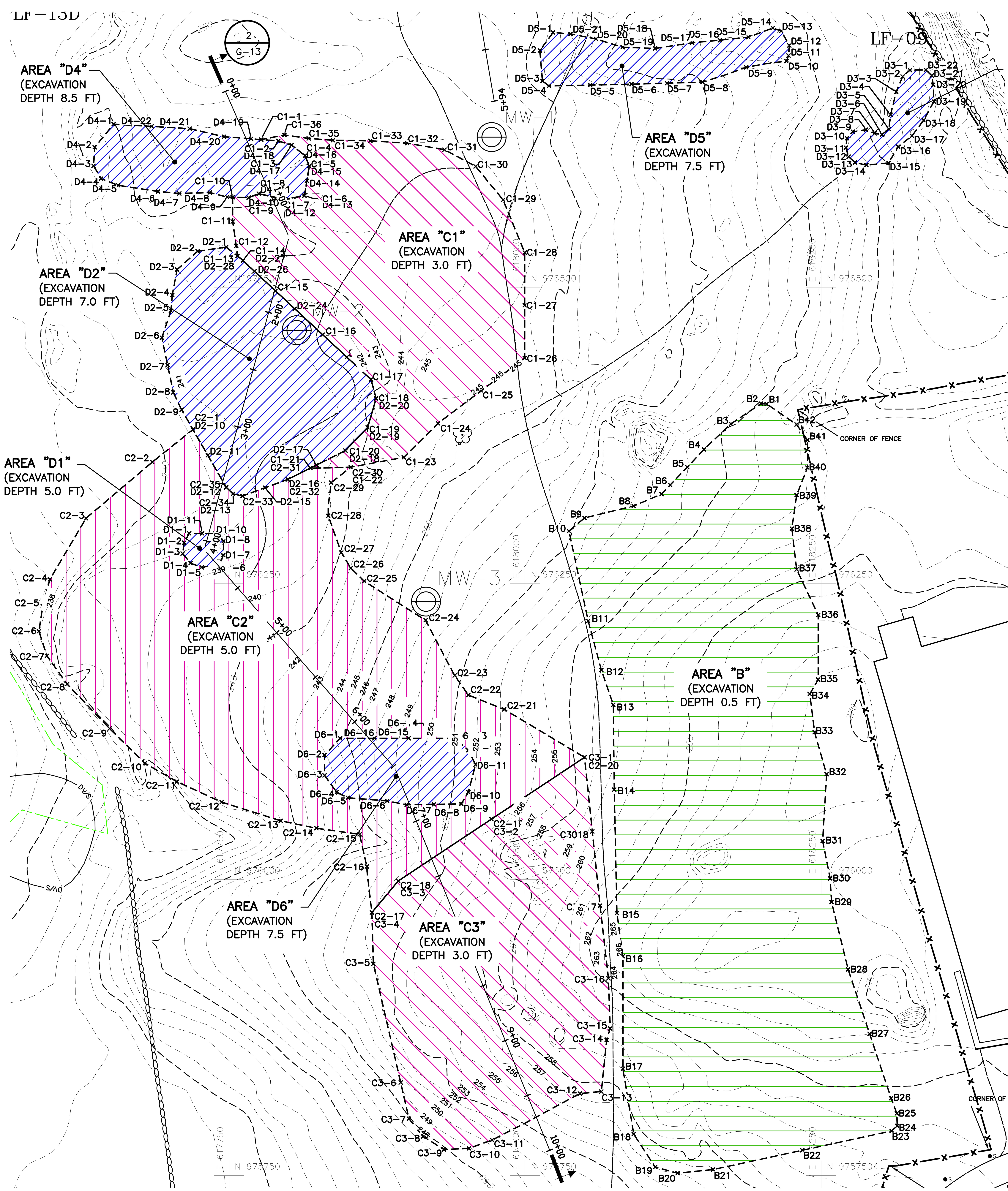
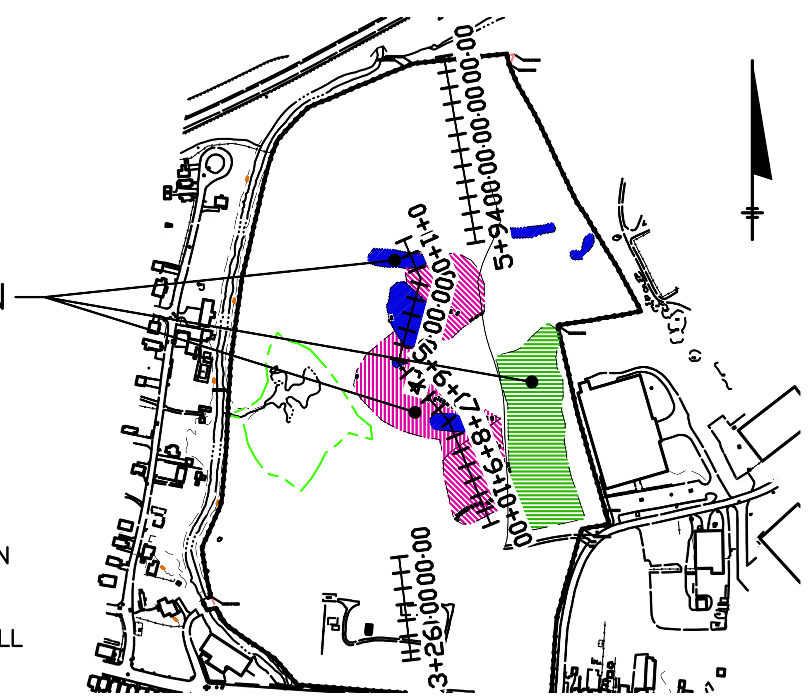


AREAS "B", "C" AND "D" EXCAVATION PLAN

SCALE: 1"=50'



KEY MAP

DRAWING NOTES:

1. ALL LIMITS OF EXCAVATION SHOWN ARE APPROXIMATE AND SHALL BE SUBJECT TO VISUAL OBSERVATION AND CONFIRMATION SAMPLING AND ANALYSES.
2. WASTE MATERIAL LOCATED ON THE SURFACE WITHIN AREA "B" AND THE TOP SIX INCHES OF SOIL SHALL BE REMOVED AND PLACED WITHIN THE NORTH LANDFILL AREA AND CAPPED.
3. ALL MATERIAL EXCAVATED FROM AREA "D" SHALL BE DISPOSED OF OFF-SITE, BASED ON WASTE CHARACTERISTICS, AT AN OWNER APPROVED FACILITY.
4. NON-HAZARDOUS MATERIAL EXCAVATED FROM AREA'S "B" AND "C" SHALL BE PLACED IN THE NORTH LANDFILL AND CAPPED.
5. IN AREA "B", IF THE RESULTS OF THE CONFIRMATION SAMPLING INDICATE THAT THE SCOs HAVE BEEN ACHIEVED, THEN THE ENGINEER WILL DIRECT THE CONTRACTOR TO GRADE THE DISTURBED AREA AS NECESSARY TO PREVENT PONDING OF SURFACE WATER. HOWEVER, IF THE SAMPLE RESULTS ARE ABOVE THE SCOs BUT NOT AT LEVELS INDICATING THE PRESENCE OF WASTE BELOW THE SURFACE, THEN THE ENGINEER WILL DIRECT THE CONTRACTOR TO PLACE A 6-INCH LAYER OF EMBANKMENT MATERIAL AND 6-INCH LAYER OF TOPSOIL ON THE SURFACE. AFTERWARDS, THE AREA WILL BE SEEDED, FERTILIZED, AND MULCHED.
6. AREA "C" AND ADJOINING AREA "D" AREAS WILL BE BACKFILLED AND GRADED AS SHOWN ON DRAWING G-9.
7. AREA "D" AREAS NOT CONTIGUOUS TO AREA "C" AREAS WILL BE BACKFILLED TO ORIGINAL GRADE.

EXCAVATION/BACKFILL TABLE

AREA NAME	SURFACE AREA (SF)	EXCAVATION/FILL DEPTH (FT)	TOTAL EXCAVATION (CY)	TOTAL FILL (CY)	BACKFILL MATERIAL (CY) (EMBANKMENT MATERIAL)	TOPSOIL & SEED (CY)
B	111,154	0.5	2,058	2,058	0	2,058
C1	42,663	3	4,740	1,580	790	790
C2	81,917	5	15,170	3,034	1,517	1,517
C3	46,664	3	5,185	1,728	864	864
D1	833	5	154*	*93	78	15
D2	23,724	7	6,151*	4,393*	3,954	439
D3	2,653	7.5	737*	737*	688	49
D4	8,779	8.5	2,764*	1,853*	1,690	163
D5	6,843	7.5	1,901*	1,901*	1774	127
D6	6,287	7.5	1,746*	1,039	923	116

* FILL DEPTH VARIES. REFER TO AREA "C" GRADING PLAN.

NOTE:

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1"=50' 50 0 50 100

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STATE OF NEW YORK JAMES R. HECKATHORNE 56609 LICENSED PROFESSIONAL ENGINEER

O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

AREAS "B", "C" AND "D" EXCAVATION PLAN

IN CHARGE OF ____________

DESIGNED BY ______ CHECKED BY ______

DRAWN BY ____________

FILE NO. 10747.39860-107

DATE AUGUST 2012

G-7

AREA "B" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
B1	976401.3308	618204.0013	B22	975771.1760	618234.0775
B2	976401.6230	618199.1256	B23	975787.4620	618309.4210
B3	976384.5874	618173.8240	B24	975791.8152	618314.1972
B4	976363.0423	618151.0237	B25	975802.3528	618313.8161
B5	976348.0104	618136.9960	B26	975815.1757	618308.9889
B6	976332.9786	618122.4662	B27	975869.5501	618290.8669
B7	976325.2131	618115.2013	B28	975923.9246	618272.7449
B8	976315.2584	618091.7012	B29	975980.7342	618258.7510
B9	976305.1464	618050.2331	B30	976000.7757	618257.5736
B10	976294.0232	618037.0847	B31	976032.3431	618251.2366
B11	976218.1833	618053.2674	B32	976088.7500	618254.5394
B12	976176.7242	618064.3930	B33	976124.1419	618244.4252
B13	976147.3995	618074.5071	B34	976156.5002	618240.3795
B14	976075.7169	618075.2997	B35	976168.6346	618247.4595
B15	975971.4509	618077.5414	B36	976223.2393	618247.4595
B16	975935.0478	618082.5985	B37	976261.6649	618229.2539
B17	975839.9952	618082.5985	B38	976296.0456	618225.2083
B18	975784.7955	618091.7230	B39	976324.3592	618229.2539
B19	975757.0040	618109.8220	B40	976347.6167	618238.3567
B20	975751.8640	618128.6830	B41	976370.8743	618238.3567
B21	975754.8900	618158.7340	B42	976384.0199	618229.2539

AREA "C1" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
C1-1	976624.6164	617777.3348	C1-19	976381.5630	617867.1370
C1-2	976623.5100	617791.6461	C1-20	976362.0275	617848.3770
C1-3	976619.9721	617802.9701	C1-21	976347.1761	617816.0826
C1-4	976611.0092	617814.2941	C1-22	976348.0104	617852.8910
C1-5	976602.2822	617817.8328	C1-23	976356.2769	617897.5593
C1-6	976577.2657	617813.7668	C1-24	976385.0910	617926.5501
C1-7	976574.2142	617796.8363	C1-25	976412.6487	617963.1312
C1-8	976578.9315	617775.1320	C1-26	976440.2064	617999.7124
C1-9	976575.6294	617766.6390	C1-27	976484.6991	617999.7124
C1-10	976575.9789	617753.1817	C1-28	976529.1918	617999.7124
C1-11	976555.4500	617753.1817	C1-29	976573.6846	617981.5069
C1-12	976534.9075	617756.1881	C1-30	976601.9981	617958.2443
C1-13	976526.3874	617757.1922	C1-31	976616.1549	617931.9475
C1-14	976522.5540	617761.9793	C1-32	976621.5931	617900.4939
C1-15	976496.9250	617789.2524	C1-33	976623.5954	617869.4306
C1-16	976459.9254	617829.1007	C1-34	976624.0974	617837.8592
C1-17	976421.9770	617869.9710	C1-35	976625.5976	617817.3196
C1-18	976406.0510	617874.2570	C1-36	976628.5227	617796.8372

AREA "C2" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
C2-1	976379.6835	617719.4650	C2-19	976050.7818	617971.5670
C2-2	976352.2690	617685.2874	C2-20	976102.9989	618050.2029
C2-3	976304.9201	617629.4245	C2-21	976143.4468	617982.4379
C2-4	976253.3098	617598.8587	C2-22	976155.5812	617952.0954
C2-5	976230.7620	617592.8430	C2-23	976172.1348	617940.5778
C2-6	976209.4646	617589.5971	C2-24	976218.7365	617916.0278
C2-7	976188.6728	617596.3514	C2-25	976251.8081	617864.1694
C2-8	976164.8714	617613.3885	C2-26	976262.8310	617852.8955
C2-9	976127.2918	617649.2139	C2-27	976275.8576	617844.8790
C2-10	976097.9827	617679.0266	C2-28	976306.9194	617833.8547
C2-11	976082.4442	617706.0839	C2-29	976334.9838	617836.3590
C2-12	976065.1591	617743.9146	C2-30	976348.0104	617852.8910
C2-13	976049.3757	617793.7677	C2-31	976347.2381	617818.8170
C2-14	976043.1134	617823.8329	C2-32	976337.6620	617799.6770
C2-15	976037.9436	617860.3209	C2-33	976323.6733	617761.4447
C2-16	976010.7979	617866.4227	C2-34	976325.4584	617753.5018
C2-17	975971.9631	617870.6827	C2-35	976330.9914	617747.7423
C2-18	975998.5647	617892.9312			

AREA "C3" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
C3-1	976102.9989	618050.2029	C3-10	975772.7896	617952.6063
C3-2	976050.7818	617971.5670	C3-11	975779.8065	617972.1477
C3-3	975998.5647	617892.9312	C3-12	975819.0962	618046.2201
C3-4	975971.9631	617870.6827	C3-13	975820.7824	618064.3930
C3-5	975928.6218	617871.9364	C3-14	975864.2344	618068.8491
C3-6	975828.4105	617894.9847	C3-15	975874.0051	618071.8570
C3-7	975797.8417	617902.0001	C3-16	975916.3453	618070.3568
C3-8	975782.8098	617914.0225	C3-17	975977.7278	618063.3369
C3-9	975771.7885	617931.5617	C3-18	976040.3634	618056.7699

AREA "D1" COORDINATE TABLE		
POINT ID.	NORTHING	EASTING
D1-1	976292.1613	617716.4751
D1-2	976284.2075	617712.2434
D1-3	976275.0690	617710.8893
D1-4	976266.9460	617717.6600
D1-5	976263.3921	617726.9697
D1-6	976265.0844	617741.6959
D1-7	976273.7152	617745.2506
D1-8	976285.5613	617745.5891
D1-10	976292.1613	617738.3106
D1-11	976292.1613	617727.3929

AREA "D2" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
D2-1	976533.8735	617747.6498	D2-15	976330.6676	617780.5608
D2-2	976530.2711	617723.5537	D2-16	976337.6620	617799.6770
D2-3	976514.8516	617706.2401	D2-17	976349.8448	617824.0270
D2-4	976493.3468	617702.1600	D2-18	976362.0275	617848.3770
D2-5	976480.0630	617701.0340	D2-19	976381.5630	617867.1370
D2-6	976457.3230	617693.3773	D2-20	976406.0510	617874.2570
D2-7	976434.2453	617698.2191	D2-21	976421.9770	617869.9710
D2-8	976411.1676	617703.0608	D2-22	976440.9512	617849.5359
D2-9	976396.5330	617710.0419	D2-23	976459.9254	617829.1007
D2-10	976379.6835	617719.4650	D2-24	976481.7576	617805.5876
D2-11	976358.0857	617732.1573	D2-25	976496.9250	617789.2524
D2-12	976330.9914	617747.7423	D2-26	976513.3501	617771.5626
D2-13	976325.4584	617753.5018	D2-27	976522.5540	617761.9793
D2-14	976323.6733	617761.4447	D2-28	976526.3874	617757.1922

AREA "D3" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
D3-1	976683.3253	618324.9406	D3-12	976610.1956	618273.1184
D3-2	976677.8988	618318.7375	D3-13	976605.2858	618278.5462
D3-3	976664.9783	618313.3097	D3-14	976603.0894	618288.1094
D3-4	976645.5976	618308.5281	D3-15	976604.8982	618306.8481
D3-5	976645.5976	618308.5281	D3-16	976618.5939	618314.9897
D3-6	976633.5816	618307.1066	D3-17	976627.7674	618326.6207
D3-7	976628.8010	618301.2911	D3-18	976641.0755	618336.5716
D3-8	976629.8347	618295.0879	D3-19	976656.7092	618345.1009
D3-9	976632.9356	618287.7217	D3-20	976670.9217	618344.5840
D3-10	976631.2559	618276.7369	D3-21	976678.6740	618343.2916
D3-11	976625.8293	618271.8261	D3-22	976683.4545	618338.3808

AREA "D4" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
D4-1	976637.6620	617652.6915	D4-12	976574.2142	617796.8363
D4-2	976618.0851	617636.6492	D4-13	976577.2657	617813.7668
D4-3	976602.5180	617635.7056	D4-14	976589.7740	617815.7998
D4-4	976591.6683	617642.0753	D4-15	976602.2822	617817.8328
D4-5	976586.0075	617656.4662	D4-16	976611.0092	617814.2941
D4-6	976580.8185	617690.2022	D4-17	976619.9721	617802.9701
D4-7	976579.1674	617708.1318	D4-18	976623.5100	617791.6461
D4-8	976579.8750	617733.8467	D4-19	976625.2790	617768.7623
D4-9	976576.1011	617748.4735	D4-20	976627.0480	617745.8784
D4-10	976575.6294	617766.6390	D4-21	976633.8881	617716.8607
D4-11	976578.9315	617775.1320	D4-22	976635.7750	617684.7761

AREA "D5" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
D5-1	976715.1035	618023.6802	D5-12	976704.1204	618223.1658
D5-2	976699.8769	618012.4451	D5-13	976716.3515	618216.1751
D5-3	976674.1666	618014.6921	D5-14	976718.8477	618209.1843
D5-4	976669.9231	618020.1849	D5-15	976711.1096	618188.4618
D5-5	976670.6720	618055.0137	D5-16	976708.6135	618164.4936
D5-6	976671.4208	618089.8425	D5-17	976706.3669	618141.0247
D5-7	976672.2945	618119.8028	D5-18	976701.6242	618109.8160
D5-8	976673.1681	618149.7631	D5-19	976702.6227	618082.3524
D5-9	976685.6489	618186.7141	D5-20	976709.6119	618059.8822
D5-10	976690.8908	618220.6691	D5-21	976713.8554	618038.4107
D5-11	976695.6335	618222.4168			

AREA "D6" COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
D6-1	976119.0859	617843.9041	D6-9	976063.6225	617946.1487
D6-2	976104.9291	617830.7557	D6-10	976073.582	617952.1257
D6-3	976087.7388	617830.7557	D6-11	976096.8395	617958.1942
D6-4	976073.582	617840.8698	D6-12	976108.9739	617952.1257
D6-5	976068.7955	617850.3818	D6-13	976119.0859	617941.0001
D6-6	976066.1386	617883.6005	D6-14	976119.0859	617921.3524
D6-7	976062.9835	617900.0438	D6-15	976119.0859	617901.7047
D6-8	976063.303	617923.0963	D6-16	976119.0859	617872.8044

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STATE OF NEW YORK
JAMES R. HECKATHORNE
56609
LICENSED PROFESSIONAL ENGINEER

NO.	DATE	REVISION	INIT.
B	01/31/2013	FINAL DESIGN FOR NYSDEC APPROVAL AND BID	
A	08/31/2012	PRE-FINAL DESIGN FOR NYSDEC REVIEW	

NOT TO SCALE

O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK
(SITE 3-36-009)

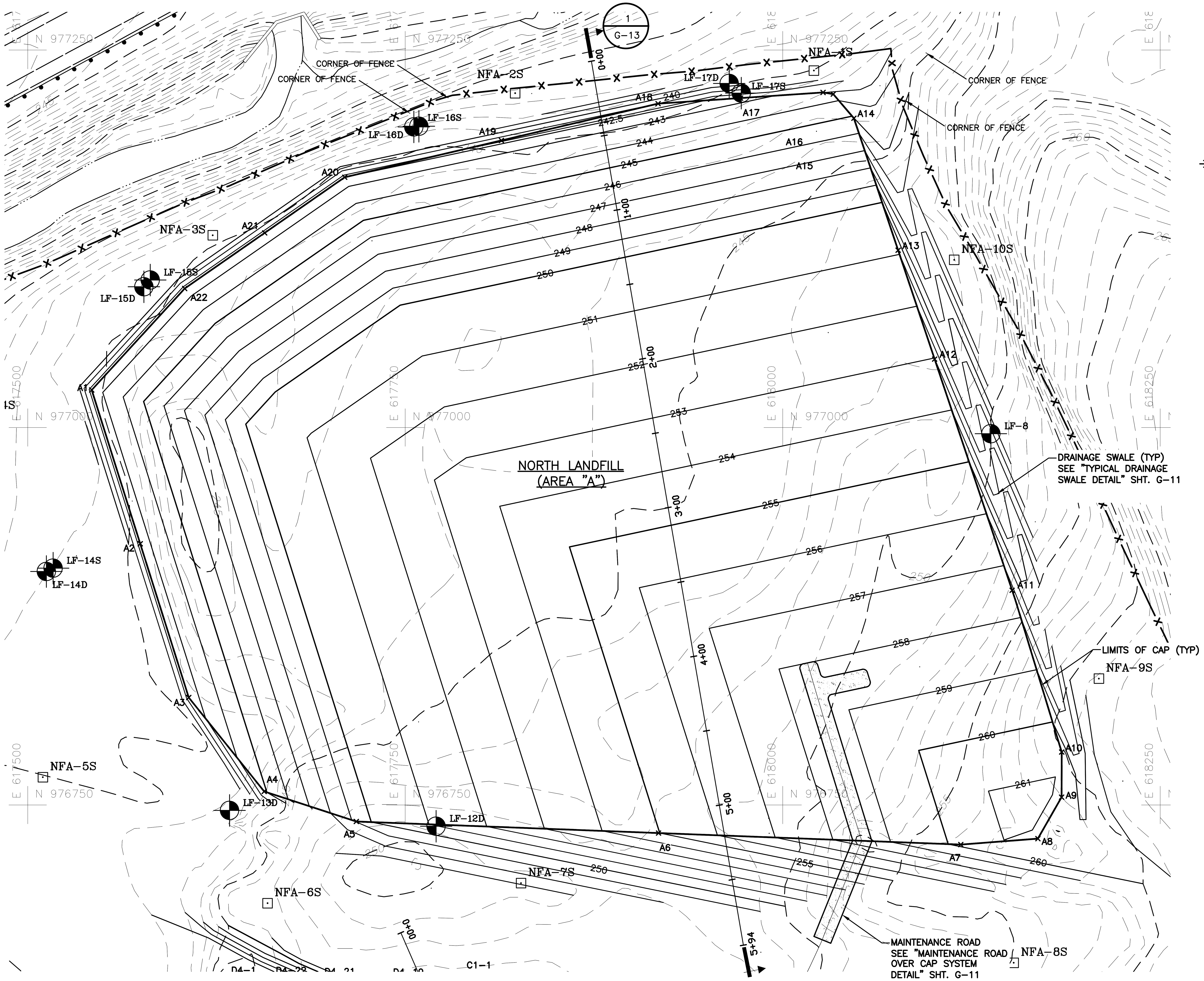
GENERAL

AREAS "B", "C", AND "D" COORDINATE TABLES

IN CHARGE OF ______
DESIGNED BY ______ CHECKED BY ______
DRAWN BY SED

FILE NO. 10747.39860-114
DATE AUGUST 2012

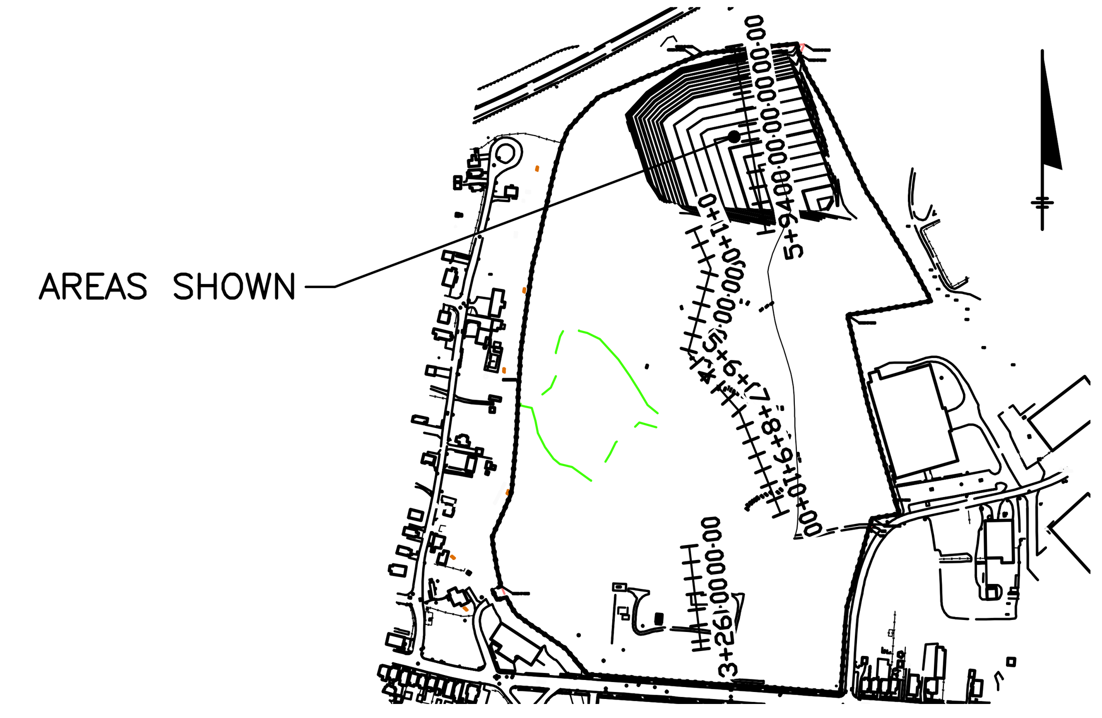
G-7A



AREA "A" GRADING PLAN

SCALE: 1"=40'

NORTH LANDFILL (AREA "A") COORDINATE TABLE					
POINT ID.	NORTHING	EASTING	POINT ID.	NORTHING	EASTING
A1	977024.8727	617542.3557	A13	977045.2966	618100.6139
A2	976923.0149	617574.4853	A14	977117.4348	618076.4327
A3	976821.1572	617606.6149	A15	977204.8017	618047.1467
A4	976758.9591	617656.5859	A16	977220.8061	618033.4735
A5	976739.0675	617717.6	A17	977221.8964	618026.7123
A6	976739.0675	617717.6	A18	977218.1894	617972.0774
A7	976731.4246	617917.77	A19	977214.4825	617917.4426
A8	976723.7817	618117.9399	A20	977190.1161	617813.685
A9	976727.7067	618168.976	A21	977165.7498	617709.9273
A10	976755.1818	618184.6795	A22	977128.8983	617656.9283
A11	976785.0685	618184.7465	A23	977092.0469	617603.9292
A12	976892.1989	618151.9333			



KEY MAP

DRAWING NOTES:

1. REFER TO MISCELLANEOUS DETAILS SHEET G-11 FOR "TYPICAL CAP CROSS SECTION" AND DETAILS.

LEGEND

LF-8	MONITORING WELL
250 (dashed)	EXISTING GRADE
250 (solid)	FINAL GRADE

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1"=40' 40 0 40 80

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O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

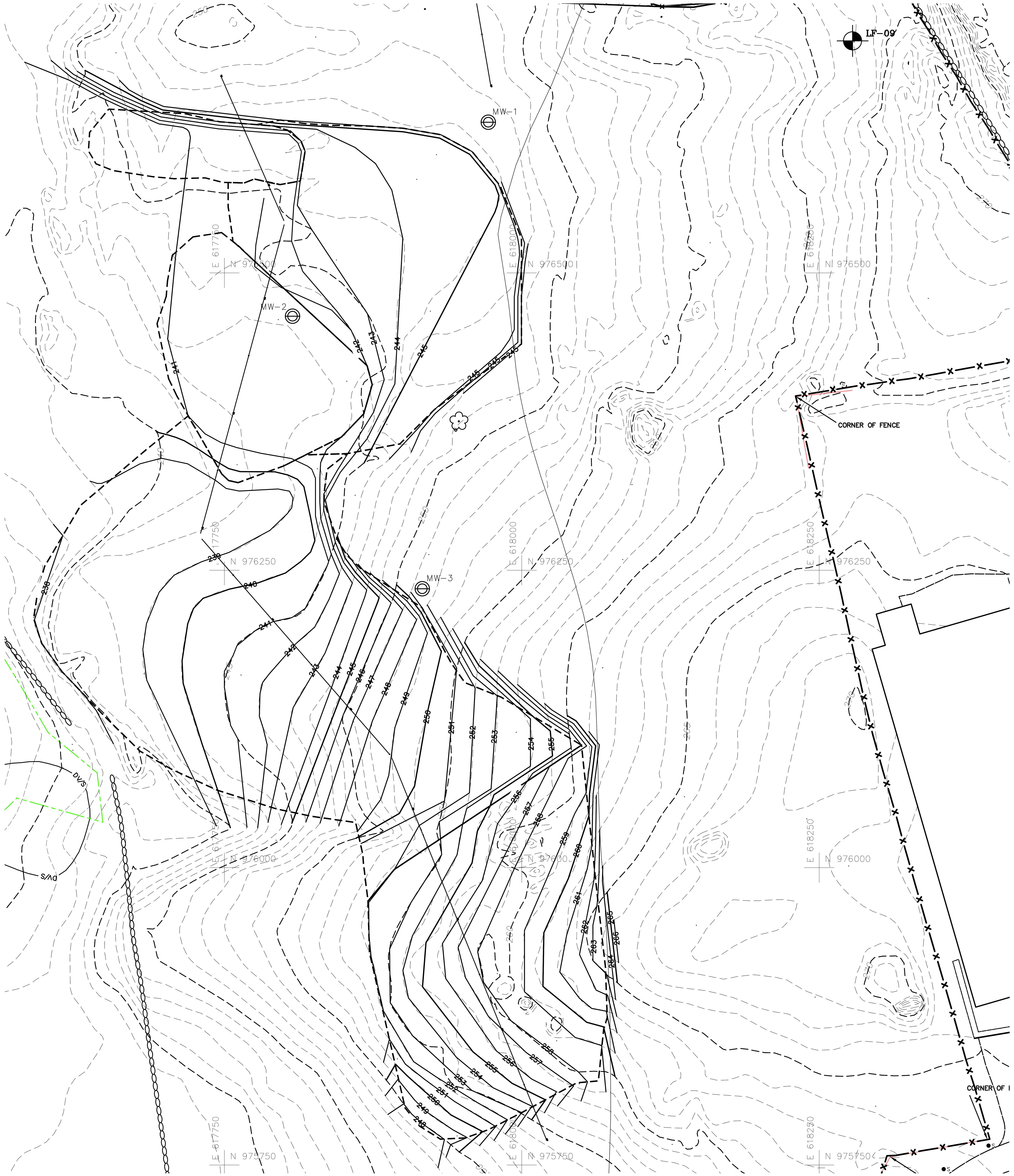
GENERAL

AREA "A" TOP OF CAP GRADING PLAN

IN CHARGE OF ______	FILE NO. 10747.39860-108	G-8
DESIGNED BY ______ CHECKED BY ______	DATE AUGUST 2012	
DRAWN BY ______		

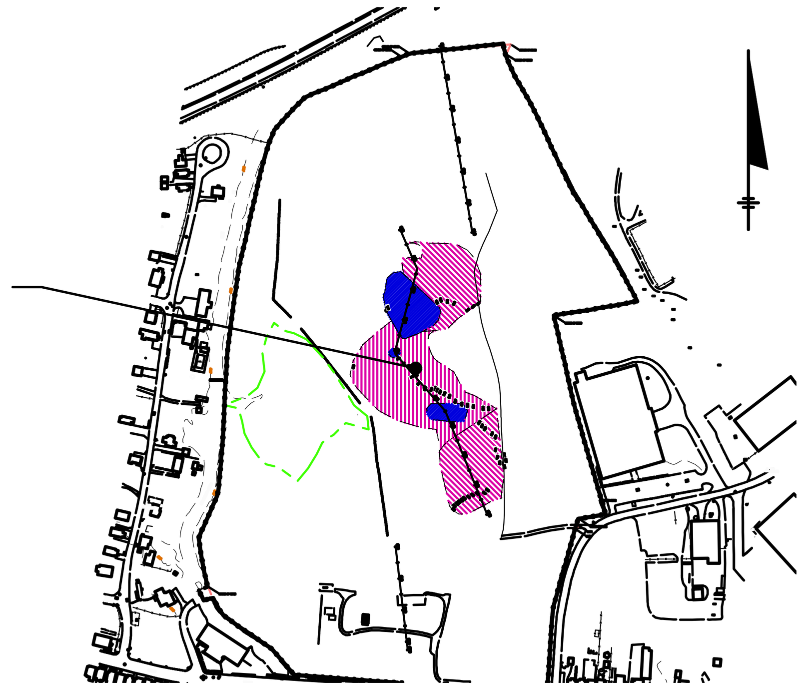
SAVED: 2/8/13 9:25 AM

I:\ZENECA.5618\39860.DUPONT-STAUF-LD-DIV71\DOC\DRAWINGS\CONTRACT DRAWINGS\SHEETS\39860-109-G9.DWG



AREA "C" GRADING PLAN

SCALE: 1"=50'



KEY MAP

LEGEND

LF-8	EXISTING MONITORING WELLS TO REMAIN
MW-3	EXISTING MONITORING WELLS TO BE ABANDONED
250	EXISTING GRADE
250	FINAL GRADE

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1"=50' 50 0 50 100

O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

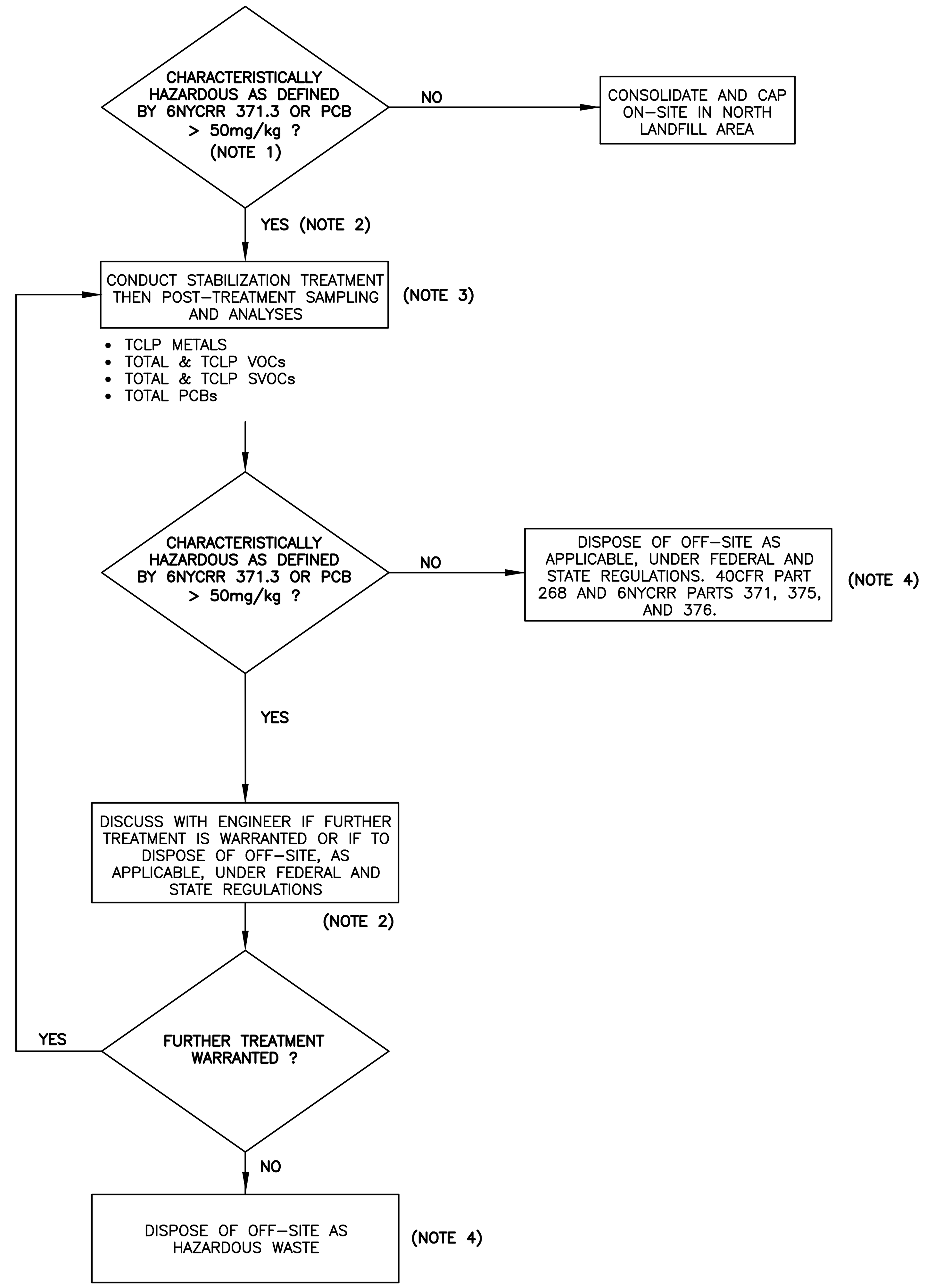
AREA "C"
GRADING PLAN

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

FILE NO. 10747.39860-109

DATE AUGUST 2012

G-9



SOUTH LANDFILL SOIL/ASH MATRIX CHARACTERIZATION PROCESS

NOT TO SCALE

SOUTH LANDFILL SOIL/ASH MATRIX CHARACTERIZATION NOTES:

1. WHERE PREVIOUS DATA, GATHERED DURING THE SOUTH LANDFILL PRE-DESIGN INVESTIGATION AND IN-SITU PILOT STUDY, DEMONSTRATE THAT THE WASTES ARE CHARACTERISTICALLY HAZARDOUS, THE MATERIAL WILL BE REMOVED AND MANAGED AS REQUIRED BY THE RECORD OF DECISION AND EXPLANATION OF SIGNIFICANT DIFFERENCE (E.G. DISPOSED OFF-STIE AS "HAZARDOUS WASTE", OR PRE-TREATED ON SITE THEN DISPOSED OFF-SITE). FOR THESE LOCATIONS, HAVING PRIOR ANALYTIC TEST RESULTS IDENTIFYING THE MATERIAL AS BEING HAZARDOUS, THE CONTRACTOR MAY BE DIRECTED BY THE ENGINEER TO COLLECT ADDITIONAL SAMPLES FOR ANALYSES TO SATISFY THE REQUIREMENTS OF THE OFF-SITE DISPOSAL FACILITY (IF REQUIRING CURRENT SAMPLE ANALYSES) AND TO FILL DATA GAPS. LIKEWISE, DATA GATHERED DURING THE PRIOR INVESTIGATIONS AND DEMONSTRATING THAT AN AREA OR WASTE IS CHARACTERISTICALLY NON-HAZARDOUS WASTE WILL BE UTILIZED AND THE CONTRACTOR MAY BE DIRECTED BY THE ENGINEER TO COLLECT ADDITIONAL SAMPLES FOR CHARACTERIZATION WHERE NECESSARY TO FILL DATA GAPS.
2. ENGINEER MAY DIRECT CONTRACTOR TO DISPOSE MATERIAL OFF-SITE AS "HAZARDOUS" WASTE RATHER THAN TREATING MATERIAL, DEPENDING ON RESULTS OF PRIOR SAMPLE ANALYSES IF ENGINEER BELIEVES TREATMENT ON-SITE MAY NOT FEASIBLY ACHIEVE NON-HAZARDOUS CHARACTERISTICS.
3. POST-TREATMENT SAMPLING SHALL BE CONDUCTED BY THE CONTRACTOR AT A FREQUENCY OF 1 GRAB SAMPLE AS REQUIRED BY 6NYCRR PART 376.4 (j)(I) PER 100 TONS OF MATERIAL, AFTER EACH PASS THROUGH TREATMENT AS APPLICABLE.
4. CONTRACTOR SHALL COLLECT AND ANALYZE ADDITIONAL SAMPLES, IF ANY ARE REQUIRED BY THE DISPOSAL FACILITY AS A CONDITION OF WASTE ACCEPTANCE IN ADDITION TO THE RESULTS ABOVE.

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STATE OF NEW YORK
JAMES R. HECKATHORNE
56609
LICENSED PROFESSIONAL ENGINEER

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OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

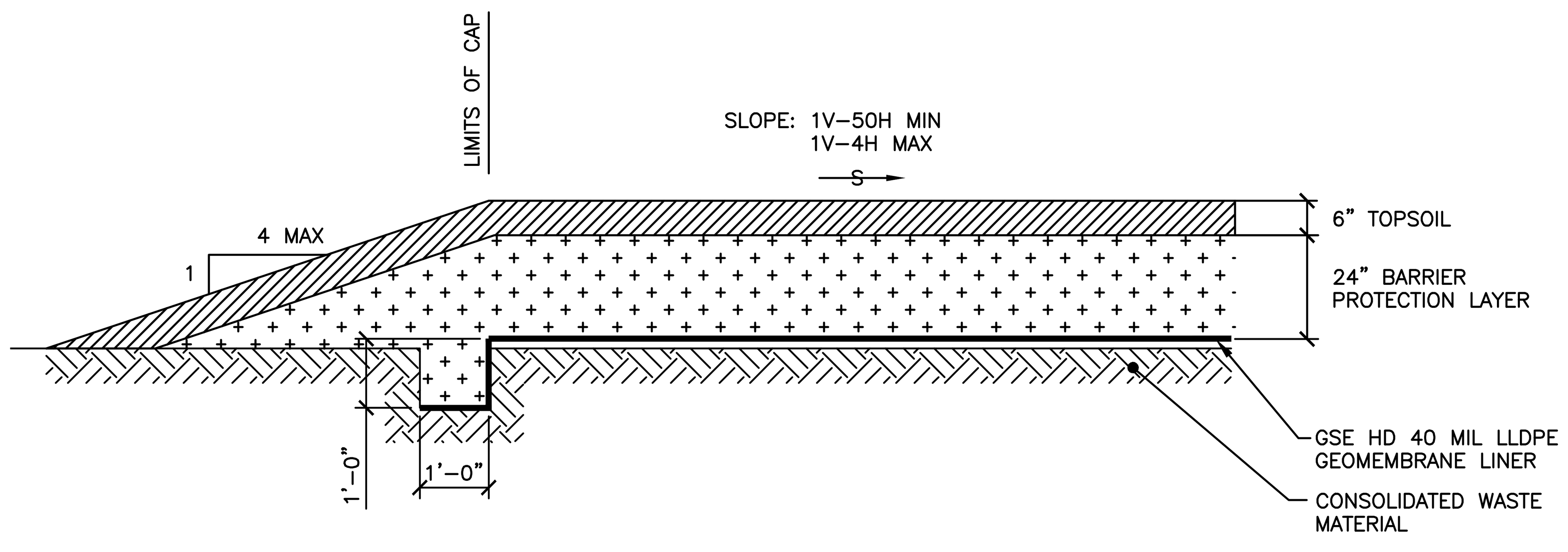
GENERAL

SOUTH LANDFILL WASTE CHARACTERIZATION MATRIX

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

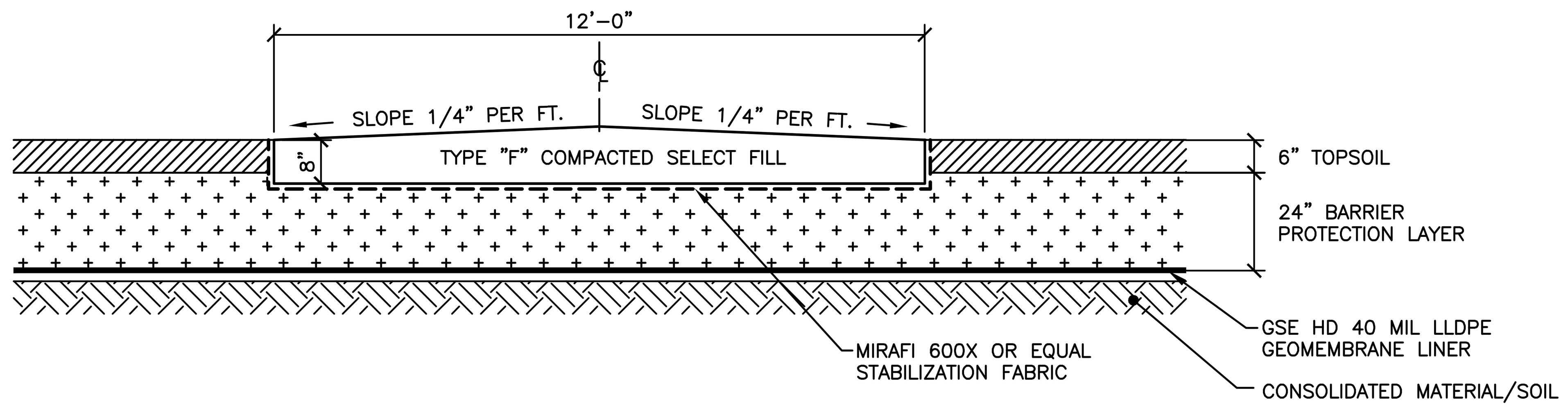
FILE NO. 10747.39860-110
DATE AUGUST 2012

G-10



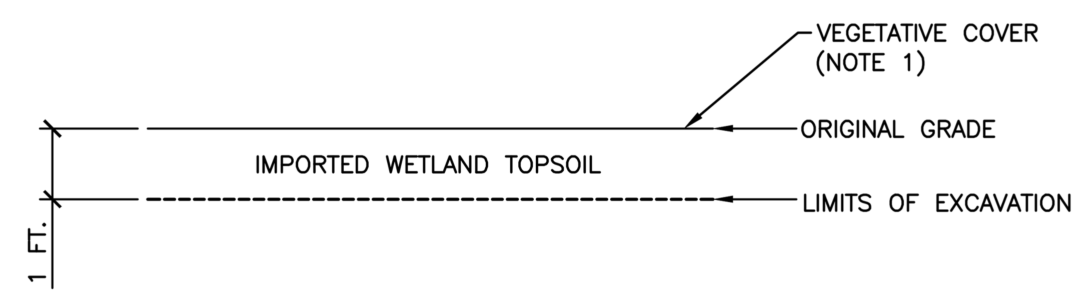
TYPICAL CAP CROSS SECTION

NOT TO SCALE



MAINTENANCE ROAD OVER CAP SYSTEM DETAIL

NOT TO SCALE

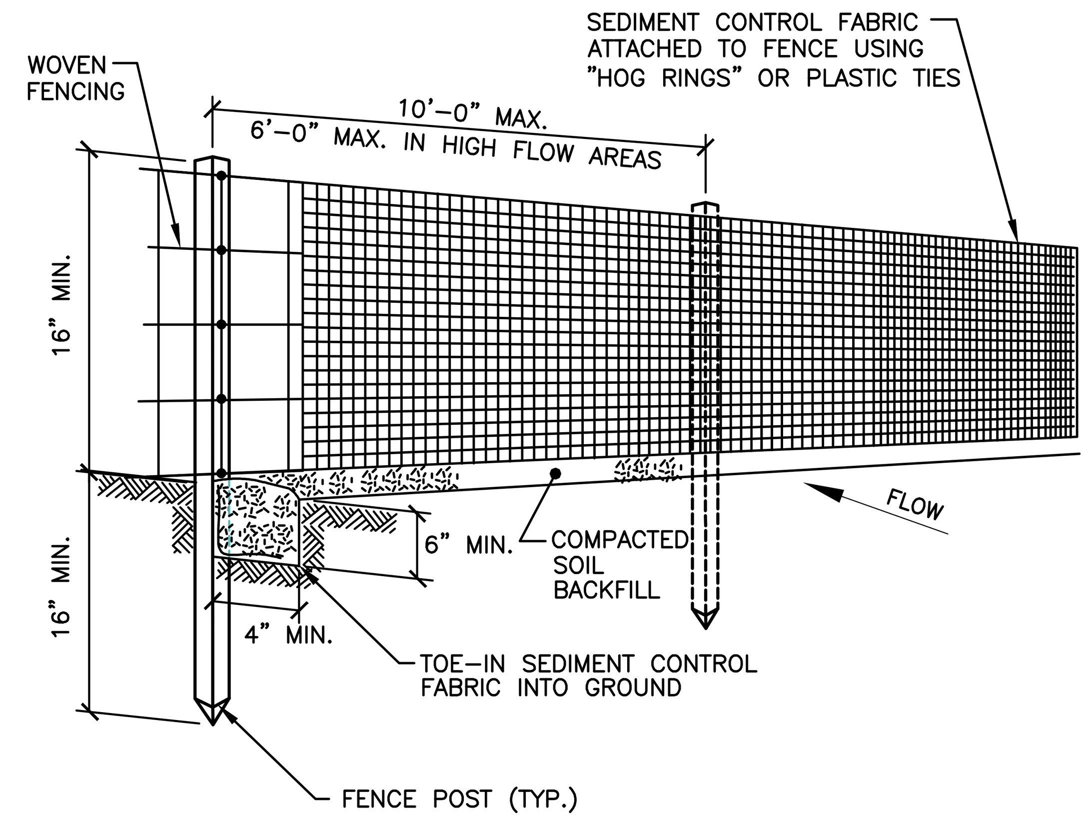


DETAIL NOTES:

1. WETLAND RESTORATION VEGETATIVE COVER SHALL BE IN ACCORDANCE WITH SPECIFICATION 02981 "WETLAND RESTORATION".

TYPICAL WETLAND RESTORATION DETAIL

NOT TO SCALE



DETAIL NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. SEDIMENT CONTROL FABRIC TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. EMBED SEDIMENT CONTROL FABRIC MIN. 6" INTO GROUND.
3. WHEN TWO SECTIONS OF SEDIMENT CONTROL FABRIC ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY MIN. SIX INCHES AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. FENCE TO BE ALIGNED ALONG CONTOUR AS CLOSELY AS POSSIBLE.

POSTS : STEEL (EITHER "T" OR "U" TYPE) OR 2" HARDWOOD ALL MIN. 36" LENGTH.

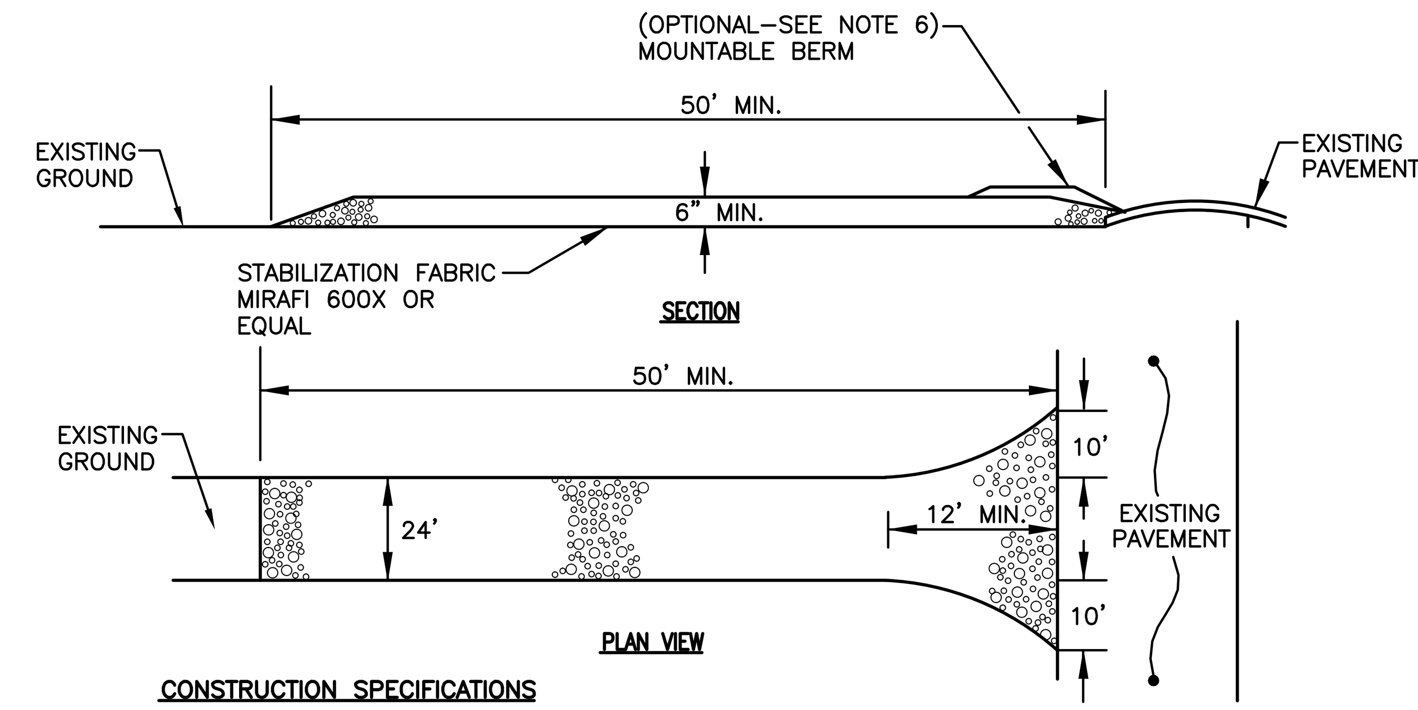
FENCE : WOVEN WIRE; MIN. 14.5 GAUGE 6" MAX. MESH OPENING

SEDIMENT CONTROL FABRIC : MINIMUM TENSILE STRENGTH OF 120 LBS/100 LBS (MD/CD) (ASTM D4632)

PREFABRICATED UNIT : MIRAFI ENVIROFENCE, OR APPROVED EQUAL

SILT FENCE DETAIL

NOT TO SCALE

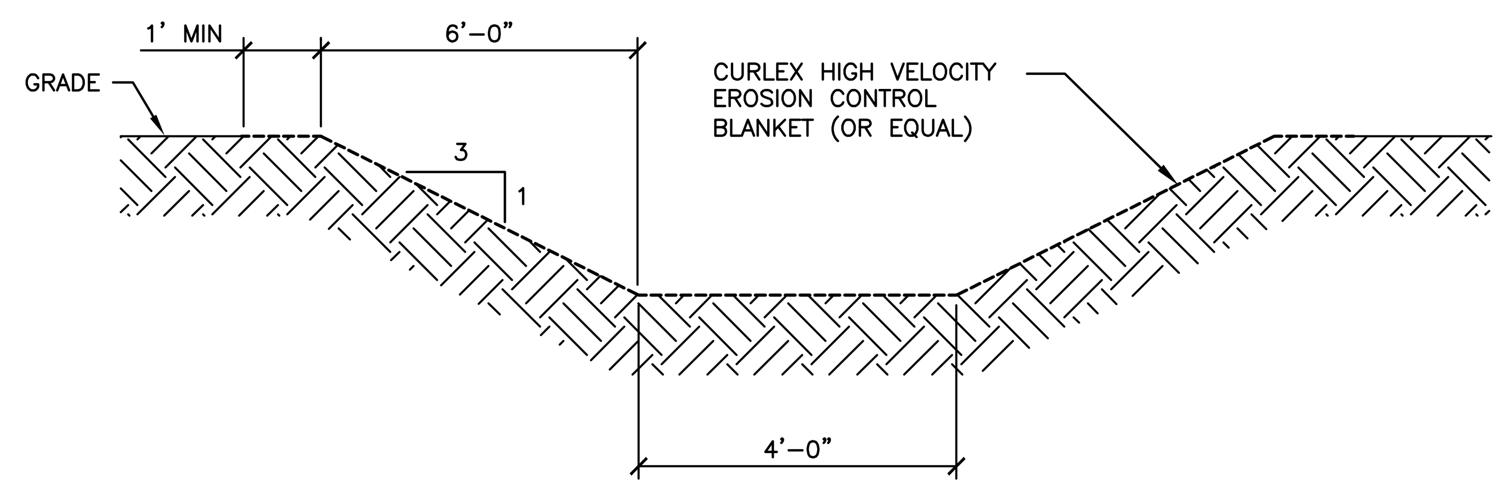


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50 FEET
3. THICKNESS – NOT LESS THAN SIX (6) INCHES
4. WIDTH–(24) TWENTY–FOUR FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE EGRESS OCCURS.
5. FILTER FABRIC (MIRAFI 600X OR EQUAL) – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARDS CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS NOT POSSIBLE, A MOUNTABLE BERM 3' WIDE (MIN.) WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO ADJACENT SEDIMENT BASINS.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED IN ACCORDANCE WITH THE PROJECT STORM WATER POLUTION PREVENTION PLAN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



DETAIL NOTES:

1. EROSION CONTROL BLANKET SHALL BE ANCHORED AT THE TOP OF THE SLOPE PER MANUFACTURER'S RECOMMENDATIONS.

DRAINAGE SWALE DETAIL

NOT TO SCALE

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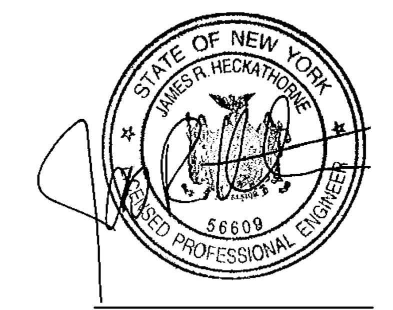

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O'BRIEN & GERE

OU–1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT–STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

GENERAL

MISCELLANEOUS DETAILS

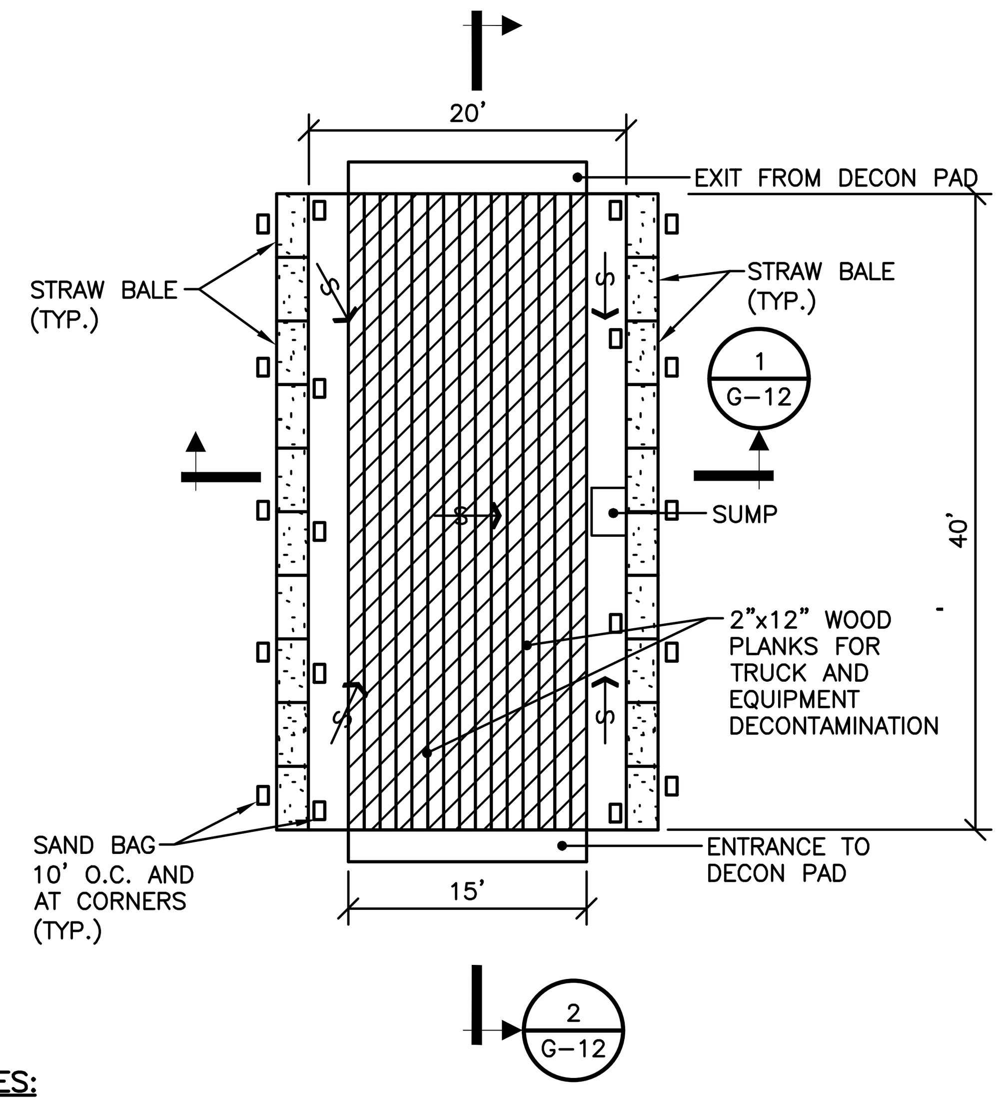
IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY ____

FILE NO. 10747.39860–111
DATE AUGUST 2012

G–11

SAVED: 2/8/13 9:27 AM

I:\ZENECA.5618\39860.DUPONT-STAUF-LD-DIV71\DOC\DRAWINGS\CONTRACT DRAWINGS\SHEETS\39860-115-G12.DWG

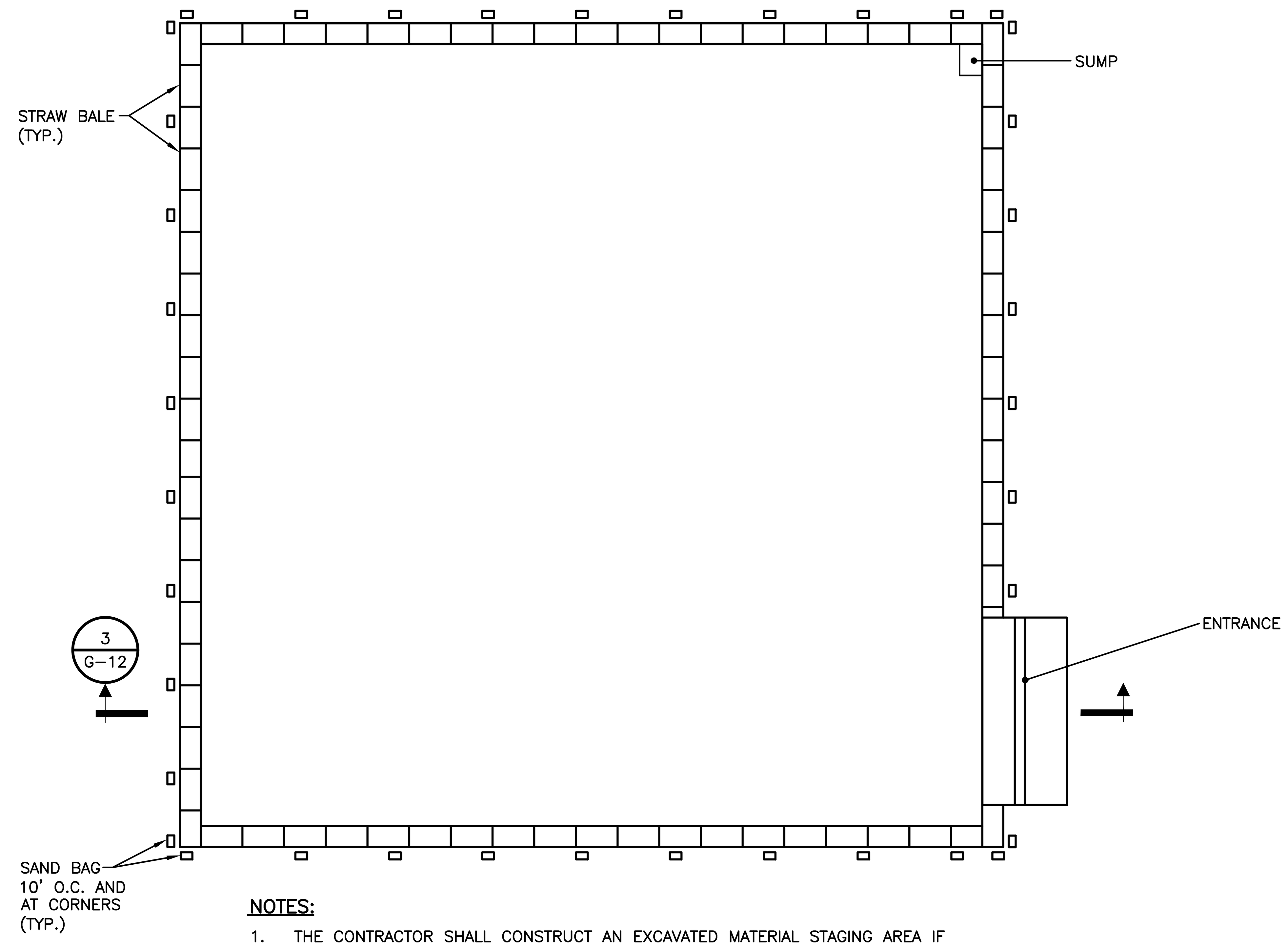


NOTES:

1. THE CONTRACTOR SHALL PLACE SELECT FILL TYPE "D" SAND (NOT SHOWN HERE) AS REQUIRED BENEATH THE NON-WOVEN GEOTEXTILE CUSHION TO PROMOTE DRAINAGE.
2. WATER COLLECTED FROM THE DECONTAMINATION PAD SHALL BE HANDLED IN ACCORDANCE WITH SPECIFICATION 02141 "CONSTRUCTION WATER MANAGEMENT".

DECONTAMINATION PAD PLAN

NOT TO SCALE

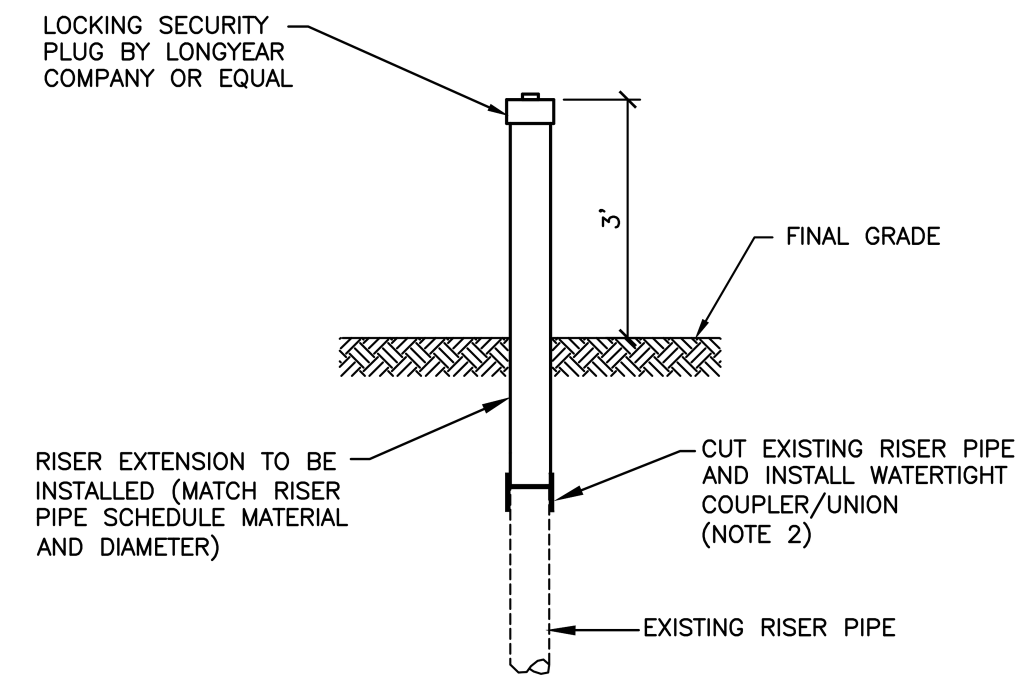


NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT AN EXCAVATED MATERIAL STAGING AREA IF MATERIAL TO BE EXCAVATED BY THEM IS NOT IMMEDIATELY PLACED BY THEM INTO THE NORTH AREA LANDFILL TYPE "A" AREA (IF NON-HAZARDOUS) OR DISPOSED OF OFF-SITE (IF HAZARDOUS). THE CONTRACTOR SHALL SIZE AND CONSTRUCT THE STAGING AREA AS NECESSARY TO ACCOMMODATE THE NUMBER AND ORIENTATION OF THE STOCKPILES THEY ANTICIPATE BASED ON THEIR MEANS, METHODS, AND SCHEDULE FOR WORK. THE CONTRACTOR SHALL DESCRIBE AND SHOW THE LOCATION OF THE MATERIAL STAGING AREA (OR AREAS) IN THE CONSTRUCTION SITE MANAGEMENT PLAN. MINIMALLY, THE STAGING AREA SHALL BE LINED AS SHOWN ON THE DETAIL ABOVE TO PREVENT CONTAMINATION OF THE UNDERLYING MATERIAL. PRIOR TO DEMOBILIZING FROM THE SITE, THE CONTRACTOR SHALL REMOVE THE STAGING AREA, APPROPRIATELY DISPOSE OF THE CONSTRUCTION MATERIAL, AND CONFIRM THAT THE UNDERLYING SURFACE HAS NOT BEEN CONTAMINATED AS A CONSEQUENCE OF THEIR CONSTRUCTION ACTIVITY.
2. WATER COLLECTED FROM THE EXCAVATED MATERIAL STAGING AREA SHALL BE HANDLED IN ACCORDANCE WITH SPECIFICATION 02141 "CONSTRUCTION WATER MANAGEMENT".

EXCAVATED MATERIAL STAGING AREA PLAN

NOT TO SCALE

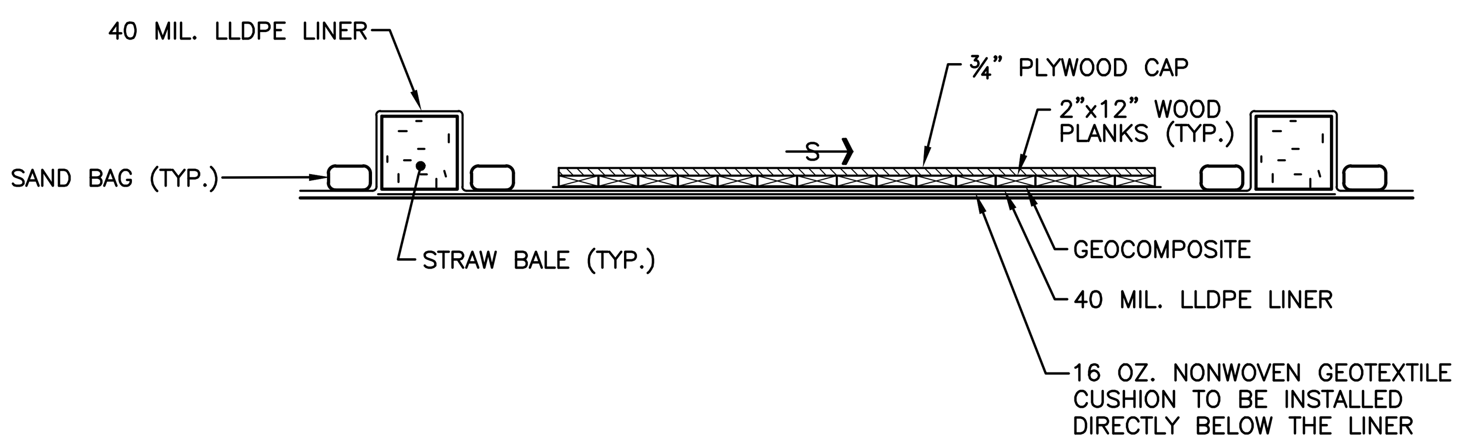


DETAIL NOTES:

1. DETAIL SHOWN HERE DEPICTS MONITORING WELL RESTORATION REQUIRED FOR MONITORING WELLS SURROUNDING THE PERIMETER OF THE NORTH LANDFILL AREA. "A".
2. THE CONTRACTOR SHALL CUT THE EXISTING RISER PIPE AT A DEPTH REQUIRED TO PERFORM THE WORK SHOWN HERE OR AS DIRECTED BY THE ENGINEER.

