



**ORANGE COUNTY LANDFILL  
ROUTE 17M, GOSHEN, NEW YORK  
(NYSDEC SITE NO. 336007)**

**SEEP MITIGATION PLAN &  
ENGINEERING REPORT**

***Prepared for:***

Orange County Department of Public Works  
Division of Environmental Facilities and Services  
P.O. Box 637  
2455-2459 Route 17M  
Goshen, New York 10924

***Prepared by:***

Sterling Environmental Engineering, P.C.  
24 Wade Road  
Latham, New York 12110

October 31, 2014

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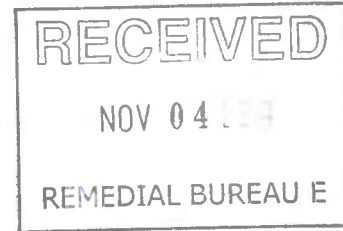
**STERLING**  
Sterling Environmental Engineering, P.C.

October 31, 2014

Mr. Bradford Shaw, P.E.  
NYS Department of Environmental Conservation  
RCRA Permitting Section  
Division of Environmental Remediation  
Remedial Bureau E, 12<sup>th</sup> Floor  
625 Broadway  
Albany, New York 12233-7017

Via Email ([brad.shaw@dec.ny.gov](mailto:brad.shaw@dec.ny.gov))

Dolores A. Tuohy, Esq.  
NYS Department of Environmental Conservation  
Office of General Counsel  
625 Broadway  
Albany, New York 12233-1500



Ms. Krista Anders  
NYS Department of Health  
Bureau of Environmental Exposure Investigation  
Empire State Plaza  
Corning Tower Room 1787  
Albany, New York 12237

Subject: Seep Mitigation Plan & Engineering Report  
Orange County Landfill  
NYSDEC Site No. 336007  
STERLING File #2010-15 (Task 313)

Transmitted herewith is the comprehensive Seep Mitigation Plan & Engineering Report. This document is intended to be in full satisfaction of Paragraphs II. B and C of the proposed Order on Consent.

With respect to Paragraph II. D. of the proposed Order on Consent, sediment sampling was not previously discussed and is outside the scope of the December 18, 2013 Work Plan approved by the NYSDEC. Substances of concern with the target seeps have been identified and thoroughly evaluated in the Seep Mitigation Plan & Engineering Report.

We believe sediment sampling of the canal and canal banks is unnecessary. The canal is subject to frequent and significant flooding. Flood deposition and river silt are clearly evident on the canal banks and seep locations. Sediment sampling will be meaningless in terms of characterizing the seeps as the sediments and soils at the seep locations will be strongly influenced by the significant flood deposition on the canal banks. Further, as a practical matter, the Cheechunk Canal is under consideration for dredging as part of a regional flood control project. Future dredging will include sediment characterization in accordance with the permit to dredge.

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We are available to discuss the Seep Mitigation Plan & Engineering Report and are prepared to address NYSDEC questions and comments. Upon approval of the plan, Orange County is prepared to:

- Immediately effectuate the expedited remediation of current seeps to protect the seeps, soils and sediments from erosion. This work will proceed immediately by Orange County Department of Public Works manpower and equipment.
- Proceed with completion of the Plans, Specifications and Contract Documents for the construction and implementation of the groundwater recovery and treatment as set forth in Section 5.0 of the Plan. A detailed implementation schedule is set forth in Section 6.3 of the Plan.

Please contact me should you have questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark P. Millspaugh, P.E.

President

[mark.millspaugh@sterlingenvironmental.com](mailto:mark.millspaugh@sterlingenvironmental.com)

MPM/bc

Email/First Class Mail

Enclosure (Seep Mitigation Plan & Engineering Report)

cc: Peter S. Hammond, Orange County ([phammond@co.orange.ny.us](mailto:phammond@co.orange.ny.us))  
Joseph F. Mahoney Esq. ([JJMahoney@orangecountygov.com](mailto:JJMahoney@orangecountygov.com))

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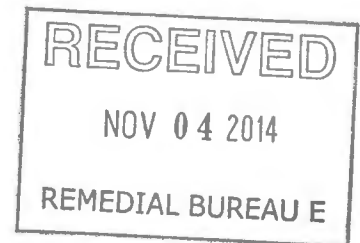
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**SEEP MITIGATION PLAN & ENGINEERING REPORT**

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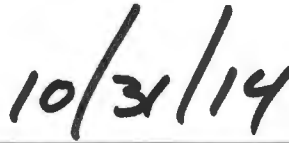
- Appendix A Wallkill River Flood Mitigation Plan Black Dirt Region, Orange County, NY dated August 16, 2013.
- Appendix B STERLING, August 17, 2012, Orange County Landfill - Cheechunk Canal Seep Sampling Work Plan & STERLING, September 20, 2012, Orange County Landfill - Cheechunk Canal Seep Sampling Results.
- Appendix C NYSDEC, August 24, 2012, Region 3/Solid Waste Program, Solid Waste Management Facility Site Visit Report (August 22, 2012) - Orange County Landfill, Town of Goshen, Orange County.
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- Appendix I June 12, 2014 Analytical Results
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## CERTIFICATION

I, Mark P. Millspaugh, P.E., certify that I am currently a New York State registered professional engineer and that this Seep Mitigation Plan & Engineering Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10).



Mark P. Millspaugh, P.E.



Date

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## **1.0 INTRODUCTION**

The Orange County Landfill (Landfill), located in the Town of Goshen, Orange County, New York (the County) is registered as a Class 2 Inactive Hazardous Waste Disposal Site, Registry No. 336007 by the New York State Department of Environmental Conservation (NYSDEC). The Landfill was previously remediated subject to the NYSDEC's oversight and approval. A Site Location Map is provided as Figure 1.

The monitoring and maintenance program for the Landfill is described in the NYSDEC approved Site Management Plan (SMP), dated June 6, 2014. The County is entering into a Consent Order with the NYSDEC to mitigate landfill impacted seeps observed offsite along the banks of the Cheechunk Canal downgradient from the Landfill on land owned by New York State. This Seep Mitigation Plan & Engineering Report is prepared as required by the anticipated Consent Order and the approved SMP.

### **1.1 Background Information**

The Landfill footprint totals approximately 75-acres within a 300-acre parcel approximately three (3) miles west of the Village of Goshen, west of NYS Route 17M. The property is bounded by the Cheechunk Canal to the southeast and by the old channel of the Wallkill River to the northwest and southwest. The New Hampton Transfer Station is located on the northeast portion of the 300-acre parcel. Property features are present on the aerial photograph presented as Figure 2.

The Orange County Department of Public Works operated the Landfill between 1974 and January 1992. In March 1992, the Landfill was classified by the NYSDEC as a "Class 2" Inactive Hazardous Waste Disposal Site, indicating "a site which the disposal of hazardous waste constitutes a threat to human health or environment". The "threat" was the possibility of the contamination of a principal aquifer underlying the site. The Record of Decision (ROD) dated January 28, 1994 addressed the immediate capping of the wastemass, Operable Unit No. 2, as a means of source control. A perimeter leachate collection system and surface water runoff collection system were installed in November 1995, prior to the capping of the Landfill. Construction of the Landfill cap was completed in November 1995. The final cap directed surface water runoff to onsite recharge/settling basins, eventually discharging into the Wallkill River and Cheechunk Canal. Leachate collected by the perimeter leachate collection system is pumped into leachate tanks and transported offsite for treatment and disposal at permitted wastewater treatment plant (WWTP) facilities.

The March 26, 1998 ROD was issued from the results of the Remedial Investigation/Feasibility Study in 1996 and called for the continued operation and monitoring of the leachate collection system, leachate disposal and continued environmental monitoring of the site, Operable Unit 01, as a whole.

### **1.2 Cheechunk Canal**

The Cheechunk Canal is prone to significant seasonal flooding. The Orange County Soil and Water Conservation District is undertaking a study entitled "Wallkill River Flood Mitigation Implementation Plan Black Dirt Region Orange County, NY". The study area includes the Cheechunk Canal proximate to the Orange County Landfill. The August 16, 2013 "Summary of Further Investigations Regarding Flood Mitigation Study Areas" (provided in Appendix A) includes important observations regarding the Landfill and its relationship to the canal. The study is also evaluating the merits of dredging the canal to aid in flood mitigation.



Flooding at the Landfill site often extends above the tree line at the toe of the mowed slope to the south and east of the wastemass. The flooding condition shown below occurred in September 2011 followed heavy precipitation due to Hurricane Storm Irene.



The summary further notes that with respect to the relationship of the Landfill to the canal, there is “no evidence or data that would support the theory that the current configuration impedes flow”. The Landfill limit of waste and the limit of the final cover system are no closer than 125 feet from the normal waterline of the canal.

### 1.3 Landfill Conceptual Model

The physical characterization, nature and extent of contamination, and contaminant fate and transport have been extensively studied at the unlined landfill since the early 1980's. The distribution and character of geologic materials, occurrence of groundwater, and overall water quality has been well documented since 1987. The conceptual model is as follows:

- Six (6) discrete overburden units exist in the vicinity of the landfill and consist of recent alluvial deposits, highly permeable glaciofluvial deposits, moderate to lowly permeable glaciolacustrine units, moderately permeable glaciolacustrine fine sand deposits, and low to moderately permeable glacial till (Wehran, 1984).
- The Wappinger Group dolostone and Martinsburg Formation shale underlie the glacial deposits at the site (Wehran, 1984).
- Groundwater on the site is unconfined and/or confined conditions.
- Three hydrostratigraphic units have been identified: glaciolacustrine silt and clay, glaciofluvial sand and gravel or glaciolacustrine fine sand, and bedrock. The refuse mass lies over the low permeability glaciolacustrine silt and clay deposits at the site. In areas where the glaciolacustrine



silt and clay is significantly thick it acts as a confining layer for the underlying glaciofluvial sand and gravel aquifer and where this glacial unit is thin or non-existent the sand and gravel aquifer is under unconfined conditions. The bedrock hydrogeologic unit is considered a confined aquifer system.

- The shallow overburden groundwater moves generally in a west-to-east flow direction.
- Groundwater analytical results, collected from post-closure monitoring over two (2) decades have consistently documented that the groundwater near the landfill is characterized by elevated concentrations of Total Dissolved Solids (TDS), iron and manganese and occasional exceedances of drinking water standards for magnesium, ammonia, chloride, phenolics, arsenic, chromium, lead, selenium, and sodium.
- Historical surface water quality data has documented that local surface waters are not significantly influenced by the Orange County Landfill.
- Leachate, collected by the perimeter leachate collection system, has reported detectable to elevated concentrations of typical landfill leachate constituents including Total Organic Carbon (TOC), alkalinity, ammonia, Biochemical Oxygen Demand (BOD), chloride, chemical oxygen demand (COD), nitrate, hardness, Total Kjeldahl Nitrogen (TKN), TDS, phenolics, sulfate, arsenic, barium, boron, calcium, chromium, copper, iron, magnesium, manganese, nickel, potassium, sodium, and zinc during post-closure monitoring events.
- Monthly post-closure landfill site inspections have documented that the integrity of the landfill cap, drainage structures, leachate collection system, gas venting system and monitoring well network to be in good condition.

#### 1.4 Groundwater Seeps

Offsite groundwater seeps have been observed at various locations along the northern and southern banks of the Cheechunk Canal. Seeps are formed when the groundwater table intersects the ground surface. The Cheechunk Canal was reportedly originally constructed in 1824 to drain the upstream portion of the Wallkill River, because valley farmers wanted to create a landscape more suitable for agriculture from the unproductive, swampy area known as the “drowned lands” and to address flooding of the Wallkill River. More recently, the Cheechunk Canal has been dredged by the United States Army Corps of Engineers (USACE) with dredge spoils sidecast onto the canal banks. Some portions of the canal bank were previously armored with rip-rap. Other areas lack any protection from erosion and flooding. In some areas that lack armoring, seeps are evident. Many of the seeps on both sides of the canal are red stained due to naturally occurring oxidized iron. In fact, the prevalent soils of Orange County are derived from glacial till or glaciolacustrine deposits, which are known to contain iron, and red stained groundwater seeps are commonplace.

In 2012, NYSDEC received citizen complaints that seeps were observed immediately downstream of the Landfill. It should be noted that the canal is reportedly owned by New York State. Due to the canal’s proximity to the Landfill, the NYSDEC notified Orange County that the seeps may indicate the Landfill perimeter leachate collection system is not functioning properly. The County immediately responded, and has continued to respond, as follows:

- July 16, 2012 - NYSDEC notifies County to prepare a work plan for the sampling, analysis, and assessment of the seeps.

- August 16, 2012 - Orange County met with the NYSDEC at the Landfill to inspect the seeps and select sampling locations.
- August 22, 2012 - Orange County met with the NYSDEC at the Landfill to inspect the seeps. The inspection included canoeing the stretch of the canal along the entire length of the canal adjacent to the Landfill. Samples of seeps were collected for laboratory analysis. Notes, photographs, and data generated by this inspection were submitted to the NYSDEC on September 20, 2012 (Appendix B). A NYSDEC Solid Waste Management Facility Site Visit Report, dated August 24, 2012 is provided in Appendix C.
- October 19, 2012 - Orange County provides a Work Plan for investigation of the perimeter leachate collection system (Appendix D).
- April 11, 2013 and August 19, 2013 - Orange County proceeded with investigation of the leachate collection system (LCS) including cleaning and internal video inspection by Closed Circuit Television (CCTV). Mr. Carl Hoffman of the NYSDEC observed the field investigation on April 11, 2013. The findings are described in Section 3.2 below.
- August 21, 2013 - Samples of seeps were collected for laboratory analysis. Laboratory analytical results are provided in Appendix E.
- December 13, 2013 - Orange County submits a Draft Site Management Plan to NYSDEC.
- December 18, 2013 - Orange County provides a Work Plan to install piezometers between the Landfill and Canal to understand the subsurface conditions and piezometry immediately upgradient of the seeps exhibiting elevated ammonia. A copy of the Work Plan is provided as Appendix F. The Work Plan was approved by the NYSDEC on December 31, 2013.
- February 19 and 20, 2014 - Following NYSDEC approval of the Work Plan, six (6) overburden piezometers were installed. A comprehensive letter report summarizing the findings of the piezometer installations is provided as Appendix G.
- June 12, 2014 - Orange County collected samples of the seeps and surface water for laboratory analysis.
- October 6 and 8, 2014 - Orange County conducted sampling of the overburden groundwater, seeps in accordance with the approved Work Plan. The purpose of monitoring was to understand seasonal fluctuations in groundwater elevation and water quality as the foundation to developing a seep mitigation plan.
- October 20, 2014 - Based upon agreements reached at the September 22, 2014 meeting with NYSDEC, Orange County proceeded with steps to immediately address the seeps (see correspondence provided in Appendix H) and a Pre-Construction Notification was submitted to the USACOE.

## 1.5 Site Management Plan (SMP)

The approved Site Management Plan (SMP) provides the recommended scope of work to continuously monitor the major components of the selected remedy for the Landfill as provided in the NYSDEC Division of Remediation RODs dated January 28, 1994 for Operable Unit No. 2 and March 26, 1998 for Operable Unit 01 as outlined below:

- Landfill cap;
- Groundwater monitoring wells;
- Leachate collection system;
- Surface water drainage channels;
- Air quality;
- Property deed restrictions;
- Post-closure monitoring and maintenance; and
- Contingency plans to protect nearby residents.

The SMP sets forth contingency measures for potential problems associated with groundwater and surface water contamination. If conditions indicative of leachate outbreaks, such as wet spots, dead vegetation, surface sloughing or discoloration are observed during the inspection, the SMP requires further investigation to evaluate the condition and determine the appropriate corrective action.

The condition must be reported to the NYSDEC and an investigation plan must be developed to determine the cause and extent of the observed condition. The investigation plan may include, but is not necessarily limited to, test pit excavations or other appropriate subsurface investigation methods. A remedial action plan must then be developed to address the condition.

If significant offsite migration of surface or groundwater contamination is determined to be occurring, then the potential threat to human health or the environment must be assessed. Factors contributing to this assessment include, but are not limited to:

- Proximity of downgradient groundwater users.
- Distance to environmentally sensitive surface waters or wetlands.
- Evidence of environmental damage, including stressed vegetation, abnormal algal growth, and abnormally high number of fish deaths.
- Deterioration of surface or groundwater quality.

This Seep Mitigation Plan & Engineering Report is prepared as a contingency response, as required by the SMP.



## 2.0 LANDFILL ENVIRONMENTAL MONITORING PROGRAM

The Landfill and surroundings have been extensively investigated. There are a total of thirty three (33) monitoring wells, which have been monitored regularly since 1990, based on the Long Term Post-Closure Monitoring Program. The NYSDEC approved Closure Plan as modified by the December 23, 2003 post-closure monitoring variance request established the monitoring well network (twenty one (21) monitoring wells and three (3) piezometers), four (4) surface water monitoring locations, and two (2) leachate manhole collections for the Landfill. This Variance Request, approved by the NYSDEC in December 2002, reduced the frequency of monitoring at the landfill to every fifth quarter for 6 NYCRR Part 360 Baseline Parameters.

The data collected from these wells and other monitoring points provide the foundation for the conceptual model and understanding of the Landfill's relationship to the underlying groundwater systems. Environmental monitoring data generated over the last two (2) decades provide a clear understanding of the Landfill's impact upon groundwater quality. The data shows that Landfill related chemistry, such as ammonia, TDS, phenolics, arsenic, iron, etc., are stable with little fluctuation in reported parameter concentrations. Further, the reported horizontal and vertical distribution of the Landfill constituents in groundwater have remained consistent over time. Recent (2013) results from upgradient monitoring wells (MW-230S and MW-230D), downgradient monitoring wells (PZ-4, MW-3B, MW-220, MW-245S and MW-245D), seeps (2012 through 2014), and the downstream surface water sampling location (SW-8) show a completely different geochemical profile compared to the leachate results, as depicted below:

| Parameter | Leachate            | Upgradient GW        | Downgradient GW      | Seep                   | Downstream SW        |
|-----------|---------------------|----------------------|----------------------|------------------------|----------------------|
| Ammonia   | 47 to 560           | 0.079 to 0.08        | 0.039 to 9.0         | 6.3 to 40              | non-detect to 0.221  |
| TDS       | 800 to 3,900        | 162 to 330           | 590 to 820           | 660 to 830             | 190 to 428           |
| Phenolics | non-detect to 0.024 | non-detect           | non-detect to 0.0087 | non-detect to 0.0054 J | non-detect to 0.0115 |
| Arsenic   | 0.022 to 0.26       | non-detect to 0.0093 | non-detect to 0.056  | 0.029 to 0.12          | non-detect to 0.014  |
| Iron      | 15 to 1,100         | 0.5 to 1.1           | 1.0 to 6.3           | 3.2 to 13              | 0.34 to 3.13         |
| Manganese | 0.031 to 0.089      | 0.13 to 0.47         | 0.45 to 1.9          | 0.28 to 1.8            | 0.052 to 0.28        |

Source: Cornerstone, 2013 and Sterling, 2012/2013/2014.

*All results are expressed in mg/L.*

Based on this understanding, Orange County recommended a modification to the currently approved long term monitoring program on December 13, 2013 as considerable data had been generated for decades and the environmental conditions at the site are well understood. In recognition of this, the modified long term monitoring program was approved by the NYSDEC in 2014.

As set forth in the approved SMP, dated June 6, 2014, the approved post-closure environmental monitoring program at the Landfill consists of the collection and analysis of groundwater, surface water and leachate samples and the performance of explosive gas monitoring. Post-closure monitoring has been conducted since 1998. In addition, the monitoring program includes inspections of the Landfill to

observe general conditions, oversee and inspect operation and maintenance activities, and to handle non-routine site issues, such as damage to the Landfill cover system.

Groundwater, surface water and leachate monitoring currently consists of annual sampling of seven (7) groundwater monitoring wells, three (3) surface water locations, and two (2) leachate manholes for 6 NYCRR Part 360-2.11 (effective date December 31, 1988) Baseline Parameters. The monitoring wells consist of an upgradient well pair (two hydrogeologic units: overburden sand and gravel and upper bedrock) and five downgradient monitoring wells located south of the Landfill and north of the Cheechunk Canal. The three surface water sample locations are collected from the Cheechunk Canal south of the Landfill while Leachate samples will continue to be collected from two (2) manholes along the perimeter of the Landfill. In addition, groundwater elevations from twenty-eight (28) monitoring wells are recorded during each monitoring event. Figure 3 shows the post-closure monitoring locations.

In addition, the Institutional and Engineering Control (IC/EC) Plan also outlines steps necessary to manage and implement the controls for the Landfill property and to evaluate such controls for annual certification consistent with the requirements of the ROD, dated March 1998, and NYSDEC DER-10.

The ECs for the Landfill to control the source of contamination and the generation of contaminated leachate include:

- Maintenance of the Landfill cover system that includes layers of fill material, gas venting system and an impermeable membrane.
- Maintenance of groundwater monitoring wells. The groundwater monitoring wells are regularly sampled to observe groundwater quality at the Landfill. The groundwater monitoring wells are located upgradient, downgradient, and cross-gradient of the Landfill. The monitoring wells range between 10 and 88 feet deep and are installed in sand and gravel or bedrock (see Figure 3 for locations).
- Operation and maintenance of ongoing leachate collection of leachate for offsite treatment. Leachate collected by the perimeter trench system flows by gravity to sumps. From these manhole sumps, leachate is pumped into aboveground storage tanks (ASTs) for subsequent removal and transportation to an offsite permitted wastewater treatment plant.
- Maintenance of surface water drainage swales and erosion control features to collect and divert surface water runoff downgradient of sections of the impermeable membrane installed on the Landfill slopes. Terraces and downchutes have been established on both the Landfill footprint and the immediate land surrounding the Landfill for the prevention of standing water on the Landfill footprint and any damage to the Landfill cover system. These surface water features divert excess surface waters away from the Landfill wastemass.
- Site inspections of the final cover system, including inspections for leachate outbreaks, settlement, erosion and insufficient vegetation continue to be completed monthly by Orange County personnel.

## 2.1 General Landfill Seep Characteristics

The phenomena of groundwater seeps at old, unlined municipal waste landfills have been studied and much has been learned regarding the fate and transport of principal landfill parameters of concern namely iron, manganese, arsenic and ammonia. Research by the NYSDEC staff is at the forefront of the understanding of unlined landfills and their impact on the environment.

It is important to appreciate that red-stained groundwater seeps are commonplace in Orange County. Dissolved iron in groundwater rapidly forms an iron oxide precipitate when groundwater daylight. Iron seeps are common at landfill sites throughout New York due to the release of iron from waste decomposition and the reducing environment of the groundwater impacted by landfill releases. A reducing environment causes more naturally occurring iron and other metals, such as arsenic, to be dissolved from the soils underlying old landfills.

Readers of this landfill Seep Mitigation Plan are strongly encouraged to review the various studies and research into how unlined landfills behave and the typical makeup of groundwater influenced by unlined landfills.<sup>1,2</sup>

One published study of environmental monitoring data from 42 unlined landfills in New York provides a statistical analysis of groundwater impacts by typical landfill indicator constituents.

At the most affected seep the concentrations of key indicator parameters are as follows:

| Parameter of Interest | Reported Range    |
|-----------------------|-------------------|
| Ammonia               | 6.3 - 40 mg/L     |
| Arsenic               | 0.048 - 0.12 mg/L |
| Iron                  | 3.2 - 13 mg/L     |
| Manganese             | 0.28 - 1.8 mg/L   |

For these same parameters the evaluation of 42 unlined landfills indicates the following:

| Parameter of Interest | Reported Range  |
|-----------------------|-----------------|
| Ammonia               | ND - 200 mg/L   |
| Arsenic               | ND - 15.5 mg/L  |
| Iron                  | ND - 1,330 mg/L |
| Manganese             | ND - 81 mg/L    |

Clearly, in comparison with the 42 unlined landfills subject to the study, the Orange County Landfill seeps show an impact within the range typically encountered and well below the maximum range experiences within the State.

Further, the seep data shows no presence of volatile organic compounds (VOCs), petroleum constituents or heavy metals that can be present in landfill leachates. The exceedances experienced at the seep represent minor exceedances of the NYSDEC promulgated drinking water standards.

<sup>1</sup> "An Assessment of Groundwater Quality Monitoring Data Collected at Unlined Municipal Solid Waste Landfills." Presented by Steven Parisio of NYSDEC Region 3, Bolton Landing, NY. May 8, 2007.

<sup>2</sup> "Historic Fill & Old Landfills: Tools for Delineation.", Presented by Steven Parisio of NYSDEC Region 3, May 20, 2014.



### **3.0 SEEP INVESTIGATION AND RESPONSE**

#### **3.1 Initial Response**

A joint inspection of the Canal was conducted on August 22, 2012 with NYSDEC, Orange County, and STERLING. The inspection included canoeing the entire stretch of Canal along the Landfill site. The on water inspection included Mr. Steven Parisio and Mr. Carl Hoffman from the NYSDEC. Based on observed conditions several seeps were selected for sampling. It was noted that some seeps were present on the opposite side of the Canal from the Landfill and at locations removed from the Landfill. The entire stretch of Canal along Orange County's property has been extensively disturbed in the past by dredging the Canal. Excavated material has been sidecast and has not been graded. As a result, the canal banks are poorly drained and in some areas precipitation runoff is trapped upslope contributing to the existence of the observed seeps.

Results from the August 22, 2012 and August 21, 2013 inspections and sampling are provided in Appendices B and E.

#### **3.2 Leachate Collection System Investigation**

On April 11, 2013 and August 19, 2013, attempts were made to inspect the perimeter leachate collection system immediately upgradient from the groundwater seeps. Self-propelled robotic camera units were unable to fully access the leachate collection pipe at the connection to the manhole.

Subsequently, push-style video cameras were manually advanced into the leachate collection pipe as far as possible (approximately 140 feet in April 2013, and approximately 175 feet in August 2013). Overall, the perforated leachate collection pipe that was able to be inspected appeared to be in good condition, with no apparent blockages. In August 2013, a jet-vac hose (with no camera) was successfully advanced approximately 190 feet.

Based upon the information obtained and the design of the collection system, the perimeter leachate collection system was determined to be functioning as the installed leachate collection pipe is surrounded by permeable stone. Accordingly, leachate and groundwater is collected and conveyed through the system to the leachate manhole even if the perforated pipe were damaged or blocked. As a result, further efforts to conduct internal video inspection were suspended.

#### **3.3 Overburden Piezometer**

On February 19 and 20, 2014, six (6) temporary shallow overburden piezometers (PZ-14-1 through PZ-14-6) were installed between the Landfill's perimeter access road and the seeps near the Cheechunk Canal bank to better understand the subsurface hydrology between the limit of waste and the seeps northwest of the Cheechunk Canal and southeast of the perimeter access road (Figure 2). The Cheechunk Canal/Seep Evaluation Letter Report was submitted to the NYSDEC on April 4, 2014 (Appendix G).

Upon completion of sampling, each borehole was either converted into a 1¼-inch (PZ-14-1, PZ-14-2, PZ-14-4, and PZ-14-6) or a 2-inch inside diameter (I.D.) temporary piezometer (PZ-14-3 and PZ-14-5) with a five (5) foot long section of 0.01-inch (10 slot) machine slotted PVC well. As detailed in Table 1, the total depths ranged from 28.91 feet below ground surface (bgs) at PZ-14-4 to 39.5 feet bgs at PZ-14-1. The screened intervals were set in the uppermost portion of the overburden hydrogeologic unit (glaciolacustrine fine sand) to obtain basic aquifer data (groundwater flow direction, gradients, horizontal

hydraulic conductivity, aquifer transmissivity, and aquifer yield) and define the hydrogeologic relationship between the Landfill and the seeps identified on the northern bank of the Cheechunk Canal.

The elevation for the top of the piezometer casings (measuring points) were measured with an engineer's level from the measuring point of nearby monitoring well MW-3B to allow for direct comparison of groundwater level measurements routinely collected at the Landfill. The apparent elevations of the Canal bank seeps downgradient from the piezometers, as well as the water level of the Canal, were also determined in the same manner. It should be noted that the slope in this portion of the site ranged from 24% to 28%.

Following installation, three (3) synoptic rounds of groundwater elevation measurements were collected on February 20, March 18, and March 27, 2014 to gain a complete understanding of the local hydrostratigraphy, define groundwater flow direction and gradients, and build a conceptual profile between the Landfill and the Cheechunk Canal.

In addition, field hydraulic conductivity testing was performed on two (2) of the temporary overburden piezometers (PZ-14-3 and PZ-14-5) to characterize the horizontal hydraulic conductivity of the aquifer and a short-term two (2) hour constant rate pumping test was performed at temporary piezometer PZ-14-3 to further define aquifer characteristics, such as yield and transmissivity (Appendix G).

Groundwater in each temporary piezometer between the Landfill and the seeps were also sampled for 6 NYCRR Part 360 field parameters (specific conductivity, temperature, pH, and Eh). Due to weather conditions, the subject seep area could not be evaluated as the Canal water level was higher than the seep elevation.

### **3.3.1 Installation**

The temporary overburden piezometers were installed using a track-mounted Geoprobe® to a depth sufficient to encounter the upper overburden aquifer (glaciolacustrine fine sand), which underlies the Cheechunk Canal (Figure 2). At each location, soil samples were collected on a continuous basis from ground surface to termination depth using the Macro-core® MC5 soil sampler. Each borehole was logged to define the local model of the critical site stratigraphy as it relates to the Landfill and the Cheechunk Canal (Appendix G).

Upon completion of sampling, each borehole was either converted into a 1¼-inch (PZ-14-1, PZ-14-2, PZ-14-4, and PZ-14-6) or a 2-inch inside diameter (I.D.) temporary piezometer (PZ-14-3 and PZ-14-5) with a five (5) foot long section of 0.01-inch (10 slot) machine slotted PVC well. As detailed in Table 1, the total depths ranged from 28.91 feet below ground surface (bgs) at PZ-14-4 to 39.5 feet bgs at PZ-14-1. The screened intervals were set in the uppermost portion of the overburden hydrogeologic unit (glaciolacustrine fine sand) to obtain basic aquifer data (groundwater flow direction, gradients, horizontal hydraulic conductivity, aquifer transmissivity, and aquifer yield) and define the hydrogeologic relationship between the Landfill and the seeps identified on the northern bank of the Cheechunk Canal.

### **3.3.2 Site Stratigraphy**

The field investigation, performed between February and March 2014, was used to define the local geologic conditions, hydrogeologic setting, and environmental parameters as well as serve as the core of understanding to remediate the subject seeps). Findings are detailed below.



The critical site stratigraphy between the Landfill and the canal has been defined as follows:

*Glaciolacustrine Silt and Clay:* Moist grayish brown clayey silt to silty clay; stiff to moderately stiff; occasionally to frequently varved; lowly permeable; and, moderately plastic. As presented in Table 1, this unit was encountered at surface to depths ranging from 24.4 to 34.1 feet bgs, which is consistent with historical data collected near this portion of the Landfill and the Cheechunk Canal. Stearns & Wheeler reported that this silt and clay layer thins toward the northeast from approximately 60 feet to 20 feet. The base of the glaciolacustrine silt and clay unit is approximately three (3) to five (5) feet above the subject seep(s).

*Glaciolacustrine Sand:* Wet fine sand; medium dense; moderately permeable; and, laminated. The top of this water-bearing unit is between 355.52 (PZ-14-1) and 357.43 (PZ-14-3) feet in elevation and slightly tilts to the north away from the Cheechunk Canal (Table 1 and Figure 4). Again, this field data is consistent with historic geoenvironmental data collected from historical investigations/remedial investigation which reports this unit as being 25 to 35 feet in thickness. The base of the glaciolacustrine sand unit was not encountered during the course of this investigation.

*Glacial Till:* Basal lodgement till is a dense, unstratified diamict of poorly sorted sediment emplaced on bedrock by the base of the glacier during ice advance. It often has large erratics oriented in the direction of the ice movement. The glacial till unit, which was not encountered during this investigation, is lowly permeable and is not considered a water bearing zone.

### 3.3.3 Aquifer Characterization

The hydrogeologic nature of the piezometer installations was interpreted using historic well logs, slug tests, groundwater elevation data, geologic cross sections, and publications. The hydrogeologic setting was further refined from information obtained from the recent drilling, surveying, overburden groundwater measurements, hydraulic conductivity testing, and the short-term pumping test.

Complex vertical and horizontal stratigraphic relationships exist between the glacial deposits on the site. As shown in Figure 4, the Cheechunk Canal dissects the glacially-derived overburden often cutting down through the glaciolacustrine silt and clay deposits, creating a hydraulic connection between the overburden groundwater unit (glaciolacustrine fine sand) and the Cheechunk Canal (Wallkill River). In general, the low hydraulic conductivity of the glaciolacustrine silt and clay, which underlies a large portion of the Landfill, limits recharge to underlying hydrogeologic units such as the glaciolacustrine fine sand (encountered). The glaciolacustrine silt and clay unit is not a water-bearing zone.

Hydraulic conductivity estimates in the overburden hydrogeologic unit (glaciolacustrine fine sand) were determined using slug tests. The data obtained were analyzed using the Bouwer and Rice method (1989). This method consists of quickly lowering or raising water levels in a well and measuring its rate of recovery. Although originally designed for use in unconfined aquifers, the authors (Bouwer and Rice) determined that most of the head difference “y” between the static water table and water level in the piezometer is dissipated in the vicinity of the piezometer around the screen and slotted section, the method is also applicable to confined or semi-confined conditions. Hydraulic conductivity of the overburden hydrogeologic unit ranged from  $9.29 \times 10^{-6}$  feet/min ( $4.72 \times 10^{-6}$  cm/sec) to  $2.35 \times 10^{-5}$  feet/min ( $1.19 \times 10^{-5}$  cm/sec).

Groundwater flow in the overburden hydrogeologic unit was determined using depth to groundwater measurements collected from the temporary overburden piezometers between February 20, 2014 and October 6, 2014 (Table 2 and Figures 5A, 5B, and 5C). This data, in conjunction with historical well log data and plots of changes in groundwater elevation over time, suggest that the glaciolacustrine fine sand

unit is currently in semi-confined to confined conditions. Therefore, the directions of groundwater flow are based on the potentiometric surface of the glaciolacustrine fine sand, not strictly elevations of the water table surface.

Groundwater flow in the overburden west or north of the Canal is to the east-southeast (Figures 5A, 5B, and 5C), discharging to the Canal that acts as a discharge zone and a groundwater flow boundary separating flow regimes on either side of the Canal. Overburden piezometers PZ-14-2, PZ-14-3, and PZ-14-4 are located immediately upgradient of the subject seep(s); the water level at the subject seep is variable but is approximately nine (9) to eleven (11) feet below the potentiometric surface observed at the lowermost piezometers (PZ-14-2, PZ-14-3 and PZ-14-4). The actual location of the piezometer array was successful at locating the groundwater that is likely causing the subject seeps (Figure 6). There is little potential for contamination to flow between the Canal and to areas east or south of the Canal based on previous investigations conducted at the Landfill. The direction of groundwater movement can be understood in the fact that groundwater always flows in the direction of decreasing head. The rate of movement, on the other hand, is dependent on the hydraulic gradient, which is the change in head per unit distance. The change in head measurement is ideally in the direction where the maximum difference of head decrease occurs. The hydraulic gradient (the change in head divided by the change in distance) on the Orange County property is seasonally variable and ranged from 0.0077 ft./ft. to 0.0133 ft./ft. based on data collected in late winter (March 18, 2014, Figure 5A) and was significantly greater in early September 2014, ranging from 0.0398 ft./ft. to 0.0557 ft./ft. when the subject seep(s) were evident (September 9, 2014, Figure 5B). The moderately steep-sloped lands between the Orange County property line and the Cheechunk Canal exhibits a consistently steeper hydraulic gradient and is less seasonally variable and is best represented by the data collected in early October 2014, ranging from 0.1216 ft./ft. to 0.0.1538 ft./ft. (October 6, 2014, Figure 5C).