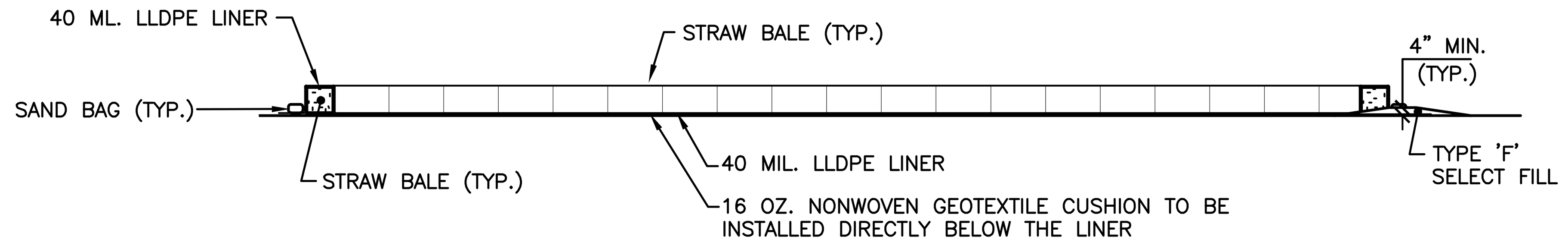
MONITORING WELL RESTORATION DETAIL

NOT TO SCALE



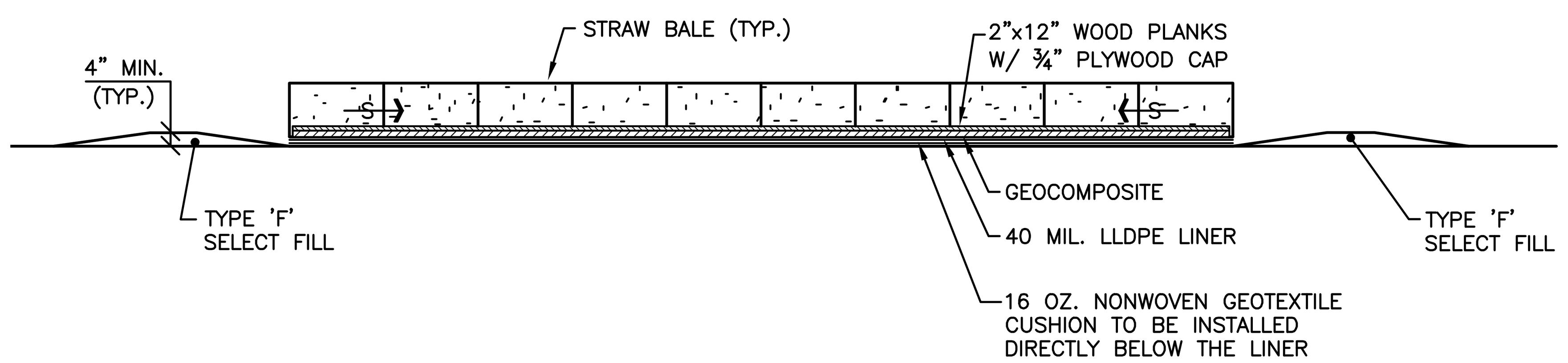
SECTION 1 / G-12

NOT TO SCALE



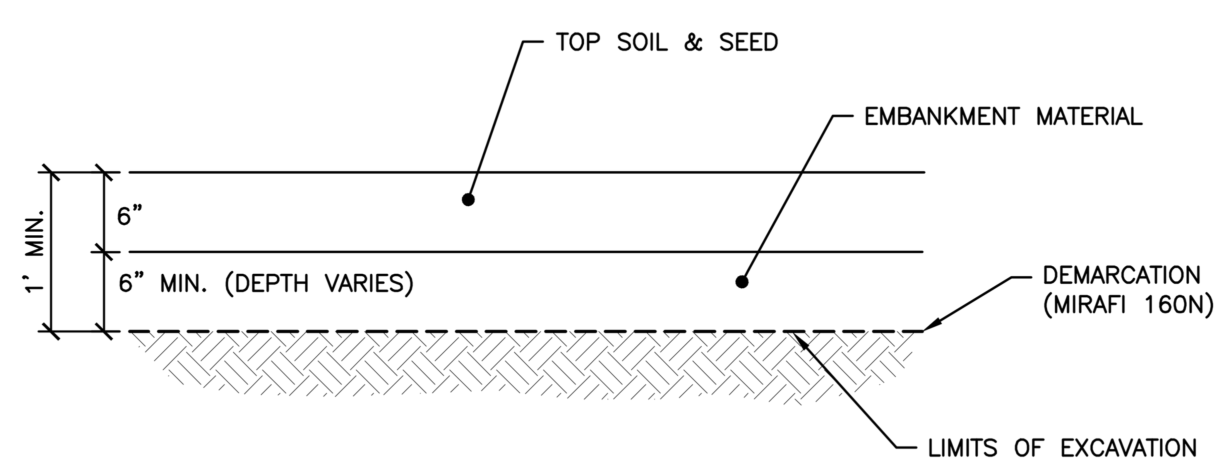
SECTION 3 / G-12

NOT TO SCALE



SECTION 2 / G-12

NOT TO SCALE



TYPICAL EXCAVATION RESTORATION DETAIL

NOT TO SCALE

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NOT TO SCALE

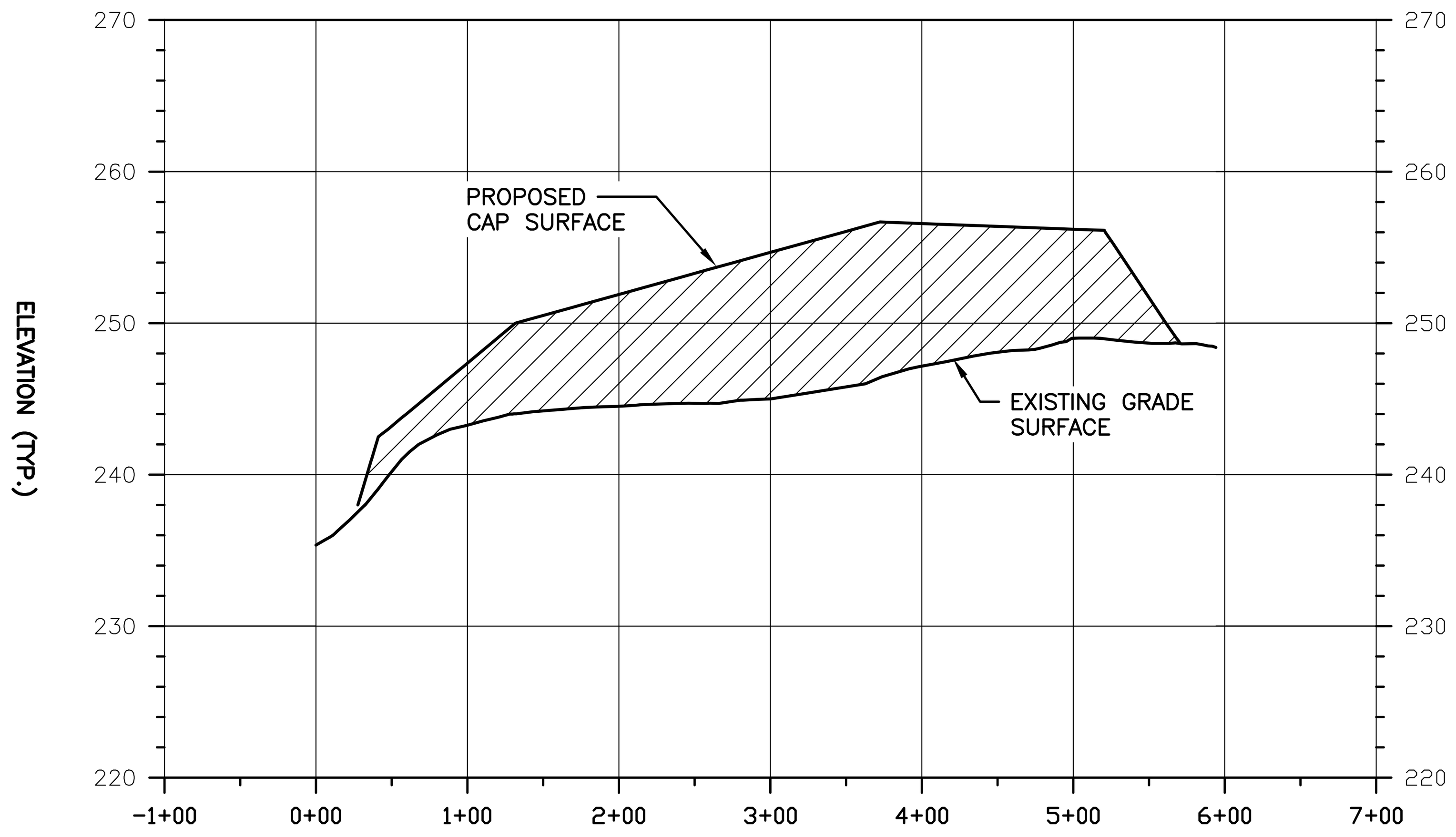
O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK
(SITE 3-36-009)

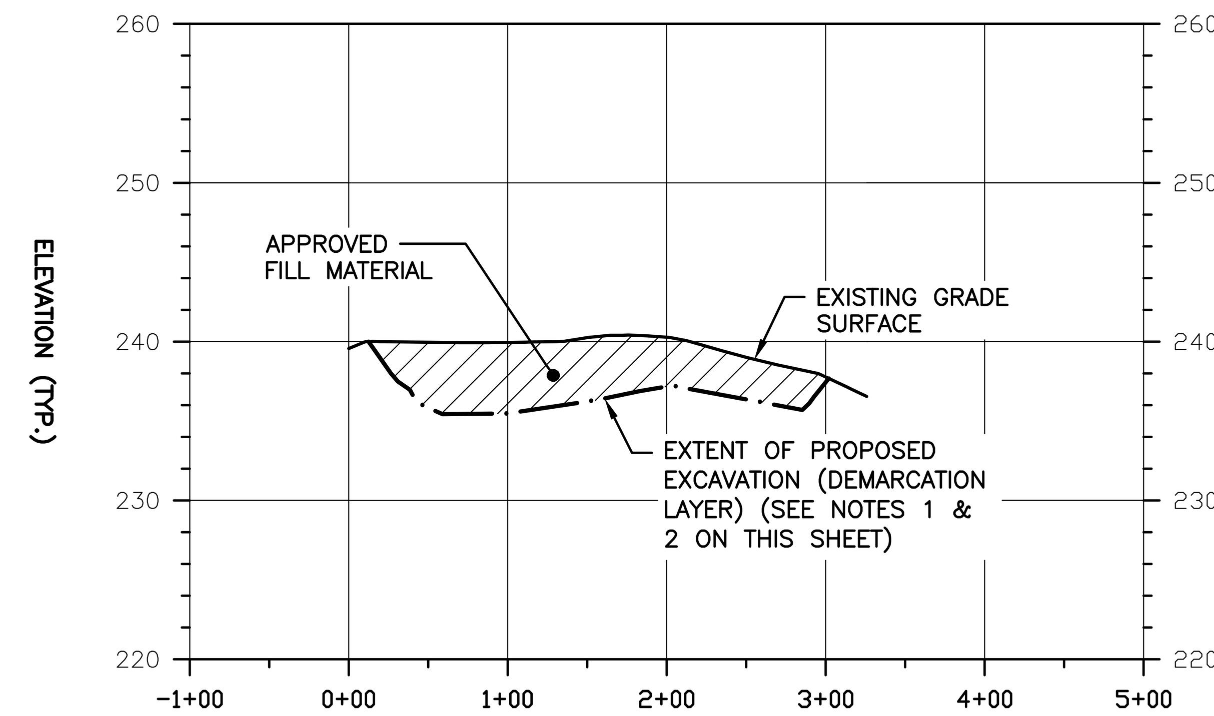
GENERAL

MISCELLANEOUS DETAILS

IN CHARGE OF ______	FILE NO. 10747.39860-115	G-12
DESIGNED BY ______ CHECKED BY ______	DATE	
DRAWN BY SED	AUGUST 2012	



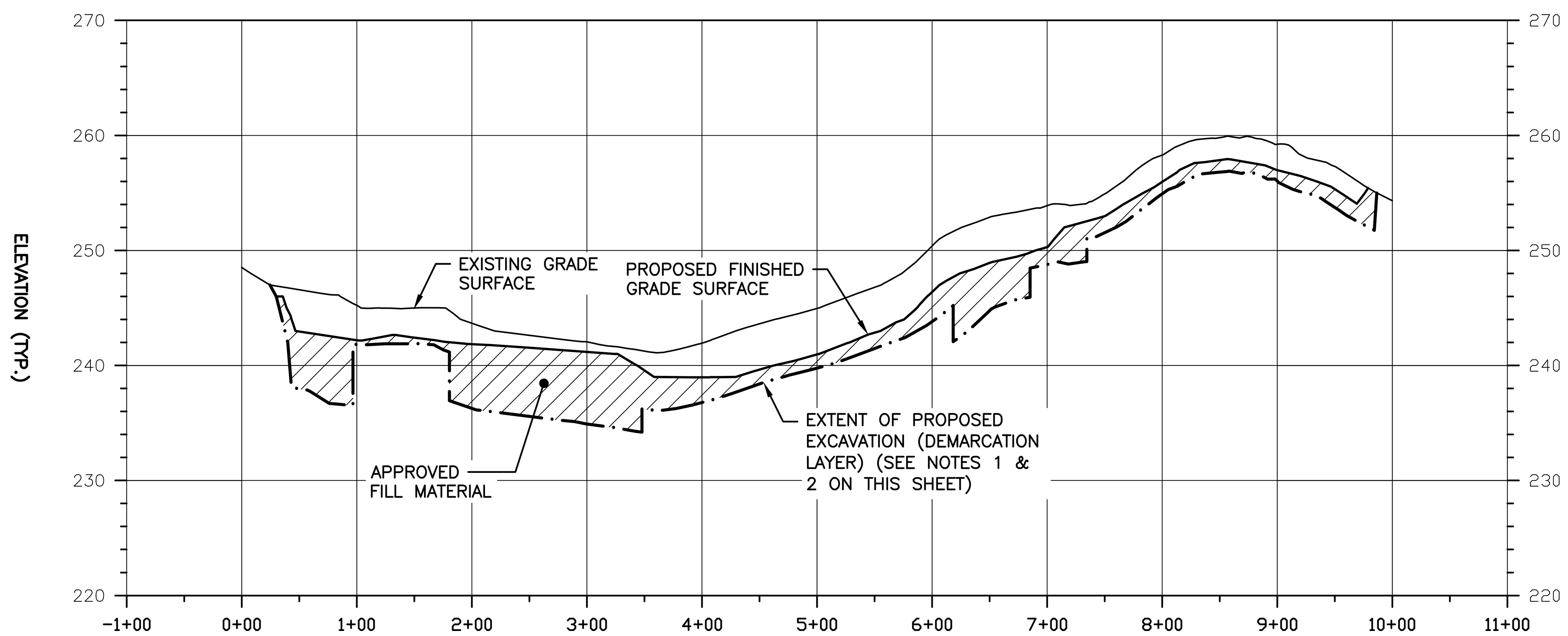
AREA "A" SECTION 1/G-8
SCALE: HORIZ. 1"=100'
VERT. 1"=10'



SOUTH LANDFILL SECTION 3/G-5
SCALE: HORIZ. 1"=100'
VERT. 1"=10'

NOTES:

1. ACTUAL EXTENT OF EXCAVATION TO BE BASED ON COMFIRMATION SAMPLING.
2. SEE SHEET G-11 FOR DEMARCATION LAYER AND BACKFILL DETAILS.



AREA "C" & "D" SECTION 2/G-7
SCALE: HORIZ. 1"=100'
VERT. 1"=10'

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STATE OF NEW YORK
JAMES R. HECKATHORNE
56609
LICENSED PROFESSIONAL ENGINEER

NO.	DATE	REVISION	INIT.
A	01/31/2013	FINAL DESIGN FOR NYSDEC APPROVAL AND BID	

1"=100' 100 0 100 200
1"=10' 10 0 10 20

O'BRIEN & GERE

OU-1 REMEDIAL ACTION: WASTE/SOIL AND CAP CONSTRUCTION
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK
(SITE 3-36-009)

GENERAL

CROSS SECTIONS

IN CHARGE OF ____
DESIGNED BY ____ CHECKED BY ____
DRAWN BY SED

FILE NO. 10747.39860-116
DATE AUGUST 2012

G-13

Technical Specifications

FINAL (100%) REMEDIAL DESIGN REPORT

WASTE REMOVAL AND CAP
DUPONT-STAUFFER LANDFILL SITE
NEWBURGH, NEW YORK

SPECIAL PROVISIONS

TECHNICAL SPECIFICATIONS

SPECIAL PROVISIONS

SP-1.0 DEFINITIONS

Owner: Where referred to within the Contract Documents, Owner shall mean Bayer CropScience, Inc. (successor-by-merger to Stauffer Chemical Company) (BCSI).

Respondents: Where referred to within the Contract Documents, Respondents shall mean Bayer CropScience, Inc. (successor-by-merger to Stauffer Chemical Company) (BCSI) and E.I. duPont de Nemours and Company (DuPont).

Engineer: Where referred to within the Contract Documents, Engineer shall mean O'Brien & Gere Engineers, Inc.

Contractor: Where referred to within the Contract Documents, Contractor shall mean shall mean the Party of the Second Part to the Contract or the person, persons, partnership or corporations entering into the Contract for the performance of the Work required by it, and the legal representatives of said party or the agents appointed for said party in the performance of the Work.

Contract: Contract or Contract Documents shall mean any or all of the following: the Advertisement or Invitation, Information for Bidders, Bid, Agreement, General Provisions, Special Provisions, Technical Specifications, Payment Items, Contract Drawings, all interpretations or Addenda thereto and Change Orders issued by the Owner or by the Engineer with the approval of the Owner.

SP-2.0 CONTRACTOR WORK PLANS

A. Construction Quality Control Plan – The Contractor will be required to prepare a Construction Quality Control Plan (see SP-17.0 for requirements)

B. Construction Site Management Plan - The Contractor will be required to prepare a Construction Site Management Plan prior to the commencement of work that includes methods, plans and drawings necessary to show site infrastructure, excavation, soil/waste management, staging pads, and decontamination pads. The Construction Site Management Plan will include methods, plans, and drawings necessary for staging trailers and equipment, soil, waste management, staging pads, stockpiling materials, waste containers, and designating work zones and requirements for other construction activities.

C. Traffic Control Plan - The Contractor will be required to prepare a Traffic Control Plan including, but not limited to, the designation of haul roads to and from the Site, developed in consultation with the City of Newburgh.

The Contractor is required to keep main public roads to the Site open at all times unless prior arrangements for temporary closing are made with the appropriate authorities. The cost of such traffic control is to be borne solely by the Contractor.

Prior to the start of any construction activities, the Contractor and the Engineer shall make a joint condition survey of road at the entrance(s) to the Site to be utilized by the

Contractor. The condition survey shall be performed using a video camera. During the video survey, the Engineer and Contractor will verbally document any pre-existing damage to the roadways and the location of the damage.

D. Erosion and Sediment Control/Stormwater Pollution Prevention Plan – (see Technical Specification 02270 – Erosion and Sediment Controls)

E. Fugitive Dust and Emission Engineering Controls Plan – Control of fugitive dust created as a result of this project shall be the obligation of the Contractor. Notwithstanding the requirements of the Contract Documents, the Contractor shall also comply with the requirements of OSHA 29 CFR 1910.1000 and NYSDEC Guidance for Fugitive Dust Suppression and Particulate Monitoring at Inactive Hazardous Waste Sites.

The Contractor will be required to prepare a Fugitive Dust Monitoring and Emission Engineering Control Plan including:

1. Monitoring requirements, action levels, etc
2. Proposed remedial actions when particulate action levels are breached
3. Mitigation measures, control of operations, and emergency measures to be used
4. Quality assurance/quality control (QA/QC) to assure accuracy of monitoring program.

The Plan may be subject to review by the NYSDEC prior to acceptance by the Owner.

The results of monitoring for dust shall be provided to the Engineer on a daily basis.

F. Construction Water Management Plan – (see Technical Specification 02140 – Construction Water Management)

G. Waste Management Plan - The Construction Contractor shall prepare a Waste Management Plan to address all wastes generated for off-site disposal or on-site consolidation. The Waste Management Plan shall outline the proposed sequence and methods for waste excavation, on-site placement, or off-site disposal and include:

1. Waste sampling requirements
2. Methods for determining waste disposal requirements
3. The name and location of the off-site disposal facility to which the waste is to be shipped
4. The type and quantity of waste to be shipped to each facility
5. The expected schedule for the shipment of the waste material
6. The method of transportation
7. The names of licensed waste haulers
8. Procedures for manifest management

SP-3.0 HEALTH AND SAFETY PLAN (HASP) REQUIREMENTS

A. The DuPont-Stauffer Landfill Site is listed on the New York State Registry of Inactive Hazardous Waste Sites. As such, the Contractor shall comply with, and cause all subcontractors to be in compliance with, the Federal and State Regulations for Hazardous Waste Operations, employee exposure and emergency response, and all the applicable provisions of these Contract Documents including those in the Technical Specification 02006 – Health and Safety.

B. The Contractor shall be responsible for conducting operations at the site in such a controlled fashion as to reduce the possibility of employee and community contact with any contaminants present and to prevent the removal of contaminants by personnel or equipment leaving the site.

C. Prior to commencement of any on-site activities, the Contractor shall prepare a site-specific Health and Safety Plan (HASP) in accordance with the Specification – Health and Safety Plan included in the Contract Documents for persons working at and/or living in the vicinity of the site, reviewed and certified by a Certified Industrial Hygienist (CIH), which shall be implemented during performance of the work. All pertinent aspects of Federal and State regulations shall be addressed. The protective measures in the HASP shall be consistent with applicable provisions of Occupational Safety and Health Administration (OSHA) and New York State Department of Labor regulations.

D. The Contractor shall develop and implement personnel and equipment decontamination procedures appropriate for site-specific locations and activities, and include those procedures in the HASP. The procedures shall include, but not necessarily be limited to: the necessary equipment and personnel and the steps to achieve equipment decontamination to the satisfaction of the Site Health and Safety Officer (HSO), prior to the equipment leaving the site; provisions for any personnel protection; and a diagram outlining the steps or stations in the procedures. The procedures must include containment and removal of any decontamination solutions and spent disposable protective apparel.

SP-4.0 PRE-CONSTRUCTION MEETING

Prior to the start of construction by the successful bidder, a general information meeting shall be held with Respondents, Engineer, and Contractor in attendance at a place and time designated by the Owner. The meeting will be called by the Owner and will cover the general features of the Project and the various requirements in the Contract including terms and conditions of the Contract, lines of communication, and other issues. The Contractor shall be prepared to discuss their proposed sequence of construction and schedule. The Contractor shall provide the Engineer a copy of the proposed schedule and Contractor work plans prior to the meeting for review.

SP-5.0 PROGRESS AND COORDINATION MEETINGS

A. Progress and coordination meetings shall be held every week, or as otherwise directed by the Engineer, with the Contractor's supervisory representatives, with decision-making authority, in attendance.

B. Meeting minutes will be prepared by the Engineer and distributed to all attendees and others affected by decisions or actions from each meeting. As appropriate, a revised construction schedule provided by the Contractor shall be attached to the minutes.

SP-6.0 WORK SCHEDULE

The work of this Contract shall be scheduled in a manner mutually acceptable to the Owner, Engineer and the Contractor. Unless otherwise especially permitted, no work shall be done between the hours of 8:00 p.m. and 7:00 a.m., nor on Sundays, December 25 (or designated holiday for Christmas Day), January 1 (or designated holiday for New Year's Day), Thanksgiving Day and the day after; July 4 (or designated holiday for July 4); and the Monday designated holidays for Memorial Day and Labor Day, except as necessary for the proper care and protection of work already performed. The Contractor will be allowed work on Saturdays only with approval from the Owner. If it shall become absolutely necessary to perform work at night, the Engineer shall be informed a reasonable time in advance of the beginning of performance of such work. Only such work shall be done at night as can be done satisfactorily and in a safe manner. Good lighting and all other necessary facilities for carrying out and inspecting the work shall be provided and maintained at all points where such work is being done. Minimum permissible illumination intensities are identified in 29 CFR 1910.120. All Contractor requests to perform night, Saturday, Sunday or Holiday work shall be made in writing to the Engineer.

SP-7.0 NOTICES

A. Whenever, under the terms of this Contract, written notice is required to be given by the Contractor to the Owner, it shall be directed to:

Charles Elmendorf
Senior Director, Environmental Remediation
Stauffer Management Company LLC
on behalf of Bayer CropScience, Inc.
PO Box 15437
FOP 2-311
Wilmington, DE 19850-5437

B. Whenever, under the terms of this Contract, written notice is required to be given by the Owner to Contractor, it shall be directed to

____
____
____
Attn:_______________________
____

SP-8.0 CONTRACTOR'S OFFICE

The Contractor shall erect, furnish and maintain a field office, with a telephone, at the site during the entire period of construction. The Contractor or an authorized agent shall be present at said office at all times or at a definite time while work is in progress. The Contractor shall provide an external telephone ringer. Readily accessible copies of the Contract Documents, the latest approved working drawings, Contractor annotated record drawings, Contractor's work plans and Health and Safety Plan (HASP), and other documents necessary or instrumental in completing the project shall be kept at said field office. This office shall be suitably heated and shall be equipped with proper sanitary facilities.

SP-9.0 CONTRACT WORK AREA SECURITY

The Contractor shall provide all elements of work area security necessary to prevent the unauthorized entry to persons onto the Contract Work Area, including but not limited to providing temporary fencing around active work areas. The main public roads to the site shall be kept open at all times unless prior arrangements for temporary closing are made with the appropriate authorities. The Contractor shall be responsible for all costs associated with installation, maintenance and removal of work area security measures instituted during the various phases of construction.

SP-10.0 PROVISION OF UTILITIES AND SERVICES

The utilities at the site are not available for use. Temporary water service, power, electrical connections, and sanitary drains needed on-site shall be the Contractor's responsibility at the Contractor's expense.

SP-11.0 EXISTING UTILITIES

A. Special precautions shall be observed to not cause interference or damage to any existing utilities, unless the existing utility is to be abandoned as shown on the Contract Drawings or specified. Where an existing utility is to be abandoned, the Contractor shall complete the work in accordance with the technical specifications and requirements of the owning Utility.

B. The Contractor shall notify the proper utility companies at least seventy-two (72) hours before construction is started adjacent to such utilities. Proof of such notification shall be filed with the Engineer. Failure to provide such proof shall be cause for an automatic cessation of the work. Utilities shall be protected in the manner prescribed by the utility company. No additional compensation other than stated in the Payment Items herein will be made for coordination or requirements of others relative to existing utilities.

SP-12.0 EXISTING MONITORING WELLS

A. The approximate locations of existing monitoring wells at or near the site are shown on the Contract Drawings. Monitoring wells noted to be extended shall be altered in accordance with the Contract Documents. All other monitoring wells shall be protected from damage. Any wells not designated to be altered that are damaged by the Contractor shall be repaired or replaced, at no additional cost, as directed by and to the satisfaction of the Engineer who will oversee rehabilitation or replacement as specified. The Owner's cost associated with bringing the Engineer on-site for oversight of rehabilitation or replacement work will be deducted from payments due the Contractor.

SP-13.0 LINES, GRADES AND ELEVATIONS

A. The Contractor shall be responsible for all survey and control needed for construction and shall utilize services of a surveyor licensed in the State of New York. The locations of selected vertical and horizontal control points are provided on the Contract Drawings. The Contractor shall verify bench marks and make all detail surveys needed for construction using the New York State planar coordinate system.

B. The Contractor shall set and maintain all necessary intermediate points, lines, grades and elevations, and provide slope stakes, offset stakes, batter boards, stakes for pipe locations, and other such items at his own expense. Where the Contractor uses laser for control, Contractor shall periodically check the grade and alignment during each day's operation. The Contractor shall furnish copies of construction grade letters and cut sheets prepared by the Contractor to the Engineer in advance.

C. The accuracy of the Contractor's survey and other required data is the sole responsibility of the Contractor, and the furnishing of data to the Engineer does not constitute a transferral of responsibility for checking.

D. Prior to excavation activities and installation of the cover materials, the Contractor shall establish a maximum fifty (50) foot grid using the New York State planar coordinate system over the site and take elevations at each grid point. The Contractor shall take elevations at each grid location upon completion of excavation activities and at completion of placement of each lift of cap material (or as directed by the Engineer) to measure the volume of material excavated and thickness of the lifts and to substantiate that waste fill placement and cap material installation are proceeding in accordance with the specifications and Contract Drawings. The elevation data shall be transmitted to the Engineer in hard copy and compact disc (Auto CAD Release 2011 on compact disc) to be reviewed by the Engineer prior to the installation of the next layer of cap material. The Contractor may utilize additional, alternative methods to verify excavated volumes of material and lift thickness subsequent to prior review by the Engineer.

SP-14.0 TEMPORARY CONSTRUCTION ACCESS ROADS

The Contractor shall construct and maintain all temporary access roads required for construction activities under this Contract. All temporary construction access roads shall be removed following construction.

SP-15.0 EMERGENCY CALLS

The Contractor shall provide the Owner and Engineer with the phone numbers of at least three (3) responsible persons, to be used during non-working hours and weekends, which shall be in a position to dispatch personnel and equipment to the project in the event of an emergency.

SP-16.0 NOISE CONTROL

It shall be the responsibility of the Contractor to take adequate measures for keeping noise levels, as produced by construction equipment, to safe and tolerable limits as set forth by the Occupational Safety and Health Administration (OSHA), and as set forth by other applicable federal, state and local regulations. All Contractor machinery and equipment presenting a potential noise nuisance, as determined by the Engineer, shall be provided with noise muffling devices or replaced at no additional cost to the Owner.

SP-17.0 CONSTRUCTION QUALITY CONTROL PLAN

A. The Contractor shall prepare and implement a Construction Quality Control (CQC) Plan for the work of this Contract. The plan shall include, as a minimum, the following:

(1) Description of the CQC organization, including chart showing lines of authority and acknowledgment that the CQC staff shall be in addition to the job supervisory staff.

(2) Names, qualifications, duties, responsibilities and authorities of each person assigned a CQC function.

B. The CQC staff shall include a CQC Manager who shall be required to be on-site during the construction period. The CQC Manager shall have demonstrated experience with earthwork projects, geosynthetic materials, and drainage structures. The CQC Manager shall have a minimum of five years experience in materials and construction testing including a minimum of two years of soils testing experience and two years of geosynthetic testing experience.

C. The CQC staff shall also include CQC inspectors with a minimum of two years of experience in performing soils testing including nuclear density meters, scales, and ovens. The CQC inspectors shall have valid certificates for operation of nuclear density gauges. The CQC staff shall include an Inspector with experience in inspecting at least two million square feet of LLDPE geomembrane. The Inspector shall also have a working knowledge of proposed seaming equipment. The CQC Plan shall include, at a minimum, the following:

(1) A copy of a letter to the CQC Manager signed by an authorized official of the Contractor's firm that describes the responsibilities and authorities of the CQC Manager.

(2) Description of proposed field observations, tests, equipment, and calibration procedures for field testing equipment including:

a. Sampling strategies
b. Sampling protocols
c. Sample size
d. Sampling locations
e. Frequency of sampling
f. Laboratory procedures

(3) Procedures for scheduling and managing submittals, including those of subcontractors, off-site fabricators, suppliers and purchasing agents.

(4) Proposed testing laboratories, including, but not limited to:

a. Geotechnical Laboratory
b. Geosynthetic Laboratory
c. Analytical Laboratory

(5) Documentation and reporting procedures including proposed reporting formats.

D. The Contractor's CQC Geotechnical Laboratory shall be an independent laboratory not owned by the Contractor and/or subcontractors or owned by a subsidiary or affiliate of the Contractor and/or his subcontractors. The Geotechnical Laboratory shall have an internal QC plan to confirm that laboratory procedures conform to applicable standards. The laboratory shall follow the internal QC procedures. The laboratory shall allow Respondents, Engineer, NYSDEC and Installer to observe sample preparation, testing procedures, record-keeping procedures, and some or all tests at any time, either announced or unannounced.

E. The CQC Geotechnical Laboratory shall have a minimum of five years of experience in testing soils properties required for the project. The laboratory shall submit references from three other similar projects. Soil testing technicians shall have a minimum of two years of soils testing experience and be certified by the National Institute of Certified Engineering Technicians. All laboratory tests results shall be certified by a Laboratory Manager with a minimum of two years of soils testing experience.

F. The Contractor's CQC Geosynthetic Laboratory shall be an independent laboratory not owned by the Contractor or owned by a subsidiary or affiliate of the Contractor, or owned by the Installer or a subsidiary of the Installer. The Geosynthetic laboratory shall have an internal QC plan to confirm that the laboratory procedures conform to applicable standards. The laboratory shall follow the internal QC procedures. The laboratory shall allow Respondents, Engineer, NYSDEC, and Installer to observe sample preparation, testing procedures, record-keeping procedures, and some or all tests at any time, either announced or unannounced.

G. The CQC Geosynthetic Laboratory shall have a minimum of two years experience in testing geosynthetics. The laboratory shall submit qualifications for review by the Engineer. The CQC Geosynthetic Laboratory Manager shall have a minimum of five years of geosynthetics testing experience. All laboratory test results shall be certified by the Laboratory Manager.

H. The Contractor's CQC Analytical Laboratory shall be an independent laboratory not owned by the Contractor and/or subcontractors or owned by a subsidiary or affiliate of the Contractor and/or subcontractors. The Analytical Laboratory shall have an internal QC plan to confirm that laboratory procedures conform to applicable standards. The laboratory shall follow the internal QC procedures. The laboratory shall allow Respondents, Engineer, NYSDEC, and Installer to observe sample preparation, testing procedures, record-keeping procedures, and some or all tests at any time, either announced or unannounced.

I. The CQC Analytical Laboratory shall submit references from three other similar projects. All laboratory test results shall be certified by a Laboratory Manager with a minimum of five years of testing experience.

J. The Contractor's CQC Plan shall be subject to acceptance by the Engineer prior to commencement of construction activities. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Engineer shall reserve the right to require the Contractor to make changes to his CQC Plan and operations as necessary to obtain the quality specified.

K. Following acceptance of the CQC Plan, the Contractor shall notify the Engineer in writing of any proposed changes. Proposed changes are subject to acceptance by the Engineer.

SP-18.0 BORROW MATERIALS

A. Contractor shall submit an affidavit from the owner of the source of each type of borrow material stating that to the best of their knowledge, the site of the source material was never used as a dump site for chemical, toxic, hazardous or radioactive materials and it is not now nor ever has been listed as a suspected depository for chemical, toxic, hazardous or radioactive materials by any federal, state or governmental agency, department, or bureau.

B. The Contractor shall sample each different type of off-site material incorporated into the work at the location or locations identified by the Engineer. The Contractor shall perform analyses for Target Analyte List (TAL) volatile organic compounds (VOCs), TAL semi-volatile organic compounds (SVOCs), TAL metals, cyanide (total and amenable), and PCBs/Pesticides in accordance with NYSDEC guidance document DER-10, Table 5.4(e)10 for each source. Laboratory data shall be submitted to the Engineer for review, on Owner’s behalf, immediately upon receipt and prior to use of the material on-site. The Engineer shall be the sole judge as to what constitutes each different type of material; however the definition of “different” shall include, but not necessarily limited to, variances in the physical properties of the same material, as well as the same material derived from separate borrow sources or separate areas in the same borrow pit. The analytical results will be compared to the cleanup objectives set forth in 6 NYCRR Part 375. If the materials are found to be unacceptable by the Engineer, the Contractor shall remove and properly dispose of the materials in accordance with all applicable Federal, State and local laws and regulations at the Contractor's expense and liability.

SP-19.0 UTILIZATION OF ON-SITE MATERIALS

The Contractor is not permitted to utilize on-site material for purposes of meeting Contractor's material requirements, unless specifically allowed in writing by the Engineer based on the results of sampling that indicates that the material is "clean" based on the analyses identified in SP-18.b.

SP-20.0 REPORTING REQUIREMENTS

A. Contractor shall submit to the Owner and Engineer written progress reports, monthly or less frequently if less frequent submission is approved in writing by the Owner that: (a) describe the Work that has been performed during the previous month; (b) include a summary of all results of sampling and tests and all other data received or generated by Contractor or its subcontractors or agents in the previous month; (c) identify all work plans, plans and other deliverables completed and submitted during the previous month; (d) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next six weeks and provide other information relating to the progress of construction, including but not limited to, critical path diagrams, Gantt charts and Pert charts; (e) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays; and (f) include any modifications to the work plans or other schedules that Owner or Engineer has proposed to NYSDEC or that have been approved by NYSDEC. Contractor shall submit these progress reports to Owner and Engineer by the fifth day of every month following the commencement of the Work. If requested by the Owner or Engineer, Contractor shall also provide briefings for NYSDEC to discuss the progress of the Work.

B. Contractor shall notify Owner and Engineer of any change in the schedule described in the monthly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than twelve days prior to the performance of the activity.

C. Upon the occurrence of any event during performance of the Work that is required to be reported pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-know Act ("EPCRA"), Contractor shall within 24 hours of the time when it or its agent knew or should have known of such event orally notify the NYSDEC Project Coordinator or the Alternate NYSDEC Project Coordinator (in the event of the unavailability of the NYSDEC Project Coordinator), and shall also notify the Owner and Engineer. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

D. Within 20 days of the time when Contractor or its agent knew or should have known of an event of the type referred to in the preceding paragraph, Contractor shall furnish to NYSDEC a written report, signed by Contractor and the Project Coordinators for

Respondents, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within 30 days of the conclusion of such an event, Contractor shall submit a report signed by Contractor and the Project Coordinators for Respondents setting forth all actions taken in response thereto.

SP-21.0 EMERGENCY RESPONSE

In the event of any action or occurrence during the performance of the Work which causes or threatens a release of waste material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Contractor shall immediately take all appropriate action to prevent, abate, or minimize such release or threat of release and shall immediately notify Owner and Engineer and shall immediately notify the NYSDEC's Project Coordinator, or, if the Project Coordinator is unavailable, NYSDEC's Alternate Project Coordinator. Contractor shall take such actions in consultation with NYSDEC's Project Coordinator or other available authorized NYSDEC officer and in accordance with all applicable provisions of the Health and Safety Plans, the Contingency Plans, and any other applicable plans or documents developed pursuant to the SOW. The term "waste material" as used in this section shall mean: (1) any "hazardous substance" under Section 101(14) of CERCLA. 42 U.S.C. §9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA. 42 U.S.C. §9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA. 42 U.S.C. §6903(27).

SP-22.0 CONTRACTOR'S PROPOSED SUBMITTALS SCHEDULE

The Contractor shall submit a list of submittals to be made by the Contractor in connection with the Work, and a proposed schedule for said submittals, for review by Owner and Engineer within 15 days of the Contractor's receipt of an authorization to proceed issued by the Owner.

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SECTION 01110

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:

1. Environmental requirements
2. Protection of soil and water resources
3. Spillages
4. Debris disposal
5. Decontamination

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02006 Health and Safety

B. 02140 Construction Water Management

C. 02270 Erosion and Sediment Control

D. SP-16 Fugitive Dust and Emission Controls Program

E. SP-18 Noise Control

1.3 SUBMITTALS

A. Environmental Protection Plan

Within 10 calendar days after Notice to Proceed and prior to commencement of the work at the site, the Contractor shall:

1. Submit in writing his detailed proposal for implementing the requirements for environmental pollution control specified herein. The plan shall address protection of soil and water resources, waste disposal, and decontamination.

2. Meet the Engineer to review and alter the Contractor's proposal as needed for compliance with the environmental pollution control program. Approval of the plans for environmental protection by Owner or Engineer shall not relieve the Contractor of any responsibility for adequate and continuing control of potential environmental aspects.

B. Preconstruction Survey

Prior to start of any on-site construction activities, the Contractor and the Engineer shall make a joint condition survey, after which the Contractor shall prepare a brief report indicating on a layout plan the condition of trees, shrubs, grassed areas and pavements immediately adjacent to the site of the work and adjacent to his assigned storage area and access route(s) as applicable. This report will be signed by both the Engineer and Contractor upon mutual agreement as to its accuracy and completeness.

C. Waste Disposal Scheme

As part of the Contractor's proposed implementation under Paragraph 3.2, and prior to on-site construction, the Contractor shall submit a description of the Contractor's scheme for disposing of waste materials resulting from the work under this contract. If any waste material is dumped in unauthorized area, the Contractor shall remove the material and restore the area to the condition of the adjacent undisturbed areas. Where directed by the Engineer, contaminated ground shall be excavated, disposed of as approved, and replaced with suitable fill material, all at the expense of the Contractor.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Perform all work while minimizing all potential environmental impacts on, but not limited to the air, water, and land.

B. Minimize all environmental impacts in accordance with all applicable federal, state and local laws and regulations.

1.5 PROTECTION OF SOIL OUTSIDE WORK LIMITS

A. Soil outside the limits of work performed under this Contract shall not be disturbed. The Contractor shall confine construction activities to areas defined by the Contract Drawings or Specifications. The Contractor shall assure that contaminated material does not migrate outside the limits of work.

B. Soil excavation/regrading beyond that specifically called for in the Contract Documents will not be permitted without the prior approval of the Engineer. Contractor shall not perform any unauthorized excavation and shall be responsible for restoring such excavations, including handling of any wastes generated therefrom.

1.6 PROTECTION OF WATER RESOURCES

A. Do not discharge waste materials to surface or groundwater. Comply with all applicable federal, state and local laws concerning pollution of surface and groundwater.

1.7 SPILLAGES

A. Take all necessary measures to ensure that no accidental contamination of the soil, groundwater, or other uncontaminated areas will occur from any of the activities required to perform the work. Report all spills to Engineer and take corrective action immediately.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall perform all work in such manner as to minimize the pollution of air, water, or land, and shall, within reasonable limits, control noise and the disposal of solid waste materials, as well as other pollutants.

3.2 IMPLEMENTATION

Within 10 calendar days after Notice to Proceed and prior to commencement of the work at the site, the Contractor shall meet the Engineer to review and alter the Contractor's proposal as needed for compliance with the environmental pollution control program.

3.3 PROTECTION OF LAND AREAS

Except for any work on storage areas and access routes specifically assigned for the use of the Contractor under this contract, the land areas outside the limits of permanent work performed under this contract shall be preserved in their present condition. Contractor shall confine his construction activities to areas defined for work on the plans or specifically assigned for the Contractor's use. Storage and related areas and access routes required temporarily by the Contractor in the performance of the work will be approved first by the Engineer. No other areas shall be used by the Contractor without written consent of the Engineer.

3.4 PROTECTION OF WATER RESOURCES

The Contractor shall control the disposal of fuels, oils, bituminous, or harmful materials, both on and off the site, and shall comply with applicable Federal, State, County and Municipal laws concerning pollution of rivers and streams while performing work under this contract. Special measures shall be taken to prevent sediments, fuels, oils, greases, and bituminous materials from entering public waters. Water used in on-site material processing, concrete curing, foundation and concrete cleanup, and other waste waters shall not be allowed to reenter a stream if an increase in the turbidity of the stream could result therefrom.

A. Control the inflow of waters (runoff) to the site and the discharge of site waters to the surrounding land or watercourses. Comply with Sections 02140 – "Construction Water Management" and 02270 – "Erosion and Sediment Control."

3.5 BURNING

Materials shall not be burned on the site or off-site.

3.6 DUST CONTROL

The Contractor shall maintain all excavations, stockpiles, access roads, waste areas, and all other work free from excess dust to such reasonable degree as to avoid causing a hazard or nuisance. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

3.7 CORRECTIVE ACTION

The Contractor shall, upon receipt of a notice of any noncompliance with the foregoing provisions, take immediate corrective action. If the Contractor fails or refuses to comply promptly, the Owner may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs of damages by the Contractor.

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SECTION 02004

FIELD OFFICE TRAILER

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes separate field office trailers for the exclusive use of the Engineer and NYSDEC.

1.2 SUBMITTALS

A. The following items shall be submitted:

1. Proposed layout of the trailers

2. Proposed method of furnishing the utilities

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. 02502 - Restoration of Surfaces

PART 2 PRODUCTS

2.1 GENERAL

A. The field office trailers shall be not less than 8 feet by 20 feet.

1. Built-In Items

a. Full width double desk on each end with two-drawer file cabinets, pencil drawers and overhead shelves

b. Drafting table, minimum 36 inch by 72 inch double storage below

c. Forced air heat

d. One air conditioning unit - not less than 8,000 BTU

e. Toilet facilities including water closet, vanity, medicine cabinet and water heater

f. Storage closet

2. Movable Items

a. One desk chair

b. Four office chairs

c. Two large waste baskets

d. One drafting stool

e. One four-drawer, fire-proof, legal size, filing cabinet with lock

f. One eight place plan rack One combination printer/copier/telephone facsimile machine with paper supply as requested by the Engineer

g. One Xerox type copying machine capable of copying legal size (8 ½” x 14”) paper, and a supply of 8 ½” by 11” and legal size paper as requested by the Engineer.

h. Two telephones, each with speaker phone feature, for exclusive use by the Engineer and NYSDEC.

i. One telephone answering and message recording machine for the sole use of the Engineer and NYSDEC.

j. One folding utility table 30 inches high with minimum top dimensions of 36 inches by 72 inches.

k. One “dorm size” refrigerator having capacity of 1.7 cubic feet, minimum.

l. One 20 lb combination type fire extinguisher.

m. First Aid and eyewash station.

B. Telephone Service

1. Install an individual direct line for telephone and separate direct line for fax for the exclusive use of the Engineer.

2. Install a separate direct telephone line, and separate line for data/fax, for the NYSDEC representative.

3. Include the cost of all local and long distance calls necessary to the work.

C. Internet Service

1. Install a wireless internet service for the exclusive use of the Engineer and NYSDEC.

D. Water Service

1. Install a water dispenser capable of dispensing hot and cold potable water.

PART 3 EXECUTION

3.1 INSTALLATION

A. The trailer shall be located on an approved site convenient to the work.

1. The field office trailer shall be ready for occupancy prior to starting work in the field.

2. The office shall be furnished and maintained until the acceptance of the Contract.

3. Relocate once, if directed, during the period of the Contract.

4. Upon the completion and acceptance of the Contract, the Contractor shall remove the field office trailer and restore the area in accordance with the Section entitled "Restoration of Surfaces."

3.2 MAINTENANCE

A. The maintenance of the trailer shall include but not be limited to:

1. Adequate heating and cooling including a continual supply of fuel

2. Electric power and lights

3. Water supply and sewer service

4. Telephone service

5. Snow removal in winter

6. Janitorial services not less than weekly

B. Should sanitary and potable water services not be available on or near the site, portable facilities shall be provided.

* * * * *

SECTION 02006

HEALTH AND SAFETY

I. PART GENERAL

1.1 SUMMARY

A. Contractor shall be solely responsible for the protection of the personnel working on the site and the residents living in the vicinity of the site from exposure to on-site contaminants generated or released as a result of the Contractor's work on site.

B. Contractor shall prepare, submit to Owner and the NYSDEC and, upon NYSDEC’S acceptance, implement a site specific health and safety plan (HASP) to protect the personnel working on the site and the residents living in the vicinity of the site from exposure to on-site contaminants encountered, generated, or released as a result of the Contractor's work on site.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. National Institute for Occupational Safety and Health (NIOSH), United States Department of Health and Human Services

   a. 85-115 - Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities

   b. NIOSH Manual of Analytical Methods – analysis for total particulate (µg/m^3) method 0500

2. Code of Federal Regulations (CFR)

   a. 29 CFR 1910 and 1926 - OSHA Safety and Health Standards, and citations adopted by reference

   b. OSHA Analytical Methods Manual, Part I, Volume 3, Methods 55-80 for Polynuclear Aromatic Hydrocarbons

   b. 49 CFR Parts 171-178 - Department of Transportation (DOT) Hazardous Materials Regulations

3. Unites States Environmental Protection Agency (USEPA)

   a. Standard Operating Safety Guides

   b. EPA Analytical Method TO-15 (mini cans)

4. American Conference of Governmental Industrial Hygienists (ACGIH)

   a. ACGIH Threshold Limit Values and Biological Exposure Indices

5. New York State Department of Environmental Conservation (NYSDEC)

   a. Technical Guidance for Site Investigation and Remediation (DER 10)

6. New York State Department of Health (NYSDOH)

   a. New York State Department of Health Generic Community Air Monitoring Plan (CAMP), Revision May 2010

1.3 SUBMITTALS

A. In addition to those submittals identified in the Special Provisions, the following items shall be submitted:

1. Site Specific Health and Safety Plan including, but not limited to:

   a. Contractor Organizational Chart

   b. Results of Health and Safety Risk Analysis performed by the Contractor

   c. Employee and Community Protection Plan

   d. Employee and Community Air Monitoring Plan

   e. Vapor Emission Response Plan

   f. Particulate Emission Response Plan

   g. Major Vapor Emission Response Plan

   h. Major Particulate Emission Response Plan

   i. Employee Training and Experience

   j. Summary of Medical Surveillance Program

   k. List of Standard Operating Procedures incorporated into the HASP

   l. A method to monitor entry and exit from the work site

   m. Personnel and Equipment Decontamination Procedures

n. A Spill Containment Program

o. Emergency Response Plan and Emergency Reporting Procedures

p. Fire Emergency Protection Plan

q. Confined Space Entry Procedures

2. Certificates of completion of Health and Safety Training as required by 29 CFR 1910.120(e).

3. Resumes of the Contractor's Project Manager, Field Supervisor, and of the health and safety staff expected to work at this site.

4. Evidence of coordination for emergency response with local police, fire, medical, and hazardous materials responders.

5. Air monitoring results.

6. Name and location of proposed permitted off-site disposal facility for used personal protective equipment (PPE).

PART 2 PRODUCTS

2.1 GENERAL

A. The responsibility for development, implementation, and enforcement of the Health and Safety Plan (HASP) lies with the Contractor and his health and safety personnel.

B. Prior to commencement of on-site activities, the Contractor shall prepare a site-specific HASP, which shall be implemented during performance of the work. The HASP shall be prepared and administered by a Certified Industrial Hygienist (C.I.H.). All pertinent aspects of applicable regulations shall be addressed. The protective measures in the HASP shall be consistent with applicable protocols and provisions of the OSHA regulations and other applicable regulations. The HASP developed by the Contractor shall include, but not be limited to employee air monitoring, programs for accident prevention, personnel protection, and emergency response/contingency planning and shall be furnished as a separate document. A corporate safety and health manual may be furnished along with the HASP but this shall not satisfy the site specific HASP requirement.

C. The Contractor's HASP shall be subject to review to the satisfaction of the NYSDEC prior to acceptance by Owner. The Contractor is advised that he should allow time for NYSDEC review and comment on each draft of the HASP submitted for agency review. No additional payment or extension of time shall be provided by the Owner to the Contractor for delays caused by NYSDEC or the Contractor in the preparation of or in NYSDEC's review of the HASP. Five copies of the final Certified Industrial Hygienist (CIH) approved Health and Safety Plan as reviewed by NYSDEC shall be provided to Owner prior to initiating on-site activities.

D. At least one copy of the HASP shall be present at the site at all times.

PART 3 EXECUTION

3.1 ORGANIZATIONAL RESPONSIBILITIES

A. Key Personnel and Organizational Chart. The lines of authority, responsibility and communication shall be presented in the HASP. The Contractor must provide an organization chart and resumes of the Contractor's key personnel involved in all phases of the DuPont-Stauffer Landfill Site construction activities. This chart must include Senior-Level Management, Project Manager, CIH, Site Health and Safety Officer (HSO), Field Supervisor, and Foreman Personnel. Resumes are required for the Project Manager, Field Supervisor, Health and Safety Officer, and Health and Safety Staff.

B. Site Health and Safety Officer (HSO). The Contractor’s C.I.H. must identify and assign a Site Health and Safety Officer (HSO) for the project. That individual must be responsible to the Contractor's C.I.H. and have the authority and knowledge necessary to implement the site Health and Safety Plan (HASP) and verify compliance with applicable safety and health requirements.

1. The HSO shall have the following responsibilities and authority to perform the following functions:

a. Be present during site operations.

b. Have the authority to enforce the HASP and stop operations if personnel safety and health may be jeopardized.

c. Evaluate health monitoring data and make necessary field decisions regarding safety and health.

d. Initiate evacuation of the site if necessary.

2. The HSO shall meet the following minimum qualifications:

a. HSO shall possess a sound working knowledge of State and Federal occupational safety and health regulations and shall have formal educational training in occupational safety and health. Documentation shall be provided that the HSO has completed the 40 hr. OSHA Training Course, the 8 hr. OSHA Supervisor's Training Course and met the field experience requirements.

b. Have documented experience that the HSO has worked on two (2) projects similar in nature to this one.

3.2 RISK ANALYSIS

A. Health and Safety Evaluation. The Contractor shall perform and provide in the HASP the results of a health and safety risk analysis for each location and operation to be performed.

B. The risk analysis shall be based upon the best information available regarding the contaminants and conditions present at the site as well as the practices and tools to be applied in the operation and shall include but not be limited to the following:

1. Overview of the following information:

a. Location, site topography, accessibility, and size of the site.

b. Description of the site operation and tasks to be performed.

c. Approximate duration of the operation and of each task.

d. Chemical and physical properties of the known or suspected hazardous substances and health hazards.

e. Known or potential safety hazards associated with each task.

f. Known or suspected pathways of hazardous substance dispersion pertinent to the operation and tasks performed.

2. An evaluation of the known or suspected contaminants and conditions that may pose inhalation, skin absorption/contact or ingestion hazards. A copy of the Material Safety Data Sheet (MSDS), chemical fact sheet, or other relevant information shall be included in the Site-specific HASP prepared by the Contractor.

3. An evaluation of known or potential safety and health hazards associated with each task on the site.

4. An evaluation of engineering and work practice controls to be applied to minimize potential harm to the community and employees on site from hazardous substances and activities during completion of the task.

a. Engineering and Work Practice Controls. The Contractor must consider the need to apply engineering and/or work practice controls as a means of protecting the community and personnel in the performance of site specific tasks.

1) When practicable, engineering controls shall be implemented to reduce and maintain community and employee exposures to or below acceptable levels for those tasks with known or suspected hazards.

2) Work practice controls shall be applied when engineering controls are deemed impractical and shall be incorporated

as site specific standard operating procedures (SOP) for personal precautions and routine operations.

5. An evaluation of the status and capabilities of emergency response teams.

3.3 MEANS TO CONTROL EMPLOYEE AND COMMUNITY EXPOSURE

A. Employee and Community Protection Plan

1. The Contractor shall prepare and implement an Employee and Community Protection Plan (ECPP) in accordance with 29 CFR 1910.120(h), NYSDEC Technical Guidance for Site Investigation and Remediation (DER 10), and the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP). The ECPP shall be developed to specify and evaluate the engineering and work practice controls to be implemented to minimize exposure of employees working on the site, residents living in the vicinity of the site, and the environment to contaminants generated or released as a result of work on the site. The ECPP shall be incorporated into the site HASP as a separate section of that document.

B. Employee and Community Air Monitoring Plan

1. The Contractor shall prepare and implement an Employee and Community Air Monitoring Plan (ECAMP) to identify times of elevated airborne contaminant concentrations, to determine the level of the concentrations relative to background, and to respond to elevated levels. The Contractor shall provide the personnel, instruments, and materials necessary to perform such air monitoring and to implement the response. The identity of the individual responsible for administering the program shall be included in the site organization chart. In addition to the odor control requirements specified in the Section titled "Special Provisions", the Contractor shall define specific air monitoring methods, sampling media, and sample analyses to be implemented during construction of the remedial action at the Site. The ECAMP shall include proposed responses to levels above the Contractor's action levels. The ECAMP shall be incorporated into the site HASP as a separate section of that document.

2. The level of particulate matter less than 10 micrometers in diameter, (PM-10), leaving the downwind side of the site shall be maintained below 150 $\mu g/m^3$ above the upwind particulate level, based on a 15 minute averaging period, as specified in the NYSDOH CAMP.

3. Consistent with the NYSDOH CAMP, the level of volatile organic compounds (VOCs) leaving the downwind side of the site shall be maintained below 5 ppm above background.

4. The Contractor shall, at a minimum, perform the following items and address these items in the ECAMP:

a. Daily monitoring of wind direction and velocity for each day that soil handling or excavation activities occur.

b. Real-time continuous monitoring for VOCs (i.e. photoionization detector) and for particulate (i.e. real time aerosol monitor) within the work zone, and at three locations on the perimeter of the exclusion zone of the work zone (one upwind, two downwind) during all ground intrusive activities. Ground intrusive activities include, but are not limited to soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

c. Periodic monitoring for VOCs during non-intrusive activities (i.e., such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells) shall be addressed.

d. Combustible gas monitoring within the work zone using an oxygen and explosive gas meter. Lower explosive limit (LEL) percent shall not exceed 1% of the LEL prior to initiating work activities and shall not exceed 10% of the LEL during work activities.

e. Establish VOC and particulate response levels and subsequent actions to be taken if exceeded as indicated in the NYSDEC DER-10 Appendix 1A - NYSDOH Generic Community Air Monitoring Plan and the NYSDEC DER-10 Appendix 1B – Fugitive Dust and Particulate Monitoring.

f. Other additional sampling and analyses necessary to minimize exposure of employees working on the site and residents living in the vicinity of the site from the airborne particulate and vapor hazards of the site.

5. Air monitoring results shall be recorded daily in a logbook and available for review by Owner, Engineer, and NYSDEC.

C. Vapor Emission Response Plan

1. The Contractor shall prepare and implement a Vapor Emission Response Plan (VERP) to identify VOC levels that may pose a threat to the health and safety of the surrounding population. The VERP shall be incorporated into the site ECAMP as a separate section of that document and shall, at a minimum, address the following:

a. VOC levels exceeding 5 ppm above background at the perimeter of the work area will require that work activities be halted, and actions initiated to reduce the VOC emissions from the work area. At that time, air monitoring shall be implemented to measure the vapor emission levels in the work zone and at 200 feet downwind of the work area or at half the distance to the nearest residential or commercial structure. If VOC levels in the work zone or downwind location are below or decrease to below 5 ppm over background, work activities can resume with continued monitoring.

b. If the VOC level at the perimeter of the work area is above 25 ppm, activities must be shutdown and actions taken to reduce VOC levels at the perimeter of the work zone to below 5 ppm above background.

c. If efforts to abate the emission source do not lower the VOC levels below 5 ppm at the downwind sampling location or if elevated levels persist for more than 30 minutes within 20 feet of the perimeter of the nearest residential or commercial structure (20-foot zone), a Major Vapor Emission Response Plan shall be implemented.

D. Particulate Emission Response Plan

1. The Contractor shall prepare and implement a Particulate Emission Response Plan (PERP) to identify particulate levels that may pose a threat to the health and safety of the surrounding population. The PERP shall be incorporated into the site ECAMP as a separate section of that document and shall, at a minimum, address the following:

a. Particulate levels exceeding 150 $\mu g/m^3$ above background at the perimeter of the work area will require that work activities be halted, and actions initiated to reduce the particulate emissions from the work area. At that time, air monitoring shall be implemented to measure the particulate emission levels in the work zone and at 200 feet downwind of the work area or at half the distance to the nearest residential or commercial structure. If particulate levels in the work zone or downwind location are below or decrease to below 150 $\mu g/m^3$ over background, work activities can resume with continued monitoring.

b. If efforts to abate the emission source do not lower the particulate levels below 150 $\mu g/m^3$ 200 feet downwind of the work area or if elevated levels persist for more than 30 minutes within 20 feet of the perimeter of the nearest residential or commercial structure (20-foot zone), a Major Particulate Emission Response Plan shall be implemented.

E. Major Vapor Emission Response Plan

1. The Contractor shall specify and implement a Major Vapor Emission Response Plan (MVERP) to identify responses to downwind VOC levels above the action levels specified in Section 3.3.C. The MVERP shall be incorporated into the site ECAMP as a separate section of that document and shall, at a minimum, include the following:

a. Provisions for contacting emergency response personnel, including local police authorities and advising them of the vapor situation.

b. Provisions for coordinating with local officials to arrange for notification and evacuation, if required, of the surrounding community.

c. Provisions for conducting air monitoring at 30 minute intervals within 20 feet of the perimeter of the nearest residential or commercial structure (20-foot zone).

F. Major Particulate Emission Response Plan

1. The Contractor shall specify and implement a Major Particulate Emission Response Plan (MPERP) to identify responses to downwind particulate levels above the action levels specified in Section 3.3.D. The MPERP shall be incorporated into the site ECAMP as a separate section of that document and shall, at a minimum, include the following:

a. Provisions for contacting emergency response personnel, including local police authorities and advising them of the particulate emission situation.

b. Provisions for coordinating with local officials to arrange for notification and evacuation, if required, of the surrounding community.

c. Provisions for conducting air monitoring at 30 minute intervals within 20 feet of the perimeter of the nearest residential or commercial structure (20-foot zone).

3.4 TRAINING

A. Training Requirements for On-Site Personnel

1. The Contractor will ensure that all employees engaged in on-site activities which expose or potentially expose them to hazardous substances and/or health hazards have satisfied the general and site specific training requirements of 29 CFR 1910.120 prior to the start of the employee's activities at the site.

2. Employees who have not received the required training prior to the start of the employee's site operations are not to engage in site operations until such training has been completed.

3. The Contractor shall provide written certification of completed training and acquired experience for all employees requiring training and/or experience. Such certification shall be supplied prior to the start of the employee's site operations.

B Personal Protective Equipment and Levels of Protection

1. The Contractor shall provide and use, under each item of work requiring such protection, personal protective equipment (PPE) under the provisions of 29 CFR 1910.132 and 29 CFR 1910.120.

2. The Contractor shall include in the HASP a list of components for each protective ensemble, the LOP selected for each task, the rationale for each task-specific selection, any contaminant action levels to be followed in LOP decision making.

3. All used PPE shall be properly disposed of by the Contractor at a permitted off-site facility approved by Owner. Used PPE shall not be disposed of on the DuPont-Stauffer Landfill Site property nor shall it be burned. The Contractor shall be responsible for characterizing used PPE, decontamination (as necessary), temporary storage, transportation, and disposal of used PPE in accordance with applicable Federal, State, and local regulations.

3.5 MEDICAL SURVEILLANCE

A. Medical Surveillance Program. The Contractor shall show evidence of a medical surveillance program (MSP) for employees engaged in on-site operations, consistent with 29 CFR 1910.120(f).

1. The MSP shall include physical examinations supervised or administered by a board certified physician familiar with occupational medicine. The Contractor shall include the name and business address of the certified physician in the HASP.

2. The Contractor shall address the need for personal exposure monitoring and post exposure medical screening in the HASP and include a summary of applicable monitoring and screening.

B. Personnel Certification

1. The Contractor shall provide written approval by a certified physician of the medical fitness for work of all employees designated to engage in on-site operations, prior to the employee's start of those operations.

C. Employee Heat and Cold Stress Prevention

1. As dictated by seasonal conditions, the Contractor shall implement an employee heat or cold stress prevention program during site operations and shall incorporate the program into the site HASP.

3.6 SITE STANDARD OPERATING PROCEDURES

A. The Contractor shall be responsible for developing and implementing necessary standard operating procedures (SOP) for site operations.

3.7 SITE CONTROL

A. Work Zones

1. The Contractor shall be responsible for conducting operations at the site in such a controlled fashion as to minimize the possibility of employee and community contact with contaminants present on the site and to prevent the removal of contaminants generated on the site by personnel or equipment leaving the site.

2. The Contractor shall delineate work zones in which specific operations or tasks will occur and shall institute specific site entry, and decontamination procedures at Contractor designated control points in accordance with provisions set forth in 29 CFR 1910.120 and DER-10. At a minimum, three (3) work zones will be established to perform this work - an exclusion/contamination zone, a contamination reduction zone, and a support/clean zone. A map or diagram showing the work zones and a description of the site control plan shall be included in the HASP.

B. Routine and Emergency Communications

1. The Contractor shall incorporate plans for routine and emergency communications appropriate for the site and project in the HASP.

C. Daily Visitor Log

1. The Contractor, in accordance with his security plan shall keep a daily visitor log, copies to be provided to Engineer upon request. A time clock shall be used to record the arrival and departure times. This log shall include:

a. Person visiting the site
b. Affiliation
c. Date
d. Arrival time
e. Departure time
f. Purpose of visit

D. Personnel

1. The Contractor shall provide Engineer a list of all Contractor and subcontractor personnel who are authorized to enter the site prior to the start of operations, updating the list as necessary. No unauthorized persons shall be permitted to enter the site.

E. Other

1 The Contractor shall be responsible for conducting operations in accordance with federal, state and local regulations and requirements for storage of the Contractor's hazardous materials (i.e. gasoline, lube oils, etc.) on-site, including locating staging areas, labeling/signage, etc.

2. The Contractor shall use a "buddy system" as required.

3.8 DECONTAMINATION

A. The Contractor shall develop and implement personnel and equipment decontamination procedures appropriate for site specific locations and activities and include those procedures in the HASP. The procedures shall include, but not necessarily be limited to, the necessary equipment and personnel and the steps to achieve contractor's specified level of decontamination, provisions for any personnel protection, and a discussion or diagram outlining the steps or stations in the procedures. The procedures must include containment and removal of any decontamination solutions and spent disposable protective apparel.

B. Decontamination shall be conducted in accordance with 29 CFR 1910.120 (k) and shall minimize employee contact with hazardous substances or with equipment that has contacted hazardous substances as well as minimize off-site transport of contamination.

C. The Contractor shall provide provisions to facilitate personal hygiene at breaks and following daily operations.

3.9 SPILL CONTAINMENT

A. The Contractor shall incorporate a spill containment program prepared in accordance with 29 CFR 1910.120 in the HASP.

3.10 CONTINGENCY PLANNING

A. Emergency Response Plan. Prior to the start of site operations, the Contractor shall develop and implement an emergency response plan (ERP) to handle potential on-site emergencies. The ERP shall be incorporated into the site HASP as a separate section of that document and shall be periodically reviewed and, as necessary, amended to keep it current with new or changing site conditions or information.

1. The Contractor shall attend public meetings or briefings, as necessary, to discuss and present the HASP and ERP. In addition, the Contractor shall address the following requirements:

a. Prior to the start of site operations, the Contractor shall attend any and all meetings necessary with local officials and/or those responsible for local emergency management and public safety (to include fire, police, hazardous material response teams, hospitals, and local health officials) for the purpose of coordinating the site-specific ERP with any emergency response efforts that would be performed by such agencies.

b. The Contractor shall contact the local medical facility selected for inclusion into the HASP and the ERP to ensure that said facility is willing and is capable of providing that medical support necessary to satisfy those anticipated hazards and emergencies detailed in the HASP and the ERP. Written verification of such contact, including the name of the individual contacted, shall be furnished to Engineer prior to the start of site operations.

B. Special Training

1. The Contractor shall ensure that at least one person holding up-to-date certifications (American Red Cross or equivalent) in basic first aid (8 hr minimum) and CPR is present at the site during all site operations.

C. Accident and Exposure Reports

1. The Contractor shall notify Owner and Engineer of all on-site accidents at the time of occurrence and follow up in writing within 24 hours. This notification shall include, but not be limited to, the date, time and identity of individual(s) involved in the accident, witnesses to the accident, the nature of the accident, the actions taken to treat the victim(s), and the steps taken to prevent recurrence.

2. The Contractor shall notify Owner and Engineer of all person(s) exposed at levels exceeding OSHA standards at the time of occurrence or determination and follow up in writing within 24 hours. This notification shall include, but not be limited to, the date, time, and identity of individual(s) involved in the exposure, witnesses to the exposure, the nature of the exposure episode, what the individual(s) were exposed to, the personal protective equipment worn during the exposure, and the steps taken to prevent recurrence.

3. The Contractor shall notify Owner and Engineer of all environmental air measurements exceeding NYSDEC standards. This notification shall include, but not be limited to, the date, time, and identity of individual(s) involved in the exposure, witnesses to the exposure, the nature of the exposure episode, what the individual(s) were exposed to, the personal protective equipment worn during the exposure, and the steps taken to prevent recurrence.

3.11 FIRE PREVENTION AND PROTECTION

A. The Contractor shall develop procedures for handling and responding to small and large fires. This Fire Protection Plan (FPP) shall be included in the HASP as a separate document. The FPP shall include procedures for requesting emergency assistance and notifying Owner and Engineer of the incident. The Contractor shall insure that fire traffic lanes are available (not blocked) and all fire exits are properly marked.

3.12 CONFINED SPACE OPERATIONS

A. Standard Operating Procedures

1. Should site operations include activities within confined spaces, the Contractor shall develop and implement SOPs in accordance with 29 CFR 1910.146 and shall incorporate them in the HASP as a separate section of that document.

3.13 DRUM AND CONTAINER HANDLING OPERATIONS

A. Standard Operating Procedures

1. Should site operations include activities requiring the handling of drums and containers, (both encountered on-site and brought on-site), the Contractor shall develop and implement SOP's in accordance with 29 CFR 1910.120(j) and incorporate them in the HASP.

3.14 OPERATIONS WITHIN AND ADJACENT TO POWER LINES

A. Standard Operating Procedures

1. Should site operations include activities requiring the operation of cranes or derricks within or adjacent to power lines, the Contractor shall develop and implement SOP's in accordance with 29 CFR 1926.550(a) - Cranes and Derricks and incorporate them in the HASP.

3.15 OPERATIONS NEAR EXISTING UTILITIES

A. Standard Operating Procedures

1. In advance of the work, the Contractor shall identify and locate buried utilities in the area of work.

2. Special precautions shall be observed to not cause interference or damage to any existing utilities.

3. The Contractor shall notify the proper utility companies at least seventy-two (72) hours before construction is started adjacent to such utilities. Utilities shall be protected in the manner prescribed by the utility company.

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SECTION 02008

PROJECT PHOTOGRAPHS

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes furnishing the services of a photographer to provide color photographs of the progress of the project. The photographer shall be appropriately trained in accordance with 29 CFR Part 1910.120 Hazard Waste Operations and Emergency Response for the activities and zones in which the photographer will work on-site before entering the site.

PART 2 PRODUCTS

2.1 GENERAL

A. The photographs shall be printed as 8 inch by 10 inch and three sets of each taking shall be furnished to the Engineer within two weeks. A digital copy of all photos shall be included with the 8-inch by 10-inch color prints.

1. All photographs and negatives shall be consecutively numbered.

2. Each print shall have the photograph number, date taken, project name and number, photographer's name, and brief description along with the direction of the view of the photograph clearly marked on the back.

PART 3 EXECUTION

3.1 GENERAL

A. 36 photographs shall be taken each month for the duration of the Contract at the time and locations as directed by the Engineer.

1. Only one day's notice shall be required for any photographs to be taken.

B. A minimum of 36 photographs shall be taken of pre-construction and final construction. The pre-construction photograph locations shall be pre-established on a map with the Engineer and staked out in the field. The final photographs shall be taken from the same locations as the pre-construction photographs. One each of the pre- and final photographs shall be aerial.

C. One (1) aerial photograph shall be taken every 2 months for the duration of the Contract. The altitude shall be such to obtain the maximum coverage of the project.

D. Upon the completion of the project, the Contractor shall submit a complete file of the negatives for the project photographs to the Engineer.

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SECTION 02110

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes clearing and grubbing by removal or destruction of trees, underbrush, logs, stumps, decayed or growing organic matter above the surface of the ground. This section also includes the removal of snow and ice which interfere with construction or landscaping.

1.2. RELATED WORK SPECIFIED ELSEWHERE

A. 02221 - Earthwork

PART 2 PRODUCTS

2.1 GENERAL

A. Contractor shall protect existing trees outside of the cap limits and trees surrounding the excavations required to complete the remedial actions with suitable stakes or protective measures.

PART 3 EXECUTION

3.1 GENERAL

A. Only those portions of the site necessary and essential to be cleared for work shall be cleared.

B. Tree protection

1. No trees located outside of the cap limits shall be disturbed unless necessary to complete the excavations required as part of the remedial actions.

2. The work of this project will necessitate the removal of some trees. Any tree, which will not, in the opinion of the Engineer, hinder construction or landscaping, shall be protected.

3. Special care shall be exercised to minimize injury to trees that will not be removed. Careful digging will be performed to minimize root damage. Roots may be cut and removed up to 25 percent of the estimated root area. If more than 25 percent is required to be cut, the Engineer shall decide whether the tree shall be removed. Straggling roots shall be pruned.

4. Any tree that is trimmed during construction shall be cut cleanly outside of the branch collar.

C. Removal of brush, trees and spoil

1. Contractor may chip brush and tree limbs.

2. The cutting of trees and shrubs shall be six inches above the ground surface for clearing in the known contaminated areas. Anything below this height should be considered grubbing, and associated soils and root balls shall be handled as contaminated soils and handled in accordance with the Section titled "Earthwork."

3. All brush, trees and spoil material chipped shall be placed on site at a location approved by the Engineer.

4. No brush, trees, peat or other organic material shall be placed under the cap system.

D. Management of root balls

1. Root balls removed from the excavation areas, and those removed from the waste consolidation area (North Landfill Area "A"), shall have soil removed to the extent practicable. The removed soil shall be handled as potentially contaminated and if determined to be non-hazardous then it would be consolidated with the non-hazardous waste in the North Landfill Area "A". If determined hazardous then it would be disposed off-site.

2. After removing soil to the extent practicable, the remaining root ball shall be ground in a tub grinder. The ground root ball organic material shall be piled on site in a location designated by the Owner.

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SECTION 02140

CONSTRUCTION WATER MANAGEMENT

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes the development and implementation of an acceptable Construction Water Management Plan detailing the handling, storage, treatment (if necessary), and disposal of all construction water and associated sludge generated during construction in accordance with all applicable local, state, and federal regulations.

B. The Contractor is to obtain, and operate in accordance with, all required local, state, and federal permits required to implement the proposed Construction Water Management Plan.

C. Provide all labor, materials, and equipment required for handling, testing, storage, treatment, and disposal of construction water in accordance with the approved Construction Water Management Plan.

D. Perform all specified and necessary sampling and analyses to insure compliance with required permits and applicable laws and regulations.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02221 – Earthwork

B. 02270 – Erosion and Sediment Control

C. 02264 – Groundwater Monitoring Well Extension, Repair and Replacement

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of all applicable federal, state, and local codes, ordinances, regulations, statutes, standards and specifications, except where more stringent requirements have been specified herein.

1.4 SUBMITTALS

A. In addition to those submittals identified in the Special Provisions, the following items shall be submitted:

1. Construction Water Management Plan

2. Shop drawings and test results used in design of the method of handling construction water.

1.5 DEFINITIONS

A. Construction water is defined as meaning all water removed from the excavation and coming into contact with waste fill or contaminated soil or sediment. Also included are liquids and sludge generated as the result of equipment or personal decontamination operations.

PART 2 PRODUCTS

2.1 GENERAL

A. Construction Water Management Plan

1. The Contractor shall submit his plan for handling construction water. The plan shall include, but not be limited to, the Contractor's proposed method of handling, sampling and analyses, methods for minimizing the volume of construction water and associated sludges, storage (if necessary), treatment (if necessary) and disposal of construction water generated during construction.

2. Acceptable methods of handling construction water include, but are not limited to, the following:

   a. Collection, on-site treatment, and discharge in accordance with all applicable laws, rules, regulations, orders and requirements including, but not limited to, a State Pollutant Discharge Elimination System (SPDES) permit or permit to discharge to the sanitary sewers, as applicable.

   b. Collection, transport, off-site treatment, and disposal at a Publicly Owned Treatment Works (POTW) or licensed waste disposal facility in accordance with all applicable local, state and federal laws, rules, regulations, and orders.

3. Acceptable methods of handling sludge generated by the Contractor's management of construction water include, but are not limited to:

   a. Non-hazardous sludge that can be compacted to meet the physical requirements in the specification titled “Embankment” shall be disposed of under the Part 360 cover. Sludge that is hazardous or which cannot meet the physical requirements for placement below the cover shall be disposed off-site.

   b. Collection, transport, off-site treatment and disposal in accordance with all applicable Local, State and Federal laws, rules, regulations and orders. No additional payment shall be made to the contractor for material transported, treated or disposed of off-site.

PART 3 EXECUTION

3.1 GENERAL

A. It shall be the responsibility of the Contractor to investigate and comply with all applicable federal, state, and local laws and regulations governing the handling, storage and disposal of construction water and associated sludge. All construction water and associated sludge shall be disposed of in a manner which meets applicable permit requirements, laws, and regulations.

B. The Contractor shall obtain all required permits and manifests required for the handling, storage, transport, treatment and disposal of construction water and associated sludge.

C. All sampling and analyses of liquids and/or solids required for discharge and/or solids in accordance with all applicable local, state, and federal laws, rules, regulations, and orders shall be the responsibility of the Contractor.

D. Whenever water is removed from excavations on site, the water should be considered hazardous unless demonstrated otherwise through analytical testing. Any sampling and analyses necessary to protect the health and welfare of the Contractor's employees and/or agents and/or characterize collected water or treated water and associated sludge shall remain the sole responsibility of the Contractor.

E. Contractor shall characterize construction water removed from the excavations and any settled solids as necessary for disposal.

F. No Contractor proposed facility for off-site disposal shall be utilized without prior acceptance by Owner. For all wastes disposed of off-site, Contractor is responsible for characterizing of such material and arranging for proper temporary storage, transportation and disposal in accordance with all applicable federal, state and local laws, rules, regulations, and orders at no additional cost to the Owner.

G. Contractor shall dispose of waters designated for off-site disposal within 30 days of collection.

H. Contractor shall mark, label, placard, package and manifest wastes in accordance with all applicable laws, rules, codes, regulations, and statutes.

I. The Contractor shall make every effort to minimize the generation of construction water and associated sludges. Appropriate methods to minimize generation of construction water include, but are not limited to, erection of temporary berms, use of low permeability tarpaulin or suitable means to cover exposed contaminated areas, limiting the amount of exposed contaminated areas, grading to control run-on and run-off, engineering controls on construction activities to minimize contact of personnel and equipment with contaminated areas thus minimizing the amount of decontamination required, and other appropriate methods.

J. Construction water and associated sludges, shall be handled using equipment compatible with anticipated contaminants which may be present.

K. The Contractor shall be solely responsible for the on-site construction water treatment system (if used) set up, debugging, operation, testing, shut-down, decontamination, dismantling and removal subsequent to completion of the Work, including removal of all materials incidental to treatment system operations.

* * * * *

SECTION 02141

GROUNDWATER MONITORING WELL ABANDONMENT

PART 1 GENERAL

1.1 WORK INCLUDED

A. Abandonment of single cased wells, listed in the table below, with 4-inch diameter stainless steel casing and stainless steel well screens. The following existing monitoring wells require abandonment:

Monitoring Well I.D.	8-inch Diameter Protective Steel Casing	4-inch Diameter Stainless Steel Well Casing
MW-1	0 to 2.5 ft	To be measured
MW-2	0 to 2.5 ft	To be measured
MW-3	0 to 2.5 ft	To be measured
MW-4	0 to 2.5 ft	To be measured
MW-5	0 to 2.5 ft	To be measured
MW-6	0 to 2.5 ft	To be measured
MW-7	0 to 2.5 ft	To be measured

Note: This information has been provided as a convenience to the Contractor only. Prior to mobilization, the Contractor will verify the well riser material and diameter. In the event that the information provided is incorrect or incomplete, the Contractor shall provide and install materials as required to meet the intent of the specification at no additional cost to the Owner.

B. Abandonment, as directed by the Engineer, of any other groundwater monitoring wells damaged during the work of the Contract.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02264 - Groundwater Monitoring Well Extension, Repair, and Replacement

B. 02140 - Construction Water Management

C. 02221 - Earthwork

1.3 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS

The publications listed below form a part of the specifications to the extent referenced. The publications are referred to in the text by basis designation only.

A. Commissioner Policy CP-43 - Groundwater Monitoring Well Decommissioning Procedures, New York State Department of Environmental Conservation, August 2009.

B. American Society of Testing and Materials (ASTM)

ASTM C150	Type 1 Portland Cement
ASTM D5299	Decommissioning of Groundwater Wells, Vadose Zone Monitoring Devices, Boreholes, and other Devices for Environmental Activities

1.4 SUBMITTALS

A. Proposed grouting materials and methods.

B. Well abandonment logs shall be submitted.

PART 2 PRODUCTS

2.1 GROUT

A. There are two types of grout mixes that may be used to seal wells: a standard mix and a special mix. Both mixes use Type 1 Portland cement and four percent bentonite by weight. However, the special mix uses a smaller volume of water and is used in situations where excessive loss of the standard grout mix is possible (e.g. highly-fractured bedrock or coarse gravels).

B. Standard Grout Mixture

1. Unless otherwise necessary, the following standard mixture shall be used:

a. One 94-lb bag Type I Portland Cement
b. 3.9 lbs powdered bentonite
c. 7.8 gals potable water

2. This mixture results in a grout with a bentonite content of four percent by weight, and shall be used in all cases except in boreholes where excessive use of grout is anticipated. In these cases, a special mixture shall be used.

C. Special Mixture

1. In cases where excessive use of grout is anticipated, such as high permeability formations and highly fractured or cavernous bedrock formations, the following special mixture shall be used:

a. One 94-lb bag type I Portland Cement
b. 3.9 lbs powdered bentonite
c. 1 lb calcium chloride
d. 6.0 – 7.8 gallons potable water (depending on desired thickness)

2. The special mixture results in a grout with a bentonite content of four percent by weight. It is thicker than the standard mixture because it contains less water. This grout is expected to set faster than the Standard Grout Mixture. The least amount of water that can be added for the mixture to be readily pumpable is six gallons per 94-lb bag of cement.

3. In cases where the penetration of the sandpack is critical, such as bedrock wells with screens that transect multiple water-bearing zones, the following alternate mixture shall be used:

   a. One 94-lb bag Type III Portland Cement
   b. 3.9 lbs powdered bentonite
   c. 7.8 gals potable water

2.2 BENTONITE

A. Baroid - Ben Seal

B. Equal

PART 3 EXECUTION

3.1 GENERAL

A. This specification applies to the wells damaged by the Contractor which the Engineer directs be abandoned and reconstructed. As directed by the Engineer, wells which are mistakenly damaged during construction shall be repaired, or abandoned and replaced, by the Contractor at no additional cost to the Owner.

B. No monitoring well abandonment, repair or replacement activities shall commence without acceptance of the Engineer.

C. All monitoring well abandonment shall be performed in accordance with the requirements of this Section and to the satisfaction of the Engineer.

D. Water generated and/or encountered during well abandonment activities shall be handled in accordance with the Section "Construction Water Management".

E. Soil cuttings shall be disposed of under the cap in accordance with the Section “Earthwork.” All other material shall be disposed of off-site in accordance with applicable local, state and federal regulations. No additional payment shall be made, however, to the Contractor for disposal of wastes generated as a consequence of well abandonment and replacement activities.

F. The Contractor shall restore the area in the vicinity of each well location as directed by the Engineer.

G. Following drilling activities, the Contractor shall decontaminate equipment as specified in Section 3.3.

H. If the well to be abandoned is constructed within a bedrock formation, the screened or the open hole portion of the well shall be grouted to the top of the bedrock. Prior to initiating any grouting procedure, the depth of the well shall be measured to determine if any silt or debris infilling has plugged the well. If plugging has occurred, the well shall be flushed with an appropriately sized roller bit or drill rods to remove or suspend the obstruction in the water column. The borehole shall then be tremie grouted from the bottom of the well to the top of bedrock to insure a continuous grout column. Note that if the bedrock well is cased, the screen should be perforated to the top of the rock if the inside diameter of the casing is 4-inches or larger. Furthermore, if the screened interval transects multiple water bearing zones, the special grout mix discussed in Part 2 shall be used to ensure penetration of the sand pack. After the rock hole is grouted, the overburden portion of the well shall be decommissioned in accordance with the following sections.

3.2 ABANDONMENT

A. Removing the Protective Casing

1. Removal of the protective casing of a well must not interfere with or compromise the integrity of decommissioning activities performed at the well.

2. Prior to Sealing the Well Bore

a. The protective casing must be removed unless the drilling tools have an inside diameter larger than the protective casing. An acceptable protective casing removal method involves breaking up the concrete seal surrounding the casing and jacking or hoisting the casing out of the ground. A check should be made during pulling to insure that the inner well casing is not being hoisted with the protective casing. If this occurs, the well casing shall be cut off after the base of the protective casing is lifted above the land surface.

B. Overdrilling

1. An overdrilling method of well abandonment shall be used to prevent cross-contamination. The overdrilling method used shall:

a. Follow the original well bore.
b. Create a borehole of the same or greater diameter than the original boring.
c. Removal all of the well construction materials.

2. Acceptable methods for overdrilling include the following:

a. Using conventional augering (i.e., a hollow stem auger fitted with a plug). The plug cutter shall grind the well construction materials, which shall be brought to the well surface by the auger.

b. Using a conventional cable tool rig to advance casing having a larger diameter than the original boring. The cable tool kit shall be advanced within the casing to grind the well construction materials and soils, which are periodically removed with large diameter bailer. This method is not applicable to bedrock wells.

c. Using an over-reaming tool with a pilot bit nearly the same size as the inside diameter of the casing and a reaming bit slightly larger than the original borehole diameter. This method can be used for wells with steel casings. Using a hollow-stem auger with outward facing carbide cutting teeth having a diameter two to four inches larger than the casing. Outward-facing cutting teeth should prevent severing the casing and drifting off center.

d. Using a hollow-stem auger with a steel guide pipe inside. The casing guides the cutter head and remains inside the auger. The guide pipe should be firmly attached to the inside of the casing by use of a packer or other type of expansion or friction device.

3. Prior to overdrilling, an expandable J-plug or other suitable well cap shall be used to prevent the introduction of soil or cuttings into the well, thereby ensuring a continuous grout column for wells that are grouted in place.

4. In all cases above, overdrilling shall advance through the original bore depth by a distance of 0.5 feet to ensure complete removal of the construction materials. When the overdrilling is complete, the casing and screen should be retrieved from the center of the auger (American Society for Testing and Materials, Standard D 5299), if one of the hollow stem auger methods described above is employed.

5. Subsequent to overdrilling at flush mount well locations where it may be impractical to remove well materials from inside the augers, a 1-2 foot deep area shall be excavated by hand around the flush-mount well to facilitate a conventional well removal while tremie-grouting inside the well. Alternatively, the soil within the annular space may be removed by raising the augers to allow the soil to fall out and re-advance the augers to the original target depth. Grout shall then be tremied within the annular space between the augers and well casings. The grout level in the borehole shall be maintained as the drilling equipment and well materials are sequentially removed.

6. After overdrilling is completed, the borehole shall be grouted and the upper five feet of borehole shall be restored.

C. Grout Placement

1. Grout shall be placed in the borehole from the bottom to the top using a tremie pipe of not less than 1-inch diameter. Grout shall then be pumped into the borehole until the grout appears at the land surface (when grouting open holes in bedrock, the grout level only needs to reach above the bedrock surface). Any groundwater displaced during grout placement shall be handled in accordance with the Specification for Construction Water Management.

2. When the grout level stabilizes, casing or augers shall be removed from the hole. As each section is removed, grout shall be added to keep the level between 0-feet and 5-feet below land surface. If the grout level drops below the land surface to an excessive degree, an alternate grouting method must be used.

3. Upon completion of grouting, the Contractor shall insure that the final grout level is approximately five feet below land surface. A ferrous metal marker shall be embedded in the top of the grout to indicate the location of the former monitoring well.

D. Backfilling and Site Restoration

1. The uppermost five feet of the borehole at the land surface shall be filled with a material appropriate to the intended use of the land. The materials shall be physically similar to the natural soils. No materials shall be used that limit the use of the property in any way.

2. The surface of the borehole shall be restored to the condition of the area surrounding the borehole. For example, concrete or asphalt shall be patched with concrete or asphalt of the same type and thickness, grassed areas shall be seeded, and topsoil shall be used in other areas.

3. All solid waste materials generated during the decommissioning process shall be disposed of properly.

3.3 EQUIPMENT DECONTAMINATION REQUIREMENTS

A. To avoid cross-contamination, equipment shall be decontaminated after operations at each well location are complete.

B. The drilling and excavation equipment (i.e., drill rigs, cutting bits, and associated equipment) shall be cleaned at a constructed decontamination facility.

C. The drilling and excavation equipment shall be prepared before it is brought to the decontamination facility and then cleaned at the facility. Preparation includes removing gross soil/rock from the equipment to minimize losses during movement to the decon pad. At the decontamination facility, the equipment shall be steam cleaned or washed using phosphate-free detergent then rinsed. The equipment shall be inspected by the Engineer’s field representative after cleaning.

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SECTION 02221

EARTHWORK

PART 1 GENERAL

1.1 WORK INCLUDED

A. This Section includes excavation and backfilling including the loosening, removing, refilling, transporting, storage and disposal of all materials classified as "earth" necessary to be removed for the construction and completion of all work under the Contract, and as shown on the Contract Drawings, specified or directed. This Section also includes requirements for excavation of the waste fill and contaminated soil in the South Landfill area as well as the other listed areas (Areas “A” through “F”) at the Dupont-Stauffer Landfill site. The excavations shall be completed to the lines and grades shown on the Contract Drawings, specified, or as otherwise directed by the Engineer.

B. This Section includes requirements for handling of the excavated material, including placement, grading, and compaction of the excavated material, except hazardous waste material removed from the South Landfill area and Area “D”, within the limits of the proposed Part 360 cap being constructed in the North Landfill Area as part of this Contract to the lines, elevations and grades shown on the Contract Drawings, specified, or directed by the Engineer.

C. This Section includes requirements for handling and disposal off-site of the waste material and contaminated soil removed from the South Landfill area of the Site.

a. South Landfill ash material that would be classified as “hazardous waste” shall be disposed of off-site at appropriate disposal facilities approved by the Owner and as required by the local, state or federal regulations. The “hazardous” South Landfill ash material either will be transported and disposed off-site as manifested hazardous waste, or may be pre-treated *in situ* as allowed by the Explanation of Significant Difference issued by the NYSDEC in June 2007 to meet the requirements of the Land Disposal Restrictions (LDRs) pursuant to 40 CFR Part 268 and 6 NYCRR Part 376. South Landfill ash that is pre-treated *in situ* shall then be transported and disposed of off-site in accordance with applicable federal, state, and local laws, rules, regulations, orders and requirements based on the characteristics of the treated material.

b. Non-hazardous South Landfill ash material and waste (*i.e.* waste not being treated), that would be classified as “non-hazardous waste” without requiring pre-treatment, shall be consolidated on site below the Part 360 cover being constructed on-site in the North Landfill area.

D. Area “D” wastes shall be disposed of off-site in accordance with 40 CFR 261 and 6 NYCRR Part 371.

E. Management of potentially hazardous wastes, liquids, and containers.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02110 – Clearing and Grubbing

B. 02223 - Embankment

C. 02140 - Construction Water Management

D. 02006 - Health and Safety

E. 02231 - Selected Fill

F. 02241 –Sampling and Analyses

G. 02980 - Topsoil and Seeding

H. 02270 – Erosion and Sediment Control

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

a. A328 Specification for Steel Sheet Piling

b. D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 kN-m/m^3)

c. D1556 Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

d. D1760 Specification for Pressure Treatment of Timber Products

e. D2922 Test Methods for Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)

f. D3017 Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

2. Codes of Federal Regulations (CFR), methods, and guidance documents

a. 40 CFR 260 Hazardous Waste Management System: General

b. 40 CFR 261 Identification and Listing of Hazardous Waste

c. 40 CFR 262 Standards Applicable to Generators of Hazardous Waste

d. 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste

e. 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

f. 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

g. 40 CFR 266 Standards for the Management of Specific Hazardous Wastes and Specific Treatment, Storage, and Disposal Facilities

h. 40 CFR 268 Land Disposal Restrictions

i. 40 CFR 270 EPA Administered Permit Programs: The Hazardous Waste Management Program

j. 40 CFR 136 Guidelines Establishing Test Procedures for the Analysis of Pollutants

k. 29 CFR 1910 Occupational Safety and Health Administration – Hazardous Waste Operations

l. 29 CFR 1926 Occupational Safety and Health Administration – Construction Industry Standards

m. EPA-SW-846 Test Methods for Evaluating Solid Waste – Physical/Chemical Methods

n. EPA Standard Operating Guide, July 1988

o. 6 NYCRR Part 371 Identification and Listing of Hazardous Wastes

p. 6 NYCRR Part 375 Environmental Remedial Programs

q. 6 NYCRR Part 376 Land Disposal Restrictions

1.4 DEFINITIONS

A. Excavation (or trenching)

1. Grubbing, stripping, removing, storing and rehandling of all materials of every name and nature necessary to be removed for all purposes incidental to the construction and completion of all the work under construction.

2. All sheeting, sheetpiling, bracing and shoring, and the placing, driving, cutting off and removing of the same.

3. All diking, ditching, fluming, cofferdamming, pumping, bailing, draining, well pointing, or otherwise disposing of water in accordance with the Section titled "Construction Water Management."

4. The removing and disposing of all surplus materials from the excavations in the manner specified.

5. The maintenance, accommodation and protection of travel and the temporary paving of highways, roads and driveways.

6. The supporting and protecting of all tracks, rails, pavements, overhead wires, poles, trees, pipes, sewers, conduits or other structures or property in the vicinity of the work, whether over- or underground or which appear within or adjacent to the excavations, and the restoration of the same in case of settlement or other injury.

7. All temporary bridging and fencing and the removing of same.

B. Earth

1. All materials including waste fill encountered in the excavations such as sand, gravel, clay, loam, ashes, cinders, pavements, muck, roots or pieces of timber, soft or disintegrated rock, not requiring blasting, barring, or wedging from their original beds, and specifically excluding all ledge or bedrock and individual boulders or masonry larger than one-half cubic yard in volume.

C. Backfill

1. The refilling of excavation and trenches to the line of filling indicated on the Contract Drawings or as directed by the Engineer using materials suitable for refilling of excavations and trenches; and the compacting of all materials used in filling or refilling by rolling, as may be required.

D. Spoil

1. Excavated materials not suitable for backfill in the excavations or for placement within the proposed limits of the cap to be constructed in the North Landfill Area under the Contract, as determined by the Engineer.

E. Embankments

1. Fills constructed above the original surface of the ground or such other elevation as specified or directed including excavated material placed within the proposed limits of the Part 360 cap to be constructed on Site under the Contract.

F. Limiting Subgrade

1. The underside of the pipe barrel for pipelines
2. The underside of footing lines for structures

G. Excavation Below Subgrade

1. Excavation below the limiting subgrades of structures or pipelines.

2. Where materials encountered at the limiting subgrades are not suitable for proper support of structures or pipelines, the Contractor shall excavate to such new lines and grades as required.

1.5 SUBMITTALS

A. Excavation sequence and methods, particularly for “South Landfill Area.”

B. If the use of sheeting, shoring, bracing and/or a lateral support system is proposed, the Contractor shall engage a Professional Engineer, registered in the State of New York, to design the sheeting, shoring, bracing and/or lateral support system. The design and all assumptions and calculations associated with the design shall be signed and sealed by the Professional Engineer engaged by the Contractor and submitted to the Engineer for review no less than two weeks prior to installation. The system installed shall be in conformity with the design. The Professional Engineer engaged by the Contractor to render the design shall provide written certification that the system was installed in accordance with the design and that field oversight was provided during installation. The lateral support system shall be adequate to withstand all pressures to which the trench will be subjected. Any vertical or lateral movement or bulging which may occur shall be corrected by the Contractor at his own expense, under the direction of the Professional Engineer engaged by the Contractor, so as to provide the necessary clearances, dimensions, and safe condition.

C. Method of compaction for waste and soil to be consolidated below the Part 360 cover on site.

D. Method of treatment for “hazardous” waste fill (*e.g.* South Landfill area ash) to be stabilized (if applicable) prior to disposal.

E. Compaction curves for embankment material and for surface preparations within the limits of the Part 360 cap.

F. Identity of proposed testing laboratory and qualifications, and Quality Assurance Plan (QAP) for physical analyses.

G. Compaction testing results

H. Waste disposal certificates for waste material (*e.g.* South Landfill Area ash and Area “D” waste) specified or directed by the Engineer to be disposed of off-site.

I. Laboratory testing results

PART 2 PRODUCTS

2.1 MATERIALS OF CONSTRUCTION

A. Wood Sheeting and Bracing, if required by the Contractor in the completion of the work:

1. Shall be sound and straight; free from cracks, shakes and large or loose knots; and shall have dressed edges where directed.

2. Shall conform to National Design Specifications for Stress Grade Lumber having a minimum fiber stress of 1200 pounds per square inch.

3. Sheeting and bracing to be left-in-place shall be pressure treated in accordance with ASTM D1760 for the type of lumber used and with a preservative approved by the Engineer.

B. Steel Sheeting and Bracing, if required by the Contractor in the completion of the work:

1. Shall be sound

2. Shall conform to ASTM A328 with a minimum thickness of 3/8 inch.

PART 3 EXECUTION

3.1 EXCAVATIONS

A. General

1. The excavation of each Waste Fill Area (Type B, Type C, Type D, Type E, and Type F) and the South Landfill shall be completed initially to the limits shown on the Contract Drawings.

2. After completing excavation to the initial limits shown, confirmation samples shall be collected in accordance with the Specification Section 02241 – Sampling and Analyses to evaluate achievement of the Restricted Commercial Use cleanup standards listed in 6 NYCRR Part 375.

3. Where the Restricted Commercial Use cleanup standards are not achieved, the Engineer will direct the Contractor to extend the excavation limits, as appropriate, to remove residual waste material. After further excavation to the limits shown, the Contractor shall collect and analyze additional confirmation samples for evaluation as directed by the Engineer.

B. Excavated Material Testing

1. Analytical testing is not required for construction and demolition (C&D) debris and miscellaneous pieces of PVC and fabric scattered on the ground surface in the Type B Waste Fill Area that is to be placed with the cap limits below the geomembrane in the North Landfill Area.

2. To confirm whether the waste material removed from the Type C and Type F Waste Fill Areas is non-hazardous and suitable for on-site consolidation; composite samples will be collected during construction at a frequency of one composite sample per 200 cy of waste material. Each composite sample will be made of four discrete samples representative of the material encountered, and will be analyzed for leachable inorganic constituents, SVOCs, and VOCs. The results of the waste characterization will be compared to the hazardous waste threshold criteria listed in 6 NYCRR Part 371.3, and if non-hazardous the material will be consolidated in the North Landfill Area and capped.

3. Excavated materials from Area "D", which is to be disposed of off-site, shall be tested for TCLP RCRA metals, TCLP VOCs, TCLP SVOCs, TCLP herbicides & pesticides, reactivity, ignitability, corrosivity, and total PCBs in accordance with federal and state rules and regulations, and in accordance with the disposal facility requirements which may include additional analyses.

4. Analytical testing is not required for the shallow soil/sediment to be removed from the Type E Waste Fill area and consolidated and capped on site in the North Landfill Area.

5. Testing of the waste material in the South Landfill Area is required, and the material shall be disposed of as follows:

   a. South Landfill ash material and waste, that would otherwise be classified as "hazardous waste" unless pre-treated *in situ* to meet the requirements of the Land Disposal Restrictions (LDRs) pursuant to 40 CFR Part 268 and 6 NYCRR Part 376, shall be disposed of off-site at appropriate disposal facilities approved by the Owner and as required by the local, state or federal regulations. "Hazardous" ash material may be rendered "non-hazardous" by an on-site treatment process, but afterward such material shall be disposed of off-site in a NYSDEC-permitted waste facility allowed to receive wastes of the characteristics applicable.

   b. Non-hazardous South Landfill ash material, and waste that would be classified as "non-hazardous waste" without requiring pre-treatment, shall be consolidated on site below the Part 360 cover in the North Landfill Area.

6. Waste fill, soils and sediment excavated from below the water table or from areas of free standing water shall be dewatered such that they can be compacted to a minimum of 90% of the maximum density in accordance with ASTM D698-91. Water removed from excavations performed on site shall be handled in accordance with Section "Construction Water Management."

7. Surveys shall be conducted prior to and immediately after the excavation to assess the in-place volumes that are excavated. Surveying shall be conducted in accordance with the Special Provisions.

C. South Landfill area

1. The Contractor shall initially complete the excavations in the South Landfill Area to the horizontal limits shown and to the depth specified on the Contract Drawings.

2. On completing excavation to the initial limits and depths shown or specified on the Contract Drawings, the Contractor shall utilize a testing laboratory with experienced field personnel to collect samples of soil for confirmation analyses from locations approved by the Engineer. Said samples shall be collected and analyzed in accordance with the Section titled "Sampling and Analyses," as approved by the Engineer.

3. Based on the results of the confirmation sampling and analyses, the Contractor shall, if necessary, extend the excavations made either horizontally or vertically. The Engineer will establish the extent to which the excavation shall be expanded.

   a. On completing excavation to the additional limits specified by the Engineer, the Contractor shall collect additional samples of soil for confirmation analyses from locations approved by the Engineer. Said samples shall be collected and analyzed in accordance with the Section titled "Sampling and Analyses" as directed by the Engineer.

4. The Contractor shall be solely responsible for dewatering the excavations during all phases of work including the initial excavation period, confirmation sampling analyses and review periods, any additional excavation periods, and backfilling period.

D. Other listed excavations (Areas "A" through "F")

1. The excavations in Areas "A" through "F" shall be completed within the horizontal limits shown and to the depth specified on the Contract Drawings.

2. On completing excavation to the initial limits and depths shown or specified on the Contract Drawings, the Contractor shall utilize a testing laboratory with experienced field personnel to collect samples of soil for confirmation analyses from locations approved by the Engineer. Said samples shall be collected and analyzed in accordance with the Section titled "Sampling and Analyses," as approved by the Engineer.

3. Based on the results of the confirmation sampling and analyses, the Contractor shall, if necessary, extend the excavations made either horizontally or vertically. The Engineer will establish the extent to which the excavation shall be expanded.

   a. On completing excavation to the additional limits specified by the Engineer, the Contractor shall collect additional samples of soil for confirmation analyses from locations approved by the Engineer. Said samples shall be collected and analyzed in accordance with the Section titled “Sampling and Analyses” as directed by the Engineer.

4. The Contractor shall be solely responsible for dewatering the excavations during all phases of work including the initial excavation period, confirmation sampling analyses and review periods, any additional excavation periods, and backfilling period.

3.2 UNAUTHORIZED EXCAVATION

A. Whenever excavations are carried beyond or below the lines and grades shown on the Contract Drawings, or as given or directed by the Engineer, all such excavated space shall be refilled with special granular materials, ordinary clean borrow or other materials as the Engineer may direct. All refilling of unauthorized excavations shall be at the Contractor's expense.

B. All material which slides, falls or caves into the established limits of excavations due to any cause whatsoever, shall be removed and disposed of at the Contractor's expense and no extra compensation will be paid the Contractor for any materials ordered for refilling the void areas left by the slide, fall or cave-in.

3.3 SHEETING AND BRACING (IF USED)

A. Installation

1. The Contractor shall furnish, place and maintain such sheeting, bracing and shoring as may be required to support the sides and ends of excavations in such manner as to prevent any movement which could, in any way, injure the pipe, structures, or other work; diminish the width necessary for construction; otherwise damage or delay the work of the Contract; endanger existing structures, pipes or pavements; or cause the excavation limits to exceed the right-of-way limits.

2. In no case will bracing be permitted against pipes or structures in trenches or other excavations.

3. Sheeting shall be driven as the excavation progresses, and in such manner as to maintain pressure against the original ground at all times. The sheeting shall be driven vertically with the edges tight together, and all bracing shall be of such design and strength as to maintain the sheeting in its proper position. Seepage which carries fines through the sheeting shall be plugged to retain the fines.

4. Where breast boards are used between soldier piles, the boards shall be back packed with soil to maintain support.

5. The Contractor shall be solely responsible for the adequacy of all sheeting and bracing and shall be responsible for any damage to the site or adjacent properties resulting from the failure of any such sheeting or bracing.

B. Removal

1. In general, all sheeting and bracing, whether of steel, wood or other material, used to support the sides of trenches or other open excavations, shall be withdrawn as the trenches or other open excavations are being refilled. That portion of the sheeting extending below the top of a pipe or structural foundation shall not be withdrawn, unless otherwise directed, before more than six inches of earth is placed above the top of the pipe or structural foundation and before any bracing is removed. The voids left by the sheeting shall be carefully refilled with selected material and rammed tight with tools especially adapted for the purpose or otherwise as may be approved.

2. The Contractor shall not remove sheeting and bracing until the work has attained the necessary strength to permit placing of backfill.

3. All sheeting and bracing shall be properly decontaminated prior to its removal from the site.

    a. Sheeting and bracing installed on-site shall be pressure steam washed following removal. Water produced during decontamination shall be handled in accordance with the Section titled “Construction Water Management” and soils and sludge shall be handled in accordance with Section 3.6 of this specification.

C. Left in Place

1. If, to serve any purpose of his own, the Contractor files a written request for permission to leave sheeting or bracing in the trench or excavation, the Engineer may grant such permission, in writing, on condition that the cost of such sheeting and bracing be assumed and paid by the Contractor.

2. The Contractor shall leave in place all sheeting, shoring and bracing which are shown on the Contract Drawings or specified to be left in place or which the Engineer may order, in writing, to be left in place. All shoring, sheeting and bracing shown or ordered to be left in place will be paid for under the appropriate item of the Contract. No payment allowance will be made for wasted ends or for portions above the proposed cutoff level which are driven down instead of cut-off.

3. In case sheeting is left in place, it shall be cut off or driven down as directed so that no portion of the same shall remain within 12 inches of the street subgrade or finished ground surface.

3.4 REMOVAL OF WATER

A. General

1. The Contractor shall at all times provide and maintain proper and satisfactory means and devices for the removal of all water entering the excavations, and shall remove all such water as fast as it may collect, in such manner as shall not

interfere with the prosecution of the work or the proper placing of pipes, structures, or other work.

2. Unless otherwise specified, all excavations which extend down to or below the static groundwater elevations shall be dewatered by lowering and maintaining the groundwater beneath such excavations at all times when work thereon is in progress including confirmation sampling.

3. Water shall not be allowed to rise over or come in contact with any masonry, concrete or mortar, until at least 24 hours after placement, and no stream of water shall be allowed to flow over such work until such time as the Engineer may permit.

4. Where the presence of fine grained subsurface materials and a high groundwater table may cause the upward flow of water into the excavation with a resulting quick or unstable condition, the Contractor shall install and operate a well point system to prevent the upward flow of water during construction.

5. Water pumped or drained from excavations, or any sewers, drains or water courses encountered in the work, shall be disposed of in accordance with the Section "Construction Water Management" without injury to adjacent property, the work under construction, or to pavements, roads, drives, and water courses.

6. Any damage caused by or resulting from dewatering operations shall be the sole responsibility of the Contractor.

B. Work Included

1. The construction and removal of cofferdams, sheeting and bracing, and dewatering associated with removal of water associated with components of the work and the furnishing of materials and labor necessary therefore.

2. The excavation and maintenance of ditches and sluiceways.

3. The furnishing and operation of pumps, well points, and appliances needed to maintain thorough drainage of the work in a satisfactory manner.

3.5 STORAGE OF EXCAVATED MATERIALS

A. All material excavated from the Site, unless designated by the Engineer for off-site disposal, shall be immediately transported and placed in accordance with the Contract requirements within the limits of the proposed cap to be constructed as part of this Contract, or else stored temporarily on site in accordance with the following requirements:

1. Excavated material staged or stockpiled in any location outside the proposed cap limits in the North Landfill area shall be containerized in trucks, roll-off boxes, or other suitable container, or placed on a polyethylene or other synthetic liner, covered by a water proof tarp, and surrounded by hay bales or silt fence to prevent contaminating the adjoining area with runoff sediments.

2. If excavated material is placed on a polyethylene or other synthetic liner, that liner shall have a thickness of not less than 40 mils. Such liner shall be free from seams and damage including but not limited to rips, tears, and holes.

3. If excavated material which must be dewatered prior to placement within the limits of the proposed cap is placed in a bermed staging pad, an appropriate collection system to handle construction water shall be included.

4. The Contractor shall be solely responsible for the cost of providing, maintaining, decontaminating or disposing of the liner and other material used for the purpose of staging or stockpiling excavated material.

5. The Contractor shall be solely responsible for the cost of addressing cross-contamination resulting from the use of stockpiles to temporarily stage excavated material outside the limits of the proposed cap.

B. The Contractor shall store, stage, or place excavated materials in locations so as not to endanger the work, and so that easy access may be had at all times to all parts of the excavation. Stored or staged materials shall be kept neatly piled and covered, so as to cause as little inconvenience as possible to the execution of the work.

C. Two samples of the surface soil beneath each temporary stockpile shall be collected and analyzed after the work. The samples shall be analyzed for SVOCs, VOCs, and metals in accordance with the requirements of the Section “Sampling and Analyses” to verify that cross-contamination has not occurred.

D. Special precautions must be taken to permit access at all times to fire hydrants and other points where access may involve the safety and welfare of the general public or those on site.

3.6 OFF-SITE DISPOSAL OF MATERIALS

A. South Landfill Ash

1. South Landfill ash material and waste, that would otherwise be classified as “hazardous waste” unless pre-treated *in situ* to meet the requirements of the Land Disposal Restrictions (LDRs) pursuant to 40 CFR Part 268 and 6 NYCRR Part 376, shall be disposed of off-site at appropriate disposal facilities approved by the Owner and as required by the local, state or federal regulations. “Hazardous” ash material may be rendered “non-hazardous” by an on-site treatment process, but afterward such material shall be disposed of off-site in a NYSDEC-permitted waste facility allowed to receive wastes of the characteristics applicable.

2. Non-hazardous South Landfill ash material and waste (*i.e.* waste not being treated), that would be classified as “non-hazardous waste” without requiring pre-treatment, shall be consolidated on site below the Part 360 cover being constructed on-site in the North Landfill Area.

B. Area "D" wastes

1. Area "D" wastes shall be disposed of off-site at appropriate disposal facilities approved by the Owner in accordance with all applicable federal, state, and local laws, rules, regulations, orders and requirements.

C. Spoil Material

1. All spoil materials, not suitable for placement below the cap as determined by the Engineer, shall be disposed of off-site at appropriate disposal facilities approved by the Owner in accordance with all applicable federal, state, and local laws, rules, regulations, orders and requirements.

D. General

1. The following requirements pertain to the waste types listed in items A, B and C above.

a. The Contractor shall collect and analyze characteristic samples of waste, as directed by the Engineer or otherwise required by the off-site facility for waste profiling as a condition of acquiring waste acceptance.

b. The Contractor shall be responsible for and provide the services of one or more licensed transporters for the transport of hazardous wastes to an Owner-approved off-site disposal facility.

c. The Contractor shall be responsible for loading, labeling, placarding, marking, and transporting hazardous waste in accordance with all applicable local, state and federal laws, rules, regulations, orders and requirements.

d. Prior to loading the waste, the Contractor shall have the sole responsibility of ensuring that the waste exhibits the characteristics (chemical and physical) acceptable to the disposal facility. The Contractor shall prepare manifest forms and/or shipping papers for all wastes leaving the site in accordance with applicable regulations. The Contractor shall be responsible for tracking the manifests and/or shipping papers and shall immediately notify the Owner of any problem in completing shipment and disposal of wastes. The Contractor shall provide to the Owner written evidence in the form of properly completed manifests/shipping papers that all waste materials leaving the Site have been properly managed.

e. Each transport container of waste shall be visually inspected by the Contractor for leaks, rips, or container damage prior to being loaded. Containers that are found to be leaking or damaged shall not be allowed to be loaded until the damage is repaired. The Contractor shall prepare transport containers to prevent spillage or contamination. In the event of spillage, the Contractor shall be solely responsible for any damages and actions necessary to remedy the situation.

f. The Contractor shall not transport waste from the site to an intermediate waste storage facility prior to or in route to the facility approved by the Owner for final disposal of the hazardous waste.

2. The Contractor shall inspect vehicles leaving the site for waste material adhering to the wheels or undercarriage. Material that is detected shall be removed at the decontamination area setup by the Contractor.

3.7 BACKFILLING OF EXCAVATIONS

A. General

1. All excavations shall be backfilled to the original surface of the ground or to such other grades as may be shown on the Contract Drawings, specified, or directed by the Engineer.

2. Backfilling shall be done with suitable clean material obtained from off-site.

3. Any settlement occurring in the backfilled excavations shall be refilled and compacted.

4. All off-site sources for clean fill materials shall have an appropriate mining permit.

B. Unsuitable Materials

1. Stones, pieces of rock or pieces of pavement greater than 1 cubic foot in volume or greater than 1.5 feet in any single dimension shall not be used in any portion of the backfill.

2. All stones, pieces of rock or pavement shall be distributed through the backfill and alternated with earth backfill in such a manner that all interstices between them shall be filled with earth.

3. Frozen earth shall not be used for backfilling.

8. Soils rich in organics, or classified as ASTM D2487 Group Symbol CH, ML, MH, OH, or OL shall be avoided.

C. Compaction and Density Control

1. The compaction shall be as specified for the type of earthwork, i.e., structural, trenching or embankment.

a. The compaction shall be the percent of maximum dry density as specified for the type of earthwork.

b. The compaction equipment shall be suitable for the material encountered.

2. Where required, to assure adequate compaction, in-place density testing shall be made by an approved testing laboratory at the expense of the Contractor in accordance with the Section "Embankment."

a. The moisture-density relationship of the backfill material shall be determined by ASTM D698, unless otherwise specified.

1) Compaction curves for the full range of materials used shall be developed.

b. In-place density shall be determined by the methods of ASTM D1556 or ASTM D2922 and shall be expressed as a percentage of maximum dry density.

3. Where required, to obtain the optimum moisture content, the Contractor shall add, at his expense, sufficient water during compaction to assure the specified maximum density of the backfill. If, due to rain or other causes, the material exceeds the optimum moisture content, it shall be allowed to dry, assisted if necessary, before resuming compaction or filling efforts.

4. The Contractor shall be responsible for all damage or injury done to pipes, structures, property or persons due to improper placing or compacting of backfill.

3.8. OTHER REQUIREMENTS

A. Drainage

1. All material deposited in roadway ditches or other water courses shall be removed immediately after backfilling is completed and the section, grades and contours of such ditches or water courses restored to their original condition, in order that surface drainage will be obstructed no longer than necessary.

B. Unfinished Work

1. When, for any reason, the work is to be left unfinished, all trenches and excavations shall be filled and all roadways, sidewalks and watercourses left unobstructed with their surfaces in a safe and satisfactory condition. The surface of all roadways shall have a temporary pavement.

C. Hauling Material on Streets

1. When it is necessary to haul material over the streets or pavements, the Contractor shall provide suitable tight vehicles so as to prevent deposits on the streets or pavements or adjoining areas. In all cases where any materials are dropped from the vehicles, the Contractor shall immediately clean up the same in accordance with all applicable federal, state, and local laws, rules,

regulations, orders and requirements and shall keep the streets, pavements and adjoining areas clean and free from dirt, mud, stone, hazardous substances, hazardous waste, and other hauled material.

2. Without limiting the indemnity in GP-7.06, the Contractor shall fully protect, defend, indemnify, and save harmless the Owner, Engineer, and the State of New York, and their officials, officers, directors, employees, representatives, agents, contractors and subcontractors against any and all pollution-related liability, judgements, costs, damages and expenses, including attorney's fees, upon any and all claims for injuries to, or death of, any persons or damage to any property, whether such damages or injuries are attributable to the strict liability, negligence, or willful misconduct of the Contractor, its officers, employees, subcontractors or agents, arising from, relating to, or in connection with the transportation of soils, sediments, waste materials, and other materials in the performance of the Work.

D. Dust Control

1. It shall be the sole responsibility of the Contractor to control the dust created by any and all of his operations to such a degree that it will not endanger the safety and welfare of the general public. The Contractor shall provide and implement a Dust Control Program and comply with the requirements of OSHA 1910.1000 and NYSDEC DER 10 Appendix 1B – Fugitive Dust and Particulate Monitoring.

2. Calcium chloride and petroleum products shall not to be used for dust control.

3. The Contractor shall conduct community air monitoring in conformance with the approved Health & Safety Plan and Dust Control and Monitoring Plan during all periods while excavation and earth handling activities are being performed. Earth handling activities include, but are not necessarily limited to, excavation; loading and handling of waste fill, soil and sediment; and placement, grading and compaction of embankment.

E. Test Pits

1. For the purpose of obtaining detail locations of underground obstructions, the Contractor shall make excavations in advance of the work. Payment for the excavations ordered by the Engineer will be made under an appropriate item of the Contract and shall include sheeting, bracing, pumping, excavation and backfilling.

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SECTION 02223

EMBANKMENT

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes construction of earth embankments constructed to established lines and grades at the locations shown on the Contract Drawings and as directed by the Engineer.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02221 - Earthwork

B. 02294 - Barrier Protection Layer

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

a. D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 kN-m/m^3)

b. D1556 - Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

c. D2922 - Test Methods for Density of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth)

d. D3017 - Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)

2. Occupational Safety and Health Administration

a. 29 CFR 1926 Construction Industry Standards

1.4 SUBMITTALS

A. In addition to those submittals identified in the Special Provisions, the following items shall be submitted:

1. Proposed testing laboratory

2. Source of off-site materials

3. Compaction curves for all materials to be used.

4. Particle size distribution curves for all materials to be used.

5. Affidavit from Owner of source and results of laboratory analyses testing in accordance with the Special Provisions.

1.5 TESTING

A. All testing, including field and laboratory services, shall be at the Contractor's expense without additional compensation, except where separate payment is specified.

PART 2 PRODUCTS

2.1 GENERAL

A. Embankment material shall be free from frost, stumps, trees, roots, sods, muck, marl, vegetable matter or other unsuitable material and shall be suitable for compaction as described in the following provisions. Where embankments are to be placed underwater only acceptable granular materials shall be used unless otherwise specified.

PART 3 EXECUTION

3.1 PREPARATION OF SUBGRADE

A. The entire surface to be covered with embankment shall be grubbed and stripped of all grass, vegetation, rubbish, or other unsuitable materials before any material is placed within the proposed limits of the cap to be constructed, as shown on the Contract Drawings. Stripped materials, not suitable for placement under the cap as determined by the Engineer, shall be removed as spoil.

B. Stripped or excavated surfaces on which embankments are to be placed shall be compacted to the required density of the embankment prior to any embankment including excavated waste fill being placed. Physical testing and compaction requirements for on-site excavated soils and wastes shall be done in accordance with Section 3.3 – “Density Control.”

3.2 PLACEMENT AND COMPACTION

A. Embankment material including waste fill and soil excavated from elsewhere on site shall be placed in a uniform lift and thoroughly compacted by compaction equipment suitable for the material encountered to obtain the required density prior to the placement of each succeeding lift. Materials shall be placed in loose lifts not greater than 8 inches of thickness unless greater thicknesses are allowed by the Engineer upon demonstration by the Contractor that the materials and compaction efforts are adequate to obtain the required density.

B. Material shall be placed in a uniform lift and thoroughly compacted by compaction equipment suitable for the material encountered to obtain the required density prior to the placement of succeeding lift.

1. Each lift shall be tested in accordance with Subpart "Density Control" of this Section for proper compaction before successive lifts are applied.

C. Compaction of material may be accomplished by the following methods, subject to acceptance by the Engineer upon completion of on-site field tests by the Contractor.

1. Pneumatic - Tired Compactors:

   The minimum pneumatic compactor class shall consist of Class F with a tire size of 13.00 X 24, number plys is 18, inflation pressure (psi) of 100* and the range of ballasted wheel loads (lbs. per wheel) shall be 8,000 - 10,000. The minimum effort for all pneumatic compactors shall be 6 passes, at speeds up to 12 feet per second (fps) on no more than the first 2 passes, and all subsequent passes at speeds of 6 fps or less.

   (* Inflation pressure for not less than the last two passes on each lift. May be reduced during earlier passes and gradually increased to this level.)

2. Vibratory Drum Compactors:

   This type of compactor is defined as a machine which primarily develops its compactive effort from the vibrations created and is classified for use according to the developed compactive force rating per linear inch of drum width (PLI). The minimum effective compactive force, PLI, used shall be 740 and the minimum effort shall be 6 passes of 4.5 fps.

3. Sheepsfoot Rollers:

   The minimum stress level shall consist of a tire psi of 40. The minimum effort for all sheepsfoot rollers shall be 6 passes, operating at speeds not exceeding 6 feet per second when towed and 15 feet per second when self-propelled. Compaction shall continue until the sheepsfoot roller can "walk out" of the compacted material.

4. Other Type of Compactor:

   Compactor types other than those classified above may be employed by the Contractor, subject to acceptance by the Engineer of the proposed minimum applied effort (minimum number of passes and travel speed). Such acceptance by the Engineer will be based upon the results of appropriate on-site field tests.

D. Stones shall not exceed 6 inches in greatest dimension and shall be well distributed throughout the soil mass. Stone shall be defined as rock material either in its natural or broken state.

E. Stones not well mixed with soil material shall not be used in earth embankments unless the stone material is sufficiently deteriorated or friable so as to be compactable to achieve minimum voids and required density.

F. If the required density is not obtained, compaction of the embankment shall continue until specified densities are obtained, before any additional embankment is placed. Improperly compacted embankment shall be removed.

G. Where required, the Contractor shall, at his expense, add sufficient water during the compaction effort to assure proper density. If, due to rain or other causes, the material exceeds the optimum moisture content for satisfactory compaction, it shall be allowed to dry, assisted by discing or harrowing, if necessary, before compaction or filling effort is resumed.

H. The Contractor shall be required to seal the working surface at the close of each day's operation and when practical prior to rainfall so that the working surface is able to drain. Sealing shall be accomplished by rolling the surface with a smooth wheel steel roller.

I. Compaction or consolidation achieved by traveling trucks, machines and other equipment will not be accepted unless such procedures are approved by the Engineer and proper compaction density is achieved.

J. Hand tamping shall be required around buried utility lines or other subsurface features that could be damaged by mechanical compaction equipment.

K. Embankments shall be constructed to such elevations as to make allowance for any settlement that may occur. Prior to the construction of any structure, roadway or other ground feature and before final acceptance of the contract, the Contractor shall regrade the embankments to conform to the established lines and grades.

3.3 DENSITY CONTROL

A. Field control samples shall be taken and tested initially and periodically thereafter by the testing laboratory as required to assure that adequate compaction of the embankment material is being achieved.

B. The embankment shall be compacted and tested in accordance with the following:

Test	Standard	Minimum Frequency	Criteria
Compaction Characteristics	ASTM D698-91	Once per 1,000 cubic yards of soil, sediment, or waste fill relocated	Develop compaction characteristics
In-Place Moisture Content	ASTM D3017-88	Once per 10,000 square feet per lift of soil, sediment, or waste fill relocated	Monitor compaction
In-Place Density	ASTM D2922-91	Once per 10,000 square feet per lift of soil, sediment, or waste fill relocated	Minimum 95% of maximum density in accordance with ASTM D698-91

1. In-place density of soils shall be determined by the methods described in ASTM D1556 or ASTM D2922 and expressed as a percentage of the maximum dry density.

2. Compaction curves for the full range of soil materials to be used in the embankment shall be developed by an approved independent testing laboratory.

3. Regardless of the requirements specified above, no fewer than two of each of the tests identified above shall be made every day that embankment material is being placed for each method of compaction utilized by the Contractor.

3.4 FINAL SURFACE

A. The final embankment surface to be covered by the geomembrane shall be free of all vegetation, rocks, debris, etc. and other deleterious materials. The surface shall be free from stones or clods greater than ¼ inches in diameter. Any roots ½ inch or over in diameter shall be removed to at least 18 inches below the surface. Any depressions, potholes, ruts, etc., in the surfaces to be covered by the geomembrane (flexible membrane cover) shall be filled with the appropriate soil material and compacted to final grade. The finished surface shall be smooth with no abrupt projections or depressions to damage the geomembrane.

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SECTION 02231

SELECTED FILL

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes selected fill materials used in either embedment or special backfill, as specified or as directed by the Engineer.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

   a. D422 - Method for Particle-Size Analysis of Soil

   b. D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft - lbf/ft^3) (600 kN-m/m^3)

1.3 SUBMITTALS

A. In addition to those submittals identified in the Special Provisions, the following items shall be submitted:

1. The name and location of the source of the material.

2. Samples and laboratory test reports of the material.

3. Affidavit from owner of the source and results of laboratory analyses testing in accordance with the Special Provisions for each type of select fill.

4. Gradation curves and data for each select fill or special backfill material required during construction.

1.4 DEFINITIONS

A. Embedment or Lining

1. Any type granular material specified or directed to be placed below an imaginary line drawn one foot above the inside diameter of the pipe and within the trench limits.

B. Special Backfill

1. Pipelines

a. Any selected fill material specified or directed to be placed above an imaginary line drawn one foot above the inside diameter of the pipe and within the trench limits.

2. Structures

a. Any selected fill material specified or directed to be placed within the excavation limits, either in, under or adjacent to the structure.

C. Special Granular Material

1. Special granular material shall mean any of the granular materials listed below or other materials ordered by the Engineer.

1.5 TESTING REQUIRED

A. All testing services, as specified herein, necessary for the Contractor to obtain approved select fill material shall be provided by the Contractor. All testing including laboratory and field services required during construction shall be provided by the Contractor. Approval for any material should be acquired from the Engineer prior to use by the Contractor.

B. All select fill materials shall be, at a minimum, tested for compaction in accordance with ASTM D 698 and grain size in accordance with ASTM D422. Both tests shall be conducted at a frequency of one test per 500 cubic yards of material. In the event that less than 500 cubic yards of a given select fill material is to be used, at least one test for that material shall be supplied. Approval for any material should be acquired from the Engineer prior to use by the Contractor.

C. Selected fill and borrow material to be imported from an off-site source shall be tested by the Contractor in accordance with the Special Provisions to demonstrate the materials are free of contamination; unless the material is a gravel, rock or stone, and can meet the sieve requirements in DER-10.

PART 2 PRODUCTS

2.1 MATERIALS

A. Type D

1. Washed Sand

a. Washed coarse sand having the following gradation by weight:

% Passing	Sieve
100	3/8-inch
95 - 100	No. 4
80 - 100	No. 8
50 - 85	No. 16
25 - 60	No. 30
10 - 30	No. 50
2 - 10	No. 100

B. Ordinary Clean Borrow

1. Ordinary clean borrow shall be common “earth”, as defined in the Section “Earthwork,” that is not rich in organics, or classified as ASTM D2487 Group Symbol CH, ME, MH, OH, or OL.

2. Ordinary clean borrow shall have the following gradation by weight:

% Passing	Screen Size (inches)
100	2
45 – 80	1 ¼
20 – 50	#40 sieve
15 – 30	#200 sieve

C. Type F

1. Run-of-crusher Stone

a. Run-of-crusher hard durable limestone or approved equal having the following gradation by weight:

% Passing	Screen Size (inches)
100	1-1/2
95 - 100	1
65 - 80	1/2
40 - 60	1/4
0 - 10	#200 Sieve

PART 3 EXECUTION

3.1 INSTALLATION

A. Special backfill where specified or directed shall be placed in accordance with the backfilling provisions of the Section titled "Earthwork" unless otherwise specified.

3.2 DISPOSAL OF DISPLACED MATERIALS

A. Potentially contaminated materials displaced through the use of the above materials shall be handled in accordance with the Section titled “Earthwork,” and the cost for such incorporation shall be included in the price bid for each of the materials. Uncontaminated materials displaced by the use of the above materials may be otherwise disposed on-site as accepted by the Engineer. The cost for such disposal shall be included in the price bid for each of the materials.

3.3 SETTLEMENTS

A. Any settlements in the finished work shall be made good by the Contractor, at no additional cost to the Owner.

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SPECIFICATION 02241

SAMPLING AND ANALYSES

PART 1 GENERAL

1.1 WORK INCLUDED

A. Untreated waste characterization sampling and analyses for the purpose of waste characterization.

B. Post-treatment confirmation testing (if hazardous waste is treated on-site) required to document that the waste no longer exhibits the characteristic of hazardous waste, and to document compliance with 40 CFR Part 268 and 6 NYCRR Part 376.4.

C. All post-excavation sampling for the purpose of confirming cleanup following excavation of the waste fill and contaminated soils.

D. The collection and analyses of quality assurance/quality control samples, as specified herein, in connection with the post-excavation confirmation sampling of native soils.

E. The production and distribution of a New York State Department of Environmental Services Analytical Services Protocol (NYSDEC ASP) Category B data package for the results of confirmation sampling and analyses performed.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02221 - Earthwork

B. 02502 - Restoration of Surfaces

C. 02980 - Topsoil and Seeding

1.3 SUBMITTALS

A. The Contractor shall provide the Engineer:

1. Copies of all laboratory test reports within one business day of receipt by the Contractor, including Chain-of-Custody records

2. Copies of all field log books

3. Copies of the laboratory’s required NYSDOH ELAP Certificates and latest proficiency testing results

4. NYSDEC ASP Category B data package

1.4 ANALYTICAL LABORATORY SERVICES, SAMPLING AND ANALYSIS

A. The analytical laboratory selected by the Contractor as a subcontractor to perform chemical analysis must be certified by the New York State Department of Health Environmental Laboratory Approval Program. This certification must cover all categories of solid and hazardous waste and volatile organic compounds, semi-volatile organic compound, and metals presented in Table 1. The Contractor remains responsible for the performance of the laboratory and all costs associated with providing the required laboratory services. It is the Contractor's responsibility to ensure that the analytical services are performed in accordance with contract requirements.

B. It is the responsibility of the Contractor to ensure that the laboratory maintains NYSDOH ELAP certification in all the aforementioned categories and is able to meet other performance requirements for the duration of the Contract.

C. Any additional expenses associated with resampling or the reanalysis of samples that fail Quality Assurance/Quality Control (QA/QC) reviews will be borne by the Contractor.

D. The Engineer may at any time, require the Contractor to obtain samples of soil, sediment, or wastes and to perform a laboratory analysis of said samples. Sampling and analysis is not limited to the above categories and may include others that the Engineer considers necessary.

E. The Contractor's costs for sampling and analytical services will include, but not be limited to, the cost of sampling equipment and supplies, the cost of transporting samples to the selected laboratory, and the cost of sample preparation and analysis including internal laboratory quality control.

F. Unless otherwise specified in writing by the Engineer, all sampling, analysis and monitoring shall be performed in accordance with the following documents:

(1) *Region II Comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA) Quality Assurance Manual*, dated October 1989, and any updates thereto.

(2) *NYSDEC Analytical Services Protocol*, dated June 2000, and any updates thereto.

PART 2 PRODUCTS

(SECTION NOT USED)

PART 3 EXECUTION

3.1 SAMPLING AND ANALYSES

Samples of waste material and soil shall be collected during the project for the following purposes:

A. Waste Characterization

1. To characterize Waste Type “C”, “D”, and “F” material for disposal, this waste shall be sampled and analyzed for TCLP RCRA metals, TCLP VOCs, TCLP SVOCs, and total PCBs. Material that is characteristically hazardous and designated to be disposed of off-site (including Type “D” material) will be further sampled and analyzed in accordance with the requirements (if required) of the off-site hazardous waste disposal facility.

2. Sampling and analyses of the soil/ash waste matrix in the South Landfill Area shall be conducted to determine if the waste matrix is characteristically hazardous or if it contains greater than 50 mg/kg of PCBs. If so, the hazardous waste material either will be disposed of off-site as hazardous waste or treated on site.

    a. If slated for off-site disposal as hazardous waste, additional sampling and analyses required by the disposal facility shall be performed.

    b. If the material is treated on site, then the treated material shall be sampled and analyzed to determine if the material is no longer hazardous, and if the treated material achieved the Universal Treatment Standards (UTS) applicable to the Underlying Hazardous Constituent (UHC). Analyses required include TCLP RCRA metals, TCLP VOCs, TCLP SVOCs, and total PCBs.

B. Post-Excavation Confirmation

1. To evaluate achievement of the site-specific cleanup objectives, samples of the native soil shall be collected from the perimeter and floor of the excavation and analyzed for comparison to the Restricted Commercial Use Standards presented in 6 NYCRR Part 375. Analyses required include total RCRA metals, VOCs, SVOCs, and PCBs.

2. Floor area sampling shall be based on a 50-ft grid pattern. At least one (1) sample per excavation shall be collected if the excavation is smaller than 2,500 SF. Confirmation samples also to be collected each 50-ft around the perimeter of the excavation to document conditions at the edge of excavation. At least four (4) samples shall be collected from the perimeter of each area excavated to document conditions to the north, east, west and south.

3. The Contractor shall also collect two (2) discrete representative samples of native soil from the surfaces where the Contractor intends to locate any stockpiles or equipment decontamination facilities. On completing the work of the project, the Contractor shall collect two (2) additional discrete representative samples of native soil from the same surfaces to confirm that the Contractor operations have not caused spreading of contamination.

    a. Payment for collection and analysis of the five samples collected as specified above will be made to the Contractor at the unit price bid. No additional payment, however, shall be made to the Contractor for any additional sampling and analyses that may be required of them if it is found that the Contractor’s operations caused a spreading of contamination. In such an event, the Contractor shall solely bear the additional cost of the contaminated soils removal and disposal, and subsequent sampling and analyses.

C. Imported Fill Characterization

1. To determine if fill material to be imported during the construction is acceptable for use on site, specimens from each off-site source shall be sampled in accordance with NYSEC DER-10 and analyzed for TAL VOCs, TAL SVOCs, TAL metals, cyanide (total and amenable), and PCBs/Pesticides in accordance with NYSDEC guidance document DER-10, Table 5.4(e)1; unless the material is a gravel, rock or stone, and can meet the sieve requirements in DER-10. If the material to be imported is from a virgin mine/pit or similar location, it will be sampled for chemical analyses only for the initial 100 cubic yards of material.

3.2 DATA QUALITY OBJECTIVES

A. The baseline waste characterization analyses must allow the results to be compared to the hazardous waste threshold values presented in 6 NYCRR Part 371.3.

B. The treated waste characterization analyses must allow the results to be compared to the Universal Treatment Standards presented in 40 CFR 268 and 6 NYCRR 376.4(j).

C. The post-excavation confirmation sample analyses must allow the results to be compared to the site-specific cleanup objectives. Presently, the cleanup objectives proposed by the Owner for the site are those set forth in 6 NYCRR Part 375 for the protection of public health – industrial/commercial.

D. The imported fill characterization sample analyses must allow the results to be compared to 6 NYCRR Part 375-6.7(d).

E. The samples shall each be analyzed for the parameters presented in Table 1:

Table 1 *Parameters and DQOs*

Sample Purpose	Frequency of sampling	Total VOCs	TCLP VOCs	Total SVOCs	TCLP SVOCs	TAL metals	Cyanide (total and amenable)	TCLP RCRA metals	Total PCBs	Pesticides	TCLP pest/herb, ignitability, reactivity, corrosivity (as required by disposal facility)	DQO and Standard for comparison
Untreated waste characterization (Fill Type C, D, F and anticipated non-hazardous portion of South Landfill soil/ash matrix)	1 composite sample per 200 CY of untreated waste		**X**		**X**			**X**	**X**		**X**	6 NYCRR Part 371.3 and 40 CFR Part 261

Treated waste characterization (applicable for on-site treatment, if any, of hazardous portion of South Landfill soil/ash matrix)	1 grab sample per 100 tons of treated waste		**X**		**X**			**X**	**X**			6 NYCRR Part 371.3 and 6 NYCRR 376.4(j) and 40 CFR Part 268
Post excavation confirmation	1 grab sample per 2,500 SF of excavation floor area, and 1 sidewall sample per 50 LF at perimeter	**X**		**X**		**X**			**X**			6 NYCRR Part 375 for the protection of public health – industrial/commercial
Imported fill verification	1 sample (composite, except grab for VOCs) per 1000 CY of material, unless from an established pit. If from a pit, only required to sample the initial 100 CY.	**X**		**X**		**X**	**X**		**X**	**X**		6 NYCRR Part 375-6.7(d)

F. The quality control criteria described in the Quality Assurance Project Plan (QAPP), and that of NYSDEC ASP Exhibit E as referenced in the QAPP, must be applied to analyses performed by the laboratory.

G. The laboratory shall use the practical quantitation limits (PQLs) as the reporting limit, but shall report concentrations to the method detection limits (MDLs) or instrument detection limit (IDL) for metals. The laboratory shall indicate that a concentration is less than the PQL, but greater than the MDL or IDL by assigning the “J” flag to the concentration.

3.3 QUALITY ASSURANCE/QUALITY CONTROL

A. In addition to the discrete samples of native soil, the Contractor shall collect and analyze Quality Assurance/Quality Control samples including a matrix spike, matrix spike duplicate, field duplicate, and field/equipment duplicate on a frequency of one each for every increment of 20 post-excavation confirmation samples (e.g. native soil) collected.

1. Field duplicate samples shall be collected to evaluate field sample collection precision procedures. Field duplicate samples are duplicate samples collected from one location and sent to the laboratory blind (with two different sample identifications). Field duplicates are co-located and shall be packed separately from each other. One field duplicate sample shall be collected by the Contractor per matrix. With the exception of VOC soil samples, duplicates shall be homogenized. Separate aliquots of the homogenized soil shall be shipped as the sample and the blind field duplicate sample.

2. Matrix spikes and matrix spike duplicates (MS/MSD) shall be collected per group of similar concentration and matrix. MS/MSD samples are duplicate samples that have spiking solutions added at the laboratory. MS/MSD samples are considered identical to the original sample. The sampled material shall be homogenized in the field and laboratory prior to analyses. The percent recovery of the spiked amount indicates the accuracy of the extraction as well as interferences caused by the matrix. Relative percent differences (RPDs) between spike sample recoveries indicate the precision of the data.

3.5 SAMPLE HANDLING AND CUSTODY

A. Immediately after collection, the Contractor shall transfer samples to properly labeled and preserved sample containers. Samples requiring refrigeration for preservation shall be immediately transferred to coolers packed with wet ice and/or ice packs, and packing material to avoid breakage of sample jars.

B. Samples shall be shipped or transported within 24 hours of being collected and shall arrive at the laboratory no later than 48 hours after sample collection. Proper chain-of-custody documentation shall be maintained throughout the transportation process.

C. Samples shall be extracted, digested, and analyzed within the holding times specified by the applicable methods. The Contractor shall solely bear the cost of resampling required for missed holding times.

D. Chain-of-custody procedures shall be instituted and followed throughout the sampling activities. Minimally, these procedures include field custody, laboratory custody, and evidence files. Samples shall be handled according to strict chain-of-custody protocols. The Contractor must be prepared to produce documentation that traces the samples from the field to the laboratory and through analyses.

E. Quality assurance measures for this project shall begin with the sample containers. Pre-cleaned sample containers shall be provided by the Contractor from a USEPA-certified manufacturer (I-Chem 300 or equivalent).

F. Chain-of-custody records shall be kept starting in the field when sample collection is being performed. In the field log book, samplers shall note climatic data and equipment employed during collection. Physical characteristics of the sample, date, time of day, sample location, and abnormalities noted during sampling shall be recorded in the field log book.

G. The field sampler shall indicate the sample identification number, date, time, sample matrix, sample type (i.e., grab or composite), number of containers and the analysis requested on the chain-of-custody form. The chain-of-custody form shall be signed and placed in a sealed ziploc bag in the cooler.

H. The shipping container shall be closed, and two paper or plastic seals shall be affixed to the latch and lid (only if the samples are shipped via overnight courier) and the field sampler will initial the seal. The seals must be broken to open the cooler and will indicate tampering if the seal is broken before receipt at the laboratory.

I. The cooler shall be shipped within 24 hours of sample collection via an overnight delivery service or hand delivered to the laboratory. When the samples arrive at the laboratory, the sample custodian shall, after inspecting the contents of the sample coolers, sign the chain of custody and record the temperature of the temperature control blank on the chain of custody. If the cooler temperature is greater than $10^{o}C$, the sample custodian shall immediately notify the Laboratory Quality Control Coordinator. The QC Coordinator will contact the Contractor and Engineer to discuss corrective actions that may apply to samples.

3.6 RECORDS, REPORTS, AND DATA MANAGEMENT

A. The generated data shall be entered into a laboratory database management system. The laboratory shall provide the results in an electronic database deliverable (EDD) prepared using the EQuIS 4 file format in accordance with the current NYSDEC protocol based on a USEPA Region 2 format.

B. The final file for the sample will comprise laboratory data packages, including summary and raw data from the analysis of environmental and QC samples, chromatograms, mass spectra, calibration data, work sheets, sample preparation logs and chain-of-custody records.

C. Sample results shall be reported to the Engineer in NYSDEC ASP Category B forms, and shall contain the information required by the NYSDEC ASP format. Included in each data package shall be a case narrative which will provide a complete description of any difficulties encountered during sample receiving, preparation, or analysis. For each analysis, the individual QA/QC parameters shall be addressed and problems along with the corrective actions taken by the laboratory shall be fully explained. The laboratories will provide an indexed and searchable PDF copy and electronic data deliverable (EQuIS 4 file format) of the data packages within 4 weeks of receipt of the last sample at the laboratory.

D. Site files, field logs, data packages, and records shall be maintained and archived by the laboratory for a period of 10 years.

3.7 FIELD EQUIPMENT DECONTAMINATION

A. The following field equipment decontamination procedures shall be followed if dedicated sampling equipment is not used for each sample location.

1. Using a laboratory grade detergent and ASTM Type II water, remove visible particles and residuals.

2. Rinse the equipment thoroughly with ASTM Type II water to remove the detergents.

3. Apply an acid rinse to remove trace metals. The acid solution can be made with 10% nitric or hydrochloric acid solution made from regent grade or nitric or hydrochloric acid and ASTM Type II water.

4. Thoroughly rinse the equipment with ASTM Type II water.

5. Rinse the equipment with a high purity solvent (pesticide grade) to remove traces of organic compounds. Acetone, methanol, and other water soluble solvents are acceptable for the solvent rinse step.

6. Allow the solvent rinse to evaporate and the equipment to air dry.

7. Give the equipment a thorough rinse with ASTM Type II water rinse to remove any residual traces of solvent.

8. Wrap the sampling equipment with a clean inert material such as aluminum foil for transport to the sample collection area. Note that household aluminum foil often has a coating of oil and should not be used for this purpose.

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SECTION 02264

GROUNDWATER MONITORING WELL EXTENSION, REPAIR AND REPLACEMENT

PART 1 GENERAL

1.1 WORK INCLUDED

A. Extension of existing groundwater monitoring wells relative to final grade shown on the Contract Drawings.

B. Replacement or reconstruction of monitoring wells damaged during the work of the Contract, as directed by the Engineer.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02141 - Groundwater Monitoring Well Abandonment

B. 02140 - Construction Water Management

C. 02221 - Earthwork

1.3 REFERENCES

The publications listed below form a part of the specifications to the extent referenced. The publications are referred to in the text by basis designation only.

A. American Society of Testing and Materials (ASTM)

ASTM C150	Type 1 Portland Cement
ASTM A778	Welded Unannealed Austentic Stainless Steel
ASTM A139	Electric-fusion (Arc)-Welded Steel Pipe
ASTM D1586	Test Method for Penetration Test and Split-Barrel Sampling of Soils

B. Commissioner Policy CP-43 - Groundwater Monitoring Well Decommissioning Procedures, New York State Department of Environmental Conservation, August 2009.

C. United States Environmental Protection Agency (USEPA) guidance documents

EPA 530/R-93/001	RCRA Groundwater Monitoring: Draft Technical Guidance
EPA 600/4-79/020	Methods for Chemical Analysis of Water and Wastes

1.4 SUBMITTALS

A. Proposed well extension materials and methods.

B. Proposed monitoring well construction procedures.

C. Borehole logs of proposed soil borings.

D. Proposed monitoring well installation diagrams.

E. Proposed monitoring well survey data.

F. Proposed monitoring well development records.

PART 2 PRODUCTS

2.1 GROUT

A. There are two types of grout mixes that may be used to seal wells: a standard mix and a special mix. Both mixes use Type 1 Portland cement and four percent bentonite by weight. However, the special mix uses a smaller volume of water and is used in situations where excessive loss of the standard grout mix is possible (e.g. highly-fractured bedrock or coarse gravels).

B. Standard Grout Mixture

1. Unless otherwise necessary, the following standard mixture shall be used:

a. One 94-lb bag Type I Portland Cement
b. 3.9 lbs powdered bentonite
c. 7.8 gals potable water

2. This mixture results in a grout with a bentonite content of four percent by weight, and shall be used in all cases except in boreholes where excessive use of grout is anticipated. In these cases, a special mixture shall be used.

C. Special Mixture

1. In cases where excessive use of grout is anticipated, such as high permeability formations and highly fractured or cavernous bedrock formations, the following special mixture shall be used:

a. One 94-lb bag type I Portland Cement
b. 3.9 lbs powdered bentonite
c. 1 lb calcium chloride
d. 6.0 – 7.8 gallons potable water (depending on desired thickness)

2. The special mixture results in a grout with a bentonite content of four percent by weight. It is thicker than the standard mixture because it contains less water. This grout is expected to set faster than the Standard Grout Mixture. The least amount of water that can be added for the mixture to be readily pumpable is six gallons per 94-lb bag of cement.

3. In cases where the penetration of the sandpack is critical, such as bedrock wells with screens that transect multiple water-bearing zones, the following alternate mixture shall be used:

   a. One 94-lb bag Type III Portland Cement
   b. 3.9 lbs powdered bentonite
   c. 7.8 gals potable water

2.2 BENTONITE

A. Baroid - Ben Seal

B. Equal

2.3 GRANULAR MATERIAL

A. The granular material used to backfill the annular space between the well screen and the boring hole shall be a silica sand, Morre size 00 or similar sand as approved by the Engineer.

2.4 DRILLING FLUIDS/GROUT MIXES

A. Drilling fluid shall be bentonite grout drilling fluid.

B. The bentonite or grout material shall be Saline Seal 100 as manufactured by American Colloid Company, M-179 as manufactured by DOW Chemical Company, Dowell Division, or an approved equal.

2.5 ACCEPTABLE STAINLESS STEEL RISER PIPE

A. Type 304 stainless steel conforming to ASTM A778

2.6 ACCEPTABLE CARBON STEEL RISER PIPE

A. Carbon steel casing conforming to ANSI/ASTM A139

PART 3 EXECUTION

3.1 GENERAL

A. No monitoring well extension or well repair/replacement activities shall commence without acceptance of the Engineer.

B. All monitoring well extensions and repairs shall be performed in accordance with the requirements of this Section and to the satisfaction of the Engineer. Monitoring wells damaged during the Work, which the Engineer determines cannot be satisfactorily repaired, shall be abandoned by the Contractor in accordance with the specification “Groundwater Monitoring Well Abandonment” and shall be replaced as directed by the Engineer. Construction of replacement wells shall be in accordance with this section.

No additional payment shall be made to the Contractor for monitoring wells damaged by the Work requiring repair, abandonment, or replacement.

C. The Contractor shall restore the area in the vicinity of each well location as directed by the Engineer.

D. Following well construction activities, the Contractor shall decontaminate equipment and well materials. Well materials removed during the abandonment activities will be disposed of in accordance with applicable local, state, and federal regulations.

3.2 MONITORING WELL EXTENSIONS

A. General: Each monitoring well located within and surrounding the Part 360 capped area shall be extended an appropriately sized length so that the well riser and protective steel riser are extended 2.5 ft above the final grade as specified and shown on the Contract Drawings.

1. Casing extensions shall be welded to existing casings and shall be installed straight and plumb. All welding shall be a full, continuous, running weld. Welds for connecting stainless steel sections shall be made using AWS Type E308-15 lime-coated or Type E308-16 titanium-coated rods. No lubricants or glues are permitted during the well extension activities.

2. The monitoring well heads shall be completed as shown on the Contract Drawings.

3. A cement/bentonite grout will be pumped into the annular space between the 4-inch and 8-inch casings using a tremie pipe. The grout mix will extend to a minimum of 2-ft below the final grade.

4. Wellheads shall be fitted with 8¾-inch locking well caps.

5. The Contractor shall be responsible for abandoning and replacing the monitoring well if it is destroyed or damaged during construction activities and/or well extension at no additional cost to the Owner.

3.3 MONITORING WELL CONSTRUCTION

A. General

1. Materials delivery, storage and handling

a. All riser pipe and well screens supplied under this Contract shall be shipped, stored and handled in accordance with the recommendations of the manufacturer.

b. All riser pipe shall be high pressure steam cleaned prior to installation.

2. Materials Inspection

   a. Prior to well installation, all riser pipe, well screens and granular material shall be inspected by the Contractor in the presence of the Engineer for conformance with the standards and specifications.

B. Borehole Drilling (if necessary to replace a damaged well)

1. The Contractor shall install the new monitoring wells in the proposed cap area after the placement of excavated soil but before the placement of the geomembrane.

2. The Contractor shall drill the replacement monitoring wells at the locations and depths directed by the Engineer.

3. The Contractor shall utilize hollow stem auger methods or other method approved by the Engineer to drill the boreholes.

4. The Contractor shall obtain continuous soil samples during drilling in accordance with ASTM-D-1586 unless otherwise directed by the Engineer.

5. The Contractor will be responsible for retaining a representative portion of each sample in a one pint glass jar labeled with: site, boring number, interval sample/interval preserved, date and time of sample collection.

6. The Contractor shall thoroughly clean all augers, samplers, rods and subs, and other necessary appurtenances used in the drilling of each monitoring well prior to and following use. Cleaning shall consist of high pressure steam cleaning.

7. The Contractor shall collect all cuttings and drilling fluids. Cuttings shall be disposed of under the Part 360 cover in accordance with the Section “Earthwork.” All fluids shall be managed in accordance with the Section "Construction Water Management." All other material shall be disposed of off-site in accordance with applicable local, state, federal regulations. No additional payment shall be made, however, to the Contractor for disposal of wastes generated as a consequence of well abandonment and replacement activities.

C. Installation

1. The Contractor shall drill a hole which shall permit the driving, sinking and placement of an outer casing to a depth specified below. Following the installation of the outer casing, the inside of the outer casing shall be cleaned of debris such that the monitoring well screen and casing assembly may be installed.

2. The well screen and connecting riser pipe shall be lowered into the outer casing, if required, to the prepared screening level and permanently positioned so that the riser will project a minimum of 2 feet above finished grade. Appropriate

centering guides shall be placed as directed by the Engineer no greater than 10 feet apart along the length of the well screen and the riser pipe.

3. After the screen and riser pipe have been properly positioned, the placement of granular backfill and simultaneous retrieval of the outer casing, if installed, shall begin. These operations should be coordinated such that the level of granular backfill placed should be no higher than three feet above the bottom of any given temporary position of the outer casing. The placement of granular backfill shall stop when the stabilized level of granular material is a minimum of two (2) feet above top of the well screen.

4. A solid bentonite plug shall be placed on top of the granular material to a level of two (2) feet above the granular material. The removal of the outer casing, if required, may then proceed with the simultaneous placement of a cement/bentonite grout into the annular space between the riser pipe and the borehole from the elevation of the top of the bentonite plug to two (2) feet below grade. The cement/bentonite grout shall be composed of the specific bentonite mixed with clean off-site water and Portland cement to a grout consistency approved by the Engineer.

5. Wellheads shall be completed as specified in Section 3.2, as directed by the Engineer.

3.4 DEVELOPMENT OF THE MONITORING WELLS

A. The Contractor shall be responsible for developing the replacement monitoring wells installed by a method accepted by the Engineer. Monitoring well development shall be conducted to remove fine-grained sediments from the well and filter pack. During development, the contractor shall be responsible for measuring and recording the pH, temperature, specific conductivity, and turbidity of the discharge water subsequent to the removal of each well volume. Development will continue until the pH, temperature, specific conductivity, and turbidity stabilize within 10% over three successive readings.

B. All liquid wastes collected during development shall be managed in accordance with the Section “Construction Water Management.”

3.5 ACCEPTANCE

A. If at any time during the installation of a monitoring well the Engineer determines that it has not been installed to the standards of this Section, the Contractor will abandon the hole as directed by the Engineer and initiate construction of a new well at a location determined by the Engineer at no cost to the Owner.

B. Upon completion of a monitoring well, the Contractor shall demonstrate to the Engineer that the full depth of the well is free from any obstructions and clear of any formation materials and that the well will produce clean sediment-free water, otherwise the monitoring well will be deemed unacceptable and will be abandoned as discussed in “A” above.

3.6 SURVEY

A. The Contractor shall survey the location and elevation of each monitoring well, modified, extended, or replaced as part of the Contract.

B. The vertical location of the ground surface and the mark made on top of the monitoring well riser shall be accurately measured to the nearest 100th foot.

3.7 RECORDS

A. The Contractor will provide the Engineer with a typed, legible copy of a boring log for each monitoring well as follows:

1. A record of the soil materials penetrated and the depth to which they were encountered, including soil type, color, percent recovery, moisture content, odor, and miscellaneous observations for replacement wells installed.

2. A record showing lengths of each diameter of casing and screen used and the location of packers, plugs and seals for all wells installed or modified by the Contractor.

3. Static groundwater level.

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SECTION 02270

EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes erosion and sediment control performed to minimize erosion of soils and sediments into drainage channels, and lands adjacent to or affected by the Work, and to prevent storm water run-on onto work areas and to prevent potentially contaminated storm water run-off (including soils and sediment) from leaving the site without appropriate treatment.

B. Erosion and sediment control measures to be implemented shall be in accordance with this specification, the Storm Water Pollution Prevention Plan (SWPPP) prepared by the Engineer, and as may be required by the New York State Department of Environmental Conservation (NYSDEC). In the event of discrepancies between this Specification and the NYSDEC requirements, the NYSDEC requirements shall govern.

C. Erosion and sediment controls shall be constructed at additional locations as ordered by the Engineer and without additional cost when the Engineer is of the opinion that additional measures may be required to provide adequate erosion and sediment control.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 01110 – Environmental Protection

B. 02110 – Clearing and Grubbing

C. 02140 - Construction Water Management

D. 02221 - Earthwork

E. 02223 - Embankment

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards, and specifications, except where more stringent requirements have been specified herein:

1. New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPEDES)

2. USDA-SCS, Guidelines for Erosion and Sediment Control in Urban Areas of New York State

3. 40 CFR 122 EPA Administered Permit Programs: The National Pollutant Discharge Elimination System

4. 40 CFR 123 State Program Requirements

5. 40 CFR 124 Procedures for Decision Making

6. 6 NYCRR Part 663 Freshwater Wetlands Permit Requirements

7. 6 NYCRR Part 701, Chapter X: Classification – Surface Water and Ground Water

1.4 SUBMITTALS

A. In addition to those submittals identified in the Special Provisions, the following items shall be submitted:

1. The Contractor shall be responsible for applying for general permit coverage by submitting the Notice of Intent (NOI) and Notice of Termination (NOT) forms provided in the SWPPP to NYSDEC.

2. The NOI and NOT shall be subject to review and approval by NYSDEC prior to acceptance by the Engineer. The Contractor is advised that time should be allowed for NYSDEC review and comment on each draft of the NOI and NOT submitted for NYSDEC review. No additional payment or extension of time shall be provided by Owner to the Contractor for delays caused either by NYSDEC or the Contractor in the preparation of or in the NYSDEC's acceptance of the NOI or NOT.

3. The Contractor Certification within the SWPPP shall be signed by the Contractor and each subcontractor. The SWPPP shall be implemented and kept current by the Contractor in accordance with the intent of the aforementioned application requirements.

4. Compliance sampling, record keeping and monitoring requirements identified within the SWPPP and the Section titled “Construction Water Management,” or as required by the NYSDEC as a condition for approval of the SWPPP, shall be conducted by the Contractor at no additional cost to the Owner.

5. Copies of all records, including sample collection and monitoring, relative to the development and implementation of the SWPPP shall be provided to the Engineer. Contractor shall retain copies of the SWPPP, all records required by the SWPPP, and records of all data used to complete the NOI covered by the SWPPP for a period of at least three years from the date that the site is finally stabilized. This period may be extended by the NYSDEC at any time upon written notification.

B. Prior to initiation of any site work, the Contractor shall prepare an Erosion and Sediment Control Plan (ESCP) which shall satisfactorily address, at minimum, the following criteria:

1. Construction schedule and work sequencing. The plan shall clearly describe for each major construction activity the appropriate erosion, sediment, run-off and run-on control measures that will be implemented and the timing for implementation. (For example, perimeter controls for one portion of the site will be installed after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site. Perimeter controls shall be actively maintained until final stabilization of those portions of the site upward of the perimeter control. Temporary perimeter controls shall be removed after final stabilization).

2. Locations of temporary and permanent (if proposed) measures.

3. Vegetative erosion and sediment control measures (i.e., seed, mulch, etc.).

4. Structural erosion and sediment control measures (i.e., traps, silt fences, sedimentation basins, etc.).

5. Stabilized construction entrance, including provisions for wheel washdown.

6. Storm water (run-on and run-off) management including methods to direct clean storm water away from the work area and to contain and minimize the amount of storm water entering the work area which may require treatment, provisions for containment/holding prior to treatment, etc.

C. The ESCP shall be a document with criteria incorporated from standard references including but not limited to USDA-SCS, Guidelines for Erosion and Sediment Control in Urban Areas of New York State.

1.5 SPECIAL REQUIREMENTS

A. In addition to appropriate permit, SWPPP and/or ESCP requirements, construction procedures shall include protection of the environment in accordance with all pertinent federal, state and local regulations. Construction procedures that are prohibited in the undertaking of work associated with this project include, but are not limited to:

1. Indiscriminate, arbitrary, or capricious operation of equipment in any stream corridors, any wetlands or within the 100-year floodplain of any surface waters.

2. Pumping of silt-laden water from trenches or other excavations into any surface waters or any stream corridors, or any wetlands.

3. Damaging vegetation beyond the extent necessary for the work of this project.

4. Disposal of trees, brush, and other debris in any stream corridors, any wetlands, or within the 100-year floodplain of any surface waters.

5. Dumping of spoil material into any stream corridor, any surface waters, or at any unspecified or unapproved locations.

6. Open burning of any debris.

B. Upon approval of the SWPPP and/or the ESCP, the Contractor shall implement and maintain the Plan. In addition, the Contractor shall place silt fence along the downgradient perimeter of the site at the approximate limit of the Work or as directed by the Engineer.

C. The Engineer shall have the authority to limit the surface area exposed by clearing, grubbing and excavation, and to direct the Contractor to implement additional erosion, run-off and run-on control measures as he deems necessary with no additional consideration for payment being made to the Contractor in this regard.

PART 2 PRODUCTS

2.1 GENERAL

A. Products used shall be in accordance with “Silt Fence Detail” and “Hay Bale Detail” in Contract Drawings.

PART 3 EXECUTION

3.1 GENERAL

A. Clearing schedules shall be formulated to provide minimum practical exposure of soils. Local run-on/run-off control measures shall be implemented as conditions warrant. The Contractor shall make every reasonable effort so as not unduly disturb the ecological or environmental quality of the area.

3.2 EROSION AND SEDIMENT CONTROL

A. During the land disturbance life of this project, the following sequence shall be adhered to:

1. Clearing and grubbing for those areas necessary for installation of perimeter controls.

2. Construction of perimeter controls including, but not necessarily limited to the installation and maintenance of silt fencing along the entire downgradient perimeter beyond the outer limits of potential set-up and work areas.

3. Remaining clearing and grubbing.

4. Trenching and excavation, providing temporary stabilization/ erosion/ run-off/run-on controls as required.

5. Final grading and permanent stabilization.

6. Removal of perimeter controls.

B. Sediment and erosion control measures may include straw bale dikes, silt fences, earth dikes, stone outlet sediment traps, stabilized construction entrances, rip rap, seeding/sodding, properly anchored mulch, and/or other measures as required.

C. Sediment and erosion control measures shall be properly maintained and adequately functioning. Any existing measures that are damaged shall be immediately repaired.

D. Excavated material shall be protected from erosion by using appropriate devices or stabilization.

E. Trapped sediment shall be removed from the area of deposition and disposed of in accordance with the Section titled "Earthwork."

F. As soon as possible after disturbance of a graded area, slope stabilization through the use of mulches (wood chips or straw anchored appropriately) or matting shall be provided.

G. Any storm water discharge shall be placed into a desilting structure or similar upgradient settling basin prior to discharge. Storm water that has come into contact with potentially contaminated sources shall be treated in accordance with the Section "Construction Water Management."

3.3 WINTER SHUTDOWN

A. The Contractor shall prepare and implement a winter shutdown plan detailing measures to be taken by the Contractor to secure and stabilize the site against erosion during a period of winter shutdown. The plan shall include, but not be limited to, the following:

1. Measures to secure the Site

2. Provisions for additional erosion control measures in areas of the cap that have not been completed and other unfinished areas (including establishment of vegetation).

3. Weekly inspections of the cap during the winter shutdown.

4. Inspections of the cap after rainfalls in excess of 1 inch and after significant snow melt.

5. Provisions for repairs to the cap and other unfinished areas damaged by erosion during the winter shutdown period.

B. The plan shall be provided to the Engineer for review no later than 6 weeks prior to the Contractor's proposed date for winter shutdown.

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SECTION 02273

GEOTEXTILE FILTER FABRIC

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes the furnishing of all labor, material, equipment and performing all operations required for testing, furnishing, hauling, and placing geotextile filter fabric as specified herein, shown on the Contract Drawings, or as specified by the Engineer.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

a. ASTM D4355 Test Method for Deterioration of Geotextiles from Exposure to Ultraviolet Light and Water (Xenon-Arc Type Apparatus)

b. ASTM D4491 Test Methods for Water Permeability of Geotextiles by Permittivity

c. ASTM D4533 Test Method for Trapezoid Tearing Strength of Geotextiles

d. ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles

e. ASTM D4751 Test Method for Determining the Apparent Opening Size of a Geotextile

f. ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes and Related Products

g. ASTM D5101 Test Method for Measuring Soil-Geotextile System Clogging Potential (By the Gradient Ratio)

h. ASTM D5261 Test Method for Mass per Unit of Geotextiles

1.3 SUBMITTALS

A. The following items shall be submitted:

1. Manufacturer’s technical data, including material specifications.

2. Manufacturer’s installation requirements.

3. Samples of any material shall be submitted at the Engineer’s request.

4. Manufacturer's certification that all materials furnished are in compliance with the applicable requirements of the referenced standards and this specification.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers are named to establish a standard of quality necessary for the project:

1. TC Mirafi

2. Or approved equal

2.2 MIRAFI 160N GEOTEXTILE FILTER FABRIC

A. The geotextile filter fabric shall consist of a long-chain geosynthetic polymer composed of at least 85 percent by weight of propylene, ethylene, ester, amids, or vinylidene-chloride, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultra-violet and heat exposure. The geotextile shall also be mildew and rot resistant, insect and rodent resistant, and inert to chemicals and hydrocarbons.