An aquifer overlain by a bed of material that has a significantly lower hydraulic conductivity is termed as confined. As was observed during the field investigation, the potentiometric surface of the confined aquifer was 3.5 to 8.5 feet above the base of the overlying confining layer (Tables 1 and 2 and Figure 4). The least seasonal variability was observed in the three (3) uppermost overburden piezometers (PZ-14-1, PZ-14-5, and PZ-14-6). Water levels in confined aquifers are typically slow to respond to storm events or droughts and therefore typically exhibit minor fluctuations. A semi-confined or “leaky” confined aquifer is characterized by a low permeability layer (i.e., glaciolacustrine silt and clay) that permits water to slowly flow through it. Groundwater in these aquifers respond more quickly to changes in precipitation.

Review of site groundwater measurement data, collected between February and October 2014, indicates that the upper portion of the site is in confined conditions while the lowermost plateau, where seeps have been reported, is likely under unconfined conditions (Figures 4 and 6). The similarity between the potentiometric surface elevation and the subject seep(s) elevation suggests that there is seasonal hydraulic connection between the Cheechunk Canal and site groundwater. If groundwater was totally confined, no hydraulic connection would exist between the Canal and local overburden groundwater. The semi-confinement can be the result of leakage through the saturated overlying low permeability layer (glaciolacustrine silt and clay) or through fractures/varved planes in the silt and clay.



Seepage velocities were also calculated in this overburden hydrogeologic unit using the following equation:

$$V = \frac{KI}{n}$$

Where “V” is the seepage velocity in distance per unit time; “K” is the hydraulic conductivity at the borehole (in distance per unit time); “I” is the hydraulic gradient (dimensionless); and, “n” is the estimated effective porosity. The lowest possible values for “n” were used to estimate highest seepage velocities. Seepage velocities indicate a range from  $2.57 \times 10^{-4}$  feet/day (0.094 feet/year) to  $1.2 \times 10^{-3}$  feet/day (0.438 feet/year).

On March 18, 2014, a two (2) hour constant flow rate pumping test was conducted on PZ-14-3 (Figure 6). Initial pumping at 2 gallons per minute (gpm) resulted in complete drawdown at piezometer PZ-14-3; the pumping rate was reduced to provide further evaluation of the overburden aquifer characteristics. Pump flow rate (0.38 to 0.4 gpm) and overburden piezometer water levels were monitored every 15 minutes throughout the two (2) hour test. A drawdown of 7.8 feet was observed during the pumping period, dropping 7.33 feet in the first five (5) minutes and steadily dropped 0.46 foot over the remainder of the pumping test period (Appendix G). Based on this information, the specific capacity was calculated as being 0.05 gpm/ft with a transmissivity of 75 ft<sup>2</sup>/day. The adjacent piezometers were lowered by 0.19 foot (PZ-14-6) to 0.29 foot (PZ-14-2), demonstrating good connection to the localized low rate pumping activity (Appendix G).

### 3.3.4 Sampling

Results from the August 22, 2012 and August 21, 2013 inspections and sampling are provided in Appendices B and E, respectively.

Following the inspection, the County provided a Work Plan to conduct a subsurface investigation downgradient of the Landfill and immediately upslope of the observed seep closest to the Landfill. The Work Plan was approved by NYSDEC on December 31, 2013. The investigation proceeded on February 19 and 20, 2014 consisted of installing six (6) piezometers to define the groundwater elevations and to allow for sample collection. Results of the NYSDEC approved investigation were provided to the NYSDEC by letter dated April 4, 2014.

Synoptic rounds of water levels from overburden piezometers and Cheechunk Canal have been collected since February 20, 2014 (Table 2). Recent inspections conducted by STERLING on August 21, 2014, September 4, 2014, September 9, 2014, and October 6, 2014 identified five (5) seeps; no flowing seeps were observed.

Additional seep and surface water sampling was performed on June 12, 2014 and October 6 - 8, 2014 (Figure 7). The June 12, 2014 sampling event consisted of the collection of five (5) seep samples (Upstream: GW-B and GW-1; at seep area (GW-2); and, Downstream: (GW-3)) and two surface water samples (Upstream: SW-01 and Downstream: SW-02). These samples were analyzed for NYSDEC Baseline parameters and results are provided on Appendix I, Figures 6 and 8, and Tables 5 and 6. The October 6, 2014 sampling event consisted of the collection of two overburden groundwater samples, collected from PZ-14-3 and PZ-14-5, one seep sample (Seep Monitoring Point) in the vicinity of the most persistent seep, and three (3) surface water samples (Upstream: SW-5; slightly downstream of the seep area (SW-Seep-DS; and, Downstream: (SW-8)). These samples were analyzed for NYSDEC Baseline parameters and results are provided in Appendix J, Figures 6 and 8, and Tables 4, 5, and 6. Sampling results for field parameters, overburden groundwater, seeps, and surface water are summarized below.

## **Field Parameters**

On March 27, 2014 and October 6, 2014, overburden groundwater in each temporary overburden piezometer, between the Landfill and the seeps, were sampled for 6 NYCRR Part 360 field parameters, including specific conductivity, temperature, pH, and Eh (Table 3). Due to weather conditions, the subject seep area could not be evaluated in February and March 2014 as it was covered with ice or submerged during this period.

As detailed in Appendix G, the specific conductance from overburden groundwater ranged from 0.607 millisiemens per centimeter (mS/cm) at PZ-14-4 to 1.230 mS/cm at PZ-14-5. The specific conductance of the water sample is the measure of its ability to carry an electrical current under specific conditions and is typically an indication of the concentration of TDS in the groundwater. A specific conductance value that is markedly different from those obtained in nearby piezometers may indicate a different source of the groundwater or leakage from a formation that contains water of a different quality. Specific conductance values from 2012 and 2014 seep sampling ranged from 0.695 mS/cm at Seep GW-03 on August 22, 2012 to 1.339 mS/cm at GW-D on August 21, 2013 (Tables 4, 5, and 6).

As detailed in Table 3 of Appendix G, the redox potential in the overburden aquifer is sensitive to organic matter associated with landfill leachate and of concentrations of redox-active components such as the mineralization of the groundwater. Oxidizing-reducing reactions result in a change of the charge of an ion as it gains or loses an electron. These reactions are almost always facilitated by bacteria that are able to gain energy from the reactions. The most common cause of reducing reactions is organic matter, either in solid form or as dissolved organic carbon. Water in contact with air will have an Eh in the range of 350 millivolts (mV) to 500mV. Microbially mediated redox processes may decrease the redox potential to values as low as -300mV. The redox potential from overburden groundwater ranged from -90.2 mV at PZ-14-1 to 214.8 mV at PZ-14-5. Oxidation-Reduction Potential (ORP) values from 2012 and 2014 seep sampling ranged from -90.6 mV at Seep GW-01 on August 22, 2012 to 31 mV at GW-3 on June 12, 2014 (Table 5). The redox potential at PZ-14-5 is considered the most irregular.

At any given temperature, there is a specific concentration of a dissolved mineral's constituents in the groundwater that is in contact with that mineral. Even minor changes in groundwater temperature can cause detectable changes in TDS. It should be noted that the temperature of the upper piezometers (PZ-14-1, PZ-14-5, and PZ-14-6) were consistently higher than the lower piezometers (PZ-14-2, PZ-14-3, and PZ-14-4). The temperature at PZ-14-5 is notably higher than others collected on March 27, 2014 and October 6, 2014.

The pH is actually a measure of the hydrogen ion (H<sup>+</sup>) availability (activity). The hydrogen ion is very small and is able to enter and disrupt mineral structures so that they can contribute dissolved constituents to groundwater. Consequently, the greater the hydrogen ion availability the lower the pH and the higher the TDS in groundwater. The pH readings collected from overburden groundwater ranged from 7.00 standard units (s.u.) at PZ-14-1 to 7.75 s.u. at PZ-14-2. In comparison, 2012 and 2014 seep sampling reported pH readings that ranged from 6.77 s.u. (Seep GW-3) on June 12, 2014 to 7.15 s.u. (GW-D) on August 21, 2013. No direct conclusions can be made based on comparison of pH readings obtained from the piezometers.

Two (2) one (1) liter samples were collected for comparison of water quality field parameters at the start and end of the short-term pumping test, which was performed at PZ-14-3. No significant changes or fluctuations were observed in the field parameters.

Field parameter and leachate indicator analytical results for 2013 from nearby environmental monitoring points (four (4) overburden groundwater monitoring wells (MW-3B, PZ-4, MW-220, MW-222), two (2)



surface water locations (SW-5 and SW-8), and one (1) leachate location (MH-7)) were reviewed to further evaluate the potential presence of leachate impacted groundwater. Only total dissolved solids (TDS) exceeded the class GA standard (500 mg/L) at these select monitoring wells, ranging from 730 mg/L (MW-3B) to 860 mg/L (MW-222). Ammonia was only detected above the NYSDEC GA standard (2 mg/L) at monitoring wells MW-3B (4.4 mg/L) and MW-222 (12 mg/L). In comparison, 2013 results for TDS and ammonia from nearby leachate (MH-7) was 3,900 mg/L and 560 mg/L, respectively.

### **Overburden Groundwater**

As shown in Figure 8 and Table 4, groundwater from overburden piezometers PZ-14-3 and PZ-14-5 showed no presence of volatile organic compounds (VOCs) and exceedances of select leachate indicator parameters such as ammonia (ranging from 5.3 to 9.1 mg/L), total cyanide (0.23 mg/L) and phenolics (0.026 mg/L) at PZ-14-5, TDS (680 to 780 mg/L), and turbidity (240 to 450 mg/L). The higher levels of ammonia and TDS at PZ-14-5 correlate to the analysis of field parameter results summarized above. Inorganic analytes that slightly exceeded NYSDEC groundwater standards include arsenic (0.057 - 0.094 mg/L), iron (4.8 - 18 mg/L), magnesium (54 - 56 mg/L), manganese (1.0 - 2.0 mg/L), and sodium (60 - 87 mg/L).

### **Seeps**

Review of historical and recent seep analytical results (water quality parameters) for upstream seep sample locations (GW-B and GW-01 or GW-1), seep samples in the vicinity of the piezometer array (GW-03, GW-D, GW-2 and Seep Monitoring Point (10/6/2014), and downstream seep samples (GW-3 and GW-A) are provided in Figure 8 and Table 5. Results showed no presence of VOCs, petroleum constituents or heavy metals frequently observed in landfill leachates. Further, as the seeps ultimately discharge into the Cheechunk Canal, a Class C surface water, the promulgated surface water standards are exceeded for ammonia, TDS, iron, occasionally dissolved oxygen. Several slight exceedance of phenols have also been observed.

### **Surface Water**

Review of historical surface water analytical results (water quality parameters) for upstream surface water sample locations (SW-13, SW-5, and SW-01), nearby surface water samples (SW-Seep DS), and downstream surface water samples (SW-02 and SW-8) revealed no exceedances of T.O.G.S. 1.1.1 Ambient Water Quality Standards for Class C Surface Water Quality standards, except for iron (ranging from 0.22 mg/L to 9.17 mg/L (Figure 8 and Table 6), three isolated historical field pH exceedances (ranging from 9.02 to 9.33 s.u. upstream of the site (SW-05) and 8.81 s.u. at the downstreammost location (SW-8)), and one phenol exceedance (0.0072 mg/L) at SW-5 in 2000 and at SW-8 (0.0115 mg/L) in September 2002 (Figure 8 and Table 6).

### 3.4 Investigation Findings and Results

The piezometer installations confirm a lowly permeable glaciolacustrine silt and clay unit exists at surface to depths ranging from 24.4 to 34.1 feet bgs. The base of this geologic unit tilts to the north away from the Cheechunk Canal. Underlying the silt and clay unit is moderately permeable glaciolacustrine fine sand, which is typically 25 to 35 feet in thickness.

The overlying glaciolacustrine silt and clay unit is not a water-bearing zone and limits recharge to underlying hydrogeologic units while the overburden hydrogeologic unit discharges into and is hydraulically connected to the Cheechunk Canal. Groundwater in the glaciolacustrine fine sand unit reveals semi-confined conditions with groundwater flow being to the east-southeast with a moderate hydraulic gradient between the Landfill and the canal. Two (2) hours of constant rate pumping (0.38 to 0.4 gpm) at PZ-14-3 revealed the following: 1). A drawdown of 7.8 feet at the wellhead; 2). Lowering of the potentiometric surface between 0.19 foot (PZ-14-6) to 0.29 foot (PZ-14-2) within the piezometer array, demonstrating a good connection within the overburden hydrogeologic unit and the Cheechunk Canal (at low pumping rates); 3). The specific capacity and transmissivity values are low for the overburden hydrogeologic unit between the Landfill and the canal; and, 4). The actual location of the piezometer array was successful at locating the groundwater that is connected to the subject seep(s).

Results from leachate, upgradient monitoring wells (MW-230S and MW-230D), downgradient monitoring wells (PZ-4, MW-3B, MW-220, MW-245S and MW-245D), seeps (2012 through 2014), and the downstream surface water sampling location (SW-8) indicate a completely different geochemical profile compared to the leachate results, as depicted below:

| Parameter | Leachate            | Upgradient GW        | Downgradient GW      | Seep                   | Downstream SW        |
|-----------|---------------------|----------------------|----------------------|------------------------|----------------------|
| Ammonia   | 47 to 560           | 0.079 to 0.08        | 0.039 to 9.0         | 6.3 to 40              | non-detect to 0.221  |
| TDS       | 800 to 3,900        | 162 to 330           | 590 to 820           | 660 to 830             | 190 to 428           |
| Phenolics | non-detect to 0.024 | non-detect           | non-detect to 0.0087 | non-detect to 0.0054 J | non-detect to 0.0115 |
| Arsenic   | 0.022 to 0.26       | non-detect to 0.0093 | non-detect to 0.056  | 0.029 to 0.12          | non-detect to 0.014  |
| Iron      | 15 to 1,100         | 0.5 to 1.1           | 1.0 to 6.3           | 3.2 to 13              | 0.34 to 3.13         |
| Manganese | 0.031 to 0.089      | 0.13 to 0.47         | 0.45 to 1.9          | 0.28 to 1.8            | 0.052 to 0.28        |

Source: Cornerstone, 2013 and Sterling, 2012/2013/2014.

*All results are expressed in mg/L.*

## **4.0 MITIGATION ALTERNATIVES**

Various remedial technologies exist to eliminate or reduce impacts from the seeps to the environment and canal. The following alternatives are evaluated.

### **4.1 Canal Bank Erosion Control**

This option provides for controlling erosion of canal bank at the location of the seeps. Obvious seep areas will be armored to control erosion. Existing, active seeps on the northern bank of the canal will be properly armored by overlaying with a medium to heavy duty (depending on the geomechanical properties of the underlying soils) woven geotextile filter fabric and covered by at least twenty-four (24) inches of NYSDOT medium stone fill rip-rap.

### **4.2 Focused Groundwater Collection and Treatment**

#### **4.2.1 Groundwater Extraction**

Groundwater collection will consist of groundwater removal immediately upgradient of the seeps by depressing the water table to flatten the groundwater gradient. This would effectively halt the migration of groundwater toward the seeps. One or more recovery wells will be installed upgradient of the seeps outside of the flood zone of the canal, and continually pumped to maintain a specific drawdown in the well(s). Creating a zone of influence around the recovery well(s) will remove the gradient and eliminate groundwater flow towards the seeps.

Based on the aquifer characteristics at the proposed groundwater collection well, initial pumping rates of 6 to 10 gpm are projected (approximately 9,000 to 14,000 gpd). Upon facilitating the desired drawdown conditions, lower pumping rates are anticipated to maintain the drawdown condition.

#### **4.2.2 Groundwater Treatment**

The County is pursuing two (2) options to treat the collected groundwater. It is not feasible to collect and truck all collected groundwater to distant offsite permitted wastewater treatment plants (WWTPs). Accordingly, Orange County is proposing to simultaneously pursue the following options to treat the collected groundwater:

##### **1. Constructed Wetland Treatment System**

Constructed wetlands and biofilters have been demonstrated as very effective in treating landfill impacted groundwater. Two (2) locations have been identified on the Landfill property as suitable for construction of lined wetlands. One totals 1.7 acres in area, the other 1.9 acres.

Initially, collected groundwater will be trucked to a constructed wetland at one or more of the locations indicated on Figure 11. Groundwater will be discharged to a lined forebay which will be sized to initially receive groundwater delivery by tank truck in 6,000 gallon batch deliveries (later to be hard-piped once pumping rates and daily treatment volumes are known).

The constructed wetland will be developed by stripping existing vegetation and grading the footprint to prevent runoff of stormwater. The wetlands will be configured as presented on Figure 11. The wetland will be underlined with a 20 mil flexible membrane liner. Above the liner, a suitable wetland substrate will be installed to an average depth of 12 to 24 inches, depending on



the chosen wetland vegetation. The substrate will provide the media for growth of wetland vegetation.

The collected groundwater will be slowly unloaded onto the forebay of the wetland biofilter. Influent to the wetland will flow from the forebay via wetland treatment cell via perforated pipe. The water will flow to the treatment cell where the ammonia will be removed through nitrification. Hardy wetland vegetation will be employed, namely phragmites (common reed) and typha (cattails).

## 2. Mid-Hudson Psychiatric Center Wastewater Treatment Plant

The existing WWTP is located between Training Center Lane and Mid-Hudson Psychiatric Center Road on the south side of NYS Route 17M, approximately 4,600 feet from the Landfill. The existing WWTP is reportedly permitted for 80,000 gallons per day (gpd) of sanitary wastewater and an additional 20,000 gpd of "other" wastewater for a total of 100,000 gpd. Reportedly, the plant is reportedly currently operating at 45,000 gpd average daily flow. Accordingly, there is surplus capacity to treat up to 55,000 gpd of groundwater from the seep mitigation.

Discussions have initiated between Orange County and New York State Office of Mental Health with respect to utilizing this surplus wastewater treatment capacity to treat the collected groundwater. If the Mid-Hudson Psychiatric Center WWTP is agreeable, initial treatment of groundwater could commence upon NYSDEC Division of Water concurrence that the groundwater may be accepted for treatment.

In such case, groundwater will be initially trucked and unloaded into the plant headworks utilizing Orange County's 6,000 gallon tanker (potentially to be hard-piped in the future).

As described above, 9,000 to 14,000 gpd are initially expected to be collected for treatment, reducing to lower rates once the desired drawdown is achieved. Therefore, there may initially be two (2) tanker loads per day on average, later reducing to one (1) load per day.

The tanker will slowly unload into the headworks of the WWTP so as to minimally impact the treatment process. Unloading over a six (6) hour period amounts to an incremental flow of approximately 16 gpm (25% of permitted average daily flow).

Batch delivery to the treatment works can be timed such that a delivery at the start of the work day can be allowed to slowly unload until mid-afternoon. The afternoon delivery can be timed to unload overnight. Operating in this manner will provide for equalization of the flow into the WWTP minimizing potential impacts on the plant and treatment process.

### 4.2.3 Treatability Evaluation

The groundwater to be collected upgradient of the seeps is minimally impacted with Ammonia as the most significant parameter requiring treatment. Landfill leachate treatability studies conducted on low strength leachates and groundwater demonstrate treatment system operations are most challenging where the strength and volume of water to be treated vary significantly. Neither appears to be the case at the Orange County Landfill. As reported in Sections 2.0 and 3.0, the groundwater elevation upgradient of the seeps are relatively stable. Based on historical data, the concentration range of dissolved iron and ammonia in groundwater south of the Landfill have also remained relatively stable. Heavy metals have

not been reported in the groundwater to be treated. For this reason, a site specific treatability study is not envisioned.

#### **4.3 Seep Source Collection**

This option involves collection of groundwater directly from the various seep locations. Shallow collection trenches (one to two feet deep) will be excavated at the seep locations, and plumbed to drain by gravity flow to a sump equipped with a pump.

The installation will require disturbance of the stream bank, excavation of previously dredged material and the installed collection system will be at a location regularly subjected to significant flooding. Accordingly, the design must provide for protection from flooding and the system operation will be designed to terminate operations when the flood stage of the canal exceeds the elevation of the collection trench. Such is necessary as the pumping system cannot be sized to operate when surcharged by flood waters.

The groundwater will be collected and treated as discussed in Section 4.2.

#### **4.4 Containment**

This option involves construction of a low permeable slurry wall or installation of sheet piles to impede the groundwater flow path to the seeps to the canal. Recovery wells or a collection trench will be installed upgradient of the barrier to remove groundwater behind the barrier.

Upgradient groundwater of the containment will be collected and treated as discussed in Section 4.2.2.

#### **4.5 In-Situ Groundwater Treatment**

Several technologies are available to provide in-situ treatment of the groundwater before it discharges along the banks of the canal.

##### **4.5.1 Chemical Injection**

This option involves the installation of groundwater injection wells to inject substances into the groundwater for subsurface treatment before the seeps discharge along the banks of the canal.

Proprietary products such as Metals Remediation Compound (MRC<sup>®</sup>) by Regenesis can be used to reduce metals contamination through precipitation and/or sorption to soil particles.

Ammonia in groundwater is typically treated by groundwater extraction and injection of treated water back to the subsurface. Accordingly, this option would require additional installation of groundwater extraction wells along with the injection wells.

##### **4.5.2 Permeable Reactive Zone**

This option involves the construction of a permeable reactive zone or trench upgradient of the groundwater seeps, which would passively treat groundwater and remove or break down contaminants, releasing treated water downgradient of the treatment zone.

A trench would be installed uphill from the seeps along the canal, and the trench would be backfilled with reactive media. Proprietary reactive media are available such as Nitrex<sup>™</sup> (a mixture of wood chips and

lime) for treatment of nitrate, ammonia, and dissolved organic nitrogen through denitrification, and Phosphex™ (a mixture of by-product of the steel industry and limestone) for metals removal via precipitation and adsorption.

#### **4.6 Evaluation of Alternatives**

In accordance with DER-10, the mitigation alternatives are evaluated primarily on the basis of implementability, effectiveness, permanence and cost for construction, operation and maintenance. An evaluation summary of the seep mitigation alternatives is provided as Table 7.

A common element of all alternatives is the armoring of the unprotected banks of the Cheechunk Canal where the seeps and erosion are occurring. The Orange County Department of Public Works can proceed with this work immediately upon approval of this Seep Mitigation Plan & Engineering Report.

##### **4.6.1 Implementability**

All technologies evaluated for the purposes of selecting a mitigation approach are implementable. It is generally preferred to avoid excavation and infrastructure installation within the flood zones. Annual flood elevations of the canal along the Landfill site results in as much as 20 feet of water over the seep elevation. Additionally, the degree of difficulty associated with implementing containment systems, seep source collection systems, or permeable reactive barriers is generally greater when compared to other treatment technologies.

As previously noted, the observed seeps indicating Landfill derived chemistry are located on the northern bank of the Cheechunk Canal. Containment structures, collection trenches, and reactive trenches installed in close proximity to the canal would be difficult to install due to the steep slope of the bank and composition of the previously dredged canal sediments on the banks and composition of the underlying soils. Similarly, containment structures and reactive trenches installed upgradient of groundwater flow will need to be installed outside the flood zone of the canal at a much greater depth, thus increasing the effort and cost of installation. Lastly, trenching across sensitive soils such as those observed at the project site may cause instability of the canal banks.

##### **4.6.2 Effectiveness**

The assessment of the effectiveness of various technologies focused upon the reduction/elimination of groundwater seeps into the canal as well as the feasibility to treat potentially impacted seep groundwater.

Containment systems will effectively reduce and, under ideal conditions, prevent seep groundwater from reaching the canal.

In-situ treatment of seep groundwater effectively treats potentially impacted groundwater. Notwithstanding, regular fluctuations of the canal flood stage would limit the effective operation of a seep source collection system as surface water from the canal would inevitably be collected by a collection trench installed near the location of the observed seeps. Ineffective collection of seep groundwater is not expected with a focused groundwater collection system as described in Section 4.2.

Chemical injection involves bench and pilot scale testing to determine an acceptable treatment formula and dosing rate in consideration of in-situ treatment of seep groundwater utilizing chemical injection technology.



The use of permeable reactive barriers is a well-documented technology with proven effectiveness, although the effectiveness of permeable reactive barriers is highly dependent on the proper delineation of site geology as well as bench and pilot scale evaluation prior to full implementation.

#### **4.6.3 Permanence**

Treatment technologies installed at or near the canal bank would be subject to significant flooding and potential damage. As such, concerns regarding long term maintenance and permanence are associated with the implementation of containment systems, seep source collection systems, and/or permeable reactive barriers.

In-situ treatment of groundwater, chemical injection technologies, and focused groundwater collection could be installed outside the flood zone but will require a continuous and long term operational effort.

#### **4.6.4 Cost**

The life-cycle costs of the remedial technologies considered for this evaluation are comparable. Although the capital costs for the installation of containment systems or permeable reactive barriers is generally greater than those for pump and treat systems and chemical injection technologies, the lower operational costs for such systems would result in a comparable, and potentially lower, life-cycle cost.

However, containment systems, seep source collection systems, or permeable reactive barriers installed near the bank of the canal are subject to flooding and fluctuations in canal stage. Unexpected costs associated with maintenance and repair from damaging flood events should be avoided by implementing design modifications, or an alternative technology altogether. As previously noted, trenches installed at a distance from the canal bank and upgradient of groundwater flow will have to be installed at a much greater depth, vastly increasing the effort and cost of installation.

#### **4.6.5 Preferred Alternative**

As canal bank erosion control armoring is readily implementable, effective and provides significant cost benefit, this protective measure will be included in the selected remedy. Based on an evaluation of various seep mitigation technologies, a focused groundwater collection and treatment, as described in Section 4.2, is the preferred approach. This technology is readily implementable with a comparable life-cycle cost to other technologies. The collection and treatment of groundwater effectively reduces/eliminates the discharge of groundwater seeps into the canal. It is favored over a seep source point collection system as all necessary mitigation groundwater collection infrastructure can be installed without disturbance of the canal banks and outside of the flood zone. Seep groundwater will be treated at a permitted wastewater treatment plant or constructed wetland system after collection from recovery well(s).

## **5.0 SEEP MITIGATION PLAN**

### **5.1 Selected Mitigation Alternatives**

The selected mitigation alternative consists of canal bank erosion control, focused groundwater collection and treatment, described as follows.

### **5.2 Canal Bank Erosion Control**

Canal banks will be protected from erosion by riprap armoring as shown on Figure 9. The active seeps on the northern bank of the canal with demonstrated Landfill related chemistry will be overlain with geotextile filter fabric and covered by at least twenty-four (24) inches of riprap. Approximately 120 cubic yards of riprap will be required. Details of the canal bank erosion control measures are shown on Figure 10. The placement of rip-rap as indicated on Figure 10 will be subject to an USACOE Nationwide Permit and Pre-Construction Notice is required. This remedial work is expected to qualify for a Nationwide Permit No. 38 as the work will proceed as part of the remedy approved by the NYSDEC.

### **5.3 Groundwater Collection System**

The groundwater collection system will consist of one (1) or more six (6) inch diameter recovery wells with submersible pumps to depress the water table upgradient from the seeps, preventing the seeps from discharging along the canal banks.

A recovery well will be installed at the location shown on Figure 9. Prior to system startup, pump tests will be performed with measurements made at the nearby piezometers to further evaluate the hydraulic conductivity of the groundwater aquifer, as well as to verify the radius of influence.

The pump test results will then be used to optimize pumping and system operation and to assess the need for additional recovery wells to produce the desired cone of depression at the established drawdown level, as well as to correctly size the permanent pump installation(s). If deemed necessary, additional recovery wells will be installed cross-gradient from the pilot recovery well as shown on Figure 9.

The recovery well(s) will be equipped with a submersible pump, water level pressure transducer, and pump controller. The pump controller will be capable of adjusting the target drawdown level in the well, and will automatically control the pump to maintain the set level. Groundwater discharged from the recovery well(s) will be conveyed to the temporary holding tank via forcemain as shown on Figure 9.

The forcemain will be sized following the initial pump test and aquifer characterization based upon the anticipated groundwater pumping rates.

The County will provide an existing aboveground 20,000 gallon steel tank to be utilized to collect and hold groundwater pending treatment at a permitted facility or the proposed onsite constructed wetland system. The tank will be equipped with a high level alarm that will automatically shut off the recovery well pump(s) and notify site personnel that the tank is full.

Proposed details of the proposed recovery well(s), forcemain, and storage tank are provided on Figure 10.

## **5.4 Groundwater Treatment**

As discussed in Section 4.2, groundwater treatment will be by an onsite constructed wetland or by discharge to the Mid-Hudson Psychiatric Center WWTP. Discussions with NYS Office of Mental Health have initiated to explore the feasibility of utilizing existing surplus treatment capacity. The County will continue to pursue this option as it represents the most direct, immediately implementable option for treatment of impacted groundwater.

Under this scenario, minor headwork modifications will be made to the WWTP to allow for direct unloading of water from the hauling vehicle. The County will continue delivering the water by truck over initial operations until the need for additional recovery wells and final pumping rates have been established. At that time, the County will consider hard piping the collected water from the wellhead(s) to the WWTP.

Simultaneous with the discussions with New York State Office of Mental Health regarding the use of the WWTP, Orange County will proceed with conducting field percolation tests at the proposed wetland treatment location and will complete the Construction Plans, Specifications and Contract Documents for the treatment system.

## **5.5 Groundwater Conveyance System / Performance Effectiveness Monitoring**

The Landfill inspections and environmental monitoring will continue as set forth in the approved Site Management Plan (SMP). The groundwater collection and treatment works will be monitored on a daily basis during the initial phases of operation as trucking of collected groundwater is proposed. Later, when groundwater is to be pumped to the treatment works, the inspection and monitoring frequency will be adjusted.

### **5.5.1 Ongoing Environmental Monitoring Program**

The Landfill Environmental Monitoring Program (EMP) will continue as currently approved by the NYSDEC. Additional seep monitoring will be conducted as part of the routine monitoring of the groundwater extraction system. During all regular inspections of the Landfill, the installed erosion control measures at the seeps will be inspected. Additionally, following high water conditions in the canal, the seep locations will be inspected after the canal recedes.

## **6.0 CONSTRUCTION PLAN**

Upon NYSDEC approval of the Seep Mitigation Plan & Engineering Report, the County will proceed with production of Construction Plans, Specifications and Contract Documents for the elements of the work that must be subject of competitive bidding under the County's procurement policies. These Construction Documents will consist of the following.

### **6.1 Construction Documents**

#### **INSTRUCTIONS TO BIDDERS**

1. Invitation
2. Delivery of Proposals
3. Preparation and Submission
4. Interpretation of Bidding Documents



5. Inspection of Site
6. Addenda
7. Resultant Contract
8. Proposed Subcontractors and Suppliers
9. Alternates
10. Project Schedule
11. Bidding Documents
12. Health and Safety Plan (HASP)
13. Community Air Monitoring Plan (CAMP)
14. Storm Water Pollution Prevention Plan (SWPPP)
15. Dust Control Plan (DCP)

## VENDOR AGREEMENT / CONSTRUCTION CONTRACT

### STANDARD GENERAL CONDITIONS

|            |   |
|------------|---|
| Article 1  | Definitions and Terminology   |
| Article 2  | Preliminary Matters   |
| Article 3  | Contract Documents: Intent, Amending, Reuse   |
| Article 4  | Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points |
| Article 5  | Bonds and Insurance   |
| Article 6  | Contractor's Responsibilities   |
| Article 7  | Other Work at the Site  |
| Article 8  | Owner's Responsibilities  |
| Article 9  | Engineer's Status During Construction   |
| Article 10 | Changes in the Work; Claims   |
| Article 11 | Cost of the Work; Allowances; Unit Price Work   |
| Article 12 | Change of Contract Price; Change of Contract Times  |
| Article 13 | Tests and Inspections; Correction, Removal or Acceptance of Defective Work                                      |
| Article 14 | Payments to Contractor and Completion   |
| Article 15 | Suspension of Work and Termination  |
| Article 16 | Dispute Resolution  |
| Article 17 | Miscellaneous   |

### SUPPLEMENTARY CONDITIONS

|            |   |
|------------|---|
| Article 1  | Definitions and Terminology   |
| Article 4  | Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points |
| Article 5  | Bonds and Insurance   |
| Article 6  | Contractor's Responsibilities   |
| Article 17 | Miscellaneous - Statutory Requirements  |

## EXHIBITS

### Exhibit A      Specifications

#### *Contract No. 1 – Division 1 - General Requirements*

|       |  |
|-------|--|
| 01010 | Summary of Work  |
| 01030 | Progress Meetings                                      |
| 01041 | Coordination   |
| 01050 | Field Engineering                                      |
| 01150 | Measurement and Payment                                |
| 01210 | Preconstruction Conference                             |
| 01310 | Construction Schedules                                 |
| 01340 | Shop Drawings, Product Data and Samples                |
| 01370 | Schedule of Values                                     |
| 01410 | Testing Laboratory Services                            |
| 01501 | Contractor's Field Office                              |
| 01540 | Security   |
| 01560 | Temporary Controls                                     |
| 01570 | Maintenance and Protection of Traffic                  |
| 01600 | Transportation and Handling of Materials and Equipment |
| 01620 | Storage and Protection                                 |
| 01720 | Project Record Documents                               |

#### *Contract No. 1 – Division 2 – Site Work*

|       |  |
|-------|--|
| 02110 | Site Preparation/Clearing and Grubbing |
| 02222 | Rough Grading, Excavation and Backfill |
| 02290 | Storm Water Drainage                   |
| 02936 | Seed and Mulch                         |
| 02949 | Erosion Control                        |
| 03000 | Mobilization/Demobilization            |
| 04000 | Dust Control                           |
| 05000 | Health and Safety                      |

#### *Contract No. 1 – Division 3 – Mechanical*

|       |   |
|-------|---|
| 03110 | Recovery Well Drilling and Construction |
| 03222 | Pumps and Controls                      |

#### *Contract No. 1 – Division 4 – Electrical*

### Exhibit B      Bid Form

1. Bid Form – Contract No. 1
2. Statement of Contractor's Qualifications
3. Certificate of Insurance

### Exhibit C      Insurance Requirements

## DRAWINGS

|         |   |
|---------|---|
| Plate 1 | Existing Conditions                           |
| Plate 2 | Site Preparation                              |
| Plate 3 | Groundwater Recovery Well, Pumps and Controls |
| Plate 4 | Wetland Treatment System                      |
| Plate 5 | Details                                       |
| Plate 6 | Details                                       |

## SUPPORTING DOCUMENTS

Site Management Plan (SMP) inclusive of:

- Storm Water Pollution Prevention Plan (SWPPP)
- Community Air Monitoring Plan (CAMP)
- Health and Safety Plan (HASP)

### 6.2 Construction Procurement

The project is a municipal prevailing rate wage project requiring coordination with New York State Department of Labor. Additionally, the bid process and procurement of a qualified construction contractor must follow Orange County's established procurement policies and procedures.

### 6.3 Construction Sequence

The following construction sequence is anticipated.

| Work Element  | Construction Completion |
|---|-------------------------|
| Receipt of NYSDEC Approval of Mitigation Plan                                 | November 15, 2014       |
| Apply Erosion Control to Canal Banks  | December 15, 2014*      |
| Submit Construction Plans, Specifications and Contract Documents              | December 31, 2014       |
| NYSDEC Approval   | February 1, 2015        |
| Orange County Issue Notice to Bidders   | February 15, 2015       |
| Pre-Construction Meeting  | March 1, 2015           |
| Receipt of Bids   | April 1, 2015           |
| Evaluate Bids / Award Contract  | May 1, 2015             |
| Contractor Mobilization   | May 15, 2015            |
| Construction Phase (estimated at 8 weeks)                                     | June 10, 2015           |
| Submission of As-Built and Construction Certification                         | June 30, 2015           |
| System Startup and Shakedown  | June 10 – June 30, 2015 |
| Performance Evaluation and Determination of Additional Groundwater Collection | August 1, 2015          |

\*To be performed by Orange County Department of Public Works.