B. The geotextile filter fabric shall be a nonwoven, needle-punched geotextile.

C. The geotextile filter fabric shall conform to the following minimum average roll physical strength requirements:

Mechanical Properties	**Test Method**	**Unit**	**Minimum Average Roll Value**	
			MD	**CD**
Grab Tensile Strength	ASTM D4632	kN (lbs)	160 (712)	160 (712)
Grab Tensile Elongation	ASTM D4632	%	50	50
Trapezoid Tear Strength	ASTM D4533	kN (lbs)	60 (267)	60 (267)
CBR Puncture Strength	ASTM D6241	kN (lbs)	410 (1825)	
Apparent Opening Size (AOS)	ASTM D4751	mm (U.S. Sieve)	70 (0.212)	
Permittivity	ASTM D4491	sec^{-1}	1.5	
Flow Rate	ASTM D4491	$l/min/m^2$ ($gal/min/ft^2$)	110 (4481)	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	
Weight	ASTM D5261	g/m^2 (oz/yd^2)	215 (97)	

2.3 MIRAFI 600X GEOTEXTILE FILTER FABRIC

A. The geotextile filter fabric shall consist of high tenacity polypropylene yarns, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistant to deterioration due to ultra-violet and heat exposure. The geotextile shall also be mildew and rot resistant, insect and rodent resistant, and inert to chemicals and hydrocarbons.

B. The woven geotextile filter fabric shall conform to the following minimum average roll physical strength requirements:

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D4632	kN (lbs)	315 (1402)	315 (1402)
Grab Tensile Elongation	ASTM D4632	%	12	12
Trapezoid Tear Strength	ASTM D4533	kN (lbs)	113 (503)	113 (503)
CBR Puncture Strength	ASTM D6241	kN (lbs)	900 (4005)	
Apparent Opening Size (AOS)	ASTM D4751	mm (U.S. sieve)	40 (0.43)	
Permittivity	ASTM D4491	sec^{-1}	0.05	
Flow Rate	ASTM D4491	$l/min/m^2$ ($gal/min/ft^2$)	4 (163)	
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	70	
Weight	ASTM D5261	g/m^2 (oz/yd^2)	6 (203)	
Thickness	ASTM D5199	mm (mils)	25 (0.6)	

PART 3 EXECUTION

3.1 SHIPMENT AND HANDLING

A. During all periods of shipment and storage, the geotextile shall be protected from adverse weather, heavy winds or precipitation, direct sunlight, ultraviolet light, temperatures greater than 140°F, mud, dirt, dust, debris, and vandals. To the extent possible, the geotextile shall be maintained wrapped in a heavy duty protective covering. In the event of damage, the Contractor shall immediately make all repair and replacements at no additional cost to the Owner.

3.2 INSTALLATION

A. The Contractor shall provide testing services specified herein as necessary for the geotextile material and thread. Also, the Contractor shall provide testing and field services required during installation of the geotextile.

B. Prior to installation of the geotextile filter fabric, the surface material on which the filter fabric is to be installed will be free of organic matter, irregularities, protrusions, and any abrupt changes in grade that could damage the filter fabric. The surface will be maintained in a smooth and uniform condition during installation of the filter fabric. The surface on which the geotextile is to be placed shall be inspected and accepted by the Engineer prior to placement of the geotextile filter fabric.

C. The geotextile shall be placed at the locations shown on the Contract Drawings. At the time of the installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration, or damage incurred during manufacture, transportation, or storage.

D. The geotextile shall be laid smooth and free of tension, stress, folds, wrinkles, or creases. When geotextile is used in trenches, the geotextile shall be placed with the long dimension perpendicular to the centerline of the trench, unless otherwise approved by the Engineer. The geotextile shall be placed to provide minimum overlaps of 1.5 feet. Overlaps shall be made with uphill or upstream fabric lapped over downhill or downstream fabric.

E. The geotextile shall be protected at all times during construction from damage by surface runoff and construction activities, and any geotextile so damaged shall be removed and replaced with undamaged geotextile. Any damage to the geotextile during its installation or during placement of soil layers or other activities shall be replaced by the Contractor at the Contractor's expense.

F. The Work shall be scheduled so that the covering of the geotextile (*i.e*. backfilling) with the specified material is accomplished within 5 days after placement of the geotextile. Failure to comply shall require replacement of geotextile.

G. The geotextile shall be protected from damage due to the placement of materials by limiting the height of drop of the material to less than 1 foot unless otherwise accepted by Engineer.

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SECTION 02293

GEOMEMBRANE

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes testing, manufacturing, fabricating, furnishing, and installing a 40 mil textured linear low density polyethylene (LLDPE) geomembrane. All work shall be performed in strict accordance with the geomembrane manufacturer's recommendations, as reviewed and accepted by the Engineer, the Contract Drawings and these specifications.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

    a. D 1004 Test Method for Initial Tear Resistance of Plastic Film and Sheeting

    b. D 1238 Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer

    c. D 1505 Test Method for Density of Plastics by the Density-Gradient Technique

    d. D 1603 Test Method for Carbon Black in Olefin Plastics

    e. D 3895 Standard Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry

    f. D 4218 Standard Test Method for Determination of Carbon Black in Polyethylene Compounds

    g. D 4833 Standard Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products

    h. D 5199 Standard Test Method for Measuring Nominal Thickness of Geotextiles and Geomembranes

    i. D 5397 Standard Test Method for Evaluation of Stress Crack Resistance of Polyolefin Geomembranes Using Notched Constant Tensile Load Test

j. D 5596 Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics

k. D 5994 Standard Test Method for Measuring Core Thickness of Textured Geomembranes

l. D 6392 Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods

m. D 6693 Standard Test Method for Determining Tensile Properties of Nonreinforced Polyethylene and Nonreinforced Flexible Polypropylene Geomembrane

n. D 7240 Standard Practice for Leak Location using Geomembranes with an Insulating Layer in Intimate Contact with a Conductive Layer via Electrical Capacitance Technique (Conductive Geomembrane Spark Test)

2. Geosynthetic Research Institute

a. GRI GM 13 Test Properties, Testing Frequency and Recommended Warranty for High Density Polyethylene (HDPE) Smooth and Textured Geomembranes.

b. GRI GM 17 Test Properties, Testing Frequency and Recommended Warranty for Linear Low Density Polyethylene (LLDPE) Smooth and Textured Geomembranes.

1.3 SUBMITTALS

A. The following items shall be submitted:

1. Resin Supplier Submittals

a. Certification that the polyethylene resin is new, first quality resin manufactured in the United States from virgin, uncontaminated ingredients, and meets or exceeds the requirements specified hereinafter and is free of contaminants.

b. Certification that all resin is from the same manufacturer

c. Origin, identification, and production date(s) of the raw materials used to manufacture the geomembrane

d. Copy of quality control certificates of raw materials used to manufacture the geomembrane

e. Reports of tests conducted to verify the quality of the raw materials will be provided as follows:

Parameter	Standard	Minimum Frequency	Criteria
Melt Flow Index	ASTM D1238	One sample from each resin batch	≤ 1.0 g/10 minutes
Carbon Black Content	ASTM D1603	One sample from each resin batch	2% to 3%
Oxidative Induction Time	ASTM D3895 @ 1 atm @ 200°C	One sample from each resin batch	> 100 minutes
Density	ASTM D792 or ASTM D1505	One sample from each resin batch	≥0.915 g/cm3

2. Manufacturer Submittals

   a. Certification of production capacity and schedule availability to meet this contract

   b. Manufacturer quality control program manual and copy of manufacturer quality control certificates

   c. Certified test results for all material properties specified

   d. Certification that no reclaimed polymer, no more than 2% recycled material, and no work off material is added to the virgin resin during the manufacture of the geomembrane

   e. Certification of geomembrane formulation of at least 97% of polyethylene resin, the balance being carbon black and additives; and certification that no fillers, extenders, or other materials are added into the formulation

   f. Certification of chemical and physical resistance of the geomembrane to materials it may come in contact with

   g. List of at least five completed facilities totaling a minimum of two million square feet with at least one million square feet of projects using the geomembranes as specified for this Contract

3. Fabricator Submittals

    a. Quality control program manual and copy of quality control certificates

    b. Certified seam test results

    c. Two samples of typical fabricated seams and a list of seam properties, minimum seam values, and test methods employed

    d. Geomembrane thickness measurements

    e. List of at least five completed facilities for which the fabricator has fabricated the proposed geomembrane panels totaling a minimum of two million square feet

4. Installer Submittals

    a. Quality control program manual including, but not limited to:

        1) Installation procedures
        2) Field seaming procedures
        3) Procedures for repair
        4) Documentation procedures

    b. Two samples of typical field seams and a list of seam properties, minimum seam values, and test methods employed

    c. List of at least five completed facilities for which the Installer has installed the proposed geomembrane panels/ rolls totaling a minimum of two million square feet with at least one million square feet of projects using the same geomembrane thickness as specified for this contract. For each installation, the following information shall be provided:

        1) Name of facility, location, date of installation, type of application, type of seaming system, and name of the installing supervisor

        2) Name of owner, designer, manufacturer, fabricator, and name and telephone number of a facility contact who can discuss status of the installation

        3) Thickness of the geomembrane and surface area and type of seaming system

    d. Resumes of the qualifications of the installation supervisor and personnel performing field seaming operations for this project

    e. Proposed geomembrane panel layout showing proposed locations of field seams to be installed. Seams shall be orientated along, not across, the slope. Also, the number of field seams should be minimized in corners and odd-shaped geometric locations. The drawing shall provide a panel and compatible seam numbering system. The Installer shall inform the Engineer of any changes in field seam locations

f. Written acceptance of the subgrade to the Engineer prior to installation of the geomembrane

g. Daily seam strength test values for peel adhesion and seam shear strength

h. Weekly update copies of the as-built drawings supplied by the Contractor to the Engineer

i. Notification of any equipment or material problems within eight hours of the occurrence and the proposed course of corrective action

j. Samples of all report/documentation forms

k. Shop drawings of panel layouts and details of geomembrane penetrations (if applicable)

5. Contractor Submittals

   a. Summary log of all field quality control work completed by the Installer

   b. Certification by both the Installer and Fabricator that the material installation is complete and in accordance with the specifications.

   c. Statement of Warranty

   d. Direct shear laboratory qualifications

   e. Certified friction test results on cap system components

6. CQC Geosynthetic Laboratory

   a. Quality control program manual

7. Qualification Submittals

   a. Manufacturer shall demonstrate qualification by having successfully manufactured at least two million square feet of the proposed geomembrane

   b. Fabricator shall demonstrate qualification by having successfully fabricated at least two million square feet of the proposed geomembrane

   c. Installer shall demonstrate qualification by having successfully installed at least two million square feet of the proposed geomembrane.

All personnel performing seaming operations shall be qualified by experience or will be required to pass a seaming test in accordance with this Section. At least one master seamer shall have experience seaming a minimum of one million square feet of the proposed geomembrane using the same type of seaming equipment and geomembrane mil thickness specified for this project

d. CQC Inspector shall demonstrate qualification by having successfully inspected at least two million square feet of the proposed geomembrane and have a working knowledge of the proposed seaming equipment

e. CQC Geosynthetic laboratory shall demonstrate qualification by having provided a minimum of two successful years of geosynthetic testing services. The Geosynthetic Laboratory Manager will be required to have a minimum of five years of geosynthetics testing experience. The CQC Geotechnical Laboratory will not be permitted to be owned by the Contractor, manufacturer, or installer, or owned by a subsidiary of the Contractor, manufacturer, or installer

1.4 DEFINITIONS

A. CQC Geosynthetic Laboratory: The third party construction quality control geosynthetic testing (CQC) lab hired by the Contractor, independent from the Contractor, manufacturer, fabricator and installer who is responsible for quality control geomembrane seam testing.

B. CQC Inspector: The third party construction quality control (CQC) person or corporation hired by the Contractor, independent from the Contractor, manufacturer, fabricator, and installer, who is responsible for observing and documenting activities related to the quality control of the geomembrane from manufacture through installation. The CQC Inspector shall report directly to the Engineer. The Inspector shall be from an engineering firm or certified testing laboratory experienced in the installation and testing of geomembranes. The Inspector's qualifications shall be submitted to and reviewed by the Engineer. The cost of the inspection is paid for by the Contractor. The CQC Inspector shall report directly to the Engineer on a daily basis. All CQC test results shall be presented to the Engineer by the CQC Inspector on a daily basis.

C. Fabricator: A factory converter of narrow geomembrane sheets into panels by dielectric bonded solvent adhesive, or fusion methods.

D. Installer: The person or corporation hired by the Contractor who is responsible for field handling, deploying, seaming, field construction quality control (CQC) testing and anchoring the geomembrane panels.

E. LLDPE: Abbreviation for linear low density polyethylene geomembrane.

F. Manufacturer: The producer of geomembrane rolls by the blown-film process or the flat extrusion process.

G. Panel: A factory-fabricated geomembrane composed of several narrow width geomembrane sheets seamed into one large unit.

H. Roll: A manufactured seamless geomembrane sheet with a minimum width of 22 feet.

1.5 EQUIPMENT

A. All equipment, tools and machines used in performance of the work shall be subject to acceptance by the Engineer prior to commencement of work. This equipment shall be maintained in satisfactory working condition at all times.

1.6 DELIVERY, STORAGE AND HANDLING.

A. The geomembrane materials shall be packaged, shipped, and delivered by appropriate means so that no damage is incurred. Materials shall be delivered only after the required submittals have been received and reviewed by the Engineer. No off-loading shall be done unless the CQC Inspector is present. The geomembrane shall be adequately protected to prevent degradation of the material and adhesion of individual whorls of a roll or layers. If outdoors, the geomembrane shall be stored in the unopened crates. The geomembrane shall be stored on pallets and shall be protected from the direct rays of the sun under a light-colored, heat-reflective, opaque cover in a manner that provides a free-flowing air space between the crate and cover. The geomembrane shall also be protected from adverse weather, heavy winds, precipitation, temperature extremes and vandals. Appropriate handling equipment and techniques, as recommended by the manufacturer/fabricator and accepted by the CQC Inspector, shall be used. Any geomembrane damaged as a result of poor delivery, storage, or handling methods shall be repaired or replaced, as determined by the CQC Inspector, at no additional cost to the Owner.

1.7 AS-BUILT DRAWINGS

A. The Contractor shall provide as-built drawings which shall be updated weekly, showing panel/roll numbers, layout plan, seam numbers, and the location(s) of patches, destructive seam samples, anchorage details, and penetrations. The as-built drawings shall differentiate the seam types.

1.8 WARRANTY

A. The Contractor shall obtain and submit to the Engineer from the Manufacturer and Installer separate written warranties guaranteeing for a 20 year period from the date of acceptance of the geomembrane that the geomembrane materials and workmanship specifically provided or performed under this Contract shall be free from defects. Said warranty shall apply to normal use and service by the Owner as described in Contract Specifications and as shown on the Contract Drawings. Such written warranty shall provide for the repair or replacement of the defect or defective area of geomembrane upon written notification and demonstration by Owner of the specific non-conformance of the geomembrane material or installation with the project specifications. Such defects or non-conformance shall be repaired or replaced within a reasonable period of time of such notification.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. The following manufacturers are named to establish a standard of quality necessary for the Project:

1. GSE Lining Technology, Inc.

2. Or equal.

B. The geomembrane selected shall meet the requirements of this section.

2.2 RAW MATERIALS

A. The materials used in production of geomembrane roll stock shall be 100 percent domestic, first-quality raw materials, using no more than 2% recycled material. The Contractor shall provide certification that the resin meets or exceeds the requirements along with a copy of the quality control certificates.

2.3 SHEET MATERIALS

A. The geomembrane sheets shall be uniform in color, thickness, size, and surface texture.

B. The geomembrane sheets shall be free of damage, tears, punctures, pinholes, blisters, nodules, contaminants, and other imperfections.

C. The geomembrane sheets shall conform to the physical requirements listed in Table 1.

D. The Contractor shall provide certified test results for all material properties specified along with a copy of the Manufacturer's quality control program manual and quality control certificates.

2.4 PANEL FABRICATION

A. Where possible, geomembrane sheets, when less than 22 feet wide, shall be factory seamed into maximum sized panels so as to minimize field seaming.

B. All factory seams shall be made by wedge welding and shall meet the minimum shear and peel strength requirements shown in Table 1.

TABLE 1. GEOMEMBRANE PROPERTIES

Parameter	Standard	Criteria
Gauge (nominal)	ASTM D5199	40 mils
Thickness, absolute minimum	ASTM D5199	36 mils
Density (minimum)	ASTM D1505	0.939 g/cm^3
Melt Index (maximum)	ASTM D1238	$\leq$ 1.0 g/10 minutes
Carbon Black Content	ASTM D1603/4218	2% to 3%
Minimum Tensile Properties	ASTM D6693	--
1. Tensile Strength @ Break	Type IV Specimen @ 2 in./minute	60 lb./in. width
2. Elongation @ Break	Type IV Specimen @ 2 in./minute	250%
Tear Resistance (minimum)	ASTM D1004	22 lb.
Puncture Resistance	ASTM D 4833	44 lb.
Low Temperature Brittleness	ASTM D746	$\leq$ -107°F.
Dimensional Stability	ASTM D1204 @ 1 hr @ 100°C	± 2%
Environmental Stress Crack Resistance (minimum)	ASTM D1693	1500 hrs.
FACTORY AND FIELD SEAM REQUIREMENTS		
Fusion Seaming		
1. Shear Strength (minimum)	ASTM D 6392	60 lb./in.
2. Peel Adhesion, (minimum)	ASTM D 6392	50 lb./in.
Extrusion Seaming		
1. Shear Strength (minimum)	ASTM D 6392	60 lb./in.
2. Peel Adhesion (minimum)	ASTM D 6392	48 lb./in.

2.5 SAMPLING AND TESTING

A. General Requirements

1. All testing services as specified herein necessary for installation of the geomembrane shall be provided by the Contractor. All testing including laboratory and field services required during construction of the geomembrane shall be provided by the Contractor.

2. Geomembrane testing shall be performed by a testing laboratory accepted by the Engineer and paid for by the Contractor.

3. The Contractor shall provide at least 2 days notice prior to testing. The Contractor shall provide transportation for the Engineer to and from the test site upon request.

B. Friction Testing

The Contractor shall perform laboratory friction tests using the ASTM D5321 Direct Shear Test Method as approved by the Engineer to assure a minimum factor of safety of 1.5, as approved by the Engineer, can be obtained between all cap system components (consolidated material, geomembrane, soil barrier protection layer, topsoil) for the steepest slopes proposed. The Engineer will evaluate the results of the friction tests. Material not capable of meeting this requirement will not be approved for use on this project. Friction testing shall be performed with a direct shear box with minimum dimensions of 12 inches by 12 inches and applied normal stresses of 1.0, 2.0, and 4.0 psi for each cap system interface. Displacement rates shall be less than 0.1 inches per minute. All cap system components shall be tested in a saturated condition. The FMC shall be oriented such that the shear force is parallel to the downslope orientation of the FMC in the field. These tests shall be performed and the results approved by the Engineer prior to delivery of the cap system components. A minimum of one test per cap system interface shall be performed. Additional tests shall be performed, at no additional cost to the Owner, if in the opinion of the Engineer, the materials of construction in contact with the cap system, or the materials of the cap system change from those originally tested.

C. Manufacturing Testing

1. Each resin batch shall be tested to ensure the consistency of the raw material quality. Any resin batch which fails to meet all the specified physical properties shall not be accepted for manufacturing the liner. The geomembrane sheets shall be randomly sampled and tested at a minimum of once every 50,000 square feet to evaluate the required physical properties listed in Table 1. Certified test results on each sample shall be submitted along with a complete stress rupture curve. In addition, a minimum of two 24-inch by 24-inch size samples, from each roll along with appropriate identification, shall be provided to the Owner for further testing if desired. The Contractor shall provide the Engineer with a permanent record of actual furnished material. Samples not meeting the minimum requirements specified shall result in the rejection of the applicable rolls.

2. Manufacturer's certification of the parameters specified in 2.5 C.1 is acceptable.

D. Fabrication Testing

1. Prior to factory seaming, all roll goods shall be continuously inspected on both sides for defects and impurities. The geomembrane shall be continuously visually inspected for:

   a. Uniformity
   b. Damage
   c. Imperfections
   d. Holes
   e. Cracks
   f. Thin spots
   g. Foreign material
   h. Tears
   i. Punctures
   j. Blisters

   All defects and impurities shall be immediately removed, repaired, and re-inspected prior to being fabricated into panels. Thickness measurements shall be made at the center and each edge of the beginning and end of each roll of material used for this project. All measurements shall be submitted by the Contractor to the Engineer. Any roll having a thickness less than the minimum value specified herein shall be rejected. The Contractor shall submit documentation to the Engineer that fabrication of geomembrane rolls took place in accordance with the requirements of this Section.

2. Prior to shipping to the site, non-destructive tests shall be performed on all fabricated seams over their full length using the appropriate test unit and procedure as outlined in this Section. Any deviation from these procedures shall be subject to review by the Engineer prior to use. All geomembrane factory seams shall be vacuum tested or pressurized dual seam tested (for double wedge process only). Any seam which fails shall be documented and repaired in accordance with the requirements of this Section.

3. Destructive Factory Seam Testing

   a. Destructive seam testing shall be performed on a minimum of two samples per geomembrane sheet. Where possible, the samples shall be taken from extra material at the beginning or end of sheet seams, such that the geomembrane sheet is not damaged and the sheet geometry is not altered.

   b. The samples shall be a minimum of 18 inches wide by 72 inches long with the seam centered lengthwise. Each sample shall be cut into three pieces with one piece (18 inches by 24 inches) retained by the fabricator, one piece given to an independent laboratory, and one piece given to Engineer for further testing if desired and permanent record. Each sample shall be tagged to identify: (1) manufacturer's roll number,

(2) date cut, (3) panel from which cut, (4) location in panel, (5) visual inspection comments, (6) inspector's name, and (7) top sheet.

c. Ten 1-inch wide replicate specimens shall be cut from the fabricator sample. Five specimens shall be tested for shear strength and five for peel adhesion. If one of the tested seams delaminates, failing in a non-film tear bond, the entire length of the seam will be reconstructed or repaired and retested using non-destructive seam testing over the full length of the seams using either the vacuum box or pressurized dual seam method. If no seams delaminate, but fail in the adjacent sheet material on either side of the seam in a film tear bond, the seam strength will be calculated for each test. To be acceptable, four out of five replicate test specimens must meet the specific property requirements listed in Table 1. If a sample fails a destructive test, the entire seam length will be reconstructed or repaired, and retested using non-destructive seam testing over the full length of the seams using either the vacuum box or pressurized dual seam method (for double wedge process only).

d. The test procedures to be used by the independent laboratory shall be the same as defined in this Section.

e. The Contractor shall provide the Engineer with certified copies of the factory test results prior to the arrival of material on site.

f. The Contractor shall provide the following information from the manufacturer for each roll or pallet of geomembrane manufactured including, but not limited to:

1) Name of manufacturer/fabricator
2) Product type
3) Product thickness
4) Manufacturing batch code
5) Date of manufacturer
6) Physical dimensions (length and width)
7) Direction for unrolling or unfolding the geomembrane.

E. Field Sampling and Testing

1. The Contractor shall provide two minimum 18-inch wide by 18-inch long samples of geomembrane for each lot number of geomembrane material that arrives at the site, for finger printing. The samples shall be provided to the Engineer for possible future testing and analysis. One sample shall be stored at room temperature and in a light free environment.

2. The CQC Inspector shall visually inspect the geomembrane for uniformity, damage, imperfections, tears, punctures, or blisters. Any imperfections must be immediately repaired by the Contractor and reinspected by the Inspector at the Contractor's expense.

3. Non-Destructive Field Seam Testing

a. The Contractor shall non-destructively test all field seams over their full length using the appropriate test unit and procedure as outlined in this Section. Any deviation from these procedures shall be subject to review by the Engineer prior to use. Testing shall be performed as the seaming work progresses, not at the completion of field seaming. All geomembrane field seams shall be vacuum tested or pressurized dual seam tested (for double wedge process only). Any seams which fail shall be documented and repaired in accordance with this Section. All non-destructive testing shall be witnessed by the CQC Inspector and documented.

4. Destructive Field Seam Testing

a. The Contractor shall obtain a minimum of one destructive test sample per 500 feet of field seam length at locations specified by the CQC Inspector and accepted by the Engineer and a minimum of one test for each seaming machine per day. When possible, these samples shall be taken from extra material at the beginning or end of panel seams such that the panel is not damaged and the panel geometry is not altered. Additional test locations may be selected at the direction of the Engineer.

b. The samples shall be a minimum of 18-inches wide by 72-inches long with the seam centered lengthwise. Each sample shall be cut by the Installer into three pieces with one piece (18 inches by 24 inches) retained by the Installer, one piece given to an independent laboratory, and the remaining piece given to the Engineer for further testing if desired and permanent record. Each sample shall be tagged to identify: (1) roll/panel number, (2) seam number, (3) date and time cut, (4) ambient temperature, (5) seaming unit, (6) name of seamer, (7) welding apparatus temperature and pressures, and (8) top sheet.

c. The Contractor shall cut ten 1-inch wide replicate specimens from his sample using the appropriate ASTM cutting tool. Five specimens shall be tested for shear strength and five for peel adhesion in accordance with ASTM D4437. Each specimen will be 1-inch wide and 12-inches long with the field seam at the center of the specimen. To be acceptable, four out of five replicate test specimens must meet the specified property requirements listed in Table 1 and fail in a film tear bond. If the field tests pass, independent laboratory testing shall be conducted in accordance with this Section. If the field tests fail, the seam shall be repaired in accordance with this Section. Certified test results from the Installer and independent laboratory on all seams shall be submitted prior to acceptance of the seam. No seams shall be covered until acceptance of the seam by the Engineer.

d. The test procedures to be used by the independent laboratory shall be the same as defined in this Section.

F. Non-Destructive Seam Testing Procedures

1. Vacuum Test

a. The vacuum test unit shall comprise the following:

1) A vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft neoprene gasket attached to the bottom, port hole or valve assembly, and a vacuum gauge.

2) A steel vacuum tank and pump assembly equipped with a pressure controller and pipe connections.

3) A rubber pressure/vacuum hose with fittings and connections.

4) A plastic bucket and wide paint brush.

5) A soapy solution.

b. The vacuum test procedure shall consist of the following steps:

1) Clean the window, gasket surfaces and check for leaks.

2) Energize the vacuum pump and reduce the tank pressure to approximately 5 psi absolute.

3) Wet a strip of geomembrane approximately 12 in. by 48 in. (length of box) with the soapy solution.

4) Place the box over the wetted area and compress.

5) Close the bleed valve and open the vacuum valve.

6) Ensure that a leak tight seal is created.

7) For a period of not less than 15 seconds from the time the vacuum gauge registers the required vacuum, examine the geomembrane through the viewing window for the presence of soap bubbles.

8) If no bubble(s) appear after 15 seconds, close the vacuum valve and open the bleed valve, move the box over the next adjoining area with a minimum 3 in. overlap and repeat the process.

9) All areas where soap bubbles appear shall be marked, repaired and retested.

2. Pressurized Dual Seam Test

a. The pressurized dual seam test unit shall comprise the following:

1) An air pump (manual or motor driven) capable of generating and sustaining the required pressure.

2) A flexible hose with fittings and connections.

3) A sharp hollow needle, or other accepted pressure feed device equipped with a properly functioning pressure gauge.

b. The pressurized dual seam test procedure shall consist of the following steps:

1) Seal both ends of the seam to be tested.

2) Insert needle or other accepted pressure feed device into the air channel created by the wedge weld. The lower sheet beneath the air channel must not be penetrated.

3) Connect the air pump to the pressure gauge and pressurize the air channel to a pressure between 24 psi and 30 psi (for LLDPE geomembrane), close valve, and sustain pressure for approximately 5 minutes after equilibrium is achieved.

4) Remove the flexible hose which connects the pressure gauge to the air pump. Mark the time and pressure of the pressure gauge at the start of the test and at a duration of five minutes on the geomembrane with a white marker. If the loss of pressure exceeds 4 psi (for LLDPE geomembrane) in the five minute period or does not stabilize, locate the faulty area and repair.

5) At the conclusion of the pressure test, cut the end of the seam opposite the pressure gauge. A decrease in gauge pressure must be observed or the air channel will be considered "blocked" and the test will have to be repeated until the blockage is corrected.

6) Remove needle or other accepted pressure feed device and seal.

G. Repair of Seam Failures

1. Any seam failing a non-destructive or destructive test shall be reconstructed between the failed location and any passed test location. Seam reconstruction shall be achieved by cutting out the existing seam and seaming in a replacement strip or adding a cap strip. In lieu of this, the seaming path shall be retraced to an intermediate location (at 10 feet minimum each side of the failed seam location). At each location a minimum 12 inch by 12 inch size sample shall be

taken for two additional shear strength tests and two additional peel adhesion tests using an approved field tensiometer. If these tests meet the specified property requirements listed in Table 1 and are classified as film tear bond failures, then the remaining sample portion shall be sent to the independent laboratory for two shear strength and two peel adhesion tests. If the field and laboratory tests pass, then the seam shall be reconstructed between that location and the original failed location. If these tests fail to meet the specified property requirements listed in Table 1 and/or are not classified as film tear bond failures, then the process shall be repeated. After reconstruction, the entire reconstructed seam shall be non-destructively tested. In any case, all acceptable seams shall be bounded by two passed test locations and include one test location along the reconstructed seam. All seams will be required to pass non-destructive testing. Certified test results on all repaired seams shall be submitted by the Contractor.

PART 3 EXECUTION

3.1 INSTALLATION

A. Preparation of Subgrade for Geomembrane

1. Prior to installation of the FMC, all vegetation, rocks, debris, etc. and other deleterious materials, shall be removed from the surfaces to be covered with the FMC. The surface shall be free from stones or clods greater than ¼ -inches in diameter. Any roots ½ inch or over in diameter shall be removed to at least 18 inches below the surface. Any depressions, potholes, ruts, etc., in the surfaces to be covered shall be filled with the appropriate soil material and compacted to final grade. The finished surface shall be smooth with no abrupt projections or depressions to damage the geomembrane.

2. The supporting layer shall be maintained in a smooth, uniform, and compacted condition during installation of the geomembrane. The subgrade surface shall be observed daily by the CQC Inspector, Contractor, and Engineer to evaluate the surface condition. The Installer shall provide written acceptance of the subgrade to the Engineer prior to installation of the geomembrane. No installation of the geomembrane shall commence until the surface is accepted by the Installer. Any damage to the subgrade caused by the Contractor's or Installer's operations shall be repaired at no additional cost to the Owner. No geomembrane or other geosynthetic material shall be placed on a subgrade that has become softened by water or overly dried, as determined by the CQC Inspector and accepted by the Engineer, until it has been properly reconditioned and/or recompacted. The Contractor shall be required to repair or re-work any area of the prepared surface requested by the Engineer, CQC Inspector, or Installer.

3. Any anchor trenches shall be excavated to the line, grade, and width shown on the drawings, or as recommended by the FMC manufacturer and accepted by the Engineer, prior to any geomembrane placement in the area of the trench. The CQC Inspector shall verify that the anchor trench has been constructed in accordance with the appropriate drawing. If the anchor trench is located in a clay susceptible to desiccation, no more than the amount of trench required for

the FMC to be anchored in one day shall be excavated. Slightly rounded corners shall be provided in the trench where the FMC adjoins the trench so as to avoid sharp bends in the FMC. No loose soil or rocks shall be allowed to underlie the FMC in the anchor trench. Leading edges of the trench shall be smooth and even. After placement of the geosynthetics, the trench shall be backfilled with suitable materials so as not to damage the geosynthetics. Immediately prior to FMC placement, the CQC Inspector, Contractor and Installer shall certify in writing that the surface on which the FMC is to be placed is acceptable. The written certification shall include the location of perimeter points referenced by coordinates.

B. Placement of Geomembrane

1. General

a. The Contractor shall furnish the services of a competent field technical installation supervisor to supervise installation of the geomembrane. The geomembrane shall be placed over the prepared surfaces to be lined in such a manner as to assure minimum handling. Any portion of geomembrane damaged during installation shall be removed or repaired, at the CQC Inspector's discretion and as specified hereinafter, at no additional cost to the Owner.

2. Panel/Roll Deployment

a. Only those panels/rolls that can be anchored/ ballasted and seamed together the same day shall be deployed.

b. Any equipment used shall not damage the geomembrane by handling, trafficking, or other means.

c. All personnel working on the geomembrane shall not smoke, wear damaging shoes, or engage in other activities which could damage the geomembrane.

d. The method used to unroll the panels/rolls shall not cause scratches or crimps in the geomembrane and shall not damage the supporting soil.

e. The method used to place the panels/rolls shall minimize wrinkles (especially differential wrinkles between adjacent panels/rolls). The geomembrane shall not have excessive slack to the point where creases fold over upon themselves. Permanent (fold-over type) creases in the covered geomembrane will not be permitted.

f. Adequate loading (*e.g.*, sandbags) not likely to damage the geomembrane shall be placed to prevent uplift by wind.

g. Direct contact of construction equipment with the geomembrane shall not be allowed.

h. The Contractor shall verify that the geomembrane thickness is in conformance with the specifications. At least two thickness readings shall be taken along the edge across each panel/roll width and four along each panel/roll length. Additional readings shall be taken across the width at any point where the panel/roll has been cut. Panels/rolls whose mil thickness falls below the specified minimum value shall be rejected and replaced at no additional cost to the Owner.

C. Weather Conditions

1. Field seaming shall not be performed when the air or sheet temperature is below 32°F (or manufacturer's recommendations, whichever is greater), when the sheet temperature exceeds 158°F, when the air temperature is above 120°F, during periods of precipitation, or when winds are in excess of 20 miles per hour. Where weather conditions are marginal for seaming, as determined by the Engineer, test seams, as described in this Section, shall be made to decide if production seaming can proceed.

2. If circumstances as accepted by the CQC Inspector and the Engineer require that field seaming be conducted in cold weather conditions (below 32°F), the following procedures shall be followed:

   a. The CQC Inspector shall measure surface temperature of the geomembrane at least every 10 feet of seaming length.

   b. Preheating of the seaming area under wind protection shall be required if the measured surface temperature is below 32°F.

   c. Preheating devices shall be approved by the CQC Inspector and the Engineer prior to operation.

   d. Additional destructive tests may be taken by the CQC Inspector to monitor the quality of the installation.

   e. No field seaming shall be conducted if ambient temperature is above 120°F unless the Installer can demonstrate to the satisfaction of the CQC Inspector that the quality of seaming is not compromised. Additional destructive tests may be required by the CQC Inspector for any suspect areas.

D. Field Seams

1. The Installer shall obtain written approval from the CQC Inspector and Engineer prior to commencing field seaming.

2. All geomembrane field seams shall be made using double wedge welding with a void space for pressure testing as the primary method. Extrusion welding shall only be used for patching and seaming around appurtenances.

3. All seaming material shall be of a type recommended and supplied by the manufacturer. The seaming material shall be delivered in the original sealed

containers, each with an indelible label bearing the brand name, manufacturer's mark number, and complete directions as to proper storage.

4. All geomembrane rolls/panels shall be overlapped 5 inches maximum for wedge welding and 3 inches minimum for extrusion welding.

5. Prior to seaming, the seam area shall be clean and free of moisture, dust, dirt, and foreign material.

6. If seam overlap grinding is required, the process shall be completed according to the manufacturer's instructions and in a way that does not damage the geomembrane.

7. Seams shall be oriented parallel to the line of maximum slope and with the fewest possible number of wrinkles. In corners and odd-shaped geometric locations, the number of field seams shall be minimized. Seaming shall extend to the outside edge of rolls/panels to be placed in anchor trenches. No horizontal seam shall be within five feet of the toe of slope.

E. Field Seam Testing

1. Test Seams

a. Test seams shall be made on fragment pieces of geomembrane to verify that seaming conditions are adequate. All test seams shall be made at a location selected by the CQC Inspector in the area to be seamed and in contact with the subgrade.

b. Test seams shall be made at the beginning of each seaming period, at the CQC Inspector's discretion, whenever there is a change in seaming personnel or equipment, if significant changes in geomembrane temperature are observed, and at least once every four hours, by each seamer and seaming equipment used that day. One sample shall be obtained from each test seam. This sample shall be at least 2 feet long by 1 foot wide with the seam centered lengthwise. The test weld samples shall be labeled with:

1) Date and time
2) Roll/panel number
3) Seam number
4) Ambient temperature
5) Welding apparatus
6) Temperature and pressures
7) Welder's initials
8) Top sheet.

c. Five specimens 1 inch wide shall be cut from each opposite end of the sample by the Installer using the appropriate ASTM cutting tool. These specimens shall be field tested by the Contractor for shear strength and peel adhesion using an accepted quantitative tensiometer. Three shear strength tests and two peel adhesion tests shall be performed on one end and two shear strength tests and three peel adhesion tests shall be performed on the opposite end. If the field tests fail to meet the minimum specified seam requirements listed in Table 1 and/or are not classified as film tear bond failures, the entire operation shall be repeated. If the additional test seam fails, the seaming apparatus or seamer shall not be accepted or used for seaming until the deficiencies are corrected and two consecutive successful full test seams are achieved. Remaining samples shall be submitted to the Engineer for subsequent laboratory testing, if required.

d. No seaming personnel may begin work until his test weld has passed the on-site shear and peel tests as indicated by the CQC Inspector.

F. Defects and Repairs

1. Prior to covering the geomembrane, all seams and non-seam areas shall be visually inspected by the CQC Inspector for defects, holes, damage due to windlift or any other cause and any sign of contamination by foreign material. At the CQC Inspector's discretion, the surface of the geomembrane shall be brushed, blown, or washed by the Installer if the amount of dust or mud inhibits inspection.

2. Each suspect location in seam and non-seam areas shall be non-destructively tested as appropriate. Each location that fails the non-destructive testing shall be marked and documented by the CQC Inspector and Engineer and repaired by the Installer.

3. Defective seams shall be repaired in accordance with this Section. Tears, holes, blisters and areas with undispersed raw materials or foreign material contamination shall be repaired by patches. Patches shall have rounded corners, be made of the same geomembrane, and extend a minimum of 6 inches beyond the edge of defects. Corners of patches shall be rounded with a radius of approximately 3 inches. If extrusion materials are used, the surface of the geomembrane to be repaired shall be abraded no more than one hour prior to the repair. Spot welding or seaming shall be used to repair small tears or other localized flaws. All repairs shall be non-destructively vacuum tested, except where the CQC Inspector elects to perform a destructive seam test on a suspect area.

4. All repairs shall be performed at no additional cost to the Owner.

G. Geomembrane Penetrations

1. All geomembrane penetration details shall be as shown on the Drawings or recommended by the geomembrane manufacturer, and as accepted by the Engineer. Any tailored area seams that cannot be non-destructively tested shall be cap stripped and visually inspected.

H. Completion

1. Upon completion and acceptance of the geomembrane in an area, the geomembrane shall be covered with the required materials within 14 days as shown on the Contract Drawings and as described in the specifications.

2. Cover materials shall be placed to the limits shown on the Contract Drawings and as approved by the Engineer. The cover soils shall include the sand fill Material as described in the Section titled "Barrier Protection Layer," and topsoil layer as described in the Section titled "Topsoil and Seeding."

3. The Contractor shall demonstrate that his cover soil placement method will not damage the underlying FMC. The Contractor shall have the option to demonstrate his placement method over a portion of the completed FMC or a separate test section outside the limits of the cap. Construction of the test section shall incorporate the same cap materials, equipment, and procedures proposed for the full scale cap system. In either case, the demonstration area shall be a minimum of four times wider than the widest piece of construction equipment proposed. The demonstration area shall be long enough to allow construction equipment to achieve normal operating speed over a minimum 25 foot length. The demostration area shall be constructed on a surface having a slope equal to the maximum slope required for the full scale cap in areas where the FMC is to be installed. After placement of the cover soil to the specified design depth over this area, the Contractor shall remove a 24 foot by 24 foot section of the cover soils placed over the FMC near the center of the demonstration area. The FMC in this area shall be visually inspected by the CQC Inspector for damage due to placement. At the CQC Inspector's discretion, any suspect areas of the FMC shall be non-destructively tested. Any puncturing of the geotextile and/or FMC resulting from the Contractor's placement method, as determined by the CQC Inspector, will result in rejection of the Contractor's placement method. Full scale cover placement shall not commence until the placement method is accepted by the CQC Inspector and Engineer and all failed demonstration areas within the limits of the test area are repaired.

4. The Contractor shall commence post-construction care of the installed geomembrane in a timely manner following completion of geomembrane seaming including, but not limited to, covering or temporary weighting using sandbags to prevent damage from wind uplift, construction, and other weather related damage. Only sand shall be used to fill sandbags that will be in contact with the geomembrane.

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SECTION 02294

BARRIER PROTECTION LAYER

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes excavation, backfilling, and compacting including the loosening, removing, working, transporting, storage, fill, and disposal of all materials necessary for construction of the barrier protection layer, as shown, specified, or directed by the Engineer.

1.2 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

a. ASTM D422 Method for Particle Size Analysis of Soil

b. ASTM D698 Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 KN-m/m^3)

c. ASTM D1556 Test Method for Density and Unit Weight of Soil In Place by the Sand-Cone Method

d. ASTM D2167 Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method

e. ASTM D2922 Test Methods for Density of Soil and Soil-Aggregate In Place by Nuclear Methods (Shallow Depth)

f. ASTM D3017 Test Method for Water Content of Soil and Rock in Place by Nuclear methods (Shallow Depth)

g. ASTM D4318 Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

h. ASTM D5084 Test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter

1.3 SUBMITTALS

A. The following items shall also be submitted:

1. Source of borrow materials for barrier protection layer.

2. Location of spoil areas.

3. Location of samples collected within borrow areas for laboratory testing.

4. Proposed soil testing laboratory.

5. Laboratory testing methods to be used.

6. Results of laboratory geotechnical testing.

7. Affidavit from owner of the borrow source and results of analytical testing in accordance with the Special Provisions.

8. Required surface disturbance permits.

1.4 TESTING

A. All soil testing services specified herein shall be provided by the Contractor. All testing results shall be provided by a lab, independent from the Contractor, hired by the Contractor to the Engineer for approval prior to the placement of material

PART 2 PRODUCTS

2.1 BARRIER PROTECTION LAYER MATERIAL

A. Barrier protection layer material shall be obtained from a source reviewed by the Engineer.

B. The barrier protection layer material must be uniform in composition and texture, clean and free from stones, weeds, stumps, roots, toxic substances, and debris or similar substances. The barrier protection layer material shall be characterized as a silty-sand and shall have physical and chemical characteristics conducive to the establishment of vegetation. The barrier protection material shall have the following gradation by weight:

First 12-inch lift of barrier protection material above the geomembrane:

% Passing	Sieve
100	1/4-inch
30 - 50	No. 200

Subsequent 6-inch lifts of barrier protection material

% Passing	Sieve
100	2-inch
30 - 50	No. 200

These analyses will be performed in accordance with ASTM D422.

C. The Contractor shall submit testing methods (prior to conducting tests), test results, and a certification from the approved soils testing laboratory that the barrier protection layer material meets the requirements of this section. The results of all soils testing specified herein and in the Special Provisions shall be submitted to the Engineer for review.

D. Prior to installation of the barrier protection layer, material from the borrow source shall be tested in accordance with the following:

Parameter	Standard	Criteria
Particle Size Analysis	ASTM D422	Material proposed for first 12-inch compacted lift of barrier protection layer: % Passing / Sieve 100 / 1/4-inch 30-50 / No. 200 Material proposed for subsequent 6-inch compacted lift of barrier protection layer: % Passing / Sieve 100 / 2-inch 30-50 / No. 200
Compaction Characteristics	ASTM D698	Develop compaction characteristics initially and one-time for each additional 5,000 cubic yards.
Hydraulic Conductivity	ASTM D5084, EM-1110-2, or similar method	Assess soil properties initially and one-time for each additional 10,000 cubic yards.

E. During installation of the barrier protection layer, material from the borrow source shall be also tested in accordance with the following standards and frequencies:

Parameter	Standard	Minimum Frequency	Criteria
Particle Size Analysis	ASTM D422	Once per 1000 cy	First 12-inch compacted lift of barrier protection layer: % Passing / Sieve 100 / 1/4-inch 30-50 / No. 200

Parameter	Standard	Minimum Frequency	Criteria
			Subsequent 6-inch compacted lift of barrier protection layer: % Passing Sieve 100 2-inch 30-50 No. 200
In-Place Density	ASTM D1556 or ASTM D2922 or ASTM D2167	1 test per 1500 square feet per lift of soil placed, but no fewer than two tests per day that material is placed	90% of the Standard Proctor Compaction as determined by ASTM 698
In-Place Moisture Content	ASTM D3017	1 test per 1500 square feet per lift of soil placed, but no fewer than two tests per day that material is placed	Monitor compaction
Liquid Limit, Plastic Limit, Plasticity Index	ASTM D4318	Once Per 1000 cy	Monitoring consistency of borrow source.

A minimum of two (2) tests for each parameter identified under Item "E" shall be performed each day that Barrier Protection Barrier soil is placed for each method of compaction utilized by the Contractor.

F. The results of all testing shall be submitted to the Engineer for review. Any materials not meeting the requirements of this section shall be removed from the project site at no cost to the Owner.

G. If at any time during this Contract the Engineer requests further soils testing to insure that the characteristics of the barrier protection layer material obtained from the borrow area(s) have not changed, the Contractor shall perform these tests at no additional cost to the Owner.

PART 3 EXECUTION

3.1 INSTALLATION

A. Placement of the barrier protection layer material shall be in accordance with the provisions of this Section. Any barrier protection layer material which cannot comply with the provisions of this Section will be considered as spoil and will be removed and disposed of at the Contractor's expense.

B. The barrier protection layer material shall have a minimum installed and compacted thickness of 24 inches, as shown on the Contract Drawings, and shall be constructed by placing suitable material in lifts. The first lift above the geomembrane shall have a compacted thickness of 12 inches and shall be free from stones greater than 1/4 inch. The remaining material shall be placed in a compacted 6-inch lift. Compaction of the lifts shall be accomplished by a smooth wheel vibratory roller or other suitable equipment. Compaction of the barrier protection layer shall be 90 percent of the Standard Proctor Compaction as determined by ASTM D698.

C. Barrier protection layer material containing frozen soil or ice shall not be placed.

D. Compaction or consolidation achieved by traveling trucks, machines, and other equipment will not be accepted unless such procedures are reviewed by the Engineer and proper compaction criteria are achieved.

E. Any damage to the completed surface of the barrier protection layer, whether caused by erosion, the Contractor’s work, or any other occurrences, shall be immediately repaired and maintained in good condition until completion of the work.

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SECTION 02302

OFF-SITE TRANSPORTATION AND DISPOSAL

PART 1 GENERAL

1.1 SUMMARY

A. The Contractor shall properly transport and dispose of all hazardous waste, and hazardous waste that may have been pre-treated on-site, to appropriate off-site disposal facilities in accordance with 40 CFR part 268; 6NYCRR Parts 371, 375 and 376; and other applicable regulations.

B. The Contractor shall be responsible and will be held accountable for assuring that all sampling, analysis, transportation, and disposal requirements of the Treatment, Storage, and Disposal Facility (TSDF) are complied with as applicable, and that Federal, State, and local government requirements are complied with.

1.2 SUBMITTALS

A. The following items shall be submitted:

1. Transportation Plan: The Contractor shall submit a Transportation Plan to the Engineer prior to the start of work for review. This shall include:

   a. Type and number of vehicles used;
   b. Travel routes and times; and
   c. Copies of transportation permits.

2. Disposal Facilities: The Contractor shall submit to the Engineer information regarding proposed facilities for disposal of each type of waste. All proposed facilities must be permitted. Information submitted shall include, but not be limited to:

   a. Name;
   b. Owner;
   c. Type of facility/permit;
   d. Contact person, phone number;
   e. Location;
   f. Hours of operation; and
   g. Copies of permits.

1.3 PERMITS AND REGULATIONS

A. The Contractor shall comply with all Federal, State, and local regulations regarding transportation and disposal of hazardous wastes. These include, but are not limited to:

1. Trucks used for transportation of hazardous wastes shall be permitted for such use;

2. Vehicle operator possession of a commercial driver's license with hazardous waste materials endorsement (if applicable);

3. Registration of vehicle as a hazardous waste carrier (if applicable);

4. Utilization of shipping papers and hazardous waste manifest;

5. Proper marking and placarding of vehicles;

6. Placement of emergency response procedures and emergency telephone numbers in vehicle, and operator familiarity with emergency response procedures; and

7. Compliance with load height and weight regulations.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. All equipment supplied shall be in good working condition. Equipment and machinery delivered to the site, including haul trucks that have visible oil or hydraulic fluid leaks, will not be allowed on site until satisfactorily repaired. The Contractor is responsible for the cleanup of any oil or hydraulic fluid spills at the Contractor's expense.

B. The Contractor shall not allow soil to be tracked off site at any time during the project. Visible soil tracks on streets will not be allowed. The Contractor shall take sufficient precautions to prevent loose soils from adhering to tire treads, wheel wells, etc. Any loose soil spread shall be cleaned up.

C. Trucks used for transportation of material for off-site disposal shall be water tight. The disposal vehicles shall be equipped with solid covers (*e.g*. tightly woven fabric, no mesh covers) that shall be utilized during the transportation of wastes from the Site to the disposal facility. Trucks carrying waste material are not permitted to leave the Site without the waste being covered.

PART 3 EXECUTION

3.1 DECONTAMINATION

A. Transport vehicles shall be decontaminated upon leaving the Exclusion Zone at the site and again at the disposal facility as required.

3.2 TRANSPORTATION

A. General

1. Prior to loading the wastes, the Contractor shall have the sole responsibility of ensuring that the wastes exhibit the characteristics (chemical and physical) acceptable to the disposal facility. The Contractor shall prepare manifest forms and shipping papers for all wastes leaving the site in accordance with applicable regulations. The Contractor shall be responsible for tracking the manifests and shipping papers and shall immediately notify the Engineer of any problems in

completing shipment and disposal of wastes. The Contractor shall provide written evidence in the form of properly completed manifests/shipping papers that all waste materials have been properly managed.

2. Prior to shipment of hazardous wastes off the site, or hazardous waste that may have been pre-treated on site, the Contractor shall confirm by written communication from the designated TSDF that it is authorized, has the capacity, and will provide that the ultimate disposal method is followed for the particular waste on the manifest. Additionally, the Contractor shall confirm by written communication from the designated transporter(s) that they are authorized to deliver the manifested waste to the designated TSDF.

3. The Contractor shall be responsible for loading, labeling, placarding, marking, and transporting materials in accordance with applicable local, State and Federal regulations.

4. Each transport container of waste shall be visually inspected by the Contractor for leaks, rips, or container damage prior to being loaded. Containers that are found to be leaking or damaged shall not be allowed to be loaded until the damage is repaired. The Contractor shall prepare transport containers to prevent spillage or contamination. In the event of spillage, the Contractor shall be solely responsible for any damages and actions necessary to remedy the situation.

5. The disposal vehicles shall be equipped with solid covers that shall be utilized during the transportation of wastes from the Site to the disposal facility. Mesh covers are not permitted. Trucks carrying waste material are not permitted to leave the Site without the waste being covered.

6. Materials shall be transported only at the times and by the routes indicated in the approved Transportation Plan, unless permission is received from the Engineer to do otherwise. The Contractor shall observe the legal load limits.

7. The Contractor shall not transport waste from the site to an intermediate waste storage facility prior to or in route to the facility approved by the Owner for final disposal of the excavation spoils.

8. The Contractor shall inspect vehicles leaving the site for waste material adhering to the wheels or undercarriage. Material that is detected shall be removed at the decontamination area setup on site by the Contractor.

3.3 SAMPLING

A. The Contractor shall be responsible for all cost associated with sampling of wastes to be disposed of as may be required by the disposal facility.

3.4 MANIFESTING

A. The Contractor shall complete all required manifest forms and Bill of Lading forms for the Owner for proper transportation and disposal of materials off site. The Contractor shall be responsible and will be held accountable for assuring that all sampling, analysis, transportation, and disposal requirements of the TSDF, Federal, State, and local governments are complied with and properly documented.

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SECTION 02502

RESTORATION OF SURFACES

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes restoration and maintenance of all types of surfaces, culverts and other features disturbed, damaged or destroyed during the performance of the work under or as a result of the operations of the Contractor and not addressed elsewhere in the Contact Documents.

B. The quality of materials and the performance of work used in the restoration shall produce a surface or feature equal to the condition of each before the work began.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02980 **-** Topsoil and Seeding

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Society for Testing and Materials (ASTM)

a. D698 - Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3) (600 kN-m/m^3)

1.4 SUBMITTALS

A. The following items shall be submitted.

1. A schedule of restoration operations. After an accepted schedule has been agreed upon it shall be adhered to unless otherwise revised with the approval of the Engineer.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.1 GENERAL

A. In general, permanent restoration of paved surfaces will not be permitted until one months' time has elapsed after excavations have been completely backfilled as specified. A greater length of time, but not more than nine months may be allowed to elapse before permanent restoration of street surfaces is undertaken, if additional time is required for shrinkage and settlement of the backfill.

B. The replacement of surfaces at any time, as scheduled or as directed, shall not relieve the Contractor of responsibility to repair damages by settlement or other failures.

3.2 TEMPORARY PAVEMENT

A. Immediately upon completion of refilling of the trench or excavation, the Contractor shall place a temporary pavement over all disturbed areas of streets, driveways, sidewalks, and other traveled places where the original surface has been disturbed as a result of his operations.

B. Unless otherwise specified or directed the temporary pavement shall consist of compacted run-of-crusher limestone to such a depth as required to withstand the traffic to which it will be subjected.

C. Where concrete pavements are removed, the temporary pavement shall be surfaced with "cold patch". The surface of the temporary pavement shall conform to the slope and grade of the area being restored.

D. For dust prevention, the Contractor shall treat all surfaces, not covered with cold patch, as frequently as may be required.

E. The temporary pavement shall be maintained by the Contractor in a safe and satisfactory condition until such time as the permanent paving is completed. The Contractor shall immediately remove and restore all pavement as shall become unsatisfactory.

3.3 PERMANENT PAVEMENT REPLACEMENT

A. The permanent and final repaving of all streets, driveways and similar surfaces where pavement not included for removal or disturbance as part of the work of the Contract has been removed, disturbed, settled or damaged by or as a result of performance of the Contractor shall be repaired and replaced by the Contractor, by a new and similar pavement at no additional cost to the Owner.

3.4 PREPARATION FOR PERMANENT PAVEMENT

A. When scheduled and within the time specified, the temporary pavement shall be removed and a base prepared, at the depth required by the New York State Department of Transportation to receive the permanent pavement.

1. The base shall be brought to the required grade and cross-section and thoroughly compacted before placing the permanent pavement.

2. Any base material which has become unstable for any reason shall be removed and replaced with compacted base materials.

B. Prior to placing the permanent pavement all service boxes, manhole frames and covers and similar structures within the area shall be adjusted to the established grade and cross-section.

C. The edges of existing asphalt pavement shall be cut a minimum of 1 foot beyond the excavation or disturbed base, whichever is greater.

1. All cuts shall be parallel or perpendicular to the centerline of the street.

3.5 ASPHALT PAVEMENT

A. The permanent asphalt pavement replacement for streets, driveways and parking area surfaces shall be replaced with bituminous materials of the same depth and kind as the existing unless otherwise specified.

B. Prior to placing of any bituminous pavement, a sealer shall be applied to the edges of the existing pavement and other features.

C. The furnishing, handling and compaction of all bituminous materials shall be in accordance with the New York State Department of Transportation Standards.

3.6 STONE OR GRAVEL PAVEMENT

A. All pavement and other areas surfaced with stone or gravel shall be replaced with material to match the existing surface unless otherwise specified.

1. The depth of the stone or gravel shall be at least equal to the existing.

2. After compaction the surface shall conform to the slope and grade of the area being replaced.

3.7 LAWNS AND IMPROVED AREAS

A. The area to receive topsoil shall be graded to a depth of not less than 6 inches or as specified, below the proposed finished surface.

1. If the depth of existing topsoil prior to construction was greater than 6 inches, topsoil shall be replaced to that depth.

B. The furnishing and placing of topsoil, seed and mulch shall be in accordance with the Section entitled "Topsoil and Seeding."

C. When required to obtain germination, the seeded areas shall be watered in such a manner as to prevent washing out of the seed.

D. Any washout or damage which occurs shall be regraded and reseeded until a good sod is established.

E. The Contractor shall maintain the newly seeded areas, including regrading, reseeding, watering and mowing, in good condition.

3.8 OTHER TYPES OF RESTORATION

A. Trees, shrubs and landscape items not included for removal as part of the work of the Contract and damaged or destroyed as a result of the construction operations shall be replaced in like species and size.

1. All planting and care thereof shall meet the standards of the American Association of Nurserymen.

B. Water courses shall be reshaped to the original grade and cross-section, unless shown or specified otherwise, and all debris removed. Where required to prevent erosion, the bottom and sides of the water course shall be protected.

C. Culverts destroyed or removed as a result of the construction operations shall be replaced in like size and material and shall be replaced at the original location and grade. When there is minor damage to a culvert and with the consent of the Engineer, a repair may be undertaken, if satisfactory results can be obtained.

3.9 MAINTENANCE

A. The finished products of restoration shall be maintained in an acceptable condition for and during a period of one year following the date of Substantial Completion or other such date as set forth elsewhere in the Contract Documents.

* * * * *

SECTION 02980

TOPSOIL AND SEEDING

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes topsoil, fertilizer, seed, mulch anchorage, and associated work to be placed in the areas of excavation and to be incorporated into the construction of the North Landfill (Area A) Part 360 cap. These requirements also apply to other disturbed areas.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02502 - Restoration of Surfaces

1.3 REFERENCES

A. Materials and installation shall be in accordance with the latest revisions of the following codes, standards and specifications, except where more stringent requirements have been specified herein:

1. American Society of Testing and Materials (ASTM)

   a. ASTM D422 Method for Particle-Size Analysis of Soils

   b. ASTM D2974 Test Method for Moisture, Ash, and Organic Matter of Peat and other Organic Materials

   c. ASTM D4972 Standard Test Method for pH of Soils

   d. ASTM D5268 Specification for Topsoil Used for Landscaping Purposes

1.4 SUBMITTALS

A. The following items shall be submitted:

1. Documentation giving location of properties from which the topsoil will be obtained, names and addresses of the owners, and depth to be stripped.

2. Documentation giving the seed vendor’s certified statement for the grass seed mixture required, stating common name, scientific name, percentage by weight, and percentages of purity and germination.

3. Documentation giving data concerning hydroseeding equipment (if used), including all material application rates.

4. Documentation regarding test results for particle size, acidity, fertility, and texture performed on representative samples of soil.

5. Each bag of fertilizer shall bear the manufacturer's guaranteed statement of analysis.

PART 2 PRODUCTS

2.1 TOPSOIL

A. The topsoil shall be unfrozen, natural, fertile, friable, clayey loam soil characteristic of productive soils in the vicinity and shall comply with ASTM D5268. No admixtures of subsoil shall be allowed. Topsoil must be uniform in composition and texture, clean and free from clay lumps, stones, weeds, sticks, brush, stumps, roots, toxic substances, and debris or similar substances 2-inches or more in greatest dimension.

B. Prior to and during installation of the topsoil layer, material from the borrow source shall be tested in accordance with the following standards and frequencies:

Parameter	Standard	Minimum Frequency	Criteria
Topsoil Particle Size	ASTM D422	Once per 1500 cy	Monitoring consistency of borrow source
Topsoil pH	ASTM 4972	Once per 1500 cy	pH in the range of 5.5 and 7.6
Topsoil Organic Content	ASTM 2974	Once per 1500 cy	Not less than 5% nor more than 20%

2.2 GRASS SEED

A. Seed mixtures shall be of commercial stock of the current season's crop and shall be delivered in unopened containers bearing the guaranteed analysis of the mix.

B. Seed Mixture: Pounds Per Acre

Common Name	% by Weight	% Purity	% Germination
Timothy	30	90	90
Clover	20	90	90
Perennial Ryegrass	40	90	90
Annual Ryegrass	10	90	90

2.3 FERTILIZER

A. Fertilizer shall be a standard quality commercial carrier of available plant food elements. A complete prepared and packaged material containing a minimum of 10 percent nitrogen, 10 percent phosphoric acid and 10 percent potash.

2.4 MULCH

A. Mulch shall be unrotted stalks of oats, wheat, rye or other approved crops which are free from noxious weeks, salt, mold, or other objectionable material.

B. Other sources of mulch may be utilized if approved by the Engineer.

PART 3 EXECUTION

3.1 INSTALLATION

A. Topsoil shall be placed to a depth of not less than 6-inches on the Part 360 cap and in the excavations. Other disturbed areas shall receive topsoil to a depth of not less than 4-inches.

1. All debris and inorganic material shall be removed and the surface loosened for a depth of 2 inches prior to the placing of the topsoil.

2. The topsoil shall not be placed until the subgrade is in suitable condition and shall be free of excessive moisture and frost.

3. All topsoil shall be free from stones, roots, sticks and other foreign substances and shall not be placed in a frozen or muddy condition.

4. The finished surface shall conform to the lines and grades of the area before disturbed or as shown on the Contract Drawings. Any irregularities shall be corrected before the placement of fertilizer and seed.

B. The fertilizer shall be applied uniformly at the rate of 20 pounds per 1000 square feet.

1. Following the application of the fertilizer and prior to application of the seed, the topsoil shall be scarified to a depth of at least 2 inches with a disc or other suitable method traveling across the slope if possible.

C. When the topsoil surface has been fine graded, the seed mixture shall be uniformly applied upon the prepared surface with a mechanical spreader at a rate of not less than 10 pounds per 1000 square feet.

1. The seed shall be raked lightly into the surface and rolled with a light hand lawn roller.

2. Seeding and mulching shall not be done during windy weather.

D. The mulch shall be hand or machine spread to form a continuous blanket over the seed bed, approximately 2 inches uniform thickness at loose measurement. Excessive amounts or bunching of mulch will not be permitted.

1. Mulch shall be anchored by an acceptable method.

2. Unless otherwise specified, mulch shall be left in place and allowed to disintegrate.

3. Any anchorage or mulch that has not disintegrated at time of first mowing, shall be removed. Anchors may be removed or driven flush with ground surface.

E. Seeded areas shall be watered as often as required to obtain germination and to obtain and maintain a satisfactory sod growth. Watering shall be in such a manner as to prevent washing out of seed.

F. Hydroseeding may be accepted as an alternative method of applying fertilizer, seed and mulch. The Contractor shall submit all data regarding materials and application rates to the Engineer for review.

G. The stand of grass resulting from the seeding shall not be considered satisfactory until accepted by the Engineer. An acceptable lawn shall have a minimum of 90% of the area covered with plants of the specified seed mix and no areas greater than one foot square of bare surface. If areas are determined to be unacceptable, the remaining mulch will be removed and all areas shall be reseeded, refertilized and remulched as per the above application procedures at the Contractor’s expense.

3.2 MAINTENANCE

A. The lawn area above the North Landfill (Area A) Part 360 cap shall be mowed by the Contractor before the new grass reaches a height of 4 inches.

B. The Contractor shall maintain the newly seeded lawn area above the North Landfill (Area A) Part 360 cap in good condition until acceptance, including regular mowing to a height of 2 inches.

C. The Contractor shall maintain the grass area above the North Landfill (Area A) Part 360 cap for the period required to establish an acceptable growth, but not less than 60 days after date of substantial completion. If seeded in the fall and not given a full 60 days of maintenance, or if not considered acceptable by the Engineer at that time, continue maintenance during following spring until acceptable, grass stand is established.

D. Seeded areas shall be watered as often as required to obtain germination and to obtain and maintain a satisfactory sod growth. Watering shall be in such a manner as to prevent washing out of seed.

* * * * *

SECTION 02981

WETLAND RESTORATION

PART 1 GENERAL

1.1 SUMMARY

A. This Section includes topsoil, fertilizer, seed, plantings, mulch, and associated restoration work within the delineated wetland areas.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. 02221 - Earthwork

1.3 REFERENCES

A. Restoration activities shall be performed in compliance with the following:

1. New York State Department of Environmental Conservation (NYSDEC) Order on Consent (Index No. W3-0988-02-04).
2. ASTM S4972.
3. Sections 401 and 404 of the Clean Water Act.
4. Conditions of permits issued by the U.S. Army Corps of Engineers (USACE), NYSDEC, and others.

1.4 SUBMITTALS

A. The following items shall be submitted:

1. The location of source and data for off-site topsoil, including organic content.

2. Source and content data for all seed mixes, plants, and trees. Data for each container of seed used shall be submitted; data submitted as representative of multiple containers will not be accepted.

3. Should hydroseeder be used, the Contractor shall submit all data including material and application rates.

4. Submit certificates from plant nursery stock supplier for each group of live plant stock required, stating botanical name, common name, origin, age, date of packaging, and name and address of supplier. Submit at least 4 weeks prior to planting.

5. Invoices for all plants and seed procured for the project shall be submitted.

6. Source and content data for organic mulch (*e.g.*, hay). If synthetic mulch is used, catalog data that includes the manufacturer, materials, and installation procedures, shall be submitted.

PART 2 PRODUCTS

2.1 MATERIALS

A. Imported topsoil shall be from a commercial source approved by the Engineer prior to use. Topsoil shall be unfrozen friable and fertile soil that meets the USDA basic soil texture class of silt loam free from clay lumps, stones, roots, sticks, stumps, brush or foreign objects. Topsoil shall be capable of sustaining healthy plant life and exhibit the following characteristics.

1. Topsoil shall have moderate pH (5 to 6.5) and organic matter concentration (between 5% and 15%) in the wetland restoration area.

2. Topsoil shall contain no nuisance weeds, including seeds, stems or rhizomes of purple loosestrife, common reed, Japanese knotweed, or plants on the Federal Noxious Weeds list.

3. Topsoil shall be comprised of the following particle sizes:

a. At least 50% silt (0.05 to 0.002 mm dia) and 12 to 27% clay (less than 0.002 mm dia), or

b. 50 to 80% silt and less than 12% clay.

B. Fertilizer shall be a standard quality commercial carrier of available plant food elements and shall consist of a complete prepared and packaged material containing a minimum of 10% nitrogen, 10% phosphoric acid and 10% potash.

1. Each bag of fertilizer shall bear the manufacturer's guaranteed statement of analysis.

C. Seed mixtures shall be of commercial stock of the current or prior season's crop and shall be delivered in unopened containers bearing the guaranteed analysis of the mix.

1. Seed shall be labeled true to species and variety. The percent of pure live strain of the seed shall be submitted with the seed mixture.

2. The seed supplier shall provide a seed analysis report including certified analyses of percent viability, percent weed seeds, and percent of other crop seed. The certifying laboratory shall be indicated on the seed tag or on associated submittals.

3. The state of origin of the seed shall be indicated on the seed tag or on associated submittals.

4. The following weed seeds shall not be present in any seed mix:

   a. Smooth brome (*Bromus inermis*)
   c. Tall fescue (*Schedonorus phoenix*)
   d. Purple loosestrife (*Lythrum salicaria*)
   e. Common reed (*Phragmites australis*)
   f. Cattail (*Typha angustifolia, T. x glauca*)
   g. Reed canarygrass (*Phalaris arundinacea*).

5. All seed shall meet the standards of germination and purity set by New York State or the Association of Official Seed Certifying Agencies (AOSCA).

6. The wetland restoration area shall be seeded with the following seed mix (Wildlife Food and Shelter Shrub Mix: ERNMX-138) from "Ernst Conservation Seeds" or equivalent (note - final species list is contingent on commercial availability and shall be approved by O'Brien & Gere prior to purchase) at a rate of 30 pounds (lbs) per acre after placement of shrubs and trees. Mulch shall be applied at a rate of 2 tons/acre.

Content (%)	Common Name	Botanical Name
24	Fox Sedge	*Carex vulpinoidea*
14	Spicebush	*Lindera benzoin*
11	Virginia Wild Rye	*Elymus virginicus*
10	Lurid (Shallow) Sedge	*Carex lurida*
10	Silky Dogwood	*Cornus amomum*
10	Arrowwood	*Viburnum dentatum*
7	Blunt Broom Sedge	*Carex scoparia*
5	False Nettle	*Boehmeria cylindrica*
5	Royal Fern*	*Osmunda regalis*
2	Awl Sedge	*Carex stipata*
2	Buttonbush	*Cephalanthus occidentalis*
1	Cosmos (Bristly) Sedge	*Carex comosa*
1	Meadow Sweet	*Spiraea alba*

*Since royal fern does not produce seed, their spores shall comprise 5% of the mixture

D. Pots and Live Stakes

1. "Pots" shall be individual size #3 specimens of the following species obtained from Island Park LLC or approved equal.

   a. American elm (*Ulmus* americana)
   b. Red maple (*Acer rubrum*)
   c. River birch (*Betula nigra*)
   d. Speckled alder (*Alnus rugosa*)

2. Potted trees shall be planted at a density of 1 per 64 square feet, alternating species such that equal numbers of each species are planted.

3. "Live stakes" material requirements:

   a. Live stakes shall be dormant and have a green cambium (sapwood) upon arrival to the job site.
   b. Live stakes shall be stored in a continuously cool, moist environment.
   c. In general, live stakes shall be approximately 3/8 inch to 1-1/2 inch in diameter and dormant.
   d. Live stakes shall consist of the following species and lengths:

      i. Spicebush (*Lindera* benzoin): 2-3 ft
      ii. Buttonbush (*Cephalanthus occidentalis*): 2 ft
      iii. Silky dogwood (*Cornus* amomum): 2-3 ft.

   e. Live stakes shall be planted in the wetland restoration area at a density of one stake per 16 square feet (*i.e.*, approximately 4-ft spacing).

E. Plantings

1. All plant materials shall comply with state and federal laws with respect to inspection for plant diseases and insect infestations.

2. Plants shall be in accordance with the current edition of the *American Standard for Nursery Stock* (ANSI Z60.1-2004) unless otherwise specified.

3. Woody plants shall be of high quality and symmetrical. They shall be healthy, well branched and densely foliated when in leaf.

4. Plants shall be free of disease and insects, eggs, or larvae, and have healthy, well-developed root systems such that the root ball does not fall apart upon plant removal from the pot or tray.

5. Plants shall be tagged true to species name and variety and not contain weeds.

6. For live stakes, each bundle shall be tagged

7. For trees and shrubs in individual pots, each pot or stem shall be tagged.

8. Plants shall arrive at the job site free from physical damage.

9. Each species shall be handled and packed in a manner approved for that plant. All precautions that are customary in good trade practice shall be taken such that plants arrive at the Site in good condition. Plants that arrive dried out, exposed to excessive heat, or that have been in storage for protracted periods of time, will not be accepted. If, upon inspection, the plants or root stocks display mold or decay, the material will not be accepted.

10. All woody seedlings shall have a heavy fibrous root system that has been developed by proper horticultural treatment, transplanting, and root pruning.

F. Mulch shall be stalks of oats, wheat, rye or other approved crops which are free from noxious weeds. Mulch may also be EcoBlanket® or a hydromulch with tackifier that is made out of bio-degradable material. Photodegradable blankets or plastic blankets cannot be used.

PART 3 EXECUTION

3.1. EXISTING WOODY PLANTS

A. The Contractor shall avoid impacts (*e.g.*, limb and bark damage, exposed roots) to those trees identified by the Engineer that will serve as seed sources for the wetland restoration area. Grading and vehicle movements shall be minimized within the drip line of the tree crown. Alternative trees may be selected by the Contractor on a one to one basis with approval from the Engineer.

3.2. INSTALLATION

A. Topsoil shall be placed in a layer not less than 6-inches thick in the area of the delineated wetland to be restored.

B. The Contractor shall verify that the exposed subgrade has a minimum clay content of 20%. If the clay content is less than 20%, the area shall be compacted to a minimum of 90% as determined with density tests designated in ASTM D698 Method D. Test results shall be provided to the Engineer.

C. Place topsoil within the wetland restoration area and rough grade to achieve an average depth of 6-inches. Topsoil depths may vary between a maximum depth of 10 inches and a minimum depth of 6 inches. The topsoil shall not be compacted or fine graded but shall be loose and non-uniform such that an irregular (*i.e.*, includes hummocks and hollows) surface results.

D. Soil staging activities shall be coordinated with the Owner prior to placement. Excess soil shall be disposed of on-site in an approved location or off-site. Silt fence shall be installed around the perimeter of the disposal area(s) until disposal activities are completed, and the area(s) is graded, seeded, and mulched.

E. Seeding shall be performed during two seasonal windows: mid-April to early June or the month of November. If site soils require seeding and stabilization at times outside of these dates, they shall be temporarily seeded and mulched using 30 pounds per acre of oats (*Avena sativa*).

F. Alternative species and/or seed mixes may be used with Engineer approval only.

G. Procedures for planting woody potted stock:

1. Potted trees and shrubs shall be planted from mid-April to late May, or from September through December.

2. The planting hole diameter shall be at least 1.5 times the diameter of the root ball and dug to a depth such that the root flare is even with the finished grade when the plant is placed in the hole.

3. If the planting hole is initially dug too deeply, soil shall be added back into the hole to attain the proper elevation.

4. Cut roots encircling the root ball with a sharp knife and install the plant as soon as possible once it has been removed from the pot.

5. Backfill the planting hole and firmly work soil into and around the root ball with care taken to fill in air spaces.

6. Tamp the backfill with foot pressure sufficient to prevent the root ball from shifting or leaning.

7. Leave the top of the root ball exposed in order to allow water to flow down into it.

8. Form earthen water-holding saucers (4 inches deep with a similar diameter as the planting hole) around each plant.

9. Water all plants immediately after planting. Apply water directly to the root ball and adjacent soil. Fill the water holding saucer with water.

10. Following installation, remove all tags, labels, strings, etc. from all plants.

H. Live stakes shall be planted when materials are dormant, after leaf drop in the fall and before bud break in the spring. Live stakes shall be installed by:

1. Cutting a pilot hole with a bar of approximately similar diameter as the live stake.

2. A minimum of 2" to 3" and two live buds of the live stake shall be exposed above the soil.

3. Equal numbers of each species shall be planted.

4. Live stakes shall be cut to a point on the basal end for insertion on the ground.

5. Use a dead blow hammer to drive stakes into the ground. The hammer head should be filled with shot or sand. A dibble, iron bar, or similar tool shall be used to make a pilot hole to prevent damaging the material during installation.

6. After placement, tamp soil around live stakes.

7. Any live stake that is damaged shall be left in place and supplemented with a replacement live stake adjacent to the original.

I. Nursery grown materials shall be stored under continuously cool, covered, and moist conditions prior to use.

J. Seed shall be applied to the wetland restoration area after placement of live stakes

K. Soak live branches for a minimum of 24 hours before planting. Soaking for 5-7 days is preferred.

L. Coarse woody debris (*i.e.*, individual logs, stumps) shall be placed randomly throughout the wetland restoration area. Debris shall consist of cleared site vegetation and shall be placed as ground cover over a minimum of 1% of wetland restoration area. Material to be used shall be a minimum of 6-inch diameter breast height (dbh) throughout, obtained from materials cleared as part of on-site construction activities. Place stockpiled debris as directed prior to planting.

M. 100 grams of slow-release 10-10-10 fertilizer shall be placed in each planting hole prior to placing woody potted stock.

N. When the topsoil surface has been graded, the seed mixture shall be uniformly applied by a method approved by the Engineer.

1. Tracking shall be performed over seeded areas using the tracks of a bulldozer (or equivalent), running perpendicular to the slope gradient where present. In areas receiving trees or shrubs, soil tracking shall occur before tree installation and seed broadcasting.

2. Seeding and mulching shall not be done during windy weather.

O. The mulch shall be hand or machine spread over restored areas to form a continuous blanket over the seed bed:

1. If straw mulch or similar is used, approximately 1 to 1.5 inches uniform thickness at loose measurement shall be applied. Excessive amounts or bunching of mulch will not be permitted.

2. If EcoBlanket® or hydromulch are used, these mulches shall be installed at a rate recommended by the manufacturer.

3. Unless otherwise specified, mulch shall be left in place and allowed to disintegrate.

P. Watering of herbaceous species (*i.e.,* seed) shall occur from July to September of the planting year if soils are not moist and if plants are showing signs of moisture stress. Watering shall be in such a manner as to prevent washing out of seed or exposing plant roots. Sufficient water shall be applied to each plant to maintain plant health and vigor.

Q. Watering of woody species (live stakes and potted plants) shall occur if one inch of rain is not received during any seven-day window from June 1 through August 31 in the year of installation. Watering events may be avoided if the woody plants are not showing moisture stress and with written approval from the Engineer. Watering shall occur in the first July to September following planting (i.e., woody plants installed in the fall shall be watered the following year). Sufficient water shall be applied to each plant to maintain plant health and vigor.

R. Hydroseeding may be accepted as an alternative method of applying fertilizer, seed and mulch. The Contractor shall submit all data regarding materials and application rates to the Engineer for review.

3.3. MONITORING AND MAINTENANCE

A. The Contractor shall warranty the plantings (potted stock, live stakes) and seed for a period of one year or until the end of the next growing season, whichever is later. The Contractor shall replace deceased planted stock or reseed areas based on the following criteria or conditions stipulated in permits by the USACE and NYSDEC:

1. Minimum 80% survival of planted stock.

2. Minimum 80% ground coverage of seeded areas.

B. Replacements shall be of the same size originally planted and subject to the first year maintenance efforts prescribed herein.

C. Alternative species and/or seed mixes may be used during replacement with Engineer approval only.

* * * * *

Slope Stability Analysis

Appendix C – Slope Stability Analysis

Final (100%) Remedial Design Report
DuPont-Stauffer Landfill Site
Newburgh, New York

C.1. General

As part of the remedy for Site 3-36-009, a low-permeability cap with geomembrane will be constructed in the North Landfill Area.

For the cap, a minimum slope of 4 percent is necessary to promote drainage while 6NYCRR Part 360-7.4 (8) requires that side slopes not be steeper than 1 vertical to 3 horizontal (1:3) to minimize erosion of the final cap. The Naval Facilities Engineering Command Design Manual 7.1 "Soil Mechanics" recommends the factor of safety against slope failure be at least 1.5.

C.2. North Landfill Area cap slope stability

O'Brien & Gere completed slope stability calculations using the computer program Slope/W by Geo-Slope International, LTD applying the Bishop, Ordinary, and Janbu methods. The design inputs for the program included the following:

- Slope of soil surface
- Material types and thickness
- Piezometric surface

The cap was modeled according to a section cut from the grading plan. The cross-section including the cap was modeled with five soil layers. The layers from the ground surface down consist of the following:

- Vegetation rooting layer (Cap topsoil)
- Barrier protection material layer (Cap loamy sand)
- On-site fill material (waste)
- Native soil layer (silty fine sand)
- Limestone Bedrock

The vegetation rooting layer soil will be placed to a depth of 6 inches above the 24-inch thick soil barrier protection layer. The combined 30 inches of soil will serve to protect the geomembrane from external forces such as root penetration. The on-site fill material layer will be installed below the geomembrane to achieve the grades of the proposed cap.