## **6.4 Startup**

Prior to final acceptance of the work, the contractor will perform a startup operation at the pumping rate indicated by the pump test during drilling and installation of the recovery well.

The pumps, controls and system operation will be monitored over the course of a week to verify the drawdown conditions is being maintained and that the pump is cycling properly. Orange County personnel will remove groundwater from the groundwater recovery tank for delivery to the treatment system using Orange County's site tank truck.

Similarly, in the same timeframe the treatment works will be started, in the case of the constructed wetland, initial loads will be slowly unloaded into the forebay. Startup will be monitored to verify water flows freely from the forebay to the constructed wetland cell. Once discharge is noted into the recharge cell, effluent sampling will be performed to verify that the system is effectively removing ammonia and iron.

Following successful startup, the facility will be placed into routine operational mode and will be monitored on a daily basis in conjunction with transport of the groundwater to treatment.

## **7.0 OPERATION AND MAINTENANCE PLAN**

### **7.1 Operation**

The groundwater collection and conveyance system is designed to fully operate in a fully automatic mode. The recovery well system(s) will be equipped with a pressure transducer and pump controller to automatically maintain a set drawdown in the well(s). The groundwater drawdown level will be able to be controlled by the operator at the control panel located near the road.

In the event of a high water condition of the groundwater storage tank, a high-level alarm will activate and the recovery well(s) will shut down automatically.

### **7.2 Maintenance**

Maintenance will be performed regularly and repairs made when necessary so that proper function is not interrupted. The area around the groundwater collection system will be regularly mowed as part of routine Landfill maintenance. Fragile structures (recovery well risers, control panels, electrical conduits, etc.) will be protected by bollards, concrete blocks or other means.

Landfill access roads will be maintained, including plowing during winter.

#### **7.2.1 Canal Banks**

The canal banks and riprap erosion control areas shall be inspected during regular monthly landfill inspections as set forth in the Site Management Plan (SMP) for signs of erosion, slope instability and occurrence of new seeps.

### **7.2.2 Pumps**

Pump maintenance shall be performed in accordance with the manufacturer's recommendations, to be provided upon installation of the pump(s). Such will be determined based upon the specific pumping units selected and installed in accordance with the engineer's approvals.

### **7.2.3 Recovery Wells**

The recovery well(s) should be inspected semi-annually. The wells should be checked for damage by frost or landscaping equipment, and should be cleared of surrounding vegetation.

### **7.2.4 Forcemain**

Any exposed portions of the forcemain will be inspected monthly for signs of damage or leaks. The ground above the buried forcemain will be inspected for erosion and wet spots that may indicate a leak.

Manually operated valves should be operated semi-annually. Pipes will be inspected by video camera equipment if deemed necessary.

### **7.2.5 Storage Tank**

The storage tank shall be inspected quarterly for signs of damage or leaks. Manually operated valves should be operated semi-annually. The discharge connection coupler shall be inspected for wear, damage or leaks during each transfer operation.

### **7.2.6 Treatment System**

The treatment system operations will include influent and effluent monitoring for ammonia and iron. The monitoring program can be modified if additional Landfill parameters of concern are identified.

## **TABLES**

|                |   |
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| <b>Table 1</b> | <b>Summary of Site Stratigraphy</b>   |
| <b>Table 2</b> | <b>Summary of Surveyed Elevations and Select Water Level Measurements</b>     |
| <b>Table 3</b> | <b>Summary of Field Parameter Measurements (October 6, 2014)</b>              |
| <b>Table 4</b> | <b>Summary of Analytical Results (October 2014)</b>                           |
| <b>Table 5</b> | <b>Summary of Historical Analytical Results - Seeps (2012 - 2014)</b>         |
| <b>Table 6</b> | <b>Summary of Historical Analytical Results - Surface Water (2012 - 2014)</b> |
| <b>Table 7</b> | <b>Evaluation of Mitigation Alternatives</b>                                  |



**Summary of Site Stratigraphy  
Orange County Landfill, Goshen, New York**

| <b>Piezometer<br/>I.D.</b> | <b>Measuring<br/>Point (MP)<br/>Elevation<br/>(Site Datum)</b> | <b>Piezometer<br/>Stickup<br/>(feet)</b> | <b>Ground<br/>Surface<br/>Elevation<br/>(Site Datum)</b> | <b>Glaciolacustrine Silt and<br/>Clay/Glaciolacustrine Fine<br/>Sand Interface (feet<br/>BGS)/[Geologic Contact<br/>Elevation]</b> | <b>Screened Interval<br/>(feet BGS) /<br/>[Screened Elevation]</b> | <b>Total Depth<br/>(Feet BGS) /<br/>[Bottom<br/>Elevation]</b> |
|----------------------------|--|--|--|--|--|--|
| PZ-14-1                    | 390.27   | 0.65                                     | 389.62   | 34.1 / [355.52]  | 34.5-39.5 / [355.12 - 350.12]                                      | 39.50 / [350.12]   |
| PZ-14-2                    | 381.94   | 0.80                                     | 381.14   | 24.6 / [356.54]  | 24.5-29.5 / [356.64 - 351.64]                                      | 30.26 / [350.88]   |
| PZ-14-3                    | 381.83   | 0.35                                     | 381.48   | 24.4 / [357.43]  | 24.92 -29.92 / [356.56 - 351.56]                                   | 29.92 / [351.56]   |
| PZ-14-4                    | 381.77   | 1.35                                     | 380.42   | 23.9 / [356.52]  | 23.91-28.91 / [356.51 - 351.51]                                    | 28.91 / [351.51]   |
| PZ-14-5                    | 392.22   | 2.17                                     | 390.05   | 33.5/ [356.55]   | 32.9-37.9 / [357.15 - 352.15]                                      | 37.86 / [352.19]   |
| PZ-14-6                    | 391.11   | 0.88                                     | 390.23   | 33.85 / [356.38]   | 34.2-39.2 / [356.03 - 351.03]                                      | 39.20 / [351.03]   |

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Table 2

Summary of Surveyed Elevations and Select Water Level Measurements  
Orange County Landfill, Goshen, New York

| Piezometer I.D. | Northing         | Easting         | Ground Surface Elevation (Site Datum) | Measuring Point (MP) Elevation (Site Datum) | February 20, 2014 Depth to Groundwater (feet BMP {Top of PVC}) / [Groundwater Elevation] | March 18, 2014 Depth to Groundwater (feet BMP {Top of PVC}) / [Groundwater Elevation] | September 9, 2014 Depth to Groundwater (feet BMP {Top of PVC}) / [Groundwater Elevation] | October 6, 2014 Depth to Groundwater (feet BMP {Top of PVC}) / [Groundwater Elevation] |
|-----------------|------------------|-----------------|---------------------------------------|---|--|---|--|--|
| PZ-14-1         | N 41° 23' 19.50" | W 74° 24' 4.85" | 389.62                                | 390.27                                      | 27.69 / [362.58]   | 26.29 / [363.98]  | 28.67 / [361.60]   | 29.06 / [361.21]   |
| PZ-14-2         | N 41° 23' 19.21" | W 74° 24' 4.60" | 381.14                                | 381.94                                      | 20.21 / [361.73]   | 18.24 / [363.70]  | 21.24 / [360.70]   | 21.53 / [360.41]   |
| PZ-14-3         | N 41° 23' 19.39" | W 74° 24' 4.22" | 381.48                                | 381.83                                      | 20.10 / [361.73]   | 18.30 / [363.53]  | 21.09 / [360.74]   | 21.39 / [360.44]   |
| PZ-14-4         | N 41° 23' 19.54" | W 74° 24' 3.79" | 380.42                                | 381.77                                      | 19.88 / [361.89]   | 18.23 / [363.54]  | 20.92 / [360.85]   | 21.23 / [360.54]   |
| PZ-14-5         | N 41° 23' 19.70" | W 74° 24' 4.45" | 390.05                                | 392.22                                      | 29.58 / [362.64]   | 28.32 / [363.90]  | 29.53 / [362.69]   | 30.94 / [361.28]   |
| PZ-14-6         | N 41° 23' 19.88" | W 74° 24' 4.06" | 390.23                                | 391.11                                      | 28.61 / [362.50]   | 27.27 / [363.41]  | 29.32 / [361.79]   | 29.74 / [361.37]   |
| SG-1            | N 41° 23' 18.66" | W 74° 24' 4.11" | ---                                   | 357.49                                      |  |   |  |  |
| SG-2            | N 41° 23' 18.54" | W 74° 24' 4.04" | ---                                   | 354.99                                      |  |   | 4.28 / [350.71]  | 4.72 / [350.27]  |

Notes:  
Northing and Easting coordinates are in New York State Plane.

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TABLE 3

**Summary of Field Parameter Measurements (October 6, 2014)**  
**Orange County Landfill, Goshen, New York**

| Parameter                         | Title 6 Part 703.5 Standards | Units              | Groundwater Locations  |                        |               |                        |               |                        | Seep Location         | Surface Water Locations |                 |            |                   | Leachate |
|-----------------------------------|------------------------------|--------------------|------------------------|------------------------|---------------|------------------------|---------------|------------------------|-----------------------|-------------------------|-----------------|------------|-------------------|----------|
|                                   |                              |                    | PZ-14-1 <sup>[3]</sup> | PZ-14-2 <sup>[3]</sup> | PZ-14-3       | PZ-14-4 <sup>[3]</sup> | PZ-14-5       | PZ-14-6 <sup>[3]</sup> | Seep Monitoring Point | SW-13 (Upstream)        | SW-5 (Upstream) | SW-Seep DS | SW-8 (Dwonstream) | MH-5     |
| Static Water Level <sup>[1]</sup> | ---                          | feet               | 29.06                  | 21.53                  | 21.39         | 21.23                  | 31.93         | 29.74                  | ---                   | ---                     | ---             | ---        | ---               | ---      |
| Specific Conductance              | ---                          | mS/cm <sup>c</sup> | 1.094 (1.113)          | 1.022 (0.698)          | 1.041 (0.859) | 1.014 (0.607)          | 1.223 (1.230) | 1.006 (1.001)          | 1.246                 | 0.790                   | 0.806           | 0.787      | 0.788             | 1.775    |
| Temperature                       | ---                          | °C                 | 16.02 (13.56)          | 15.15 (12.68)          | 18.00 (12.96) | 15.27 (12.36)          | 19.80 (14.15) | 16.07 (13.66)          | 16.09                 | 15.79                   | 16.00           | 15.39      | 15.47             | 17.11    |
| Turbidity                         |                              | NTU                | 899                    | 235                    | 77.6          | 291                    | 75.0          | 165                    | ---                   | ---                     | ---             | ---        | ---               | ---      |
| pH                                | 6.5<pH< 8.5                  | S.U.               | 7.22 (7.00)            | 7.31 (7.41)            | 7.65 (7.03)   | 7.10 (7.21)            | 7.75 (7.03)   | 7.14 (7.12)            | 6.95                  | 7.46                    | 7.36            | 7.56       | 7.61              | 7.50     |
| ORP                               | ---                          | mV                 | -82.7 (-90.2)          | -84.5 (3.10)           | -40.4 (38.2)  | -55.7 (47.5)           | 17.8 (214.8)  | -64.9 (-15.9)          | -58.8                 | 516.9                   | -138.6          | 490.1      | 495.8             | 204.4    |
| Dissolved Oxygen                  | > 3.0 <sup>[2]</sup>         | mg/L               | 1.50 (1.76)            | 1.89 (2.77)            | 1.69 (1.19)   | 1.40 (1.44)            | 0.69 (1.29)   | 1.80 (1.72)            | 2.85                  | 5.71                    | 4.51            | 3.74       | 4.83              | 0.79     |

## NOTES :

<sup>[1]</sup> Measured from the top of the PVC casing to water surface.<sup>[2]</sup> Standard only applies to surface water samples.<sup>[3]</sup> Only field measurements were taken at these locations, no sample.

Values in parentheses reflect field parameter measurements collected on March 18, 2014.

Values in **BOLD** indicate an exceedance of applicable water quality standard or guidance value.

--- No standard or not measured.



Table 4

**Summary of Analytical Results (October 2014)**  
**Orange County Landfill, Goshen, New York**

| Analyte and Method         | Units | Groundwater Standard and Guidance Values <sup>(A)</sup> | Groundwater Samples |        | Surface Water Standard and Guidance Values <sup>(B)</sup> | Seep Sample Location  |        | Surface Water Sample Locations |                 |            |                   | Leachate |
|----------------------------|-------|---|---------------------|--------|---|-----------------------|--------|--------------------------------|-----------------|------------|-------------------|----------|
|                            |       |   | PZ-14-3             | PZ14-5 |   | Seep Monitoring Point | DUP-1  | SW-13 (Upstream)               | SW-5 (Upstream) | SW-Seep DS | SW-8 (Downstream) | MH-5     |
| Volatile Organic Compounds |       |   |                     |        |   |                       |        |                                |                 |            |                   |          |
| 1,1,1-Trichloroethane      | µg/L  | 5.0   | 0.39 U              | 0.39 U | ---   | 0.39 U                | 0.39 U | 0.39 U                         | 0.39 U          | 0.39 U     | 0.39 U            | 3.9 U    |
| 1,1,2,2-Tetrachloroethane  | µg/L  | 5.0   | 0.26 U              | 0.26 U | ---   | 0.26 U                | 0.26 U | 0.26 U                         | 0.26 U          | 0.26 U     | 0.26 U            | 2.6 U    |
| 1,1,2-Trichloroethane      | µg/L  | 1.0   | 0.48 U              | 0.48 U | ---   | 0.48 U                | 0.48 U | 0.48 U                         | 0.48 U          | 0.48 U     | 0.48 U            | 4.8 U    |
| 1,1-Dichloroethane         | µg/L  | 5.0   | 0.59 U              | 0.59 U | ---   | 0.59 U                | 0.59 U | 0.59 U                         | 0.59 U          | 0.59 U     | 0.59 U            | 5.9 U    |
| 1,1-Dichloroethene         | µg/L  | 5.0   | 0.85 U              | 0.85 U | ---   | 0.85 U                | 0.85 U | 0.85 U                         | 0.85 U          | 0.85 U     | 0.85 U            | 8.5 U    |
| 1,2-Dichlorobenzene        | µg/L  | 3.0   | 0.44 U              | 0.44 U | 5 <sup>(2)</sup>  | 0.44 U                | 0.44 U | 0.44 U                         | 0.44 U          | 0.44 U     | 0.44 U            | 4.4 U    |
| 1,2-Dichloroethane         | µg/L  | 0.6 <sup>(1)</sup>                                      | 0.60 U              | 0.60 U | ---   | 0.60 U                | 0.60 U | 0.60 U                         | 0.60 U          | 0.60 U     | 0.60 U            | 6.0 U    |
| 1,2-Dichloropropane        | µg/L  | 1.0   | 0.61 U              | 0.61 U | ---   | 0.61 U                | 0.61 U | 0.61 U                         | 0.61 U          | 0.61 U     | 0.61 U            | 6.1 U    |
| 1,3-Dichlorobenzene        | µg/L  | 3.0   | 0.54 U              | 0.54 U | 5 <sup>(2)</sup>  | 0.54 U                | 0.54 U | 0.54 U                         | 0.54 U          | 0.54 U     | 0.54 U            | 5.4 U    |
| 1,4-Dichlorobenzene        | µg/L  | 3.0   | 0.51 U              | 0.51 U | 5 <sup>(2)</sup>  | 0.51 U                | 0.51 U | 0.51 U                         | 0.51 U          | 0.51 U     | 0.51 U            | 5.1 U    |
| 2-Chloroethyl vinyl ether  | µg/L  | ---   | 1.9 U               | 1.9 U  | ---   | 1.9 U                 | 1.9 U  | 1.9 U                          | 1.9 U           | 1.9 U      | 1.9 U             | 19 U     |
| Benzene                    | µg/L  | 1.0   | 0.60 U              | 0.60 U | 10  | 0.60 U                | 0.60 U | 0.60 U                         | 0.60 U          | 0.60 U     | 0.60 U            | 6.0 U    |
| Bromodichloromethane       | µg/L  | 50  | 0.54 U              | 0.54 U | ---   | 0.54 U                | 0.54 U | 0.54 U                         | 0.54 U          | 0.54 U     | 0.54 U            | 5.4 U    |
| Bromoform                  | µg/L  | 50  | 0.47 U              | 0.47 U | ---   | 0.47 U                | 0.47 U | 0.47 U                         | 0.47 U          | 0.47 U     | 0.47 U            | 4.7 U    |
| Bromomethane               | µg/L  | 5.0   | 1.2 U               | 1.2 U  | ---   | 1.2 U                 | 1.2 U  | 1.2 U                          | 1.2 U           | 1.2 U      | 1.2 U             | 12 U     |
| Carbon tetrachloride       | µg/L  | 5.0   | 0.51 U              | 0.51 U | ---   | 0.51 U                | 0.51 U | 0.51 U                         | 0.51 U          | 0.51 U     | 0.51 U            | 5.1 U    |
| Chlorobenzene              | µg/L  | 5.0   | 0.48 U              | 0.48 U | 5   | 0.48 U                | 0.48 U | 0.48 U                         | 0.48 U          | 0.48 U     | 0.48 U            | 4.8 U    |
| Chloroethane               | µg/L  | 5.0   | 0.87 U              | 0.87 U | ---   | 0.87 U                | 0.87 U | 0.87 U                         | 0.87 U          | 0.87 U     | 0.87 U            | 20 J     |
| Chloroform                 | µg/L  | 7.0   | 0.54 U              | 0.54 U | ---   | 0.54 U                | 0.54 U | 0.54 U                         | 0.54 U          | 0.54 U     | 0.54 U            | 5.4 U    |
| Chloromethane              | µg/L  | 5.0   | 0.64 U              | 0.64 U | ---   | 0.64 U                | 0.64 U | 0.64 U                         | 0.64 U          | 0.64 U     | 0.64 U            | 6.4 U    |
| cis-1,2-Dichloroethene     | µg/L  | 5.0   | 0.57 U              | 0.57 U | ---   | 0.57 U                | 0.57 U | 0.57 U                         | 0.57 U          | 0.57 U     | 0.57 U            | 5.7 U    |
| cis-1,3-Dichloropropene    | µg/L  | 0.4   | 0.33 U              | 0.33 U | ---   | 0.33 U                | 0.33 U | 0.33 U                         | 0.33 U          | 0.33 U     | 0.33 U            | 3.3 U    |
| Dibromochloromethane       | µg/L  | 50  | 0.41 U              | 0.41 U | ---   | 0.41 U                | 0.41 U | 0.41 U                         | 0.41 U          | 0.41 U     | 0.41 U            | 4.1 U    |
| Dichlorodifluoromethane    | µg/L  | 5.0   | 0.28 U              | 0.28 U | ---   | 0.28 U                | 0.28 U | 0.28 U                         | 0.28 U          | 0.28 U     | 0.28 U            | 2.8 U    |
| Ethylbenzene               | µg/L  | 5.0   | 0.46 U              | 0.46 U | 17  | 0.46 U                | 0.46 U | 0.46 U                         | 0.46 U          | 0.46 U     | 0.46 U            | 4.6 U    |
| Methylene Chloride         | µg/L  | 5.0   | 0.81 U              | 0.81 U | 200   | 0.81 U                | 0.81 U | 0.81 U                         | 0.81 U          | 0.81 U     | 0.81 U            | 8.1 U    |
| m-Xylene & p-Xylene        | µg/L  | 5.0 <sup>(2)</sup>                                      | 1.1 U               | 1.1 U  | 65 <sup>(2)</sup>   | 1.1 U                 | 1.1 U  | 1.1 U                          | 1.1 U           | 1.1 U      | 1.1 U             | 11 U     |
| o-Xylene                   | µg/L  | 5.0   | 0.43 U              | 0.43 U | 65 <sup>(2)</sup>   | 0.43 U                | 0.43 U | 0.43 U                         | 0.43 U          | 0.43 U     | 0.43 U            | 4.3 U    |
| Tetrachloroethene          | µg/L  | 5.0   | 0.34 U              | 0.34 U | 1.0   | 0.34 U                | 0.34 U | 0.34 U                         | 0.34 U          | 0.34 U     | 0.34 U            | 3.4 U    |
| Toluene                    | µg/L  | 5.0   | 0.45 U              | 0.45 U | 6,000   | 0.45 U                | 0.45 U | 0.45 U                         | 0.45 U          | 0.45 U     | 0.45 U            | 4.5 U    |
| trans-1,2-Dichloroethene   | µg/L  | 5.0   | 0.59 U              | 0.59 U | ---   | 0.59 U                | 0.59 U | 0.59 U                         | 0.59 U          | 0.59 U     | 0.59 U            | 5.9 U    |
| trans-1,3-Dichloropropene  | µg/L  | 0.4 <sup>(1)(2)</sup>                                   | 0.44 U              | 0.44 U | ---   | 0.44 U                | 0.44 U | 0.44 U                         | 0.44 U          | 0.44 U     | 0.44 U            | 4.4 U    |
| Trichloroethene            | µg/L  | 5.0   | 0.60 U              | 0.60 U | 40  | 0.60 U                | 0.60 U | 0.60 U                         | 0.60 U          | 0.60 U     | 0.60 U            | 6.0 U    |
| Trichlorofluoromethane     | µg/L  | 5.0   | 0.45 U              | 0.45 U | ---   | 0.45 U                | 0.45 U | 0.45 U                         | 0.45 U          | 0.45 U     | 0.45 U            | 4.5 U    |
| Vinyl chloride             | µg/L  | 2.0   | 0.75 U              | 0.75 U | ---   | 0.75 U                | 0.75 U | 0.75 U                         | 0.75 U          | 0.75 U     | 0.75 U            | 7.5 U    |
| Xylenes, Total             | µg/L  | 5.0   | 1.1 U               | 1.1 U  | 65  | 1.1 U                 | 1.1 U  | 1.1 U                          | 1.1 U           | 1.1 U      | 1.1 U             | 11 U     |



Table 4

**Summary of Analytical Results (October 2014)**  
**Orange County Landfill, Goshen, New York**

| Analyte and Method            | Units       | Groundwater Standard and Guidance Values <sup>(A)</sup> | Groundwater Samples |           | Surface Water Standard and Guidance Values <sup>(B)</sup> | Seep Sample Location  |           | Surface Water Sample Locations |                 |            |                   | Leachate  |
|-------------------------------|-------------|---|---------------------|-----------|---|-----------------------|-----------|--------------------------------|-----------------|------------|-------------------|-----------|
|                               |             |   | PZ-14-3             | PZ-14-5   |   | Seep Monitoring Point | DUP-1     | SW-13 (Upstream)               | SW-5 (Upstream) | SW-Seep DS | SW-8 (Downstream) |           |
| Leachate Indicator Parameters |             |   |                     |           |   |                       |           |                                |                 |            |                   |           |
| Alkalinity, Total             | mg/L        | ---   | 570 B               | 600 B     | ---   | 590                   | 620       | 210 B                          | 230             | 230 B      | 220 B             | 1300 B    |
| Ammonia                       | mg/L        | 2.0   | 5.3                 | 9.1 B     | <sup>(3)</sup>  | 6.9                   | 7.0       | 0.009 U                        | 0.009 U         | 0.058 B    | 0.014 JB          | 130 B     |
| Biochemical Oxygen Demand     | mg/L        | ---   | 2.0 U               | 7.1 b     | ---   | 6.1                   | 5.2       | 2.0 H                          | 2.0 U           | 2.0 Hb     | 2.0 U             | 16 b      |
| Chemical Oxygen Demand        | mg/L        | ---   | 23 B                | 32 B      | ---   | 21                    | 15        | 6.4 JB <sup>A</sup>            | 21 B            | 23 B       | 21 B              | 250 B     |
| Chloride                      | mg/L        | 250   | 61                  | 79        | ---   | 81                    | 84        | 100                            | 100             | 100        | 100               | 520       |
| Color                         | Color Units | 15  | 5.0 U               | 5.0 U     | ---   | 60                    | 50        | 25                             | 25              | 25         | 25                | 40        |
| Cyanide, Total                | mg/L        | 0.2   | 0.005 U             | 0.23      | 0.0052  | 0.01 U                | 0.12      | 0.005 ^                        | 0.005 ^         | 0.005 U    | 0.005 ^           | 0.0083 J  |
| Hardness                      | mg/L        | ---   | 610                 | 580       | ---   | 490                   | 500       | 240                            | 230             | 240        | 240               | 760       |
| Nitrate as N                  | mg/L        | 10  | 0.69                | 0.090     | ---   | 0.02 U                | 0.02 U    | 2.1                            | 2.1             | 2.1        | 2.1               | 0.24      |
| Phenolics, Total Recoverable  | mg/L        | 0.001 <sup>(1)</sup>                                    | 0.005 U             | 0.026     | 0.001 <sup>(1)</sup>                                      | 0.01 U                | 0.005 U   | 0.005 U                        | 0.005 U         | 0.005 U    | 0.005 U           | 0.0075 J  |
| Sulfate                       | mg/L        | 250   | 34                  | 30        | ---   | 4.7                   | 5.9       | 33                             | 33              | 34         | 34                | 4.6       |
| Total Dissolved Solids        | mg/L        | 500   | 680                 | 780       | ---   | 720                   | 740       | 390                            | 420             | 410        | 400               | 1000      |
| Total Kjeldahl Nitrogen       | mg/L        | ---   | 5.9                 | 9.2       | ---   | 8.5 B                 | 8.2 B     | 0.94                           | 0.75            | 0.8        | 0.41              | 140       |
| Total Organic Carbon          | mg/L        | ---   | 3.2                 | 8.9       | ---   | 4.4                   | 4.4       | 4.1                            | 4.1             | 4.1        | 4.1               | 57        |
| Turbidity                     | NTU         | 5.0   | 450                 | 240       | ---   | 76                    | 73        | 28                             | 29              | 23         | 22                | 440       |
| Total Metals                  |             |   |                     |           |   |                       |           |                                |                 |            |                   |           |
| Aluminum, Total Recoverable   | mg/L        | ---   | 6.3                 | 0.73      | ---   | 0.19 J                | 0.06 U    | 0.54                           | 0.4             | 0.16 J     | 0.47              | 0.16 J    |
| Antimony, Total Recoverable   | mg/L        | 0.003 <sup>(1)</sup>                                    | 0.0068 U            | 0.0068 U  | ---   | 0.0068 U              | 0.0064 U  | 0.0068 U                       | 0.0068 U        | 0.0068 U   | 0.0068 U          | 0.0068 U  |
| Arsenic, Total Recoverable    | mg/L        | 0.025   | 0.094               | 0.057     | 0.15 <sup>(5)</sup>                                       | 0.11                  | 0.12      | 0.0056 U                       | 0.0056 U        | 0.0062 J   | 0.0098 J          | 0.031     |
| Barium, Total Recoverable     | mg/L        | 1.0   | 0.63                | 0.51      | ---   | 0.86                  | 0.93      | 0.041                          | 0.04            | 0.043      | 0.041             | 1.9       |
| Beryllium, Total Recoverable  | mg/L        | 0.003 <sup>(1)</sup>                                    | 0.00047 J           | 0.0003 U  | <sup>(4)</sup>  | 0.0003 U              | 0.0003 U  | 0.0003 U                       | 0.0003 U        | 0.0003 U   | 0.0003 U          | 0.0003 U  |
| Boron, Total Recoverable      | mg/L        | 1.0   | 0.18                | 0.21      | 10  | 0.24                  | 0.24      | 0.046                          | 0.045           | 0.048      | 0.045             | 1.0       |
| Cadmium, Total Recoverable    | mg/L        | 0.005   | 0.0005 U            | 0.0005 U  | <sup>(4)</sup>  | 0.0005 U              | 0.0005 U  | 0.0005 U                       | 0.0005 U        | 0.0005 U   | 0.0005 U          | 0.0005 U  |
| Calcium, Total Recoverable    | mg/L        | ---   | 180                 | 140       | ---   | 130                   | 130       | 59                             | 58              | 61         | 61                | 180       |
| Chromium, Total Recoverable   | mg/L        | 0.05  | 0.028               | 0.0076    | <sup>(4)</sup>  | 0.0018 J              | 0.0017 J  | 0.0015 J                       | 0.001 U         | 0.0015 J   | 0.001 J           | 0.0054    |
| Chromium, hexavalent          | mg/L        | 0.05  | 0.005 U             | 0.005 U   | 0.011 <sup>(5)</sup>                                      | 0.005 U               | 0.005 H   | 0.005 U                        | 0.005 U         | 0.005 U    | 0.005 U           | 0.005 U   |
| Copper, Total Recoverable     | mg/L        | 0.2   | 0.091               | 0.0072 J  | <sup>(4)</sup>  | 0.0026 J              | 0.0018 J  | 0.0054 J                       | 0.0051 J        | 0.0052 J   | 0.005 J           | 0.0038 J  |
| Iron, Total Recoverable       | mg/L        | 0.3   | 18 B                | 4.8 B     | 0.3   | 8.6                   | 9.1       | 0.54 B                         | 0.4 B           | 0.22 B     | 0.46 B            | 47 B      |
| Lead, Total Recoverable       | mg/L        | 0.025   | 0.017               | 0.003 U   | <sup>(4)</sup>  | 0.0032 J              | 0.003 U   | 0.003 U                        | 0.003 U         | 0.003 U    | 0.0031 J          | 0.003 U   |
| Magnesium, Total Recoverable  | mg/L        | 35 <sup>(1)</sup>                                       | 56                  | 54        | ---   | 63                    | 63        | 23                             | 23              | 23         | 23                | 53        |
| Manganese, Total Recoverable  | mg/L        | 0.3   | 2.0                 | 1.0       | ---   | 0.76 B                | 0.76 B    | 0.13                           | 0.13            | 0.13       | 0.12              | 2.2       |
| Mercury, Total Recoverable    | mg/L        | 0.0007  | 0.00012 U           | 0.00012 U | 0.7   | 0.00012 U             | 0.0001 U  | 0.00012 U                      | 0.00012 U       | 0.00012 U  | 0.00012 U         | 0.00012 U |
| Nickel, Total Recoverable     | mg/L        | 0.1   | 0.025               | 0.028     | <sup>(4)</sup>  | 0.0094 J              | 0.0099 J  | 0.0016 J                       | 0.0018 J        | 0.0018 J   | 0.002 J           | 0.028     |
| Potassium, Total Recoverable  | mg/L        | ---   | 9.3                 | 9.8       | ---   | 16                    | 16        | 3.8                            | 3.7             | 3.7        | 3.8               | 67        |
| Selenium, Total Recoverable   | mg/L        | 0.01  | 0.0087 U            | 0.0087 U  | ---   | 0.0087 U              | 0.0087 U  | 0.0087 U                       | 0.0087 U        | 0.0087 U   | 0.0087 U          | 0.0087 U  |
| Silver, Total Recoverable     | mg/L        | 0.05  | 0.0017 U            | 0.0017 U  | ---   | 0.0017 U              | 0.0017 U  | 0.0017 U                       | 0.0017 U        | 0.0017 U   | 0.0017 U          | 0.0017 U  |
| Sodium, Total Recoverable     | mg/L        | 20  | 60                  | 87        | ---   | 64                    | 66        | 52                             | 52              | 52         | 52                | 370       |
| Thallium, Total Recoverable   | mg/L        | 0.0005 <sup>(1)</sup>                                   | 0.01 U              | 0.01 U    | 0.008 <sup>(1)</sup>                                      | 0.01 U                | 0.01 U    | 0.01 U                         | 0.01 U          | 0.01 U     | 0.01 U            | 0.01 U    |
| Zinc, Total Recoverable       | mg/L        | 2.0 <sup>(1)</sup>                                      | 0.087 B             | 0.026 B   | <sup>(4)</sup>  | 0.0094 JB             | 0.0071 JB | 0.0071 JB                      | 0.023 B         | 0.041 B    | 0.012 B           | 0.014 B   |



Table 4

**Summary of Analytical Results (October 2014)**  
**Orange County Landfill, Goshen, New York**

| Analyte and Method      | Units | Groundwater Standard and Guidance Values <sup>(A)</sup> | Groundwater Samples |           | Surface Water Standard and Guidance Values <sup>(B)</sup> | Seep Sample Location  |       | Surface Water Sample Locations |                 |            |                   | Leachate |
|-------------------------|-------|---|---------------------|-----------|---|-----------------------|-------|--------------------------------|-----------------|------------|-------------------|----------|
|                         |       |   | PZ-14-3             | PZ-14-5   |   | Seep Monitoring Point | DUP-1 | SW-13 (Upstream)               | SW-5 (Upstream) | SW-Seep DS | SW-8 (Downstream) | MH-5     |
| <b>Dissolved Metals</b> |       |   |                     |           |   |                       |       |                                |                 |            |                   |          |
| Aluminum, Dissolved     | mg/L  | ---   | 8.7                 | 2.7       | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Antimony, Dissolved     | mg/L  | ---   | 0.0068 U            | 0.0068 U  | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Arsenic, Dissolved      | mg/L  | ---   | 0.092               | 0.055     | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Barium, Dissolved       | mg/L  | ---   | 0.59                | 0.47      | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Beryllium, Dissolved    | mg/L  | ---   | 0.00048 J           | 0.0003 U  | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Boron, Dissolved        | mg/L  | ---   | 0.17 B              | 0.20 B    | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Cadmium, Dissolved      | mg/L  | ---   | 0.0005 U            | 0.0005 U  | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Calcium, Dissolved      | mg/L  | ---   | 150                 | 130       | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Chromium, Dissolved     | mg/L  | ---   | 0.032               | 0.016     | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Copper, Dissolved       | mg/L  | ---   | 0.083 B             | 0.011 B   | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Iron, Dissolved         | mg/L  | ---   | 22                  | 7.7       | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Lead, Dissolved         | mg/L  | ---   | 0.015               | 0.0051 J  | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Magnesium, Dissolved    | mg/L  | ---   | 54                  | 52        | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Manganese, Dissolved    | mg/L  | ---   | 1.7                 | 1.1       | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Mercury, Dissolved      | mg/L  | ---   | 0.00012 U           | 0.00012 U | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Nickel, Dissolved       | mg/L  | ---   | 0.030               | 0.032     | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Potassium, Dissolved    | mg/L  | ---   | 9.1                 | 9.7       | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Selenium, Dissolved     | mg/L  | ---   | 0.0087 U            | 0.0087 U  | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Silver, Dissolved       | mg/L  | ---   | 0.0017 U            | 0.0017 U  | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Sodium, Dissolved       | mg/L  | ---   | 58                  | 85        | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Thallium, Dissolved     | mg/L  | ---   | 0.010 U             | 0.01 U    | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |
| Zinc, Dissolved         | mg/L  | ---   | 0.087 B             | 0.036 B   | ---   | ---                   | ---   | ---                            | ---             | ---        | ---               | ---      |

Values in **BOLD** indicate exceedance of applicable groundwater and surface water quality standard.

--- = Not analyzed or no applicable standard.

<sup>(A)</sup> = T.O.G.S. 1.1.1 Ambient Water Quality Standards for Class GA Groundwater

<sup>(B)</sup> = T.O.G.S. 1.1.1 Ambient Water Quality Standards for Class C Surface Water

<sup>(1)</sup> = Laboratory Method Detection Limit is greater than or equal to the applicable water quality standard.

<sup>(2)</sup> = Applies to the sum of 1,2-1,3-1,4-Dichlorobenzene, or Applies to each individual isomer, or applies to the sum of m-, o-, and p-xylenes, or applies to the sum of cis-trans 1,3-Dichloropropene.

<sup>(3)</sup> = Surface water standard for ammonia (mg/L) is interpolated using the temperatures and pH of the individual samples. SW-13 = 2.18; SW-5 = 2.19; SW SEEP DS = 2.14; and SW-8 = 2.10

<sup>(4)</sup> = Surface Water Standard for Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, and Zinc are based on the individual sample's hardness.