The typical properties of the soil types were selected based on their USCS group symbol taken from Table 1 on page 7.2-39 in Naval Facilities Engineering Command Design Manual 7.02. This table is included in this appendix for reference. The Cap topsoil layer was modeled with a maximum dry unit weight γ = 90 lbs/ft^3, an angle of internal friction ϕ = 28 °, and cohesion C = 10 lbs/ft^2. The Cap Loamy sand material was modeled with a maximum dry unit weight γ = 100 lbs/ft^3, an angle of internal friction ϕ = 32 °, and cohesion C = 0 lbs/ft^2. The on-site fill material was modeled with a maximum dry unit weight γ = 110 lbs/ft^3, an angle of internal friction ϕ = 25 °, and cohesion C = 0 lbs/ft^2. The native silty fine sand material was modeled with a maximum dry unit weight of 95 lbs/ft^3, an angle of internal friction $\phi = 32°$, and cohesion $C = 0$ lbs/ft^2.

No water levels were recorded on the boring logs or test pit logs, therefore it was assumed that the piezometric surface would occur below the native sand layer. This surface was not modeled in the Slope/W analysis.

Results of the slope stability analysis indicate that a factor of safety of 6.9 against failure was obtained for the input parameters. The minimum value recommended by Naval Facilities Engineering Command Design Manual 7.1 “Soil Mechanics” is 1.5. The failure predicted by the model was global in nature.

Based on the factor of safety calculated and the failure type predicted by the slope stability analysis, the cap would have an adequate factor of safety (>1.5) against failure.

Naval Facilities Engineering Command
200 Stovall Street
Alexandria, Virginia 22332-2300

APPROVED FOR PUBLIC RELEASE

Foundations & Earth Structures

DESIGN MANUAL 7.02
VALIDATED BY CHANGE

TABLE 1

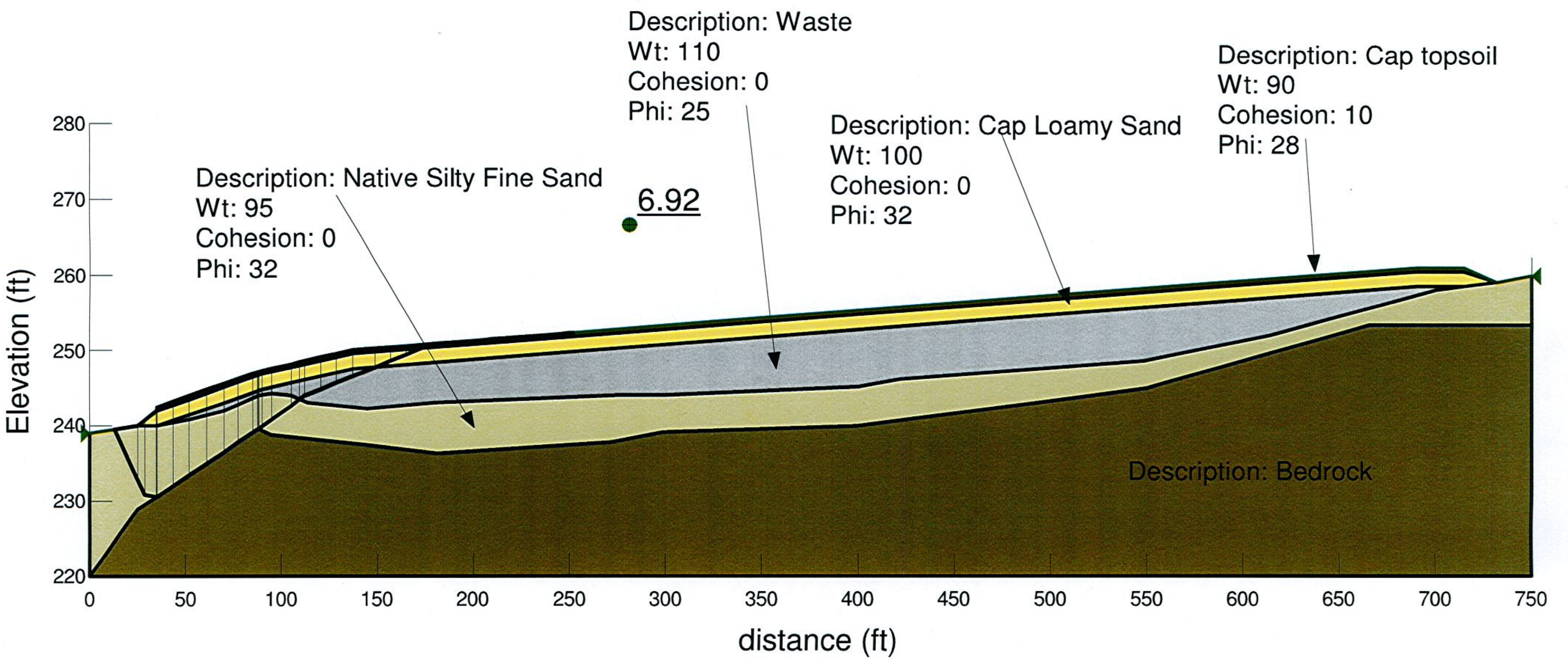
Typical Properties of Compacted Soils

Group Symbol	Soil Type	Range of Maximum Dry Unit Weight, pcf	Range of Optimum Moisture, Percent	Typical Value of Compression: At 1.4 tsf (20 psi) — Percent of Original Height	Typical Value of Compression: At 3.6 tsf (50 psi) — Percent of Original Height	Typical Strength Characteristics: Cohesion (as compacted) psf	Typical Strength Characteristics: Cohesion (saturated) psf	Typical Strength Characteristics: ϕ (Effective Stress Envelope Degrees)	Typical Strength Characteristics: Tan ϕ	Typical Coefficient of Permeability ft./min.	Range of CBR Values	Range of Subgrade Modulus k lbs/cu in.
GW	Well graded clean gravels, gravel-sand mixtures.	125 - 135	11 - 8	0.3	0.6	0	0	>38	>0.79	5×10^{-2}	40 - 80	300 - 500
GP	Poorly graded clean gravels, gravel-sand mix	115 - 125	14 - 11	0.4	0.9	0	0	>37	>0.74	10^{-1}	30 - 60	250 - 400
GM	Silty gravels, poorly graded gravel-sand-silt.	120 - 135	12 - 8	0.5	1.1	.....	.....	>34	>0.67	$>10^{-6}$	20 - 60	100 - 400
GC	Clayey gravels, poorly graded gravel-sand-clay.	115 - 130	14 - 9	0.7	1.6	.....	.....	>31	>0.60	$>10^{-7}$	20 - 40	100 - 300
SW	Well graded clean sands, gravelly sands.	110 - 130	16 - 9	0.6	1.2	0	0	38	0.79	$>10^{-3}$	20 - 40	200 - 300
SP	Poorly graded clean sands, sand-gravel mix.	100 - 120	21 - 12	0.8	1.4	0	0	37	0.74	$>10^{-3}$	10 - 40	200 - 300
SM	Silty sands, poorly graded sand-silt mix.	110 - 125	16 - 11	0.8	1.6	1050	420	34	0.67	$5 \times >10^{-5}$	10 - 40	100 - 300
SM-SC	Sand-silt clay mix with slightly plastic fines.	110 - 130	15 - 11	0.8	1.4	1050	300	33	0.66	$2 \times >10^{-6}$	5 - 30	100 - 300
SC	Clayey sands, poorly graded sand-clay-mix.	105 - 125	19 - 11	1.1	2.2	1550	230	31	0.60	$5 \times >10^{-7}$	5 - 20	100 - 300
ML	Inorganic silts and clayey silts.	95 - 120	24 - 12	0.9	1.7	1400	190	32	0.62	$>10^{-5}$	15 or less	100 - 200
ML-CL	Mixture of inorganic silt and clay.	100 - 120	22 - 12	1.0	2.2	1350	460	32	0.62	$5 \times >10^{-7}$	.....	
CL	Inorganic clays of low to medium plasticity.	95 - 120	24 - 12	1.3	2.5	1800	270	28	0.54	$>10^{-7}$	15 or less	50 - 200
OL	Organic silts and silt-clays, low plasticity.	80 - 100	33 - 21	.....	.....	.....	.....	.....	.....	.....	5 or less	50 - 100
MH	Inorganic clayey silts, elastic silts.	70 - 95	40 - 24	2.0	3.8	1500	420	25	0.47	$5 \times >10^{-7}$	10 or less	50 - 100
CH	Inorganic clays of high plasticity	75 - 105	36 - 19	2.6	3.9	2150	230	19	0.35	$>10^{-7}$	15 or less	50 - 150
OH	Organic clays and silty clays	65 - 100	45 - 21	.....	.....	.....	.....	.....	.....	.....	5 or less	25 - 100

Notes:

1. All properties are for condition of "Standard Proctor" maximum density, except values of k and CBR which are for "modified Proctor" maximum density.
2. Typical stength characteristics are for effective strength envelopes and are obtained from USBR data.
3. Compression values are for vertical loading with complete lateral confinement.
4. (>) indicates that typical property is greater than the value shown.
   (..) indicates insufficient data available for an estimate.

Dupont Landfill
Cover Slope Stability
11/14/11



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Soil Erosion Factors

Soil Physical Properties

Soil Qualities and Features

AASHTO Group Classification (Surface)

Depth to a Selected Soil Restrictive Layer

Depth to Any Soil Restrictive Layer

Drainage Class

Frost Action

Frost-Free Days

Hydrologic Soil Group

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff

Tie-break Rule: ○ Lower ◉ Higher

View Description | View Rating

Map Unit Name

Parent Material Name

Representative Slope

Unified Soil Classification (Surface)

Water Features

Map — Hydrologic Soil Group

Scale (not to scale)

⚠ *Warning: Soil Ratings Map may not be valid at this scale.*

Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — Orange County, New York (NY071)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ab	Alden silt loam	D	9.7	7.4%
ErB	Erie gravelly silt loam, 3 to 8 percent slopes	C	10.0	7.6%
ESB	Erie extremely stony soils, gently sloping	C	8.1	6.2%
FAC	Farmington silt loam, sloping	C	5.4	4.1%
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	C	23.0	17.5%
MdC	Mardin gravelly silt loam, 8 to 15 percent slopes	C	0.1	0.1%
PtB	Pittsfield gravelly loam, 3 to 8 percent slopes	B	0.0	0.0%
PtC	Pittsfield gravelly loam, 8 to 15 percent slopes	B	1.0	0.7%
SXC	Swartswood and Mardin very stony soils, sloping	C	11.3	8.6%
UH	Udorthents, smoothed	A/D	47.1	35.8%
Ur	Urban land		4.7	3.5%
Wd	Wayland silt loam	C/D	11.2	8.5%
Totals for Area of Interest			**131.5**	**100.0%**

Description — Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options — Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Sliding Stability Analysis

Appendix D – Sliding Stability Analysis

Final (100%) Remedial Design Report
DuPont-Stauffer Landfill Site
Newburgh, New York

D.1. General

As part of the remedy for Site 3-36-009, a low-permeability cap with geomembrane will be constructed in the North Landfill Area.

D.2. North Landfill Area cap sliding stability

O'Brien & Gere conducted a sliding stability analysis using a cover soil slope stability design calculator from www.landfilldesign.com. The analysis method is referenced by R. M. Koerner, and T-Y. Soong, 1998. "Analysis and Design of Veneer Cover Soils". Proceedings of 6th International Conference on Geosynthetics, Vol. 1, pp. 1-23, Atlanta, Georgia, USA.

The design inputs for the program included the following:

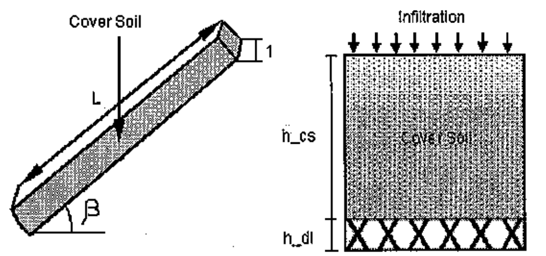
- length of slope = 15.24 m (50 ft)
- slope angle = 4.76° (1 ft vertical to 12 ft horizontal)
- height of cover soil = 152.4 mm (6 inch)
- height of drainage layer = 609.6 mm (24 inch)
- permeability of cover soil = 0.0002 cm/s
- design permeability of drainage layer = 0.0017 cm/s
- precipitation = 165.1 mm/hr (6.5 in/hr)
- run-off coefficient = 0.1
- dry unit weight of cover soil = 14.14 kN/m^3 (90 lb/ft^3)
- saturated unit weight of the cover soil = 19.86 kN/m^3 (125 lb/ft^3)
- friction angle of the cover soil = 28°
- friction angle of the cover soil / underlying interface = 22°

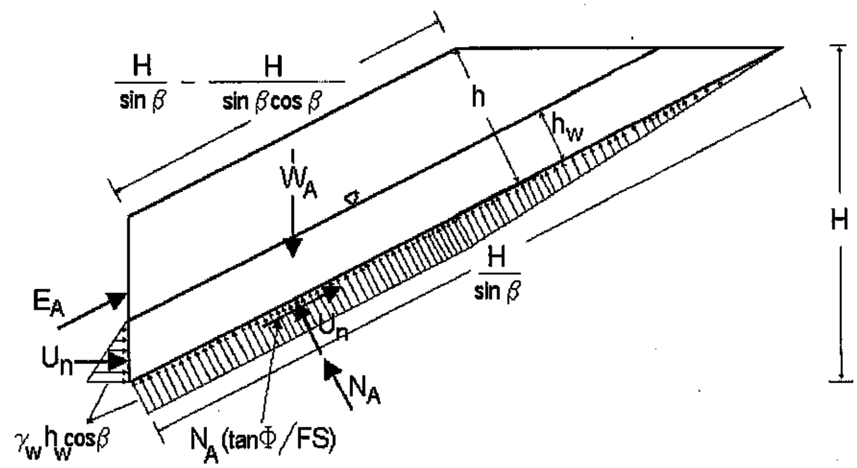
The physical properties of the cap were modeled consistent with the overall slope stability analysis presented in Appendix C based on the assumed soil types. The run-off coefficient and drainage layer information are typical values used in the program and were not changed as they are representative of the materials to be used in the design.

A calculated factor of safety of 6.4 was obtained for the proposed slope of 12%, which is better than the 2.0 minimum value recommended by "Geosynthetic Design Guidance for Hazardous Waste Landfill Cells and Surface Impoundments" by Gregory N. Richardson and Robert M. Koerner.

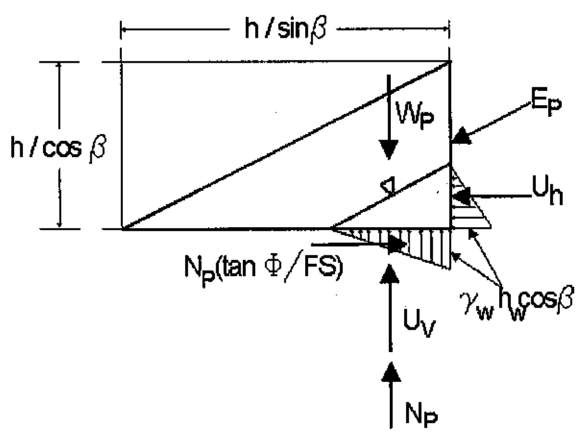
landfilldesign.com
Design Calculator
Cover Slope Stability

Problem Statement





Active Wedge



Passive Wedge

Input Values

Design Input

Slope characteristics

Length of the slope (L)	15.24	m
Slope angle (ß)	4.76	degrees
Height of soil layers		
Height of cover soil (h_cs)	152.4	mm
Height of drainage layer (h_dl)	609.6	mm
Permeability of the soil layers		
Permeability of cover soil	0.0002	cm/s
Design permeability of drainage layer	.0017	cm/s
Rain intensity parameters		
Precipitation	165.1	mm/hr
Run-off coefficient	.1	
Soil characteristics		
Dry unit weight of cover soil	14.14	kN/m^3
Saturated unit weight of the cover soil	19.86	kN/m^3
Friction angles		
Friction angle of the cover soil	28	degrees
Friction angle of the cover soil / underlying interface	22	degrees

Calculate

Solution

I. Normalized Input data	
Gradient	0.083
Horizontal length	15.187 m
Height cover soil and drainage layer	0.762 m
Permeability of cover soil in m/s	2.00E-006 m/s
Design permeability of the drainage layer in m/s	1.70E-005 m/s
II. Calculation of the Drainage Capacity	
Precipitation from input	165.10 mm/hr
Actual runoff	157.90 mm/hr
Actual percolation	7.20 mm/hr
Actual flux	0.109 m^3/hr
Allowable flux	0.003 m^3/hr
Drainage Layer Capacity (DLC) (needs to be >1.0 to avoid saturation)	0.028
III. Parallel Submergence Ratio (PSR)	
Average height water table	1.78E+002 m
Parallel Submergence Ratio (PSR)	0.00
Stability Factor of Safety (FS)	6.435

Assistance

References

R. M. Koerner, and T-Y. Soong, 1998. "Analysis and Design of Veneer Cover Soils". Proceedings of 6th International Conference on Geosynthetics, Vol. 1, pp. 1-23, Atlanta, Georgia, USA.

Soil Loss Analysis

Appendix E – Soil Loss Analysis

Final (100%) Remedial Design Report
DuPont-Stauffer Landfill Site
Newburgh, New York

E.1. General

A soil loss analysis was performed for the Site, following final grading, looking at two conditions: good grass and bare soil (worst case scenario). The revised universal soil loss equation and the publication of the New York Standards and Specifications for Erosion and Sediment Control by Frederick B Gaffney and Donald W Lake, Jr. (August 2005) were utilized. Tables A.2-A.8 are included in the appendix as a reference. The publication was referenced to estimate the following variables to be used in the equation:

<u>Good Grass</u>

- R, rainfall factor = 133
- K, soil erodibility factor = 0.28
- LS, topographic factor = 0.0673 (Based on slope of 8.3% and a horizontal slope length of 45')
  = 0.312 (Based on slope of 2.3% and a horizontal slope length of 95')
- C, cover management factor = 0.11 (75-90% grass cover)
- P, support practice factor =1

<u>Worst Case Scenario: Bare soil</u>

- R, rainfall factor = 133
- K, soil erodibility factor = 0.28
- LS, topographic factor = 0.0673 (Based on slope of 8.3% and a horizontal slope length of 45')
  = 0.312 (Based on slope of 2.3% and a horizontal slope length of 95')
- C, cover management factor = 0.79 (Seeding on topsoil, without mulch, 0-10% grass cover)
- P, support practice factor =1.25

Good grass conditions were modeled as they are representative of post-construction conditions. Pre-construction conditions were not modeled, as it will be the responsibility of the Contractor to minimize soil loss as part of their erosion and sediment control plan.

The results of the soil loss equation (good grass condition) indicate that 1.28 tons/acre/year of soil loss might occur as a result of erosion for a 2.3% slope, and 2.76 tons/acre/year of soil loss might occur for an 8.3% slope. Both slope values are within the generally accepted range of 2 to 5 tons/acre/year range for soil loss in the United States.

The results for the soil loss equation (bare soil condition) indicate that 11.47 tons/acre/year of soil loss might occur as a result of erosion for a 2.3% slope, and 24.75 tons/acre/year of soil loss might occur for an 8.3% slope.

O'BRIEN & GERE

SUBJECT:	PAGE:	BY:	DATE:	JOB NUMBER:
Newburgh- Soil loss Equation	1/1	JEG	11/10/11	39860

Data taken from: "New York Standards and Specifications For Erosion and Sediment Control." August 2005. NYSDEC

Good Grass conditions

A= R · K · LS · C · P

R ≈ 133 for Newburgh, NY (Orange County)
K = 0.28 (value for medium silty loam)
LS = 0.673 for 44.48 ft] Interpolated
0.312 for 94.97 ft]
C = 0.11 (assuming 75-90% grass cover)
P = 1

For 8.3% slope and slope length 45 ft
A = (133)(0.28)(0.673)(0.11)(1)
A = 2.76 tons/acre/yr

For 2.3% slope and slope length 95 ft
A = (133)(0.28)(0.312)(0.11)(1)
A = 1.28 tons/acre/yr

O'BRIEN & GERE

SUBJECT:	PAGE:	BY:	DATE:	JOB NUMBER:
Newburgh - soil loss Equation	1/1	JEG	11/10/11	39860

Data taken from: "New York Standards and Specifications For Erosion and Sediment Control." Aug 2005. NYSDEC

Bare soil

$A = R \cdot K \cdot LS \cdot C \cdot P$

$R \approx 133$ for Newburgh, NY (Orange County)

$K = 0.28$ (value for medium silty loam)

$LS = 0.673$ for 50ft] Interpolated
0.312 for 200ft

$C = 0.79$ Seeding on topsoil, without mulch, 0-10% grass cover

$P = 1.25$

For 83% slope and slope length 45ft

$A = (133)(0.28)(0.673)(0.79)(1.25)$

$A = 24.75$ tons/acre/yr

For 2.3% slope and slope length 95ft

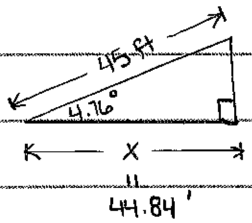
$A = (133)(0.28)(0.312)(0.79)(1.25)$

$A = 11.47$ tons/acre/yr

O'BRIEN & GERE

SUBJECT:	PAGE:	BY:	DATE:	JOB NUMBER:
RUSLE calcs	1/2	JEG	11/14/11	39860

1:12 → 8.3%

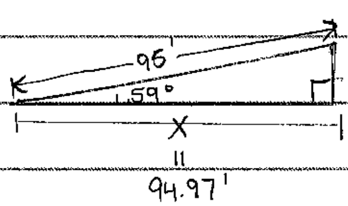


Interpolate (Table A.2)

	50	25
8.0	0.70	0.45
8.3	x = 0.7315	y = 0.468
10.0	0.91	0.57

25	0.468
44.48	$z = \boxed{0.673}$
50	0.7315

1:36 → 2.3%



O'BRIEN & GERE

SUBJECT:	PAGE:	BY:	DATE:	JOB NUMBER:
RUSLE calcs	2/2	JEG	11/14/11	39860

Interpolate (Table A.2)

	75	100
2.0	0.25	0.28
2.3	x = 0.283	y = 0.319
3.0	0.36	0.41

75	0.283
94.97	z = $\boxed{0.312}$
100	0.319

Table A.2 (USDA - NRCS)
Values for Topographic Factor, LS, for High Ratio of Rill to Interrill Erosion[1]

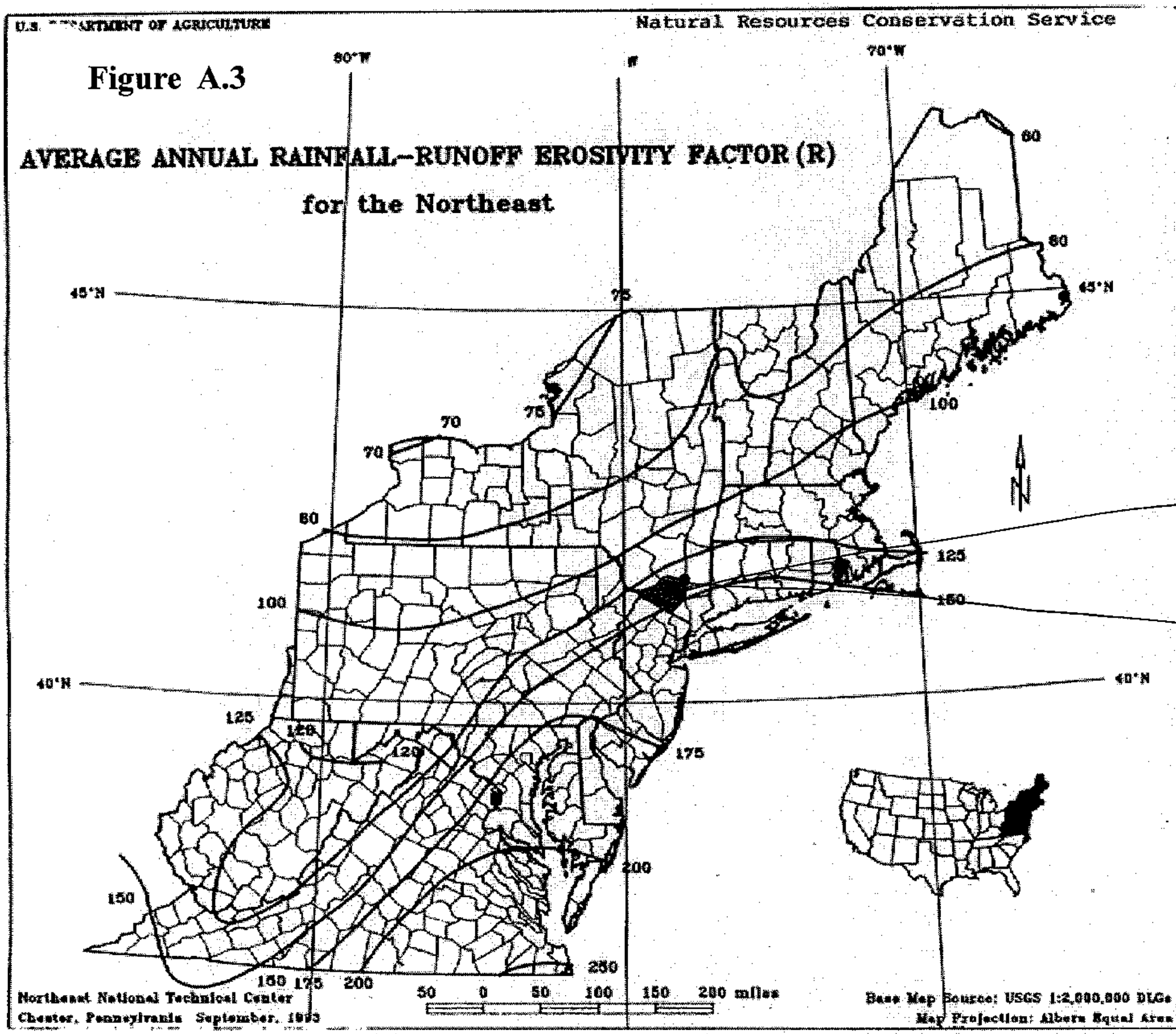
44.48

94.97

Values for topographic factor, LS, for high ratio of rill to interrill erosion.[1]

Slope (%)	Horizontal slope length (ft) <3	6	9	12	15	25	50	75	100	150	200	250	300	400	600	800	1000
0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06
0.5	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.09	0.09	0.10	0.10	0.10	0.11	0.12	0.12	0.13
1.0	0.09	0.09	0.09	0.09	0.09	0.10	0.13	0.14	0.15	0.17	0.18	0.19	0.20	0.22	0.24	0.26	0.27
2.0	0.13	0.13	0.13	0.13	0.13	0.16	0.21	0.25	0.28	0.33	0.37	0.40	0.43	0.48	0.56	0.63	0.69
2.3								0.283 ≈	0.319								
3.0	0.17	0.17	0.17	0.17	0.17	0.21	0.30	0.36	0.41	0.50	0.57	0.64	0.69	0.80	0.96	1.10	1.23
4.0	0.20	0.20	0.20	0.20	0.20	0.28	0.38	0.47	0.55	0.66	0.79	0.89	0.98	1.14	1.42	1.65	1.86
5.0	0.23	0.23	0.23	0.23	0.23	0.31	0.46	0.58	0.68	0.86	1.02	1.16	1.28	1.51	1.91	2.25	2.55
6.0	0.26	0.26	0.26	0.26	0.26	0.36	0.54	0.69	0.82	1.05	1.25	1.43	1.60	1.90	2.43	2.89	3.30
8.0	0.32	0.32	0.32	0.32	0.32	0.45	0.70	0.91	1.10	1.43	1.72	1.99	2.24	2.70	3.52	4.24	4.91
8.3						0.468 ≈	0.7315										
10.0	0.35	0.37	0.38	0.39	0.40	0.57	0.91	1.20	1.46	1.92	2.34	2.72	3.09	3.75	4.95	6.03	7.02
12.0	0.36	0.41	0.45	0.47	0.49	0.71	1.15	1.54	1.88	2.51	3.07	3.60	4.09	5.01	6.67	8.17	9.57
14.0	0.38	0.45	0.51	0.55	0.58	0.85	1.40	1.87	2.31	3.09	3.81	4.46	5.11	6.30	8.45	10.40	12.23
16.0	0.39	0.49	0.56	0.62	0.67	0.98	1.64	2.21	2.73	3.66	4.56	5.37	6.15	7.60	10.26	12.69	14.96
20.0	0.41	0.56	0.67	0.78	0.84	1.24	2.10	2.86	3.57	4.85	6.04	7.16	8.23	10.24	13.94	17.35	20.57
25.0	0.45	0.64	0.80	0.93	1.04	1.56	2.67	3.67	4.59	6.30	7.88	9.36	10.81	13.53	18.57	23.24	27.66
30.0	0.48	0.72	0.91	1.06	1.24	1.86	3.22	4.44	5.58	7.70	9.67	11.55	13.35	16.77	23.14	29.07	34.71
40.0	0.53	0.85	1.13	1.37	1.59	2.41	4.24	5.89	7.44	10.35	13.07	15.67	18.17	22.95	31.89	40.29	48.29
50.0	0.58	0.97	1.31	1.62	1.91	2.91	5.16	7.20	9.13	12.75	16.16	19.42	22.57	28.60	39.95	50.63	60.84
60.0	0.63	1.07	1.47	1.84	2.19	3.36	5.97	8.37	10.63	14.89	18.92	22.76	26.51	33.67	47.18	59.93	72.15

[1]Such as for freshly prepared construction and other highly disturbed soil conditions with little or no cover (not applicable to thawing soil)



ORANGE COUNTY

Newburgh
R ≈ 133

Table A.5
Construction Site Mulching C Factors
(Data from Wischmeier and Smith 1978, Pitt 2004)

Type of Mulch	Mulch Rate (tons per acre)	Land Slope (%)	Mulching C Factor	Length Limit (ft)[1]
None	0	all	1.0	n/a
Straw or hay, tied down by anchoring and tacking equipment	1.0	1-5	0.20	200
	1.0	6-10	0.20	100
	1.5	1-5	0.12	300
	1.5	6-10	0.12	150
	2.0	1-5	0.06	400
	2.0	6-10	0.06	200
	2.0	11-15	0.07	150
	2.0	16-20	0.11	100
	2.0	21-25	0.14	75
	2.0	26-33	0.17	50
	2.0	34-50	0.20	35
Wood Chips	7	<16	0.08	75
	7	16-20	0.08	50
	12	<16	0.05	150
	12	16-20	0.05	100
	12	21-33	0.05	75
	25	<16	0.02	200
	25	16-20	0.02	150
	25	21-33	0.02	100
	25	34-50	0.02	75

[1] Maximum slope lengths for which the specified mulch rate is considered effective. If these limits are exceeded, either a higher application rate or mechanical shortening of the effective slope length is required (such as with terracing).

Table A.6
Cover Factor C Values for Different Growth Periods for Planted Cover Crops for Erosion Control at Construction Sites
(Data from Wischmeier and Smith 1978, Pitt 2004)

	SB (seedbed preparation)	**Period 1** (establishment)	**Period 2** (development)	**Period 3a** (maturing crop)	**Period 3b** (maturing crop)	**Period 3c** (maturing crop)
Crop Canopy[1]	0-10%	10-50%	50-75%	75-80%	75-90%	75-96%
Seeding on topsoil, without mulch	0.79	0.62	0.42	0.17	0.11	0.06
Seeding on a desurfaced area, where residual effects of prior vegetation are no longer significant	1.0	0.75	0.50	0.17	0.11	0.06
Sod	0.01	0.01	0.01	0.01	0.01	0.01

[1] Percent canopy cover is the percentage of the land surface that would not be hit by directly falling rain drops because the drops would be intercepted by the plant. It is the portion of the soil surface that would be covered by shadows if the sun were directly overhead.

Table A.7
Cover Factor C Values for Established Plants
(data from NRCS NEH Chapter 3 and Wischmeier and Smith 1978)

			Percentage of surface covered by residue in contact with the soil					
	Percent Cover[1]	Plant Type	0%	20	40	60	80	95+
C factor for grass, grasslike plants, or decaying compacted plant litter	0	Grass	0.45	0.20	0.10	0.042	0.013	0.0003
C factor for broadleaf herbaceous plants (including most weeds with little lateral root networks), or un-decayed residues	0	Weeds	0.45	0.24	0.15	0.091	0.043	0.011
Tall weeds or short brush with average drop height[2] of =20 inches	25	Grass	0.36	0.17	0.09	0.038	0.013	0.003
		Weeds	0.36	0.20	0.13	0.083	0.041	0.011
	50	Grass	0.26	0.13	0.07	0.035	0.012	0.003
		Weeds	0.26	0.16	0.11	0.076	0.039	0.011
	75	Grass	0.17	0.12	0.09	0.068	0.038	0.011
		Weeds	0.17	0.12	0.09	0.068	0.038	0.011
Mechanically prepared sites, with no live vegetation and no topsoil, and no litter mixed in.	0	None	0.94	0.44	0.30	0.20	0.10	Not given

[1] Percent cover is the portion of the total area surface that would be hidden from view by canopy if looking straight downward.
[2] Drop height is the average fall height of water drops falling from the canopy to the ground.

Table A.8 (USDA-NRCS)
Construction Site P Practice Factors

Surface Condition		P Factor
Bare Soil Loose		1.0
Freshly disked or rough irregular surface		0.9
Compact smooth by equipment up and down hill		1.3
Compact smooth by equipment across slope		1.2
Contoured Furrows:		
Slope (%)	**Maximum Downslope Length (ft)**	**P Factor**
1-2	350	0.6
3-5	250	0.5
6-8	200	0.5
9-12	125	0.6
13-16	75	0.7
17-20	60	0.8
>20	50	0.8

Source: USDA-NRCS; HDI, 1987; Wischmeier and Smith, 1978

HELP Model Analysis

Appendix F – HELP Model Analysis

Final (100%) Remedial Design Report
DuPont-Stauffer Landfill Site
Newburgh, New York

F.1. General

A hydrologic evaluation analysis was performed for the low-permeability cap system using the computer program HELP by Environmental Laboratory USAE Waterways Experiment Station. The HELP model was used to predict the amount of water that may percolate through the geomembrane cap.

The HELP Model analysis incorporates precipitation, temperature, solar radiation, and evapotranspiration data for the site based on historical data for Newburgh, New York. Soil and cap data for the site is also required by the HELP Model. The soil and cap information required by the HELP Model and the data used are presented in the following table:

Parameter	**Geomembrane Cap**
Landfill Area	5.81 acre
Percent of area where runoff is possible	100%
Layer type - Topsoil - Barrier Protection Material - Flexible Membrane - Backfill	 - Vertical percolation layer - Vertical percolation layer - Flexible membrane liner - Vertical percolation layer
Layer thickness - Topsoil - Barrier Protection Material - Flexible Membrane - Backfill	 - 6 inches - 24 inches - 0.04 inches - 48 inches
Soil texture no. - Topsoil - Barrier Protection Material - Flexible Membrane - Backfill	 - SiL soil type - LS soil type - LLDPE geomembrane - Comp. Mun. Incinerator Fly Ash
Slope of cap	2.3%-8.3%
Slope length	240-261 ft
Vegetation cover	Bare soil – Good grass

The geomembrane cap was modeled as being a 40 mil LLDPE geomembrane installed between the Barrier Protection Material and backfill. The backfill material was assumed to be relocated on-site soils used to establish grades.

The results of the HELP Model indicate that the peak rate of percolation through the geomembrane cap will be approximately 1.0 gpd/acre. These values represent each parcel with either bare soil or good grass conditions.

For a comparative base, the Site was also modeled with good grass coverage but no cap to assess pre-construction conditions. The results of the HELP Model for the baseline condition indicate that the peak rate of percolation at present is approximately 889 gpd/acre.

Based on these results, construction of the low-permeability cap system will reduce percolation of precipitation into the waste by approximately 61%.

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WARNING:  TEMPERATURE FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR     1


WARNING:  SOLAR RADIATION FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR     1

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**                                                                           **
**                                                                           **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                 **
**                 DEVELOPED BY ENVIRONMENTAL LABORATORY                     **
**                   USAE WATERWAYS EXPERIMENT STATION                       **
**             FOR USEPA RISK REDUCTION ENGINEERING LABORATORY               **
**                                                                           **
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PRECIPITATION DATA FILE:     C:\HELP5\1CAP4.D4
TEMPERATURE DATA FILE:       C:\HELP5\1CAP7.D7
SOLAR RADIATION DATA FILE:   C:\HELP5\1CAP13.D13
EVAPOTRANSPIRATION DATA:     C:\HELP5\1CAP11.D11
SOIL AND DESIGN DATA FILE:   C:\HELP5\1CAP10.D10
OUTPUT DATA FILE:            C:\HELP5\RCRA.OUT


TIME:  14:27      DATE:  11/18/2011


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     TITLE:  Newburgh Existing Conditions

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     NOTE:  INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
              COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.


                                  LAYER  1
                                  --------

                       TYPE 1 - VERTICAL PERCOLATION LAYER
                           MATERIAL TEXTURE NUMBER   4
          THICKNESS                    =     36.00   INCHES
          POROSITY                     =      0.4370 VOL/VOL
          FIELD CAPACITY               =      0.1050 VOL/VOL
          WILTING POINT                =      0.0470 VOL/VOL
          INITIAL SOIL WATER CONTENT   =      0.1787 VOL/VOL
          EFFECTIVE SAT. HYD. COND.    =  0.170000002000E-02 CM/SEC
        NOTE:  SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY  4.63
                 FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.
```

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 4 WITH A FAIR STAND OF GRASS, A SURFACE SLOPE OF 3.% AND A SLOPE LENGTH OF 640. FEET.

SCS RUNOFF CURVE NUMBER	=	56.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	5.540	ACRES
EVAPORATIVE ZONE DEPTH	=	20.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	3.098	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	8.740	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	0.940	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	6.434	INCHES
TOTAL INITIAL WATER	=	6.434	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM NEW YORK NEW YORK

STATION LATITUDE	=	40.47	DEGREES
MAXIMUM LEAF AREA INDEX	=	3.50	
START OF GROWING SEASON (JULIAN DATE)	=	108	
END OF GROWING SEASON (JULIAN DATE)	=	302	
EVAPORATIVE ZONE DEPTH	=	20.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	12.20	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	68.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	68.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR NEW YORK NEW YORK

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
3.11	3.08	4.10	3.76	3.46	3.15
3.67	4.32	3.48	3.24	3.77	3.68

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR NEW YORK NEW YORK

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
31.80	33.30	41.00	51.90	61.70	71.00
76.40	75.30	68.20	57.50	47.10	36.20

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR NEW YORK NEW YORK
AND STATION LATITUDE = 40.47 DEGREES

WARNING: TEMPERATURE FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

WARNING: SOLAR RADIATION FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

****

MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.67	3.21	3.30	1.37	2.68	4.02
	3.13	2.73	5.09	0.96	6.18	4.28
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	1.382	1.635	2.660	1.963	3.300	4.382
	3.113	2.670	3.059	1.354	1.743	1.244
PERCOLATION/LEAKAGE THROUGH	0.8744	0.2653	1.8075	0.4334	0.1692	0.2318
LAYER 1	0.1596	0.1119	0.0916	0.0378	1.9357	4.0040

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.62	776655.750	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	28.504	573218.062	73.81
PERC./LEAKAGE THROUGH LAYER 1	10.121995	203555.344	26.21
CHANGE IN WATER STORAGE	-0.006	-117.392	-0.02

SOIL WATER AT START OF YEAR	6.434	129388.680	
SOIL WATER AT END OF YEAR	6.428	129271.289	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.307	0.00

****

WARNING: TEMPERATURE FOR YEAR 1975 USED WITH PRECIPITATION FOR YEAR 2

WARNING: SOLAR RADIATION FOR YEAR 1975 USED WITH PRECIPITATION FOR YEAR 2

****

MONTHLY TOTALS (IN INCHES) FOR YEAR 2

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	2.57	6.16	3.31	7.82	5.55	3.29
	0.69	5.18	1.37	1.88	3.76	6.97
RUNOFF	0.022	3.533	1.291	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.860	0.739	1.500	3.267	4.799	4.130
	0.444	2.822	2.422	1.396	1.314	0.967
PERCOLATION/LEAKAGE THROUGH	0.9023	0.2357	3.2635	3.1392	2.9199	0.8157
LAYER 1	0.2589	0.2383	0.7599	0.2689	0.1050	4.9165

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	48.55	976350.125	100.00
RUNOFF	4.846	97462.562	9.98
EVAPOTRANSPIRATION	24.660	495913.437	50.79
PERC./LEAKAGE THROUGH LAYER 1	17.823740	358438.969	36.71
CHANGE IN WATER STORAGE	1.220	24534.865	2.51

SOIL WATER AT START OF YEAR	6.428	129271.289	
SOIL WATER AT END OF YEAR	7.627	153371.328	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.022	434.823	0.04
ANNUAL WATER BUDGET BALANCE	0.0000	0.230	0.00

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WARNING: TEMPERATURE FOR YEAR 1976 USED WITH PRECIPITATION FOR YEAR 3

WARNING: SOLAR RADIATION FOR YEAR 1976 USED WITH PRECIPITATION FOR YEAR 3

****

MONTHLY TOTALS (IN INCHES) FOR YEAR 3

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.61	2.28	2.01	6.44	7.68	3.16
	2.59	4.89	1.92	2.10	3.91	3.64
RUNOFF	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	1.444	1.313	2.267	2.941	5.654	3.863
	3.479	4.972	1.822	1.390	1.418	0.862
PERCOLATION/LEAKAGE THROUGH	1.5191	1.1396	0.4151	1.0459	2.0610	1.8346
LAYER 1	0.2628	0.1312	0.1347	0.1225	0.0959	1.7472

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.23	849253.750	100.00
RUNOFF	0.000	0.000	0.00
EVAPOTRANSPIRATION	31.424	631948.437	74.41
PERC./LEAKAGE THROUGH LAYER 1	10.509499	211348.125	24.89
CHANGE IN WATER STORAGE	0.296	5957.237	0.70

SOIL WATER AT START OF YEAR	7.627	153371.328	
SOIL WATER AT END OF YEAR	7.100	142792.406	
SNOW WATER AT START OF YEAR	0.022	434.823	0.05
SNOW WATER AT END OF YEAR	0.844	16970.984	2.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.096	0.00

****

WARNING: TEMPERATURE FOR YEAR 1977 USED WITH PRECIPITATION FOR YEAR 4

WARNING: SOLAR RADIATION FOR YEAR 1977 USED WITH PRECIPITATION FOR YEAR 4

****

MONTHLY TOTALS (IN INCHES) FOR YEAR 4

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	2.25	4.11	2.73	3.81	3.10	2.87
	5.63	2.21	2.44	1.70	2.98	3.74
RUNOFF	0.856	1.195	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.595	1.282	2.320	2.675	4.250	2.964
	3.850	3.779	2.379	0.881	0.917	0.973
PERCOLATION/LEAKAGE THROUGH	0.7915	3.0951	0.8235	1.0368	1.0321	0.3366
LAYER 1	0.1849	0.1461	0.1179	0.0901	0.0639	0.5966

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.57	755540.375	100.00
RUNOFF	2.051	41238.926	5.46
EVAPOTRANSPIRATION	26.864	540246.812	71.50
PERC./LEAKAGE THROUGH LAYER 1	8.315122	167218.766	22.13
CHANGE IN WATER STORAGE	0.340	6835.663	0.90

SOIL WATER AT START OF YEAR	7.100	142792.406	
SOIL WATER AT END OF YEAR	7.591	152660.094	
SNOW WATER AT START OF YEAR	0.844	16970.984	2.25
SNOW WATER AT END OF YEAR	0.693	13938.961	1.84
ANNUAL WATER BUDGET BALANCE	0.0000	0.192	0.00

****

WARNING: TEMPERATURE FOR YEAR 1978 USED WITH PRECIPITATION FOR YEAR 5

WARNING: SOLAR RADIATION FOR YEAR 1978 USED WITH PRECIPITATION FOR YEAR 5

****

MONTHLY TOTALS (IN INCHES) FOR YEAR 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	4.21	3.61	3.92	4.22	2.89	4.58
	2.90	5.53	2.27	3.97	3.41	2.86
RUNOFF	0.454	1.704	1.679	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION	0.705	0.274	1.748	2.310	3.822	4.686
	2.363	5.701	2.402	1.277	1.454	1.305
PERCOLATION/LEAKAGE THROUGH	4.1442	0.3055	3.5947	0.3500	1.0203	0.4601
LAYER 1	0.2045	0.2231	0.3681	0.1842	1.3001	0.9800

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	44.37	892289.625	100.00
RUNOFF	3.837	77171.078	8.65
EVAPOTRANSPIRATION	28.047	564024.000	63.21
PERC./LEAKAGE THROUGH LAYER 1	13.134814	264143.750	29.60
CHANGE IN WATER STORAGE	-0.649	-13049.344	-1.46

SOIL WATER AT START OF YEAR	7.591	152660.094	
SOIL WATER AT END OF YEAR	7.635	153549.719	
SNOW WATER AT START OF YEAR	0.693	13938.961	1.56
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.096	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	2.46	3.87	3.05	4.73	4.38	3.58
	2.99	4.11	2.62	2.12	4.05	4.30
STD. DEVIATIONS	1.06	1.44	0.72	2.49	2.18	0.70
	1.76	1.52	1.44	1.12	1.24	1.58
RUNOFF						
TOTALS	0.266	1.287	0.594	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
STD. DEVIATIONS	0.382	1.461	0.825	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000
EVAPOTRANSPIRATION						
TOTALS	0.997	1.049	2.099	2.631	4.365	4.005
	2.650	3.989	2.417	1.259	1.369	1.070
STD. DEVIATIONS	0.392	0.539	0.468	0.513	0.907	0.657
	1.350	1.327	0.438	0.217	0.299	0.193
PERCOLATION/LEAKAGE THROUGH LAYER 1						
TOTALS	1.6463	1.0082	1.9808	1.2011	1.4405	0.7357
	0.2141	0.1701	0.2944	0.1407	0.7001	2.4489
STD. DEVIATIONS	1.4262	1.2262	1.4204	1.1315	1.0646	0.6525
	0.0456	0.0569	0.2828	0.0892	0.8676	1.9097

****

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 5

	INCHES		CU. FEET	PERCENT
PRECIPITATION	42.27	(4.451)	850017.9	100.00
RUNOFF	2.147	(2.2007)	43174.52	5.079
EVAPOTRANSPIRATION	27.900	(2.4687)	561070.19	66.007
PERCOLATION/LEAKAGE THROUGH LAYER 1	11.98103	(3.69218)	240941.000	28.34540
CHANGE IN WATER STORAGE	0.240	(0.6753)	4832.21	0.568

****

****

PEAK DAILY VALUES FOR YEARS 1 THROUGH 5

	(INCHES)	(CU. FT.)
PRECIPITATION	3.37	67771.375
RUNOFF	1.764	35481.2266
PERCOLATION/LEAKAGE THROUGH LAYER 1	1.487218	29908.25000
SNOW WATER	2.37	47592.2383
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.3278
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0470

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****

FINAL WATER STORAGE AT END OF YEAR 5

LAYER	(INCHES)	(VOL/VOL)
1	7.6354	0.2121
SNOW WATER	0.000	

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****

WARNING: TEMPERATURE FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

WARNING: SOLAR RADIATION FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

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**                                                                          **
**                                                                          **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE               **
**                HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                **
**                  DEVELOPED BY ENVIRONMENTAL LABORATORY                   **
**                    USAE WATERWAYS EXPERIMENT STATION                     **
**            FOR USEPA RISK REDUCTION ENGINEERING LABORATORY               **
**                                                                          **
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PRECIPITATION DATA FILE:      C:\HELP5\2CAP4.D4
TEMPERATURE DATA FILE:        C:\HELP5\2CAP7.D7
SOLAR RADIATION DATA FILE:    C:\HELP5\2CAP13.D13
EVAPOTRANSPIRATION DATA:      C:\HELP5\2CAP11.D11
SOIL AND DESIGN DATA FILE:    C:\HELP5\2CAP10.D10
OUTPUT DATA FILE:             C:\HELP5\RCRA2.OUT
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TIME: 14:55 DATE: 11/17/2011

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TITLE: CAP WITH BARE SOIL

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NOTE: INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE
COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.

LAYER 1

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 9

```
THICKNESS                    =       6.00    INCHES
POROSITY                     =       0.5010 VOL/VOL
FIELD CAPACITY               =       0.2840 VOL/VOL
WILTING POINT                =       0.1350 VOL/VOL
INITIAL SOIL WATER CONTENT   =       0.2199 VOL/VOL
EFFECTIVE SAT. HYD. COND.    =  0.190000006000E-03 CM/SEC
```

NOTE: SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY 1.80
FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.

LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 4

THICKNESS	=	24.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.1050 VOL/VOL
WILTING POINT	=	0.0470 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.3857 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.170000002000E-02 CM/SEC

LAYER 3
----

change to LLDPE

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 35

THICKNESS	=	0.04 INCHES
POROSITY	=	0.0000 VOL/VOL
FIELD CAPACITY	=	0.0000 VOL/VOL
WILTING POINT	=	0.0000 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.199999996000E-12 CM/SEC
FML PINHOLE DENSITY	=	1.00 HOLES/ACRE
FML INSTALLATION DEFECTS	=	2.00 HOLES/ACRE
FML PLACEMENT QUALITY	=	3 - GOOD

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 4

THICKNESS	=	48.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.1050 VOL/VOL
WILTING POINT	=	0.0470 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1354 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.170000002000E-02 CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 32

THICKNESS	=	36.00 INCHES
POROSITY	=	0.4500 VOL/VOL
FIELD CAPACITY	=	0.1160 VOL/VOL
WILTING POINT	=	0.0490 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1101 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.999999978000E-02 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 9 WITH BARE GROUND CONDITIONS, A SURFACE SLOPE OF 2.% AND A SLOPE LENGTH OF 390. FEET.

SCS RUNOFF CURVE NUMBER	=	91.60	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	5.810	ACRES
EVAPORATIVE ZONE DEPTH	=	13.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	3.147	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	6.065	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.139	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	21.038	INCHES
TOTAL INITIAL WATER	=	21.038	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM NEW YORK NEW YORK

STATION LATITUDE	=	40.47	DEGREES
MAXIMUM LEAF AREA INDEX	=	1.00	
START OF GROWING SEASON (JULIAN DATE)	=	108	
END OF GROWING SEASON (JULIAN DATE)	=	302	
EVAPORATIVE ZONE DEPTH	=	13.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	12.20	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	68.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	68.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR NEW YORK NEW YORK

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
3.11	3.08	4.10	3.76	3.46	3.15
3.67	4.32	3.48	3.24	3.77	3.68

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR NEW YORK NEW YORK

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
31.80	33.30	41.00	51.90	61.70	71.00
76.40	75.30	68.20	57.50	47.10	36.20

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING
COEFFICIENTS FOR NEW YORK NEW YORK
AND STATION LATITUDE = 40.47 DEGREES

WARNING: TEMPERATURE FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

WARNING: SOLAR RADIATION FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.67	3.21	3.30	1.37	2.68	4.02
	3.13	2.73	5.09	0.96	6.18	4.28
RUNOFF	0.005	0.147	0.125	0.000	0.021	0.029
	0.059	0.387	0.952	0.067	0.431	0.883
EVAPOTRANSPIRATION	1.599	2.002	2.843	2.268	2.540	4.484
	3.203	2.457	2.782	1.941	1.550	1.328
PERCOLATION/LEAKAGE THROUGH	0.3811	0.3295	0.4176	0.3786	0.3568	0.3253
LAYER 3	0.3221	0.3078	0.2839	0.2913	0.2970	0.5147
PERCOLATION/LEAKAGE THROUGH	0.0145	0.0127	0.0135	0.0134	0.0133	0.0078
LAYER 5	0.0000	0.0002	0.0000	0.0009	0.1492	0.2650

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	18.975	18.042	21.075	19.555	17.582	16.408
TOP OF LAYER 3	15.605	14.794	13.979	13.859	14.754	26.650
STD. DEVIATION OF DAILY	0.402	0.269	0.880	0.708	0.549	0.250
HEAD ON TOP OF LAYER 3	0.235	0.250	0.214	0.117	2.509	2.916

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.62	814507.187	100.00
RUNOFF	3.106	65498.102	8.04
EVAPOTRANSPIRATION	28.999	611597.250	75.09
PERC./LEAKAGE THROUGH LAYER 3	4.205597	88697.297	10.89
AVG. HEAD ON TOP OF LAYER 3	17.6066		
PERC./LEAKAGE THROUGH LAYER 5	0.490514	10345.094	1.27
CHANGE IN WATER STORAGE	6.025	127066.914	15.60
SOIL WATER AT START OF YEAR	22.823	481353.094	
SOIL WATER AT END OF YEAR	28.848	608420.000	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.172	0.00

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WARNING: TEMPERATURE FOR YEAR 1975 USED WITH PRECIPITATION FOR YEAR 2

WARNING: SOLAR RADIATION FOR YEAR 1975 USED WITH PRECIPITATION FOR YEAR 2

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MONTHLY TOTALS (IN INCHES) FOR YEAR 2

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	2.57	6.16	3.31	7.82	5.55	3.29
	0.69	5.18	1.37	1.88	3.76	6.97
RUNOFF	0.265	5.567	2.091	3.062	1.522	0.467
	0.000	1.283	0.025	0.021	0.608	2.371
EVAPOTRANSPIRATION	0.884	0.739	1.521	3.946	5.241	3.316
	1.801	2.837	1.783	1.571	1.167	1.025
PERCOLATION/LEAKAGE THROUGH	0.4768	0.3015	0.4057	0.4952	0.5116	0.4285
LAYER 3	0.3797	0.3378	0.3289	0.3254	0.3087	0.5056
PERCOLATION/LEAKAGE THROUGH	0.3114	0.1870	0.4859	0.4666	0.3209	0.3934

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 LAYER  5                       0.5122  0.4908  0.4444  0.4008  0.3497  0.3443

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               MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)
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AVERAGE DAILY HEAD ON          24.481  16.274  20.400  26.480  26.476  22.520
  TOP OF LAYER  3              18.896  16.502  16.616  15.793  15.428  26.129

STD. DEVIATION OF DAILY         4.428   0.267   5.878   1.762   1.608   0.635
  HEAD ON TOP OF LAYER  3       1.438   0.241   0.259   0.239   0.711   3.743

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                   ANNUAL TOTALS FOR YEAR    2
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                                       INCHES          CU. FEET      PERCENT
                                      --------        ----------     -------
  PRECIPITATION                         48.55        1023933.940     100.00

  RUNOFF                                17.283        364495.687      35.60

  EVAPOTRANSPIRATION                    25.832        544799.062      53.21

  PERC./LEAKAGE THROUGH LAYER  3         4.805354     101346.359       9.90

  AVG. HEAD ON TOP OF LAYER  3          20.4996

  PERC./LEAKAGE THROUGH LAYER  5         4.707435      99281.211       9.70

  CHANGE IN WATER STORAGE                0.728         15358.021       1.50

  SOIL WATER AT START OF YEAR           28.848        608420.000

  SOIL WATER AT END OF YEAR             29.555        623322.000

  SNOW WATER AT START OF YEAR            0.000             0.000       0.00

  SNOW WATER AT END OF YEAR              0.022           456.014       0.04

  ANNUAL WATER BUDGET BALANCE            0.0000           -0.070       0.00

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WARNING:  TEMPERATURE FOR YEAR 1976 USED WITH PRECIPITATION FOR YEAR    3

WARNING:  SOLAR RADIATION FOR YEAR 1976 USED WITH PRECIPITATION FOR YEAR    3


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MONTHLY TOTALS (IN INCHES) FOR YEAR 3

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.61	2.28	2.01	6.44	7.68	3.16
	2.59	4.89	1.92	2.10	3.91	3.64
RUNOFF	0.102	0.541	0.055	1.438	1.994	0.374
	0.173	0.575	0.164	0.053	0.440	0.035
EVAPOTRANSPIRATION	1.579	1.833	2.577	3.601	5.377	3.678
	3.792	4.625	1.477	1.709	1.719	0.898
PERCOLATION/LEAKAGE THROUGH	0.5447	0.4699	0.4759	0.4304	0.4398	0.3912
LAYER 3	0.3553	0.3294	0.3048	0.3003	0.2828	0.3496
PERCOLATION/LEAKAGE THROUGH	0.3582	0.2343	0.4705	0.5193	0.5117	0.4549
LAYER 5	0.4574	0.4455	0.4047	0.3794	0.3409	0.3358

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	28.374	26.970	24.424	22.632	22.348	20.303
TOP OF LAYER 3	17.500	16.020	15.200	14.371	13.917	17.177
STD. DEVIATION OF DAILY	0.650	1.787	0.657	0.638	1.152	1.412
HEAD ON TOP OF LAYER 3	0.969	0.253	0.258	0.222	0.434	1.664

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.23	890643.375	100.00
RUNOFF	5.943	125349.375	14.07
EVAPOTRANSPIRATION	32.866	693145.500	77.83
PERC./LEAKAGE THROUGH LAYER 3	4.673997	98576.008	11.07
AVG. HEAD ON TOP OF LAYER 3	19.9363		
PERC./LEAKAGE THROUGH LAYER 5	4.912578	103607.734	11.63
CHANGE IN WATER STORAGE	-1.492	-31458.930	-3.53
SOIL WATER AT START OF YEAR	29.555	623322.000	
SOIL WATER AT END OF YEAR	27.241	574521.000	
SNOW WATER AT START OF YEAR	0.022	456.014	0.05

SNOW WATER AT END OF YEAR	0.844	17798.090	2.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.362	0.00

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WARNING: TEMPERATURE FOR YEAR 1977 USED WITH PRECIPITATION FOR YEAR 4

WARNING: SOLAR RADIATION FOR YEAR 1977 USED WITH PRECIPITATION FOR YEAR 4

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MONTHLY TOTALS (IN INCHES) FOR YEAR 4

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	2.25	4.11	2.73	3.81	3.10	2.87
	5.63	2.21	2.44	1.70	2.98	3.74
RUNOFF	1.651	1.799	0.312	0.535	0.108	0.319
	0.730	0.232	0.168	0.000	0.737	0.181
EVAPOTRANSPIRATION	0.588	1.295	2.466	3.532	3.479	3.345
	4.064	3.332	2.237	0.639	1.354	1.180
PERCOLATION/LEAKAGE THROUGH	0.3370	0.3701	0.4848	0.4450	0.4215	0.3754
LAYER 3	0.3481	0.3283	0.3035	0.2983	0.2750	0.2867
PERCOLATION/LEAKAGE THROUGH	0.3269	0.2612	0.3317	0.2809	0.3696	0.4476
LAYER 5	0.4626	0.4303	0.3930	0.3726	0.3377	0.3322

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	16.457	19.820	24.935	23.500	21.295	19.365
TOP OF LAYER 3	17.090	15.959	15.125	14.256	13.457	13.607
STD. DEVIATION OF DAILY	0.298	4.392	1.274	0.886	0.841	0.370
HEAD ON TOP OF LAYER 3	0.641	0.241	0.234	0.258	0.201	0.945

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ANNUAL TOTALS FOR YEAR 4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.57	792362.687	100.00

RUNOFF	6.772	142827.906	18.03
EVAPOTRANSPIRATION	27.512	580230.562	73.23
PERC./LEAKAGE THROUGH LAYER 3	4.273687	90133.336	11.38
AVG. HEAD ON TOP OF LAYER 3	17.9056		
PERC./LEAKAGE THROUGH LAYER 5	4.346277	91664.289	11.57
CHANGE IN WATER STORAGE	-1.060	-22360.377	-2.82
SOIL WATER AT START OF YEAR	27.241	574521.000	
SOIL WATER AT END OF YEAR	26.332	555340.437	
SNOW WATER AT START OF YEAR	0.844	17798.090	2.25
SNOW WATER AT END OF YEAR	0.693	14618.297	1.84
ANNUAL WATER BUDGET BALANCE	0.0000	0.302	0.00

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WARNING: TEMPERATURE FOR YEAR 1978 USED WITH PRECIPITATION FOR YEAR 5

WARNING: SOLAR RADIATION FOR YEAR 1978 USED WITH PRECIPITATION FOR YEAR 5

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MONTHLY TOTALS (IN INCHES) FOR YEAR 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	4.21	3.61	3.92	4.22	2.89	4.58
	2.90	5.53	2.27	3.97	3.41	2.86
RUNOFF	1.337	3.095	2.900	0.376	0.099	0.418
	0.518	1.393	0.011	0.686	0.146	0.199
EVAPOTRANSPIRATION	0.734	0.240	2.369	2.514	3.900	4.039
	2.966	4.608	2.379	1.755	2.047	1.498
PERCOLATION/LEAKAGE THROUGH	0.4184	0.2995	0.4300	0.4244	0.4298	0.3743
LAYER 3	0.3533	0.3285	0.3029	0.3012	0.3019	0.3336
PERCOLATION/LEAKAGE THROUGH	0.3030	0.3105	0.2311	0.3634	0.3182	0.3807
LAYER 5	0.4476	0.4251	0.3949	0.3752	0.3389	0.3363

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 3	21.122	16.145	21.791	22.276	21.773	19.304
	17.386	15.968	15.088	14.421	15.033	16.260
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 3	4.387	0.265	4.191	0.792	1.182	0.432
	1.032	0.264	0.233	0.200	0.934	0.103

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	44.37	935776.687	100.00
RUNOFF	11.178	235756.703	25.19
EVAPOTRANSPIRATION	29.050	612664.375	65.47
PERC./LEAKAGE THROUGH LAYER 3	4.297674	90639.227	9.69
AVG. HEAD ON TOP OF LAYER 3	18.0472		
PERC./LEAKAGE THROUGH LAYER 5	4.224955	89105.562	9.52
CHANGE IN WATER STORAGE	-0.083	-1750.265	-0.19
SOIL WATER AT START OF YEAR	26.332	555340.437	
SOIL WATER AT END OF YEAR	26.942	568208.437	
SNOW WATER AT START OF YEAR	0.693	14618.297	1.56
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.272	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	2.46	3.87	3.05	4.73	4.38	3.58
	2.99	4.11	2.62	2.12	4.05	4.30
STD. DEVIATIONS	1.06	1.44	0.72	2.49	2.18	0.70
	1.76	1.52	1.44	1.12	1.24	1.58

RUNOFF

TOTALS	0.672	2.230	1.097	1.082	0.749	0.321
	0.296	0.774	0.264	0.166	0.473	0.734
STD. DEVIATIONS	0.764	2.194	1.312	1.226	0.937	0.172
	0.315	0.531	0.391	0.292	0.222	0.973

EVAPOTRANSPIRATION

TOTALS	1.077	1.222	2.355	3.172	4.107	3.772
	3.165	3.572	2.132	1.523	1.567	1.186
STD. DEVIATIONS	0.479	0.739	0.499	0.735	1.203	0.494
	0.881	1.003	0.511	0.511	0.339	0.238

PERCOLATION/LEAKAGE THROUGH LAYER 3

TOTALS	0.4316	0.3541	0.4428	0.4347	0.4319	0.3789
	0.3517	0.3264	0.3048	0.3033	0.2931	0.3980
STD. DEVIATIONS	0.0814	0.0707	0.0355	0.0419	0.0552	0.0371
	0.0205	0.0111	0.0160	0.0130	0.0139	0.1049

PERCOLATION/LEAKAGE THROUGH LAYER 5

TOTALS	0.2628	0.2011	0.3065	0.3287	0.3067	0.3369
	0.3760	0.3584	0.3274	0.3058	0.3033	0.3227
STD. DEVIATIONS	0.1404	0.1145	0.1945	0.1989	0.1819	0.1868
	0.2117	0.2019	0.1842	0.1708	0.0863	0.0326

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	21.8816	19.4504	22.5252	22.8887	21.8947	19.5801
	17.2954	15.8486	15.2017	14.5399	14.5179	19.9644
STD. DEVIATIONS	4.6736	4.4633	2.0355	2.4911	3.1688	2.1997
	1.1736	0.6315	0.9374	0.7343	0.8117	6.0128

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 5

	INCHES		CU. FEET	PERCENT
PRECIPITATION	42.27	(4.451)	891444.7	100.00
RUNOFF	8.856	(5.5293)	186785.55	20.953
EVAPOTRANSPIRATION	28.852	(2.6023)	608487.31	68.259

PERCOLATION/LEAKAGE THROUGH LAYER 3	4.45126 (	0.26947)	93878.453	10.53104
AVERAGE HEAD ON TOP OF LAYER 3	18.799 (	1.320)		
PERCOLATION/LEAKAGE THROUGH LAYER 5	3.73635 (	1.83526)	78800.781	8.83967
CHANGE IN WATER STORAGE	0.824 (	3.0329)	17371.08	1.949

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 5

	(INCHES)	(CU. FT.)
PRECIPITATION	3.37	71074.305
RUNOFF	2.004	42261.4258
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.018475	389.64096
AVERAGE HEAD ON TOP OF LAYER 3	29.980	
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.019226	405.47974
SNOW WATER	2.37	49911.7148

MAXIMUM VEG. SOIL WATER (VOL/VOL)	0.4665
MINIMUM VEG. SOIL WATER (VOL/VOL)	0.0876

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FINAL WATER STORAGE AT END OF YEAR 5

LAYER	(INCHES)	(VOL/VOL)
1	1.9537	0.3256
2	9.1654	0.3819
3	0.0000	0.0000
4	8.6085	0.1793
5	5.4290	0.1508
SNOW WATER	0.000	

WARNING: TEMPERATURE FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

WARNING: SOLAR RADIATION FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

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**                                                                            **
**                                                                            **
**              HYDROLOGIC EVALUATION OF LANDFILL PERFORMANCE                 **
**              HELP MODEL VERSION 3.07  (1 NOVEMBER 1997)                    **
**              DEVELOPED BY ENVIRONMENTAL LABORATORY                         **
**              USAE WATERWAYS EXPERIMENT STATION                             **
**              FOR USEPA RISK REDUCTION ENGINEERING LABORATORY               **
**                                                                            **
**                                                                            **
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PRECIPITATION DATA FILE:      C:\HELP5\3CAP4.D4
TEMPERATURE DATA FILE:        C:\HELP5\3CAP7.D7
SOLAR RADIATION DATA FILE:    C:\HELP5\3CAP13.D13
EVAPOTRANSPIRATION DATA:      C:\HELP5\3CAP11.D11
SOIL AND DESIGN DATA FILE:    C:\HELP5\3CAP10.D10
OUTPUT DATA FILE:             C:\HELP5\RCRA3.OUT
```

TIME: 15: 6 DATE: 11/28/2011

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********************************************************************************

     TITLE:  CAP WITH GOOD GRASS

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NOTE: INITIAL MOISTURE CONTENT OF THE LAYERS AND SNOW WATER WERE COMPUTED AS NEARLY STEADY-STATE VALUES BY THE PROGRAM.

LAYER 1

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 9

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THICKNESS                  =        6.00   INCHES
POROSITY                   =        0.5010 VOL/VOL
FIELD CAPACITY             =        0.2840 VOL/VOL
WILTING POINT              =        0.1350 VOL/VOL
INITIAL SOIL WATER CONTENT =        0.4239 VOL/VOL
EFFECTIVE SAT. HYD. COND.  =   0.190000006000E-03 CM/SEC
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NOTE: SATURATED HYDRAULIC CONDUCTIVITY IS MULTIPLIED BY 4.63 FOR ROOT CHANNELS IN TOP HALF OF EVAPORATIVE ZONE.

LAYER 2

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 4

THICKNESS	=	24.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.1050 VOL/VOL
WILTING POINT	=	0.0470 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.4384 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.170000002000E-02 CM/SEC

LAYER 3

TYPE 4 - FLEXIBLE MEMBRANE LINER
MATERIAL TEXTURE NUMBER 36

THICKNESS	=	0.04 INCHES
POROSITY	=	0.0000 VOL/VOL
FIELD CAPACITY	=	0.0000 VOL/VOL
WILTING POINT	=	0.0000 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.0000 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.399999993000E-12 CM/SEC
FML PINHOLE DENSITY	=	0.00 HOLES/ACRE
FML INSTALLATION DEFECTS	=	0.00 HOLES/ACRE
FML PLACEMENT QUALITY	=	4 - POOR

LAYER 4

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 4

THICKNESS	=	48.00 INCHES
POROSITY	=	0.4370 VOL/VOL
FIELD CAPACITY	=	0.1050 VOL/VOL
WILTING POINT	=	0.0470 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1048 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.170000002000E-02 CM/SEC

LAYER 5

TYPE 1 - VERTICAL PERCOLATION LAYER
MATERIAL TEXTURE NUMBER 32

THICKNESS	=	36.00 INCHES
POROSITY	=	0.4500 VOL/VOL
FIELD CAPACITY	=	0.1160 VOL/VOL
WILTING POINT	=	0.0490 VOL/VOL
INITIAL SOIL WATER CONTENT	=	0.1102 VOL/VOL
EFFECTIVE SAT. HYD. COND.	=	0.999999978000E-02 CM/SEC

GENERAL DESIGN AND EVAPORATIVE ZONE DATA

NOTE: SCS RUNOFF CURVE NUMBER WAS COMPUTED FROM DEFAULT SOIL DATA BASE USING SOIL TEXTURE # 9 WITH A GOOD STAND OF GRASS, A SURFACE SLOPE OF 2.% AND A SLOPE LENGTH OF 390. FEET.

SCS RUNOFF CURVE NUMBER	=	74.90	
FRACTION OF AREA ALLOWING RUNOFF	=	100.0	PERCENT
AREA PROJECTED ON HORIZONTAL PLANE	=	5.810	ACRES
EVAPORATIVE ZONE DEPTH	=	20.0	INCHES
INITIAL WATER IN EVAPORATIVE ZONE	=	8.696	INCHES
UPPER LIMIT OF EVAPORATIVE STORAGE	=	9.124	INCHES
LOWER LIMIT OF EVAPORATIVE STORAGE	=	1.468	INCHES
INITIAL SNOW WATER	=	0.000	INCHES
INITIAL WATER IN LAYER MATERIALS	=	22.064	INCHES
TOTAL INITIAL WATER	=	22.064	INCHES
TOTAL SUBSURFACE INFLOW	=	0.00	INCHES/YEAR

EVAPOTRANSPIRATION AND WEATHER DATA

NOTE: EVAPOTRANSPIRATION DATA WAS OBTAINED FROM NEW YORK NEW YORK

STATION LATITUDE	=	40.47	DEGREES
MAXIMUM LEAF AREA INDEX	=	3.50	
START OF GROWING SEASON (JULIAN DATE)	=	108	
END OF GROWING SEASON (JULIAN DATE)	=	302	
EVAPORATIVE ZONE DEPTH	=	20.0	INCHES
AVERAGE ANNUAL WIND SPEED	=	12.20	MPH
AVERAGE 1ST QUARTER RELATIVE HUMIDITY	=	65.00	%
AVERAGE 2ND QUARTER RELATIVE HUMIDITY	=	68.00	%
AVERAGE 3RD QUARTER RELATIVE HUMIDITY	=	72.00	%
AVERAGE 4TH QUARTER RELATIVE HUMIDITY	=	68.00	%

NOTE: PRECIPITATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR NEW YORK NEW YORK

NORMAL MEAN MONTHLY PRECIPITATION (INCHES)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
3.11	3.08	4.10	3.76	3.46	3.15
3.67	4.32	3.48	3.24	3.77	3.68

NOTE: TEMPERATURE DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR NEW YORK NEW YORK

NORMAL MEAN MONTHLY TEMPERATURE (DEGREES FAHRENHEIT)

JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
31.80	33.30	41.00	51.90	61.70	71.00
76.40	75.30	68.20	57.50	47.10	36.20

NOTE: SOLAR RADIATION DATA WAS SYNTHETICALLY GENERATED USING COEFFICIENTS FOR NEW YORK NEW YORK AND STATION LATITUDE = 40.47 DEGREES

WARNING: TEMPERATURE FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

WARNING: SOLAR RADIATION FOR YEAR 1974 USED WITH PRECIPITATION FOR YEAR 1

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MONTHLY TOTALS (IN INCHES) FOR YEAR 1

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.67	3.21	3.30	1.37	2.68	4.02
	3.13	2.73	5.09	0.96	6.18	4.28
RUNOFF	0.149	0.998	0.847	0.000	0.000	0.000
	0.000	0.000	0.014	0.000	0.000	2.483
EVAPOTRANSPIRATION	1.518	1.936	2.771	2.562	3.156	7.484
	5.161	2.754	2.904	1.107	1.561	1.177
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
	0.0001	0.0001	0.0001	0.0001	0.0002	0.0003
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.0139	0.0122	0.0130	0.0121	0.0120	0.0113
	0.0114	0.0110	0.0105	0.0103	0.0096	0.0097

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 3	27.808	27.851	28.680	25.641	24.059	19.867
	10.889	10.000	10.000	10.539	15.418	29.166
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 3	1.005	1.247	0.870	1.051	0.660	2.478
	1.542	0.005	0.000	0.334	5.375	1.147

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ANNUAL TOTALS FOR YEAR 1

	INCHES	CU. FEET	PERCENT
PRECIPITATION	38.62	814507.187	100.00
RUNOFF	4.492	94740.984	11.63
EVAPOTRANSPIRATION	34.091	718982.687	88.27
PERC./LEAKAGE THROUGH LAYER 3	0.002477	52.249	0.01
AVG. HEAD ON TOP OF LAYER 3	19.9931		
PERC./LEAKAGE THROUGH LAYER 5	0.137048	2890.386	0.35
CHANGE IN WATER STORAGE	-0.100	-2106.383	-0.26
SOIL WATER AT START OF YEAR	23.114	487471.312	
SOIL WATER AT END OF YEAR	23.014	485364.906	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.520	0.00

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WARNING: TEMPERATURE FOR YEAR 1975 USED WITH PRECIPITATION FOR YEAR 2

WARNING: SOLAR RADIATION FOR YEAR 1975 USED WITH PRECIPITATION FOR YEAR 2

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MONTHLY TOTALS (IN INCHES) FOR YEAR 2

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	2.57	6.16	3.31	7.82	5.55	3.29
	0.69	5.18	1.37	1.88	3.76	6.97
RUNOFF	0.451	5.950	2.702	3.476	2.161	0.000
	0.000	0.028	0.000	0.000	0.000	1.930
EVAPOTRANSPIRATION	0.840	0.739	1.484	3.823	5.390	6.466
	2.975	2.813	3.436	1.207	1.302	0.960
PERCOLATION/LEAKAGE THROUGH	0.0003	0.0001	0.0002	0.0003	0.0003	0.0002
LAYER 3	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
PERCOLATION/LEAKAGE THROUGH	0.0094	0.0083	0.0090	0.0084	0.0085	0.0080

LAYER 5	0.0083	0.0080	0.0075	0.0076	0.0072	0.0072

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON	25.356	10.000	17.773	27.413	27.482	20.422
TOP OF LAYER 3	10.810	10.508	10.816	10.000	10.355	25.509
STD. DEVIATION OF DAILY	7.696	0.004	9.349	1.828	1.807	1.769
HEAD ON TOP OF LAYER 3	1.655	0.933	1.138	0.005	0.882	4.943

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ANNUAL TOTALS FOR YEAR 2

	INCHES	CU. FEET	PERCENT
PRECIPITATION	48.55	1023933.940	100.00
RUNOFF	16.698	352165.875	34.39
EVAPOTRANSPIRATION	31.435	662967.687	64.75
PERC./LEAKAGE THROUGH LAYER 3	0.002143	45.202	0.00
AVG. HEAD ON TOP OF LAYER 3	17.2037		
PERC./LEAKAGE THROUGH LAYER 5	0.097381	2053.791	0.20
CHANGE IN WATER STORAGE	0.320	6746.683	0.66
SOIL WATER AT START OF YEAR	23.014	485364.906	
SOIL WATER AT END OF YEAR	23.312	491655.594	
SNOW WATER AT START OF YEAR	0.000	0.000	0.00
SNOW WATER AT END OF YEAR	0.022	456.014	0.04
ANNUAL WATER BUDGET BALANCE	0.0000	-0.071	0.00

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WARNING: TEMPERATURE FOR YEAR 1976 USED WITH PRECIPITATION FOR YEAR 3

WARNING: SOLAR RADIATION FOR YEAR 1976 USED WITH PRECIPITATION FOR YEAR 3

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MONTHLY TOTALS (IN INCHES) FOR YEAR 3

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	1.61	2.28	2.01	6.44	7.68	3.16
	2.59	4.89	1.92	2.10	3.91	3.64
RUNOFF	0.419	0.837	0.109	1.636	1.127	0.031
	0.000	0.001	0.000	0.000	0.002	0.000
EVAPOTRANSPIRATION	1.424	1.685	2.460	3.966	6.376	7.572
	5.111	4.953	1.959	1.479	0.924	0.740
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.0070	0.0063	0.0068	0.0064	0.0065	0.0062
	0.0063	0.0062	0.0059	0.0061	0.0057	0.0057

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 3	29.307	27.673	28.284	26.952	26.051	20.921
	11.516	10.000	10.000	10.000	10.858	19.253
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 3	0.376	1.535	1.015	1.673	2.196	4.850
	1.626	0.000	0.006	0.009	1.726	2.411

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ANNUAL TOTALS FOR YEAR 3

	INCHES	CU. FEET	PERCENT
PRECIPITATION	42.23	890643.375	100.00
RUNOFF	4.163	87809.062	9.86
EVAPOTRANSPIRATION	38.649	815115.312	91.52
PERC./LEAKAGE THROUGH LAYER 3	0.002382	50.243	0.01
AVG. HEAD ON TOP OF LAYER 3	19.2345		
PERC./LEAKAGE THROUGH LAYER 5	0.075129	1584.485	0.18
CHANGE IN WATER STORAGE	-0.657	-13865.403	-1.56
SOIL WATER AT START OF YEAR	23.312	491655.594	
SOIL WATER AT END OF YEAR	21.832	460448.094	
SNOW WATER AT START OF YEAR	0.022	456.014	0.05

	INCHES	CU. FEET	PERCENT
SNOW WATER AT END OF YEAR	0.844	17798.090	2.00
ANNUAL WATER BUDGET BALANCE	0.0000	-0.138	0.00

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WARNING: TEMPERATURE FOR YEAR 1977 USED WITH PRECIPITATION FOR YEAR   4

WARNING: SOLAR RADIATION FOR YEAR 1977 USED WITH PRECIPITATION FOR YEAR   4

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MONTHLY TOTALS (IN INCHES) FOR YEAR   4

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	2.25	4.11	2.73	3.81	3.10	2.87
	5.63	2.21	2.44	1.70	2.98	3.74
RUNOFF	1.377	2.572	1.314	0.643	0.000	0.000
	0.000	0.000	0.000	0.000	0.036	0.000
EVAPOTRANSPIRATION	0.621	1.229	2.264	3.348	4.971	7.375
	4.169	3.921	2.429	0.837	0.798	1.001
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.0001	0.0002	0.0003	0.0003	0.0003	0.0002
	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.0058	0.0052	0.0055	0.0052	0.0053	0.0052
	0.0052	0.0050	0.0049	0.0049	0.0048	0.0048

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 3	10.562	19.386	28.522	25.971	23.955	16.819
	10.002	10.000	10.000	10.000	10.000	12.587
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 3	2.562	9.931	0.996	1.542	1.562	2.879
	0.012	0.004	0.004	0.005	0.002	2.212

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ANNUAL TOTALS FOR YEAR   4

	INCHES	CU. FEET	PERCENT
PRECIPITATION	37.57	792362.687	100.00

RUNOFF	5.941	125289.508	15.81
EVAPOTRANSPIRATION	32.962	695175.562	87.73
PERC./LEAKAGE THROUGH LAYER 3	0.001946	41.038	0.01
AVG. HEAD ON TOP OF LAYER 3	15.6503		
PERC./LEAKAGE THROUGH LAYER 5	0.061796	1303.300	0.16
CHANGE IN WATER STORAGE	-1.394	-29405.777	-3.71
SOIL WATER AT START OF YEAR	21.832	460448.094	
SOIL WATER AT END OF YEAR	20.589	434222.125	
SNOW WATER AT START OF YEAR	0.844	17798.090	2.25
SNOW WATER AT END OF YEAR	0.693	14618.297	1.84
ANNUAL WATER BUDGET BALANCE	0.0000	0.086	0.00

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WARNING: TEMPERATURE FOR YEAR 1978 USED WITH PRECIPITATION FOR YEAR 5

WARNING: SOLAR RADIATION FOR YEAR 1978 USED WITH PRECIPITATION FOR YEAR 5

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MONTHLY TOTALS (IN INCHES) FOR YEAR 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION	4.21	3.61	3.92	4.22	2.89	4.58
	2.90	5.53	2.27	3.97	3.41	2.86
RUNOFF	1.603	3.341	2.968	0.830	0.000	0.000
	0.000	0.116	0.000	0.032	0.000	0.000
EVAPOTRANSPIRATION	0.709	0.269	2.218	2.410	4.526	7.160
	4.702	6.076	2.541	1.293	1.321	1.261
PERCOLATION/LEAKAGE THROUGH	0.0002	0.0001	0.0002	0.0003	0.0003	0.0002
LAYER 3	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002
PERCOLATION/LEAKAGE THROUGH	0.0046	0.0043	0.0046	0.0043	0.0044	0.0043
LAYER 5	0.0043	0.0042	0.0042	0.0042	0.0040	0.0040

MONTHLY SUMMARIES FOR DAILY HEADS (INCHES)

AVERAGE DAILY HEAD ON TOP OF LAYER 3	21.397	9.999	21.674	26.194	25.238	19.115
	11.572	10.078	10.000	10.000	14.892	20.234
STD. DEVIATION OF DAILY HEAD ON TOP OF LAYER 3	8.621	0.006	7.661	2.468	1.770	2.827
	2.245	0.173	0.005	0.004	3.163	1.005

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ANNUAL TOTALS FOR YEAR 5

	INCHES	CU. FEET	PERCENT
PRECIPITATION	44.37	935776.687	100.00
RUNOFF	8.891	187508.031	20.04
EVAPOTRANSPIRATION	34.487	727333.250	77.73
PERC./LEAKAGE THROUGH LAYER 3	0.002079	43.848	0.00
AVG. HEAD ON TOP OF LAYER 3	16.6995		
PERC./LEAKAGE THROUGH LAYER 5	0.051365	1083.298	0.12
CHANGE IN WATER STORAGE	0.941	19851.797	2.12
SOIL WATER AT START OF YEAR	20.589	434222.125	
SOIL WATER AT END OF YEAR	22.223	468692.219	
SNOW WATER AT START OF YEAR	0.693	14618.297	1.56
SNOW WATER AT END OF YEAR	0.000	0.000	0.00
ANNUAL WATER BUDGET BALANCE	0.0000	0.252	0.00

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AVERAGE MONTHLY VALUES IN INCHES FOR YEARS 1 THROUGH 5

	JAN/JUL	FEB/AUG	MAR/SEP	APR/OCT	MAY/NOV	JUN/DEC
PRECIPITATION						
TOTALS	2.46	3.87	3.05	4.73	4.38	3.58
	2.99	4.11	2.62	2.12	4.05	4.30
STD. DEVIATIONS	1.06	1.44	0.72	2.49	2.18	0.70
	1.76	1.52	1.44	1.12	1.24	1.58

RUNOFF

TOTALS	0.800	2.740	1.588	1.317	0.658	0.006
	0.000	0.029	0.003	0.006	0.008	0.883
STD. DEVIATIONS	0.646	2.082	1.220	1.341	0.972	0.014
	0.000	0.050	0.006	0.015	0.016	1.224

EVAPOTRANSPIRATION

TOTALS	1.023	1.172	2.239	3.222	4.884	7.211
	4.423	4.103	2.654	1.185	1.181	1.028
STD. DEVIATIONS	0.418	0.681	0.475	0.712	1.184	0.444
	0.902	1.426	0.552	0.237	0.313	0.203

PERCOLATION/LEAKAGE THROUGH LAYER 3

TOTALS	0.0002	0.0002	0.0003	0.0003	0.0003	0.0002
	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
STD. DEVIATIONS	0.0001	0.0001	0.0001	0.0000	0.0000	0.0000
	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001

PERCOLATION/LEAKAGE THROUGH LAYER 5

TOTALS	0.0082	0.0072	0.0078	0.0073	0.0073	0.0070
	0.0071	0.0069	0.0066	0.0066	0.0063	0.0063
STD. DEVIATIONS	0.0037	0.0031	0.0034	0.0031	0.0030	0.0028
	0.0028	0.0027	0.0025	0.0024	0.0022	0.0022

AVERAGES OF MONTHLY AVERAGED DAILY HEADS (INCHES)

DAILY AVERAGE HEAD ON TOP OF LAYER 3

AVERAGES	22.8861	18.9820	24.9865	26.4344	25.3570	19.4288
	10.9577	10.1169	10.1630	10.1076	12.3046	21.3501
STD. DEVIATIONS	7.5109	8.8844	5.0004	0.7290	1.4716	1.6059
	0.6381	0.2211	0.3650	0.2410	2.6264	6.3408

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AVERAGE ANNUAL TOTALS & (STD. DEVIATIONS) FOR YEARS 1 THROUGH 5

	INCHES		CU. FEET	PERCENT
PRECIPITATION	42.27	(4.451)	891444.7	100.00
RUNOFF	8.037	(5.1891)	169502.69	19.014
EVAPOTRANSPIRATION	34.325	(2.6921)	723914.87	81.207

PERCOLATION/LEAKAGE THROUGH LAYER 3	0.00221 (	0.00022)	46.516	0.00522
AVERAGE HEAD ON TOP OF LAYER 3	17.756 (	1.806)		
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.08454 (	0.03402)	1783.052	0.20002
CHANGE IN WATER STORAGE	-0.178 (	0.8967)	-3755.82	-0.421

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PEAK DAILY VALUES FOR YEARS 1 THROUGH 5

	(INCHES)	(CU. FT.)
PRECIPITATION	3.37	71074.305
RUNOFF	2.028	42768.2422
PERCOLATION/LEAKAGE THROUGH LAYER 3	0.000010	0.21522
AVERAGE HEAD ON TOP OF LAYER 3	30.000	
PERCOLATION/LEAKAGE THROUGH LAYER 5	0.000511	10.76741
SNOW WATER	2.37	49911.7148
MAXIMUM VEG. SOIL WATER (VOL/VOL)		0.4562
MINIMUM VEG. SOIL WATER (VOL/VOL)		0.0734

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FINAL WATER STORAGE AT END OF YEAR 5

LAYER	(INCHES)	(VOL/VOL)
1	2.1139	0.3523
2	10.4731	0.4364
3	0.0000	0.0000
4	4.9820	0.1038
5	3.6041	0.1001
SNOW WATER	0.000	

Stormwater Runoff Calculations

Appendix G – Stormwater Runoff Calculations

Final (100%) Remedial Design Report
DuPont-Stauffer Landfill Site
Newburgh, New York

G.1. General

O'Brien & Gere conducted a stormwater runoff analysis for the North Landfill area of the site using the computer program Win TR-55 Small Watershed Hydrology developed by the National Resources Conservation Service. The analysis was performed for both pre- and post-construction conditions.

The analysis incorporates the site location and historical precipitation data to develop storm data. Rainfall events for the 1, 2, 10, 25, 50, and 100-year storms were simulated using TR-55 to evaluate the flow rates of runoff leaving the North Landfill area. The North Landfill area was divided into two subareas for the analysis based on the topography of the site. Flow rates for each of the subareas with existing conditions are presented in Table 1.

Table 1 *Existing Conditions Flow Rates, cfs*

Site Area	Rainfall Return Period						
	1-year	2-year	5-year	10-year	25-year	50-year	100-year
Northeast Section	3.29	4.82	7.55	10.45	13.44	14.95	17.98
Southwest Section	0.37	0.54	0.85	1.17	1.51	1.68	2.02

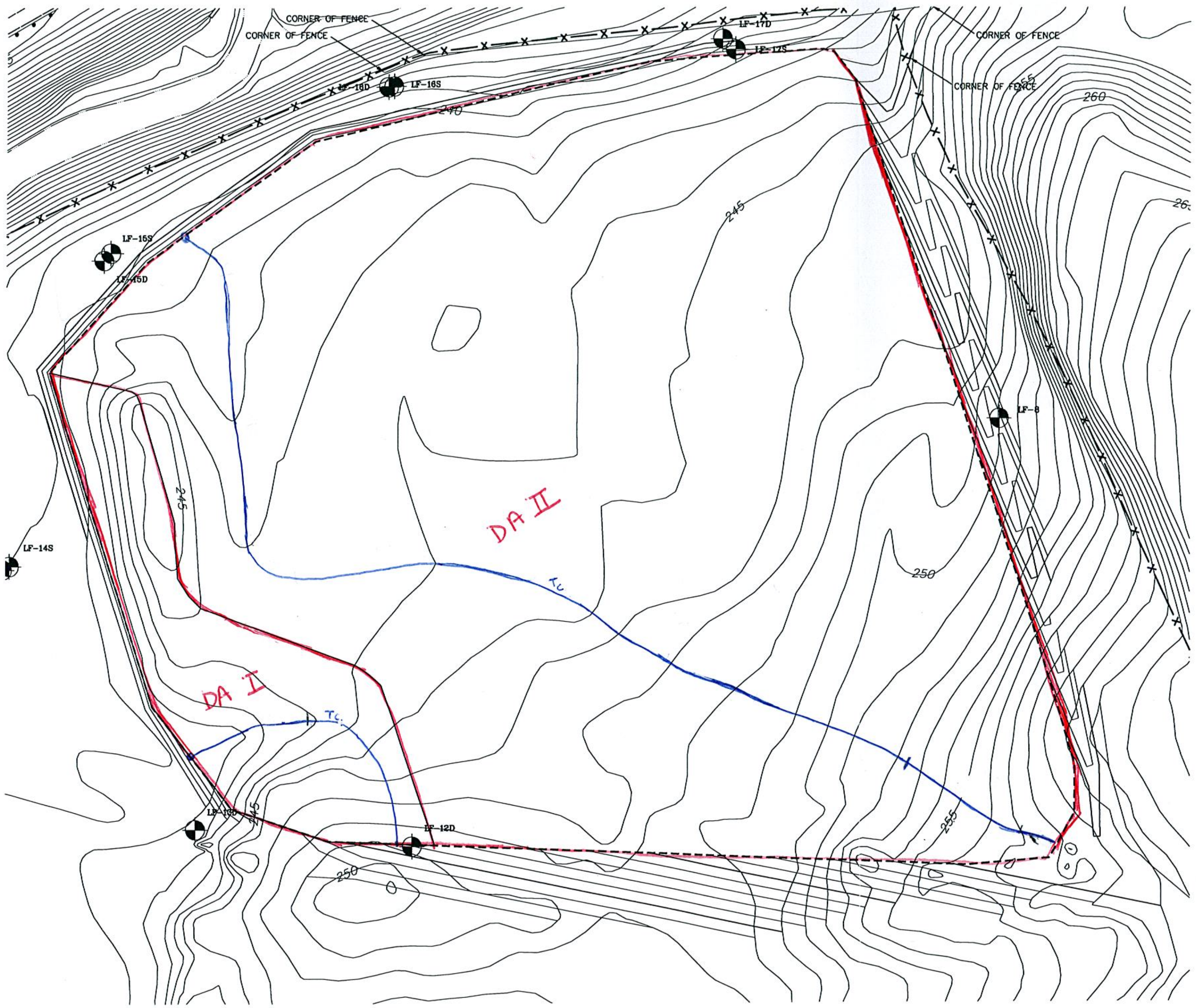
Flow rates for each of the subareas with proposed conditions are presented in Table 2.

Table 2 *Proposed Conditions Flow Rates, cfs*

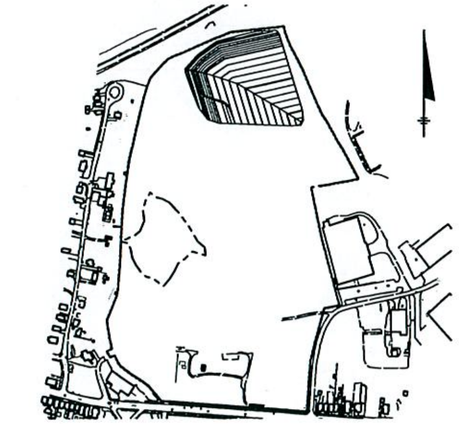
Site Area	Rainfall Return Period						
	1-year	2-year	5-year	10-year	25-year	50-year	100-year
Northeast Section	2.56	3.91	6.36	9.00	11.75	13.15	15.97
Southwest Section	1.56	2.38	3.88	5.50	7.17	8.03	9.76

The results indicate that the proposed low permeability cap will slightly increase the flows over this area, as compared to existing conditions, by approximately 4 cfs. Runoff will continue to leave this area by overland flow. Detailed calculations using TR-55 are attached.

Friday, August 05, 2005 9:58:42 AM



DRAWING NOTES:



Existing Conditions

AREA "A" GRADING PLAN

SCALE: 1"=40'

DA I
'Southwest Section'

Area = 23,878 SF
= 0.55 ac

T_c:
$slope_1 = \frac{251.2 - 247.2}{100} = 0.04$

$slope_2 = \frac{247.2 - 240.25}{80} = 0.09$

DA II
'Northeast Section'

Area = 217,227 SF
= 4.99 ac

T_c:
$slope_1 = \frac{257.8 - 252.3}{100} = 0.055$

$slope_2 = \frac{252.3 - 240.3}{630} = 0.019$

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

PRELIMINARY NOT FOR CONSTRUCTION

DATE: 11/11/11

NO.	DATE	REVISION	INIT.
A	9/4/07	ISSUED FOR NYSDEC REVIEW	

1"=40' 40 0 40 80

O'BRIEN & GERE

DUPONT – STAUFFER LANDFILL SITE
SITE 33-6-009
REMEDIAL DESIGN PROJECT
NEWBURGH, NEW YORK

GENERAL

AREA "A"
GRADING PLAN

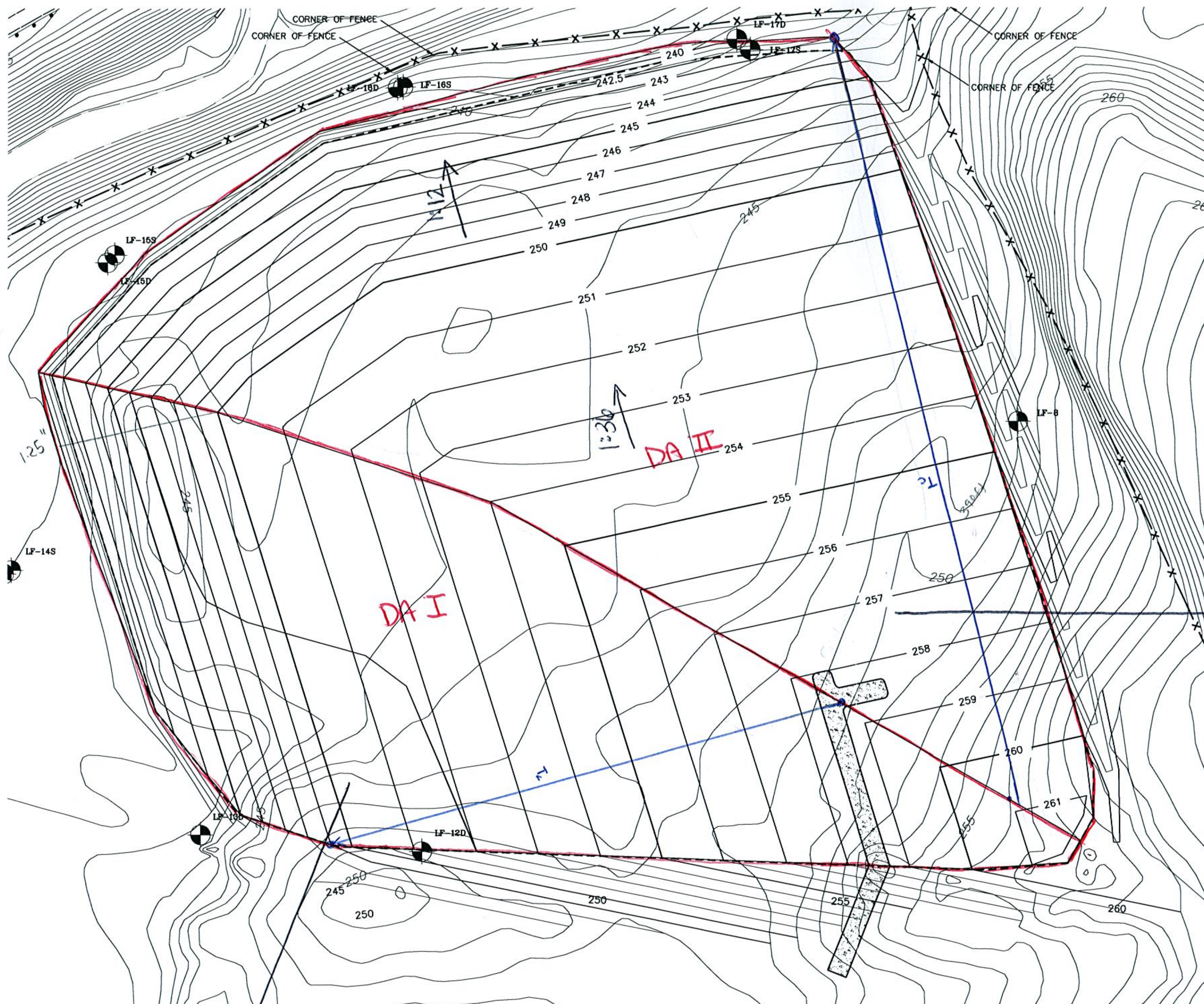
IN CHARGE OF ______
DESIGNED BY ______ CHECKED BY ______
DRAWN BY ______

FILE NO. 5618.39860.107
DATE NOV. 2001

G-7

I:\ZENECA.5618\39860.DUPONT-STAUF-LD-DIV71\DOC\DRAWINGS\CONTRACT DRAWINGS\39860-101-G1G2G3G4G5G6G7.DWG

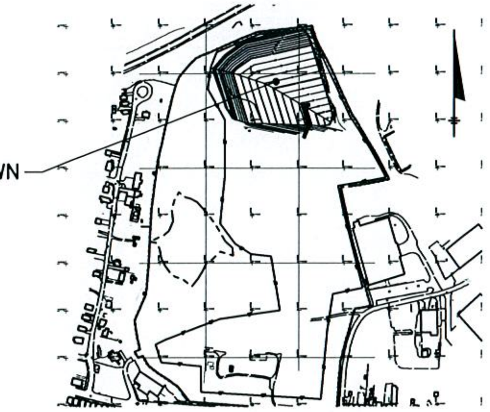
Friday, August 05, 2005 9:58:42 AM



DRAWING NOTES:

Slopes:
1:36 = 0.028
1:12 = 0.083

AREAS SHOWN



KEY MAP

Proposed Conditions

DA II
'Northeast Section'
Area = 155296 SF
= 3.57 acres

Access Road Area = 526 SF
= 0.012 acres
3.57 ac - 0.012 ac = 3.56

T_c: Sheet flow - 100 ft
Slope = 0.028
Shallow conc - 285 ft
Slope = 0.028
Shallow conc - 85 ft
Slope = 0.083

NO.	DATE	REVISION	INIT.
A	9/4/07	ISSUED FOR NYSDEC REVIEW	

1" = 20' 40'
40 20 0 20 40 80 40

DA I
'Southwest section'
Area = 97588 SF
= 2.24 acres

Access Road area = 1306 SF
= 0.03
2.24 - 0.03 = 2.21 ac

AREA "A" GRADING PLAN
SCALE: 1"=40'

T_c:
sheet flow - 100 ft
Slope = 0.028
Shallow conc - 210 ft
Slope = 0.028
Shallow conc - 10 ft
Slope = 0.083

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED IN THE TITLE BLOCK. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR IN THE TITLE BLOCK TO DETERMINE THE ACTUAL SCALE OF THIS DRAWING.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

PRELIMINARY NOT FOR CONSTRUCTION
DATE: 10/19/11

O'BRIEN & GERE

DUPONT – STAUFFER LANDFILL SITE
SITE 33-6-009
REMEDIAL DESIGN PROJECT
NEWBURGH, NEW YORK

GENERAL

AREA "A" GRADING PLAN

IN CHARGE OF ______
DESIGNED BY ______ CHECKED BY ______
DRAWN BY ______
FILE NO. 5618.39860.106
DATE OCT. 2001
G-6

I:\ZENECA.5618\39860.DUPONT-STAUF-LD-DIV71\DOC\DRAWINGS\CONTRACT DRAWINGS\39860-101-G1.DWG

WinTR-55 Current Data Description

--- Identification Data ---

User:	JEG	Date:	11/18/2011
Project:		Units:	English
SubTitle:	Existing Conditions	Areal Units:	Acres
State:	New York		
County:	Orange		
Filename:	C:\Documents and Settings\GreenfJE\Desktop\Dupont Stauffer Landfill Site - Existing.w55		

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
DA I	southwest section	Outlet	0.55	77	0.457
DA II	northeast section	Outlet	4.99	77	0.477

Total area: 5.54 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
3.5	4.5	5.5	6.5	7.0	8.0	2.9

Storm Data Source: Orange County, NY (NRCS)
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

JEG

Existing Conditions
Orange County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
3.5	4.5	5.5	6.5	7.0	8.0	2.9

Storm Data Source: Orange County, NY (NRCS)
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

JEG

Existing Conditions
Orange County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)	1-Yr (cfs)
SUBAREAS							
DA I	0.54	0.85	1.17	1.51	1.68	2.02	0.37
DA II	4.82	7.55	10.45	13.44	14.95	17.98	3.29
REACHES							
OUTLET	5.35	8.38	11.59	14.91	16.61	19.99	3.66

JEG

Existing Conditions
Orange County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs) (hr)	5-Yr (cfs) (hr)	10-Yr (cfs) (hr)	25-Yr (cfs) (hr)	50-Yr (cfs) (hr)	100-Yr (cfs) (hr)	1-Yr (cfs) (hr)
SUBAREAS							
DA I	0.54	0.85	1.17	1.51	1.68	2.02	0.37
	12.35	12.33	12.32	12.32	12.32	12.31	12.34
DA II	4.82	7.55	10.45	13.44	14.95	17.98	3.29
	12.35	12.34	12.34	12.34	12.32	12.34	12.37
REACHES							
OUTLET	5.35	8.38	11.59	14.91	16.61	19.99	3.66

JEG

Existing Conditions
Orange County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
DA I	.55	0.457	77	Outlet	southwest section
DA II	4.99	0.477	77	Outlet	northeast section

Total Area: 5.54 (ac)

JEG

Existing Conditions
Orange County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
DA I							
SHEET	100	0.0400	0.800				0.452
SHALLOW	80	0.0900	0.050				0.005
				Time of Concentration			0.457
							========
DA II							
SHEET	100	0.0550	0.800				0.398
SHALLOW	630	0.0190	0.050				0.079
				Time of Concentration			0.477
							========

JEG

Existing Conditions
Orange County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
DA I	Woods	(good)	D	.55	77
	Total Area / Weighted Curve Number			.55	77
				===	==
DA II	Woods	(good)	D	4.99	77
	Total Area / Weighted Curve Number			4.99	77
				====	==

WinTR-55 Current Data Description

--- Identification Data ---

User:	JEG	Date:	11/18/2011
Project:		Units:	English
SubTitle:	Proposed Conditions	Areal Units:	Acres
State:	New York		
County:	Orange		

Filename: C:\Documents and Settings\GreenfJE\Desktop\Dupont Stauffer Landfill Site - Proposed.w55

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
DA I	southwest	Outlet	2.24	74	0.233
DA II	northeast	Outlet	3.57	74	0.211

Total area: 5.81 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
3.5	4.5	5.5	6.5	7.0	8.0	2.9

Storm Data Source: Orange County, NY (NRCS)
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

JEG

Proposed Conditions
Orange County, New York

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
3.5	4.5	5.5	6.5	7.0	8.0	2.9

Storm Data Source: Orange County, NY (NRCS)
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

JEG

Proposed Conditions
Orange County, New York

Watershed Peak Table

Sub-Area or Reach Identifier	Peak Flow by Rainfall Return Period 2-Yr (cfs)	5-Yr (cfs)	10-Yr (cfs)	25-Yr (cfs)	50-Yr (cfs)	100-Yr (cfs)	1-Yr (cfs)
SUBAREAS							
DA I	2.38	3.88	5.50	7.17	8.03	9.76	1.56
DA II	3.91	6.36	9.00	11.75	13.15	15.97	2.56
REACHES							
OUTLET	6.27	10.23	14.49	18.91	21.15	25.69	4.13

JEG

Proposed Conditions
Orange County, New York

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period 2-Yr (cfs) (hr)	5-Yr (cfs) (hr)	10-Yr (cfs) (hr)	25-Yr (cfs) (hr)	50-Yr (cfs) (hr)	100-Yr (cfs) (hr)	1-Yr (cfs) (hr)
SUBAREAS							
DA I	2.38 12.18	3.88 12.18	5.50 12.17	7.17 12.17	8.03 12.17	9.76 12.17	1.56 12.19
DA II	3.91 12.17	6.36 12.17	9.00 12.17	11.75 12.17	13.15 12.16	15.97 12.16	2.56 12.17
REACHES							
OUTLET	6.27	10.23	14.49	18.91	21.15	25.69	4.13

JEG

Proposed Conditions
Orange County, New York

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
DA I	2.24	0.233	74	Outlet	southwest
DA II	3.57	0.211	74	Outlet	northeast

Total Area: 5.81 (ac)

JEG

Proposed Conditions
Orange County, New York

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
DA I							
SHEET	100	0.0280	0.240				0.199
SHALLOW	285	0.0280	0.050				0.029
SHALLOW	85	0.0830	0.050				0.005
				Time of Concentration			0.233
							========
DA II							
SHEET	100	0.0280	0.240				0.199
SHALLOW	93	0.0280	0.050				0.010
SHALLOW	35	0.0830	0.050				0.002
				Time of Concentration			0.211
							========

JEG

Proposed Conditions
Orange County, New York

Sub-Area Land Use and Curve Number Details

Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
DA I	Open space; grass cover > 75%	(good)	C	2.21	74
	Gravel (w/ right-of-way)		D	.03	91
	Total Area / Weighted Curve Number			2.24	74
				====	==
DA II	Open space; grass cover > 75%	(good)	C	3.56	74
	Gravel (w/ right-of-way)		D	.01	91
	Total Area / Weighted Curve Number			3.57	74
				====	==

Data Usability Summary Report for December 2011 Groundwater Analyses

TO: A. Farrell **cc:**
FROM: K. Storne
RE: DuPont-Stauffer Landfill Site, Newburgh, New York – Data Validation Results
FILE: 5618/39860.910.971
DATE: August 21, 2012

This Data Usability Summary Report (DUSR) presents the results of data validation performed for environmental samples collected as part of the investigation of the DuPont-Stauffer Landfill Site located in Newburgh, New York. Sample collection activities were conducted by O'Brien & Gere in December 2011.

The environmental samples collected for this investigation consisted of groundwater samples, trip blanks, equipment blank, matrix spike, matrix spike duplicate, and field duplicate sample. Samples were analyzed by Lancaster Laboratories, Inc. (Lancaster) of Lancaster, Pennsylvania. Lancaster utilized United States Environmental Protection Agency (USEPA) methods listed in the following table.

Table 1. *Analytical methods and references*

Parameter	Method	Reference
VOCs	USEPA Methods 5030B/8260B	1
SVOCs	USEPA Methods 3510C/8270C	1
Metals	USEPA Methods 3005A/3010A/6010B/6020	1
Mercury	USEPA Method 7470A	1

Note:
1. (USEPA. 2004. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846,* 3rd Edition, Update IIIB. Washington D.C.

VOCs indicates volatile organic compounds.
SVOCs indicates semivolatile organic compounds.

The laboratory data packages included summary forms for quality control analysis and supportive raw data.

The samples listed in the attached Table 2 were submitted for data validation. Table 3 presents the specific data validation approach applied to data generated for this investigation. Definitions of laboratory QA/QC terms are presented in Table 4.

Full validation was performed on the samples collected for this sampling event.

The analytical data generated for this investigation were evaluated by O'Brien & Gere using the quality assurance/quality control (QA/QC) information presented in the following documents:

- O'Brien & Gere. 2006. *Pre-Design Investigation, DuPont Stauffer Landfill, Newburgh, New York.* Syracuse, New York.

- USEPA. 2004. *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846,* 3rd Edition, Update IIIB. Washington D.C.

Data affected by excursions from criteria presented in the methods are qualified using guidance provided in the following documents and professional judgment:

- USEPA. 2006a. *USEPA Region II Evaluation of Metals Data for the CLP Program, SOP HW-2* Revision 13. New York, NY.

- USEPA. 2006b. *USEPA Region II Validating Semivolatile Organic Compounds by SW-846 Method 8270D, SOP HW-22* Revision 3. New York, NY.

- USEPA. 2006c. *USEPA Region II Validating Volatile Organic Compounds by SW-846 Method 8260B, SOP HW-24* Revision 2. New York, NY.

USEPA data validation guidelines have been modified to reflect the requirements of the methods used in the analysis of samples collected for this sampling event. Qualifiers were applied to data that failed to meet the quality control criteria presented in the USEPA methods and the QAPP.

The validation included checking the following parameters:

1. QAPP compliance
2. Chain-of-custody record
3. Sample collection and preservation
4. Holding times
5. Gas chromatography/mass spectrometry (GC/MS) tuning criteria
6. Calibration
7. Blank analysis
8. Surrogate recovery
9. Matrix spike/matrix spike duplicate (MS/MSD) analysis
10. Laboratory duplicate analysis
11. Field duplicate analysis
12. Laboratory Control Sample (LCS) analysis
13. Internal standards performance
14. Inductively Coupled Plasma (ICP) interference check sample analysis
15. ICP serial dilution analysis
16. Target analyte identification, quantitation, and quantitation limits (QLs)
17. Documentation completeness

The following sections of this report present the results of the comparison of the analytical data to the QA/QC criteria specified above. Based on the QA/QC information review, an overall evaluation of data usability is also presented in the final section.

VOC DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet method and validation criteria or did not result in additional qualification of sample results:

- QAPP compliance
- Sample collection and preservation
- Holding times
- Calibration
- Blank analysis
- MS/MSD analysis
- LCS analysis
- Field duplicate analysis

- Surrogate recovery
- Internal standards performance
- GC/MS instrument performance check
- Target analyte identification

Excursions from method or validation criteria were not identified during the validation process. An additional observation is described below.

I. Target analyte quantitation and QLs

VOC results with concentrations greater than the MDL but less than the QL were qualified as approximate (J) by the laboratory. The "J" qualifiers were retained during the validation process to indicate that these concentrations are approximate.

SVOC DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet method and validation criteria or did not result in additional qualification of sample results:

- QAPP compliance
- Sample collection and preservation
- Holding times
- Calibration
- Blank analysis
- MS/MSD analysis
- Field duplicate analysis
- Surrogate recovery
- Internal standards performance
- GC/MS instrument performance check
- Target analyte identification

Excursions from method or validation criteria and additional observations are described below.

I. LCS analysis

The following results were qualified as approximate (UJ) to indicate minor accuracy excursions due to LCS excursions:

- Results for bis(2-chloroethyl)ether, 2,2-oxybis(1-chloropropane, n-nitroso-di-n-propylamine, hexachloroethane, nitrobenzene, isophorone, bis(2-chloroethoxy)methane, 1,2,4-trichlorobenzene, naphthalene, 4-chloroaniline, hexachlorobutadiene, 2-methylnaphthalene, hexachlorocyclopentadiene, 2-chloronaphthalene, 2-nitroaniline, dimethylphthalate, 2,6-dinitrotoluene, acenaphthylene, 3-nitroaniline, acenaphthene, 2,4-dinitrotoluene, dibenzofuran, diethylphthalate, fluorene, 4-chlorophenyl-phenylether, 4-nitroaniline, n-nitrosodiphenylamine, 4-bromophenyl-phenylether, hexachlorobenzene, phenanthrene, anthracene, carbazole, di-n-butylphthalate, fluoranthene, pyrene, butylbenzylphthalate, bis-2-ethylhexyl-phthalate, 3,3'-dichlorobenzidine, benzo(a)anthracene, chrysene, di-n-octylphthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene and benzo(g,h,i)perylene in samples GW-LF-13D-122211, GW-LF-12D-122211, GW-LF-9-122211 and EB-02-122211.

II. Target analyte quantitation and QLs

SVOC results with concentrations greater than the MDL but less than the QL were qualified as approximate (J) by the laboratory. The "J" qualifiers were retained during the validation process to indicate that these concentrations are approximate.

METALS DATA EVALUATION SUMMARY

The following QA/QC parameters were found to meet method and validation criteria or did not result in additional qualification of sample results (where applicable):

- QAPP compliance
- Sample collection and preservation
- Holding times
- Calibration
- LCS analysis
- MS/MSD analysis
- Internal standards performance
- ICP interference check analysis
- ICP serial dilution analysis
- Laboratory duplicate analysis

Excursions from method or validation criteria and additional observations are described below.

I. Blank analysis

The following results were qualified as non-detected (U) due to blank excursions to indicate minor representativeness excursions:

- Copper in the following eight samples: GW-LF-16D-122011, GW-LF-16S-122011, GW-LF-15S-122011, GW-LF-14D-122011, GW-X-1-122011[GW-LF-14D-122011], GW-LF-14S-122011, GW-LF-17S-122111, and GW-LF-17D-122111.

II. Field duplicate analysis

The following results were qualified as approximate (UJ, J) to indicate minor accuracy excursions due to field duplicate precision excursions:

- Total aluminum and total iron in samples in the following 13 samples: GW-LF-16D-122011, GW-LF-16S-122011, GW-LF-15D-122011, GW-LF-15S-122011, GW-LF-14D-122011, GW-LF-14S-122011, GW-X-1-122011 [LF-14D-122011], GW-LF-17S-122111, GW-LF-17D-122111, GW-LF-8-122111, GW-LF-13D-122211, GW-LF-12D-122211 and GW-LF-9-122211.

III. Target analyte quantitation and QLs

Metal results with concentrations greater than the MDL but less than the QL were qualified as approximate (J) by the laboratory. The "J" qualifiers were retained during the validation process to indicate that these concentrations are approximate.

DATA USABILITY

The data from the samples listed in Table 2 were evaluated based on QA/QC criteria established by the methods as listed in Table 1 and the data validation approach as described in Table 3.

Major deficiencies in the data generation process, which would have resulted in data points being rejected, were not identified, indicating that the data are usable for quantitative and/or qualitative purposes. Data were not rejected for this sampling event. Minor deficiencies in the data generation process resulted in sample data being characterized as approximate or non-detected.

A discussion of the data quality with regard to the data usability parameters follows:

Precision: Data were not rejected for precision excursions.

Sensitivity: Sensitivity is established by QLs, which represent measurable concentrations of analytes which can be determined with a designated level of confidence, that meet project requirements. Dilutions were performed for analyses due to elevated concentrations of target analytes in the samples.

Accuracy: Data were not rejected for accuracy excursions.

Representativeness: Data were not rejected for representativeness excursions.

Comparability: Data usability with respect to comparability is 100 percent, as standardized analytical methods, QLs, reference materials, and data deliverables were used throughout the data generation process for this project.

Completeness: For the samples submitted for data validation, overall data usability with respect to completeness is 100 percent for the organic and inorganic data, considering the complete data set, meeting the QAPP completeness requirements.

Table 2. *Sample cross reference list*					
Samples collected and submitted for data validation					
Laboratory	**Date Collected**	**Laboratory ID**	**Client ID**	**Matrix**	**Analysis Requested**
Lancaster	12/20/2011	6505867	GW-LF-16D-122011	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505868	GW-LF-16S-122011	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505869	GW-LF-15D-122011	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505870	GW-LF-15S-122011	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505871	GW-LF-14D-122011	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505872	GW-LF-14S-122011, MS/MSD	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505876	EB-01-122011	Aqueous	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505877	GW-X-1-122011[GW-LF-14D-122011]	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/20/2011	6505878	TB-01-122011	Aqueous	VOCs
Lancaster	12/20/2011	6505879	GW-LF-16D-122011	Groundwater	Dissolved Metals
Lancaster	12/20/2011	6505880	GW-LF-16S-122011	Groundwater	Dissolved Metals
Lancaster	12/20/2011	6505881	GW-LF-15D-122011	Groundwater	Dissolved Metals
Lancaster	12/20/2011	6505882	GW-LF-15S-122011	Groundwater	Dissolved Metals
Lancaster	12/20/2011	6505883	GW-LF-14D-122011	Groundwater	Dissolved Metals
Lancaster	12/20/2011	6505884	GW-LF-14S-122011, MS/MSD	Groundwater	Dissolved Metals
Lancaster	12/20/2011	6505889	GW-X-1-122011[GW-LF-14D-122011]	Groundwater	Dissolved Metals
Lancaster	12/21/2011	6506946	GW-LF-17S-122111	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/21/2011	6506947	GW-LF-17S-122111	Groundwater	Dissolved Metals
Lancaster	12/21/2011	6506948	GW-LF-17D-122111	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/21/2011	6506949	GW-LF-17D-122111	Groundwater	Dissolved Metals
Lancaster	12/21/2011	6506950	GW-LF-8-12211	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/21/2011	6506951	GW-LF-8-12211	Groundwater	Dissolved Metals
Lancaster	12/21/2011	6506952	TB-02-12211	Aqueous	VOCs
Lancaster	12/22/2011	6508235	GW-LF-13D-122211	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/22/2011	6508236	GW-LF-13D-122211	Groundwater	Dissolved Metals
Lancaster	12/22/2011	6508237	GW-LF-12D-122211	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/22/2011	6508238	GW-LF-12D-122211	Groundwater	Dissolved Metals
Lancaster	12/22/2011	6508239	GW-LF-9-122211	Groundwater	VOCs, SVOCs, Metals
Lancaster	12/22/2011	6508240	GW-LF-9-122211	Groundwater	Dissolved Metals
Lancaster	12/22/2011	6508241	EB-02-122211	Aqueous	VOCs, SVOCs, Metals
Lancaster	12/22/2011	6508242	TB-03-122211	Aqueous	VOCs

Notes:
Lancaster indicates Lancaster Laboratories, Inc of Lancaster, Pennsylvannia.
VOCs indicates volatile organic compounds.
SVOCs indicates semivolatile organic compounds.
EB indicates equipment blank.
TB indicates trip blank.
MS/MSD indicates matrix spike/matrix spike duplicate.
Dup indicates field duplicate.
Sample identification utilized for field duplicate is shown in brackets.

O'Brien & Gere Data validation approach based on USEPA Region II Data validation guidelines for the following SW-846 analytical methods: VOCs (8260B), SVOCs (8270C/8270D), Metals (6010B)	
General Validation Approach	The validation approach taken by O'Brien & Gere is a conservative one; qualifiers are applied to sample data to indicate both major and minor excursions so that data associated with any type of excursion are identified to the data user. Major excursions result in data being rejected (R), indicating that the data are considered unusable for either quantitative or qualitative purposes. Minor excursions result in sample data being qualified as approximate (J, UJ, JN) or non-detected (U) that is otherwise usable for quantitative or qualitative purposes.
	Excursions are subdivided into excursions that are within the laboratory's control and those that are out of the laboratory's control. Excursions involving laboratory control sample recovery, calibration response, method blank excursions, low or high spike recovery due to inaccurate spiking solutions or poor instrument response, holding times, interpretation errors, and quantitation errors are within the control of the laboratory. Excursions resulting from matrix spike recovery, serial dilution recovery, surrogate, and internal standard performance due to interference from the matrix of the samples are examples of those excursions that are not within the laboratory's control if the laboratory has followed proper method procedures, including performing appropriate cleanup techniques.
Applying professional judgment	USEPA data validation directs professional judgment to be used when applying qualifiers in some cases. When utilizing professional judgment, provide justification for actions taken in the associated validation notes.
Validation Parameter	O'Brien & Gere Data Validation Approach based on Region II guidelines for SW-846 methods, current as of November 2011. Since Region II guidelines available for metals apply only to the CLP method, only the general approach to applying qualifiers was utilized for metals and inorganics.
Validation Qualifiers - Organics	U - The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the quantitation limit (QL). J - The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the QL). NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration. UJ - The analyte was not detected at a level greater than or equal to the QL. However, the QL is approximate and may be inaccurate or imprecise. R - The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample. EMPC- Estimated maximum possible concentration is characterized by a response with a signal to noise of at least 2.5 for both the quantitation ions but does not meet all the identification criteria specified in the method.
Cooler Temperature	Results for samples submitted for organic and inorganic analyses that are impacted by coolers that did not contain ice, or if the ice melted upon receipt and the cooler temperatures are greater than 10°C, are qualified as approximate (UJ, J). If samples are delivered to the laboratory the same day as sample collection and samples did not have sufficient time to reach 10°C, samples are not qualified, unless proper preservation was not provided for samples between sample collection and sample receipt at the laboratory. Results for samples received at ambient temperature involved in extended shipment-day issues may be rejected, applying professional judgment.
Percent Solids	Results for samples submitted for organic and inorganic analyses that are impacted by percent solids of 50 percent or less are qualified as approximate (UJ, J).
Holding Time	Results for samples analyzed less than two times the holding time window established in the method or the QAPP for preparation and/or analysis are qualified as approximate (UJ, J). Non-detected results for samples analyzed greater than two times the holding time window for preparation and/or analysis are rejected (R). Detected results for samples analyzed greater than two times the holding time window for preparation and/or analysis are qualified as approximate (J). The entire sample target list for a VOC sample impacted by a holding time excursion is qualified.

O'Brien & Gere Data validation approach based on USEPA Region II Data validation guidelines for the following SW-846 analytical methods: VOCs (8260B), SVOCs (8270C/8270D), Metals (6010B)	
General Calibration Actions	Due to relative standard deviation (RSD) calibration excursions, detected results for analytes in samples associated with the calibration are qualified as approximate (J). Non-detected results associated with RSD excursions may be qualified as approximate (UJ) based on professional judgment. If the RSD calibration excursion is greater than 90, detected results for analytes in samples associated with the calibration are qualified as approximate (J) and non-detected results may be rejected (R), applying professional judgment. Due to %D calibration verification excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). The response direction and detection of target analytes in associated sample may be considered in applying qualifiers. For response factor excursions, detected results are qualified as approximate (J) and non-detected results are rejected (R). For initial calibration verifications (ICV) excursions, detected and non-detected results for analytes in samples associated with the calibration are qualified as approximate (J, UJ). The response direction and detection of target analytes in associated sample may be considered in applying qualifiers.
VOCs Calibration Evaluation	VOC target analytes are evaluated using the criteria of 15 percent relative standard deviation (%RSD) or correlation coefficient of 0.990 for initial calibration curves. Calibration verifications are evaluated using a criterion of 20 percent difference (%D) for target analytes. Initial calibrations and calibration verifications are also evaluated using the response factor (RF) criteria described in the method for system performance check compounds, a criterion of greater than or equal to 0.010 for ketones and alcohols, and a criterion of 0.05 for the remaining target analytes. ICV recoveries are evaluated using laboratory control limits if available or 70 to 130%.
SVOCs Calibration Evaluation	SVOC target analytes are evaluated using the criteria of 15 %RSD (<20 %RSD Method 8270D) or correlation coefficient of 0.990 for initial calibration curves. Calibration verifications are evaluated using a criterion of 20 %D for the target analytes. Initial calibrations and calibration verifications are also evaluated using the criterion of a RF value of greater than or equal to a value of 0.05 for the target analytes using Method 8270C or Table 4 of 8270D. ICV recoveries are evaluated using laboratory control limits if available or 70 to 130%.
Associating samples with Field and Laboratory QC Samples	Trip blanks are associated with samples in the same sample cooler.
	Equipment blanks (Rinsate blanks) are associated with samples collected in the same day (or sampling event) using the same sample collection equipment and decontamination solutions. When sampling equipment or decontamination solutions are changed, a new equipment blank should be collected. Each sample should be associated with one equipment blank, which is collected as close to the sample collection date/time as possible. Use professional judgment.
	Field blanks are associated with the sample containers used to collect samples. When sampling container lots are changed, a new field blank should be collected.
	Method blanks are associated with samples prepared at the same time (if preparation is required) or analyzed in the same analytical batch as the samples. Method blanks should reflect the sample matrix type (aqueous, low level solid, medium level solid).
	LCSs are associated with samples prepared at the same time (if preparation is required) or analyzed in the same analytical batch as the samples.
	MS/MSD and laboratory duplicate samples are collected in the field. The laboratory must prepare using project samples. MS/MSDs and laboratory duplicates are associated with samples prepared at the same time or close to the same time (if preparation is required) with the same matrix type.
	Field duplicates are collected in the field and are associated with samples of the same matrix type.
	In the case that insufficient QC samples are provided due to field or laboratory problems, use professional judgment to associate each sample with a QC sample that reflects the sample matrix and analysis conditions. If insufficient QC samples are available to properly associate samples, record the impact in the DV notes.

O'Brien & Gere Data validation approach based on USEPA Region II Data validation guidelines for the following SW-846 analytical methods: VOCs (8260B), SVOCs (8270C/8270D), Metals (6010B)	
Evaluation and Action for MS/MSD, LCS, Surrogate and Laboratory Duplicate Data for VOCs and SVOCs	The laboratory control limit (CL) is used to assess MS/MSD, LCS, surrogate and laboratory duplicate data. Refer to Region II guidelines if laboratory control limits are not available.
	In the case that excursions are identified in more than one quality control sample of the same matrix within one sample delivery group, samples are batched according to sample preparation or analysis date and qualified accordingly (see batching description above).
	If percent recoveries are less than laboratory CLs but greater than 10%, non-detected and detected results are qualified as approximate (UJ, J).
	If percent recoveries are greater than laboratory CLs, detected results are qualified as approximate (J).
	If percent recoveries are less than 10%, detected results are qualified as approximate (J) and non-detected results are qualified as rejected (R).
	If RPDs for MSDs or laboratory duplicates are outside of laboratory CLs, detected results are qualified as approximate (J). Non-detected results may not be qualified, applying professional judgment.
Evaluation of MS/MSD, Surrogate, and Field Duplicate Data for VOCs and SVOCS	Qualification is performed only when both MS and MSD recoveries are outside of laboratory CLs.
	Organic data are rejected (R) in the case that both MS/MSD recoveries are less than 10%.
	Qualification is not performed if MS/MSD or surrogate recoveries are outside of laboratory CLs with an analysis that applied a dilution factor of 10 times or more, applying professional judgment.
	Qualification of data associated with MS/MSD or field duplicate excursions is limited to the un-spiked sample or the field duplicate pair, respectively.
	Field duplicate data are evaluated against relative percent difference (RPD) criteria of less than 50 percent for aqueous samples and less than 100 percent for soils when results are greater than or equal to five times the QL. When a field duplicate result is less than five times the QL, a control limit of plus or minus two times the QL (difference criterion) is applied. If RPDs or differences are outside of criterion, detected and non-detected results are qualified as approximate (UJ, J) to indicate minor excursions.
Evaluation and Actions for Blank Results for VOC, SVOC Data	Blanks are not qualified due to contamination of another blank. Sample results qualified as non-detected (U) are treated as hits when qualifying for surrogate or calibration excursions. The following approach is utilized for applying qualifiers, using twice the quantitation limit (QL) for methylene chloride, 2-butanone and acetone: 1. For blank results less than the QL, samples with concentrations less than the QL are reported at the QL and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL are not qualified or may apply the Blank Rule Option. 2. For blank results greater than the QL, samples with concentrations less than the QL are reported at the QL and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL and less than the blank contamination level are reported and qualified as non-detected (U). Samples with concentrations greater than or equal to the QL and greater than or equal to the blank contamination level are not qualified or may apply the Blank Rule Option. 3. For blank results equal to the QL, sample concentrations less than the QL are reported at the QL value and qualified as non-detected (U). Samples greater than or equal to the QL are not qualified or may apply the Blank Rule Option. 4. For gross contamination in blanks (saturated peaks, interference peaks, poor baselines), all associated sample detected results are rejected (R) or qualified as non-detected (U) using professional judgment. Blank Rule Option: If methylene chloride, acetone or 2-butanone is detected in the sample at a concentration that is less than ten times the concentration in the associated blank, the sample result is qualified as "U". If other target analytes are detected in the sample at a concentration that is less than five times the concentration detected in the associated blank, the sample result is qualified as "U".

O'Brien & Gere Data validation approach based on USEPA Region II Data validation guidelines for the following SW-846 analytical methods: VOCs (8260B), SVOCs (8270C/8270D), Metals (6010B)	
Evaluation of MS/MSD, Surrogate, and Field Duplicate Data for VOCs and SVOCS	Qualification is performed only when both MS and MSD recoveries are outside of laboratory CLs.
	Organic data are rejected (R) in the case that both MS/MSD recoveries are less than 10%.
	Qualification is not performed if MS/MSD or surrogate recoveries are outside of laboratory CLs with an analysis that applied a dilution factor of 10 times or more, applying professional judgment.
	Qualification of data associated with MS/MSD or field duplicate excursions is limited to the un-spiked sample or the field duplicate pair, respectively.
	Field duplicate data are evaluated against relative percent difference (RPD) criteria of less than 50 percent for aqueous samples and less than 100 percent for soils when results are greater than or equal to five times the QL. When a field duplicate result is less than five times the QL, a control limit of plus or minus two times the QL (difference criterion) is applied. If RPDs or differences are outside of criterion, detected and non-detected results are qualified as approximate (UJ, J) to indicate minor excursions.
Evaluation of Internal Standards for VOCs and SVOCs	Internal standard recoveries are evaluated using control limits of from 50% of the lower standard area to 100% of the upper standard area of the associated calibration verification standard. The results associated with internal standard area recoveries 25% or greater but less than 50% are qualified as approximate (J, UJ). Non-detected results associated with internal standard area recoveries less than 25% are rejected (R), using professional judgment.
Metals, Mercury, and Inorganic MS/MSD, Laboratory/Field Duplicate, Serial Dilution	Qualification of sample results associated with MS/MSD, laboratory duplicate and field duplicate excursions is performed on samples for the same matrix, within the same preparation batch, within the same SDG group. [Region II only qualifies the Field Duplicate and associated sample.]
Evaluation of LCS Data for Metals, Mercury, and Inorganics	To apply qualifiers if LCS result is outside of laboratory CLs or 80 to 120%: Aqueous sample: 1. Detected and non-detected result associated with a recovery of less than 50% is rejected (R). 2. Detected result associated with recovery between 50 and 79%, is qualified as approximate (J). Non-detected result is qualified as approximate (UJ). 3. Detected result associated with recoveries of between 121 and 150% is qualified as approximate (J). 4. Detected result associated with recoveries of greater than 150% is rejected (R), applying professional judgment. Soil sample: 1. Detected result associated with recovery greater than the upper CL is qualified as approximate (J). 2. Detected result associated with recovery less than the lower CL is qualified as approximate (J) and non-detected result is qualified as approximate (UJ). 3. Detected and non-detected result associated with a recovery of less than 10% is rejected (R).
Evaluation of MS/MSD Data for Metals, Mercury, and Inorganics	To apply qualifiers if either MS or MSD result is outside of laboratory CL or 75 to 125%: Aqueous sample: 1. Detected and non-detected result associated with a recovery of less than 30% is rejected (R). 2. Detected result associated with recoveries between 30 and 74%, is qualified as approximate (J). Non-detected result is qualified as approximate (UJ). 3. Detected result associated with recoveries of between 126 and 150% is qualified as approximate (J). 4. Detected result associated with recoveries of greater than 150% is rejected (R) or qualified as approximate (J) applying professional judgment. Soil sample: 1. Detected and non-detected result associated with a recovery of less than 10% is rejected (R). 2. Detected result associated with recovery of between 10 and 74%, is qualified as approximate (J). Non-detected result is qualified as approximate (UJ). 3. Detected result associated with recoveries of between 126 and 200% is qualified as approximate (J). 4. Detected result associated with recoveries of greater than 200% is rejected (R) or qualified as approximate (J) applying professional judgment.

O'Brien & Gere Data validation approach based on USEPA Region II Data validation guidelines for the following SW-846 analytical methods: VOCs (8260B), SVOCs (8270C/8270D), Metals (6010B)	
Evaluation of Laboratory Duplicate and Field Duplicate for Metals, Mercury, and Inorganics	To apply qualifiers if laboratory duplicate results are outside of RPD or difference criteria: Aqueous sample with sample and duplicate values both greater than or equal to 5 times the QL: 1. Detected result greater than or equal to the QL, associated with an RPD of greater than 20 is qualified as approximate (J). Aqueous sample when either detected sample or duplicate value is less than 5 times the QL: 1. Detected results with absolute difference greater than the QL are qualified as approximate (J). Non-detected results are qualified as approximate (UJ). Soil sample for sample and duplicate values both greater than or equal to 5 times the QL: 1. Detected result greater than or equal to the QL, associated with an RPD of greater than or equal to 35 is qualified as approximate (J). Soil sample when either detected sample or duplicate value is less than 5 times the QL: 1. Sample results with absolute difference greater than 2 times the QL are qualified as approximate (J). Non-detected results are qualified as approximate (UJ).
Evaluation of Metals, Mercury, and Inorganic Blank Data	For calibration blanks and preparation blanks at concentrations greater than laboratory MDLs but less than or equal to QLs: 1. Concentration in the associated samples of greater than or equal to the MDLs but less than or equal to QLs are revised to the QL level and qualified as non-detected (U).
	For calibration blanks, preparation blanks and field blanks at concentrations greater than laboratory QLs: 1. Concentration in the associated samples of greater than the blank concentration and less than ten times the blank concentration are qualified as approximate (J). 2. Concentrations in the associated samples of greater than or equal to the MDLs but less than or equal to QLs are revised to the QL level and are qualified as non-detected (U). 3. Concentration in the associated samples of greater than the QLs and less than the blank concentration are rejected (R) or qualified as non-detected (U), applying professional judgment.
	For calibration blanks and preparation blanks at concentrations less than the negative value of the QLs: 1. Concentration in the associated samples of less than ten times the QLs are qualified as approximate (J). 2. Non-detected concentrations in the associated samples are qualified as approximate (UJ).
Evaluation of Serial Dilution Data	Serial dilution results are evaluated for data with initial sample concentrations that are greater than 50 times the MDL. If the percent difference is greater than 10%, associated sample results greater than or equal to the MDL are qualified as approximate (J). If the percent difference is greater than or equal to 100%, associated sample results greater than or equal to the MDL are rejected (R).
Source O'Brien & Gere	

Laboratory QA/QC analyses definitions.	
QA/QC Term	**Definition**
Quantitation limit	The level above which numerical results may be obtained with a specified degree of confidence; the minimum concentration of an analyte in a specific matrix that can be identified and quantified above the method detection limit and within specified limits of precision and bias during routine analytical operating conditions.
Method detection limit	The minimum concentration of an analyte that undergoes preparation similar to the environmental samples and can be reported with a stated level of confidence that the analyte concentration is greater than zero.
Instrument detection limit	The lowest concentration of a metal target analyte that, when directly inputted and processed on a specific analytical instrument, produces a signal/response that is statistically distinct from the signal/response arising from equipment "noise" alone.
Gas chromatography/mass spectrometry (GC/MS) instrument performance check	Performed to verify mass resolution, identification, and to some degree, instrument sensitivity. These criteria are not sample specific; conformance is determined using standard materials.
Calibration	Compliance requirements for satisfactory instrument calibration are established to verify that the instrument is capable of producing acceptable quantitative data. Initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of analysis and calibration verifications document satisfactory maintenance and adjustment of the instrument on a day-to-day basis.
Relative Response Factor	A measure of the relative mass spectral response of an analyte compared to its internal standard. Relative Response Factors are determined by analysis of standards and are used in the calculation of concentrations of analytes in samples.
Relative standard deviation	The standard deviation divided by the mean; a unit-free measure of variability.
Correlation coefficient	A measure of the strength of the relationship between two variables.
Relative Percent Difference	Used to compare two values; the relative percent difference is based on the mean of the two values, and is reported as an absolute value, i.e., always expressed as a positive number or zero.
Percent Difference	Used to compare two values; the percent difference indicates both the direction and the magnitude of the comparison, i.e., the percent difference may be either negative, positive, or zero.
Percent Recovery	The act of determining whether or not the methodology measures all of the target analytes contained in a sample.
Calibration blank	Consists of acids and reagent water used to prepare metal samples for analysis. This type of blank is analyzed to evaluate whether contamination is occurring during the preparation and analysis of the sample.
Method blank	A water or soil blank that undergoes the preparation procedures applied to a sample (i.e., extraction, digestion, clean-up). These samples are analyzed to examine whether sample preparation, clean-up, and analysis techniques result in sample contamination.
Field/equipment	Collected and submitted for laboratory analysis, where appropriate. Field/equipment blanks are handled in the same manner as environmental samples. Equipment/field blanks are analyzed to assess contamination introduced during field sampling procedures.
Trip blank	Consist of samples of analyte-free water that have undergone shipment from the sampling site to the laboratory in coolers with the environmental samples submitted for volatile organic compound (VOC) analysis. Trip blanks will be analyzed for VOCs to determine if contamination has taken place during sample handling and/or shipment. Trip blanks will be utilized at a frequency of one each per cooler sent to the laboratory for VOC analysis.
Internal standards performance	Compounds not found in environmental samples which are spiked into samples and quality control samples at the time of sample preparation for organic analyses. Internal standards must meet retention time and recovery criteria specified in the analytical method. Internal standards are used as the basis for quantitation of the target analytes.
Surrogate recovery	Compounds similar in nature to the target analytes but not expected to be detected in the environmental media which are spiked into environmental samples, blanks, and quality control samples prior to sample preparation for organic analyses. Surrogates are used to evaluate analytical efficiency by measuring recovery.
Laboratory control sample Matrix spike blank analyses	Standard solutions that consist of known concentrations of the target analytes spiked into laboratory analyte-free water or sand. They are prepared or purchased from a certified manufacturer from a source independent from the calibration standards to provide an independent verification of the calibration procedure. They are prepared and analyzed following the same procedures employed for environmental sample analysis to assess method accuracy independently of sample matrix effects.
Laboratory duplicate	Two or more representative portions taken from one homogeneous sample by the analyst and analyzed in the same laboratory.
Matrix	The material of which the sample is composed or the substrate containing the analyte of interest, such as drinking water, waste water, air, soil/sediment, biological material.
Matrix Spike (MS)	An aliquot of a matrix (water or soil) fortified (spiked) with known quantities of specific target analytes and subjected to the entire analytical procedure in order to indicate the appropriateness of the method for the matrix by measuring recovery.
Matrix spike duplicate (MSD)	A second aliquot of the same matrix as the matrix spike that is spiked in order to determine the precision of the method.
Retention time	The time a target analyte is retained on a GC column before elution. The identification of a target analyte is dependent on a target compound's retention time falling within the specified retention time window established for that compound.
Relative retention time	The ratio of the retention time of a compound to that of a standard.
Source O'Brien & Gere	

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Sample Reference List for SDG Number ODP07 with a Data Package Type of NYSDEC B

/ODP08 – Filtered Metals

06745 - O'Brien & Gere Engineers - NY

Project: DuPont-Stauffer Landfill

Lab Sample Number	Lab Sample Code	Client Sample Description
6505867	DSL6D	GW-LF-16D-122011 Grab Water ✓
6505868	DSL6S	GW-LF-16S-122011 Grab Water ✓
6505869	DSL5D	GW-LF-15D-122011 Grab Water ✓
6505870	DSL5S	GW-LF-15S-122011 Grab Water ✓
6505871	DSL4D	GW-LF-14D-122011 Grab Water ✓
6505872	DSL4S	GW-LF-14S-122011 Grab Water
6505873	DSL4S	GW-LF-14S-MS-122011 Grab Water
6505874	DSL4S	GW-LF-14S-MSD-122011 Grab Water
6505875	DSL4S	GW-LF-14S-DUP-122011 Grab Water
6505876	DSLEB	EB-01-122011 Grab Water
6505877	DSLFD	GW-X-1-122011 Grab Water (LF-14D)
6505878	DSLTB	TB-01-122011 Water

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Analysis Report

Sample Description: GW-LF-16D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505867
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6D SDG#: ODP07-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

ODP07 0012

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-16D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505867
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6D SDG#: ODP07-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

ODP07 0013

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-16D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505867
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6D SDG#: ODP07-01

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol		87-86-5	N.D.	1	5	1
04678	Phenanthrene		85-01-8	N.D.	0.1	0.5	1
04678	Phenol		108-95-2	N.D.	0.5	1	1
04678	Pyrene		129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene		120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol		95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol		88-06-2	N.D.	0.5	1	1
Metals		**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	0.109 J	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	0.0056 J	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0350	0.00026	0.0050	1
01750	Calcium		7440-70-2	138	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0033 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	~~0.0024 J~~	~~0.00094~~ 0.0100 U	0.0100	1
01754	Iron		7439-89-6	1.02 J	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	39.5	0.0067	0.100	1
07058	Manganese		7439-96-5	0.0184	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0032 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	14.9	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	19.6	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	0.00051 J	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial# Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-16D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505879
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF6D SDG#: ODP08-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0345	0.00026	0.0050	1
01750	Calcium	7440-70-2	131	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0012 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0010 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.0326 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	37.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0112	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.00095 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	14.1	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	18.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00065 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-16S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505868
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6S SDG#: ODP07-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

ODP07 0016

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-16S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505868
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6S SDG#: ODP07-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

ODP07 8017

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-16S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505868
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6S SDG#: ODP07-02

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles**	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol		87-86-5	N.D.	1	5	1
04678	Phenanthrene		85-01-8	N.D.	0.1	0.5	1
04678	Phenol		108-95-2	N.D.	0.5	1	1
04678	Pyrene		129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene		120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol		95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol		88-06-2	N.D.	0.5	1	1
Metals		**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	1.06 J	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	0.0053 J	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0285	0.00026	0.0050	1
01750	Calcium		7440-70-2	135	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0067 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	0.0019 J	0.00062	0.0050	1
07053	Copper		7440-50-8	~~0.0040 J~~ 0.0100U	0.00094	0.0100	1
01754	Iron		7439-89-6	2.32 J	0.0141	0.200	1
07055	Lead		7439-92-1	0.0028 J	0.0022	0.0150	1
01757	Magnesium		7439-95-4	34.4	0.0067	0.100	1
07058	Manganese		7439-96-5	0.508	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0061 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	2.33	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	12.0	0.0647	1.00	1
07071	Vanadium		7440-62-2	0.0019 J	0.00096	0.0050	1
07072	Zinc		7440-66-6	0.0129 J	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	0.00056 J	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

ODP07 0018

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-16S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505880
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF6S SDG#: ODP08-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0223	0.00026	0.0050	1
01750	Calcium	7440-70-2	130	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0012 J	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	33.1	0.0067	0.100	1
07058	Manganese	7439-96-5	0.412	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0017 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	2.08	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	11.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0045 J	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00049 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011	00:52	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-15D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505869
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL5D SDG#: ODP07-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.09	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.09	0.5	1
04678	Anthracene	120-12-7	N.D.	0.09	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.09	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.09	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.09	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.09	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.09	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	0.9	1

ODP07 0020

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster PA, 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Sample Description: GW-LF-15D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505869
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL5D SDG#: ODP07-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	0.9	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	0.9	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	0.9	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	0.9	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	0.9	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	0.9	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	0.9	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	0.9	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	0.9	1
04678	Chrysene	218-01-9	N.D.	0.09	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.09	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	0.9	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	0.9	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	0.9	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	9	28	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	0.9	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	0.9	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.09	0.5	1
04678	Fluorene	86-73-7	N.D.	0.09	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.09	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	0.9	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	0.9	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.09	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	0.9	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.09	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	0.9	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	0.9	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.09	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	0.9	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	0.9	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	0.9	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	0.9	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	0.9	1
04678	4-Nitrophenol	100-02-7	N.D.	9	28	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	0.9	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	0.9	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

ODP07 0021

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-15D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505869
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL5D SDG#: ODP07-03

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Pentachlorophenol		87-86-5	N.D.	0.9	5	1
04678	Phenanthrene		85-01-8	N.D.	0.09	0.5	1
04678	Phenol		108-95-2	N.D.	0.5	0.9	1
04678	Pyrene		129-00-0	N.D.	0.09	0.5	1
04678	1,2,4-Trichlorobenzene		120-82-1	N.D.	0.5	0.9	1
04678	2,4,5-Trichlorophenol		95-95-4	N.D.	0.5	0.9	1
04678	2,4,6-Trichlorophenol		88-06-2	N.D.	0.5	0.9	1
Metals		SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	N.D. UJ	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0270	0.00026	0.0050	1
01750	Calcium		7440-70-2	120	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0017 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron		7439-89-6	2.16 J	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	27.9	0.0067	0.100	1
07058	Manganese		7439-96-5	0.0072	0.00044	0.0050	1
07061	Nickel		7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium		7440-09-7	3.22	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	8.39	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	0.0014 J	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

0DP07 0022

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-15D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505881
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF5D SDG#: ODP08-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	Metals Dissolved SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0263	0.00026	0.0050	1
01750	Calcium	7440-70-2	112	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	26.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.00087 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	3.16	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	8.08	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0012 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-15S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505870
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL5S SDG#: ODP07-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

ODP07 0024

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
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Analysis Report

Sample Description: GW-LF-15S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505870
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL5S SDG#: ODP07-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

0DP87 0025

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-15S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505870
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL5S SDG#: ODP07-04

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Pentachlorophenol		87-86-5	N.D.	1	5	1
04678	Phenanthrene		85-01-8	N.D.	0.1	0.5	1
04678	Phenol		108-95-2	N.D.	0.5	1	1
04678	Pyrene		129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene		120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol		95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol		88-06-2	N.D.	0.5	1	1
	Metals	SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	N.D. UJ	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	0.0075 J	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0263	0.00026	0.0050	1
01750	Calcium		7440-70-2	117	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0017 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	~~0.0014 J~~ 0.0100U	0.00094	0.0100	1
01754	Iron		7439-89-6	0.0657 J	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	27.7	0.0067	0.100	1
07058	Manganese		7439-96-5	0.0070	0.00044	0.0050	1
07061	Nickel		7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium		7440-09-7	3.25	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	8.66	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	0.0011 J	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

ODP07 0026

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-15S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505882
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF5S SDG#: ODP08-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	Metals Dissolved	**SW-846 6010B**	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0259	0.00026	0.0050	1
01750	Calcium	7440-70-2	111	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0017 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	26.6	0.0067	0.100	1
07058	Manganese	7439-96-5	N.D.	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	3.16	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	8.44	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0010 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk [illegible]	[illegible]
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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717-656-2300 Fax: 717-656-2681

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Analysis Report

Sample Description: GW-LF-14D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505871
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4D SDG#: ODP07-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10903	Acetone	67-64-1	N.D.		6	20	1
10903	Benzene	71-43-2	N.D.		0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.		1	5	1
10903	Bromodichloromethane	75-27-4	N.D.		1	5	1
10903	Bromoform	75-25-2	N.D.		1	5	1
10903	Bromomethane	74-83-9	N.D.		1	5	1
10903	2-Butanone	78-93-3	N.D.		3	10	1
10903	Carbon Disulfide	75-15-0	N.D.		1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10903	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10903	Chloroethane	75-00-3	N.D.		1	5	1
10903	Chloroform	67-66-3	N.D.		0.8	5	1
10903	Chloromethane	74-87-3	N.D.		1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2	5	1
10903	Dibromochloromethane	124-48-1	N.D.		1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.		1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.		1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.		1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.		1	5	1
10903	1,1-Dichloroethane	75-34-3	4	J	1	5	1
10903	1,2-Dichloroethane	107-06-2	1	J	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10903	2-Hexanone	591-78-6	N.D.		3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10903	Methylene Chloride	75-09-2	N.D.		2	5	1
10903	Styrene	100-42-5	N.D.		1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10903	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10903	Toluene	108-88-3	N.D.		0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10903	Trichloroethene	79-01-6	N.D.		1	5	1
10903	Vinyl Chloride	75-01-4	N.D.		1	5	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.		0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.		0.1	0.5	1
04678	Anthracene	120-12-7	N.D.		0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1

ODP07 0328

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-14D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505871
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4D SDG#: ODP07-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	0.1 J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

ODP07 0529

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-14D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505871
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4D SDG#: ODP07-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.819 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0068 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0616	0.00026	0.0050	1
01750	Calcium	7440-70-2	157	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0067 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0019 J	0.00062	0.0050	1
07053	Copper	7440-50-8	~~0.0088 J~~ 0.0100 U	0.00094	0.0100	1
01754	Iron	7439-89-6	2.36 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	54.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.870	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0081 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	5.06	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.6	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.0012 J	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0103 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00028 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

0DP07 0038

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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Lancaster Laboratories

Analysis Report

Sample Description: GW-LF-14D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505883
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF4D SDG#: ODP08-05

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0549	0.00026	0.0050	1
01750	Calcium		7440-70-2	141	0.0705	0.200	1
07051	Chromium		7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt		7440-48-4	0.00097 J	0.00062	0.0050	1
07053	Copper		7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron		7439-89-6	0.372	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	47.3	0.0067	0.100	1
07058	Manganese		7439-96-5	0.877	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0045 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	4.78	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	15.8	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax: 717-656-2681

Sample Description: GW-X-1-122011 Grab Water (LF-14D)
DuPont Stauffer Landfill

LLI Sample # WW 6505877
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSLFD SDG#: ODP07-08FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	5 J	1	5	1
10903	1,2-Dichloroethane	107-06-2	1 J	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	[illegible]
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-X-1-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505877
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLFD SDG#: ODP07-08FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

ODP07 0051

*=This limit was used in the evaluation of the final result

Sample Description: GW-X-1-122011 Grab Water [LF-14D-122011]
DuPont Stauffer Landfill

LLI Sample # WW 6505877
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLFD SDG#: ODP07-08FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.113 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0053 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0587	0.00026	0.0050	1
01750	Calcium	7440-70-2	151	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0041 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0014 J	0.00062	0.0050	1
~~07053~~	~~Copper~~	7440-50-8	~~0.0016 J~~ 0.0100U	0.00094	0.0100	1
01754	Iron	7439-89-6	0.829 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	51.1	0.0067	0.100	1
07058	Manganese	7439-96-5	0.845	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0061 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.94	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0037 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00029 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

ODF87 0852

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Sample Description: GW-X-1-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505889
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSFFD SDG#: ODP08-08FD*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0561	0.00026	0.0050	1
01750	Calcium	7440-70-2	143	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0013 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.00096 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0020 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.374	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	48.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.894	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0049 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.84	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.1	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1

ODP08 0029

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-14S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505872
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

03387 8832

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster PA 17605-2425
717-656-2300 Fax: 717-656-2681

Sample Description: GW-LF-14S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505872
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

OBF57 0033

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-14S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505872
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06BKG

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles**	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol		87-86-5	N.D.	1	5	1
04678	Phenanthrene		85-01-8	N.D.	0.1	0.5	1
04678	Phenol		108-95-2	N.D.	0.5	1	1
04678	Pyrene		129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene		120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol		95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol		88-06-2	N.D.	0.5	1	1
Metals		**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	0.846 J	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0244	0.00026	0.0050	1
01750	Calcium		7440-70-2	85.4	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0027 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	~~0.0038 J~~ 0.0100 U	0.00094	0.0100	1
01754	Iron		7439-89-6	1.77 J	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	20.2	0.0067	0.100	1
07058	Manganese		7439-96-5	0.102	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0016 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	2.89	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	6.45	0.0647	1.00	1
07071	Vanadium		7440-62-2	0.0027 J	0.00096	0.0050	1
07072	Zinc		7440-66-6	0.0077 J	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	0.0014 J	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

ODP07 0034

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster PA, 17605-2425
717-656-2300 Fax: 717-656-2681

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Analysis Report

Sample Description: GW-LF-14S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505884
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF4S SDG#: ODP08-06BKG

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0181	0.00026	0.0050	1
01750	Calcium		7440-70-2	81.6	0.0705	0.200	1
07051	Chromium		7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron		7439-89-6	N.D.	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	19.2	0.0067	0.100	1
07058	Manganese		7439-96-5	0.00067 J	0.00044	0.0050	1
07061	Nickel		7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium		7440-09-7	2.66	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	6.31	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	0.0015 J	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk [illegible]	[illegible]
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster PA, 17605-2425
717-656-2300 Fax: 717-656-2681

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Analysis Report

Sample Description: EB-01-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505876
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 16:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLEB SDG#: ODP07-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.6	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.6	1
04678	Anthracene	120-12-7	N.D.	0.1	0.6	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.6	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.6	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.6	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.6	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.6	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.6	1	1

ODP07 6846

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: EB-01-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505876
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 16:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLEB SDG#: ODP07-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	6	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	6	1
04678	Carbazole	86-74-8	N.D.	0.6	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.6	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.6	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.6	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.6	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.5	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.6	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.6	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.6	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.6	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.6	1
04678	Dibenzofuran	132-64-9	N.D.	0.6	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	6	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.6	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	6	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.6	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	6	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	6	18	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	12	36	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	6	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.6	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	6	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.6	1
04678	Fluorene	86-73-7	N.D.	0.1	0.6	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.6	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.6	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	6	18	1
04678	Hexachloroethane	67-72-1	N.D.	1	6	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.6	1
04678	Isophorone	78-59-1	N.D.	0.6	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.6	1
04678	2-Methylphenol	95-48-7	N.D.	0.6	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.6	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.6	1
04678	2-Nitroaniline	88-74-4	N.D.	0.6	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.6	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.6	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.6	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.6	1	1
04678	4-Nitrophenol	100-02-7	N.D.	12	36	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.6	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.6	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	6	1

ODP07 0047

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: EB-01-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505876
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 16:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLEB SDG#: ODP07-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	6	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.6	1
04678	Phenol	108-95-2	N.D.	0.6	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.6	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.6	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.6	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.6	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	N.D.	0.00026	0.0050	1
01750	Calcium	7440-70-2	N.D.	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.00096 J	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	N.D.	0.0067	0.100	1
07058	Manganese	7439-96-5	0.00060 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	N.D.	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	0.259 J	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

03F87 8848

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
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Lancaster PA 17605-2425
717-656-2300 Fax: 717-656-2681

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Analysis Report

Sample Description: TB-01-122011 Water
DuPont Stauffer Landfill

LLI Sample # WW 6505878
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLTB SDG#: ODP07-09TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

ODP07 0054

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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PO Box 12425
Lancaster PA, 17605-2425
717-656-2300 Fax: 717-656-2681

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Sample Reference List for SDG Number ODP09 with a Data Package Type of NYSDEC B

06745 - O'Brien & Gere Engineers - NY

Project: DuPont-Stauffer Landfill

Lab Sample Number	Lab Sample Code	Client Sample Description
6506946	LF17S	GW-LF-17S-122111 Grab Water
6506947	F17SF	GW-LF-17S-122111 Filtered Grab Water
6506948	LF17D	GW-LF-17D-122111 Grab Water
6506949	F17DF	GW-LF-17D-122111 Filtered Grab Water
6506950	LF8--	GW-LF-8-122111 Grab Water
6506951	LF8-F	GW-LF-8-122111 Filtered Grab Water
6506952	LF8-T	TB-02-122111 Water

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Analysis Report

Sample Description: GW-LF-17S-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506946
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

LF17S SDG#: ODP09-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

ODP09 0811

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-17S-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506946
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17S SDG#: ODP09-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	0.2 J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

ODP09 0012

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-17S-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506946
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17S SDG#: ODP09-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	1.06 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0058 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0312	0.00026	0.0050	1
01750	Calcium	7440-70-2	145	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0099 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0012 J	0.00062	0.0050	1
07053	Copper	7440-50-8	~~0.0034 J~~ 0.0100U	0.00094	0.0100	1
01754	Iron	7439-89-6	2.10 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	34.6	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0831	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0060 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.73	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	9.35	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.0020 J	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0074 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0013 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

ODP09 0013

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-17S-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506947
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

F17SF SDG#: ODP09-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0064 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0261	0.00026	0.0050	1
01750	Calcium	7440-70-2	144	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0020 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0341	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	34.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0013 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0015 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.53	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	9.26	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0014 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:30	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1

ODP09 0015

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-17D-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506948
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17D SDG#: ODP09-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

OUPBS 0017

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-17D-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506948
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17D SDG#: ODP09-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	16	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	31	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	16	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	0.1 J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	31	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

00P89 0615

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster PA, 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Sample Description: GW-LF-17D-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506948
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