Beryllium (mg/L): SW-13 = 1.1; SW-5 = 1.1; SW SEEP DS = 1.1; and SW-8 = 1.1

Cadmium (mg/L): SW-13 = 0.01; SW-5 = 0.01; SW SEEP DS = 0.01; and SW-8 = 0.01

Chromium (mg/L): SW-13 = 1.17; SW-5 = 1.13; SW SEEP DS = 1.17; and SW-8 = 1.7

Copper (mg/L): SW-13 = 0.03; SW-5 = 0.03; SW SEEP DS = 0.03; and SW-8 = 0.03

Lead (mg/L): SW-13 = 0.25; SW-5 = 0.24; SW SEEP DS = 0.25; and SW-8 = 0.25

Nickel (mg/L): SW-13 = 0.98; SW-5 = 0.95; SW SEEP DS = 0.98; and SW-8 = 0.98

Zinc (mg/L): SW-13 = 0.25; SW-5 = 0.24; SW SEEP DS = 0.25; and SW-8 = 0.25

<sup>(5)</sup> = Standard applies to the dissolved form, not total recoverable.

U = Compound is not detected at or above laboratory method detection limit.

J = Result is less than the laboratory reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

B = Compound was found in the blank and the sample.

b = Result detected in the unseeded control blank (USB).

H = Sample was prepped or analyzed beyond specified holding time.

<sup>^</sup> = Instrument related QC exceeds the control limits.

DUP-1 was collected at the Seep Monitoring Point location.



Table 5

Summary of Historical Analytical Results - Seeps (2012 - 2014)  
Orange County Landfill, Goshen, New York

| Analyte                       | Units              | Surface Water<br>Standard and<br>Guidance<br>Values <sup>(A)</sup> | GW-B<br>(South Side of Canal) |           | GW-01/GW-1<br>(North Side of Canal) |           | Seep Monitoring Point<br>(North Side of Canal) |                     |                     |           | GW-3<br>(North Side<br>of Canal) | GW-A<br>(South Side of Canal) |           |
|-------------------------------|--------------------|--|-------------------------------|-----------|-------------------------------------|-----------|--|---------------------|---------------------|-----------|----------------------------------|-------------------------------|-----------|
|                               |                    |  | 8/21/2013                     | 6/12/2014 | 8/22/2012                           | 6/12/2014 | 8/22/2012<br>(GW-03)                           | 8/21/2013<br>(GW-D) | 6/12/2014<br>(GW-2) | 10/6/2014 | 6/12/2014                        | 8/21/2013                     | 6/12/2014 |
| Field Measurements            |                    |  |                               |           |                                     |           |  |                     |                     |           |                                  |                               |           |
| Temperature                   | °C                 | ---  | 21.75                         | 16.83     | 20.77                               | 13.81     | 23.88  | 19.01               | 14.47               | 16.09     | 15.66                            | 20.57                         | 15.12     |
| Dissolved Oxygen              | mg/L               | < 4  | ---                           | 8.1       | 9.3                                 | 1.98      | 8.17   | 6.54                | 2.39                | 2.85      | 9.18                             | 5.68                          | 9.08      |
| Oxidation Reduction Potential | mV                 | ---  | -7.0                          | 232       | -90.6                               | -5.0      | -77  | -55                 | 14.1                | -58.8     | 31                               | 9.6                           | 252.3     |
| pH                            | S.U.               | 6.5-8.5  | 7.46                          | 7.7       | 7.03                                | 6.85      | ---  | 7.15                | 6.83                | 6.95      | 6.77                             | 7.48                          | 6.92      |
| Specific Conductivity         | mS/cm <sup>c</sup> | ---  | 0.426                         | 0.438     | 0.7772                              | 1.265     | 0.695  | 1.339               | 1.162               | 1.246     | 1.247                            | 0.420                         | 0.426     |
| Water Quality Parameters      |                    |  |                               |           |                                     |           |  |                     |                     |           |                                  |                               |           |
| Alkalinity                    | mg/L               | ---  | 130 B                         | 260       | 640                                 | 560       | 850  | 640                 | 610                 | 590       | 630                              | 170 B                         | 130       |
| Ammonia                       | mg/L               | <sup>(2)</sup>   | 0.075                         | 0.14      | 40                                  | 18        | 13   | 8.0                 | 8.8                 | 6.9       | 6.3                              | 0.018 J                       | 0.016 J   |
| Biochemical Oxygen Demand     | mg/L               | ---  | 2.0 b                         | 2.2 b     | 2.0 U                               | 2.0 U     | 5.8 b  | 13                  | 2.0 U               | 6.1       | 14 b                             | 2.0 U                         | <2.0      |
| Bromide                       | mg/L               | ---  | 0.073 U <sup>a</sup>          | ---       | 0.65                                | ---       | 0.75   | 1.0 <sup>a</sup>    | ---                 | ---       | ---                              | 0.073                         | ---       |
| Chemical Oxygen Demand        | mg/L               | ---  | 210                           | 110       | 21                                  | 31        | 22   | 18 B                | 5.0 U               | 21        | 21                               | 18                            | 24        |
| Chloride                      | mg/L               | ---  | 3.0                           | 0.82      | 82                                  | 73        | 63   | 73                  | 58                  | 81        | 54                               | 23                            | 44        |
| Color                         | Color Units        | ---  | 400                           | 140       | 150                                 | 25        | 35   | 100                 | 15                  | 60        | 5.0                              | 50                            | 60        |
| Cyanide                       | mg/L               | 0.0052   | 0.012 B                       | 0.005 U   | 0.005 U                             | 0.005 U   | 0.005 U  | 0.005 U             | 0.0053 J            | 0.01 U    | 0.005 U                          | 0.005 U                       | 0.005 U   |
| Nitrate                       | mg/L               | ---  | 0.28                          | 0.31      | 0.011 U                             | 0.076     | 0.26   | 0.075 U             | 0.57                | 0.02 U    | 0.02 U                           | 0.33                          | 0.45      |
| Phenols                       | mg/L               | 0.001 <sup>(1)</sup>   | 0.0069 J                      | 0.005 U   | 0.0054 J                            | 0.005 U   | 0.005 U  | 0.005 JH            | 0.005 U             | 0.01 U    | 0.005 U                          | 0.005 U                       | 0.005 U   |
| Sulfate                       | mg/L               | ---  | 86                            | 23        | 19                                  | 4.7       | 7.7  | 10                  | 11                  | 4.7       | 67                               | 27                            | 17        |
| Total Dissolved Solids        | mg/L               | 500  | 430                           | 420       | 680                                 | 690       | 780  | 830                 | 660                 | 720       | 780                              | 250                           | 280       |
| Total Hardness                | mg/L               | ---  | 240                           | 250       | 530                                 | 490       | 540  | 760                 | 500                 | 490       | 600                              | 180                           | 160       |
| Total Kjeldahl Nitrogen       | mg/L               | ---  | 4.1 B                         | 2.7       | 38                                  | 16        | 12   | 8.2                 | 8.6                 | 8.5 B     | 6.8                              | 0.50                          | 0.41      |
| Total Organic Carbon          | mg/L               | ---  | 67                            | 46        | 6.1                                 | 6.0       | 6.0  | 5.5 b               | 5.9                 | 4.4       | 5.5                              | 5.6                           | 6.9       |
| Turbidity                     | NTU                | ---  | 7.6                           | 160       | 66                                  | 320       | 1.0 U  | 7100                | 120                 | 76        | 150                              | 7.6                           | 12        |
| Metal Parameters              |                    |  |                               |           |                                     |           |  |                     |                     |           |                                  |                               |           |
| Aluminum                      | mg/L               | ---  | 0.67                          | 6.3       | 0.22                                | 0.60      | 0.80   | 4.4                 | 1.4                 | 0.19 J    | 0.21                             | 0.23                          | 0.37      |
| Antimony                      | mg/L               | ---  | 0.0068 U                      | 0.0068 U  | 0.0068 U                            | 0.0068 U  | 0.0068 U                                       | 0.0068 U            | 0.0068 U            | 0.0068 U  | 0.0068 U                         | 0.0068 U                      | 0.0068 U  |
| Arsenic                       | mg/L               | 0.15 <sup>(3)</sup>  | 0.0056 U                      | 0.0058 J  | 0.094                               | 0.12      | 0.048  | 0.11                | 0.086               | 0.11      | 0.029                            | 0.0056 U                      | 0.0056 U  |
| Barium                        | mg/L               | ---  | 0.032                         | 0.074     | 0.44                                | 1.2       | 0.33   | 0.90                | 0.38                | 0.86      | 0.49                             | 0.022                         | 0.021     |
| Beryllium                     | mg/L               | 1.1  | 0.0003 U                      | 0.00045 J | 0.0003 U                            | 0.0003 U  | 0.0003 U                                       | 0.0003 U            | 0.0003 U            | 0.0003 U  | 0.0003 U                         | 0.0003 U                      | 0.0003    |
| Boron                         | mg/L               | 10   | 0.080                         | 0.027 B   | 0.37 B                              | 0.27 B    | 0.23 B   | 0.25                | 0.17 B              | 0.24      | 0.17 B                           | 0.092                         | 0.023 B   |
| Cadmium                       | mg/L               | *  | 0.0005 U                      | 0.0005 U  | 0.0005 U                            | 0.00094 J | 0.0005 U                                       | 0.0014              | 0.00062 J           | 0.0005 U  | 0.0005 U                         | 0.0005 U                      | 0.0005    |
| Calcium                       | mg/L               | ---  | 72                            | 76        | 100                                 | 92        | 130  | 140                 | 120                 | 130       | 150                              | 56                            | 49        |
| Chromium                      | mg/L               | *  | 0.0018 J                      | 0.0078    | 0.001 U                             | 0.0010 U  | 0.0011 J                                       | 0.0058              | 0.0020 J            | 0.0018 J  | 0.0010                           | 0.001 U                       | 0.001 U   |
| Chromium, Hexavalent          | mg/L               | 0.011  | 0.005 UH                      | 0.005 U   | 0.005 U                             | 0.005 U   | 0.005 U  | 0.0079 JH           | 0.005 U             | 0.005 U   | 0.005 U                          | 0.0087 JH                     | 0.005 U   |
| Cobalt                        | mg/L               | 0.005  | 0.0065                        | 0.0014 J  | 0.00063 U                           | 0.00063 J | 0.0034 J                                       | 0.0051              | 0.0019 J            | ---       | 0.0024 J                         | 0.00063 U                     | 0.00063 U |
| Copper                        | mg/L               | *  | 0.04                          | 0.012     | 0.0016 U                            | 0.0016 U  | 0.0038 J                                       | 0.013               | 0.0027 J            | 0.0026 J  | 0.0016 U                         | 0.0044 J                      | 0.0016 U  |
| Iron                          | mg/L               | 0.3  | 1.5                           | 8.0       | 6.5                                 | 11        | 3.2  | 12                  | 5.3                 | 8.6       | 13                               | 0.34                          | 0.53      |
| Lead                          | mg/L               | *  | 0.003 U                       | 0.007 J   | 0.003 U                             | 0.003 U   | 0.003 U  | 0.0075              | 0.0042 J            | 0.0032 J  | 0.0030 U                         | 0.003                         | 0.003 U   |
| Magnesium                     | mg/L               | ---  | 12                            | 15        | 41                                  | 57        | 51   | 57                  | 44                  | 63        | 48                               | 9.3                           | 8.8       |
| Manganese                     | mg/L               | ---  | 0.93                          | 1.0       | 0.54                                | 0.28      | 1.7  | 1.1                 | 1.8                 | 0.76 B    | 1.4                              | 0.047                         | 0.063     |
| Mercury                       | mg/L               | 0.0007   | 0.00012 U                     | 0.00012 U | 0.00012 U                           | 0.00012 U | 0.00012 U                                      | 0.00012 U           | 0.00012 U           | 0.00012 U | 0.00012 U                        | 0.00012 U                     | 0.00012 U |
| Nickel                        | mg/L               | *  | 0.027                         | 0.018     | 0.0093 J                            | 0.013     | 0.009 J  | 0.015               | 0.0091 J            | 0.0094 J  | 0.0073                           | 0.0013 U                      | 0.0013 U  |
| Potassium                     | mg/L               | ---  | 3.3 B                         | 4.4       | 23                                  | 19        | 15   | 13 B                | 12                  | 16        | 8.0                              | 2.2 B                         | 1.8       |
| Selenium                      | mg/L               | 0.0046 <sup>(1)</sup>  | 0.0087 U                      | 0.0087 U  | 0.0087 U                            | 0.0087 U  | 0.0087 U                                       | 0.0087 U            | 0.0087 U            | 0.0087 U  | 0.0087 U                         | 0.0087 U                      | 0.0087 U  |
| Silver                        | mg/L               | 0.0001   | 0.0017 U                      | 0.0017 U  | 0.0017 U                            | 0.0017 U  | 0.0017 U                                       | 0.0017 U            | 0.0017 U            | 0.0017 U  | 0.0017 U                         | 0.0017 U                      | 0.0017 U  |
| Sodium                        | mg/L               | ---  | 2.0                           | 3.2       | 81                                  | 65        | 59   | 64                  | 45                  | 64        | 45                               | 16                            | 24        |
| Thallium                      | mg/L               | 0.008  | 0.01 U                        | 0.01 U    | 0.01 U                              | 0.01 U    | 0.01 U   | 0.01 U              | 0.01 U              | 0.01 U    | 0.01 U                           | 0.01 U                        | 0.01 U    |
| Vanadium                      | mg/L               | 0.014  | 0.0015 U                      | 0.0015 U  | 0.0017 J                            | 0.0015 U  | 0.0074   | 0.0067              | 0.0015 U            | ---       | 0.0015 U                         | 0.0015 U                      | 0.0015 U  |
| Zinc                          | mg/L               | *  | 0.011                         | 0.028     | 0.0096 JB                           | 0.012     | 0.010 B  | 0.033               | 0.020               | 0.0094 JB | 0.0054 J                         | 0.0017 J                      | 0.0029 J  |

Values in **BOLD** indicate exceedance of applicable groundwater and surface water quality standard.

--- = Not analyzed or no applicable standard.

<sup>(A)</sup> = T.O.G.S. 1.1.1 Ambient Water Quality Standards for Class C Surface Water. Part 703.3 for pH, D.O., TD5, Color, and Turbidity.

<sup>(1)</sup> = Laboratory Method Detection Limit is greater than or equal to the applicable water quality standard.

<sup>(2)</sup> Surface Water Standard for ammonia, in mg/L, is interpolated from the samples pH and temperature. GW-B (8/21/2013) = 1.5, GW-B (6/12/2014) = 2.04, GW-1/GW-01 (8/22/2012) = 1.5, GW-1/GW-01 (6/12/2014) = 2.2,

<sup>(3)</sup> = Standard applies to the dissolved form, not total recoverable.

Seep Monitoring Point (8/22/2012) = No pH value, can't interpolate standard; Seep Monitoring Point (8/21/2013) = 1.5; Seep Monitoring Point (6/12/2014) = 2.2; Seep Monitoring Point (10/6/2014) = 2.2; GW-3 (6/12/2014) = 2.2; GW-A (8/21/2013) = 1.5; and, GW-A (6/12/2014) = 2.2

\* = Surface water standards for Cadmium, Chromium, Copper, Lead, Nickel, and Zinc are based on the samples hardness for Class C streams.

Cadmium (mg/L): GW-B(8/21/2013) = 0.01, GW-B(6/12/2014) = 0.01, GW-1/GW-01(8/22/2012) = 0.03, GW-1/GW-01(6/12/2014) = 0.02, Seep Monitoring Point(8/22/2012) = 0.03, Seep Monitoring Point(8/21/2013) = 0.04,

Seep Monitoring Point(6/12/2014) = 0.02, Seep Monitoring Point(10/6/2014) = 0.02, GW-3(6/12/2014) = 0.03, GW-A(8/21/2013) = 0.01, GW-A(6/12/2014) = 0.01

Chromium: (mg/L): GW-B(8/21/2013) = 1.17, GW-B(6/12/2014) = 1.12, GW-1/GW-01(8/22/2012) = 2.23, GW-1/GW-01(6/12/2014) = 2.08, Seep Monitoring Point(8/22/2012) = 2.27, Seep Monitoring Point(8/21/2013) = 3.00,

Seep Monitoring Point(6/12/2014) = 2.13, Seep Monitoring Point(10/6/2014) = 2.09, GW-3(6/12/2014) = 2.47, GW-A(8/21/2013) = 0.92, GW-A(6/12/2014) = 0.84

Copper (mg/L): GW-B(8/21/2013) = 0.03, GW-B(6/12/2014) = 0.03, GW-1/GW-01(8/22/2012) = 0.06, GW-1/GW-01(6/12/2014) = 0.06, Seep Monitoring Point(8/22/2012) = 0.07, Seep Monitoring Point(8/21/2013) = 0.09,

Seep Monitoring Point(6/12/2014) = 0.06, Seep Monitoring Point(10/6/2014) = 0.06, GW-3(6/12/2014) = 2.47, GW-A(8/21/2013) = 0.07, GW-A(6/12/2014) = 0.02

Lead (mg/L): GW-B(8/21/2013) = 0.25, GW-B(6/12/2014) = 0.26, GW-1/GW-01(8/22/2012) = 0.56, GW-1/GW-01(6/12/2014) = 0.52, Seep Monitoring Point(8/22/2012) = 0.57, Seep Monitoring Point(8/21/2013) = 0.80,

Seep Monitoring Point(6/12/2014) = 0.53, Seep Monitoring Point(10/6/2014) = 0.52, GW-3(6/12/2014) = 0.64, GW-A(8/21/2013) = 0.18, GW-A(6/12/2014) = 0.16

Nickel (mg/L): GW-B(8/21/2013) = 0.98, GW-B(6/12/2014) = 1.02, GW-1/GW-01(8/22/2012) = 1.92, GW-1/GW-01(6/12/2014) = 1.80, Seep Monitoring Point(8/22/2012) = 1.95, Seep Monitoring Point(8/21/2013) = 2.80,

Seep Monitoring Point(6/12/2014) = 1.83, Seep Monitoring Point(10/6/2014) = 1.80, GW-3(6/12/2014) = 2.13, GW-A(8/21/2013) = 0.77, GW-A(6/12/2014) = 0.70

Zinc (mg/L): GW-B(8/21/2013) = 0.25, GW-B(6/12/2014) = 0.25, GW-1/GW-01(8/22/2012) = 0.48, GW-1/GW-01(6/12/2014) = 0.45, Seep Monitoring Point(8/22/2012) = 0.49, Seep Monitoring Point(8/21/2013) = 0.85,

Seep Monitoring Point(6/12/2014) = 0.46, Seep Monitoring Point(10/6/2014) = 0.45, GW-3(6/12/2014) = 0.53, GW-A(8/21/2013) = 0.19, GW-A(6/12/2014) = 0.17

U = Compound is not detected at or above laboratory method detection limit.

J = Result is less than the laboratory reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

B = Compound was found in the blank and the sample.

b = Result detected in the unseeded control blank (USB).

H = Sample was prepped or analyzed beyond specified holding time.

<sup>a</sup> = Instrument related QC exceeds the control limits.



TABLE 6

**Summary of Historical Analytical Results - Surface Water (2012 - 2014)**  
**Orange County Landfill, Goshen, New York**

| Analyte                       | Units              | Surface Water<br>Standard and<br>Guidance<br>Values <sup>(A)</sup> | SW-13<br>(Upstream) |                   | SW-5<br>(Upstream) |                   | SW-01<br>(Upstream) |           | SW-Seep DS<br>(Downstream) | SW-02**<br>(Downstream) |           | SW-8<br>(Downstream) |                   |
|-------------------------------|--------------------|--|---------------------|-------------------|--------------------|-------------------|---------------------|-----------|----------------------------|-------------------------|-----------|----------------------|-------------------|
|                               |                    |  | 10/6/2014           | Historical Range  | 10/6/2014          | Historical Range  | 8/22/2012           | 6/12/2014 | 10/6/2014                  | 8/22/2012               | 6/12/2014 | 10/6/2014            | Historical Range  |
| Field Measurements            |                    |  |                     |                   |                    |                   |                     |           |                            |                         |           |                      |                   |
| Temperature                   | °C                 | ---  | 15.79               | 0.3-25.3          | 16                 | 0.1-25.4          | 22.17               | 18.63     | 15.39                      | 23.25                   | 18.67     | 15.47                | 0.2-25.91         |
| Dissolved Oxygen              | mg/L               | < 4  | 5.71                | 6.79-12.68        | 4.51               | 5.2-10.8          | 6.78                | 8.13      | 3.74                       | 6.68                    | 8.04      | 4.83                 | 6-11.28           |
| Oxidation Reduction Potential | mV                 | ---  | 516.9               | -137-380          | -138.6             | -162-370          | 43.9                | 235.3     | 490.1                      | -20.6                   | 235.1     | 495.8                | -186-395          |
| pH                            | S.U.               | 6.5-8.5  | 7.46                | 7.18-9.02         | 7.36               | 7.01-9.33         | 7.78                | 7.85      | 7.56                       | 7.80                    | 7.72      | 7.61                 | 7.0-8.81          |
| Specific Conductivity         | mS/cm <sup>c</sup> | ---  | 0.79                | 285-576           | 0.806              | 290-684           | 0.479               | 0.492     | 0.787                      | 0.488                   | 0.492     | 0.788                | 300-4940          |
| Water Quality Parameters      |                    |  |                     |                   |                    |                   |                     |           |                            |                         |           |                      |                   |
| Alkalinity                    | mg/L               | ---  | 210 B               | 44-187            | 230                | 62.9-160          | 130 B               | 130       | 230 B                      | 140 B                   | 140       | 220 B                | 65.2-189          |
| Ammonia                       | mg/L               | (2)  | 0.009 U             | 0.03-0.51 U       | 0.009 U            | 0.03-0.155 U      | 0.049               | 0.053     | 0.058 B                    | 0.21                    | 0.053     | 0.014 JB             | 0.03 U-0.221      |
| Biochemical Oxygen Demand     | mg/L               | ---  | 2.0 H               | 2.0-7.0 U         | 2.0 U              | 2.0 U-8.0         | 3.3 b               | 2.0 U     | 2.0 Hb                     | 2.0 U                   | 2.0 U     | 2.0 U                | 2.0 U-14          |
| Bromide                       | mg/L               | ---  | ---                 | 0.1 U-1.0 U       | ---                | 0.1 U-1.0 U       | 0.1 U               | ---       | ---                        | 0.1 U                   | ---       | ---                  | 0.1 U-1.0 U       |
| Chemical Oxygen Demand        | mg/L               | --   | 6.4 JB <sup>a</sup> | 10 U-50           | 21                 | 10 U-105          | 14                  | 10        | 23 B                       | 14                      | 9.0 J     | 21 B                 | 6.0-34            |
| Chloride                      | mg/L               | ---  | 100                 | 23-82             | 100                | 28.9-79           | 46                  | 61        | 100                        | 47                      | 61        | 100                  | 30-80             |
| Chromium, Hexavalent          | mg/L               | 0.011  | 0.005 U             | 0.004 U-0.01 U    | 0.005 U            | 0.004 U-0.01 U    | 0.005 U             | 0.005 U   | 0.005 U                    | 0.005 U                 | 0.005 U   | <0.005               | 0.004 U-0.01      |
| Color                         | Color Units        | ---  | 25                  | 5.0 U-750         | 25                 | 5.0 U-750         | 40                  | 35        | 25                         | 50                      | 40        | 25                   | 5.0 U-500         |
| Cyanide                       | mg/L               | 0.0052   | 0.005 <sup>a</sup>  | 0.005 U-0.01 U    | 0.005 <sup>a</sup> | 0.005 U-0.01 U    | 0.005 U             | 0.005 U   | 0.005 U                    | 0.005 U                 | 0.005 U   | 0.005 <sup>a</sup>   | 0.005 U-0.01 U    |
| Hardness                      | mg/L               | ---  | 240                 | 96.7-260          | 230                | 99.8-242          | 18 J                | 180       | 240                        | 180                     | 180       | 240                  | 102-238           |
| Nitrate                       | mg/L               | ---  | 2.1                 | 0.4-1.82          | 2.1                | 0.1 U-1.72        | 0.77                | 0.91      | 2.1                        | 0.83                    | 0.93      | 2.1                  | 0.1 U-3.3         |
| Phenols                       | mg/L               | 0.005  | 0.005 U             | 0.002 U-0.0045 U  | 0.005 U            | 0.002 U-0.0072    | 0.005 U             | 0.005 U   | 0.005 U                    | 0.005 U                 | 0.005 U   | <0.005               | 0.002 U-0.0115    |
| Sulfate                       | mg/L               | ---  | 33                  | 11-91             | 33                 | 7.5-100           | 19                  | 14        | 34                         | 19                      | 14        | 34                   | 8.5-100           |
| Total Dissolved Solids        | mg/L               | 500  | 390                 | 172-404           | 420                | 156-446           | 300                 | 310       | 410                        | 300                     | 310       | 400                  | 190-428           |
| Total Kjeldahl Nitrogen       | mg/L               | ---  | 0.94                | 0.58-1.45         | 0.75               | 0.5-7.52          | 2.4                 | 0.41      | 0.8                        | 0.97                    | 0.44      | 0.41                 | 0.58-1.76         |
| Total Organic Carbon          | mg/L               | ---  | 4.1                 | 4.5-18            | 4.1                | 4.2-11            | 5.8                 | 4.4       | 4.1                        | 5.5                     | 4.4       | 4.1                  | 4.4-18            |
| Turbidity                     | NTU                | ---  | 28                  | 5.6-130           | 29                 | 8.7-95            | 37                  | 16        | 23                         | 29                      | 17        | 22                   | 5.8-112           |
| Metal Parameters              |                    |  |                     |                   |                    |                   |                     |           |                            |                         |           |                      |                   |
| Aluminum                      | mg/L               | ---  | 0.54                | 0.08-0.991        | 0.4                | 0.13-0.941        | 1.5                 | 0.57      | 0.16 J                     | 1.6                     | 0.55      | 0.47                 | 0.12-1            |
| Antimony                      | mg/L               | ---  | 0.0068 U            | 0.0068 U-0.06 U   | 0.0068 U           | 0.0044 U-0.0068 U | 0.0068 U            | 0.0068 U  | 0.0068 U                   | 0.0068 U                | 0.0068 U  | 0.0068 U             | 0.05 U-0.12       |
| Arsenic                       | mg/L               | 0.15 <sup>(3)</sup>  | 0.0056 U            | 0.002 U-0.02 U    | 0.0056 U           | 0.001-0.014       | 0.0056 U            | 0.0056 U  | 0.0062 J                   | 0.0056 U                | 0.0056 U  | 0.0098 J             | 0.002 U-0.014     |
| Barium                        | mg/L               | ---  | 0.041               | 0.017-0.2 U       | 0.04               | 0.016-0.2         | 0.033               | 0.024     | 0.043                      | 0.039                   | 0.024     | 0.041                | 0.2 U-0.037       |
| Beryllium                     | mg/L               | *  | 0.0003 U            | 0.0003 U-0.02 U   | 0.0003 U           | 0.0003 U-0.02 U   | 0.0003 U            | 0.0003 U  | 0.0003 U                   | 0.0003 U                | 0.0003 U  | 0.0003 U             | 0.0003 U-0.02 U   |
| Boron                         | mg/L               | 10   | 0.046               | 0.026-0.5 U       | 0.045              | 0.048 U-0.066     | 0.035 B             | 0.022 B   | 0.048                      | 0.036 B                 | 0.023 B   | 0.045                | 0.025 U-0.053     |
| Cadmium                       | mg/L               | *  | 0.0005 U            | 0.0005 U-0.02 U   | 0.0005 U           | 0.0005 U-0.02 U   | 0.0005 U            | 0.0005 U  | 0.0005 U                   | 0.0005 U                | 0.0005 U  | 0.0005 U             | 0.0005 U-0.02 U   |
| Calcium                       | mg/L               | ---  | 59                  | 28.1-67           | 58                 | 27.5-61.4         | 45                  | 43        | 61                         | 46                      | 44        | 61                   | 26.8-60.6         |
| Chromium                      | mg/L               | *  | 0.0015 J            | 0.001 U-0.02 U    | 0.001 U            | 0.0009 U-0.02 U   | 0.0016 J            | 0.001 U   | 0.0015 U                   | 0.0022 J                | 0.001 U   | 0.001 J              | 0.001 U-0.02 U    |
| Cobalt                        | mg/L               | 0.005  | ---                 | 0.0019 U-0.05 U   | ---                | 0.0019 U-0.05 U   | 0.00067 J           | 0.00063 U | ---                        | 0.0019 U                | 0.00063 U | ---                  | 0.0019 U-0.05 U   |
| Copper                        | mg/L               | *  | 0.0054 J            | 0.0053-0.017 U    | 0.0051             | 0.003 U-0.025 U   | 0.0034 J            | 0.0016 U  | 0.0052 J                   | 0.0031 J                | 0.0017 J  | 0.005 J              | 0.0021-0.025 U    |
| Iron                          | mg/L               | 0.3  | 0.54 B              | 0.36-8.2          | 0.4                | 0.285-9.17        | 1.4                 | 0.81      | 0.22 B                     | 1.4                     | 0.77      | 0.46                 | 0.34-3.13         |
| Lead                          | mg/L               | *  | 0.003 U             | 0.001 U-0.014     | 0.003 U            | 0.0019 U-0.013    | 0.003 U             | 0.003 U   | 0.003 U                    | 0.003 U                 | 0.003 U   | 0.0031 J             | 0.001 U-0.02 U    |
| Magnesium                     | mg/L               | ---  | 23                  | 6.44-22.7         | 23                 | 7.55-22.2         | 15                  | 15        | 23                         | 16                      | 15        | 23                   | 7.57-21.2         |
| Manganese                     | mg/L               | ---  | 0.13                | 0.048-1.0         | 0.13               | 0.055-0.22        | 0.14                | 0.11      | 0.13                       | 0.15                    | 0.11      | 0.12                 | 0.052-0.28        |
| Mercury                       | mg/L               | 0.0007   | 0.00012 U           | 0.00012 U-0.001 U | 0.00012 U          | 0.00012 U-0.001 U | 0.00012 U           | 0.00012 U | 0.00012 U                  | 0.00012 U               | 0.00012 U | 0.00012 U            | 0.00012 U-0.001 U |
| Nickel                        | mg/L               | *  | 0.0016              | 0.0013 U-0.04 U   | 0.0018             | 0.0013 U-0.02 U   | 0.0015 J            | 0.0015 J  | 0.0018 J                   | 0.0016 J                | 0.0013 U  | 0.002 J              | 0.0013 U-0.04 U   |
| Potassium                     | mg/L               | ---  | 3.8                 | 1.4-5.22          | 3.7                | 1.6-4.98          | 3.2                 | 1.8       | 3.7                        | 3.3                     | 1.8       | 3.8                  | 1.2-4.92          |
| Selenium                      | mg/L               | 0.00046  | 0.0087 U            | 0.001 U-0.059     | 0.0087 U           | 0.001 U-0.077 U   | 0.0087 U            | 0.0087 U  | 0.0087 U                   | 0.0087 U                | 0.0087 U  | 0.0087 U             | 0.001 U-0.079     |
| Silver                        | mg/L               | 0.0001 <sup>(1)</sup>  | 0.0017 U            | 0.0012-0.01 U     | 0.0017 U           | 0.0017 U-0.01     | 0.0017 U            | 0.0017 U  | 0.0017 U                   | 0.0017 U                | 0.0017 U  | 0.0017 U             | 0.0015-0.01 U     |
| Sodium                        | mg/L               | ---  | 52                  | 14.9-41           | 52                 | 15-38.6           | 29                  | 32        | 52                         | 30                      | 32        | 52                   | 15-40             |
| Thallium                      | mg/L               | 0.008 <sup>(1)</sup>   | 0.01 U              | 0.001 U-0.022     | 0.01 U             | 0.001 U-0.023     | 0.01 U              | 0.01 U    | 0.01 U                     | 0.01 U                  | 0.01 U    | 0.01 U               | 0.001 U-0.02 U    |
| Vanadium                      | mg/L               | 0.014  | ---                 | 0.002 U-0.274     | ---                | 0.002 U-0.01 U    | 0.0043 J            | 0.0015 U  | ---                        | 0.0033 J                | 0.0015 U  | ---                  | 0.002 U-0.02 U    |
| Zinc                          | mg/L               | *  | 0.0071 JB           | 0.0043-0.149      | 0.023 B            | 0.028 U-0.0023    | 0.0069 JB           | 0.006 J   | 0.041 B                    | 0.0095 JB               | 0.0055 J  | 0.012 B              | 0.004-0.0345      |

Values in **BOLD** indicate exceedance of applicable groundwater and surface water quality standard.

--- = Not analyzed or no applicable standard.

<sup>(A)</sup> = T.O.G.S. 1.1.1 Ambient Water Quality Standards for Class C Surface Water

<sup>(1)</sup> = Laboratory Method Detection Limit is greater than or equal to the applicable water quality standard.

<sup>(2)</sup> = Surface water standard for ammonia (mg/L) is interpolated using the temperatures and pH of the individual samples. SW-13 = 2.18; SW-01(8/22/2012) = 1.34; SW-01(6/12/2014) = 1.21; SW-5 = 2.19; SW SEEP DS = 2.14;

SW-02(8/22/2012) = 1.31; SW-02(6/12/2014) = 1.41; and SW-8 = 2.10.

<sup>(3)</sup> = Standard applies to the dissolved form.

\* = Surface Water Standard for Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, and Zinc are based on the individual sample's hardness.

Beryllium (mg/L): SW-13 = 1.1; SW-01(8/22/2012) = 0.011; SW-01(6/12/2014) = 1.1; SW-5 = 1.1; SW SEEP DS = 1.1; SW-02(8/22/2012) = 1.1; and SW-8 = 1.1

Cadmium (mg/L): SW-13 = 0.01; SW-01(8/22/2012) = 0.0006; SW-01(6/12/2014) = 0.007; SW-5 = 0.01; SW SEEP DS = 0.01; SW-02(8/22/2012) = 0.007; SW-02(6/12/2014) = 0.007; and SW-8 = 0.01

Chromium (mg/L): SW-13 = 0.03; SW-01(8/22/2012) = 0.14; SW-01(6/12/2014) = 0.92; SW-5 = 1.13; SW SEEP DS = 1.17; SW-02(8/22/2012) = 0.92; SW-02(6/12/2014) = 0.92; and SW-8 = 0.03

Copper (mg/L): SW-13 = 0.03; SW-01(8/22/2012) = 0.003; SW-01(6/12/2014) = 0.02; SW-5 = 0.03; SW SEEP DS = 0.03; SW-02(8/22/2012) = 0.02; SW-02(6/12/2014) = 0.02; and SW-8 = 0.03

Lead (mg/L): SW-13 = 0.25; SW-01(8/22/2012) = 0.01; SW-01(6/12/2014) = 0.18; SW-5 = 0.24; SW SEEP DS = 0.25; SW-02(8/22/2012) = 0.18; SW-02(6/12/2014) = 0.18; and SW-8 = 0.25

Nickel (mg/L): SW-13 = 0.25; SW-01(8/22/2012) = 0.11; SW-01(6/12/2014) = 0.77; SW-5 = 0.95; SW SEEP DS = 0.98; SW-02(8/22/2012) = 0.77; SW-02(6/12/2014) = 0.77; and SW-8 = 0.98

Zinc (mg/L): SW-13 = 0.25; SW-01(8/22/2012) = 0.03; SW-01(6/12/2014) = 0.19; SW-5 = 0.24; SW SEEP DS = 0.25; SW-02(8/22/2012) = 0.19; SW-02(6/12/2014) = 0.19; and SW-8 = 0.25

\*\* = Sampling Location SW-02 at distinct locations (see Figure 4).

U = Compound is not detected at or above laboratory method detection limit.

J = Result is less than the laboratory reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

B = Compound was found in the blank and the sample.

b = Result detected in the unseeded control blank (USB).

H = Sample was prepped or analyzed beyond specified holding time.

<sup>a</sup> = Instrument related QC exceeds the control limits.