LF17D SDG#: ODP09-03

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		SW-846 8270C		ug/l	ug/l	ug/l	
04678	Pentachlorophenol		87-86-5	N.D.	1	5	1
04678	Phenanthrene		85-01-8	N.D.	0.1	0.5	1
04678	Phenol		108-95-2	N.D.	0.5	1	1
04678	Pyrene		129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene		120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol		95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol		88-06-2	N.D.	0.5	1	1
Metals		SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	N.D. UJ	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0308	0.00026	0.0050	1
01750	Calcium		7440-70-2	155	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0037 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	0.00096 J	0.00062	0.0050	1
07053	Copper		7440-50-8	~~0.0045 J~~ 0.0100U	0.00094	0.0100	1
01754	Iron		7439-89-6	26.8 J	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	38.2	0.0067	0.100	1
07058	Manganese		7439-96-5	0.0598	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0067 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	6.61	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	13.3	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	0.0012 J	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

ODP09 0019

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster PA, 17605-2425
717-656-2300 Fax: 717-656-2681

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Analysis Report

Sample Description: GW-LF-17D-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506949
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

F17DF SDG#: ODP09-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0293	0.00026	0.0050	1
01750	Calcium	7440-70-2	157	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0013 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	0.0976 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	38.8	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0156	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0011 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	6.66	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	13.5	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0010 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:37	Eric L Eby	
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1

ODP09 0021

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-8-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506950
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-- SDG#: ODP09-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

ODP09 0023

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-8-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506950
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-- SDG#: ODP09-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

ODP09 0024

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-8-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506950
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-- SDG#: ODP09-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D. UJ	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0061 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0945	0.00026	0.0050	1
01750	Calcium	7440-70-2	234	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0031 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0028 J	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	1.47 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	58.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.238	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0069 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	23.9	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	49.4	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

ODP09 0025

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Analysis Report

Sample Description: GW-LF-8-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506951
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-F SDG#: ODP09-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0938	0.00026	0.0050	1
01750	Calcium	7440-70-2	234	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0028 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0029 J	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	1.14	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	58.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.236	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0059 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	24.0	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	49.6	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0083 J	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:44	Eric L Eby	[illegible]
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Sample Reference List for SDG Number ODP10 with a Data Package Type of NYSDEC B

06745 - O'Brien & Gere Engineers - NY

Project: DuPont-Stauffer Landfill

Lab Sample Number	Lab Sample Code	Client Sample Description
6508235	DSL13	GW-LF-13D-122211 Grab Water
6508236	DSF13	GW-LF-13D-122211 Filtered Grab Water
6508237	DSL12	GW-LF-12D-122211 Grab Water
6508238	DSF12	GW-LF-12D-122211 Filtered Grab Water
6508239	DSL09	GW-LF-9-122211 Grab Water
6508240	DSF09	GW-LF-9-122211 Filtered Grab Water
6508241	DSLE2	EB-02-122211 Grab Water
6508242	DSLT3	TB-03-122211 Water

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Analysis Report

Sample Description: GW-LF-13D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508235
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL13 SDG#: ODP10-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D. UJ	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	[illegible]
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax: 717-656-2681

Sample Description: GW-LF-13D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508235
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL13 SDG#: ODP10-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D. UJ	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D. UJ	2	5	1
04678	Carbazole	86-74-8	N.D. UJ	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D. UJ	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D. UJ	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D. UJ	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D. UJ	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	3	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D. UJ	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D. UJ	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D. UJ	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D. UJ	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D. UJ	2	5	1

ODP10 0012

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-13D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508235
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL13 SDG#: ODP10-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		SW-846 8270C	ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D. UJ	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D. UJ	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D. UJ	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		SW-846 6010B	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.0933 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0320	0.00026	0.0050	1
01750	Calcium	7440-70-2	102	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0025 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0012 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0050 J	0.00094	0.0100	1
01754	Iron	7439-89-6	2.41 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	41.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0534	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0036 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.56	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	5.05	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00044 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

ODP10 0013

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-13D-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508236
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF13 SDG#: ODP10-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		SW-846 6010B	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0310	0.00026	0.0050	1
01750	Calcium	7440-70-2	103	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.00098 J	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	41.8	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0034 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0010 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.59	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	5.19	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00036 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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OBG# 8815

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Analysis Report

Sample Description: GW-LF-12D-122211 Grab Water
DutPont Stauffer Landfill

LLI Sample # WW 6508237
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL12 SDG#: ODP10-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D. UJ	0.09	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.09	0.5	1
04678	Anthracene	120-12-7	N.D.	0.09	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.09	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.09	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.09	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.09	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.09	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	0.9	1

ODP10 0017

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-12D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508237
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL12 SDG#: ODP10-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D. UJ	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	0.9	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	0.9	1
04678	4-Chloroaniline	106-47-8	N.D. UJ	0.5	0.9	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	0.9	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	0.9	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	0.9	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	0.9	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D. UJ	0.5	0.9	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	0.9	1
04678	Chrysene	218-01-9	N.D.	0.09	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.09	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	0.9	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	0.9	1
04678	Diethylphthalate	84-66-2	N.D. UJ	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	0.9	1
04678	Dimethylphthalate	131-11-3	N.D. UJ	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	9	28	1
04678	2,4-Dinitrotoluene	121-14-2	N.D. UJ	0.9	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	0.9	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.09	0.5	1
04678	Fluorene	86-73-7	N.D.	0.09	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.09	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	0.9	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	0.9	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.09	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	0.9	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.09	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	0.9	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	0.9	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D. UJ	0.09	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	0.9	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	0.9	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	0.9	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	0.9	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	0.9	1
04678	4-Nitrophenol	100-02-7	N.D.	9	28	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D. UJ	0.5	0.9	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D. UJ	0.5	0.9	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D. UJ	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-12D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508237
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL12 SDG#: ODP10-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		SW-846 8270C	ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	0.9	5	1
04678	Phenanthrene	85-01-8	N.D. UJ	0.09	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	0.9	1
04678	Pyrene	129-00-0	N.D. UJ	0.09	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D. UJ	0.5	0.9	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	0.9	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	0.9	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		SW-846 6010B	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.465 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0131	0.00026	0.0050	1
01750	Calcium	7440-70-2	83.2	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0034 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0026 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.973 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	42.0	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0254	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0034 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	1.47	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	4.41	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0036 J	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

ODP10 0019

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-12D-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508238
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF12 SDG#: ODP10-04

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0105	0.00026	0.0050	1
01750	Calcium		7440-70-2	77.5	0.0705	0.200	1
07051	Chromium		7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron		7439-89-6	N.D.	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	39.0	0.0067	0.100	1
07058	Manganese		7439-96-5	0.0010 J	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0020 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	1.15	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	4.28	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-9-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508239
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL09 SDG#: ODP10-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D. UJ	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-9-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508239
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL09 SDG#: ODP10-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	GC/MS Semivolatiles SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D. UJ	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D. UJ	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D. UJ	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D. UJ	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D. UJ	2	5	1
04678	~~4,6-Dinitro-2-methylphenol~~	~~534-52-1~~	~~N.D.~~	~~5~~	16	1
04678	~~2,4-Dinitrophenol~~	~~51-28-5~~	~~N.D.~~	~~11~~	32	1
04678	2,4-Dinitrotoluene	121-14-2	N.D. UJ	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	16	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D. UJ	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	~~2-Nitrophenol~~	~~88-75-5~~	~~N.D.~~	~~0.5~~	1	1
04678	~~4-Nitrophenol~~	~~100-02-7~~	~~N.D.~~	~~11~~	32	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D. UJ	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D. UJ	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D. UJ	2	5	1

ODP10 0024

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-9-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508239
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL09 SDG#: ODP10-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D. UJ	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D. UJ	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D. UJ	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D. UJ	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0266	0.00026	0.0050	1
01750	Calcium	7440-70-2	119	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0027 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0013 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.0884 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	64.0	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0229	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0022 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.73	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	12.0	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

ODP10 0025

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-9-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508240
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF09 SDG#: ODP10-06

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		SW-846 6010B		mg/l	mg/l	mg/l	
01743	Aluminum		7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0271	0.00026	0.0050	1
01750	Calcium		7440-70-2	122	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0015 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	0.0023 J	0.00094	0.0100	1
01754	Iron		7439-89-6	N.D.	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	65.4	0.0067	0.100	1
07058	Manganese		7439-96-5	0.0222	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0017 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	4.85	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	12.3	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011	01:34	John W Yanzuk II	1

ODP10 0027

*=This limit was used in the evaluation of the final result

Sample Description: EB-02-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508241
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 12:15 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLE2 SDG#: ODP10-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D. UJ	0.1	0.6	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.6	1
04678	Anthracene	120-12-7	N.D.	0.1	0.6	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.6	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.6	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.6	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.6	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.6	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.6	1	1

ODP10 0829

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: EB-02-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508241
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 12:15 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLE2 SDG#: ODP10-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	SW-846 8270C		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D. UJ	3	6	1
04678	Di-n-butylphthalate	84-74-2	N.D.	3	6	1
04678	Carbazole	86-74-8	N.D.	0.6	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.6	1	1
04678	4-Chloroaniline	106-47-8	N.D. UJ	0.6	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.6	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.6	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.5	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.6	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D. UJ	0.6	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.6	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.6	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.6	1
04678	Dibenzofuran	132-64-9	N.D.	0.6	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	3	6	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.6	1	1
04678	Diethylphthalate	84-66-2	N.D. UJ	3	6	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.6	1	1
04678	Dimethylphthalate	131-11-3	N.D. UJ	3	6	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	6	19	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	13	39	1
04678	2,4-Dinitrotoluene	121-14-2	N.D. UJ	1	6	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.6	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	3	6	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.6	1
04678	Fluorene	86-73-7	N.D.	0.1	0.6	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.6	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.6	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	6	19	1
04678	Hexachloroethane	67-72-1	N.D.	1	6	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.6	1
04678	Isophorone	78-59-1	N.D.	0.6	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.6	1
04678	2-Methylphenol	95-48-7	N.D.	0.6	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.6	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	0.2 J	0.1	0.6	1
04678	2-Nitroaniline	88-74-4	N.D. UJ	0.6	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.6	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.6	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.6	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.6	1	1
04678	4-Nitrophenol	100-02-7	N.D.	13	39	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D. UJ	0.6	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D. UJ	0.6	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D. UJ	3	6	1

ODP10 0038

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: EB-02-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508241
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 12:15 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLE2 SDG#: ODP10-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		SW-846 8270C	ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	6	1
04678	Phenanthrene	85-01-8	N.D. UJ	0.1	0.6	1
04678	Phenol	108-95-2	N.D.	0.6	1	1
04678	Pyrene	129-00-0	N.D. UJ	0.1	0.6	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D. UJ	0.6	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.6	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.6	1	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		SW-846 6010B	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	N.D.	0.00026	0.0050	1
01750	Calcium	7440-70-2	N.D.	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	N.D.	0.0067	0.100	1
07058	Manganese	7439-96-5	N.D.	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	N.D.	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	N.D.	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

ODP10 0031

*=This limit was used in the evaluation of the final result

Lancaster Laboratories, Inc.
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717-656-2300 Fax: 717-656-2681

Lancaster Laboratories

Analysis Report

Sample Description: TB-03-122211 Water
DuPont Stauffer Landfill

LLI Sample # WW 6508242
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLT3 SDG#: ODP10-08TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
	GC/MS Volatiles SW-846 8260B		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

ODP18 0033

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*=This limit was used in the evaluation of the final result

Draft Environmental Easement

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E-Mail: jgreenthal@nixonpeabody.com

November 28, 2006

Via Federal Express

Salvatore Priore, P.E.
Project Manager
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

Re: Order on Consent and Administrative Settlement (the "Order")
Index No. W3-0988-02-04
Site # 3-36-009

Dear Mr. Priore:

On behalf of Respondent Stauffer Management Company LLC, pursuant to Subparagraph X.A.1 of the Order, I am enclosing for the approval of the Department of Environmental Conservation the Environmental Easement for the property that is described in the enclosure. This submittal is timely made in that it is within 90 days of the issuance of the Record of Decision.

Sincerely,

John L. Greenthal

John L. Greenthal

JLG:rav
Enclosure
cc: Michael J. Lesser, Esq.
Mr. Michael Rivara
Mr. Ramanand Pergadia
Mr. Robert Shay
Pamela Meitner, Esq.
Ms. Amanda A. DeSantis

10205007.1

ENVIRONMENTAL EASEMENT

THIS INDENTURE made this ____ day of __________, 200_, between Stauffer Management Company LLC, successor in interest (by merger) to Atkemix Thirty-Seven Inc., residing at (or having an office at) 1800 Concord Pike, Wilmington, Delaware 19803 (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("brownfield sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of environmental easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and of ensuring the potential restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that environmental easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a brownfield site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and;

WHEREAS, Grantor, is the owner of real property located in the City of Newburgh, Orange County, New York known and designated on the tax map of the County of Orange as section 5 block 1, lot 1 (referred to in the attached legal description as Parcel A) and section 5, block 2, lot 1 (referred to in the attached legal description as Parcel B), being the same as that property conveyed to Grantor by deed recorded in the Land Records of the Orange County Clerk on November 23, 1987 in Liber 2837 of Deeds, page 122, comprised of approximately 49.6 acres, and hereinafter more fully described in Schedule A attached hereto and made a part hereof (the "Controlled Property"); and;

WHEREAS, the Commissioner does hereby acknowledge that the Department accepts this Environmental Easement in order to ensure the protection of human health and the environment and to achieve the requirements for remediation established at this Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the covenants and mutual promises contained herein and the terms and conditions of Order on Consent Number 3-0988-02-04, Grantor grants, conveys and releases to Grantee a permanent Environmental Easement pursuant to Article 71, Title 36 of the ECL in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the potential restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional Controls. The following controls apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees, and any person using the Controlled Property:

A. The Controlled Property may only be used for commercial use/industrial use, as the terms "commercial use" and "industrial use" are defined in Section 375-1.8(g)(2)(iii) and (iv), respectively, of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York ("6 NYCRR"). Any use of the Controlled Property which threatens the integrity of any engineering controls in effect thereat, as the term "engineering control" is defined in 6 NYCRR Section 375-1.2(o), and, specifically, any development of the North Landfill at the Controlled Property (as the "North Landfill" is described in the Record of Decision issued by the Department) which has the potential to impact the integrity of the engineered cap or to create or contribute to potential exposure pathways to contamination or to otherwise result in threats or potential threats to human health, is prohibited. The use of groundwater underlying the Controlled Property for drinking purposes is prohibited without prior approval of the Department. The excavation of soil at the Controlled Property shall be conducted in accordance with the Department-approved Site Management Plan.

B. The Controlled Property may not be used for a higher level of use such as "unrestricted," "residential," or "active recreational use," as those terms are defined in 6 NYCRR Section 375-1.8(g)(1)(i), Section 375-1.8(g)(2)(i), and Section 375-1.8(g)(2)(ii)(b), respectively. The above-stated institutional controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an environmental easement held by the New York State Department of Environmental Conservation

pursuant of Title 36 to Article 71 of the Environmental Conservation Law.

D. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

E. Grantor covenants and agrees on behalf of itself and its successors and assigns that the then-current owner of the Controlled Property shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

F. Grantor's successors, transfers and assigns shall provide written notice to Grantor and to E.I. DuPont deNemours and Company ("DuPont") at least thirty (30) days prior to the effective date of any conveyance, grant, gift or other transfer, in whole or in part, of any of their interest in the Controlled Property. Such notice shall be sent to Grantor at the address mentioned above and, as to DuPont, as follows: Director of Corporate Remediation Group, 4417 Lancaster Pk., Bldg. 19, Wilmington, Delaware 19805.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Controlled Property, including:

1. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

2. The right to give, sell, assign, or otherwise transfer the underlying fee interest to the Controlled Property by operation of law, by deed, or by indenture, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This environmental easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the then-current owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver.

It is not a defense in any action to enforce this environmental easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach. Grantor shall then have a reasonable amount of time from receipt of such notice to cure. At the expiration of said second period, Grantee may commence any proceedings and take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement in accordance with applicable law to require compliance with the terms of this Environmental Easement.

C. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar its enforcement rights in the event of a subsequent breach of or noncompliance with any of the terms of this Environmental easement.

6. Notice. Whenever notice to the State (other than the annual certification) or approval from the State is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing its County tax map number or the Liber and Page or computerized system tracking/ identification number and address correspondence to:

Division of Environmental Enforcement
Office of General Counsel
New York State Department of Environmental Conservation
625 Broadway
Albany New York 12233-5500

Such correspondence shall be delivered by hand, or by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. This environmental easement may be amended only by an amendment executed by the Commissioner of the New York State Department of Environmental Conservation and Stauffer Management Company LLC and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This environmental easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Grantor's Name

By:________________________________

Title:________________________________

Date:________________________________

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation

By: ____
Denise M. Sheehan, Acting Commissioner

Grantor's Acknowledgment

STATE OF NEW YORK)
) **ss:**
COUNTY OF)

On the ______ day of __________________, in the year 200_, before me, the undersigned, personally appeared ____________________, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

____
Notary Public - State of New York

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the ______ day of ________________, in the year 200_, before me, the undersigned, personally appeared ________________, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

____
Notary Public - State of New York

SCHEDULE A

ALL those certain lots, pieces or parcels of land situate in the City of Newburgh, County of Orange, State of New York, denominated below as Parcel A and Parcel B, and being more accurately bounded and described as follows:

PARCEL A

BEGINNING at the intersection of the northerly line of South Street with the westerly line of Pierce's Road, said point of beginning being located South 51° 20' 25" East 0.64' from a corner fence post; thence from said point of beginning and along the northerly line of South Street, North 71° 58' 50" West 835.76' to the intersection of the northerly line of South Street with the center line of the Gidney Town Creek; thence along the center line of Gidney Town Creek and along the easterly line of lands now or formerly of Newburgh Gardens, North 25° 26' West 73.49' to an angle point in creek; thence North 39° 43' West 184.40' to a monument in the center line of the creek; thence North 16° 26' West 77.99' to the intersection of the center line of the creek with the southerly line of Old Pierce's Road, said point being on the southerly face of the old bridge over the creek; thence along a portion of the southerly face of the bridge and along a portion of the southerly line of Old Pierce's Road, South 84° 42' West 35.74' to a point; thence crossing Old Pierce's Road North 30° 44' East 36.07' to a point in the westerly line of the old bridge; thence along a portion of the westerly line of the old bridge North 14° 25' West 11.47' to the northwest corner of the old bridge, said point being in the northerly line of Old Pierce's Road; thence along the northerly line of the Old Pierce's Road, following a portion of the northerly face of the old bridge, North 84° 42' East 9.33' to the intersection of the northerly face of the old bridge with the center line of the Gidney Town Creek; thence along the center line of the creek as it existed in 1912 and along the lands formerly of Newburgh Gardens on the next several courses and distances, North 24° 30' 30" West 112.89' to a point; thence North 1° 00' 20" East 98.09' to a point; thence North 35°45'30" East 30.60' to a point; thence North 13°07'30" East 91.78' to a point; thence North 73°00'30" East 90.69' to a point; thence North 32°01' East 30.28' to a point; thence North 9°30'40" East 31.05' to a point; thence North 33°02' East 104.87' to a point; thence North 10°24'50" East 30.59' to a point; thence North 4°48'50" West 67.09' to a point; thence North 21°44'30" East 90.00' to a point; thence North 11°09' East 109.73' to a point; thence North 30°40'30" West 53.53' to a point; thence North 13°35'40" East 198.08' to a point; thence North 41°39'20" East 152.21' to a point; thence North 54°46'50" East 103.45' to a point; thence North 34°25'40" East 66.45' to a point; thence North 19°17'20" East 91.78' to a point in the southerly line of Interstate Route 84; thence along the southerly line of Interstate Route 84, on the next several courses and distances, North 57°43'20" East 156.10' to a point in the center line of the Gidney Town Creek, as it now exists; thence passing over a highway monument at 71.70', and following a fence in part, North 81°34'20" East a total distance of 430.40' to a highway monument; thence following a fence South 82°08'10" East 308.96' to a highway monument; thence following a fence South 58°40'10" East 14.48' to the intersection of a stone wall with said fence, said point being the northwest corner of lands of City of Newburgh; thence along the westerly line of lands of City of Newburgh, following a stone wall South 37°27'50" West 33.12' to an angle point in the wall; thence still following a wall South 12°00'20" East 455.40' to a monument in the wall; thence still following a wall South 15°59'50" East 430.65' to a monument set in a stone wall corner; thence following a stone wall and along the line of lands now or formerly of the City of Newburgh North 84°57'50" West 270.45' to a nail set in concrete; thence South 01°21'40" West 289.00' to a monument; thence South 02°10'50" East, passing over a monument at 342.77' a total distance of 352.80' to a monument in the northerly line of Pierce's Road; thence along the northerly and westerly line of Pierce's Road on the remaining courses and distances, North 88°03'20" West, passing over a monument at 81.33' a total distance of 90.13' to an angle point; thence South 29°44'10" West 287.06' to an angle point; thence South 18°01'10" West 268.70' to the point of beginning.

Said Parcel A is the same as "Parcel A" in that certain Deed dated February 1, 1967 made by E.I. DuPont de Nemours and Company to Stauffer Chemical Company and recorded on February 3, 1967 in Liber 1762 of Deeds at page 307 in the Office of the County Clerk of Orange County, New York.

EXCEPTING from said Parcel A all those certain lots, pieces or parcels of land situate in the City of Newburgh, County of Orange, State of New York, and lying west of the westerly bank of the relocated Gidney Town Creek, which were described in the following ten (10) Deeds all dated September 19, 1967 and all made by Stauffer Chemical Company, to the grantees listed below, and recorded in the Orange County Clerk's Office also as below:

	Recorded in Orange County Clerk's Office	
Grantees	Date	Liber and Page of Deeds
Leita Mae Sylvia	10/9/67	1778 cp 1030
Henry Morgan, as Executor of the Estate of Henrietta Morgan, Deceased	10/3/67	1778 cp 417
Douglas Chauncey	10/3/67	1778 cp 408
William B. Griffin and Florence M. Griffin	10/3/67	1778 cp 396
Adolph F. Clavio	10/3/67	1778 cp 392
Clare W. Clapper and Sarah A. Clapper	10/3/67	1778 cp 402
Howard D. Atkins and Florence Atkins	10/3/67	1778 cp 399
Catherine Albers	10/3/67	1778 cp 411
Donald L. McQuiston and Ethel M. McQuiston	10/3/67	1778 cp 414
John Owens Kerochan Jr.	10/3/67	1778 cp 405

PARCEL B

BEGINNING at a monument in the easterly line of Pierce's Road, said monument being located North 18°01'10" East 258.33' from the intersection of the easterly line of Pierce's Road with the northerly line of South Street; thence from said point of beginning and along the easterly line of Pierce's Road, North 29°44'10" East 268.62' to a point, said point being located South 55°05'40" West 66.93' from a monument on the northerly line of Pierce's Road, said monument being in the easterly line of Parcel A described above; thence along the westerly line of lands now or formerly of Lowden, South 7°54'10" West 258.70' to a point; thence along the northerly line of lands now or formerly of Overhiser North 76° 44' 50" West 100.34' to the point of beginning.

Said Parcel B is the same "Parcel B" in that certain Deed dated February 1, 1967 made by E.I. DuPont deNemours and Company to Stauffer Chemical Company and recorded on February 3, 1967 in Liber 1762 of Deeds at Page 307 in the Office of the County Clerk of Orange County, New York.

December 2011
Groundwater Sampling
Laboratory Reports

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425	O'Brien & Gere Engineers - NY P.O.Box 4873 Syracuse NY 13221-4873

January 04, 2012

Project: DuPont-Stauffer Landfill

Submittal Date: 12/21/2011
Group Number: 1282072
SDG: ODP07
PO Number: 10810812EST
State of Sample Origin: NY

Client Sample Description	Lancaster Labs (LLI) #
GW-LF-16D-122011 Grab Water	6505867
GW-LF-16S-122011 Grab Water	6505868
GW-LF-15D-122011 Grab Water	6505869
GW-LF-15S-122011 Grab Water	6505870
GW-LF-14D-122011 Grab Water	6505871
GW-LF-14S-122011 Grab Water	6505872
GW-LF-14S-MS-122011 Grab Water	6505873
GW-LF-14S-MSD-122011 Grab Water	6505874
GW-LF-14S-DUP-122011 Grab Water	6505875
EB-01-122011 Grab Water	6505876
GW-X-1-122011 Grab Water	6505877
TB-01-122011 Water	6505878

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	O'Brien & Gere Engineers - NY	Attn: Paul D'annibale
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300 Ext. 1246

Respectfully Submitted,

Robin C. Runkle
Senior Specialist

eurofins | Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-16D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505867
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6D SDG#: ODP07-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-16D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505867
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6D SDG#: ODP07-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-16D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505867
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6D SDG#: ODP07-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	0.109 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0056 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0350	0.00026	0.0050	1
01750	Calcium	7440-70-2	138	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0033 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0024 J	0.00094	0.0100	1
01754	Iron	7439-89-6	1.02	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	39.5	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0184	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0032 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	14.9	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	19.6	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00051 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-16D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505867
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6D SDG#: ODP07-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	00:49	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	00:49	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	12:57	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	11:54	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:26	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:20	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:20	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:20	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:20	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	21:48	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-16S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505868
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6S SDG#: ODP07-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-16S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505868
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL6S SDG#: ODP07-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-16S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505868
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL6S SDG#: ODP07-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	1.06	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0053 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0285	0.00026	0.0050	1
01750	Calcium	7440-70-2	135	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0067 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0019 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0040 J	0.00094	0.0100	1
01754	Iron	7439-89-6	2.32	0.0141	0.200	1
07055	Lead	7439-92-1	0.0028 J	0.0022	0.0150	1
01757	Magnesium	7439-95-4	34.4	0.0067	0.100	1
07058	Manganese	7439-96-5	0.508	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0061 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	2.33	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	12.0	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.0019 J	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0129 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00056 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-16S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505868
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL6S SDG#: ODP07-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	01:11	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	01:11	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	13:22	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	11:58	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:30	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:23	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:23	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:23	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:23	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	21:49	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-15D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505869
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL5D SDG#: ODP07-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.09	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.09	0.5	1
04678	Anthracene	120-12-7	N.D.	0.09	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.09	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.09	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.09	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.09	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.09	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	0.9	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-15D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505869
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL5D SDG#: ODP07-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	0.9	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	0.9	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	0.9	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	0.9	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	0.9	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	0.9	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	0.9	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	0.9	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	0.9	1
04678	Chrysene	218-01-9	N.D.	0.09	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.09	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	0.9	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	0.9	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	0.9	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	9	28	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	0.9	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	0.9	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.09	0.5	1
04678	Fluorene	86-73-7	N.D.	0.09	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.09	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	0.9	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	0.9	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.09	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	0.9	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.09	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	0.9	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	0.9	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.09	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	0.9	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	0.9	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	0.9	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	0.9	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	0.9	1
04678	4-Nitrophenol	100-02-7	N.D.	9	28	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	0.9	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	0.9	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-15D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505869
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL5D SDG#: ODP07-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	N.D.	0.9	5	1
04678	Phenanthrene	85-01-8	N.D.	0.09	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	0.9	1
04678	Pyrene	129-00-0	N.D.	0.09	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	0.9	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	0.9	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	0.9	1
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0270	0.00026	0.0050	1
01750	Calcium	7440-70-2	120	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0017 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	2.16	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	27.9	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0072	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	3.22	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	8.39	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0014 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-15D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505869
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL5D SDG#: ODP07-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011 01:33	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011 01:33	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012 13:46	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011 02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:02	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011 23:41	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012 10:26	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012 10:26	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012 10:26	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012 10:26	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012 21:54	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011 08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011 08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-15S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505870
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL5S SDG#: ODP07-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-15S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505870
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL5S SDG#: ODP07-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-15S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505870
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL5S SDG#: ODP07-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0075 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0263	0.00026	0.0050	1
01750	Calcium	7440-70-2	117	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0017 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0014 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.0657 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	27.7	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0070	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	3.25	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	8.66	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0011 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-15S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505870
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL5S SDG#: ODP07-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	01:55	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	01:55	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	14:10	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	12:05	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:45	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:29	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:29	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:29	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:29	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	21:56	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505871
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4D SDG#: ODP07-05

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		**SW-846 8260B**	ug/l		ug/l	ug/l	
10903	Acetone	67-64-1	N.D.		6	20	1
10903	Benzene	71-43-2	N.D.		0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.		1	5	1
10903	Bromodichloromethane	75-27-4	N.D.		1	5	1
10903	Bromoform	75-25-2	N.D.		1	5	1
10903	Bromomethane	74-83-9	N.D.		1	5	1
10903	2-Butanone	78-93-3	N.D.		3	10	1
10903	Carbon Disulfide	75-15-0	N.D.		1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10903	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10903	Chloroethane	75-00-3	N.D.		1	5	1
10903	Chloroform	67-66-3	N.D.		0.8	5	1
10903	Chloromethane	74-87-3	N.D.		1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2	5	1
10903	Dibromochloromethane	124-48-1	N.D.		1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.		1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.		1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.		1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.		1	5	1
10903	1,1-Dichloroethane	75-34-3	4	J	1	5	1
10903	1,2-Dichloroethane	107-06-2	1	J	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10903	2-Hexanone	591-78-6	N.D.		3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10903	Methylene Chloride	75-09-2	N.D.		2	5	1
10903	Styrene	100-42-5	N.D.		1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10903	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10903	Toluene	108-88-3	N.D.		0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10903	Trichloroethene	79-01-6	N.D.		1	5	1
10903	Vinyl Chloride	75-01-4	N.D.		1	5	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC/MS Semivolatiles		**SW-846 8270C**	ug/l		ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.		0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.		0.1	0.5	1
04678	Anthracene	120-12-7	N.D.		0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505871
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4D SDG#: ODP07-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	0.1 J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505871
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4D SDG#: ODP07-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	0.819	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0068 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0616	0.00026	0.0050	1
01750	Calcium	7440-70-2	157	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0067 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0019 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0088 J	0.00094	0.0100	1
01754	Iron	7439-89-6	2.36	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	54.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.870	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0081 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	5.06	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.6	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.0012 J	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0103 J	0.0032	0.0200	1
		SW-846 6020	**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00028 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: GW-LF-14D-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505871
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4D SDG#: ODP07-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	02:17	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	02:17	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	14:35	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	12:09	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:49	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:32	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:32	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:32	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:32	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	21:57	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505872
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4S SDG#: ODP07-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-14S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505872
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4S SDG#: ODP07-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505872
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4S SDG#: ODP07-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	0.846	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0244	0.00026	0.0050	1
01750	Calcium	7440-70-2	85.4	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0027 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0038 J	0.00094	0.0100	1
01754	Iron	7439-89-6	1.77	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	20.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.102	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0016 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	2.89	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	6.45	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.0027 J	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0077 J	0.0032	0.0200	1
		SW-846 6020	**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0014 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: GW-LF-14S-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505872
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06BKG

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	02:39	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	02:39	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	14:59	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	11:40	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:03	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	09:54	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	09:54	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	09:54	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	09:54	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	21:59	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

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Sample Description: GW-LF-14S-MS-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505873
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4S SDG#: ODP07-06MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	150	6	20	1
10903	Benzene	71-43-2	21	0.5	5	1
10903	Bromochloromethane	74-97-5	19	1	5	1
10903	Bromodichloromethane	75-27-4	18	1	5	1
10903	Bromoform	75-25-2	15	1	5	1
10903	Bromomethane	74-83-9	18	1	5	1
10903	2-Butanone	78-93-3	140	3	10	1
10903	Carbon Disulfide	75-15-0	19	1	5	1
10903	Carbon Tetrachloride	56-23-5	19	1	5	1
10903	Chlorobenzene	108-90-7	20	0.8	5	1
10903	Chloroethane	75-00-3	17	1	5	1
10903	Chloroform	67-66-3	20	0.8	5	1
10903	Chloromethane	74-87-3	18	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	15	2	5	1
10903	Dibromochloromethane	124-48-1	17	1	5	1
10903	1,2-Dibromoethane	106-93-4	20	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	19	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	20	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	20	1	5	1
10903	1,1-Dichloroethane	75-34-3	21	1	5	1
10903	1,2-Dichloroethane	107-06-2	19	1	5	1
10903	1,1-Dichloroethene	75-35-4	22	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	20	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	21	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	20	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	18	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	18	1	5	1
10903	Ethylbenzene	100-41-4	21	0.8	5	1
10903	2-Hexanone	591-78-6	93	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	92	3	10	1
10903	Methylene Chloride	75-09-2	21	2	5	1
10903	Styrene	100-42-5	19	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	19	1	5	1
10903	Tetrachloroethene	127-18-4	21	0.8	5	1
10903	Toluene	108-88-3	21	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	19	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	20	0.8	5	1
10903	Trichloroethene	79-01-6	20	1	5	1
10903	Vinyl Chloride	75-01-4	19	1	5	1
10903	Xylene (Total)	1330-20-7	59	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	49	0.1	0.5	1
04678	Acenaphthylene	208-96-8	54	0.1	0.5	1
04678	Anthracene	120-12-7	51	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	49	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	52	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	52	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	52	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	53	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	50	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14S-MS-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505873
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06MS

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l		ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	46		2	5	1
04678	Di-n-butylphthalate	84-74-2	51		2	5	1
04678	Carbazole	86-74-8	50		0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	49		0.5	1	1
04678	4-Chloroaniline	106-47-8	40		0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	44		0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	44		0.5	1	1
04678	2-Chloronaphthalene	91-58-7	53		0.4	1	1
04678	2-Chlorophenol	95-57-8	47		0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	50		0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	40		0.5	1	1
04678	Chrysene	218-01-9	48		0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	52		0.1	0.5	1
04678	Dibenzofuran	132-64-9	47		0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	36		2	5	1
04678	2,4-Dichlorophenol	120-83-2	50		0.5	1	1
04678	Diethylphthalate	84-66-2	48		2	5	1
04678	2,4-Dimethylphenol	105-67-9	47		0.5	1	1
04678	Dimethylphthalate	131-11-3	39		2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	45		5	14	1
04678	2,4-Dinitrophenol	51-28-5	67		10	29	1
04678	2,4-Dinitrotoluene	121-14-2	53		1	5	1
04678	2,6-Dinitrotoluene	606-20-2	53		0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	47		2	5	1
04678	Fluoranthene	206-44-0	53		0.1	0.5	1
04678	Fluorene	86-73-7	50		0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	53		0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	51		0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	88		5	14	1
04678	Hexachloroethane	67-72-1	47		1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	52		0.1	0.5	1
04678	Isophorone	78-59-1	45		0.5	1	1
04678	2-Methylnaphthalene	91-57-6	48		0.1	0.5	1
04678	2-Methylphenol	95-48-7	43		0.5	1	1
04678	4-Methylphenol	106-44-5	36		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
04678	Naphthalene	91-20-3	46		0.1	0.5	1
04678	2-Nitroaniline	88-74-4	52		0.5	1	1
04678	3-Nitroaniline	99-09-2	51		0.5	1	1
04678	4-Nitroaniline	100-01-6	43		0.5	1	1
04678	Nitrobenzene	98-95-3	47		0.5	1	1
04678	2-Nitrophenol	88-75-5	49		0.5	1	1
04678	4-Nitrophenol	100-02-7	21	J	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	43		0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	49		0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
04678	Di-n-octylphthalate	117-84-0	49		2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14S-MS-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505873
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	31	1	5	1
04678	Phenanthrene	85-01-8	48	0.1	0.5	1
04678	Phenol	108-95-2	19	0.5	1	1
04678	Pyrene	129-00-0	46	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	49	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	51	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	50	0.5	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	3.24	0.0801	0.200	1
07044	Antimony	7440-36-0	0.547	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.164	0.0051	0.0200	1
07046	Barium	7440-39-3	2.06	0.00026	0.0050	1
01750	Calcium	7440-70-2	86.2	0.0705	0.200	1
07051	Chromium	7440-47-3	0.206	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.504	0.00062	0.0050	1
07053	Copper	7440-50-8	0.263	0.00094	0.0100	1
01754	Iron	7439-89-6	2.78	0.0141	0.200	1
07055	Lead	7439-92-1	0.155	0.0022	0.0150	1
01757	Magnesium	7439-95-4	21.6	0.0067	0.100	1
07058	Manganese	7439-96-5	0.601	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.515	0.00095	0.0100	1
01762	Potassium	7440-09-7	13.1	0.0874	0.500	1
07066	Silver	7440-22-4	0.0515	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.4	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.520	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.505	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	0.0043	0.00013	0.00050	1
06028	Cadmium	7440-43-9	0.0053	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0116	0.00027	0.0020	1
06045	Thallium	7440-28-0	0.0021	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	0.0010	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

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Analysis Report

Sample Description: GW-LF-14S-MS-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505873
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06MS

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	03:01	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	03:01	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	15:23	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:14	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:04	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:04	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:04	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:04	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	22:02	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

Analysis Report

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Sample Description: GW-LF-14S-MSD-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505874
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4S SDG#: ODP07-06MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	160	6	20	1
10903	Benzene	71-43-2	21	0.5	5	1
10903	Bromochloromethane	74-97-5	19	1	5	1
10903	Bromodichloromethane	75-27-4	18	1	5	1
10903	Bromoform	75-25-2	16	1	5	1
10903	Bromomethane	74-83-9	18	1	5	1
10903	2-Butanone	78-93-3	140	3	10	1
10903	Carbon Disulfide	75-15-0	19	1	5	1
10903	Carbon Tetrachloride	56-23-5	19	1	5	1
10903	Chlorobenzene	108-90-7	21	0.8	5	1
10903	Chloroethane	75-00-3	18	1	5	1
10903	Chloroform	67-66-3	19	0.8	5	1
10903	Chloromethane	74-87-3	18	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	15	2	5	1
10903	Dibromochloromethane	124-48-1	17	1	5	1
10903	1,2-Dibromoethane	106-93-4	20	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	19	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	20	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	20	1	5	1
10903	1,1-Dichloroethane	75-34-3	21	1	5	1
10903	1,2-Dichloroethane	107-06-2	19	1	5	1
10903	1,1-Dichloroethene	75-35-4	22	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	20	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	21	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	20	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	18	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	18	1	5	1
10903	Ethylbenzene	100-41-4	21	0.8	5	1
10903	2-Hexanone	591-78-6	94	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	92	3	10	1
10903	Methylene Chloride	75-09-2	21	2	5	1
10903	Styrene	100-42-5	19	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	20	1	5	1
10903	Tetrachloroethene	127-18-4	21	0.8	5	1
10903	Toluene	108-88-3	21	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	19	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	20	0.8	5	1
10903	Trichloroethene	79-01-6	20	1	5	1
10903	Vinyl Chloride	75-01-4	19	1	5	1
10903	Xylene (Total)	1330-20-7	59	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	48	0.1	0.5	1
04678	Acenaphthylene	208-96-8	53	0.1	0.5	1
04678	Anthracene	120-12-7	51	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	49	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	52	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	52	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	52	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	56	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	51	0.5	1	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14S-MSD-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505874
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL4S SDG#: ODP07-06MSD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	47		2	5	1
04678	Di-n-butylphthalate	84-74-2	50		2	5	1
04678	Carbazole	86-74-8	50		0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	48		0.5	1	1
04678	4-Chloroaniline	106-47-8	40		0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	44		0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	44		0.5	1	1
04678	2-Chloronaphthalene	91-58-7	51		0.4	1	1
04678	2-Chlorophenol	95-57-8	47		0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	50		0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	39		0.5	1	1
04678	Chrysene	218-01-9	49		0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	53		0.1	0.5	1
04678	Dibenzofuran	132-64-9	46		0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	36		2	5	1
04678	2,4-Dichlorophenol	120-83-2	50		0.5	1	1
04678	Diethylphthalate	84-66-2	47		2	5	1
04678	2,4-Dimethylphenol	105-67-9	47		0.5	1	1
04678	Dimethylphthalate	131-11-3	38		2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	50		5	14	1
04678	2,4-Dinitrophenol	51-28-5	85		10	29	1
04678	2,4-Dinitrotoluene	121-14-2	51		1	5	1
04678	2,6-Dinitrotoluene	606-20-2	53		0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	47		2	5	1
04678	Fluoranthene	206-44-0	53		0.1	0.5	1
04678	Fluorene	86-73-7	50		0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	53		0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	50		0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	88		5	14	1
04678	Hexachloroethane	67-72-1	47		1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	52		0.1	0.5	1
04678	Isophorone	78-59-1	45		0.5	1	1
04678	2-Methylnaphthalene	91-57-6	48		0.1	0.5	1
04678	2-Methylphenol	95-48-7	43		0.5	1	1
04678	4-Methylphenol	106-44-5	36		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
04678	Naphthalene	91-20-3	46		0.1	0.5	1
04678	2-Nitroaniline	88-74-4	51		0.5	1	1
04678	3-Nitroaniline	99-09-2	50		0.5	1	1
04678	4-Nitroaniline	100-01-6	41		0.5	1	1
04678	Nitrobenzene	98-95-3	47		0.5	1	1
04678	2-Nitrophenol	88-75-5	50		0.5	1	1
04678	4-Nitrophenol	100-02-7	23	J	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	43		0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	50		0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
04678	Di-n-octylphthalate	117-84-0	50		2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14S-MSD-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505874
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	43	1	5	1
04678	Phenanthrene	85-01-8	49	0.1	0.5	1
04678	Phenol	108-95-2	19	0.5	1	1
04678	Pyrene	129-00-0	46	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	48	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	52	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	52	0.5	1	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	3.20	0.0801	0.200	1
07044	Antimony	7440-36-0	0.533	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.161	0.0051	0.0200	1
07046	Barium	7440-39-3	2.05	0.00026	0.0050	1
01750	Calcium	7440-70-2	87.2	0.0705	0.200	1
07051	Chromium	7440-47-3	0.203	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.499	0.00062	0.0050	1
07053	Copper	7440-50-8	0.259	0.00094	0.0100	1
01754	Iron	7439-89-6	2.76	0.0141	0.200	1
07055	Lead	7439-92-1	0.151	0.0022	0.0150	1
01757	Magnesium	7439-95-4	21.8	0.0067	0.100	1
07058	Manganese	7439-96-5	0.604	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.509	0.00095	0.0100	1
01762	Potassium	7440-09-7	13.1	0.0874	0.500	1
07066	Silver	7440-22-4	0.0508	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.3	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.510	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.500	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	0.0044	0.00013	0.00050	1
06028	Cadmium	7440-43-9	0.0056	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0121	0.00027	0.0020	1
06045	Thallium	7440-28-0	0.0021	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.0011	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

eurofins Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-MSD-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505874
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06MSD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011 03:23	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011 03:23	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012 15:47	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011 02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011 23:18	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012 10:07	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012 10:07	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012 10:07	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012 10:07	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012 22:03	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011 08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011 08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-DUP-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505875
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06DUP

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.869	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0245	0.00026	0.0050	1
01750	Calcium	7440-70-2	87.1	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0030 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.00075 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0034 J	0.00094	0.0100	1
01754	Iron	7439-89-6	1.80	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	20.7	0.0067	0.100	1
07058	Manganese	7439-96-5	0.103	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0021 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	2.93	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	6.61	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.0014 J	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0089 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0015 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 11:47	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14S-DUP-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505875
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSL4S SDG#: ODP07-06DUP

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011 23:10	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012 10:00	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012 10:00	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012 10:00	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012 10:00	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012 22:00	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011 08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011 08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011 13:40	Nelli S Markaryan	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: EB-01-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505876
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 16:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLEB SDG#: ODP07-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.6	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.6	1
04678	Anthracene	120-12-7	N.D.	0.1	0.6	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.6	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.6	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.6	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.6	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.6	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.6	1	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-01-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505876
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 16:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLEB SDG#: ODP07-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	6	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	6	1
04678	Carbazole	86-74-8	N.D.	0.6	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.6	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.6	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.6	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.6	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.5	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.6	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.6	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.6	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.6	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.6	1
04678	Dibenzofuran	132-64-9	N.D.	0.6	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	6	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.6	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	6	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.6	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	6	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	6	18	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	12	36	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	6	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.6	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	6	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.6	1
04678	Fluorene	86-73-7	N.D.	0.1	0.6	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.6	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.6	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	6	18	1
04678	Hexachloroethane	67-72-1	N.D.	1	6	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.6	1
04678	Isophorone	78-59-1	N.D.	0.6	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.6	1
04678	2-Methylphenol	95-48-7	N.D.	0.6	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.6	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.6	1
04678	2-Nitroaniline	88-74-4	N.D.	0.6	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.6	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.6	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.6	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.6	1	1
04678	4-Nitrophenol	100-02-7	N.D.	12	36	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.6	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.6	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	6	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-01-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505876
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 16:00 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSLEB SDG#: ODP07-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	N.D.	1	6	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.6	1
04678	Phenol	108-95-2	N.D.	0.6	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.6	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.6	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.6	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.6	1	1
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	N.D.	0.00026	0.0050	1
01750	Calcium	7440-70-2	N.D.	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.00096 J	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	N.D.	0.0067	0.100	1
07058	Manganese	7439-96-5	0.00060 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	N.D.	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	0.259 J	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

Sample Description: EB-01-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505876
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 16:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLEB SDG#: ODP07-07EB

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	03:45	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	03:45	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	16:12	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	12:20	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:52	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:35	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:35	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:35	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:35	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	22:05	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

eurofins Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-X-1-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505877
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLFD SDG#: ODP07-08FD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	ug/l	
10903	Acetone	67-64-1	N.D.		6	20	1
10903	Benzene	71-43-2	N.D.		0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.		1	5	1
10903	Bromodichloromethane	75-27-4	N.D.		1	5	1
10903	Bromoform	75-25-2	N.D.		1	5	1
10903	Bromomethane	74-83-9	N.D.		1	5	1
10903	2-Butanone	78-93-3	N.D.		3	10	1
10903	Carbon Disulfide	75-15-0	N.D.		1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.		1	5	1
10903	Chlorobenzene	108-90-7	N.D.		0.8	5	1
10903	Chloroethane	75-00-3	N.D.		1	5	1
10903	Chloroform	67-66-3	N.D.		0.8	5	1
10903	Chloromethane	74-87-3	N.D.		1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.		2	5	1
10903	Dibromochloromethane	124-48-1	N.D.		1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.		1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.		1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.		1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.		1	5	1
10903	1,1-Dichloroethane	75-34-3	5	J	1	5	1
10903	1,2-Dichloroethane	107-06-2	1	J	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.		0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.		0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.		0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.		1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.		1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.		1	5	1
10903	Ethylbenzene	100-41-4	N.D.		0.8	5	1
10903	2-Hexanone	591-78-6	N.D.		3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.		3	10	1
10903	Methylene Chloride	75-09-2	N.D.		2	5	1
10903	Styrene	100-42-5	N.D.		1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.		1	5	1
10903	Tetrachloroethene	127-18-4	N.D.		0.8	5	1
10903	Toluene	108-88-3	N.D.		0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.		0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.		0.8	5	1
10903	Trichloroethene	79-01-6	N.D.		1	5	1
10903	Vinyl Chloride	75-01-4	N.D.		1	5	1
10903	Xylene (Total)	1330-20-7	N.D.		0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.		0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.		0.1	0.5	1
04678	Anthracene	120-12-7	N.D.		0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.		0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.		0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.		0.5	1	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-X-1-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505877
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSLFD SDG#: ODP07-08FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	15	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-X-1-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505877
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLFD SDG#: ODP07-08FD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.113 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0053 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0587	0.00026	0.0050	1
01750	Calcium	7440-70-2	151	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0041 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0014 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0016 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.829	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	51.1	0.0067	0.100	1
07058	Manganese	7439-96-5	0.845	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0061 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.94	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0037 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00029 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

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Analysis Report

Sample Description: GW-X-1-122011 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505877
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLFD SDG#: ODP07-08FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011	04:07	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011	04:07	Frank A Valla, Jr	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11356WAE026	01/03/2012	16:36	Matthew S Woods	1
00813	BNA Water Extraction	SW-846 3510C	1	11356WAE026	12/23/2011	02:50	David V Hershey Jr	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	12:23	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/30/2011	23:56	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:39	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:39	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:39	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:39	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713002	01/01/2012	22:06	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713002	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

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Sample Description: TB-01-122011 Water
DuPont Stauffer Landfill

LLI Sample # WW 6505878
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

DSLTB SDG#: ODP07-09TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: TB-01-122011 Water
DuPont Stauffer Landfill

LLI Sample # WW 6505878
LLI Group # 1282072
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 15:30

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSLTB SDG#: ODP07-09TB*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L113632AA	12/30/2011 04:29	Frank A Valla, Jr	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L113632AA	12/30/2011 04:29	Frank A Valla, Jr	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282072
Reported: 01/04/12 at 03:30 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: L113632AA	Sample number(s): 6505867-6505874,6505876-6505878								
Acetone	N.D.	6.	20	ug/l	147		49-234		
Benzene	N.D.	0.5	5	ug/l	100		79-120		
Bromochloromethane	N.D.	1.	5	ug/l	90		80-120		
Bromodichloromethane	N.D.	1.	5	ug/l	88		80-120		
Bromoform	N.D.	1.	5	ug/l	79		61-120		
Bromomethane	N.D.	1.	5	ug/l	85		44-120		
2-Butanone	N.D.	3.	10	ug/l	114		66-151		
Carbon Disulfide	N.D.	1.	5	ug/l	95		62-120		
Carbon Tetrachloride	N.D.	1.	5	ug/l	85		75-123		
Chlorobenzene	N.D.	0.8	5	ug/l	98		80-120		
Chloroethane	N.D.	1.	5	ug/l	84		49-129		
Chloroform	N.D.	0.8	5	ug/l	93		77-122		
Chloromethane	N.D.	1.	5	ug/l	83		60-129		
1,2-Dibromo-3-chloropropane	N.D.	2.	5	ug/l	76		56-126		
Dibromochloromethane	N.D.	1.	5	ug/l	85		80-120		
1,2-Dibromoethane	N.D.	1.	5	ug/l	99		80-120		
1,2-Dichlorobenzene	N.D.	1.	5	ug/l	93		80-120		
1,3-Dichlorobenzene	N.D.	1.	5	ug/l	96		80-120		
1,4-Dichlorobenzene	N.D.	1.	5	ug/l	97		80-120		
1,1-Dichloroethane	N.D.	1.	5	ug/l	98		79-120		
1,2-Dichloroethane	N.D.	1.	5	ug/l	92		70-130		
1,1-Dichloroethene	N.D.	0.8	5	ug/l	102		74-123		
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	97		80-120		
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	98		80-120		
1,2-Dichloropropane	N.D.	1.	5	ug/l	98		78-120		
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	93		80-120		
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	90		79-120		
Ethylbenzene	N.D.	0.8	5	ug/l	97		79-120		
2-Hexanone	N.D.	3.	10	ug/l	103		65-136		
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	93		70-121		
Methylene Chloride	N.D.	2.	5	ug/l	99		80-120		
Styrene	N.D.	1.	5	ug/l	91		80-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	97		71-120		
Tetrachloroethene	N.D.	0.8	5	ug/l	97		80-121		
Toluene	N.D.	0.7	5	ug/l	98		79-120		
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	89		75-127		
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	99		80-120		
Trichloroethene	N.D.	1.	5	ug/l	96		80-120		
Vinyl Chloride	N.D.	1.	5	ug/l	87		65-125		
Xylene (Total)	N.D.	0.8	5	ug/l	93		80-120		
Batch number: 11356WAE026	Sample number(s): 6505867-6505874,6505876-6505877								
Acenaphthene	N.D.	0.1	0.5	ug/l	99		75-114		
Acenaphthylene	N.D.	0.1	0.5	ug/l	109		80-122		
Anthracene	N.D.	0.1	0.5	ug/l	104		76-115		

*- Outside of specification
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(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY — Group Number: 1282072
Reported: 01/04/12 at 03:30 PM

Analysis Name	Blank Result		Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Benzo(a)anthracene	N.D.		0.1	0.5	ug/l	101		75-116		
Benzo(a)pyrene	N.D.		0.1	0.5	ug/l	107		64-126		
Benzo(b)fluoranthene	N.D.		0.1	0.5	ug/l	119		66-125		
Benzo(g,h,i)perylene	N.D.		0.1	0.5	ug/l	108		66-132		
Benzo(k)fluoranthene	N.D.		0.1	0.5	ug/l	97		66-131		
4-Bromophenyl-phenylether	N.D.		0.5	1	ug/l	102		75-115		
Butylbenzylphthalate	N.D.		2.	5	ug/l	95		77-115		
Di-n-butylphthalate	N.D.		2.	5	ug/l	103		76-115		
Carbazole	N.D.		0.5	1	ug/l	102		75-120		
4-Chloro-3-methylphenol	N.D.		0.5	1	ug/l	97		70-123		
4-Chloroaniline	N.D.		0.5	1	ug/l	83		24-128		
bis(2-Chloroethoxy)methane	N.D.		0.5	1	ug/l	91		74-124		
bis(2-Chloroethyl)ether	N.D.		0.5	1	ug/l	88		77-108		
2-Chloronaphthalene	N.D.		0.4	1	ug/l	103		54-132		
2-Chlorophenol	N.D.		0.5	1	ug/l	95		71-114		
4-Chlorophenyl-phenylether	N.D.		0.5	1	ug/l	101		77-114		
2,2'-oxybis(1-Chloropropane)	N.D.		0.5	1	ug/l	81		65-113		
Chrysene	0.1	J	0.1	0.5	ug/l	101		76-116		
Dibenz(a,h)anthracene	N.D.		0.1	0.5	ug/l	110		67-131		
Dibenzofuran	N.D.		0.5	1	ug/l	94		75-117		
3,3'-Dichlorobenzidine	N.D.		2.	5	ug/l	73		37-117		
2,4-Dichlorophenol	N.D.		0.5	1	ug/l	102		77-117		
Diethylphthalate	N.D.		2.	5	ug/l	86		66-116		
2,4-Dimethylphenol	N.D.		0.5	1	ug/l	97		72-110		
Dimethylphthalate	N.D.		2.	5	ug/l	53		39-126		
4,6-Dinitro-2-methylphenol	N.D.		5.	15	ug/l	103		65-126		
2,4-Dinitrophenol	N.D.		10.	30	ug/l	90		52-131		
2,4-Dinitrotoluene	N.D.		1.	5	ug/l	104		76-119		
2,6-Dinitrotoluene	N.D.		0.5	1	ug/l	109		76-118		
bis(2-Ethylhexyl)phthalate	N.D.		2.	5	ug/l	96		78-117		
Fluoranthene	N.D.		0.1	0.5	ug/l	110		76-119		
Fluorene	N.D.		0.1	0.5	ug/l	102		76-116		
Hexachlorobenzene	N.D.		0.1	0.5	ug/l	106		75-119		
Hexachlorobutadiene	N.D.		0.5	1	ug/l	103		57-124		
Hexachlorocyclopentadiene	N.D.		5.	15	ug/l	99		36-118		
Hexachloroethane	N.D.		1.	5	ug/l	94		52-113		
Indeno(1,2,3-cd)pyrene	N.D.		0.1	0.5	ug/l	110		69-121		
Isophorone	N.D.		0.5	1	ug/l	93		74-117		
2-Methylnaphthalene	N.D.		0.1	0.5	ug/l	99		69-108		
2-Methylphenol	N.D.		0.5	1	ug/l	88		58-110		
4-Methylphenol	N.D.		0.5	1	ug/l	74		49-108		
Naphthalene	N.D.		0.1	0.5	ug/l	96		70-111		
2-Nitroaniline	N.D.		0.5	1	ug/l	104		75-120		
3-Nitroaniline	N.D.		0.5	1	ug/l	104		74-113		
4-Nitroaniline	N.D.		0.5	1	ug/l	85		59-100		
Nitrobenzene	N.D.		0.5	1	ug/l	98		75-109		
2-Nitrophenol	N.D.		0.5	1	ug/l	100		76-118		
4-Nitrophenol	N.D.		10.	30	ug/l	52		16-78		
N-Nitroso-di-n-propylamine	N.D.		0.5	1	ug/l	88		69-110		
N-Nitrosodiphenylamine	N.D.		0.5	1	ug/l	99		67-136		
Di-n-octylphthalate	N.D.		2.	5	ug/l	102		68-128		
Pentachlorophenol	N.D.		1.	5	ug/l	91		53-110		
Phenanthrene	N.D.		0.1	0.5	ug/l	99		76-113		
Phenol	N.D.		0.5	1	ug/l	43		21-67		
Pyrene	N.D.		0.1	0.5	ug/l	94		75-119		
1,2,4-Trichlorobenzene	N.D.		0.5	1	ug/l	101		71-112		
2,4,5-Trichlorophenol	N.D.		0.5	1	ug/l	105		79-107		
2,4,6-Trichlorophenol	N.D.		0.5	1	ug/l	104		76-120		

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Analysis Report

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Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282072
Reported: 01/04/12 at 03:30 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 113575713002	Sample number(s): 6505867-6505877								
Mercury	N.D.	0.000026	0.00020	mg/l	83		80-120		
Batch number: 113611848001	Sample number(s): 6505867-6505877								
Aluminum	N.D.	0.0801	0.200	mg/l	101		90-112		
Antimony	N.D.	0.0058	0.0200	mg/l	107		88-111		
Arsenic	N.D.	0.0051	0.0200	mg/l	105		89-115		
Barium	N.D.	0.00026	0.0050	mg/l	101		90-110		
Calcium	N.D.	0.0705	0.200	mg/l	102		90-110		
Chromium	N.D.	0.0011	0.0150	mg/l	103		90-110		
Cobalt	N.D.	0.00062	0.0050	mg/l	104		90-110		
Copper	0.0011 J	0.00094	0.0100	mg/l	104		90-112		
Iron	N.D.	0.0141	0.200	mg/l	100		90-112		
Lead	N.D.	0.0022	0.0150	mg/l	103		88-110		
Magnesium	N.D.	0.0067	0.100	mg/l	101		90-110		
Manganese	N.D.	0.00044	0.0050	mg/l	102		90-110		
Nickel	N.D.	0.00095	0.0100	mg/l	106		90-111		
Potassium	N.D.	0.0874	0.500	mg/l	101		85-115		
Silver	N.D.	0.00091	0.0050	mg/l	102		83-120		
Sodium	N.D.	0.0647	1.00	mg/l	100		87-114		
Vanadium	N.D.	0.00096	0.0050	mg/l	104		90-110		
Zinc	N.D.	0.0032	0.0200	mg/l	101		90-110		
Batch number: 113616050002A	Sample number(s): 6505867-6505877								
Beryllium	N.D.	0.00013	0.00050	mg/l	109		90-113		
Cadmium	N.D.	0.00020	0.00050	mg/l	110		90-114		
Thallium	N.D.	0.00015	0.00050	mg/l	104		89-116		
Batch number: 113616050002B	Sample number(s): 6505867-6505877								
Selenium	N.D.	0.00027	0.0020	mg/l	103		85-114		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: L113632AA	Sample number(s): 6505867-6505874,6505876-6505878 UNSPK: 6505872								
Acetone	103	104	52-139	1	30				
Benzene	106	106	80-126	0	30				
Bromochloromethane	94	94	83-123	1	30				
Bromodichloromethane	89	89	78-125	0	30				
Bromoform	77	78	60-121	1	30				
Bromomethane	88	92	38-149	4	30				
2-Butanone	96	96	57-138	0	30				
Carbon Disulfide	97	97	67-135	1	30				
Carbon Tetrachloride	94	93	81-138	2	30				
Chlorobenzene	102	103	87-124	1	30				
Chloroethane	86	88	51-145	2	30				
Chloroform	100	97	81-134	3	30				
Chloromethane	88	89	67-154	1	30				

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282072
Reported: 01/04/12 at 03:30 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,2-Dibromo-3-chloropropane	74	77	54-134	4	30				
Dibromochloromethane	86	85	74-116	1	30				
1,2-Dibromoethane	100	101	77-116	0	30				
1,2-Dichlorobenzene	96	96	84-119	0	30				
1,3-Dichlorobenzene	99	100	86-121	1	30				
1,4-Dichlorobenzene	100	100	85-121	0	30				
1,1-Dichloroethane	105	104	84-129	1	30				
1,2-Dichloroethane	95	97	66-141	2	30				
1,1-Dichloroethene	112	109	85-142	2	30				
cis-1,2-Dichloroethene	102	102	85-125	1	30				
trans-1,2-Dichloroethene	107	106	87-126	1	30				
1,2-Dichloropropane	101	101	83-124	1	30				
cis-1,3-Dichloropropene	91	92	75-125	2	30				
trans-1,3-Dichloropropene	90	91	74-119	1	30				
Ethylbenzene	103	103	71-134	0	30				
2-Hexanone	93	94	55-127	2	30				
4-Methyl-2-pentanone	92	92	63-123	0	30				
Methylene Chloride	104	103	79-120	1	30				
Styrene	95	95	78-125	0	30				
1,1,2,2-Tetrachloroethane	96	98	72-128	2	30				
Tetrachloroethene	105	105	80-128	0	30				
Toluene	104	104	80-125	0	30				
1,1,1-Trichloroethane	97	96	80-143	0	30				
1,1,2-Trichloroethane	102	102	77-124	0	30				
Trichloroethene	102	102	88-133	0	30				
Vinyl Chloride	96	96	66-133	0	30				
Xylene (Total)	99	98	79-125	0	30				

Batch number: 11356WAE026 Sample number(s): 6505867-6505874,6505876-6505877 UNSPK: 6505872

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Acenaphthene	102	101	78-107	1	30				
Acenaphthylene	113	111	75-124	1	30				
Anthracene	107	108	78-114	0	30				
Benzo(a)anthracene	103	102	76-114	1	30				
Benzo(a)pyrene	109	110	58-128	1	30				
Benzo(b)fluoranthene	109	108	65-125	1	30				
Benzo(g,h,i)perylene	108	108	72-122	1	30				
Benzo(k)fluoranthene	112	117	71-121	4	30				
4-Bromophenyl-phenylether	104	106	79-118	2	30				
Butylbenzylphthalate	97	97	68-122	0	30				
Di-n-butylphthalate	106	104	79-118	2	30				
Carbazole	105	104	82-112	1	30				
4-Chloro-3-methylphenol	102	100	19-155	2	30				
4-Chloroaniline	84	83	23-118	1	30				
bis(2-Chloroethoxy)methane	93	92	65-119	1	30				
bis(2-Chloroethyl)ether	92	91	41-143	0	30				
2-Chloronaphthalene	111	107	49-141	4	30				
2-Chlorophenol	99	98	27-146	0	30				
4-Chlorophenyl-phenylether	106	105	73-117	0	30				
2,2'-oxybis(1-Chloropropane)	83	82	54-125	2	30				
Chrysene	101	101	78-116	1	30				
Dibenz(a,h)anthracene	110	111	73-133	1	30				
Dibenzofuran	98	96	71-116	3	30				
3,3'-Dichlorobenzidine	76	75	16-128	2	30				

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282072
Reported: 01/04/12 at 03:30 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2,4-Dichlorophenol	104	105	30-154	1	30				
Diethylphthalate	100	98	74-118	2	30				
2,4-Dimethylphenol	98	99	20-145	1	30				
Dimethylphthalate	82	79	38-126	5	30				
4,6-Dinitro-2-methylphenol	95	104	26-149	10	30				
2,4-Dinitrophenol	70	89	20-168	24	30				
2,4-Dinitrotoluene	110	107	70-124	3	30				
2,6-Dinitrotoluene	112	110	47-140	1	30				
bis(2-Ethylhexyl)phthalate	98	98	72-122	1	30				
Fluoranthene	111*	111*	73-110	0	30				
Fluorene	104	105	71-123	1	30				
Hexachlorobenzene	110	110	77-122	0	30				
Hexachlorobutadiene	106	104	68-123	1	30				
Hexachlorocyclopentadiene	92	92	15-143	1	30				
Hexachloroethane	98	97	54-119	1	30				
Indeno(1,2,3-cd)pyrene	110	109	69-120	1	30				
Isophorone	94	94	73-114	0	30				
2-Methylnaphthalene	100	100	80-111	0	30				
2-Methylphenol	89	89	10-146	0	30				
4-Methylphenol	76	76	10-147	0	30				
Naphthalene	96	96	73-113	0	30				
2-Nitroaniline	108	107	49-141	1	30				
3-Nitroaniline	106	105	44-133	1	30				
4-Nitroaniline	90	86	46-117	4	30				
Nitrobenzene	99	98	48-136	1	30				
2-Nitrophenol	103	104	34-146	1	30				
4-Nitrophenol	44	49	10-109	11	30				
N-Nitroso-di-n-propylamine	90	91	72-119	1	30				
N-Nitrosodiphenylamine	103	104	74-122	1	30				
Di-n-octylphthalate	103	104	58-137	1	30				
Pentachlorophenol	65	90	23-133	33*	30				
Phenanthrene	101	102	72-121	1	30				
Phenol	40	40	10-83	1	30				
Pyrene	96	96	77-117	0	30				
1,2,4-Trichlorobenzene	102	101	55-133	1	30				
2,4,5-Trichlorophenol	108	109	32-144	1	30				
2,4,6-Trichlorophenol	104	108	27-147	3	30				
Batch number: 113575713002	Sample number(s): 6505867-6505877 UNSPK: 6505872 BKG: 6505872								
Mercury	104	106	80-120	1	20	N.D.	N.D.	0 (1)	20
Batch number: 113611848001	Sample number(s): 6505867-6505877 UNSPK: 6505872 BKG: 6505872								
Aluminum	120	118	75-125	1	20	0.846	0.869	3 (1)	20
Antimony	109	107	87-122	3	20	N.D.	N.D.	0 (1)	20
Arsenic	109	108	81-123	2	20	N.D.	N.D.	0 (1)	20
Barium	102	101	78-118	1	20	0.0244	0.0245	1 (1)	20
Calcium	20 (2)	47 (2)	81-118	1	20	85.4	87.1	2	20
Chromium	102	100	81-120	1	20	0.0027 J	0.0030 J	10 (1)	20
Cobalt	101	100	87-112	1	20	N.D.	0.00075 J	200* (1)	20
Copper	104	102	86-122	2	20	0.0038 J	0.0034 J	11 (1)	20
Iron	101	100	75-125	1	20	1.77	1.80	2	20
Lead	103	101	75-125	2	20	N.D.	N.D.	0 (1)	20
Magnesium	67 (2)	78 (2)	75-125	1	20	20.2	20.7	2	20

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Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282072
Reported: 01/04/12 at 03:30 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Manganese	100	100	75-125	0	20	0.102	0.103	1	20
Nickel	103	101	86-115	1	20	0.0016 J	0.0021 J	27* (1)	20
Potassium	102	102	83-123	0	20	2.89	2.93	2	20
Silver	103	102	75-125	1	20	N.D.	N.D.	0 (1)	20
Sodium	99	99	75-125	0	20	6.45	6.61	2	20
Vanadium	104	101	90-111	2	20	0.0027 J	0.0014 J	65* (1)	20
Zinc	99	98	85-117	1	20	0.0077 J	0.0089 J	14 (1)	20
Batch number: 113616050002A	Sample number(s): 6505867-6505877 UNSPK: 6505872 BKG: 6505872								
Beryllium	107	111	88-117	3	20	N.D.	N.D.	0 (1)	20
Cadmium	106	112	79-118	5	20	N.D.	N.D.	0 (1)	20
Thallium	105	107	85-114	2	20	N.D.	N.D.	0 (1)	20
Batch number: 113616050002B	Sample number(s): 6505867-6505877 UNSPK: 6505872 BKG: 6505872								
Selenium	102	107	75-125	4	20	0.0014 J	0.0015 J	2 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 Std. Water Master
Batch number: L113632AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6505867	93	99	98	92
6505868	94	100	97	92
6505869	94	99	97	92
6505870	94	99	97	92
6505871	95	100	97	91
6505872	94	101	97	90
6505873	93	98	98	95
6505874	93	98	99	96
6505876	93	101	98	93
6505877	93	99	97	91
6505878	94	99	97	91
Blank	93	101	98	92
LCS	92	98	99	94
MS	93	98	98	95
MSD	93	98	99	96
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TCL SW846 Semivolatiles/Waters
Batch number: 11356WAE026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6505867	59	39	121	94	95	103
6505868	37	25	100	92	96	105
6505869	56	36	123	90	92	105

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Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282072
Reported: 01/04/12 at 03:30 PM

Surrogate Quality Control

6505870	59	38	124	90	93	103
6505871	29	22	95	90	95	105
6505872	59	38	127	91	95	108
6505873	67	42	119	95	97	93
6505874	67	43	119	95	96	96
6505876	62	41	121	90	92	109
6505877	44	36	101	90	93	97
Blank	63	39	122	92	94	105
LCS	71	46	120	97	97	98
MS	67	42	119	95	97	93
MSD	67	43	119	95	96	96
Limits:	10-98	10-74	22-150	52-120	63-114	34-118

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only
Acct. # 6745 Group# 1282072 Sample # 6505867-78

COC # 276561

Please print. Instructions on reverse side correspond with circled numbers.

For Lab Use Only
FSC:
SCR#: 114632

1 Client: O'Brien & Gere Acct. #:
Project Name/#: Dupont-Stauffer LF PWSID #:
Project Manager: Al Farrell P.O.#:
Sampler: Paul D'Annibale/Rob Hornung Quote #:
Name of state where samples were collected: NY

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, O=Other

Remarks: Shipped in 3 coolers

6 Temperature of samples upon receipt (if requested)

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water (Potable / NPDES, Check if Applicable)	Other	4 Total # of Containers	5 VOCs 8260 (H)	SVOCs TCL (/)	Total Metals (N)	Filtered Metals (N)
GW-LF-16D-122011	12/20/11	0955	G			X		7	X	X	X	X
GW-LF-16S-122011	↓	0940	↓			X		7	X	X	X	X
GW-LF-15D-122011	↓	1147	↓			X		7	X	X	X	X
GW-LF-15S-122011	↓	1200	↓			X		7	X	X	X	X
GW-LF-14D-122011	↓	1450	↓			X		7	X	X	X	X
GW-LF-14S-122011	↓	1451	↓			X		7	X	X	X	X
GW-LF-14S-MS/MSD-122011	↓	1451	↓			X		14	X	X	X	X
EB-01-122011	↓	1600	↓			X		7	X	X	X	
GW-X-1-122011	↓	—	G			X		7	X	X	X	X
TB-01-122011	—	—	—			X		2	X			

7 **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

8 **Data Package Options** (please circle if required)
Type I (validation/NJ Reg) TX TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No
Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

9

Relinquished by:	Date	Time	Received by:	Date	Time
P. Carlson	12/5/11	1350	Rob D.	12/7/11	1200
Rob D.	12/20/11	1830	FedEx 872983487233 872983487244 872983487255	12/20/11	1830
			[signature]	12/21/11	1050

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

Issued by Dept. 6042 Management
2102.05

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.
>	greater than
J	estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

	Organic Qualifiers		**Inorganic Qualifiers**
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions, and Lancaster hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425	O'Brien & Gere Engineers - NY P.O.Box 4873 Syracuse NY 13221-4873

January 04, 2012

Project: DuPont-Stauffer Landfill

Submittal Date: 12/21/2011
Group Number: 1282073
SDG: ODP08
PO Number: 10810812EST
State of Sample Origin: NY

Client Sample Description	Lancaster Labs (LLI) #
GW-LF-16D-122011 Filtered Grab Water	6505879
GW-LF-16S-122011 Filtered Grab Water	6505880
GW-LF-15D-122011 Filtered Grab Water	6505881
GW-LF-15S-122011 Filtered Grab Water	6505882
GW-LF-14D-122011 Filtered Grab Water	6505883
GW-LF-14S-122011 Filtered Grab Water	6505884
GW-LF-14S-MS-122011 Filtered Grab Water	6505885
GW-LF-14S-MSD-122011 Filtered Grab Water	6505886
GW-LF-14S-DUP-122011 Filtered Grab Water	6505887
GW-X-1-122011 Filtered Grab Water	6505889

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	O'Brien & Gere Engineers - NY	Attn: Paul D'annibale
1 COPY TO	Data Package Group	

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300 Ext. 1246

Respectfully Submitted,

Robert Strocko Jr.
Manager

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-16D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505879
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF6D SDG#: ODP08-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0345	0.00026	0.0050	1
01750	Calcium	7440-70-2	131	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0012 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0010 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.0326 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	37.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0112	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.00095 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	14.1	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	18.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00065 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-16D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505879
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:55 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF6D SDG#: ODP08-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 05:35	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012 05:35	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 00:49	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 12:46	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 12:46	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 12:46	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 12:46	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:02	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-16S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505880
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF6S SDG#: ODP08-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0223	0.00026	0.0050	1
01750	Calcium	7440-70-2	130	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0012 J	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	33.1	0.0067	0.100	1
07058	Manganese	7439-96-5	0.412	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0017 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	2.08	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	11.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0045 J	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00049 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-16S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505880
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 09:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF6S SDG#: ODP08-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 05:39	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012 05:39	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 00:52	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 12:49	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 12:49	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 12:49	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 12:49	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:04	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-15D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505881
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF5D SDG#: ODP08-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0263	0.00026	0.0050	1
01750	Calcium	7440-70-2	112	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	26.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.00087 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	3.16	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	8.08	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0012 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-15D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505881
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 11:47 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF5D SDG#: ODP08-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 05:50	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012 05:50	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 01:03	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 12:52	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 12:52	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 12:52	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 12:52	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:05	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-15S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505882
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF5S SDG#: ODP08-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0259	0.00026	0.0050	1
01750	Calcium	7440-70-2	111	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0017 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	26.6	0.0067	0.100	1
07058	Manganese	7439-96-5	N.D.	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	3.16	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	8.44	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0010 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-15S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505882
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 12:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF5S SDG#: ODP08-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 05:54	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 01:06	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 12:56	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 12:56	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 12:56	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 12:56	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:07	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505883
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF4D SDG#: ODP08-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0549	0.00026	0.0050	1
01750	Calcium	7440-70-2	141	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.00097 J	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	0.372	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	47.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.877	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0045 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.78	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	15.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14D-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505883
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:50 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF4D SDG#: ODP08-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 05:58	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012 05:58	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 01:10	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 12:59	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 12:59	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 12:59	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 12:59	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:08	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Sample Description: GW-LF-14S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505884
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF4S SDG#: ODP08-06BKG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0181	0.00026	0.0050	1
01750	Calcium	7440-70-2	81.6	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	19.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.00067 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	2.66	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	6.31	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0015 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 00:28	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505884
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF4S SDG#: ODP08-06BKG

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	05:12	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012	05:12	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	00:28	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	12:21	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	12:21	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	12:21	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	12:21	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012	21:10	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-MS-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505885
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF4S SDG#: ODP08-06MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	1.88	0.0801	0.200	1
07044	Antimony	7440-36-0	0.531	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.153	0.0051	0.0200	1
07046	Barium	7440-39-3	1.97	0.00026	0.0050	1
01750	Calcium	7440-70-2	81.8	0.0705	0.200	1
07051	Chromium	7440-47-3	0.196	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.484	0.00062	0.0050	1
07053	Copper	7440-50-8	0.252	0.00094	0.0100	1
01754	Iron	7439-89-6	0.945	0.0141	0.200	1
07055	Lead	7439-92-1	0.152	0.0022	0.0150	1
01757	Magnesium	7439-95-4	20.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.493	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.498	0.00095	0.0100	1
01762	Potassium	7440-09-7	12.3	0.0874	0.500	1
07066	Silver	7440-22-4	0.0487	0.00091	0.0050	1
01767	Sodium	7440-23-5	15.6	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.486	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.495	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	0.0041	0.00013	0.00050	1
06028	Cadmium	7440-43-9	0.0053	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0119	0.00027	0.0020	1
06045	Thallium	7440-28-0	0.0021	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.00098	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-14S-MS-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505885
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF4S SDG#: ODP08-06MS

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 05:23	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 00:38	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 12:30	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 12:30	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 12:30	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 12:30	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:13	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-MSD-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505886
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSF4S SDG#: ODP08-06MSD

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	1.91	0.0801	0.200	1
07044	Antimony	7440-36-0	0.533	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.156	0.0051	0.0200	1
07046	Barium	7440-39-3	2.01	0.00026	0.0050	1
01750	Calcium	7440-70-2	82.6	0.0705	0.200	1
07051	Chromium	7440-47-3	0.200	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.489	0.00062	0.0050	1
07053	Copper	7440-50-8	0.255	0.00094	0.0100	1
01754	Iron	7439-89-6	0.961	0.0141	0.200	1
07055	Lead	7439-92-1	0.151	0.0022	0.0150	1
01757	Magnesium	7439-95-4	20.4	0.0067	0.100	1
07058	Manganese	7439-96-5	0.499	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.504	0.00095	0.0100	1
01762	Potassium	7440-09-7	12.4	0.0874	0.500	1
07066	Silver	7440-22-4	0.0501	0.00091	0.0050	1
01767	Sodium	7440-23-5	15.8	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.497	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.498	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	0.0043	0.00013	0.00050	1
06028	Cadmium	7440-43-9	0.0054	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0118	0.00027	0.0020	1
06045	Thallium	7440-28-0	0.0021	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	0.0010	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 00:42	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-MSD-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505886
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF4S SDG#: ODP08-06MSD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	05:27	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	00:42	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	12:33	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	12:33	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	12:33	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	12:33	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012	21:17	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

Sample Description: GW-LF-14S-DUP-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505887
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF4S SDG#: ODP08-06DUP

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0177	0.00026	0.0050	1
01750	Calcium	7440-70-2	81.5	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0012 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0011 J	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	19.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.00069 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	2.72	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	6.30	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0014 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-14S-DUP-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505887
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 14:51 by PD

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSF4S SDG#: ODP08-06DUP

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 05:19	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012 05:19	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 00:35	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 12:27	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 12:27	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 12:27	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 12:27	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:11	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-X-1-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505889
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSFFD SDG#: ODP08-08FD*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0561	0.00026	0.0050	1
01750	Calcium	7440-70-2	143	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0013 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.00096 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0020 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.374	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	48.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.894	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0049 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.84	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	16.1	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:13	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-X-1-122011 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6505889
LLI Group # 1282073
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/20/2011 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/21/2011 10:50
Reported: 01/04/2012 16:28

DSFFD SDG#: ODP08-08FD*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	06:01	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	01:13	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	01:13	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	01:13	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	01:13	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012	06:01	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	01:13	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	01:13	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	01:13	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	13:02	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	13:02	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	13:02	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	13:02	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012	21:19	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011	13:40	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282073
Reported: 01/04/12 at 04:28 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 113575713004	Sample number(s): 6505879-6505887,6505889								
Mercury	N.D.	0.000026	0.00020	mg/l	88		80-120		
Batch number: 113611848002	Sample number(s): 6505879-6505887,6505889								
Aluminum	N.D.	0.0801	0.200	mg/l	97		90-112		
Antimony	N.D.	0.0058	0.0200	mg/l	105		88-111		
Arsenic	N.D.	0.0051	0.0200	mg/l	99		89-115		
Barium	N.D.	0.00026	0.0050	mg/l	98		90-110		
Calcium	N.D.	0.0705	0.200	mg/l	96		90-110		
Chromium	N.D.	0.0011	0.0150	mg/l	100		90-110		
Cobalt	N.D.	0.00062	0.0050	mg/l	100		90-110		
Copper	N.D.	0.00094	0.0100	mg/l	100		90-112		
Iron	N.D.	0.0141	0.200	mg/l	97		90-112		
Lead	N.D.	0.0022	0.0150	mg/l	104		88-110		
Magnesium	0.0182 J	0.0067	0.100	mg/l	96		90-110		
Manganese	N.D.	0.00044	0.0050	mg/l	101		90-110		
Nickel	N.D.	0.00095	0.0100	mg/l	103		90-111		
Potassium	N.D.	0.0874	0.500	mg/l	98		85-115		
Silver	N.D.	0.00091	0.0050	mg/l	98		83-120		
Sodium	N.D.	0.0647	1.00	mg/l	96		87-114		
Vanadium	N.D.	0.00096	0.0050	mg/l	98		90-110		
Zinc	N.D.	0.0032	0.0200	mg/l	100		90-110		
Batch number: 113616050003A	Sample number(s): 6505879-6505887,6505889								
Beryllium	N.D.	0.00013	0.00050	mg/l	103		90-113		
Cadmium	N.D.	0.00020	0.00050	mg/l	107		90-114		
Thallium	N.D.	0.00015	0.00050	mg/l	99		89-116		
Batch number: 113616050003B	Sample number(s): 6505879-6505887,6505889								
Selenium	N.D.	0.00027	0.0020	mg/l	105		85-114		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 113575713004	Sample number(s): 6505879-6505887,6505889 UNSPK: 6505884 BKG: 6505884								
Mercury	98	103	80-120	5	20	N.D.	N.D.	0 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282073
Reported: 01/04/12 at 04:28 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 113611848002	Sample number(s): 6505879-6505887,6505889 UNSPK: 6505884 BKG: 6505884								
Aluminum	94	95	75-125	1	20	N.D.	N.D.	0 (1)	20
Antimony	106	107	87-122	0	20	N.D.	N.D.	0 (1)	20
Arsenic	102	104	81-123	2	20	N.D.	N.D.	0 (1)	20
Barium	98	100	78-118	2	20	0.0181	0.0177	2 (1)	20
Calcium	6 (2)	25 (2)	81-118	1	20	81.6	81.5	0	20
Chromium	98	100	81-120	2	20	N.D.	0.0012 J	200* (1)	20
Cobalt	97	98	87-112	1	20	N.D.	N.D.	0 (1)	20
Copper	101	102	86-122	1	20	N.D.	0.0011 J	200* (1)	20
Iron	94	96	75-125	2	20	N.D.	N.D.	0 (1)	20
Lead	101	101	75-125	0	20	N.D.	N.D.	0 (1)	20
Magnesium	55 (2)	64 (2)	75-125	1	20	19.2	19.2	0	20
Manganese	98	100	75-125	1	20	0.00067 J	0.00069 J	3 (1)	20
Nickel	100	101	86-115	1	20	N.D.	N.D.	0 (1)	20
Potassium	97	97	83-123	0	20	2.66	2.72	3	20
Silver	97	100	75-125	3	20	N.D.	N.D.	0 (1)	20
Sodium	93	95	75-125	2	20	6.31	6.30	0	20
Vanadium	97	99	90-111	2	20	N.D.	N.D.	0 (1)	20
Zinc	99	100	85-117	1	20	N.D.	N.D.	0 (1)	20
Batch number: 113616050003A	Sample number(s): 6505879-6505887,6505889 UNSPK: 6505884 BKG: 6505884								
Beryllium	104	106	88-117	3	20	N.D.	N.D.	0 (1)	20
Cadmium	106	108	79-118	2	20	N.D.	N.D.	0 (1)	20
Thallium	107	105	85-114	2	20	N.D.	N.D.	0 (1)	20
Batch number: 113616050003B	Sample number(s): 6505879-6505887,6505889 UNSPK: 6505884 BKG: 6505884								
Selenium	104	103	75-125	1	20	0.0015 J	0.0014 J	10 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only
Acct. # 6745 Group# 1282073 Sample # 6505879-89 **COC #** 276561

Please print. Instructions on reverse side correspond with circled numbers.

1 Client: O'Brien & Gere Acct. #:
Project Name/#: Dupont-Stauffer LF PWSID #:
Project Manager: Al Farrell P.O.#:
Sampler: Paul D'Annibale/Rob Hornung Quote #:
Name of state where samples were collected: NY

For Lab Use Only
FSC:
SCR#: 114632

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

5 Analyses Requested — Preservation Codes: H, /, N, N

2 Sample Identification	Date Collected	Time Collected	3 Grab	Composite	Soil	Water	Other	4 Total # of Containers	VOCs 8260 (H)	SVOCs TCL (/)	Total Metals (N)	Filtered Metals (N)					Remarks	6 Temperature of samples upon receipt (if requested)
GW-LF-16D-122011	12/20/11	0955	G			X		7	X	X	X	X					Shipped in 3 coolers	
GW-LF-16S-122011	↓	0940	↓			X		7	X	X	X	X						
GW-LF-15D-122011	↓	1147	↓			X		7	X	X	X	X						
GW-LF-15S-122011	↓	1200	↓			X		7	X	X	X	X						
GW-LF-14D-122011	↓	1450	↓			X		7	X	X	X	X						
GW-LF-14S-122011	↓	1451	↓			X		7	X	X	X	X						
GW-LF-14S-MS/MSD-122011	↓	1451	↓			X		14	X	X	X	X						
EB-01-122011	↓	1600	↓			X		7	X	X	X							
GW-X-1-122011	↓	—	G			X		7	X	X	X	X						
TB-01-122011	—	—	—			X		2	X									

7 **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

8 **Data Package Options** (please circle if required)
Type I (validation/NJ Reg) TX TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No
Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

9

Relinquished by:	Date	Time	Received by:	Date	Time
P. Carlson	12/5	1350	Paul D'Annibale	12/7/11	1200
Paul D'Annibale	12/20/11	1830	FedEx 872983487233 872983487244 872983487255	12/20/11	1830
			[signature]	12/21/11	1050

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

Issued by Dept. 6042 Management 2102.05

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

	Organic Qualifiers		**Inorganic Qualifiers**
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
U	Compound was not detected	*****	Duplicate analysis not within control limits
X,Y,Z	Defined in case narrative	**+**	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425	O'Brien & Gere Engineers - NY P.O.Box 4873 Syracuse NY 13221-4873

January 04, 2012

Project: DuPont-Stauffer Landfill

Submittal Date: 12/22/2011
Group Number: 1282278
SDG: ODP09
PO Number: 10810812EST
State of Sample Origin: NY

Client Sample Description	Lancaster Labs (LLI) #
GW-LF-17S-122111 Grab Water	6506946
GW-LF-17S-122111 Filtered Grab Water	6506947
GW-LF-17D-122111 Grab Water	6506948
GW-LF-17D-122111 Filtered Grab Water	6506949
GW-LF-8-122111 Grab Water	6506950
GW-LF-8-122111 Filtered Grab Water	6506951
TB-02-122111 Water	6506952

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	O'Brien & Gere Engineers - NY	Attn: Paul D'annibale
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300 Ext. 1246

Respectfully Submitted,

Lawrence M. Taylor
Senior Specialist

eurofins Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17S-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506946
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17S SDG#: ODP09-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17S-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506946
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17S SDG#: ODP09-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l		ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
04678	Carbazole	86-74-8	N.D.		0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.		0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
04678	Chrysene	218-01-9	N.D.		0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.		0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.		2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.		0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.		2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	15	1
04678	2,4-Dinitrophenol	51-28-5	N.D.		10	30	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
04678	Fluoranthene	206-44-0	N.D.		0.1	0.5	1
04678	Fluorene	86-73-7	N.D.		0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.		5	15	1
04678	Hexachloroethane	67-72-1	N.D.		1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
04678	Isophorone	78-59-1	N.D.		0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.		0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.		0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
04678	Naphthalene	91-20-3	0.2	J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.		0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.		10	30	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
04678	Di-n-octylphthalate	117-84-0	N.D.		2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17S-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506946
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

LF17S SDG#: ODP09-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	1.06	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0058 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0312	0.00026	0.0050	1
01750	Calcium	7440-70-2	145	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0099 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0012 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0034 J	0.00094	0.0100	1
01754	Iron	7439-89-6	2.10	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	34.6	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0831	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0060 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.73	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	9.35	0.0647	1.00	1
07071	Vanadium	7440-62-2	0.0020 J	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0074 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0013 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17S-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506946
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17S SDG#: ODP09-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	N120031AA	01/03/2012 20:02	Emily R Styer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N120031AA	01/03/2012 20:02	Emily R Styer	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11361WAC026	12/29/2011 06:58	Jennifer R Riggs	1
00813	BNA Water Extraction	SW-846 3510C	1	11361WAC026	12/27/2011 18:15	Nicholas W Shroyer	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:27	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/31/2011 00:00	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012 10:42	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012 10:42	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012 10:42	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012 10:42	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:24	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011 08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011 08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

Sample Description: GW-LF-17S-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506947
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

F17SF SDG#: ODP09-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0064 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0261	0.00026	0.0050	1
01750	Calcium	7440-70-2	144	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0020 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	34.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0013 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0015 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.53	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	9.26	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0014 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:30	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17S-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506947
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:05 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

F17SF SDG#: ODP09-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/31/2011 00:04	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012 10:45	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012 10:45	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012 10:45	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012 10:45	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:25	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011 08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011 08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

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Analysis Report

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Sample Description: GW-LF-17D-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506948
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

LF17D SDG#: ODP09-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Volatiles SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-17D-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506948
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17D SDG#: ODP09-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l		ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.		2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.		2	5	1
04678	Carbazole	86-74-8	N.D.		0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.		0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.		0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.		0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.		0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.5	1	1
04678	Chrysene	218-01-9	N.D.		0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.		0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.		2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.		0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.		2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.		0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.		2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		5	16	1
04678	2,4-Dinitrophenol	51-28-5	N.D.		10	31	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.		1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.		0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		2	5	1
04678	Fluoranthene	206-44-0	N.D.		0.1	0.5	1
04678	Fluorene	86-73-7	N.D.		0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.		0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.		0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.		5	16	1
04678	Hexachloroethane	67-72-1	N.D.		1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.5	1
04678	Isophorone	78-59-1	N.D.		0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.		0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.		0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.		0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
04678	Naphthalene	91-20-3	0.1	J	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.		0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.		0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.		0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.		0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.		0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.		10	31	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.		0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
04678	Di-n-octylphthalate	117-84-0	N.D.		2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17D-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506948
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17D SDG#: ODP09-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0308	0.00026	0.0050	1
01750	Calcium	7440-70-2	155	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0037 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.00096 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0045 J	0.00094	0.0100	1
01754	Iron	7439-89-6	26.8	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	38.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0598	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0067 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	6.61	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	13.3	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0012 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

*=This limit was used in the evaluation of the final result

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17D-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506948
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF17D SDG#: ODP09-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	N120031AA	01/03/2012	20:25	Emily R Styer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N120031AA	01/03/2012	20:25	Emily R Styer	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11361WAC026	12/29/2011	07:22	Jennifer R Riggs	1
00813	BNA Water Extraction	SW-846 3510C	1	11361WAC026	12/27/2011	18:15	Nicholas W Shroyer	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	12:34	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/31/2011	00:08	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	10:55	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	10:55	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	10:55	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	10:55	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012	21:27	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-17D-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506949
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

F17DF SDG#: ODP09-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**	**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0293	0.00026	0.0050	1
01750	Calcium	7440-70-2	157	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0013 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	0.0976 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	38.8	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0156	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0011 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	6.66	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	13.5	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.0010 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:37	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-17D-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506949
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 10:25 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

F17DF SDG#: ODP09-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/31/2011 00:12	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012 10:58	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012 10:58	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012 10:58	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012 10:58	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:28	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011 08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011 08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-8-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506950
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-- SDG#: ODP09-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

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Sample Description: GW-LF-8-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506950
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

LF8-- SDG#: ODP09-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-8-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506950
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

LF8-- SDG#: ODP09-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	0.0061 J	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0945	0.00026	0.0050	1
01750	Calcium	7440-70-2	234	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0031 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0028 J	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	1.47	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	58.2	0.0067	0.100	1
07058	Manganese	7439-96-5	0.238	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0069 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	23.9	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	49.4	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor

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Sample Description: GW-LF-8-122111 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506950
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-- SDG#: ODP09-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	N120031AA	01/03/2012	20:48	Emily R Styer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N120031AA	01/03/2012	20:48	Emily R Styer	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11361WAC026	12/29/2011	07:46	Jennifer R Riggs	1
00813	BNA Water Extraction	SW-846 3510C	1	11361WAC026	12/27/2011	18:15	Nicholas W Shroyer	1
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012	12:41	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/31/2011	00:16	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012	11:01	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012	11:01	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012	11:01	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012	11:01	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012	21:30	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011	08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011	08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011	13:40	Nelli S Markaryan	1

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Analysis Report

Sample Description: GW-LF-8-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506951
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-F SDG#: ODP09-06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0938	0.00026	0.0050	1
01750	Calcium	7440-70-2	234	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0028 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0029 J	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	1.14	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	58.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.236	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0059 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	24.0	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	49.6	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0083 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848001	01/03/2012 12:44	Eric L Eby	1
07052	Cobalt	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

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Sample Description: GW-LF-8-122111 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6506951
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011 12:40 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-F SDG#: ODP09-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
01757	Magnesium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848001	12/31/2011 00:27	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050002A	01/04/2012 11:04	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050002A	01/04/2012 11:04	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050002B	01/04/2012 11:04	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050002A	01/04/2012 11:04	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113575713004	01/01/2012 21:31	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848001	12/28/2011 08:56	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050002	12/28/2011 08:52	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113575713004	12/23/2011 13:40	Nelli S Markaryan	1

Sample Description: TB-02-122111 Water
DuPont Stauffer Landfill

LLI Sample # WW 6506952
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

LF8-T SDG#: ODP09-07TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Sample Description: TB-02-122111 Water
DuPont Stauffer Landfill

LLI Sample # WW 6506952
LLI Group # 1282278
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/21/2011

Submitted: 12/22/2011 09:50
Reported: 01/04/2012 18:40

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

LF8-T SDG#: ODP09-07TB*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	N120031AA	01/03/2012 15:48	Emily R Styer	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	N120031AA	01/03/2012 15:48	Emily R Styer	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282278
Reported: 01/04/12 at 06:40 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: N120031AA	Sample number(s): 6506946,6506948,6506950,6506952								
Acetone	N.D.	6.	20	ug/l	111	109	49-234	2	30
Benzene	N.D.	0.5	5	ug/l	97	94	79-120	2	30
Bromochloromethane	N.D.	1.	5	ug/l	97	97	80-120	1	30
Bromodichloromethane	N.D.	1.	5	ug/l	88	88	80-120	1	30
Bromoform	N.D.	1.	5	ug/l	84	79	61-120	5	30
Bromomethane	N.D.	1.	5	ug/l	68	68	44-120	1	30
2-Butanone	N.D.	3.	10	ug/l	91	91	66-151	0	30
Carbon Disulfide	N.D.	1.	5	ug/l	90	87	62-120	3	30
Carbon Tetrachloride	N.D.	1.	5	ug/l	90	88	75-123	3	30
Chlorobenzene	N.D.	0.8	5	ug/l	100	95	80-120	5	30
Chloroethane	N.D.	1.	5	ug/l	70	68	49-129	3	30
Chloroform	N.D.	0.8	5	ug/l	94	93	77-122	2	30
Chloromethane	N.D.	1.	5	ug/l	84	80	60-129	5	30
1,2-Dibromo-3-chloropropane	N.D.	2.	5	ug/l	84	77	56-126	9	30
Dibromochloromethane	N.D.	1.	5	ug/l	91	86	80-120	5	30
1,2-Dibromoethane	N.D.	1.	5	ug/l	96	91	80-120	5	30
1,2-Dichlorobenzene	N.D.	1.	5	ug/l	97	86	80-120	12	30
1,3-Dichlorobenzene	N.D.	1.	5	ug/l	96	87	80-120	10	30
1,4-Dichlorobenzene	N.D.	1.	5	ug/l	95	84	80-120	12	30
1,1-Dichloroethane	N.D.	1.	5	ug/l	100	98	79-120	1	30
1,2-Dichloroethane	N.D.	1.	5	ug/l	99	97	70-130	2	30
1,1-Dichloroethene	N.D.	0.8	5	ug/l	95	92	74-123	3	30
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	96	93	80-120	3	30
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	96	93	80-120	3	30
1,2-Dichloropropane	N.D.	1.	5	ug/l	100	98	78-120	2	30
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	93	92	80-120	2	30
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	92	87	79-120	5	30
Ethylbenzene	N.D.	0.8	5	ug/l	94	89	79-120	6	30
2-Hexanone	N.D.	3.	10	ug/l	81	80	65-136	1	30
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	89	89	70-121	0	30
Methylene Chloride	N.D.	2.	5	ug/l	96	95	80-120	1	30
Styrene	N.D.	1.	5	ug/l	90	84	80-120	7	30
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	97	87	71-120	11	30
Tetrachloroethene	N.D.	0.8	5	ug/l	96	89	80-121	8	30
Toluene	N.D.	0.7	5	ug/l	96	91	79-120	5	30
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	92	90	75-127	2	30
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	98	94	80-120	4	30
Trichloroethene	N.D.	1.	5	ug/l	93	91	80-120	3	30
Vinyl Chloride	N.D.	1.	5	ug/l	92	87	65-125	5	30
Xylene (Total)	N.D.	0.8	5	ug/l	96	90	80-120	6	30
Batch number: 11361WAC026	Sample number(s): 6506946,6506948,6506950								
Acenaphthene	N.D.	0.1	0.5	ug/l	100	101	75-114	1	30
Acenaphthylene	N.D.	0.1	0.5	ug/l	109	108	80-122	1	30
Anthracene	N.D.	0.1	0.5	ug/l	107	106	76-115	1	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282278
Reported: 01/04/12 at 06:40 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Benzo(a)anthracene	N.D.	0.1	0.5	ug/l	97	96	75-116	1	30
Benzo(a)pyrene	N.D.	0.1	0.5	ug/l	107	108	64-126	1	30
Benzo(b)fluoranthene	N.D.	0.1	0.5	ug/l	108	114	66-125	5	30
Benzo(g,h,i)perylene	N.D.	0.1	0.5	ug/l	107	108	66-132	1	30
Benzo(k)fluoranthene	N.D.	0.1	0.5	ug/l	105	102	66-131	3	30
4-Bromophenyl-phenylether	N.D.	0.5	1	ug/l	106	106	75-115	1	30
Butylbenzylphthalate	N.D.	2.	5	ug/l	98	96	77-115	2	30
Di-n-butylphthalate	N.D.	2.	5	ug/l	105	105	76-115	0	30
Carbazole	N.D.	0.5	1	ug/l	102	103	75-120	1	30
4-Chloro-3-methylphenol	N.D.	0.5	1	ug/l	96	97	70-123	1	30
4-Chloroaniline	N.D.	0.5	1	ug/l	86	94	24-128	9	30
bis(2-Chloroethoxy)methane	N.D.	0.5	1	ug/l	93	95	74-124	2	30
bis(2-Chloroethyl)ether	N.D.	0.5	1	ug/l	90	93	77-108	3	30
2-Chloronaphthalene	N.D.	0.4	1	ug/l	126	136*	54-132	7	30
2-Chlorophenol	N.D.	0.5	1	ug/l	94	97	71-114	3	30
4-Chlorophenyl-phenylether	N.D.	0.5	1	ug/l	103	104	77-114	2	30
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1	ug/l	81	84	65-113	3	30
Chrysene	N.D.	0.1	0.5	ug/l	98	96	76-116	2	30
Dibenz(a,h)anthracene	N.D.	0.1	0.5	ug/l	109	110	67-131	1	30
Dibenzofuran	N.D.	0.5	1	ug/l	96	98	75-117	1	30
3,3'-Dichlorobenzidine	N.D.	2.	5	ug/l	74	84	37-117	11	30
2,4-Dichlorophenol	N.D.	0.5	1	ug/l	104	104	77-117	0	30
Diethylphthalate	N.D.	2.	5	ug/l	99	101	66-116	1	30
2,4-Dimethylphenol	N.D.	0.5	1	ug/l	97	97	72-110	0	30
Dimethylphthalate	N.D.	2.	5	ug/l	86	87	39-126	0	30
4,6-Dinitro-2-methylphenol	N.D.	5.	15	ug/l	107	103	65-126	4	30
2,4-Dinitrophenol	N.D.	10.	30	ug/l	90	92	52-131	2	30
2,4-Dinitrotoluene	N.D.	1.	5	ug/l	102	104	76-119	2	30
2,6-Dinitrotoluene	N.D.	0.5	1	ug/l	107	107	76-118	0	30
bis(2-Ethylhexyl)phthalate	N.D.	2.	5	ug/l	97	95	78-117	2	30
Fluoranthene	N.D.	0.1	0.5	ug/l	106	108	76-119	1	30
Fluorene	N.D.	0.1	0.5	ug/l	101	104	76-116	3	30
Hexachlorobenzene	N.D.	0.1	0.5	ug/l	112	110	75-119	2	30
Hexachlorobutadiene	N.D.	0.5	1	ug/l	103	103	57-124	0	30
Hexachlorocyclopentadiene	N.D.	5.	15	ug/l	96	96	36-118	0	30
Hexachloroethane	N.D.	1.	5	ug/l	87	93	52-113	6	30
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5	ug/l	109	108	69-121	1	30
Isophorone	N.D.	0.5	1	ug/l	95	96	74-117	1	30
2-Methylnaphthalene	N.D.	0.1	0.5	ug/l	100	99	69-108	1	30
2-Methylphenol	N.D.	0.5	1	ug/l	83	85	58-110	3	30
4-Methylphenol	N.D.	0.5	1	ug/l	69	73	49-108	5	30
Naphthalene	N.D.	0.1	0.5	ug/l	95	95	70-111	0	30
2-Nitroaniline	N.D.	0.5	1	ug/l	105	106	75-120	1	30
3-Nitroaniline	N.D.	0.5	1	ug/l	100	102	74-113	2	30
4-Nitroaniline	N.D.	0.5	1	ug/l	81	84	59-100	4	30
Nitrobenzene	N.D.	0.5	1	ug/l	96	98	75-109	2	30
2-Nitrophenol	N.D.	0.5	1	ug/l	101	103	76-118	2	30
4-Nitrophenol	N.D.	10.	30	ug/l	45	46	16-78	3	30
N-Nitroso-di-n-propylamine	N.D.	0.5	1	ug/l	86	90	69-110	4	30
N-Nitrosodiphenylamine	N.D.	0.5	1	ug/l	105	104	67-136	1	30
Di-n-octylphthalate	N.D.	2.	5	ug/l	107	108	68-128	2	30
Pentachlorophenol	N.D.	1.	5	ug/l	102	99	53-110	2	30
Phenanthrene	N.D.	0.1	0.5	ug/l	100	101	76-113	1	30
Phenol	N.D.	0.5	1	ug/l	37	39	21-67	6	30
Pyrene	N.D.	0.1	0.5	ug/l	96	95	75-119	2	30
1,2,4-Trichlorobenzene	N.D.	0.5	1	ug/l	99	99	71-112	0	30
2,4,5-Trichlorophenol	N.D.	0.5	1	ug/l	107	106	79-107	0	30
2,4,6-Trichlorophenol	N.D.	0.5	1	ug/l	107	107	76-120	0	30

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

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Analysis Report

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Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282278
Reported: 01/04/12 at 06:40 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 113575713004	Sample number(s): 6506946-6506951								
Mercury	N.D.	0.000026	0.00020	mg/l	88		80-120		
Batch number: 113611848001	Sample number(s): 6506946-6506951								
Aluminum	N.D.	0.0801	0.200	mg/l	101		90-112		
Antimony	N.D.	0.0058	0.0200	mg/l	107		88-111		
Arsenic	N.D.	0.0051	0.0200	mg/l	105		89-115		
Barium	N.D.	0.00026	0.0050	mg/l	101		90-110		
Calcium	N.D.	0.0705	0.200	mg/l	102		90-110		
Chromium	N.D.	0.0011	0.0150	mg/l	103		90-110		
Cobalt	N.D.	0.00062	0.0050	mg/l	104		90-110		
Copper	0.0011 J	0.00094	0.0100	mg/l	104		90-112		
Iron	N.D.	0.0141	0.200	mg/l	100		90-112		
Lead	N.D.	0.0022	0.0150	mg/l	103		88-110		
Magnesium	N.D.	0.0067	0.100	mg/l	101		90-110		
Manganese	N.D.	0.00044	0.0050	mg/l	102		90-110		
Nickel	N.D.	0.00095	0.0100	mg/l	106		90-111		
Potassium	N.D.	0.0874	0.500	mg/l	101		85-115		
Silver	N.D.	0.00091	0.0050	mg/l	102		83-120		
Sodium	N.D.	0.0647	1.00	mg/l	100		87-114		
Vanadium	N.D.	0.00096	0.0050	mg/l	104		90-110		
Zinc	N.D.	0.0032	0.0200	mg/l	101		90-110		
Batch number: 113616050002A	Sample number(s): 6506946-6506951								
Beryllium	N.D.	0.00013	0.00050	mg/l	109		90-113		
Cadmium	N.D.	0.00020	0.00050	mg/l	110		90-114		
Thallium	N.D.	0.00015	0.00050	mg/l	104		89-116		
Batch number: 113616050002B	Sample number(s): 6506946-6506951								
Selenium	N.D.	0.00027	0.0020	mg/l	103		85-114		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 113575713004	Sample number(s): 6506946-6506951 UNSPK: P505884 BKG: P505884								
Mercury	98	103	80-120	5	20	N.D.	N.D.	0 (1)	20
Batch number: 113611848001	Sample number(s): 6506946-6506951 UNSPK: P505872 BKG: P505872								
Aluminum	120	118	75-125	1	20	0.846	0.869	3 (1)	20
Antimony	109	107	87-122	3	20	N.D.	N.D.	0 (1)	20
Arsenic	109	108	81-123	2	20	N.D.	N.D.	0 (1)	20
Barium	102	101	78-118	1	20	0.0244	0.0245	1 (1)	20
Calcium	20 (2)	47 (2)	81-118	1	20	85.4	87.1	2	20
Chromium	102	100	81-120	1	20	0.0027 J	0.0030 J	10 (1)	20
Cobalt	101	100	87-112	1	20	N.D.	0.00075 J	200* (1)	20
Copper	104	102	86-122	2	20	0.0038 J	0.0034 J	11 (1)	20
Iron	101	100	75-125	1	20	1.77	1.80	2	20
Lead	103	101	75-125	2	20	N.D.	N.D.	0 (1)	20

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282278
Reported: 01/04/12 at 06:40 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Magnesium	67 (2)	78 (2)	75-125	1	20	20.2	20.7	2	20
Manganese	100	100	75-125	0	20	0.102	0.103	1	20
Nickel	103	101	86-115	1	20	0.0016 J	0.0021 J	27* (1)	20
Potassium	102	102	83-123	0	20	2.89	2.93	2	20
Silver	103	102	75-125	1	20	N.D.	N.D.	0 (1)	20
Sodium	99	99	75-125	0	20	6.45	6.61	2	20
Vanadium	104	101	90-111	2	20	0.0027 J	0.0014 J	65* (1)	20
Zinc	99	98	85-117	1	20	0.0077 J	0.0089 J	14 (1)	20
Batch number: 113616050002A	Sample number(s): 6506946-6506951 UNSPK: P505872 BKG: P505872								
Beryllium	107	111	88-117	3	20	N.D.	N.D.	0 (1)	20
Cadmium	106	112	79-118	5	20	N.D.	N.D.	0 (1)	20
Thallium	105	107	85-114	2	20	N.D.	N.D.	0 (1)	20
Batch number: 113616050002B	Sample number(s): 6506946-6506951 UNSPK: P505872 BKG: P505872								
Selenium	102	107	75-125	4	20	0.0014 J	0.0015 J	2 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 Std. Water Master
Batch number: N120031AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6506946	101	103	99	92
6506948	102	102	100	95
6506950	101	102	98	94
6506952	101	102	95	97
Blank	102	103	93	100
LCS	100	103	104	98
LCSD	102	104	102	102
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TCL SW846 Semivolatiles/Waters
Batch number: 11361WAC026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6506946	54	36	110	94	95	108
6506948	54	36	105	93	95	108
6506950	64	51	108	92	92	111
Blank	57	34	118	96	97	114
LCS	64	40	113	96	97	105
LCSD	67	42	119	97	100	105
Limits:	10-98	10-74	22-150	52-120	63-114	34-118

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282278
Reported: 01/04/12 at 06:40 PM

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 6745 Group# 1282278 Sample # 6506946-52

COC # 276565

Please print. Instructions on reverse side correspond with circled numbers.

For Lab Use Only
FSC:
SCR#:

(1)
Client: O'Brien & Gere Acct. #:
Project Name/#: Dupont-Stauffer LF PWSID #:
Project Manager: Al Farrell P.O.#:
Sampler: Paul D'Annibale Rob Hornung Quote #:
Name of state where samples were collected: NY

(5) Analyses Requested

Preservation Codes: H=HCl, T=Thiosulfate, N=HNO_3, B=NaOH, S=H_2SO_4, O=Other

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix: Soil	Water (Potable / NPDES, Check if Applicable)	Other	(4) Total # of Containers	VOCs 8260 (H)	SVOCs TCL (—)	Total Metals (N)	Filtered Metals (N)						Remarks	(6) Temperature of samples upon receipt (if requested)
GW-LF-17S-122111	12/21/11	1005	✓			X		7	X	X	X	X							
GW-LF-17D-122111	↓	1025	✓			X		7	X	X	X	X							
GW-LF-8-122111	↓	1240	✓			X		7	X	X	X	X							
TB-02-122111	—	—	—			X		2	X										

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg) TX TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No
Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

(9)

Relinquished by:	Date	Time	Received by:	Date	Time
Paul D'Annibale	12/21/11	1700	FedEx 872983487222	12/21/11	1700
			Deborah Neal	12/22/11	0950

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Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

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2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared by:	Prepared for:
Lancaster Laboratories 2425 New Holland Pike Lancaster, PA 17605-2425	O'Brien & Gere Engineers - NY P.O.Box 4873 Syracuse NY 13221-4873

January 06, 2012

Project: DuPont-Stauffer Landfill

Submittal Date: 12/23/2011
Group Number: 1282475
SDG: ODP10
PO Number: 10810812EST
State of Sample Origin: NY

Client Sample Description	Lancaster Labs (LLI) #
GW-LF-13D-122211 Grab Water	6508235
GW-LF-13D-122211 Filtered Grab Water	6508236
GW-LF-12D-122211 Grab Water	6508237
GW-LF-12D-122211 Filtered Grab Water	6508238
GW-LF-9-122211 Grab Water	6508239
GW-LF-9-122211 Filtered Grab Water	6508240
EB-02-122211 Grab Water	6508241
TB-03-122211 Water	6508242

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	O'Brien & Gere Engineers - NY	Attn: Paul D'annibale
1 COPY TO	Data Package Group	

Questions? Contact your Client Services Representative
Megan A Moeller at (717) 656-2300 Ext. 1246

Respectfully Submitted,

Matthew E. Barton
Senior Specialist

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-13D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508235
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL13 SDG#: ODP10-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-13D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508235
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL13 SDG#: ODP10-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	10	29	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	10	29	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-13D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508235
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL13 SDG#: ODP10-01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles		**SW-846 8270C**	ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals		**SW-846 6010B**	mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.0933 J	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0320	0.00026	0.0050	1
01750	Calcium	7440-70-2	102	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0025 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	0.0012 J	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0050 J	0.00094	0.0100	1
01754	Iron	7439-89-6	2.41	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	41.3	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0534	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0036 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.56	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	5.05	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020	mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00044 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A	mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-13D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508235
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL13 SDG#: ODP10-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L120041AA	01/04/2012	17:03	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L120041AA	01/04/2012	17:03	Kerri E Legerlotz	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11362WAA026	01/03/2012	21:54	Jennifer R Riggs	1
00813	BNA Water Extraction	SW-846 3510C	1	11362WAA026	12/28/2011	16:45	Nicholas W Shroyer	1
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	06:05	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	01:17	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	13:05	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	13:05	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	13:05	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	13:05	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113615713001	12/29/2011	18:30	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113615713001	12/28/2011	15:10	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-13D-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508236
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF13 SDG#: ODP10-02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0310	0.00026	0.0050	1
01750	Calcium	7440-70-2	103	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.00098 J	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	41.8	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0034 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0010 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.59	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	5.19	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	0.00036 J	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-13D-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508236
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:00 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF13 SDG#: ODP10-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 06:09	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012 06:09	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 01:20	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 13:08	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 13:08	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 13:08	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 13:08	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113615713001	12/29/2011 18:31	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113615713001	12/28/2011 15:10	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-12D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508237
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL12 SDG#: ODP10-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.09	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.09	0.5	1
04678	Anthracene	120-12-7	N.D.	0.09	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.09	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.09	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.09	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.09	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.09	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	0.9	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-12D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508237
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL12 SDG#: ODP10-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	0.9	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	0.9	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	0.9	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	0.9	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	0.9	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	0.9	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	0.9	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	0.9	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	0.9	1
04678	Chrysene	218-01-9	N.D.	0.09	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.09	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	0.9	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	0.9	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	0.9	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	14	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	9	28	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	0.9	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	0.9	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.09	0.5	1
04678	Fluorene	86-73-7	N.D.	0.09	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.09	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	0.9	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	14	1
04678	Hexachloroethane	67-72-1	N.D.	0.9	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.09	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	0.9	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.09	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	0.9	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	0.9	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.09	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	0.9	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	0.9	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	0.9	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	0.9	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	0.9	1
04678	4-Nitrophenol	100-02-7	N.D.	9	28	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	0.9	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	0.9	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-12D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508237
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL12 SDG#: ODP10-03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	0.9	5	1
04678	Phenanthrene	85-01-8	N.D.	0.09	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	0.9	1
04678	Pyrene	129-00-0	N.D.	0.09	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	0.9	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	0.9	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	0.9	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	0.465	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0131	0.00026	0.0050	1
01750	Calcium	7440-70-2	83.2	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0034 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0026 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.973	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	42.0	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0254	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0034 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	1.47	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	4.41	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	0.0036 J	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-12D-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508237
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL12 SDG#: ODP10-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L120041AA	01/04/2012	17:25	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L120041AA	01/04/2012	17:25	Kerri E Legerlotz	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11362WAA026	01/03/2012	22:19	Jennifer R Riggs	1
00813	BNA Water Extraction	SW-846 3510C	1	11362WAA026	12/28/2011	16:45	Nicholas W Shroyer	1
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	06:13	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	01:24	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	13:11	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	13:11	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	13:11	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	13:11	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113615713001	12/29/2011	18:33	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113615713001	12/28/2011	15:10	Nelli S Markaryan	1

*=This limit was used in the evaluation of the final result

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-12D-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508238
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF12 SDG#: ODP10-04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0105	0.00026	0.0050	1
01750	Calcium	7440-70-2	77.5	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	39.0	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0010 J	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0020 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	1.15	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	4.28	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:27	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-12D-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508238
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 10:05 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF12 SDG#: ODP10-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	06:17	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	01:27	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	01:27	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	01:27	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	01:27	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012	06:17	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	01:27	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	01:27	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	01:27	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	13:24	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	13:24	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	13:24	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	13:24	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113615713001	12/29/2011	18:34	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113615713001	12/28/2011	15:10	Nelli S Markaryan	1

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Analysis Report

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Sample Description: GW-LF-9-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508239
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL09 SDG#: ODP10-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.5	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.5	1
04678	Anthracene	120-12-7	N.D.	0.1	0.5	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.5	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.5	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.5	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.5	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.5	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.5	1	1

*=This limit was used in the evaluation of the final result

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Analysis Report

Sample Description: GW-LF-9-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508239
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL09 SDG#: ODP10-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.	2	5	1
04678	Di-n-butylphthalate	84-74-2	N.D.	2	5	1
04678	Carbazole	86-74-8	N.D.	0.5	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.	0.5	1	1
04678	4-Chloroaniline	106-47-8	N.D.	0.5	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.	0.5	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.	0.5	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.	0.4	1	1
04678	2-Chlorophenol	95-57-8	N.D.	0.5	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.	0.5	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.	0.5	1	1
04678	Chrysene	218-01-9	N.D.	0.1	0.5	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	0.5	1
04678	Dibenzofuran	132-64-9	N.D.	0.5	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.	2	5	1
04678	2,4-Dichlorophenol	120-83-2	N.D.	0.5	1	1
04678	Diethylphthalate	84-66-2	N.D.	2	5	1
04678	2,4-Dimethylphenol	105-67-9	N.D.	0.5	1	1
04678	Dimethylphthalate	131-11-3	N.D.	2	5	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.	5	16	1
04678	2,4-Dinitrophenol	51-28-5	N.D.	11	32	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.	1	5	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.	0.5	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.	2	5	1
04678	Fluoranthene	206-44-0	N.D.	0.1	0.5	1
04678	Fluorene	86-73-7	N.D.	0.1	0.5	1
04678	Hexachlorobenzene	118-74-1	N.D.	0.1	0.5	1
04678	Hexachlorobutadiene	87-68-3	N.D.	0.5	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.	5	16	1
04678	Hexachloroethane	67-72-1	N.D.	1	5	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	0.5	1
04678	Isophorone	78-59-1	N.D.	0.5	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.	0.1	0.5	1
04678	2-Methylphenol	95-48-7	N.D.	0.5	1	1
04678	4-Methylphenol	106-44-5	N.D.	0.5	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
04678	Naphthalene	91-20-3	N.D.	0.1	0.5	1
04678	2-Nitroaniline	88-74-4	N.D.	0.5	1	1
04678	3-Nitroaniline	99-09-2	N.D.	0.5	1	1
04678	4-Nitroaniline	100-01-6	N.D.	0.5	1	1
04678	Nitrobenzene	98-95-3	N.D.	0.5	1	1
04678	2-Nitrophenol	88-75-5	N.D.	0.5	1	1
04678	4-Nitrophenol	100-02-7	N.D.	11	32	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.	0.5	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.	0.5	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.					
04678	Di-n-octylphthalate	117-84-0	N.D.	2	5	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-9-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508239
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSL09 SDG#: ODP10-05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Pentachlorophenol	87-86-5	N.D.	1	5	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.5	1
04678	Phenol	108-95-2	N.D.	0.5	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.5	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.5	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.5	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.5	1	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		mg/l	mg/l	mg/l	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	0.0266	0.00026	0.0050	1
01750	Calcium	7440-70-2	119	0.0705	0.200	1
07051	Chromium	7440-47-3	0.0027 J	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	0.0013 J	0.00094	0.0100	1
01754	Iron	7439-89-6	0.0884 J	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	64.0	0.0067	0.100	1
07058	Manganese	7439-96-5	0.0229	0.00044	0.0050	1
07061	Nickel	7440-02-0	0.0022 J	0.00095	0.0100	1
01762	Potassium	7440-09-7	4.73	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	12.0	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		mg/l	mg/l	mg/l	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		mg/l	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-9-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508239
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSL09 SDG#: ODP10-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L120041AA	01/04/2012	17:47	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L120041AA	01/04/2012	17:47	Kerri E Legerlotz	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11362WAA026	01/03/2012	22:44	Jennifer R Riggs	1
00813	BNA Water Extraction	SW-846 3510C	1	11362WAA026	12/28/2011	16:45	Nicholas W Shroyer	1
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	06:21	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	01:31	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	13:27	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	13:27	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	13:27	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	13:27	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113615713001	12/29/2011	18:36	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113615713001	12/28/2011	15:10	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: GW-LF-9-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508240
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF09 SDG#: ODP10-06

CAT No.	Analysis Name		CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals Dissolved		**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum		7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony		7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic		7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium		7440-39-3	0.0271	0.00026	0.0050	1
01750	Calcium		7440-70-2	122	0.0705	0.200	1
07051	Chromium		7440-47-3	0.0015 J	0.0011	0.0150	1
07052	Cobalt		7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper		7440-50-8	0.0023 J	0.00094	0.0100	1
01754	Iron		7439-89-6	N.D.	0.0141	0.200	1
07055	Lead		7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium		7439-95-4	65.4	0.0067	0.100	1
07058	Manganese		7439-96-5	0.0222	0.00044	0.0050	1
07061	Nickel		7440-02-0	0.0017 J	0.00095	0.0100	1
01762	Potassium		7440-09-7	4.85	0.0874	0.500	1
07066	Silver		7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium		7440-23-5	12.3	0.0647	1.00	1
07071	Vanadium		7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc		7440-66-6	N.D.	0.0032	0.0200	1
		SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium		7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium		7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium		7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium		7440-28-0	N.D.	0.00015	0.00050	1
		SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury		7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670
This sample was field filtered for dissolved metals.

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1

*=This limit was used in the evaluation of the final result

Sample Description: GW-LF-9-122211 Filtered Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508240
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 11:45 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSF09 SDG#: ODP10-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012 06:25	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	01/04/2012 06:25	Tara L Snyder	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011 01:34	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012 13:31	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012 13:31	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012 13:31	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012 13:31	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113615713001	12/29/2011 18:37	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011 08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011 08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113615713001	12/28/2011 15:10	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: EB-02-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508241
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 12:15 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLE2 SDG#: ODP10-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	ug/l	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l	ug/l	ug/l	
04678	Acenaphthene	83-32-9	N.D.	0.1	0.6	1
04678	Acenaphthylene	208-96-8	N.D.	0.1	0.6	1
04678	Anthracene	120-12-7	N.D.	0.1	0.6	1
04678	Benzo(a)anthracene	56-55-3	N.D.	0.1	0.6	1
04678	Benzo(a)pyrene	50-32-8	N.D.	0.1	0.6	1
04678	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	0.6	1
04678	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	0.6	1
04678	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	0.6	1
04678	4-Bromophenyl-phenylether	101-55-3	N.D.	0.6	1	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-02-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508241
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 12:15 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLE2 SDG#: ODP10-07EB

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		ug/l		ug/l	ug/l	
04678	Butylbenzylphthalate	85-68-7	N.D.		3	6	1
04678	Di-n-butylphthalate	84-74-2	N.D.		3	6	1
04678	Carbazole	86-74-8	N.D.		0.6	1	1
04678	4-Chloro-3-methylphenol	59-50-7	N.D.		0.6	1	1
04678	4-Chloroaniline	106-47-8	N.D.		0.6	1	1
04678	bis(2-Chloroethoxy)methane	111-91-1	N.D.		0.6	1	1
04678	bis(2-Chloroethyl)ether	111-44-4	N.D.		0.6	1	1
04678	2-Chloronaphthalene	91-58-7	N.D.		0.5	1	1
04678	2-Chlorophenol	95-57-8	N.D.		0.6	1	1
04678	4-Chlorophenyl-phenylether	7005-72-3	N.D.		0.6	1	1
04678	2,2'-oxybis(1-Chloropropane)	108-60-1	N.D.		0.6	1	1
04678	Chrysene	218-01-9	N.D.		0.1	0.6	1
04678	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	0.6	1
04678	Dibenzofuran	132-64-9	N.D.		0.6	1	1
04678	3,3'-Dichlorobenzidine	91-94-1	N.D.		3	6	1
04678	2,4-Dichlorophenol	120-83-2	N.D.		0.6	1	1
04678	Diethylphthalate	84-66-2	N.D.		3	6	1
04678	2,4-Dimethylphenol	105-67-9	N.D.		0.6	1	1
04678	Dimethylphthalate	131-11-3	N.D.		3	6	1
04678	4,6-Dinitro-2-methylphenol	534-52-1	N.D.		6	19	1
04678	2,4-Dinitrophenol	51-28-5	N.D.		13	39	1
04678	2,4-Dinitrotoluene	121-14-2	N.D.		1	6	1
04678	2,6-Dinitrotoluene	606-20-2	N.D.		0.6	1	1
04678	bis(2-Ethylhexyl)phthalate	117-81-7	N.D.		3	6	1
04678	Fluoranthene	206-44-0	N.D.		0.1	0.6	1
04678	Fluorene	86-73-7	N.D.		0.1	0.6	1
04678	Hexachlorobenzene	118-74-1	N.D.		0.1	0.6	1
04678	Hexachlorobutadiene	87-68-3	N.D.		0.6	1	1
04678	Hexachlorocyclopentadiene	77-47-4	N.D.		6	19	1
04678	Hexachloroethane	67-72-1	N.D.		1	6	1
04678	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	0.6	1
04678	Isophorone	78-59-1	N.D.		0.6	1	1
04678	2-Methylnaphthalene	91-57-6	N.D.		0.1	0.6	1
04678	2-Methylphenol	95-48-7	N.D.		0.6	1	1
04678	4-Methylphenol	106-44-5	N.D.		0.6	1	1
	3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.						
04678	Naphthalene	91-20-3	0.2	J	0.1	0.6	1
04678	2-Nitroaniline	88-74-4	N.D.		0.6	1	1
04678	3-Nitroaniline	99-09-2	N.D.		0.6	1	1
04678	4-Nitroaniline	100-01-6	N.D.		0.6	1	1
04678	Nitrobenzene	98-95-3	N.D.		0.6	1	1
04678	2-Nitrophenol	88-75-5	N.D.		0.6	1	1
04678	4-Nitrophenol	100-02-7	N.D.		13	39	1
04678	N-Nitroso-di-n-propylamine	621-64-7	N.D.		0.6	1	1
04678	N-Nitrosodiphenylamine	86-30-6	N.D.		0.6	1	1
	N-nitrosodiphenylamine decomposes in the GC inlet forming diphenylamine. The result reported for N-nitrosodiphenylamine represents the combined total of both compounds.						
04678	Di-n-octylphthalate	117-84-0	N.D.		3	6	1

*=This limit was used in the evaluation of the final result

Sample Description: EB-02-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508241
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 12:15 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLE2 SDG#: ODP10-07EB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS	**Semivolatiles SW-846 8270C**		**ug/l**	**ug/l**	**ug/l**	
04678	Pentachlorophenol	87-86-5	N.D.	1	6	1
04678	Phenanthrene	85-01-8	N.D.	0.1	0.6	1
04678	Phenol	108-95-2	N.D.	0.6	1	1
04678	Pyrene	129-00-0	N.D.	0.1	0.6	1
04678	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.6	1	1
04678	2,4,5-Trichlorophenol	95-95-4	N.D.	0.6	1	1
04678	2,4,6-Trichlorophenol	88-06-2	N.D.	0.6	1	1

The recoveries of several compounds were outside of QC limits in the LCS. This sample was re-extracted outside of the method required holding time, and acceptable QC and comparable data were observed. The data reported here is from the initial extraction of the sample.

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
Metals	**SW-846 6010B**		**mg/l**	**mg/l**	**mg/l**	
01743	Aluminum	7429-90-5	N.D.	0.0801	0.200	1
07044	Antimony	7440-36-0	N.D.	0.0058	0.0200	1
07035	Arsenic	7440-38-2	N.D.	0.0051	0.0200	1
07046	Barium	7440-39-3	N.D.	0.00026	0.0050	1
01750	Calcium	7440-70-2	N.D.	0.0705	0.200	1
07051	Chromium	7440-47-3	N.D.	0.0011	0.0150	1
07052	Cobalt	7440-48-4	N.D.	0.00062	0.0050	1
07053	Copper	7440-50-8	N.D.	0.00094	0.0100	1
01754	Iron	7439-89-6	N.D.	0.0141	0.200	1
07055	Lead	7439-92-1	N.D.	0.0022	0.0150	1
01757	Magnesium	7439-95-4	N.D.	0.0067	0.100	1
07058	Manganese	7439-96-5	N.D.	0.00044	0.0050	1
07061	Nickel	7440-02-0	N.D.	0.00095	0.0100	1
01762	Potassium	7440-09-7	N.D.	0.0874	0.500	1
07066	Silver	7440-22-4	N.D.	0.00091	0.0050	1
01767	Sodium	7440-23-5	N.D.	0.0647	1.00	1
07071	Vanadium	7440-62-2	N.D.	0.00096	0.0050	1
07072	Zinc	7440-66-6	N.D.	0.0032	0.0200	1
	SW-846 6020		**mg/l**	**mg/l**	**mg/l**	
06027	Beryllium	7440-41-7	N.D.	0.00013	0.00050	1
06028	Cadmium	7440-43-9	N.D.	0.00020	0.00050	1
06041	Selenium	7782-49-2	N.D.	0.00027	0.0020	1
06045	Thallium	7440-28-0	N.D.	0.00015	0.00050	1
	SW-846 7470A		**mg/l**	**mg/l**	**mg/l**	
00259	Mercury	7439-97-6	N.D.	0.000026	0.00020	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Sample Description: EB-02-122211 Grab Water
DuPont Stauffer Landfill

LLI Sample # WW 6508241
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011 12:15 by PD

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

DSLE2 SDG#: ODP10-07EB

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time		Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L120041AA	01/04/2012	18:09	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L120041AA	01/04/2012	18:09	Kerri E Legerlotz	1
04678	TCL SW846 Semivolatiles/Waters	SW-846 8270C	1	11362WAA026	01/03/2012	23:10	Jennifer R Riggs	1
00813	BNA Water Extraction	SW-846 3510C	1	11362WAA026	12/28/2011	16:45	Nicholas W Shroyer	1
01743	Aluminum	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07044	Antimony	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07035	Arsenic	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07046	Barium	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
01750	Calcium	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07051	Chromium	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07052	Cobalt	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07053	Copper	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
01754	Iron	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07055	Lead	SW-846 6010B	1	113611848002	01/04/2012	06:36	Tara L Snyder	1
01757	Magnesium	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07058	Manganese	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07061	Nickel	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
01762	Potassium	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07066	Silver	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
01767	Sodium	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07071	Vanadium	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
07072	Zinc	SW-846 6010B	1	113611848002	12/31/2011	01:45	John W Yanzuk II	1
06027	Beryllium	SW-846 6020	1	113616050003A	01/04/2012	13:34	Choon Y Tian	1
06028	Cadmium	SW-846 6020	1	113616050003A	01/04/2012	13:34	Choon Y Tian	1
06041	Selenium	SW-846 6020	1	113616050003B	01/04/2012	13:34	Choon Y Tian	1
06045	Thallium	SW-846 6020	1	113616050003A	01/04/2012	13:34	Choon Y Tian	1
00259	Mercury	SW-846 7470A	1	113615713001	12/29/2011	18:39	Parker D Lindstrom	1
01848	WW SW846 ICP Digest (tot rec)	SW-846 3005A	1	113611848002	12/28/2011	08:34	Denise K Conners	1
06050	ICP/MS SW-846 Water Digest	SW-846 3010A modified	1	113616050003	12/28/2011	08:29	Denise K Conners	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	113615713001	12/28/2011	15:10	Nelli S Markaryan	1

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: TB-03-122211 Water
DuPont Stauffer Landfill

LLI Sample # WW 6508242
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSLT3 SDG#: ODP10-08TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles		**SW-846 8260B**	**ug/l**	**ug/l**	**ug/l**	
10903	Acetone	67-64-1	N.D.	6	20	1
10903	Benzene	71-43-2	N.D.	0.5	5	1
10903	Bromochloromethane	74-97-5	N.D.	1	5	1
10903	Bromodichloromethane	75-27-4	N.D.	1	5	1
10903	Bromoform	75-25-2	N.D.	1	5	1
10903	Bromomethane	74-83-9	N.D.	1	5	1
10903	2-Butanone	78-93-3	N.D.	3	10	1
10903	Carbon Disulfide	75-15-0	N.D.	1	5	1
10903	Carbon Tetrachloride	56-23-5	N.D.	1	5	1
10903	Chlorobenzene	108-90-7	N.D.	0.8	5	1
10903	Chloroethane	75-00-3	N.D.	1	5	1
10903	Chloroform	67-66-3	N.D.	0.8	5	1
10903	Chloromethane	74-87-3	N.D.	1	5	1
10903	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	2	5	1
10903	Dibromochloromethane	124-48-1	N.D.	1	5	1
10903	1,2-Dibromoethane	106-93-4	N.D.	1	5	1
10903	1,2-Dichlorobenzene	95-50-1	N.D.	1	5	1
10903	1,3-Dichlorobenzene	541-73-1	N.D.	1	5	1
10903	1,4-Dichlorobenzene	106-46-7	N.D.	1	5	1
10903	1,1-Dichloroethane	75-34-3	N.D.	1	5	1
10903	1,2-Dichloroethane	107-06-2	N.D.	1	5	1
10903	1,1-Dichloroethene	75-35-4	N.D.	0.8	5	1
10903	cis-1,2-Dichloroethene	156-59-2	N.D.	0.8	5	1
10903	trans-1,2-Dichloroethene	156-60-5	N.D.	0.8	5	1
10903	1,2-Dichloropropane	78-87-5	N.D.	1	5	1
10903	cis-1,3-Dichloropropene	10061-01-5	N.D.	1	5	1
10903	trans-1,3-Dichloropropene	10061-02-6	N.D.	1	5	1
10903	Ethylbenzene	100-41-4	N.D.	0.8	5	1
10903	2-Hexanone	591-78-6	N.D.	3	10	1
10903	4-Methyl-2-pentanone	108-10-1	N.D.	3	10	1
10903	Methylene Chloride	75-09-2	N.D.	2	5	1
10903	Styrene	100-42-5	N.D.	1	5	1
10903	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	1	5	1
10903	Tetrachloroethene	127-18-4	N.D.	0.8	5	1
10903	Toluene	108-88-3	N.D.	0.7	5	1
10903	1,1,1-Trichloroethane	71-55-6	N.D.	0.8	5	1
10903	1,1,2-Trichloroethane	79-00-5	N.D.	0.8	5	1
10903	Trichloroethene	79-01-6	N.D.	1	5	1
10903	Vinyl Chloride	75-01-4	N.D.	1	5	1
10903	Xylene (Total)	1330-20-7	N.D.	0.8	5	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: TB-03-122211 Water
DuPont Stauffer Landfill

LLI Sample # WW 6508242
LLI Group # 1282475
Account # 06745

Project Name: DuPont-Stauffer Landfill

Collected: 12/22/2011

Submitted: 12/23/2011 09:45
Reported: 01/06/2012 18:04

O'Brien & Gere Engineers - NY
P.O.Box 4873
Syracuse NY 13221-4873

DSLT3 SDG#: ODP10-08TB*

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10903	8260 Std. Water Master	SW-846 8260B	1	L120041AA	01/04/2012 18:31	Kerri E Legerlotz	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	L120041AA	01/04/2012 18:31	Kerri E Legerlotz	1

*=This limit was used in the evaluation of the final result

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Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282475
Reported: 01/06/12 at 06:04 PM

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: L120041AA	Sample number(s): 6508235,6508237,6508239,6508241-6508242								
Acetone	N.D.	6.	20	ug/l	125		49-234		
Benzene	N.D.	0.5	5	ug/l	102		79-120		
Bromochloromethane	N.D.	1.	5	ug/l	94		80-120		
Bromodichloromethane	N.D.	1.	5	ug/l	89		80-120		
Bromoform	N.D.	1.	5	ug/l	79		61-120		
Bromomethane	N.D.	1.	5	ug/l	91		44-120		
2-Butanone	N.D.	3.	10	ug/l	104		66-151		
Carbon Disulfide	N.D.	1.	5	ug/l	95		62-120		
Carbon Tetrachloride	N.D.	1.	5	ug/l	88		75-123		
Chlorobenzene	N.D.	0.8	5	ug/l	100		80-120		
Chloroethane	N.D.	1.	5	ug/l	88		49-129		
Chloroform	N.D.	0.8	5	ug/l	96		77-122		
Chloromethane	N.D.	1.	5	ug/l	86		60-129		
1,2-Dibromo-3-chloropropane	N.D.	2.	5	ug/l	75		56-126		
Dibromochloromethane	N.D.	1.	5	ug/l	85		80-120		
1,2-Dibromoethane	N.D.	1.	5	ug/l	100		80-120		
1,2-Dichlorobenzene	N.D.	1.	5	ug/l	95		80-120		
1,3-Dichlorobenzene	N.D.	1.	5	ug/l	97		80-120		
1,4-Dichlorobenzene	N.D.	1.	5	ug/l	99		80-120		
1,1-Dichloroethane	N.D.	1.	5	ug/l	101		79-120		
1,2-Dichloroethane	N.D.	1.	5	ug/l	96		70-130		
1,1-Dichloroethene	N.D.	0.8	5	ug/l	107		74-123		
cis-1,2-Dichloroethene	N.D.	0.8	5	ug/l	100		80-120		
trans-1,2-Dichloroethene	N.D.	0.8	5	ug/l	102		80-120		
1,2-Dichloropropane	N.D.	1.	5	ug/l	98		78-120		
cis-1,3-Dichloropropene	N.D.	1.	5	ug/l	93		80-120		
trans-1,3-Dichloropropene	N.D.	1.	5	ug/l	89		79-120		
Ethylbenzene	N.D.	0.8	5	ug/l	98		79-120		
2-Hexanone	N.D.	3.	10	ug/l	97		65-136		
4-Methyl-2-pentanone	N.D.	3.	10	ug/l	93		70-121		
Methylene Chloride	N.D.	2.	5	ug/l	102		80-120		
Styrene	N.D.	1.	5	ug/l	91		80-120		
1,1,2,2-Tetrachloroethane	N.D.	1.	5	ug/l	99		71-120		
Tetrachloroethene	N.D.	0.8	5	ug/l	100		80-121		
Toluene	N.D.	0.7	5	ug/l	99		79-120		
1,1,1-Trichloroethane	N.D.	0.8	5	ug/l	89		75-127		
1,1,2-Trichloroethane	N.D.	0.8	5	ug/l	102		80-120		
Trichloroethene	N.D.	1.	5	ug/l	98		80-120		
Vinyl Chloride	N.D.	1.	5	ug/l	91		65-125		
Xylene (Total)	N.D.	0.8	5	ug/l	95		80-120		
Batch number: 11362WAA026	Sample number(s): 6508235,6508237,6508239,6508241								
Acenaphthene	N.D.	0.1	0.5	ug/l	21*		75-114		
Acenaphthylene	N.D.	0.1	0.5	ug/l	23*		80-122		
Anthracene	N.D.	0.1	0.5	ug/l	22*		76-115		

*- Outside of specification
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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282475
Reported: 01/06/12 at 06:04 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Benzo(a)anthracene	N.D.	0.1	0.5	ug/l	24*		75-116		
Benzo(a)pyrene	N.D.	0.1	0.5	ug/l	23*		64-126		
Benzo(b)fluoranthene	N.D.	0.1	0.5	ug/l	23*		66-125		
Benzo(g,h,i)perylene	N.D.	0.1	0.5	ug/l	23*		66-132		
Benzo(k)fluoranthene	N.D.	0.1	0.5	ug/l	24*		66-131		
4-Bromophenyl-phenylether	N.D.	0.5	1	ug/l	21*		75-115		
Butylbenzylphthalate	N.D.	2.	5	ug/l	22*		77-115		
Di-n-butylphthalate	N.D.	2.	5	ug/l	21*		76-115		
Carbazole	N.D.	0.5	1	ug/l	22*		75-120		
4-Chloro-3-methylphenol	N.D.	0.5	1	ug/l	82		70-123		
4-Chloroaniline	N.D.	0.5	1	ug/l	21*		24-128		
bis(2-Chloroethoxy)methane	N.D.	0.5	1	ug/l	22*		74-124		
bis(2-Chloroethyl)ether	N.D.	0.5	1	ug/l	22*		77-108		
2-Chloronaphthalene	N.D.	0.4	1	ug/l	21*		54-132		
2-Chlorophenol	N.D.	0.5	1	ug/l	79		71-114		
4-Chlorophenyl-phenylether	N.D.	0.5	1	ug/l	22*		77-114		
2,2'-oxybis(1-Chloropropane)	N.D.	0.5	1	ug/l	19*		65-113		
Chrysene	N.D.	0.1	0.5	ug/l	23*		76-116		
Dibenz(a,h)anthracene	N.D.	0.1	0.5	ug/l	24*		67-131		
Dibenzofuran	N.D.	0.5	1	ug/l	22*		75-117		
3,3'-Dichlorobenzidine	N.D.	2.	5	ug/l	15*		37-117		
2,4-Dichlorophenol	N.D.	0.5	1	ug/l	93		77-117		
Diethylphthalate	N.D.	2.	5	ug/l	20*		66-116		
2,4-Dimethylphenol	N.D.	0.5	1	ug/l	76		72-110		
Dimethylphthalate	N.D.	2.	5	ug/l	15*		39-126		
4,6-Dinitro-2-methylphenol	N.D.	5.	15	ug/l	92		65-126		
2,4-Dinitrophenol	N.D.	10.	30	ug/l	85		52-131		
2,4-Dinitrotoluene	N.D.	1.	5	ug/l	21*		76-119		
2,6-Dinitrotoluene	N.D.	0.5	1	ug/l	22*		76-118		
bis(2-Ethylhexyl)phthalate	N.D.	2.	5	ug/l	21*		78-117		
Fluoranthene	N.D.	0.1	0.5	ug/l	23*		76-119		
Fluorene	N.D.	0.1	0.5	ug/l	22*		76-116		
Hexachlorobenzene	N.D.	0.1	0.5	ug/l	22*		75-119		
Hexachlorobutadiene	N.D.	0.5	1	ug/l	17*		57-124		
Hexachlorocyclopentadiene	N.D.	5.	15	ug/l	17*		36-118		
Hexachloroethane	N.D.	1.	5	ug/l	17*		52-113		
Indeno(1,2,3-cd)pyrene	N.D.	0.1	0.5	ug/l	23*		69-121		
Isophorone	N.D.	0.5	1	ug/l	22*		74-117		
2-Methylnaphthalene	N.D.	0.1	0.5	ug/l	20*		69-108		
2-Methylphenol	N.D.	0.5	1	ug/l	64		58-110		
4-Methylphenol	N.D.	0.5	1	ug/l	55		49-108		
Naphthalene	N.D.	0.1	0.5	ug/l	20*		70-111		
2-Nitroaniline	N.D.	0.5	1	ug/l	23*		75-120		
3-Nitroaniline	N.D.	0.5	1	ug/l	27*		74-113		
4-Nitroaniline	N.D.	0.5	1	ug/l	28*		59-100		
Nitrobenzene	N.D.	0.5	1	ug/l	20*		75-109		
2-Nitrophenol	N.D.	0.5	1	ug/l	97		76-118		
4-Nitrophenol	N.D.	10.	30	ug/l	26		16-78		
N-Nitroso-di-n-propylamine	N.D.	0.5	1	ug/l	20*		69-110		
N-Nitrosodiphenylamine	N.D.	0.5	1	ug/l	21*		67-136		
Di-n-octylphthalate	N.D.	2.	5	ug/l	20*		68-128		
Pentachlorophenol	N.D.	1.	5	ug/l	108		53-110		
Phenanthrene	N.D.	0.1	0.5	ug/l	21*		76-113		
Phenol	N.D.	0.5	1	ug/l	29		21-67		
Pyrene	N.D.	0.1	0.5	ug/l	22*		75-119		
1,2,4-Trichlorobenzene	N.D.	0.5	1	ug/l	19*		71-112		
2,4,5-Trichlorophenol	N.D.	0.5	1	ug/l	97		79-107		
2,4,6-Trichlorophenol	N.D.	0.5	1	ug/l	96		76-120		

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eurofins Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282475
Reported: 01/06/12 at 06:04 PM

Analysis Name	Blank Result	Blank MDL**	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 113611848002	Sample number(s): 6508235-6508241								
Aluminum	N.D.	0.0801	0.200	mg/l	97		90-112		
Antimony	N.D.	0.0058	0.0200	mg/l	105		88-111		
Arsenic	N.D.	0.0051	0.0200	mg/l	99		89-115		
Barium	N.D.	0.00026	0.0050	mg/l	98		90-110		
Calcium	N.D.	0.0705	0.200	mg/l	96		90-110		
Chromium	N.D.	0.0011	0.0150	mg/l	100		90-110		
Cobalt	N.D.	0.00062	0.0050	mg/l	100		90-110		
Copper	N.D.	0.00094	0.0100	mg/l	100		90-112		
Iron	N.D.	0.0141	0.200	mg/l	97		90-112		
Lead	N.D.	0.0022	0.0150	mg/l	104		88-110		
Magnesium	0.0182 J	0.0067	0.100	mg/l	96		90-110		
Manganese	N.D.	0.00044	0.0050	mg/l	101		90-110		
Nickel	N.D.	0.00095	0.0100	mg/l	103		90-111		
Potassium	N.D.	0.0874	0.500	mg/l	98		85-115		
Silver	N.D.	0.00091	0.0050	mg/l	98		83-120		
Sodium	N.D.	0.0647	1.00	mg/l	96		87-114		
Vanadium	N.D.	0.00096	0.0050	mg/l	98		90-110		
Zinc	N.D.	0.0032	0.0200	mg/l	100		90-110		
Batch number: 113615713001	Sample number(s): 6508235-6508241								
Mercury	N.D.	0.00002 6	0.00020	mg/l	96		80-120		
Batch number: 113616050003A	Sample number(s): 6508235-6508241								
Beryllium	N.D.	0.00013	0.00050	mg/l	103		90-113		
Cadmium	N.D.	0.00020	0.00050	mg/l	107		90-114		
Thallium	N.D.	0.00015	0.00050	mg/l	99		89-116		
Batch number: 113616050003B	Sample number(s): 6508235-6508241								
Selenium	N.D.	0.00027	0.0020	mg/l	105		85-114		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: L120041AA	Sample number(s): 6508235,6508237,6508239,6508241-6508242 UNSPK: P509580								
Acetone	92	92	52-139	0	30				
Benzene	104	105	80-126	1	30				
Bromochloromethane	89	91	83-123	2	30				
Bromodichloromethane	87	90	78-125	4	30				
Bromoform	72	75	60-121	3	30				
Bromomethane	88	90	38-149	2	30				
2-Butanone	93	97	57-138	5	30				
Carbon Disulfide	95	100	67-135	5	30				
Carbon Tetrachloride	91	94	81-138	4	30				
Chlorobenzene	100	103	87-124	4	30				
Chloroethane	86	91	51-145	6	30				
Chloroform	94	98	81-134	4	30				
Chloromethane	86	88	67-154	3	30				

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282475
Reported: 01/06/12 at 06:04 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
1,2-Dibromo-3-chloropropane	77	87	54-134	12	30				
Dibromochloromethane	82	84	74-116	2	30				
1,2-Dibromoethane	97	97	77-116	0	30				
1,2-Dichlorobenzene	93	95	84-119	2	30				
1,3-Dichlorobenzene	97	100	86-121	3	30				
1,4-Dichlorobenzene	98	100	85-121	3	30				
1,1-Dichloroethane	98	104	84-129	6	30				
1,2-Dichloroethane	93	92	66-141	1	30				
1,1-Dichloroethene	110	113	85-142	3	30				
cis-1,2-Dichloroethene	98	100	85-125	2	30				
trans-1,2-Dichloroethene	102	107	87-126	5	30				
1,2-Dichloropropane	98	102	83-124	4	30				
cis-1,3-Dichloropropene	89	93	75-125	4	30				
trans-1,3-Dichloropropene	86	91	74-119	5	30				
Ethylbenzene	99	102	71-134	3	30				
2-Hexanone	91	95	55-127	4	30				
4-Methyl-2-pentanone	89	93	63-123	4	30				
Methylene Chloride	99	101	79-120	2	30				
Styrene	91	94	78-125	4	30				
1,1,2,2-Tetrachloroethane	96	98	72-128	2	30				
Tetrachloroethene	103	105	80-128	2	30				
Toluene	100	104	80-125	3	30				
1,1,1-Trichloroethane	90	95	80-143	6	30				
1,1,2-Trichloroethane	108	108	77-124	1	30				
Trichloroethene	101	104	88-133	3	30				
Vinyl Chloride	93	98	66-133	6	30				
Xylene (Total)	96	99	79-125	3	30				
Batch number: 11362WAA026	Sample number(s): 6508235,6508237,6508239,6508241 UNSPK: P507666								
Acenaphthene	97	99	78-107	5	30				
Acenaphthylene	108	108	75-124	3	30				
Anthracene	103	101	78-114	1	30				
Benzo(a)anthracene	107	113	76-114	8	30				
Benzo(a)pyrene	106	109	58-128	6	30				
Benzo(b)fluoranthene	98	103	65-125	8	30				
Benzo(g,h,i)perylene	107	109	72-122	5	30				
Benzo(k)fluoranthene	109	106	71-121	0	30				
4-Bromophenyl-phenylether	99	99	79-118	3	30				
Butylbenzylphthalate	102	108	68-122	8	30				
Di-n-butylphthalate	102	103	79-118	4	30				
Carbazole	100	102	82-112	5	30				
4-Chloro-3-methylphenol	57	38	19-155	36*	30				
4-Chloroaniline	63	66	23-118	8	30				
bis(2-Chloroethoxy)methane	95	96	65-119	4	30				
bis(2-Chloroethyl)ether	92	99	41-143	9	30				
2-Chloronaphthalene	88	89	49-141	3	30				
2-Chlorophenol	31	24*	27-146	26	30				
4-Chlorophenyl-phenylether	96	99	73-117	6	30				
2,2'-oxybis(1-Chloropropane)	91	97	54-125	9	30				
Chrysene	102	104	78-116	5	30				
Dibenz(a,h)anthracene	107	109	73-133	4	30				
Dibenzofuran	95	97	71-116	5	30				
3,3'-Dichlorobenzidine	71	79	16-128	14	30				

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Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282475
Reported: 01/06/12 at 06:04 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
2,4-Dichlorophenol	32	22*	30-154	36*	30				
Diethylphthalate	97	100	74-118	6	30				
2,4-Dimethylphenol	90	71	20-145	21	30				
Dimethylphthalate	99	99	38-126	3	30				
4,6-Dinitro-2-methylphenol	100	104	26-149	7	30				
2,4-Dinitrophenol	108	115	20-168	9	30				
2,4-Dinitrotoluene	103	103	70-124	3	30				
2,6-Dinitrotoluene	103	107	47-140	6	30				
bis(2-Ethylhexyl)phthalate	102	108	72-122	8	30				
Fluoranthene	108	110	73-110	5	30				
Fluorene	101	101	71-123	2	30				
Hexachlorobenzene	98	98	77-122	2	30				
Hexachlorobutadiene	88	88	68-123	3	30				
Hexachlorocyclopentadiene	104	104	15-143	3	30				
Hexachloroethane	81	87	54-119	10	30				
Indeno(1,2,3-cd)pyrene	108	110	69-120	4	30				
Isophorone	98	100	73-114	5	30				
2-Methylnaphthalene	94	96	80-111	5	30				
2-Methylphenol	62	47	10-146	25	30				
4-Methylphenol	53	40	10-147	25	30				
Naphthalene	94	95	73-113	3	30				
2-Nitroaniline	108	110	49-141	4	30				
3-Nitroaniline	94	97	44-133	6	30				
4-Nitroaniline	84	89	46-117	9	30				
Nitrobenzene	95	99	48-136	7	30				
2-Nitrophenol	97	95	34-146	1	30				
4-Nitrophenol	30	35	10-109	16	30				
N-Nitroso-di-n-propylamine	91	97	72-119	9	30				
N-Nitrosodiphenylamine	102	99	74-122	0	30				
Di-n-octylphthalate	104	107	58-137	5	30				
Pentachlorophenol	63	50	23-133	21	30				
Phenanthrene	97	96	72-121	2	30				
Phenol	22	16	10-83	29	30				
Pyrene	100	101	77-117	4	30				
1,2,4-Trichlorobenzene	90	93	55-133	6	30				
2,4,5-Trichlorophenol	37	28*	32-144	24	30				
2,4,6-Trichlorophenol	34	23*	27-147	35*	30				
Batch number: 113611848002	Sample number(s): 6508235-6508241 UNSPK: P505884 BKG: P505884								
Aluminum	94	95	75-125	1	20	N.D.	N.D.	0 (1)	20
Antimony	106	107	87-122	0	20	N.D.	N.D.	0 (1)	20
Arsenic	102	104	81-123	2	20	N.D.	N.D.	0 (1)	20
Barium	98	100	78-118	2	20	0.0181	0.0177	2 (1)	20
Calcium	6 (2)	25 (2)	81-118	1	20	81.6	81.5	0	20
Chromium	98	100	81-120	2	20	N.D.	0.0012 J	200* (1)	20
Cobalt	97	98	87-112	1	20	N.D.	N.D.	0 (1)	20
Copper	101	102	86-122	1	20	N.D.	0.0011 J	200* (1)	20
Iron	94	96	75-125	2	20	N.D.	N.D.	0 (1)	20
Lead	101	101	75-125	0	20	N.D.	N.D.	0 (1)	20
Magnesium	55 (2)	64 (2)	75-125	1	20	19.2	19.2	0	20
Manganese	98	100	75-125	1	20	0.00067 J	0.00069 J	3 (1)	20
Nickel	100	101	86-115	1	20	N.D.	N.D.	0 (1)	20
Potassium	97	97	83-123	0	20	2.66	2.72	3	20

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Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY   Group Number: 1282475
Reported: 01/06/12 at 06:04 PM

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Silver	97	100	75-125	3	20	N.D.	N.D.	0 (1)	20
Sodium	93	95	75-125	2	20	6.31	6.30	0	20
Vanadium	97	99	90-111	2	20	N.D.	N.D.	0 (1)	20
Zinc	99	100	85-117	1	20	N.D.	N.D.	0 (1)	20
Batch number: 113615713001	Sample number(s): 6508235-6508241 UNSPK: P507666 BKG: P507666								
Mercury	99	93	80-120	6	20	N.D.	0.00016 J	200* (1)	20
Batch number: 113616050003A	Sample number(s): 6508235-6508241 UNSPK: P505884 BKG: P505884								
Beryllium	104	106	88-117	3	20	N.D.	N.D.	0 (1)	20
Cadmium	106	108	79-118	2	20	N.D.	N.D.	0 (1)	20
Thallium	107	105	85-114	2	20	N.D.	N.D.	0 (1)	20
Batch number: 113616050003B	Sample number(s): 6508235-6508241 UNSPK: P505884 BKG: P505884								
Selenium	104	103	75-125	1	20	0.0015 J	0.0014 J	10 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed
unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: 8260 Std. Water Master
Batch number: L120041AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
6508235	92	97	98	92
6508237	92	96	97	91
6508239	93	96	97	91
6508241	94	99	97	90
6508242	93	100	97	91
Blank	94	99	97	92
LCS	92	98	98	96
MS	92	96	98	96
MSD	92	98	99	95
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TCL SW846 Semivolatiles/Waters
Batch number: 11362WAA026

	2-Fluorophenol	Phenol-d6	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
6508235	39	26	93	94	94	111
6508237	43	27	96	88	92	111
6508239	43	37	94	93	96	108
6508241	52	32	97	98	98	114
Blank	42	26	103	100	98	126*
LCS	44	27	91	20*	20*	34
MS	11	17	25	91	93	103
MSD	7*	10	19*	96	95	108

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**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: O'Brien & Gere Engineers - NY Group Number: 1282475
Reported: 01/06/12 at 06:04 PM

Surrogate Quality Control

Limits:	10-98	10-74	22-150	52-120	63-114	34-118

*- Outside of specification
**-This limit was used in the evaluation of the final result for the blank
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only
Acct. # 6745 Group# 1282475 Sample # 6508235-42

COC # 276562

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: O'Brien & Gere Acct. #:
Project Name/#: Dupont-Stauffer LF PWSID #:
Project Manager: Al Farrell P.O.#:
Sampler: Paul D'Annibale Rob Hornung Quote #:
Name of state where samples were collected: NY

For Lab Use Only
FSC:
SCR#:

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(5) Analyses Requested — Preservation Codes: H, -, N, N

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Soil	Water	Other	(4) Total # of Containers	VOCs 8260 (H)	SVOCs TCL (-)	Total Metals (N)	Filtered Metals (N)					Remarks	(6) Temperature of samples upon receipt (if requested)
GW-LF13D-122211	12/22/11	1000	X			X		7	X	X	X	X					Shipped in 2 Coolers	
GW-LF-12D-122211	↓	1005	X			X		7	X	X	X	X						
GW-LF-9-122211	↓	1145	X			X		7	X	X	X	X						
EB-02-122211	↓	1215	X			X		7	X	X	X	X						
TB-03-122211	—	—	-			X		2	X									

Matrix: Check if Applicable ☐ Potable ☐ NPDES

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg) TX TRRP-13
Type II (Tier II) MA MCP CT RCP
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

SDG Complete? Yes No

Site-specific QC (MS/MSD/Dup)? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal COC Required? Yes / No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	12/22/11	1330	872983487211 FedEx 872983487185	12/22/11	1330
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: [signature]	12/23/11	945	(9)

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

Issued by Dept. 6042 Management
2102.05

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

RL	Reporting Limit	**BMQL**	Below Minimum Quantitation Level
N.D.	none detected	**MPN**	Most Probable Number
TNTC	Too Numerous To Count	**CP Units**	cobalt-chloroplatinate units
IU	International Units	**NTU**	nephelometric turbidity units
umhos/cm	micromhos/cm	**ng**	nanogram(s)
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
µg	microgram(s)	**mg**	milligram(s)
mL	milliliter(s)	**L**	liter(s)
m3	cubic meter(s)	**µL**	microliter(s)
		pg/L	picogram/liter

<	less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.
>	greater than
J	estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.
ppb	parts per billion
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

	Organic Qualifiers		Inorganic Qualifiers
A	TIC is a possible aldol-condensation product	**B**	Value is <CRDL, but ≥IDL
B	Analyte was also detected in the blank	**E**	Estimated due to interference
C	Pesticide result confirmed by GC/MS	**M**	Duplicate injection precision not met
D	Compound quantitated on a diluted sample	**N**	Spike sample not within control limits
E	Concentration exceeds the calibration range of the instrument	**S**	Method of standard additions (MSA) used for calculation
N	Presumptive evidence of a compound (TICs only)	**U**	Compound was not detected
P	Concentration difference between primary and confirmation columns >25%	**W**	Post digestion spike out of control limits
		*****	Duplicate analysis not within control limits
U	Compound was not detected	**+**	Correlation coefficient for MSA <0.995
X,Y,Z	Defined in case narrative		

Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.