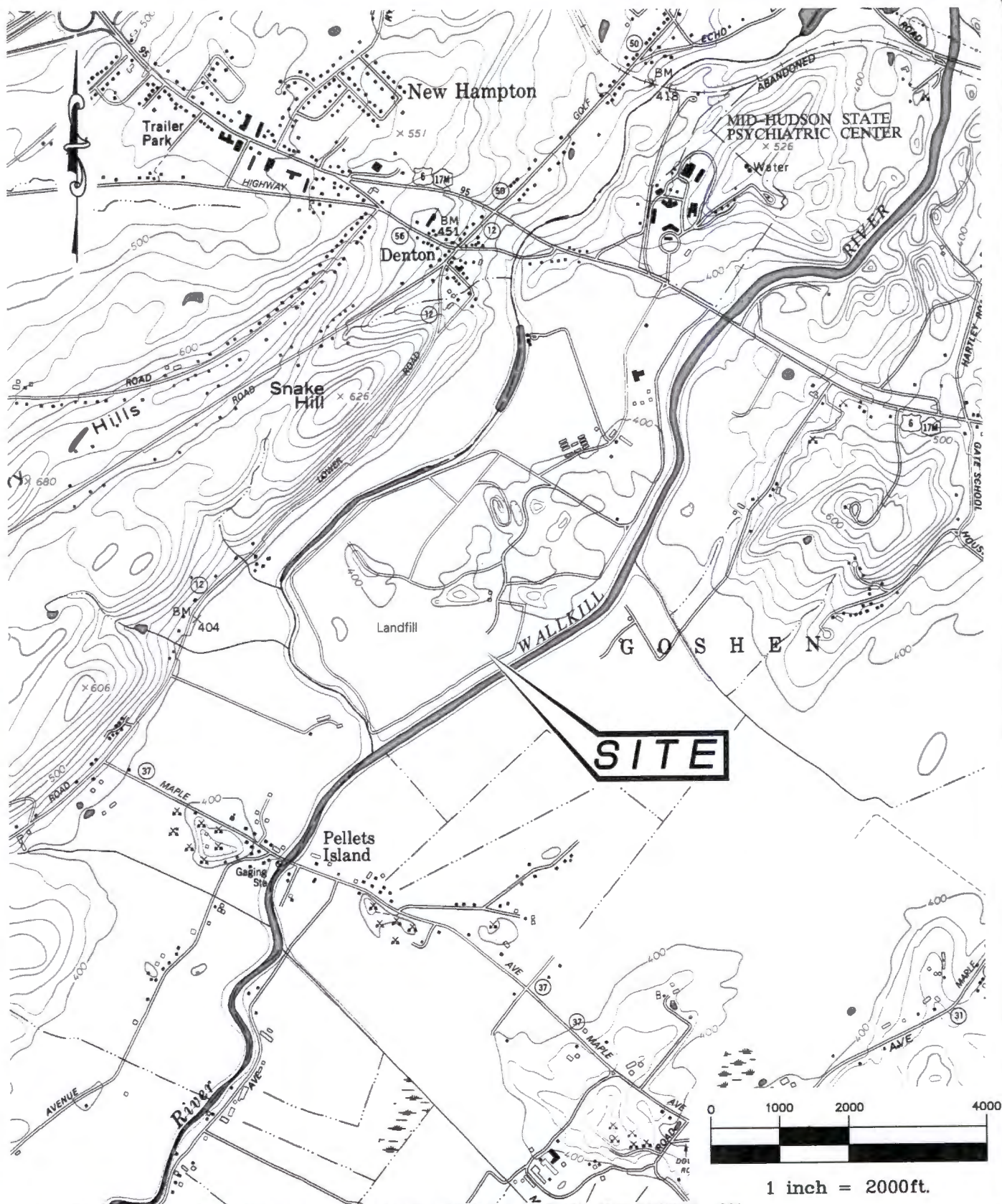
**Evaluation of Mitigation Alternatives  
Orange County Landfill, Goshen, New York**

| <b>Response Action</b> | <b>Technology</b>                                 | <b>Implementability</b>   | <b>Effectiveness and Permanence</b>   | <b>Cost Remarks</b>   |
|------------------------|---|---|---|---|
| Containment            | Geotextile filter fabric or Geomembrane w/ Riprap | Moderately difficult to install and maintain due to location and slope.                             | Effectively controls seep from reaching canal, no associated treatment of seep, potential negative ecological impacts, and will likely require maintenance.   | Likely maintenance costs.                                       |
| Containment            | Slurry Wall                                       | Moderately difficult to install and maintain due to location and slope.                             | Effectively prevents seep from reaching canal. Will likely require maintenance. Effectiveness could be reduced due to movement of Canal bank.   | Likely maintenance costs. Recurring operational costs.          |
| Groundwater Collection | Focused Groundwater Collection Treatment          | Readily implementable.  | Effectively prevents seep from reaching canal and treats groundwater contamination. Continuous operation of pump required.  | Recurring operational costs.                                    |
| Seep Source Collection | Seep Source Point Collection                      | Moderately difficult to maintain due to fluctuations of the canal stage.                            | Effectively prevents seep from reaching canal and treats present contamination. Continuous operation of pump required. Potentially ineffective operation due to frequent flooding of the canal stage. | Recurring operational costs.                                    |
| In-situ Treatment      | Chemical Injection                                | Readily implementable.  | Effectiveness of technology currently unknown. Continuous operation of pump required.   | Bench / pilot scale testing costs. Recurring operational costs. |
| In-situ Treatment      | Reactive Trench                                   | Moderately difficult to install and maintain due to location, slope, and is prone to site flooding. | Effectively prevents seep from reaching canal. Will likely require maintenance.   | Likely maintenance costs.                                       |



## FIGURES

|           |   |
|-----------|---|
| Figure 1  | Site Location Map   |
| Figure 2  | Site Vicinity Map   |
| Figure 3  | Post-Closure Monitoring Network Map (2014)                            |
| Figure 4  | Geologic Cross Section A - A'   |
| Figure 5A | Overburden Groundwater Contour Map (March 18, 2014)                   |
| Figure 5B | Overburden Groundwater Contour Map (September 9, 2014)                |
| Figure 5C | Overburden Groundwater Contour Map (October 6, 2014)                  |
| Figure 6  | Sample & Seep Location Map  |
| Figure 7  | October 2014 Sample Location Map                                      |
| Figure 8  | 2012, 2013, & 2014 Groundwater / Seep / Surface Water Exceedances Map |
| Figure 9  | Seep Mitigation Plan  |
| Figure 10 | Seep Mitigation Details   |
| Figure 11 | Wetland Treatment System  |



MAP REFERENCE: NYSDOT MIDDLETOWN, PINE ISLANDE, GOSHEN, & WARWICK QUADRANGLES, 1991.

# STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road • Latham, New York 12110

SITE LOCATION MAP  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

TOWN OF GOSHEN

ORANGE CO., N.Y.

PROJ. No.: 2013-29 | DATE: 10/31/14 | SCALE: 1" = 2000' | DWG. NO. 2010-15026 | FIGURE 1



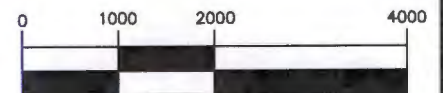


**LEGEND:**

- APPROXIMATE PROPERTY BOUNDARY  
 - - - - - APPROXIMATE LIMIT OF WASTE

**MAP REFERENCES:**

1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
2. AERIAL PHOTOGRAPH FROM GOOGLE EARTH IMAGERY, DATED 2013.



1 inch = 2000ft.

**STERLING**

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SITE VICINITY MAP  
 ORANGE CO. DEPT. OF PUBLIC WORKS  
 ORANGE COUNTY LANDFILL

TOWN OF GOSHEN

ORANGE CO., N.Y.

PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: 1" = 1000' | DWG. NO. 2010-15027 | FIGURE 2





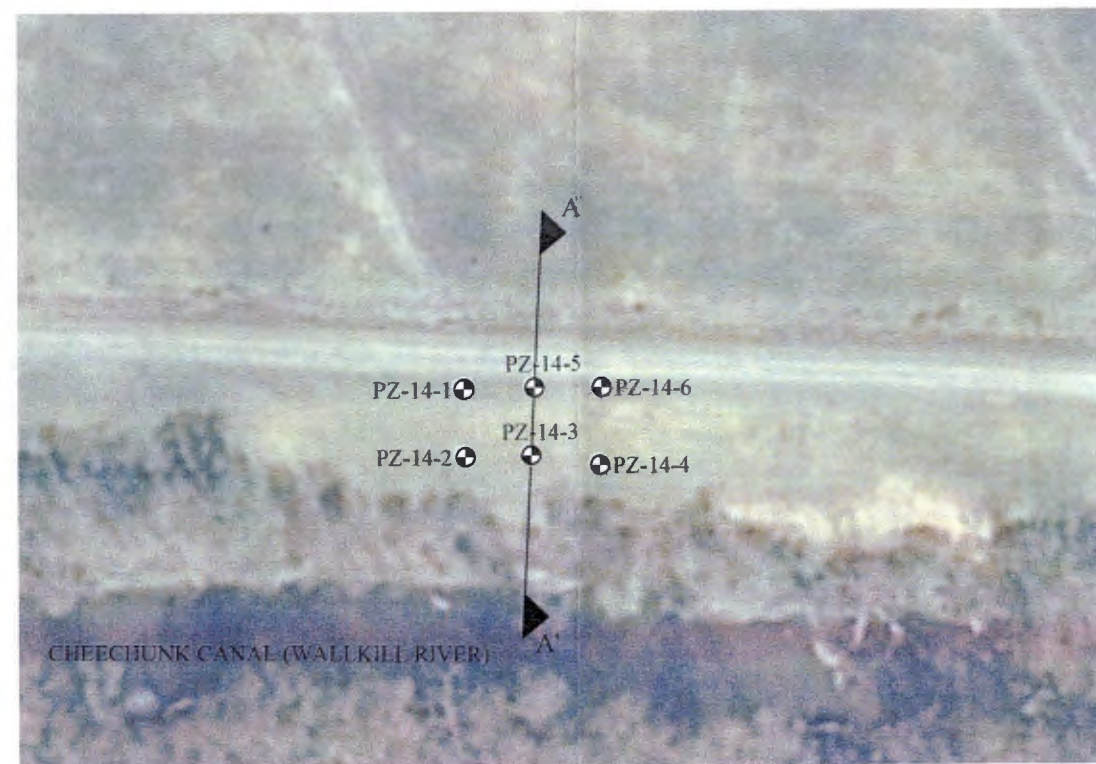
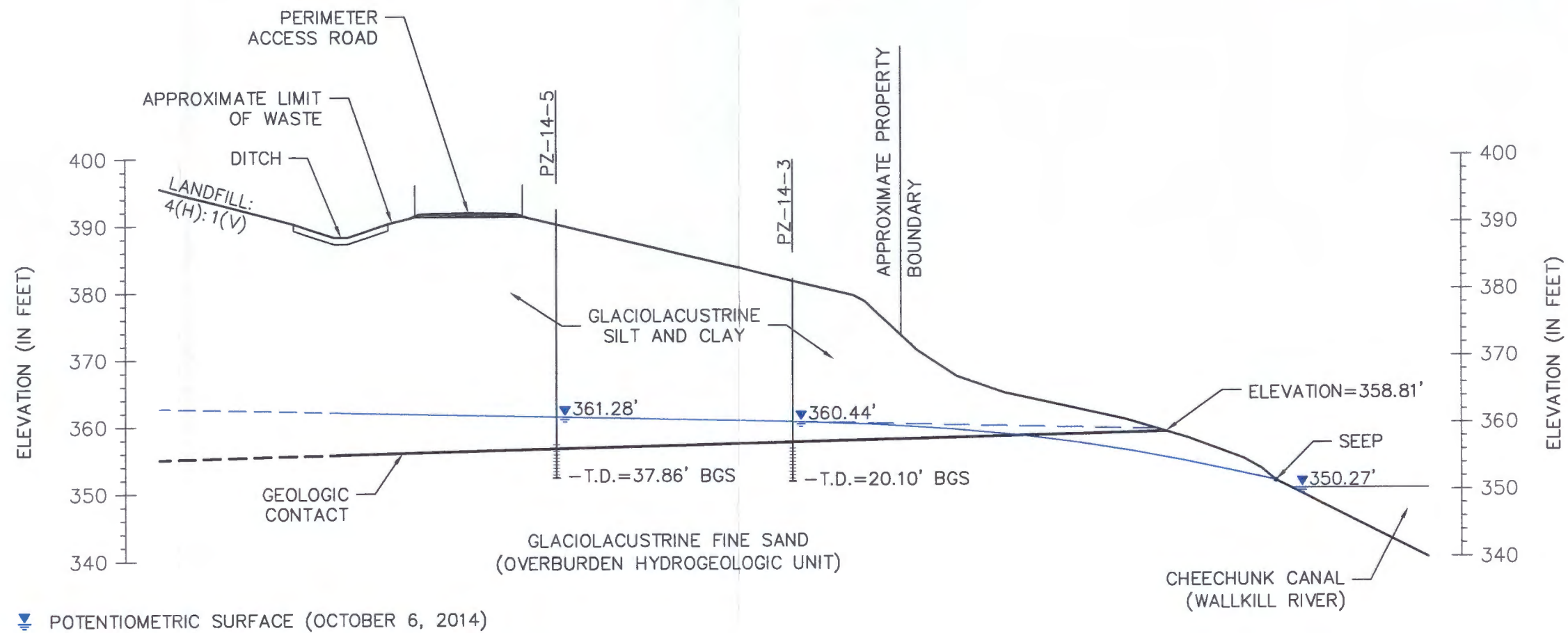


# GEOLOGIC CROSS SECTION A-A'

HORIZONTAL SCALE: 1"=20'  
VERTICAL SCALE: 1"=20'

A  
NORTHWEST

A'  
SOUTHEAST



LINE OF SECTION A-A'

SCALE: 1"=100'

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GEOLOGIC CROSS SECTION A-A'  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

TOWN OF GOSHEN

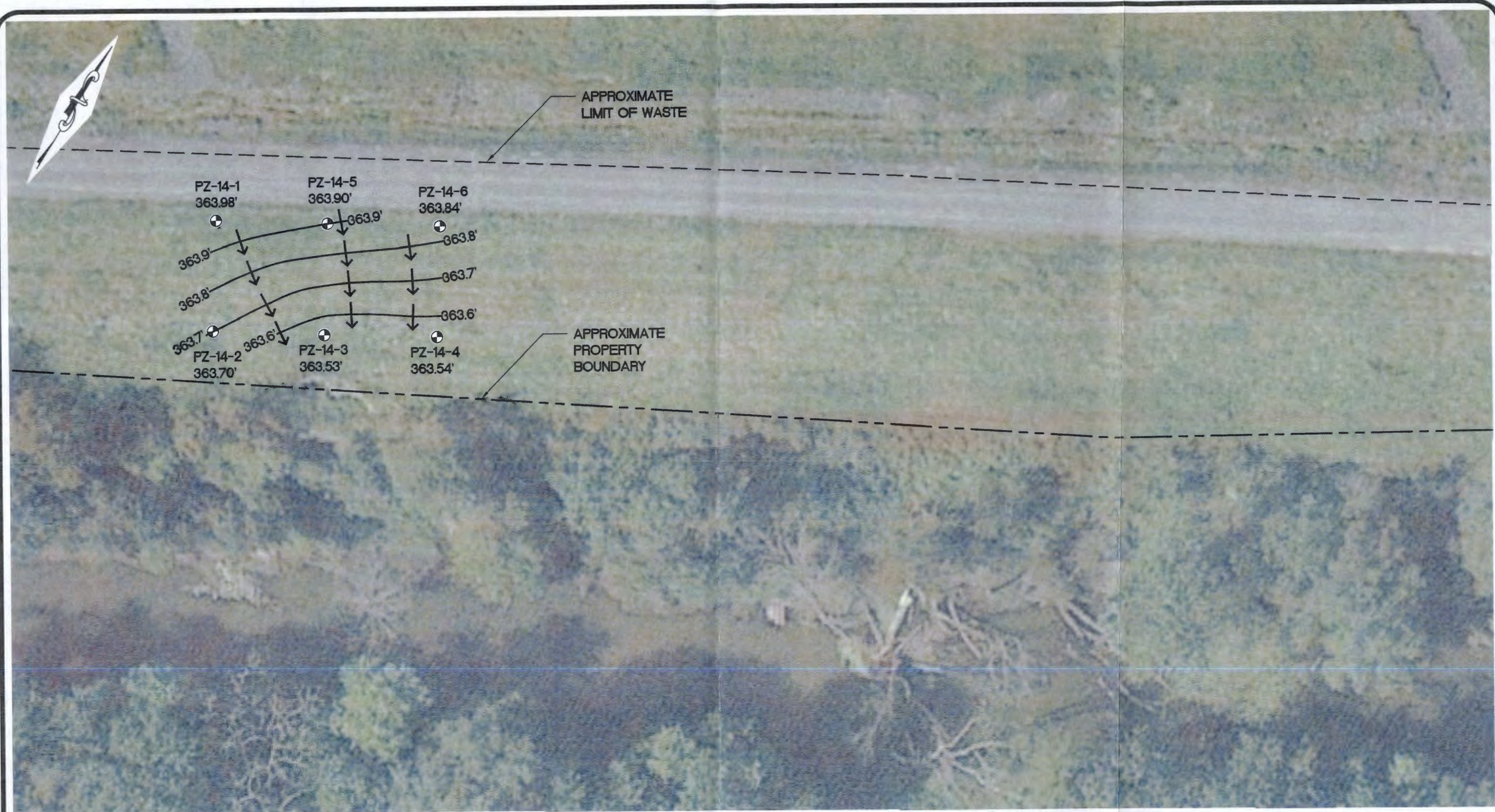
ORANGE CO., N.Y.

PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: AS NOTED | DWG. NO. 2010-15029 | FIGURE

4



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LEGEND:

● PZ-14-1  
361.21'

PIEZOMETER LOCATION WITH  
GROUNDWATER ELEVATION

— 352' —  
→ →

GROUNDWATER ELEVATION CONTOURS  
GROUNDWATER FLOW DIRECTION

---  
---

LIMIT OF WASTE  
PROPERTY BOUNDARY



( IN FEET )  
1 inch = 30 ft.

MAP REFERENCES:

1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
2. AERIAL PHOTOGRAPH FROM GOOGLE EARTH IMAGERY, DATED 2013.

**STERLING**

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24 Wade Road • Latham, New York 12110

OVERBURDEN GROUNDWATER CONTOUR MAP  
(MARCH 18, 2014)

ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

TOWN OF GOSHEN

ORANGE CO., N.Y.

PROJ. No.: 2010-15

DATE:

10/31/14

SCALE:

1" = 30'

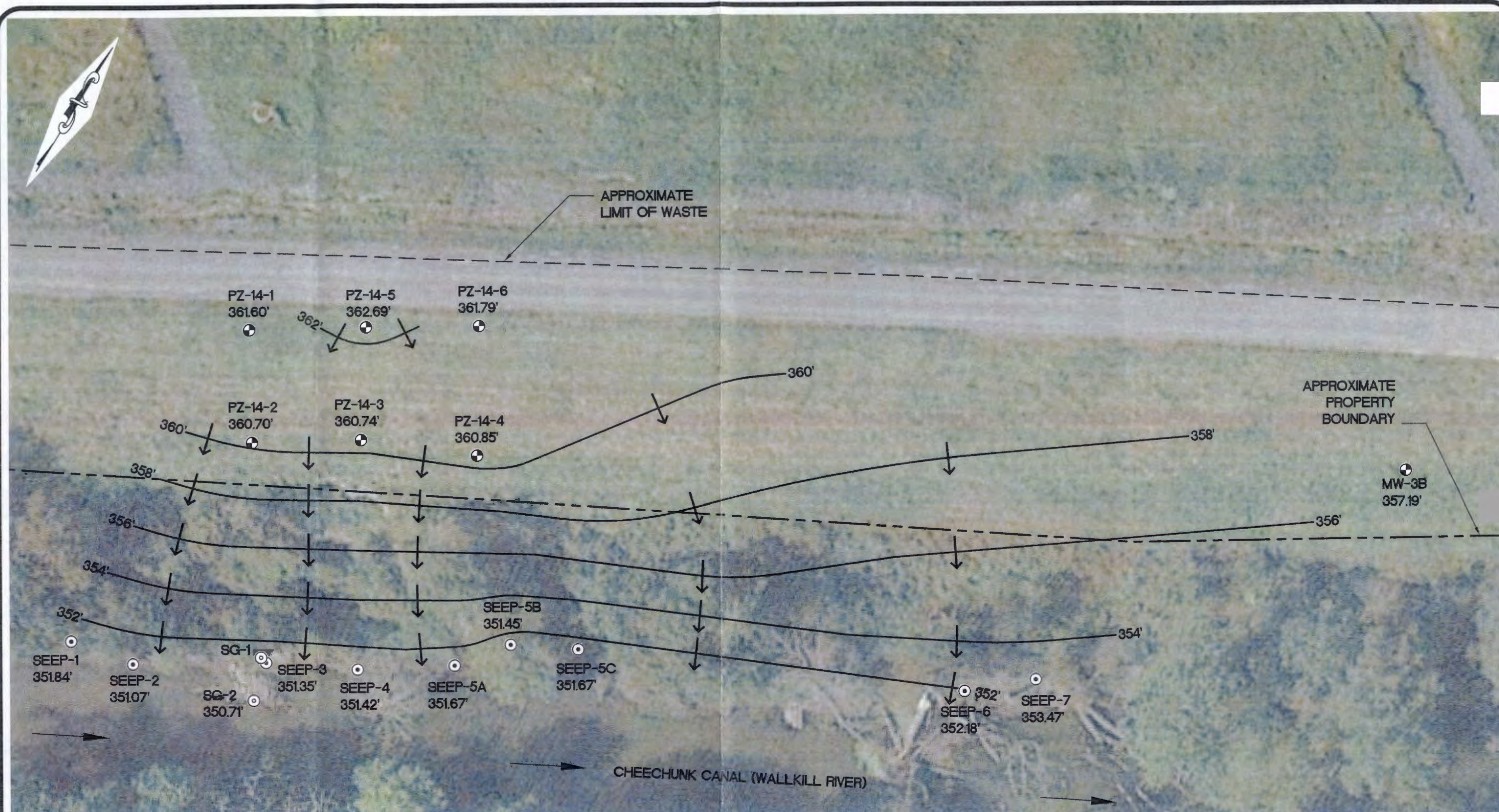
DWG. NO. 2010-15030A

FIGURE

5A



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OVERBURDEN GROUNDWATER CONTOUR MAP  
(SEPTEMBER 9, 2014)  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

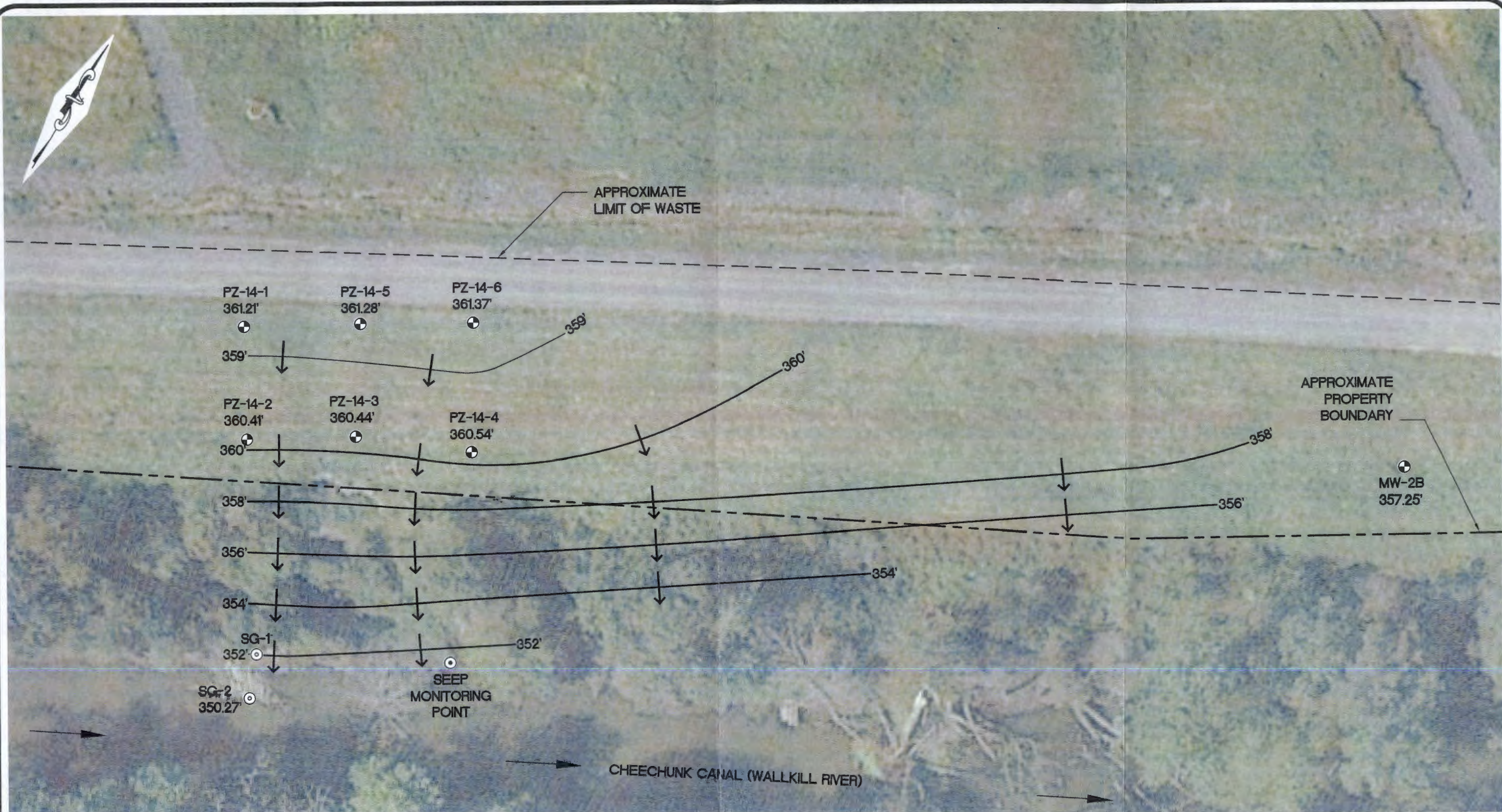
TOWN OF GOSHEN

ORANGE CO., N.Y.








PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: 1" = 30' | DWG. NO. 2010-15030B | FIGURE 5B

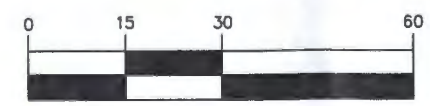


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LEGEND:

-  **PZ-14-1**  
361.21'      PIEZOMETER LOCATION WITH GROUNDWATER ELEVATION
-       SEEP MONITORING POINT
-  **SG-2**  
350.27'      STAFF GAUGE ELEVATION
-  **352'**      GROUNDWATER ELEVATION CONTOURS
-       GROUNDWATER FLOW DIRECTION
-       LIMIT OF WASTE
-       PROPERTY BOUNDARY



( IN FEET )  
1 inch = 30 ft.

- MAP REFERENCES:
1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
  2. AERIAL PHOTOGRAPH FROM GOOGLE EARTH IMAGERY, DATED 2013.

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OVERBURDEN GROUNDWATER CONTOUR MAP  
(OCTOBER 6, 2014)  
**ORANGE CO. DEPT. OF PUBLIC WORKS**  
ORANGE COUNTY LANDFILL

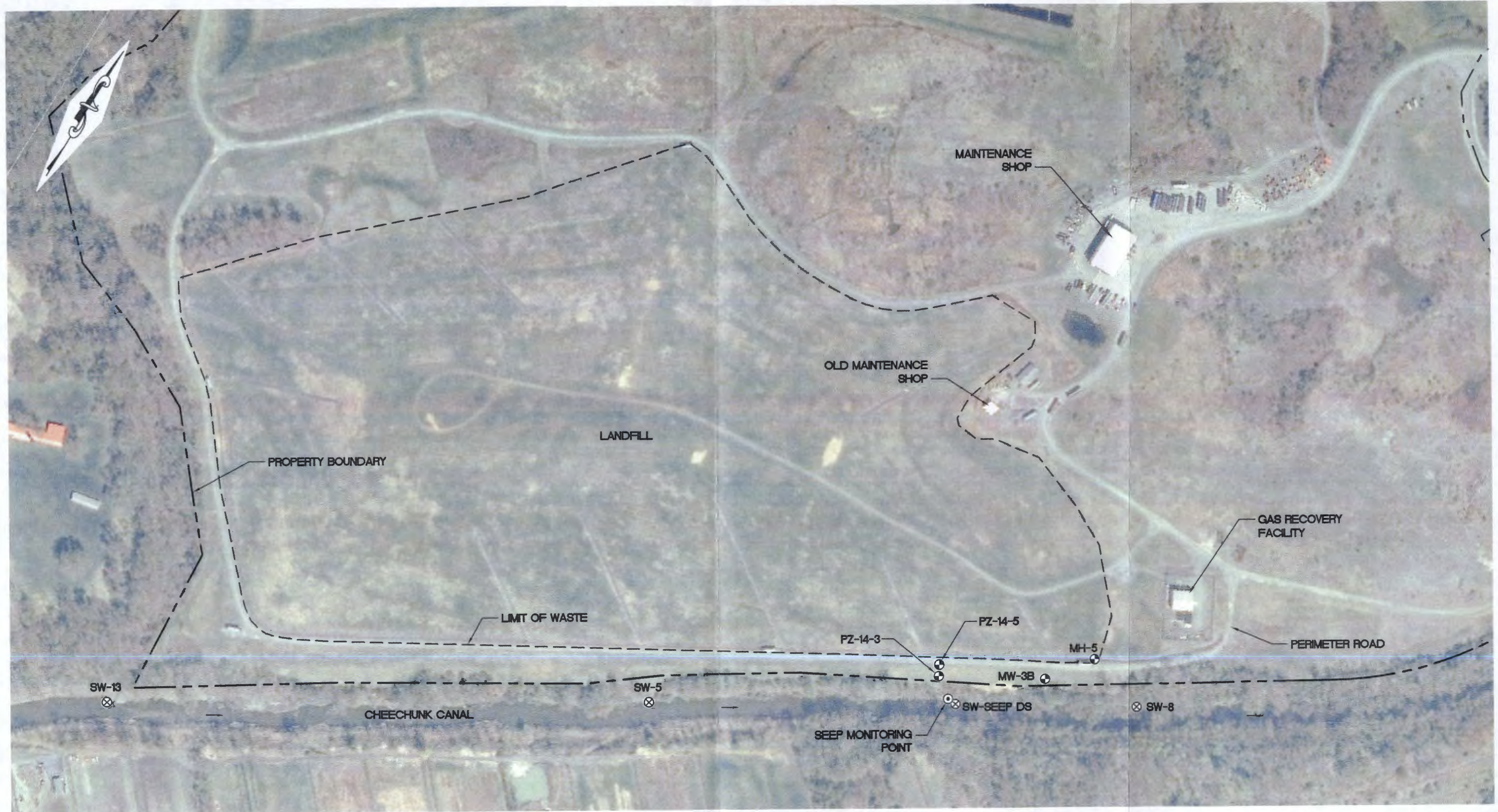
TOWN OF GOSHEN      ORANGE CO., N.Y.

PROJ. No.: 2010-15    DATE: 10/31/14    SCALE: 1" = 30'    DWG. NO. 2010-15030C    FIGURE 5C



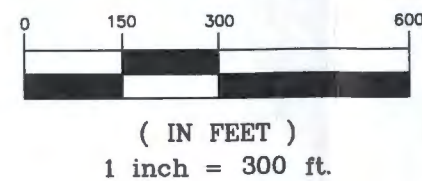






**LEGEND:**

- ⊕ MW-3B GROUNDWATER AND LEACHATE SAMPLE LOCATIONS
- ⊙ SEEP MONITORING POINT
- ⊗ SW-5 SURFACE WATER SAMPLE LOCATION
- LIMIT OF WASTE
- PROPERTY BOUNDARY



**MAP REFERENCES:**

1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
2. AERIAL PHOTOGRAPHY FROM NEW YORK STATWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013.

**STERLING**

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24 Wade Road • Latham, New York 12110

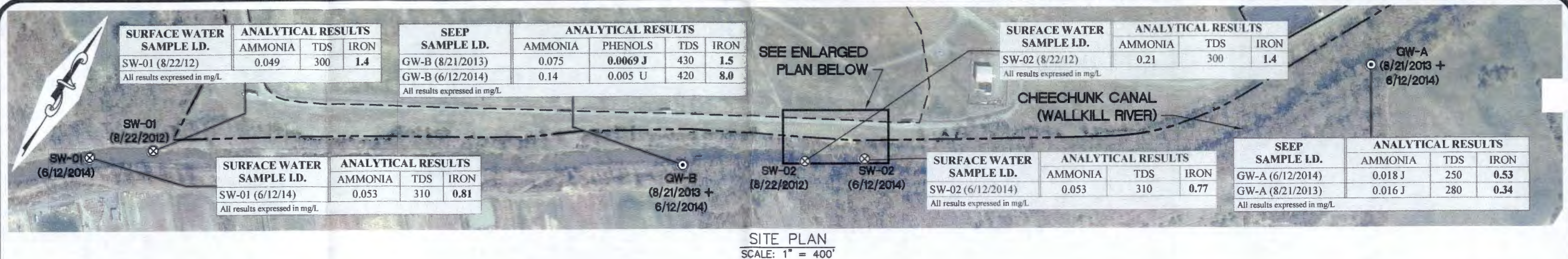
OCTOBER 2014 SAMPLE LOCATION MAP  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

TOWN OF GOSHEN

ORANGE CO., N.Y.

PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: 1"=300' | DWG. NO. 2010-15032 | FIGURE 7





| GROUNDWATER<br>SAMPLE I.D.    | ANALYTICAL RESULTS |         |         |     |       |
|-------------------------------|--------------------|---------|---------|-----|-------|
|                               | AMMONIA            | PHENOLS | ARSENIC | TDS | IRON  |
| PZ-14-5 (10/6/2014)           | 9.1 B              | 0.005 U | 0.057   | 780 | 4.8 B |
| All results expressed in mg/L |                    |         |         |     |       |

| GROUNDWATER<br>SAMPLE I.D.    | ANALYTICAL RESULTS |         |         |     |      |
|-------------------------------|--------------------|---------|---------|-----|------|
|                               | AMMONIA            | PHENOLS | ARSENIC | TDS | IRON |
| PZ-14-3 (10/6/2014)           | 5.3                | 0.026   | 0.094   | 680 | 18 B |
| All results expressed in mg/L |                    |         |         |     |      |

| SEEP<br>SAMPLE I.D.           | ANALYTICAL RESULTS |         |     |      |
|-------------------------------|--------------------|---------|-----|------|
|                               | AMMONIA            | PHENOLS | TDS | IRON |
| GW-3 (6/12/2014)              | 6.3                | 0.005 U | 780 | 13   |
| All results expressed in mg/L |                    |         |     |      |

| SEEP<br>SAMPLE I.D.           | ANALYTICAL RESULTS |         |     |      |
|-------------------------------|--------------------|---------|-----|------|
|                               | AMMONIA            | PHENOLS | TDS | IRON |
| GW-2 (6/12/2014)              | 8.8                | 0.005 U | 660 | 5.3  |
| All results expressed in mg/L |                    |         |     |      |

| SEEP<br>SAMPLE I.D.           | ANALYTICAL RESULTS |          |     |      |
|-------------------------------|--------------------|----------|-----|------|
|                               | AMMONIA            | PHENOLS  | TDS | IRON |
| GW-01 (8/22/2012)             | 40                 | 0.0054 J | 680 | 6.5  |
| GW-1 (6/12/2014)              | 18                 | 0.005 U  | 690 | 11   |
| All results expressed in mg/L |                    |          |     |      |

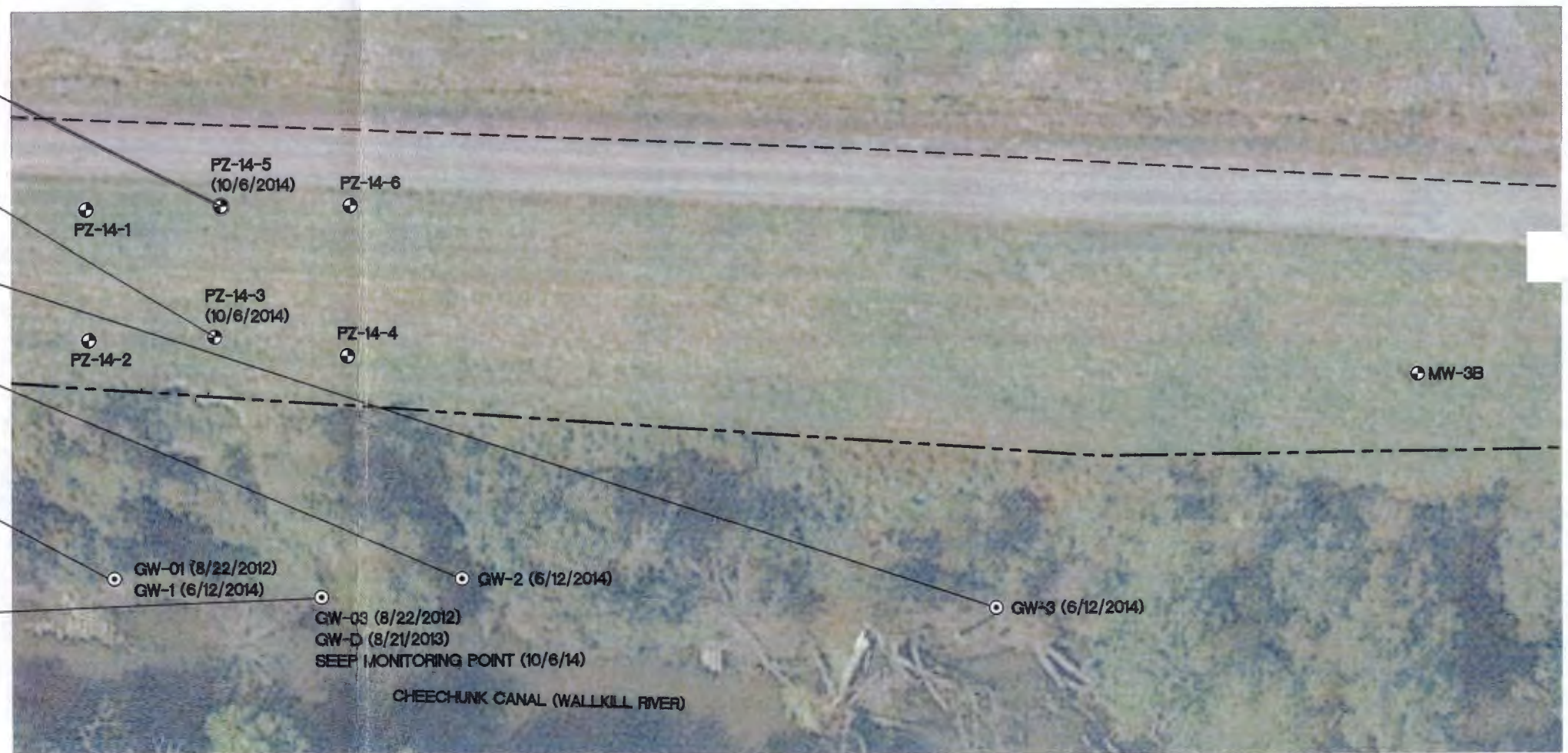
| SEEP<br>SAMPLE I.D.                  | ANALYTICAL RESULTS |           |     |      |
|--------------------------------------|--------------------|-----------|-----|------|
|                                      | AMMONIA            | PHENOLS   | TDS | IRON |
| GW-03 (8/22/2012)                    | 13                 | 0.005 U   | 780 | 3.2  |
| GW-D (8/21/2013)                     | 8                  | 0.005 J H | 830 | 12   |
| SEEP MONITORING<br>POINT (10/6/2014) | 6.9                | 0.01 U    | 720 | 8.6  |
| All results expressed in mg/L        |                    |           |     |      |

**NOTE:**

U = Not detected at or above laboratory method detection limit

**LEGEND:**

- PZ-14-1 (6/12/14) PIEZOMETER/MONITORING WELL LOCATION (DATE SAMPLE WAS TAKEN)  
 GW-01 (8/22/12) SEEP LOCATION (DATE SAMPLE WAS TAKEN)  
 SW-01 (8/22/12) SURFACE WATER LOCATION (DATE SAMPLE WAS TAKEN)  
 --- LIMIT OF WASTE  
 --- PROPERTY BOUNDARY

**MAP REFERENCES:**

- PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
- AERIAL PHOTOGRAPHY FROM NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2013.

# STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road • Latham, New York 12110

2012, 2013, & 2014 GROUNDWATER /  
SEEP / SURFACE WATER EXCEEDANCES IN  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

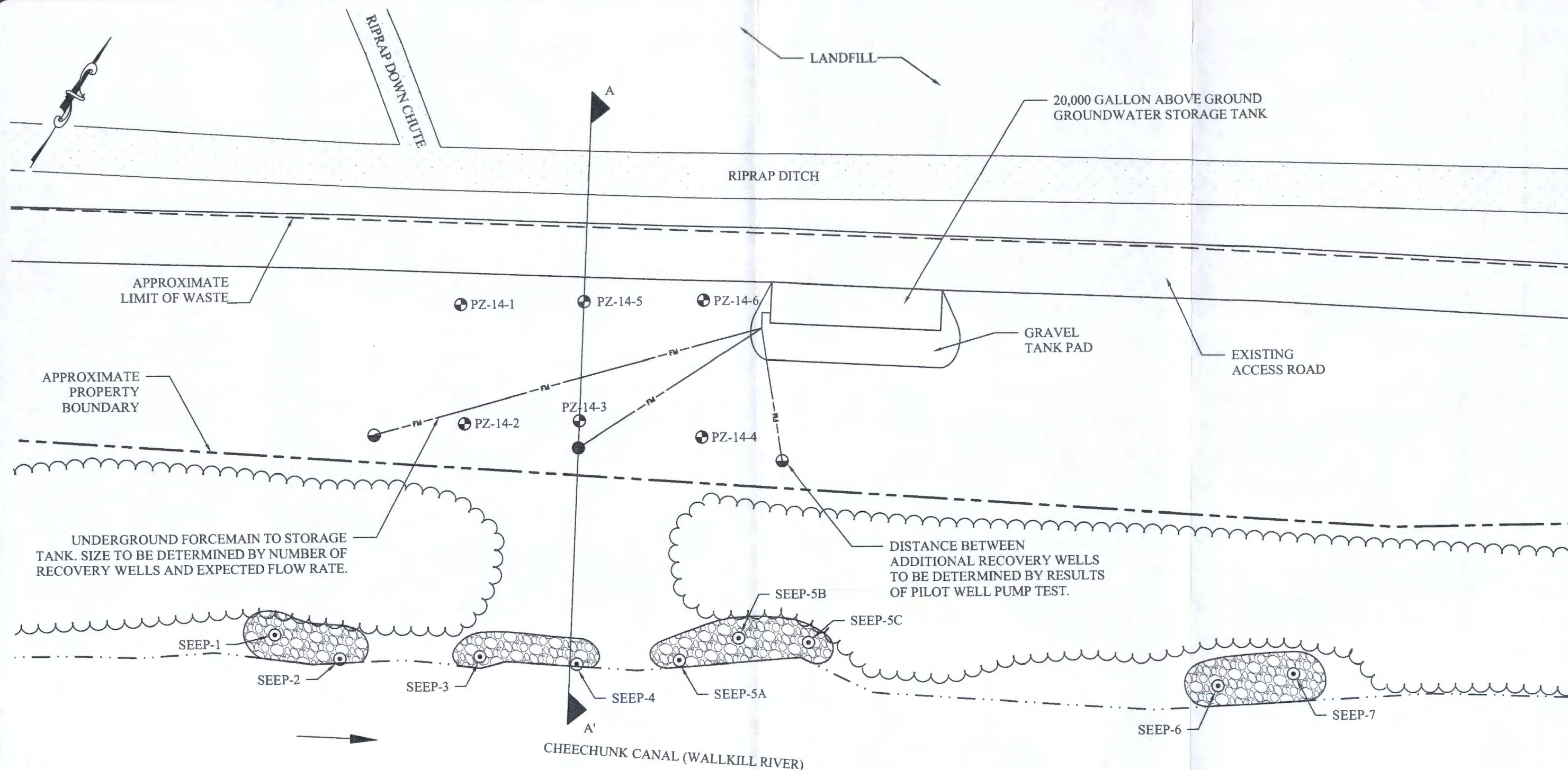
TOWN OF GOSHEN

ORANGE CO., N.Y.

PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: AS NOTED | DWG. NO. 2010-15033 | FIGURE



S:\Drawings\2010-15 - Orange County\2010-15034-35 Seep Mitigation Plan.dwg 10/31/2014 2:49 PM



LEGEND:

- PROPOSED PILOT RECOVERY WELL
- ADDITIONAL RECOVERY WELLS (IF NECESSARY)
- ▨ PROPOSED CANAL BANK EROSION CONTROL RIPRAP ARMORING
- ⊕ PZ-14-1 EXISTING PIEZOMETER LOCATIONS
- ⊙ SEEP-1 SEEP/SURFACE WATER LOCATIONS
- PROPERTY BOUNDARY
- - - LIMIT OF WASTE
- ... EDGE OF STREAM
- ~~~~~ TREE LINE



( IN FEET )  
1 inch = 30 ft.

MAP REFERENCES:  
1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.

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SEEP MITIGATION PLAN  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

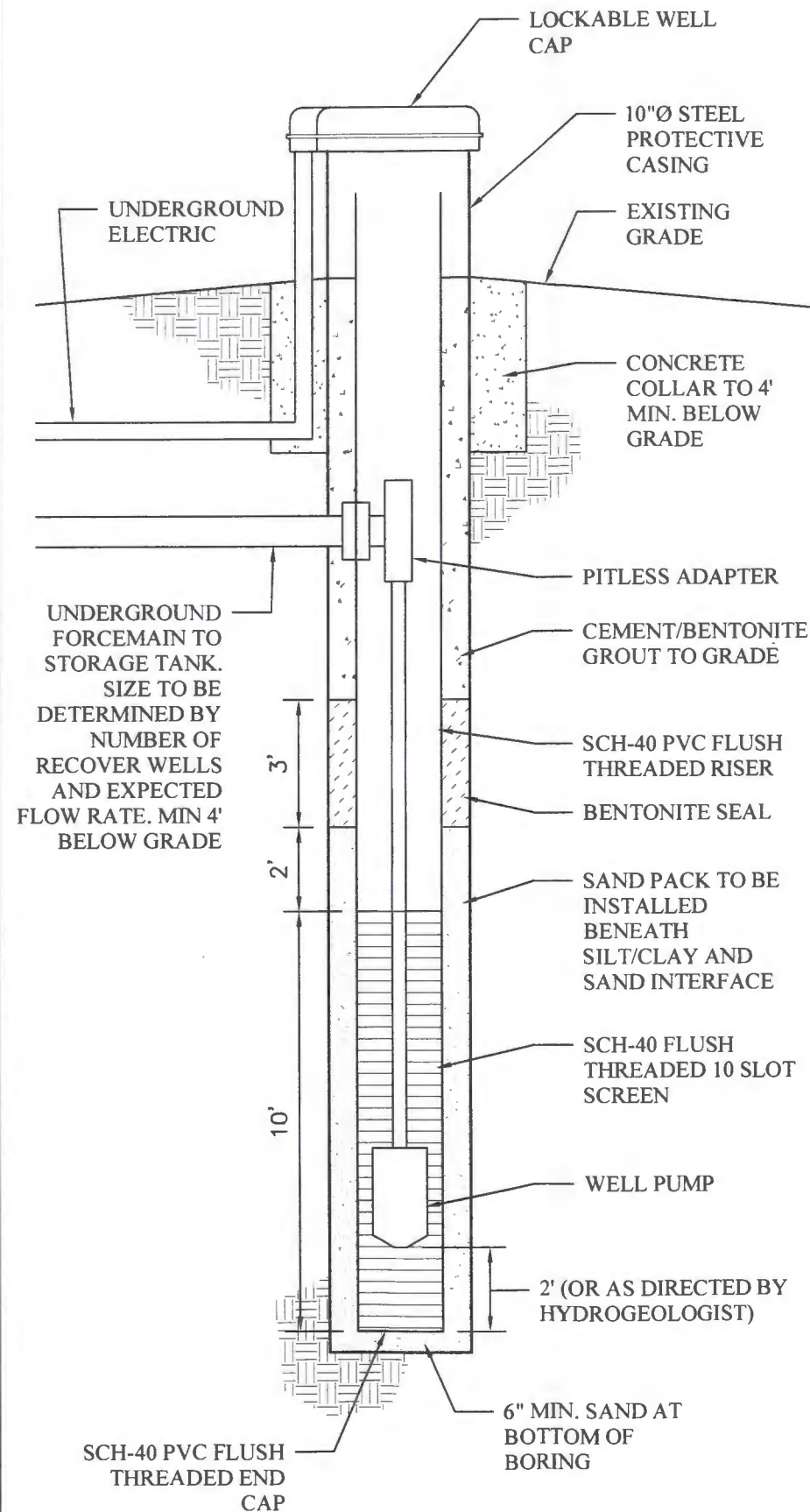
TOWN OF GOSHEN

ORANGE CO., N.Y.

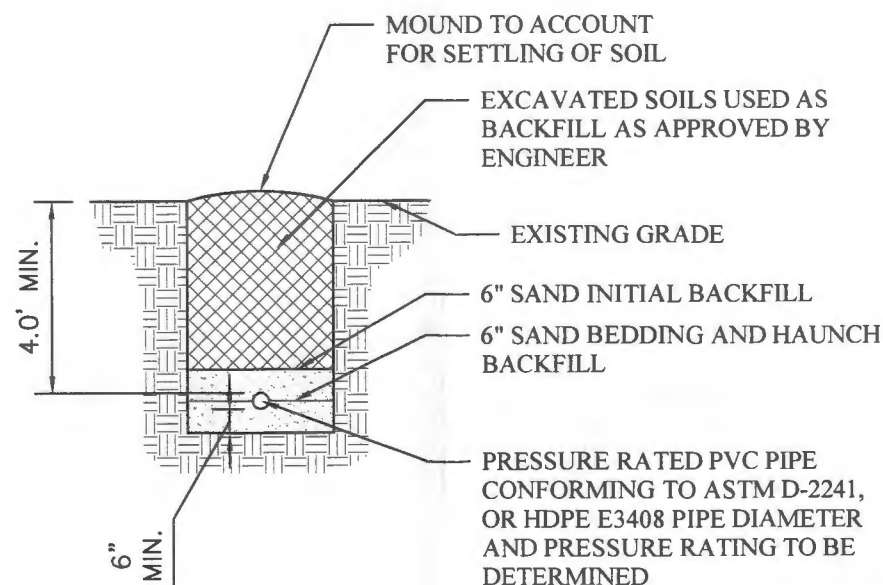
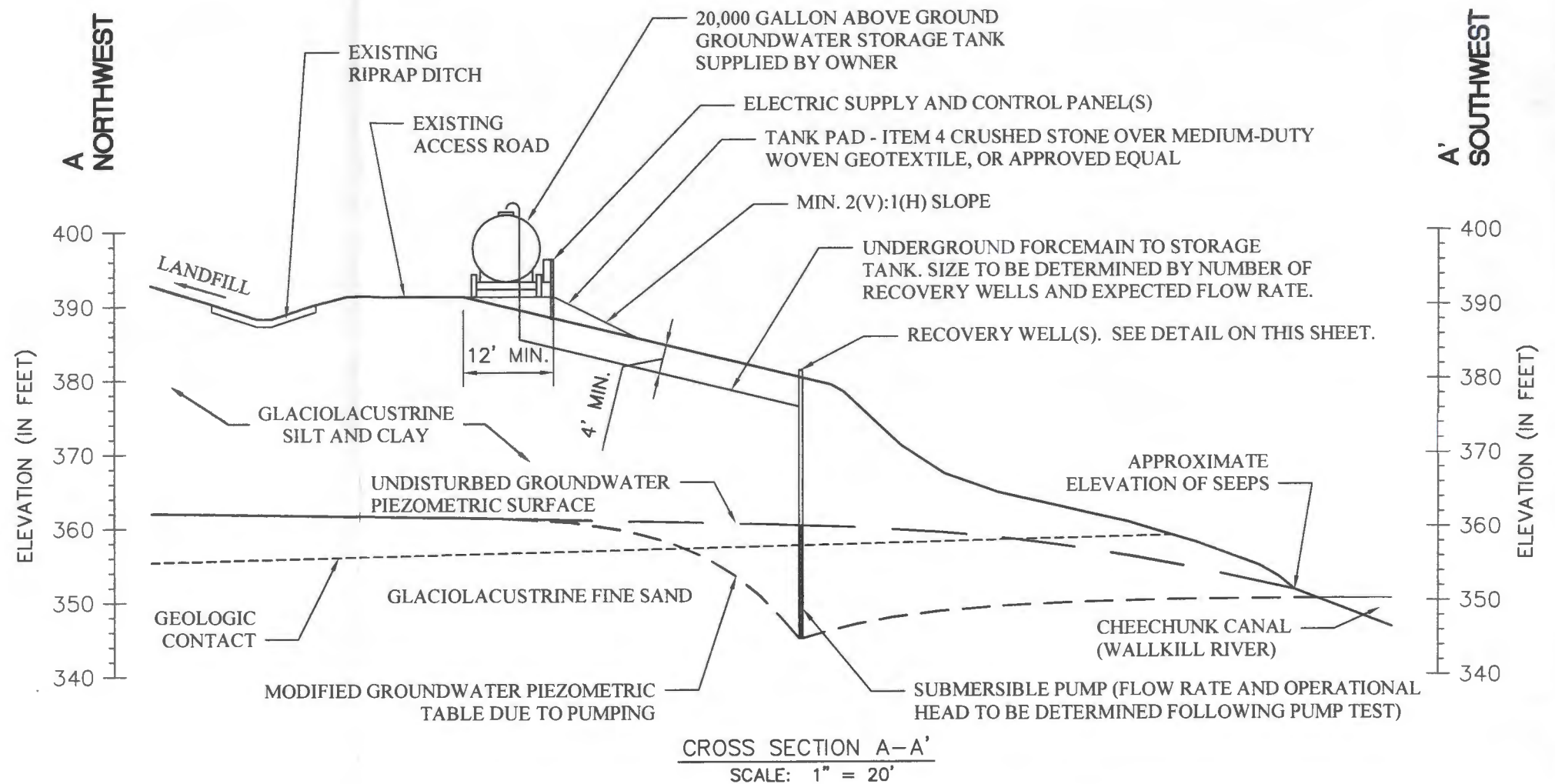
PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: 1" = 30' | DWG. NO. 2010-15034 | FIGURE



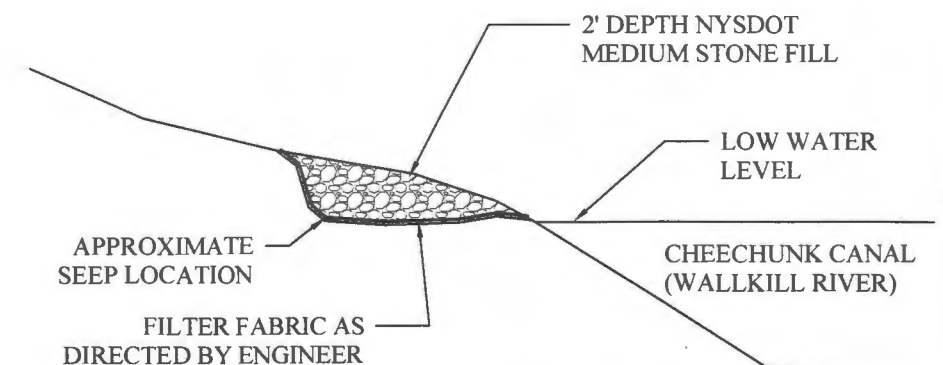
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RECOVERY WELL DETAIL  
NOT TO SCALE



FORCEMAIN TRENCH DETAIL  
NOT TO SCALE



CANAL BANK EROSION CONTROL  
NOT TO SCALE

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SEEP MITIGATION DETAILS  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

TOWN OF GOSHEN

ORANGE CO., N.Y.

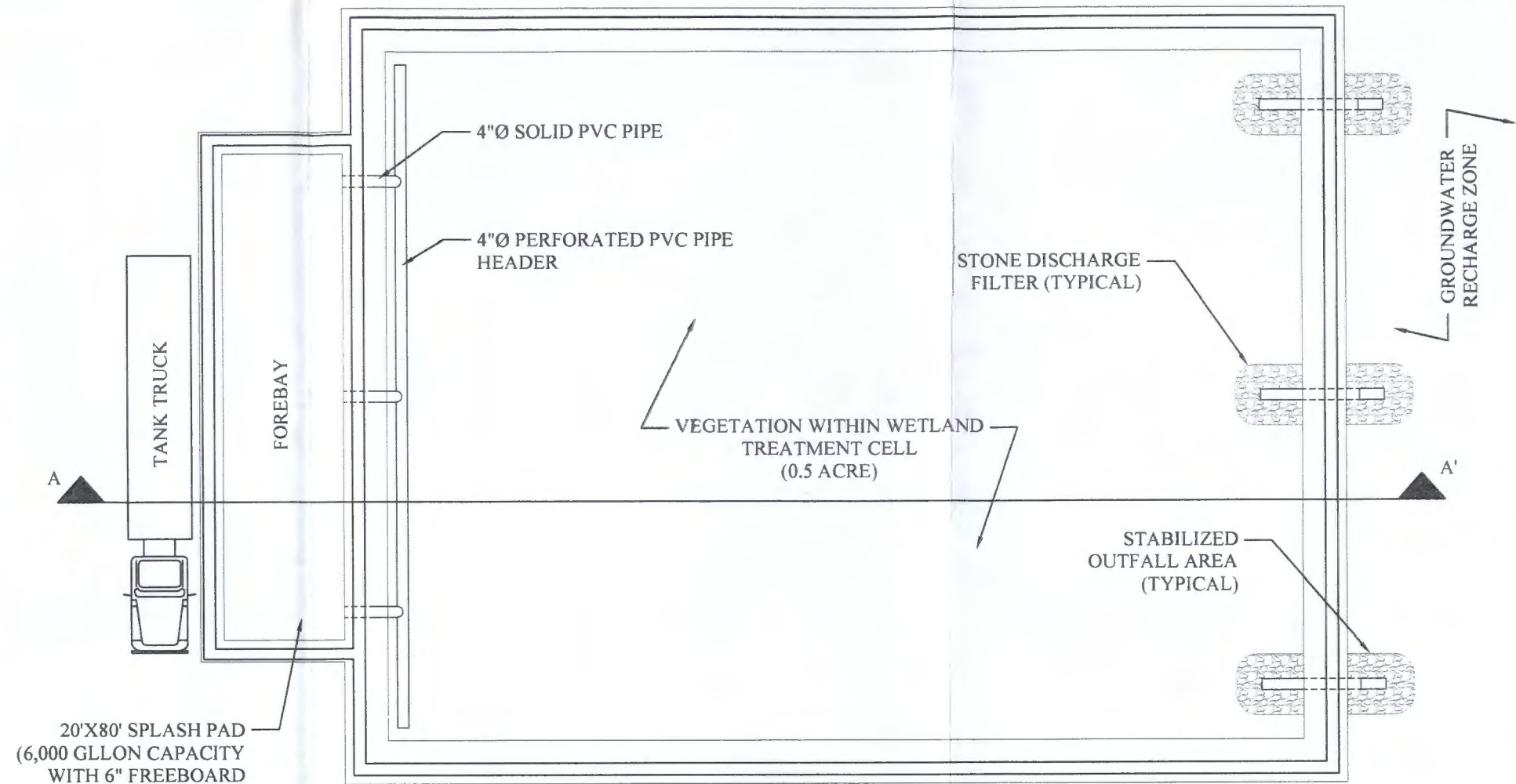
PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: AS NOTED | DWG. NO. 2010-15035 | FIGURE 10





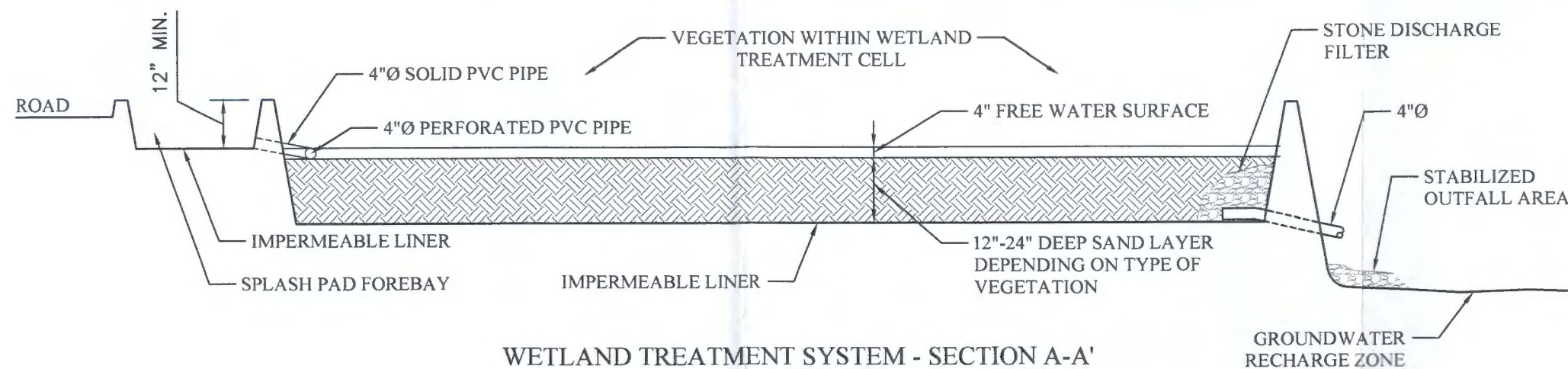
POTENTIAL WETLAND TREATMENT LOCATIONS

SCALE: 1" = 1000'



WETLAND TREATMENT SYSTEM - PLAN

NOT TO SCALE



WETLAND TREATMENT SYSTEM - SECTION A-A'

NOT TO SCALE

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WETLAND TREATMENT SYSTEM  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE COUNTY LANDFILL

TOWN OF GOSHEN

ORANGE CO., N.Y.

PROJ. No.: 2010-15 | DATE: 10/31/14 | SCALE: NOT TO SCALE | DWG. NO. 2010-15036 | FIGURE

**APPENDIX A**

**WALLKILL RIVER FLOOD MITIGATION PLAN  
BLACK DIRT REGION, ORANGE COUNTY, NY  
DATED AUGUST 16, 2013**



**Wallkill River Flood Mitigation Implementation Plan**  
**Black Dirt Region, Orange County, NY**

**Summary of Further Investigations Regarding Flood Mitigation Study Areas**  
**August 16, 2013**

**Introduction**

Based on our July 10, 2013 meeting in Pine Island and on-going discussions with the Soil and Water Conservation District (SWCD) regarding the flood mitigation plan for the Black Dirt Region, we have explored several alternatives in further detail. The same modeling approach was used as previously discussed. We evaluated each alternative for the 2 year and 10 year storm events. For each alternative, we have summarized the advantages and disadvantages to allow the SWCD to make an informed decision on which alternatives to pursue with the current funding as well as potential future funding opportunities. The alternatives considered include:

- Cheechunk Canal Extension (1930's geometry)
- Cheechunk Canal Extension (Floodplain geometry)
- Dredging the Existing Cheechunk Canal to remove sediment
- Remove portion of Celery Ave Rock Ledge
- Remove portion of Pochuck Rock Ledge
- Remove portion of Wallkill Rock Ledge
- Impacts of Orange County Landfill

**Cheechunk Canal Extension (1930's geometry)**

This alternative looks at extending the Cheechunk Canal south from the end of the existing canal towards Oil City Road. The extension was modeled with the geometry laid out in the 1930's Army Corps of Engineers Project. This alternative would cost approximately \$1,800-\$2,000 per foot or \$10 million per mile to construct.

***Advantages/Benefits***

- 3" decrease in 2-year storm upstream of the junction with Pochuck Creek
- 2" decrease in 10-year storm upstream of the junction with Pochuck Creek

***Disadvantages/Considerations***

- ½" increase in water elevations through the existing Cheechunk Canal for the 2-year storm
- minimal increase in peak flows for the 2-year and 10-year storm at the Orange County Landfill
- Minimal increase in water elevation through the existing Cheechunk Canal for the 10-year storm
- Impact to agricultural land, loss of land due to construction of the canal
- Regulatory (NYS DEC, US ACOE, FEMA, U.S. Fish Wildlife, NYSHPO)

### **Cheechunk Canal Extension (90' Floodplain Geometry)**

This alternative extends the Cheechunk Canal south from the end of the existing canal towards Oil City Road, but in lieu of excavating a new channel, this alternative investigates adding capacity by creating a lower floodplain along the banks of the existing river. The floodplain was modeled as a 90 foot floodplain on either side of the main channel. As part of this alternative, the Mayjack Bridge was removed to accommodate the wider floodplain. The lower floodplain associated with this alternative provides storm storage. The cumulative benefit of this storage area is realized as the floodplain is progressed upstream. The lower water surface elevations at Oil City Road are a result of this increased storage area. This alternative would cost approximately \$1800-\$2,000 per foot or \$10 million per mile to construct.

#### ***Advantages/Benefits***

- 1" decrease in 2-year storm upstream of the junction with Pochuck Creek and increasing to 9" at Oil City Road
- 1" decrease in 10-year storm upstream of the junction with Pochuck Creek and increasing to 10" at Oil City Road
- minimal decrease in peak flows for the 2-year storm at the Orange County Landfill
- Suitable with various avenues of future funding
- Environmental Benefits may ease regulatory hurdles
- Costs may be considerably offset by incorporating value of soil in removal or relocation options.
- Relocation of usable soil could be used to offset adjacent agricultural subsidence.

#### ***Disadvantages/Considerations***

- minimal increase in peak flows for the 10-year storm at the Orange County Landfill
- Impact to agricultural land, loss of land due to construction of the canal
- Regulatory (NYS DEC, FEMA, US ACOE) although potential benefits over canal extension alone.

### **Cheechunk Canal Extension (200' Floodplain Geometry)**

This alternative is similar to the alternative above, except the floodplain was expanded to 200 feet either side of the channel. This results in an increased benefit, but also increases the extent of the impact. The water surface changes from the model are summarized below and the remaining advantages/disadvantages are similar to those listed above.

- 3" decrease in 2-year storm upstream of the junction with Pochuck Creek and increasing to 14" at Oil City Road
- 2" decrease in 10-year storm upstream of the junction with Pochuck Creek and increasing to 18" at Oil City Road



**Comparison of Cheechunk Canal Extension - 1930's vs Floodplain Configuration**

| Impact  | 1930's Geometry       | 90' Floodplain Geometry | 200' Floodplain Geometry |
|---|-----------------------|-------------------------|--------------------------|
| Cost  | \$10M/mile            | \$10M/mile              | \$12M/mile               |
| 2-year drop in Water Surface<br>Near Pochuck Creek<br>Near Oil City Road  | 3"<br>3"              | 1"<br>9"                | 3"<br>14"                |
| 10-year drop in Water Surface<br>Near Pochuck Creek<br>Near Oil City Road | 2"<br>2"              | 1"<br>10"               | 2"<br>18"                |
| Active agricultural land impacted by construction                         | 55-60 acres (approx.) | 40-45 acres (approx.)   | 45-50 acres (approx.)    |
| Regulatory hurdles  | High                  | Moderate                | Moderate                 |
| Funding Opportunities   | Few                   | Several                 | Several                  |

**Dredging the Existing Cheechunk Canal to remove sediment**

This alternative evaluates removing the sediment from the bottom of the Cheechunk Canal to increase conveyance of the Canal. This alternative assumed approximately 2' of sediment build up that would be removed through the length of the canal. The excavation of sediment would be transitioned at either end to match the streambed elevation of the Wallkill River upstream and downstream of the canal. The modeling results of this alternative are similar to adding a floodplain bench to the canal which was previously investigated. This alternative also presents a few negative factors that must be considered. The cost to dredge the entire length of the canal would be \$4,000,000-\$5,000,000. This cost could increase if the dredged material is found to include contaminated material. This cost does not include the future maintenance cost associated with repeating this operation in the future as the canal will accumulate silt in the future.

**Advantages/Benefits**

- 6" decrease in 2-year storm immediately through the canal, transitioning to less than an inch at Oil City Road.
- 5" decrease in 10-year storm immediately through the canal, transitioning to less than ½ inch at Oil City Road.

**Disadvantages/Considerations**

- Minimal increase in peak flows for the 2-year and 10-year storms at the Orange County Landfill
- Sediment has potential for containing hazardous waste.
- Lowering invert of the canal would further entrench the river and result in streambank erosion. This option would require transitioning the invert elevation to upstream and downstream and

may require grade control in these areas to prevent incision and streambank erosion from traveling upstream.

- Lowering the invert may cause undermining issues at bridge crossings
- Lowering the invert would lower the groundwater table in the adjacent areas.
- Regulatory (NYS DEC, US ACOE, FEMA, NYSHPO)
- Although deliberated, it has not been confirmed that deposition has occurred in the canal since the original construction. Prior to progressing with this alternative, the extent and rate of deposition should be verified by field measurements to validate that the proposed modeled alternative agrees with the actual field conditions.
- Sediment removal may provide some temporary relief, as shown by the alternative modeled, but the returns will diminish as sediment will likely redeposit over time, requiring future repetitive maintenance.

#### **Remove Portion of the Celery Avenue Rock Ledge**

This alternative evaluates lowering the elevation of the rock ledge to increase conveyance. The removal would consist of a 40 foot wide by 4 foot deep notch in the ledge. The streambed immediately upstream of the ledge would be regraded to transition the lower rock ledge to the existing streambed elevation. In addition streambed stabilization methods would be employed above the rock cut to prevent future erosion of the stream. This alternative would cost approximately \$220,000 to construct.

#### ***Advantages/Benefits***

- 3-4" decrease in 2-year storm immediately upstream of the rock ledge, transitioning to no benefits upstream of the confluence with Quaker/Black Walnut Creek
- ½" decrease in 10-year storm immediately upstream of the rock ledge, no benefits through the rest of the model.
- Minimal decrease in peak flows for the 2-year storm at the Orange County Landfill

#### ***Disadvantages/Considerations***

- Minimal increase in peak flows for the 10-year storm at the Orange County Landfill
- Requires soil boring(s) to evaluate effect on ground water levels
- Regulatory (NYS DEC, US ACOE, FEMA)
- Lowering the channel elevation may further entrench the river and result in streambank erosion. May require grade control and/or streambank stabilization
- Must maintain bankfull channel dimensions to maintain sediment conveyance
- Removal of rock ledges impacts smaller storms more than large events. During the larger storm events the rock ledge is submerged, therefore removing a portion of the ledge has decreased benefit.



### **Remove Portion of the Pochuck Rock Ledge**

This alternative evaluates lowering the elevation of the rock ledge to increase conveyance. The removal would consist of a 40 foot wide by 3 foot deep notch in the ledge. The streambed immediately upstream of the ledge would be regraded to transition the lower rock ledge to the existing streambed elevation. In addition streambed stabilization methods would be employed above the rock cut to prevent future erosion of the stream. This alternative would cost approximately \$200,000 to construct.

#### *Advantages/Benefits*

- 4" decrease in 2-year storm immediately upstream of the rock ledge, transitioning to a 2" decrease at Glenwood Road
- 8" decrease in 10-year storm immediately upstream of the rock ledge, transitioning to a 2" decrease at Glenwood Road

#### *Disadvantages/Considerations*

- Minimal increase in peak flows for the 2-year and 10-year storms at the Orange County Landfill
- Lowering the channel elevation may further entrench the river and result in streambank erosion. May require grade control and/or streambank stabilization.
- Regulatory (NYS DEC, US ACOE, FEMA, NYSHPO)

### **Remove Portion of the Wallkill Rock Ledges**

This alternative evaluates the lowering of the rock ledges on the Wallkill River downstream of Oil City Road. There was not sufficient geometry to accurately model this alternative. Based on approximations in the model, we expect small 1-2" benefits upstream of the rock ledges only. In addition streambed stabilization methods would be employed above the rock cut to prevent future erosion of the stream. This alternative would cost approximately \$200,000 to construct.

#### *Advantages/Benefits*

- Minor decrease in water elevations upstream of the rock ledge

#### *Disadvantages/Considerations*

- Only impacts areas upstream of the ledge
- Potential impacts to Federal Wetlands/Duck Ponds upstream
- Lowering the channel elevation may further entrench the river and result in streambank erosion. May require grade control and/or streambank stabilization.
- Regulatory (NYS DEC, US ACOE, FEMA, NYSHPO)
- Removal of rock ledges impacts smaller storms more than large events. During larger storm events the rock ledge is submerged, therefore removing a portion of the ledge has decreased benefit.

### **Impacts of Orange County Landfill**

While it is understood that the construction of the Landfill may have resulted in some alteration of the river channel in the vicinity of the landfill, there appears to be no evidence or data that would support the theory that the current configuration impedes flows. Reviews of the County's records from the Landfill's slope failure indicate that it was at an isolated location and the damage was predominately rectified. Again, there is no evidence or data that supports the supposition that the minor change in landfill shape and size due to the failure impacts the capacity of the Wallkill River to convey water through the Black Dirt Region.



**APPENDIX B**

**STERLING, AUGUST 17, 2012, ORANGE COUNTY LANDFILL -  
CHEECHUNK CANAL SEEP SAMPLING WORK PLAN**

**&**

**STERLING, SEPTEMBER 20, 2012, ORANGE COUNTY LANDFILL -  
CHEECHUNK CANAL SEEP SAMPLING RESULTS**

# STERLING

Sterling Environmental Engineering, P.C.

August 17, 2012

Ms. Susan Edwards, P.E.  
Chief, Remedial Section D  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Bureau E, 12<sup>th</sup> Floor  
625 Broadway  
Albany, New York 12233-7017

Subject: Orange County Landfill  
NYS Inactive Hazardous Waste Site No. 336007  
Cheechunk Canal Seep Sampling Work Plan  
STERLING File #2010-15

Dear Ms. Edwards,

In response to your letter dated July 16, 2012, the following Work Plan is provided outlining the sampling methodology and procedures for the sampling of seeps along the Cheechunk Canal adjacent to the Orange County Landfill to determine whether the seeps contain leachate constituents and to determine if the Landfill is impacting the canal.

A meeting was conducted August 16, 2012 at the Landfill with Steven Parisio and Carl Hoffman of the NYSDEC and Sterling Environmental Engineering, P.C. (STERLING). Due to heavy vegetation and limited access, the selection of sampling locations could not be finalized. We will return with a boat during the field sampling event to access the seep locations.

## Field Sampling:

Sampling will be conducted by STERLING on August 22, 2012 at the following locations:

- Aqueous and floc samples will be obtained at up to three (3) seep locations adjacent to the canal near the closed landfill.
- An aqueous and floc sample will be obtained at one (1) seep location adjacent to canal upstream of and away from the potential influence of the closed landfill.
- One (1) aqueous grab sample will be obtained from the leachate manhole. A floc sample cannot be obtained at this location.
- Two (2) aqueous grab samples will be obtained from the canal; one (1) adjacent to the largest observed seep and one (1) upstream of the landfill site.

This results in a total of seven (7) aqueous samples and four (4) floc samples. A boat will be furnished by STERLING.

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The grab samples will be obtained at the water surface using a wide mouth glass jar. The aqueous samples will be obtained by use of a peristaltic pump and dedicated tubing.

Field parameters will be measured as follows.

Water Depth, pH, Specific Conductivity, Temperature, and Oxidation Reduction Potential (ORP) measurements will be recorded in the field on data sheets, and provided in the report for sampled locations.

Aqueous samples will be analyzed for NYSDEC 6 NYCRR 360 "Baseline Parameters".

In accordance with NYSDEC's request, floc samples will be analyzed for TOC, Iron, Aluminum, Si, Mn, and Arsenic.

Additionally, an explosive gas survey of the landfill perimeter will be conducted.

Reporting:

A final letter report and original laboratory data sheets will be prepared with appropriate observations and conclusions.

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark P. Millspaugh, P.E.  
President

[mark@sterlingenvironmental.com](mailto:mark@sterlingenvironmental.com)

MPM/bc  
Email/First Class Mail

cc: Peter Hammond, Orange County Department of Public Works  
Steven Parisio, PG, NYSDEC Region 3  
Carl Hoffman, P.E., NYSDEC Central Office



Sterling Environmental Engineering, P.C.

September 20, 2012

Ms. Susan Edwards, P.E.  
Chief, Remedial Section D  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Bureau E, 12<sup>th</sup> Floor  
625 Broadway  
Albany, New York 12233-7017

Subject: Orange County Landfill  
NYS Inactive Hazardous Waste Site No. 336007  
Cheechunk Canal Seep Sampling  
STERLING File #2010-15 (Task 310)

Dear Ms. Edwards,

In accordance with the August 17, 2012 Work Plan approved by the NYSDEC, Sterling Environmental Engineering, P.C. (STERLING) met with the NYSDEC at the Orange County Landfill on August 16, 2012 for the purpose of selecting sampling locations. Due to the limited accessibility of the shoreline of the Cheechunk Canal, the NYSDEC deferred the decision on sampling locations until the August 22, 2012 sampling event.

On August 22, 2012, STERLING provided a canoe so that NYSDEC personnel could inspect the entire riverbank along the Landfill in order to identify seep locations and to select suitable, representative sampling locations. Based upon the inspection, samples were obtained as follows:

- Aqueous and floc samples were obtained at two (2) seep locations adjacent to the canal near the closed Landfill. These locations are shown as Seep 1 and Seep 3 on Figure 1.
- One (1) background floc sample was obtained at the seep location indicated as Seep 2 on Figure 1 containing precipitate similar in appearance to the aforementioned floc samples adjacent to canal, at a location not adjacent to the footprint of the closed Landfill.
- One (1) aqueous grab sample was obtained from the leachate manhole shown as LMH1 in Figure 1. A floc sample was not obtained at this location as there was no visible precipitate.
- Two (2) aqueous grab samples were obtained from the canal; one (1) adjacent to the largest observed seep shown as SW02 and one (1) upstream of the Landfill site shown as SW01 (see Figure 1).

This results in a total of five (5) aqueous samples and three (3) floc samples.

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---

24 Wade Road + Latham, New York 12110 + Tel: 518-456-4900 + Fax: 518-456-3532  
E-mail: [sterling@sterlingenvironmental.com](mailto:sterling@sterlingenvironmental.com) + Website: [www.sterlingenvironmental.com](http://www.sterlingenvironmental.com)

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Samples were submitted to TestAmerica, Inc. located in Amherst, NY. The analytical results are summarized by Tables 1 through 3 attached. The full laboratory analytical reports are also provided with this letter.

#### **FINDINGS:**

Floc sample results are summarized by Table 1 along with a comparison to Soil Cleanup Objectives (SCOs) stated in CP-51 and 6 NYCRR 375-6. Comparisons are also made to the reported natural range for soils in New York State.

The floc results are consistent with natural occurring levels and are not indicative of a release from the Landfill. In fact, the results for Seep 2, which is not situated in an area which would be influenced by the Landfill, are comparable to the locations near the Landfill. Further, seeps and surficial red staining are also evident on the south side of the canal which cannot be caused by any Landfill influence.

Regarding the analysis of water samples collected at the identified seep and surface water locations, field parameters and sample analytical results are presented in Tables 2 and 3. This data was compared to the surface and groundwater post-closure monitoring data reported in the July 2012 report by Cornerstone Environmental summarizing the 2012 post-closure monitoring event. The two seep locations sampled are nearest to existing groundwater wells PZ-4, MW-3B and MW-222. No appreciable differences were noted in comparing the seep sample results to the reported site groundwater condition.

Ammonia was detected in all seep and surface water locations in excess of the surface water standards ranging from 0.049 mg/l to 40.0 mg/l. Ammonia levels reported for the groundwater at wells PZ-4, MW-3B and MW-222 indicate a range of 0.13 to 5.2 mg/l. While Ammonia levels reported for Seep 1 and Seep 3 are elevated relative to the surface water sample locations in the canal, we also note Ammonia is present in the upgradient groundwater monitoring wells.

Iron was detected in all seep and surface water locations in excess of the surface water standards ranging from 1.4 to 6.5 mg/l. A review of Iron levels reported for groundwater wells PZ-4, MW-3B and MW-222 indicate a range of 2.05 to 126 mg/l. Elevated Iron is also noted in groundwater wells upgradient of the Landfill. The observed Iron concentrations at Seeps 1 and 3 are much lower than the concentration observed in nearby groundwater.

The analysis of the leachate sample from LMH1 was reviewed and compared to the water sample results at the seep locations. Typical leachate parameters (Ammonia, Iron, Manganese, Phenol, etc.) present in the leachate are also present in the seeps at much lower concentrations and except for Ammonia and Iron all parameters are within the applicable surface water standards at the seep locations.

There were no reported exceedances of volatile or semi-volatile parameters at the seep locations.

#### **CONCLUSION:**

The analyses of seep, surface water and flocculent samples are consistent with previously reported groundwater quality at the site. The data does not indicate a release from the Landfill has or is currently occurring. The water quality reported for the seeps is within the naturally occurring range. In fact, other

seeps and reddish stained areas exist along both sides of the Cheechunk Canal including areas removed from the Landfill.

Accordingly, no further response is recommended regarding these seeps.

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark P. Millspaugh, P.E.

President

[mark@sterlingenvironmental.com](mailto:mark@sterlingenvironmental.com)

MPM/bc  
Email/First Class Mail  
Attachments

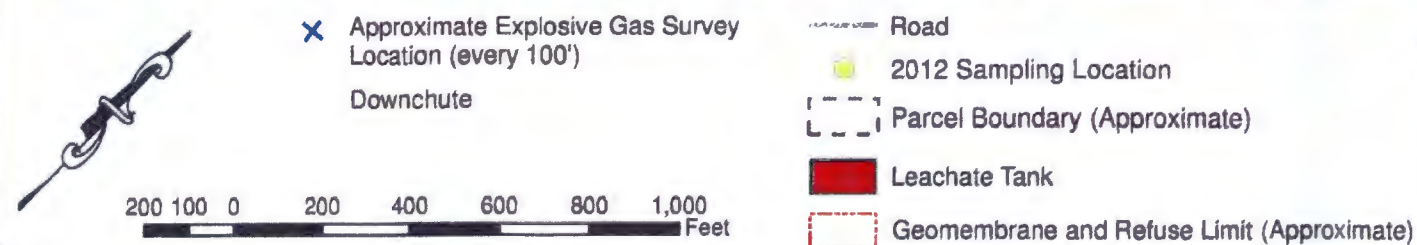
cc: Peter Hammond, Orange County Department of Public Works  
Steven Parisio, PG, NYSDEC Region 3  
Carl Hoffman, P.E., NYSDEC Central Office

2010-15/Correspondence/NYSDEC\_Cheechunk\_Canal Seep Sampling Results\_ltr.doc





GIS FIGURE 1



**S E R L I N G**

Sterling Environmental Engineering, P.C.  
24 Wade Road • Latham, New York 12110

2012 CHEECHUNK CANAL SURFACE WATER,  
SEEP & LANDFILL LEACHATE SAMPLING AND  
ORANGE COUNTY LANDFILL EXPLOSIVE GAS SURVEY  
**ORANGE COUNTY**  
**ORANGE COUNTY LANDFILL**  
TOWN OF GOSHEN ORANGE CO., N.Y.

|                    |                 |                 |                        |          |
|--------------------|-----------------|-----------------|------------------------|----------|
| PROJ. No.: 2010-15 | DATE: 8-28-2012 | SCALE: AS SHOWN | DWG. NO. 2010-15003GIS | FIGURE 1 |
|--------------------|-----------------|-----------------|------------------------|----------|



**TABLE 1**  
**Orange County Landfill**  
**2012 Floc Sample Results**

Lab Name: TestAmerica Buffalo  
 Customer: Sterling Environmental Engineering PC  
 Job No: 480-24283-1  
 Date :09/04/2012

Date Sampled 08/22/12

**METALS BY 6010B (SOLID) MG/KG**

| Analyte   | CP-51 Standard or Guidance Value (PPM) | 6 NYCRR Part 375-6* (PPM) | Reported New York Soil Natural Range <sup>(1)</sup> (PPM) | Floc 1 |   | Floc 2 |   | Floc 3 |   |
|-----------|--|---------------------------|---|--------|---|--------|---|--------|---|
| Aluminum  | 10,000                                 | NA                        | 11,000 - 22,000   | 11,000 |   | 11,000 |   | 15,000 |   |
| Arsenic   | NA                                     | 13 a                      | 2.2 - 28  | 44     |   | 15     |   | 25     |   |
| Iron      | 2,000                                  | NA                        | 0 - 30,000  | 27,000 | B | 25,000 | B | 33,000 | B |
| Manganese | NA                                     | 1,600 a                   | 146 - 2,285   | 470    |   | 1,100  |   | 750    |   |
| Selenium  | NA                                     | 3.9 a                     | 0.4 - 5.1   | 0.79   | U | 0.92   | U | 0.77   | U |

**GENERAL CHEMISTRY BY 9060 (SOLID) MG/KG**

|                      |    |    |    |     |   |      |   |    |   |
|----------------------|----|----|----|-----|---|------|---|----|---|
| Total Organic Carbon | NA | NA | NA | 120 | B | 2800 | B | 23 | B |
|----------------------|----|----|----|-----|---|------|---|----|---|

**Notes:**

NA - No standard or guidance value is available for these substances.

B - Compound was found in the blank and sample.

U - Indicates the analyte was analyzed for but not detected.

\* - Unrestricted Use Soil Cleanup Objectives Table 375-6.8(a)

(1) = New York State Brownfield Cleanup Program Development of Soil Cleanup Objectives Technical Support Document, Appendix D - Concentration of Selected Analytes in Rural New York State Surface Soils: A Summary Report on the Statewide Rural Surface Soil Survey, dated August 2005.

a - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the NYSDEC and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.



**TABLE 2**  
**Orange County Landfill**  
**2012 Seep Sampling - Water Quality Monitoring**  
**Field Parameters Measurements Obtained 8/22/2012**

| Parameter            | Title 6 Part 703.5 Standards | Units              | Seep 01<br>(Adjacent to Landfill) | Seep 03<br>(Adjacent to Landfill) | SW01 (Canal<br>Upstream of Landfill) | SW02 (Canal<br>Adjacent to Seep 03) | LMH1<br>(Leachate Manhole) |
|----------------------|------------------------------|--------------------|-----------------------------------|-----------------------------------|--------------------------------------|-------------------------------------|----------------------------|
| Specific Conductance | --                           | mS/cm <sup>c</sup> | 0.772                             | 0.695                             | 0.479                                | 0.488                               | 3.129                      |
| Temperature          | --                           | degrees C          | 20.77                             | 23.88                             | 22.17                                | 23.25                               | 24.16                      |
| pH                   | 6.5<pH< 8.5                  | pH Units           | 7.03                              | ---                               | 7.78                                 | 7.80                                | ---                        |
| ORP                  | --                           | mV                 | -90.6                             | -77.0                             | 43.9                                 | -20.6                               | -46.1                      |
| Dissolved Oxygen     | --                           | mg/L               | 9.3                               | 8.17                              | 6.78                                 | 6.68                                | 8.05                       |

Values in **BOLD** indicate an exceedance of applicable water quality standard or guidance value.

--- = No standard or not measured.



TABLE 3  
Orange County Landfill  
2012 Seep Sampling - Water Quality Results  
August 22, 2012

| Analyte                      | CAS Number  | Units       | Specific Method                    | Reports To   | Reg 1 | SW01<br>Canal<br>Upstream of<br>Landfill<br>08/22/12 | SW02<br>Canal Adjacent<br>to Seep 03<br>08/22/12 | Seep 01<br>Adjacent to<br>Landfill<br>08/22/12 | Seep 03<br>Adjacent to<br>Landfill<br>08/22/12 | LMH1<br>Leachate<br>Manhole<br>08/22/12 |
|------------------------------|-------------|-------------|------------------------------------|--------------|-------|--|--|--|--|---|
| 1,1,1-Trichloroethane        | 71-55-6     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,1,2,2-Tetrachloroethane    | 79-34-5     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,1,2-Trichloroethane        | 79-00-5     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,1-Dichloroethane           | 75-34-3     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,1-Dichloroethene           | 75-35-4     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,2,3-Trichloropropane       | 96-18-4     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,2-Dibromo-3-Chloropropane  | 96-12-8     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,2-Dibromoethane            | 106-93-4    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,2-Dichlorobenzene          | 95-50-1     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 5(1)   | ND   | ND   | ND   | ND                                      |
| 1,2-Dichloroethane           | 107-06-2    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,2-Dichloropropane          | 78-87-5     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 1,3-Dichlorobenzene          | 541-73-1    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 5(1)   | ND   | ND   | ND   | ND                                      |
| 1,4-Dichlorobenzene          | 106-46-7    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 5(1)   | ND   | ND   | ND   | ND                                      |
| 2-Butanone (MEK)             | 78-93-3     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 2-Chloroethyl vinyl ether    | 110-75-8    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| 4-Methyl-2-pentanone (MIBK)  | 108-10-1    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Acetone                      | 67-64-1     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | 3.9 J  | 47 J                                    |
| Acrylonitrile                | 107-13-1    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Alkalinity, Total            | N/A         | mg/L        | Alkalinity                         | 310.2        | MRL   | ---  | 130 B  | 140 B  | 640  | 850                                     |
| Aluminum                     | 7429-90-5   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | ---  | 1.5  | 1.6  | 0.22   | 0.8                                     |
| Ammonia                      | 7664-41-7   | mg/L        | Nitrogen, Ammonia                  | 350.1        | MRL   | 0.044  | 0.049  | 0.21   | 40   | 13                                      |
| Antimony                     | 7440-36-0   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Arsenic                      | 7440-38-2   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | 0.15   | ND   | ND   | 0.094  | 0.048                                   |
| Barium                       | 7440-39-3   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | ---  | 0.033  | 0.039  | 0.44   | 0.33                                    |
| Benzene                      | 71-43-2     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 0.01   | ND   | ND   | ND   | ND                                      |
| Beryllium                    | 7440-41-7   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | ---  | ND*  | ND*  | ND*  | ND*                                     |
| Biochemical Oxygen Demand    | N/A         | mg/L        | BOD, 5-Day                         | 5210B        | MDL   | ---  | 3.3 b  | ND   | ND   | 5.8 b                                   |
| Boron                        | 7440-42-8   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | 10   | 0.035 B  | 0.036 B  | 0.37 B   | 0.23 B                                  |
| Bromide                      | 24959-67-9  | mg/L        | Anions, Ion Chromatography         | 300.0_28D    | MRL   | ---  | ND   | ND   | 0.65   | 0.75                                    |
| Bromodichloromethane         | 75-27-4     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Bromoform                    | 75-25-2     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Bromomethane                 | 74-83-9     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Cadmium                      | 7440-43-9   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.8  | ND   | ND   | ND   | ND                                      |
| Calcium                      | 7440-70-2   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | ---  | 45   | 46   | 100  | 130                                     |
| Carbon disulfide             | 75-15-0     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Carbon tetrachloride         | 56-23-5     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Chemical Oxygen Demand       | N/A         | mg/L        | COD                                | 410.4        | MRL   | ---  | 14   | 15   | 21   | 22                                      |
| Chloride                     | 16887-00-6  | mg/L        | Anions, Ion Chromatography         | 300.0_28D    | MRL   | ---  | 46   | 47   | 82   | 63                                      |
| Chlorobenzene                | 108-90-7    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 5  | ND   | ND   | ND   | ND                                      |
| Chloroethane                 | 75-00-3     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Chloroform                   | 67-66-3     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Chloromethane                | 74-87-3     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Chromium                     | 7440-47-3   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.47   | 0.0016 J   | 0.0022 J                                       | ND   | 0.0011 J                                |
| Chromium, hexavalent         | 18540-29-9  | mg/L        | Chromium, Hexavalent               | 7196A        | MDL   | 0.011  | ND   | ND   | ND   | ND                                      |
| cis-1,2-Dichloroethene       | 156-59-2    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| cis-1,3-Dichloropropene      | 10061-01-5  | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Cobalt                       | 7440-48-4   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.005  | 0.00067 J  | ND   | ND   | 0.0034 J                                |
| Color                        | N/A         | Color Units | Color, Colorimetric                | 2120B        | MRL   | ---  | 40   | 50   | 150  | 35                                      |
| Copper                       | 7440-50-8   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.89   | 0.0034 J   | 0.0031 J                                       | ND   | 0.0038 J                                |
| Cyanide, Total               | 57-12-5     | mg/L        | Cyanide, Total and/or Amenable     | 9012A        | MDL   | 0.0052   | ND   | ND   | ND   | 0.0054 J                                |
| Dibromochloromethane         | 124-48-1    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Dichlorodifluoromethane      | 75-71-8     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Ethylbenzene                 | 100-41-4    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 0.017 GV   | ND   | ND   | ND   | ND                                      |
| Hardness                     | N/A         | mg/L        | Hardness, Total                    | 2340C        | MRL   | ---  | 18 J   | 180  | 530  | 540                                     |
| Iron                         | 7439-89-6   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | 0.3  | 1.4  | 1.4  | 6.5  | 3.2                                     |
| Lead                         | 7439-92-1   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.45   | ND   | ND   | ND   | ND                                      |
| Magnesium                    | 7439-95-4   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | ---  | 15   | 16   | 41   | 51                                      |
| Manganese                    | 7439-96-5   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | ---  | 0.14   | 0.15   | 0.54   | 1.7                                     |
| Mercury                      | 7439-97-6   | mg/L        | Mercury (CVAA)                     | 7470A        | MDL   | 0.0007   | ND   | ND   | ND   | ND                                      |
| Methylene Chloride           | 75-09-2     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| m-Xylene & p-Xylene          | 179601-23-1 | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 65(2)  | ND   | ND   | ND   | ND                                      |
| Nickel                       | 7440-02-0   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | 0.99   | 0.0015 J   | 0.0016 J                                       | 0.0093 J                                       | 0.0090 J                                |
| Nitrate as N                 | 14797-55-8  | mg/L        | Nitrogen, Nitrate-Nitrite          | NITRATE_CALC | MDL   | ---  | 0.77   | 0.83   | ND   | 0.26                                    |
| o-Xylene                     | 95-47-6     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 65(2)  | ND   | ND   | ND   | ND                                      |
| Phenolics, Total Recoverable | N/A         | mg/L        | Phenolics, Total Recoverable       | 9066         | MRL   | ---  | ND   | ND   | 0.0054 J                                       | ND                                      |
| Potassium                    | 7440-09-7   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | ---  | 3.2  | 3.3  | 23   | 15                                      |
| Selenium                     | 7782-49-2   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.0046   | ND   | ND   | ND   | ND                                      |
| Silver                       | 7440-22-4   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.0001   | ND   | ND   | ND   | ND                                      |
| Sodium                       | 7440-23-5   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | ---  | 29   | 30   | 81   | 59                                      |
| Styrene                      | 100-42-5    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Sulfate                      | 14808-79-8  | mg/L        | Anions, Ion Chromatography         | 300.0_28D    | MRL   | ---  | 19   | 19   | 19   | 7.7                                     |
| Tetrachloroethene            | 127-18-4    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 1 GV   | ND   | ND   | ND   | ND                                      |
| Thallium                     | 7440-28-0   | mg/L        | Metals (ICP)                       | 6010B        | MDL   | 0.008  | ND   | ND   | ND   | ND                                      |
| Toluene                      | 108-88-3    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 0.1  | ND   | ND   | ND   | ND                                      |
| Total Dissolved Solids       | N/A         | mg/L        | Solids, Total Dissolved (TDS)      | 2540C_CALC   | MRL   | ---  | 300  | 300  | 680  | 780                                     |
| Total Kjeldahl Nitrogen      | N/A         | mg/L        | Nitrogen, Total Kjeldahl           | 351.2        | MRL   | ---  | 2.4  | 0.97   | 38   | 12                                      |
| Total Organic Carbon         | 7440-44-0   | mg/L        | Organic Carbon, Total (TOC)        | 9060         | MRL   | ---  | 5.8  | 5.5  | 6.1  | 6                                       |
| trans-1,2-Dichloroethene     | 156-60-5    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| trans-1,3-Dichloropropene    | 10061-02-6  | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| trans-1,4-Dichloro-2-butene  | 110-57-6    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Trichloroethene              | 79-01-6     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 40   | ND   | ND   | ND   | ND                                      |
| Trichlorofluoromethane       | 75-69-4     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Turbidity                    | N/A         | NTU         | Turbidity, Nephelometric           | 180.1        | MRL   | ---  | 37   | 29   | 66   | ND                                      |
| Vanadium                     | 7440-62-2   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | 0.014  | 0.0043 J   | 0.0033 J                                       | 0.0017 J                                       | 0.0074                                  |
| Vinyl acetate                | 108-05-4    | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Vinyl chloride               | 75-01-4     | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | ---  | ND   | ND   | ND   | ND                                      |
| Xylenes, Total               | 1330-20-7   | ug/L        | Volatile Organic Compounds (GC/MS) | 624_5ML      | MDL   | 65(2)  | ND   | ND   | ND   | ND                                      |
| Zinc                         | 7440-66-6   | mg/L        | Metals (ICP)                       | 6010B        | MRL   | 2.96   | 0.0069 J B                                       | 0.0095 J B                                     | 0.0096 J B                                     | 0.010 B                                 |

Reg 1 T.O.G.S. 1.1.1 Surface Water Standards C Streams.

**Bold** = Value indicates reported concentration exceeds applicable water quality standard.  
**B** = Compound was found in the blank and sample.  
**GV** = Guidance Value  
**J** = Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.  
**(1)** = Applies to the sum of 1,2-, 1,3- and 1,4-Dichlorobenzene.  
**(2)** = Applies to the sum of m-, o- and p-Xylene.  
**\*** = 11 ug/L, when hardness is less than or equal to 75 ppm; 1,100 ug/L when hardness is greater than 75 ppm  
**MDL** = Method Detection Limit  
**MRL** = Method Reporting Limit  
**ND** = Not Detected  
**---** = No Existing Standard  
**b** = Result Detected in the USB



**APPENDIX C**

**NYSDEC, AUGUST 24, 2012, REGION 3/SOLID WASTE PROGRAM,  
SOLID WASTE MANAGEMENT FACILITY SITE VISIT REPORT  
(AUGUST 22, 2012) - ORANGE COUNTY LANDFILL, TOWN OF  
GOSHEN, ORANGE COUNTY**

Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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|                                    |   |
|------------------------------------|---|
| Facility Name/Location:            | Orange County Landfill, T-Goshen, Orange County   |
| Date of Site Visit:                | August 22, 2012   |
| DEC Staff Present:                 | Steven Parisio, Carl Hoffman  |
| Others Present:                    | Mark Millspaugh, Nathan Shafer<br>Sterling Environmental Engineering P.C.   |
| Background Information:            | Concerns have been expressed by the public regarding "orange goo" seeping from the bank of the Cheechunk Canal (Wallkill River) downslope of the landfill. The County has agreed to collect and analyze environmental samples to determine whether these discharges are impacting water quality or otherwise pose a threat to the environment. After consultation with Department staff, a sampling plan was submitted on August 17, 2012 by Sterling Environmental Engineering P.C on behalf of the County. The plan includes sampling of groundwater (from seeps), surface water and leachate for Part 360 baseline parameters and sampling of iron flocs for iron, TOC, arsenic and other selected metals. |
| Purpose of Site Visit:             | To observe and assist with sampling and to collect split samples for analysis by the Department's contact lab.  |
| New Issues and Follow-up Required: | Department staff collected 3 water samples and 2 iron floc samples which were splits of samples collected by Sterling. Table 1 provides a summary of the samples collected and Figure 1 shows the sampling locations.   |
| Report prepared by:                | Steven Parisio  |
| Report Date:                       | August 24, 2012   |



Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report



Figure 1. Orange County Landfill and vicinity, August 22, 2012 sampling locations.



Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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Table 1. Samples Collected at Orange Co. Landfill on August 22, 2012 by Sterling Environmental Engineering, P.C. & NYSDEC

| Sterling Sample ID | DEC Split Sample ID | Sample Time | Latitude  | Longitude | Sample Description/Comments   |
|--------------------|---------------------|-------------|-----------|-----------|---|
| FLOC 02            | NA                  | 11:00       | N41.39458 | W74.39368 | Background sample of grey silt w/iron floc coatings; No DEC split due to insufficient sample volume                       |
| SW 01              | 121115-OCLF-01      | 12:11       | N41.38489 | W74.40900 | Surface water from Cheechunk Canal upstream of landfill   |
| LMH                | 121115-OCLF-02      | 13:00       | N41.38882 | W74.40141 | Leachate from manhole upslope of seeps  |
| FLOC 01            | 121115-OCLF-04      | 13:15       | N41.38846 | W74.40131 | Gray silt with iron floc coating on river bank downslope of leachate manhole; Upstream and smaller of two adjacent seeps  |
| FLOC 03            | 121115-OCLF-05      | 13:40       | N41.38846 | W74.40128 | Gray silt with iron floc coating on river bank downslope of leachate manhole; Downstream and larger of two adjacent seeps |
| GW 03              | 121115-OCLF-03      | 14:00       | N41.38846 | W74.40128 | Groundwater discharging from seep in area of sample FLOC 03 (DEC Split 121115-OCLF-05)                                    |
| SW 02              | NA                  | 14:00       | N41.38846 | W74.40128 | Surface water where seeps with iron flocs enter the Cheechunk Canal   |
| GW 01              | NA                  | 15:00       | N41.38846 | W74.40131 | Groundwater discharging from seep in area of sample FLOC 01 (DEC Split 121115-OCLF-04)                                    |



Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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A thorough reconnaissance of the Cheechunk Canal was carried out using a canoe provided by Sterling. Both banks were examined along a stretch extending from the upstream end of the landfill to a point well beyond the downstream end of the landfill (see figure 1). Several flowing seeps with iron flocs were observed in the area immediately downslope of the leachate manhole. Dried iron floc residues without active seepage were observed at two locations considered to be outside of the influence of landfill-derived groundwater contamination.



Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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Iron floc residues were observed adhering to exposed plant roots in an erosional gully in the bank of the canal opposite the landfill.. No moisture was present on the day of our sampling event. This is the location where seepage and iron flocs had been observed by Department staff during a site visit on April 18, 2012. A sample was collected from this location but was not submitted for analysis because a more suitable background sample was observed further downstream.



Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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Sterling collected a floc sample (FLOC 02) from the northwest bank (landfill side) of the canal at a location far enough downstream to be outside of the immediate influence of landfill-derived groundwater contamination. The sample consisted of gray silt with a coating of iron floc. A DEC split sample was not collected due to inadequate sample volume. No groundwater sample was collected here because the rate and volume of the seep was inadequate to allow collection of a liquid sample.



Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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An upstream surface water sample (SW 01) was collected by Sterling in the Cheechunk Canal.  
A split sample (121115-OCLF-01) was collected by DEC staff.



Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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An iron floc sample (Sterling FLOC 01, DEC split 121115-OCLF-04) and a groundwater seep sample (Sterling GW 01) was collected from this location which is downslope of the leachate manhole. Iron floc was present as only a thin film on the surface of the gray silt and a pure iron floc sample could not be collected. The iron floc sample consisted of gray silt with a thin coating of iron floc.

Region 3/Solid Waste Program  
Solid Waste Management Facility Site Visit Report

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Slightly downstream of the FLOC 02 sampling location, a larger area of seepage and iron floc was observed. Iron floc sample FLOC3 (Sterling ID) and 121115-OCLF-05 (DEC split) were collected here. Iron floc was present as only a thin film on the surface of the gray silt and a pure iron floc sample could not be collected. The iron floc sample consisted of gray silt with a thin coating of iron floc.



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Groundwater seeping out of the area of iron floc deposition at sample location FLOC 03 was collected using a peristaltic pump. A small depression was excavated in the seepage channel downstream of the iron floc deposits and just upstream of where the seep enters the canal. By letting the silt settle out and by keeping the end of the pump tubing just below the water surface, a turbidity-free sample of the seep discharge was collected. This was sample GW 03 (Sterling) and 121115-OCLF-05 (DEC split sample).



**APPENDIX D**

**STERLING, OCTOBER 19, 2012, ORANGE COUNTY LANDFILL - WORK  
PLAN TO EVALUATE LEACHATE COLLECTION SYSTEM**



# STERLING

Sterling Environmental Engineering, P.C.

October 19, 2012

Ms. Susan Edwards, P.E.  
Chief, Remedial Section D  
NYS Department of Environmental Conservation  
Division of Environmental Remediation  
Remedial Bureau E, 12<sup>th</sup> Floor  
625 Broadway  
Albany, New York 12233-7017

Subject: Orange County Landfill  
Work Plan to Evaluate Leachate Collection System  
STERLING File #2010-15 (Task 310)

Dear Ms. Edwards,

On Monday, October 15, 2012, I met with Mr. Peter Hammond and Mr. Brian Ritzinger at the Orange County Landfill to determine an appropriate course of action to assess the integrity of the existing leachate collection system upslope of the recently sampled seeps and leachate manhole. Results of the sampling were provided to the New York State Department of Environmental Conservation (NYSDEC) by letter dated September 20, 2012 and were also the subject of a conference call with the NYSDEC on October 10, 2012.

Following the meeting at the Landfill, Brian Ritzinger and I inspected leachate Tanks 4 and 5 along with the adjacent pump chambers. We also inspected the manhole between leachate Tanks 4 and 5 which was previously observed to contain a pump and riser pipe. It is this manhole and pump system that Mr. Carl Hoffman specifically mentioned during the October 10, 2012 conference call.

Brian Ritzinger and I determined that the leachate collection trenches convey collected leachate by gravity to the sumps adjacent to the leachate tanks. Manhole MH-9, upon further evaluation, is no longer in use and the electrical service is not connected. Operational records indicate the manhole is regularly pumped out when the leachate tanks are emptied.

Insomuch as the pump and forcemain from MH-9 are not in use, there is no need to conduct an integrity test of the forcemain. Rather, Orange County will proceed to obtain price quotes from qualified contractors capable of performing internal video inspections of the leachate collection trench pipes between leachate Tanks 4 and 5.

The County has determined it cannot use the inspection equipment maintained by the Sewer Department due to access limitations and observed explosive atmosphere. This inspection will require the services of a trained, qualified contractor.

The County has determined that competitive quotes should be obtained and Sterling Environmental Engineering, P.C. is proceeding to develop the Request for Proposals.

*"Serving our clients and the environment since 1993"*

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24 Wade Road ♦ Latham, New York 12110 ♦ Tel: 518-456-4900 ♦ Fax: 518-456-3532  
E-mail: [sterling@sterlingenvironmental.com](mailto:sterling@sterlingenvironmental.com) ♦ Website: [www.sterlingenvironmental.com](http://www.sterlingenvironmental.com)

---

Please contact me should you have any questions.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark P. Millsbaugh, P.E.  
President  
[mark@sterlingenvironmental.com](mailto:mark@sterlingenvironmental.com)

MPM/bc  
Email/First Class Mail

cc: Peter Hammond, Orange County Department of Public Works  
Steven Parisio, PG, NYSDEC Region 3  
Carl Hoffman, P.E., NYSDEC Central Office

2010-15/Correspondence/NYSDEC\_Work Plan To Evaluate Leachate Collection System\_ltr.doc



**APPENDIX E**

**AUGUST 21, 2013  
CHEECHUNK CANAL SEEP SAMPLING  
ANALYTICAL RESULTS**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-44452-1

Client Project/Site: Orange County Landfill

For:

Sterling Environmental Engineering PC

24 Wade Road

Latham, New York 12110

Attn: Nathan J Shaffer



Authorized for release by:

9/4/2013 3:48:31 PM

Lisa Shaffer, Project Manager I

[lisa.shaffer@testamericainc.com](mailto:lisa.shaffer@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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## Definitions/Glossary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Qualifiers

#### Metals

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| B         | Compound was found in the blank and sample.  |

#### General Chemistry

| Qualifier | Qualifier Description  |
|-----------|--|
| H         | Sample was prepped or analyzed beyond the specified holding time   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| *         | LCS or LCSD exceeds the control limits   |
| ^         | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.   |
| B         | Compound was found in the blank and sample.  |
| b         | Result Detected in the Unseeded Control blank (USB).   |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| D              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CNF            | Contains no Free Liquid   |
| DER            | Duplicate error ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision level concentration  |
| MDA            | Minimum detectable activity   |
| EDL            | Estimated Detection Limit   |
| MDC            | Minimum detectable concentration  |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| NC             | Not Calculated  |
| ND             | Not detected at the reporting limit (or MDL or EDL if shown)  |
| PQL            | Practical Quantitation Limit  |
| QC             | Quality Control   |
| RER            | Relative error ratio  |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |



## Case Narrative

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

Job ID: 480-44452-1

Laboratory: TestAmerica Buffalo

### Narrative

Job Narrative  
480-44452-1

### Comments

No additional comments.

### Receipt

The samples were received on 8/23/2013 2:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.7° C.

### HPLC

Method(s) 300.0: The continuing calibration verification (CCV) for Bromide associated with batch 135669 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No other analytical or quality issues were noted.

### Metals

Method(s) 6010B: The Method Blank for batch 480-135533 contained total potassium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples GW-A (480-44452-1), GW-B (480-44452-2), GW-D (480-44452-3) was not performed.

Method(s) 6010B: The Method Blank for batch 480-136979 contained dissolved aluminum, barium, calcium, manganese, and zinc above the method detection limits. These target analyte concentrations were less than the reporting limits (RLs); therefore, re-extraction and/or re-analysis of sample GW-D (480-44452-3) was not performed.

No other analytical or quality issues were noted.

### General Chemistry

Method(s) SM 2540C: Due to the matrix, the initial volume(s) used for the following sample(s) deviated from the standard procedure: GW-D (480-44452-3). The reporting limits (RLs) have been adjusted proportionately.

Method(s) 310.2: The method blank for batch 136002 contained Alkalinity above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. GW-A (480-44452-1), GW-B (480-44452-2), GW-D (480-44452-3)

Method(s) 351.2: The method blank for batch 135990 contained TKN above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. GW-B (480-44452-2), GW-D (480-44452-3)

Method(s) SM 5210B: For batch # 135640, the USB dilution water D.O. depletion was greater than 0.2 mg/L but less than the reporting limit of 2.0 mg/L. The associated sample results are reported. (USB 480-135640/1)

Method(s) 7196A: The following samples were received outside of holding time: GW-A (480-44452-1), GW-B (480-44452-2), GW-D (480-44452-3).

Method(s) 335.4, 9012A: The method blank for batch 135893 contained Cyanide above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. GW-B (480-44452-2)

No other analytical or quality issues were noted.

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

Client Sample ID: GW-A

Lab Sample ID: 480-44452-1

| Analyte                 | Result | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D | Method   | Prep Type |
|-------------------------|--------|-----------|--------|---------|-------------|-----|-----|---|----------|-----------|
| Aluminum                | 0.23   |           | 0.20   | 0.060   | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Barium                  | 0.022  |           | 0.0020 | 0.00070 | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Boron                   | 0.092  |           | 0.020  | 0.0040  | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Calcium                 | 56     |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Copper                  | 0.0044 | J         | 0.010  | 0.0016  | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Iron                    | 0.34   |           | 0.050  | 0.019   | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Magnesium               | 9.3    |           | 0.20   | 0.043   | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Manganese               | 0.047  |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Potassium               | 2.2    | B         | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Sodium                  | 16     |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Zinc                    | 0.0017 | J         | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010B    | Total/NA  |
| Chloride                | 23     |           | 0.50   | 0.28    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                 | 27     |           | 2.0    | 0.35    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total       | 170    | B         | 50     | 20      | mg/L        | 5   |     |   | 310.2    | Total/NA  |
| Ammonia                 | 0.018  | J         | 0.020  | 0.0090  | mg/L        | 1   |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen | 0.50   |           | 0.20   | 0.15    | mg/L        | 1   |     |   | 351.2    | Total/NA  |
| Nitrate as N            | 0.33   |           | 0.050  | 0.020   | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand  | 18     |           | 10     | 5.0     | mg/L        | 1   |     |   | 410.4    | Total/NA  |
| Chromium, hexavalent    | 0.0087 | J H       | 0.010  | 0.0050  | mg/L        | 1   |     |   | 7196A    | Total/NA  |
| Total Organic Carbon    | 5.6    |           | 1.0    | 0.43    | mg/L        | 1   |     |   | 9060     | Total/NA  |
| Hardness                | 180    |           | 4.0    | 1.1     | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids  | 250    |           | 10     | 4.0     | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Analyte                 | Result | Qualifier | RL     | RL      | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity               | 7.6    |           | 1.0    | 1.0     | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                   | 50     |           | 5.0    | 5.0     | Color Units | 1   |     |   | SM 2120B | Total/NA  |

Client Sample ID: GW-B

Lab Sample ID: 480-44452-2

| Analyte                 | Result | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method | Prep Type |
|-------------------------|--------|-----------|--------|---------|------|-----|-----|---|--------|-----------|
| Aluminum                | 0.87   |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Barium                  | 0.032  |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Boron                   | 0.080  |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Calcium                 | 72     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Chromium                | 0.0018 | J         | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Cobalt                  | 0.0065 |           | 0.0040 | 0.00063 | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Copper                  | 0.040  |           | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Iron                    | 1.5    |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Magnesium               | 12     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Manganese               | 0.93   |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Nickel                  | 0.027  |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Potassium               | 3.3    | B         | 0.50   | 0.10    | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Sodium                  | 2.0    |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Zinc                    | 0.011  |           | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Chloride                | 3.0    |           | 0.50   | 0.28    | mg/L | 1   |     |   | 300.0  | Total/NA  |
| Sulfate                 | 86     |           | 2.0    | 0.35    | mg/L | 1   |     |   | 300.0  | Total/NA  |
| Alkalinity, Total       | 130    | B         | 50     | 20      | mg/L | 5   |     |   | 310.2  | Total/NA  |
| Ammonia                 | 0.075  |           | 0.020  | 0.0090  | mg/L | 1   |     |   | 350.1  | Total/NA  |
| Total Kjeldahl Nitrogen | 4.1    | B         | 0.40   | 0.30    | mg/L | 2   |     |   | 351.2  | Total/NA  |
| Nitrate as N            | 0.28   |           | 0.050  | 0.020   | mg/L | 1   |     |   | 353.2  | Total/NA  |
| Chemical Oxygen Demand  | 210    |           | 10     | 5.0     | mg/L | 1   |     |   | 410.4  | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Client Sample ID: GW-B (Continued)

Lab Sample ID: 480-44452-2

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | Dil | Fac | D | Method   | Prep Type |
|------------------------------|--------|-----------|-------|--------|-------------|-----|-----|---|----------|-----------|
| Cyanide, Total               | 0.012  | B         | 0.010 | 0.0050 | mg/L        | 1   |     |   | 9012A    | Total/NA  |
| Total Organic Carbon         | 67     |           | 1.0   | 0.43   | mg/L        | 1   |     |   | 9060     | Total/NA  |
| Phenolics, Total Recoverable | 0.0069 | J         | 0.010 | 0.0050 | mg/L        | 1   |     |   | 9066     | Total/NA  |
| Hardness                     | 240    |           | 4.0   | 1.1    | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids       | 430    |           | 10    | 4.0    | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand    | 2.0    | b         | 2.0   | 2.0    | mg/L        | 1   |     |   | SM 5210B | Total/NA  |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity                    | 19     |           | 1.0   | 1.0    | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                        | 400    |           | 50    | 50     | Color Units | 10  |     |   | SM 2120B | Total/NA  |

### Client Sample ID: GW-D

Lab Sample ID: 480-44452-3

| Analyte                 | Result  | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method | Prep Type |
|-------------------------|---------|-----------|--------|---------|------|-----|-----|---|--------|-----------|
| Aluminum                | 4.4     |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Arsenic                 | 0.11    |           | 0.010  | 0.0056  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Barium                  | 0.90    |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Boron                   | 0.25    |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Cadmium                 | 0.0014  |           | 0.0010 | 0.00050 | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Calcium                 | 140     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Chromium                | 0.0058  |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Cobalt                  | 0.0051  |           | 0.0040 | 0.00063 | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Copper                  | 0.013   |           | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Iron                    | 12      |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Lead                    | 0.0075  |           | 0.0050 | 0.0030  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Magnesium               | 57      |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Manganese               | 1.1     |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Nickel                  | 0.015   |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Potassium               | 13      | B         | 0.50   | 0.10    | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Sodium                  | 64      |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Vanadium                | 0.0067  |           | 0.0050 | 0.0015  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Zinc                    | 0.033   |           | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010B  | Total/NA  |
| Aluminum                | 0.15    | J B       | 0.20   | 0.060   | mg/L | 1   |     |   | 6010B  | Dissolved |
| Barium                  | 0.66    | B         | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010B  | Dissolved |
| Boron                   | 0.20    |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010B  | Dissolved |
| Cadmium                 | 0.00054 | J         | 0.0010 | 0.00050 | mg/L | 1   |     |   | 6010B  | Dissolved |
| Calcium                 | 130     | B         | 0.50   | 0.10    | mg/L | 1   |     |   | 6010B  | Dissolved |
| Copper                  | 0.0045  | J         | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010B  | Dissolved |
| Lead                    | 0.0040  | J         | 0.0050 | 0.0030  | mg/L | 1   |     |   | 6010B  | Dissolved |
| Magnesium               | 52      |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010B  | Dissolved |
| Manganese               | 0.12    | B         | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010B  | Dissolved |
| Nickel                  | 0.0084  | J         | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010B  | Dissolved |
| Potassium               | 11      |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010B  | Dissolved |
| Sodium                  | 62      |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010B  | Dissolved |
| Zinc                    | 0.0066  | J B       | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010B  | Dissolved |
| Bromide                 | 1.0     | ^ *       | 0.20   | 0.073   | mg/L | 1   |     |   | 300.0  | Total/NA  |
| Chloride                | 73      |           | 0.50   | 0.28    | mg/L | 1   |     |   | 300.0  | Total/NA  |
| Sulfate                 | 10      |           | 2.0    | 0.35    | mg/L | 1   |     |   | 300.0  | Total/NA  |
| Alkalinity, Total       | 640     | B         | 100    | 40      | mg/L | 10  |     |   | 310.2  | Total/NA  |
| Ammonia                 | 8.0     |           | 0.10   | 0.045   | mg/L | 5   |     |   | 350.1  | Total/NA  |
| Total Kjeldahl Nitrogen | 8.2     | B         | 1.0    | 0.75    | mg/L | 5   |     |   | 351.2  | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

**Client Sample ID: GW-D (Continued)**

**Lab Sample ID: 480-44452-3**

| Analyte                   | Result | Qualifier | RL    | MDL    | Unit        | Dil | Fac | D | Method   | Prep Type |
|---------------------------|--------|-----------|-------|--------|-------------|-----|-----|---|----------|-----------|
| Nitrate as N              | 0.075  |           | 0.050 | 0.020  | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand    | 18     |           | 10    | 5.0    | mg/L        | 1   |     |   | 410.4    | Total/NA  |
| Chromium, hexavalent      | 0.0079 | J H       | 0.010 | 0.0050 | mg/L        | 1   |     |   | 7196A    | Total/NA  |
| Total Organic Carbon      | 5.5    |           | 1.0   | 0.43   | mg/L        | 1   |     |   | 9060     | Total/NA  |
| Hardness                  | 760    |           | 10    | 2.6    | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids    | 830    |           | 40    | 16     | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand | 13     | b         | 2.0   | 2.0    | mg/L        | 1   |     |   | SM 5210B | Total/NA  |
| Analyte                   | Result | Qualifier | RL    | RL     | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity                 | 7100   |           | 25    | 25     | NTU         | 25  |     |   | 180.1    | Total/NA  |
| Color                     | 100    |           | 50    | 50     | Color Units | 10  |     |   | SM 2120B | Total/NA  |

5

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

Client Sample ID: GW-A

Lab Sample ID: 480-44452-1

Date Collected: 08/21/13 16:40

Matrix: Water

Date Received: 08/23/13 02:00

## Method: 6010B - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.23   |           | 0.20   | 0.060   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Arsenic   | ND     |           | 0.010  | 0.0056  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Barium    | 0.022  |           | 0.0020 | 0.00070 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Boron     | 0.092  |           | 0.020  | 0.0040  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Cadmium   | ND     |           | 0.0010 | 0.00050 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Calcium   | 56     |           | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Chromium  | ND     |           | 0.0040 | 0.0010  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Cobalt    | ND     |           | 0.0040 | 0.00063 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Copper    | 0.0044 | J         | 0.010  | 0.0016  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Iron      | 0.34   |           | 0.050  | 0.019   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Lead      | ND     |           | 0.0050 | 0.0030  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Magnesium | 9.3    |           | 0.20   | 0.043   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Manganese | 0.047  |           | 0.0030 | 0.00040 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Nickel    | ND     |           | 0.010  | 0.0013  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Potassium | 2.2    | B         | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Selenium  | ND     |           | 0.015  | 0.0087  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Silver    | ND     |           | 0.0030 | 0.0017  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Sodium    | 16     |           | 1.0    | 0.32    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |
| Zinc      | 0.0017 | J         | 0.010  | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:17 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 08/23/13 08:35 | 08/23/13 13:35 | 1       |

## General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Bromide                      | ND     | A *       | 0.20  | 0.073  | mg/L        |   |                | 08/24/13 02:26 | 1       |
| Chloride                     | 23     |           | 0.50  | 0.28   | mg/L        |   |                | 08/24/13 02:26 | 1       |
| Sulfate                      | 27     |           | 2.0   | 0.35   | mg/L        |   |                | 08/26/13 18:06 | 1       |
| Alkalinity, Total            | 170    | B         | 50    | 20     | mg/L        |   |                | 08/26/13 21:27 | 5       |
| Ammonia                      | 0.018  | J         | 0.020 | 0.0090 | mg/L        |   |                | 08/23/13 16:01 | 1       |
| Total Kjeldahl Nitrogen      | 0.50   |           | 0.20  | 0.15   | mg/L        |   | 08/26/13 07:41 | 08/26/13 18:41 | 1       |
| Nitrate as N                 | 0.33   |           | 0.050 | 0.020  | mg/L        |   |                | 08/23/13 10:30 | 1       |
| Chemical Oxygen Demand       | 18     |           | 10    | 5.0    | mg/L        |   |                | 08/27/13 16:49 | 1       |
| Chromium, hexavalent         | 0.0087 | J H       | 0.010 | 0.0050 | mg/L        |   |                | 08/23/13 07:45 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 08/23/13 11:26 | 08/26/13 09:20 | 1       |
| Total Organic Carbon         | 5.6    |           | 1.0   | 0.43   | mg/L        |   |                | 08/23/13 16:46 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 08/26/13 08:00 | 08/27/13 17:35 | 1       |
| Hardness                     | 180    |           | 4.0   | 1.1    | mg/L        |   |                | 08/27/13 12:49 | 1       |
| Total Dissolved Solids       | 250    |           | 10    | 4.0    | mg/L        |   |                | 08/26/13 15:11 | 1       |
| Biochemical Oxygen Demand    | ND     |           | 2.0   | 2.0    | mg/L        |   |                | 08/23/13 10:08 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 7.6    |           | 1.0   | 1.0    | NTU         |   |                | 08/23/13 06:00 | 1       |
| Color                        | 50     |           | 5.0   | 5.0    | Color Units |   |                | 08/23/13 11:30 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

Client Sample ID: GW-B

Lab Sample ID: 480-44452-2

Date Collected: 08/21/13 16:25

Matrix: Water

Date Received: 08/23/13 02:00

## Method: 6010B - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.67   |           | 0.20   | 0.060   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Arsenic   | ND     |           | 0.010  | 0.0056  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Barium    | 0.032  |           | 0.0020 | 0.00070 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Boron     | 0.080  |           | 0.020  | 0.0040  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Cadmium   | ND     |           | 0.0010 | 0.00050 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Calcium   | 72     |           | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Chromium  | 0.0018 | J         | 0.0040 | 0.0010  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Cobalt    | 0.0065 |           | 0.0040 | 0.00063 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Copper    | 0.040  |           | 0.010  | 0.0016  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Iron      | 1.5    |           | 0.050  | 0.019   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Lead      | ND     |           | 0.0050 | 0.0030  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Magnesium | 12     |           | 0.20   | 0.043   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Manganese | 0.93   |           | 0.0030 | 0.00040 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Nickel    | 0.027  |           | 0.010  | 0.0013  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Potassium | 3.3    | B         | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Selenium  | ND     |           | 0.015  | 0.0087  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Silver    | ND     |           | 0.0030 | 0.0017  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Sodium    | 2.0    |           | 1.0    | 0.32    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |
| Zinc      | 0.011  |           | 0.010  | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:19 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 08/23/13 08:35 | 08/23/13 13:37 | 1       |

## General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Bromide                      | ND     | A *       | 0.20  | 0.073  | mg/L        |   |                | 08/24/13 02:36 | 1       |
| Chloride                     | 3.0    |           | 0.50  | 0.28   | mg/L        |   |                | 08/24/13 02:36 | 1       |
| Sulfate                      | 86     |           | 2.0   | 0.35   | mg/L        |   |                | 08/26/13 18:17 | 1       |
| Alkalinity, Total            | 130    | B         | 50    | 20     | mg/L        |   |                | 08/26/13 21:27 | 5       |
| Ammonia                      | 0.075  |           | 0.020 | 0.0090 | mg/L        |   |                | 08/23/13 16:02 | 1       |
| Total Kjeldahl Nitrogen      | 4.1    | B         | 0.40  | 0.30   | mg/L        |   | 08/26/13 07:50 | 08/26/13 20:17 | 2       |
| Nitrate as N                 | 0.28   |           | 0.050 | 0.020  | mg/L        |   |                | 08/23/13 10:31 | 1       |
| Chemical Oxygen Demand       | 210    |           | 10    | 5.0    | mg/L        |   |                | 08/30/13 23:30 | 1       |
| Chromium, hexavalent         | ND     | H         | 0.010 | 0.0050 | mg/L        |   |                | 08/23/13 07:45 | 1       |
| Cyanide, Total               | 0.012  | B         | 0.010 | 0.0050 | mg/L        |   | 08/23/13 11:26 | 08/26/13 09:21 | 1       |
| Total Organic Carbon         | 67     |           | 1.0   | 0.43   | mg/L        |   |                | 08/23/13 17:14 | 1       |
| Phenolics, Total Recoverable | 0.0069 | J         | 0.010 | 0.0050 | mg/L        |   | 08/26/13 08:00 | 08/27/13 17:44 | 1       |
| Hardness                     | 240    |           | 4.0   | 1.1    | mg/L        |   |                | 08/27/13 12:49 | 1       |
| Total Dissolved Solids       | 430    |           | 10    | 4.0    | mg/L        |   |                | 08/26/13 15:12 | 1       |
| Biochemical Oxygen Demand    | 2.0    | b         | 2.0   | 2.0    | mg/L        |   |                | 08/23/13 10:08 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 19     |           | 1.0   | 1.0    | NTU         |   |                | 08/23/13 06:00 | 1       |
| Color                        | 400    |           | 50    | 50     | Color Units |   |                | 08/23/13 11:30 | 10      |

TestAmerica Buffalo



# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

Client Sample ID: GW-D

Lab Sample ID: 480-44452-3

Date Collected: 08/21/13 16:00

Matrix: Water

Date Received: 08/23/13 02:00

## Method: 6010B - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 4.4    |           | 0.20   | 0.060   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Arsenic   | 0.11   |           | 0.010  | 0.0056  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Barium    | 0.90   |           | 0.0020 | 0.00070 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Boron     | 0.25   |           | 0.020  | 0.0040  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Cadmium   | 0.0014 |           | 0.0010 | 0.00050 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Calcium   | 140    |           | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Chromium  | 0.0058 |           | 0.0040 | 0.0010  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Cobalt    | 0.0051 |           | 0.0040 | 0.00063 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Copper    | 0.013  |           | 0.010  | 0.0016  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Iron      | 12     |           | 0.050  | 0.019   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Lead      | 0.0075 |           | 0.0050 | 0.0030  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Magnesium | 57     |           | 0.20   | 0.043   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Manganese | 1.1    |           | 0.0030 | 0.00040 | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Nickel    | 0.015  |           | 0.010  | 0.0013  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Potassium | 13 B   |           | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Selenium  | ND     |           | 0.015  | 0.0087  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Silver    | ND     |           | 0.0030 | 0.0017  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Sodium    | 64     |           | 1.0    | 0.32    | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Vanadium  | 0.0067 |           | 0.0050 | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |
| Zinc      | 0.033  |           | 0.010  | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 19:21 | 1       |

## Method: 6010B - Metals (ICP) - Dissolved

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.15    | J B       | 0.20   | 0.060   | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Antimony  | ND      |           | 0.020  | 0.0068  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Arsenic   | ND      |           | 0.010  | 0.0056  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Barium    | 0.66    | B         | 0.0020 | 0.00070 | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Beryllium | ND      |           | 0.0020 | 0.00030 | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Boron     | 0.20    |           | 0.020  | 0.0040  | mg/L |   | 08/27/13 08:20 | 08/28/13 17:10 | 1       |
| Cadmium   | 0.00054 | J         | 0.0010 | 0.00050 | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Calcium   | 130     | B         | 0.50   | 0.10    | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Chromium  | ND      |           | 0.0040 | 0.0010  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Cobalt    | ND      |           | 0.0040 | 0.00063 | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Copper    | 0.0045  | J         | 0.010  | 0.0016  | mg/L |   | 09/03/13 09:40 | 09/03/13 18:17 | 1       |
| Iron      | ND      |           | 0.050  | 0.019   | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Lead      | 0.0040  | J         | 0.0050 | 0.0030  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Magnesium | 52      |           | 0.20   | 0.043   | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Manganese | 0.12    | B         | 0.0030 | 0.00040 | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Nickel    | 0.0084  | J         | 0.010  | 0.0013  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Potassium | 11      |           | 0.50   | 0.10    | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Selenium  | ND      |           | 0.015  | 0.0087  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Silver    | ND      |           | 0.0030 | 0.0017  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Sodium    | 62      |           | 1.0    | 0.32    | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Thallium  | ND      |           | 0.020  | 0.010   | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Vanadium  | ND      |           | 0.0050 | 0.0015  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |
| Zinc      | 0.0066  | J B       | 0.010  | 0.0015  | mg/L |   | 09/03/13 09:40 | 09/03/13 16:06 | 1       |

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

**Client Sample ID: GW-D**

Date Collected: 08/21/13 16:00

Date Received: 08/23/13 02:00

**Lab Sample ID: 480-44452-3**

Matrix: Water

### Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 08/23/13 08:35 | 08/23/13 13:39 | 1       |

### Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 08/27/13 08:30 | 08/27/13 13:07 | 1       |

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Bromide                      | 1.0    | A *       | 0.20  | 0.073  | mg/L        |   |                | 08/24/13 02:46 | 1       |
| Chloride                     | 73     |           | 0.50  | 0.28   | mg/L        |   |                | 08/24/13 02:46 | 1       |
| Sulfate                      | 10     |           | 2.0   | 0.35   | mg/L        |   |                | 08/26/13 18:27 | 1       |
| Alkalinity, Total            | 640    | B         | 100   | 40     | mg/L        |   |                | 08/26/13 22:04 | 10      |
| Ammonia                      | 8.0    |           | 0.10  | 0.045  | mg/L        |   |                | 08/23/13 17:00 | 5       |
| Total Kjeldahl Nitrogen      | 8.2    | B         | 1.0   | 0.75   | mg/L        |   | 08/26/13 07:50 | 08/26/13 20:53 | 5       |
| Nitrate as N                 | 0.075  |           | 0.050 | 0.020  | mg/L        |   |                | 08/23/13 10:32 | 1       |
| Chemical Oxygen Demand       | 18     |           | 10    | 5.0    | mg/L        |   |                | 08/27/13 16:49 | 1       |
| Chromium, hexavalent         | 0.0079 | J H       | 0.010 | 0.0050 | mg/L        |   |                | 08/23/13 07:45 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 08/23/13 11:26 | 08/26/13 09:22 | 1       |
| Total Organic Carbon         | 5.5    |           | 1.0   | 0.43   | mg/L        |   |                | 08/23/13 17:41 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 08/26/13 08:00 | 08/27/13 17:44 | 1       |
| Hardness                     | 760    |           | 10    | 2.6    | mg/L        |   |                | 08/27/13 12:49 | 1       |
| Total Dissolved Solids       | 830    |           | 40    | 16     | mg/L        |   |                | 08/26/13 15:13 | 1       |
| Biochemical Oxygen Demand    | 13     | b         | 2.0   | 2.0    | mg/L        |   |                | 08/23/13 10:08 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 7100   |           | 25    | 25     | NTU         |   |                | 08/23/13 06:00 | 25      |
| Color                        | 100    |           | 50    | 50     | Color Units |   |                | 08/23/13 11:30 | 10      |

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TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 6010B - Metals (ICP)

Lab Sample ID: MB 480-135533/1-A

Matrix: Water

Analysis Batch: 135857

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 135533

| Analyte   | MB MB  |           | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
|           | Result | Qualifier |        |         |      |   |                |                |         |
| Aluminum  | ND     |           | 0.20   | 0.060   | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Arsenic   | ND     |           | 0.010  | 0.0056  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Barium    | ND     |           | 0.0020 | 0.00070 | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Boron     | ND     |           | 0.020  | 0.0040  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Cadmium   | ND     |           | 0.0010 | 0.00050 | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Calcium   | ND     |           | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Chromium  | ND     |           | 0.0040 | 0.0010  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Cobalt    | ND     |           | 0.0040 | 0.00063 | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Copper    | ND     |           | 0.010  | 0.0016  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Iron      | ND     |           | 0.050  | 0.019   | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Lead      | ND     |           | 0.0050 | 0.0030  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Magnesium | ND     |           | 0.20   | 0.043   | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Manganese | ND     |           | 0.0030 | 0.00040 | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Nickel    | ND     |           | 0.010  | 0.0013  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Potassium | 0.225  | J         | 0.50   | 0.10    | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Selenium  | ND     |           | 0.015  | 0.0087  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Silver    | ND     |           | 0.0030 | 0.0017  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Sodium    | ND     |           | 1.0    | 0.32    | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |
| Zinc      | ND     |           | 0.010  | 0.0015  | mg/L |   | 08/23/13 08:20 | 08/23/13 18:18 | 1       |

Lab Sample ID: LCS 480-135533/2-A

Matrix: Water

Analysis Batch: 135857

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 135533

| Analyte   | Spike Added | LCS LCS |           | Unit | D | %Rec | %Rec.    |  |
|-----------|-------------|---------|-----------|------|---|------|----------|--|
|           |             | Result  | Qualifier |      |   |      | Limits   |  |
| Aluminum  | 10.0        | 10.3    |           | mg/L |   | 103  | 80 - 120 |  |
| Antimony  | 0.200       | 0.202   |           | mg/L |   | 101  | 80 - 120 |  |
| Arsenic   | 0.200       | 0.202   |           | mg/L |   | 101  | 80 - 120 |  |
| Barium    | 0.200       | 0.207   |           | mg/L |   | 103  | 80 - 120 |  |
| Beryllium | 0.200       | 0.204   |           | mg/L |   | 102  | 80 - 120 |  |
| Boron     | 0.200       | 0.204   |           | mg/L |   | 102  | 80 - 120 |  |
| Cadmium   | 0.200       | 0.203   |           | mg/L |   | 102  | 80 - 120 |  |
| Calcium   | 10.0        | 10.0    |           | mg/L |   | 100  | 80 - 120 |  |
| Chromium  | 0.200       | 0.208   |           | mg/L |   | 104  | 80 - 120 |  |
| Cobalt    | 0.200       | 0.200   |           | mg/L |   | 100  | 80 - 120 |  |
| Copper    | 0.200       | 0.206   |           | mg/L |   | 103  | 80 - 120 |  |
| Iron      | 10.0        | 9.99    |           | mg/L |   | 100  | 80 - 120 |  |
| Lead      | 0.200       | 0.197   |           | mg/L |   | 98   | 80 - 120 |  |
| Magnesium | 10.0        | 10.3    |           | mg/L |   | 103  | 80 - 120 |  |
| Manganese | 0.200       | 0.202   |           | mg/L |   | 101  | 80 - 120 |  |
| Nickel    | 0.200       | 0.197   |           | mg/L |   | 99   | 80 - 120 |  |
| Potassium | 10.0        | 10.2    |           | mg/L |   | 102  | 80 - 120 |  |
| Selenium  | 0.200       | 0.199   |           | mg/L |   | 99   | 80 - 120 |  |
| Silver    | 0.0500      | 0.0521  |           | mg/L |   | 104  | 80 - 120 |  |

TestAmerica Buffalo

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

## Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-135533/2-A

Matrix: Water

Analysis Batch: 135857

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 135533

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Sodium   | 10.0        | 9.94       |               | mg/L |   | 99   | 80 - 120     |
| Thallium | 0.200       | 0.199      |               | mg/L |   | 99   | 80 - 120     |
| Vanadium | 0.200       | 0.204      |               | mg/L |   | 102  | 80 - 120     |
| Zinc     | 0.200       | 0.196      |               | mg/L |   | 98   | 80 - 120     |

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Lab Sample ID: MB 480-135891/1-B

Matrix: Water

Analysis Batch: 136502

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 136029

| Analyte | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|-------|--------|------|---|----------------|----------------|---------|
| Boron   | ND        |              | 0.020 | 0.0040 | mg/L |   | 08/27/13 08:20 | 08/28/13 16:22 | 1       |

Lab Sample ID: LCS 480-135891/2-B

Matrix: Water

Analysis Batch: 136502

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 136029

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Boron   | 0.200       | 0.206      |               | mg/L |   | 103  | 80 - 120     |

Lab Sample ID: LCSD 480-135891/15-B

Matrix: Water

Analysis Batch: 136502

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 136029

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| Boron   | 0.200       | 0.208       |                | mg/L |   | 104  | 80 - 120     | 1   | 20        |

Lab Sample ID: MB 480-136834/1-B

Matrix: Water

Analysis Batch: 137111

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 136979

| Analyte   | MB Result | MB Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.124     | J            | 0.20   | 0.060   | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Antimony  | ND        |              | 0.020  | 0.0068  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Arsenic   | ND        |              | 0.010  | 0.0056  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Barium    | 0.000960  | J            | 0.0020 | 0.00070 | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Beryllium | ND        |              | 0.0020 | 0.00030 | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Cadmium   | ND        |              | 0.0010 | 0.00050 | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Calcium   | 0.388     | J            | 0.50   | 0.10    | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Chromium  | 0.00198   | J            | 0.0040 | 0.0010  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Cobalt    | ND        |              | 0.0040 | 0.00063 | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Copper    | ND        |              | 0.010  | 0.0016  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Iron      | 0.0279    | J            | 0.050  | 0.019   | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Lead      | ND        |              | 0.0050 | 0.0030  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Magnesium | ND        |              | 0.20   | 0.043   | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Manganese | 0.000680  | J            | 0.0030 | 0.00040 | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Nickel    | ND        |              | 0.010  | 0.0013  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Potassium | ND        |              | 0.50   | 0.10    | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Selenium  | ND        |              | 0.015  | 0.0087  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Silver    | ND        |              | 0.0030 | 0.0017  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 480-136834/1-B

Matrix: Water

Analysis Batch: 137111

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 136979

| Analyte  | Result  | MB MB<br>Qualifier | RL     | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|---------|--------------------|--------|--------|------|---|----------------|----------------|---------|
| Sodium   | ND      |                    | 1.0    | 0.32   | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Thallium | ND      |                    | 0.020  | 0.010  | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Vanadium | ND      |                    | 0.0050 | 0.0015 | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |
| Zinc     | 0.00416 | J                  | 0.010  | 0.0015 | mg/L |   | 09/03/13 09:40 | 09/03/13 15:18 | 1       |

Lab Sample ID: LCS 480-136834/2-B

Matrix: Water

Analysis Batch: 137111

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 136979

| Analyte   | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-----------|----------------|---------------|------------------|------|---|------|-----------------|
| Aluminum  | 10.0           | 10.4          |                  | mg/L |   | 104  | 80 - 120        |
| Antimony  | 0.200          | 0.203         |                  | mg/L |   | 101  | 80 - 120        |
| Arsenic   | 0.200          | 0.206         |                  | mg/L |   | 103  | 80 - 120        |
| Barium    | 0.200          | 0.208         |                  | mg/L |   | 104  | 80 - 120        |
| Beryllium | 0.200          | 0.205         |                  | mg/L |   | 103  | 80 - 120        |
| Cadmium   | 0.200          | 0.204         |                  | mg/L |   | 102  | 80 - 120        |
| Calcium   | 10.0           | 10.6          |                  | mg/L |   | 106  | 80 - 120        |
| Chromium  | 0.200          | 0.206         |                  | mg/L |   | 103  | 80 - 120        |
| Cobalt    | 0.200          | 0.201         |                  | mg/L |   | 100  | 80 - 120        |
| Copper    | 0.200          | 0.213         |                  | mg/L |   | 106  | 80 - 120        |
| Iron      | 10.0           | 10.1          |                  | mg/L |   | 101  | 80 - 120        |
| Lead      | 0.200          | 0.199         |                  | mg/L |   | 100  | 80 - 120        |
| Magnesium | 10.0           | 10.1          |                  | mg/L |   | 101  | 80 - 120        |
| Manganese | 0.200          | 0.202         |                  | mg/L |   | 101  | 80 - 120        |
| Nickel    | 0.200          | 0.198         |                  | mg/L |   | 99   | 80 - 120        |
| Potassium | 10.0           | 9.96          |                  | mg/L |   | 99   | 80 - 120        |
| Selenium  | 0.200          | 0.205         |                  | mg/L |   | 102  | 80 - 120        |
| Silver    | 0.0500         | 0.0520        |                  | mg/L |   | 104  | 80 - 120        |
| Sodium    | 10.0           | 9.97          |                  | mg/L |   | 100  | 80 - 120        |
| Thallium  | 0.200          | 0.203         |                  | mg/L |   | 102  | 80 - 120        |
| Vanadium  | 0.200          | 0.206         |                  | mg/L |   | 103  | 80 - 120        |
| Zinc      | 0.200          | 0.204         |                  | mg/L |   | 102  | 80 - 120        |

Lab Sample ID: LCSD 480-136834/3-B

Matrix: Water

Analysis Batch: 137111

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 136979

| Analyte   | Spike<br>Added | LCSD<br>Result | LCSD<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits | RPD<br>RPD | Limit |
|-----------|----------------|----------------|-------------------|------|---|------|-----------------|------------|-------|
| Aluminum  | 10.0           | 10.5           |                   | mg/L |   | 105  | 80 - 120        | 1          | 20    |
| Antimony  | 0.200          | 0.201          |                   | mg/L |   | 101  | 80 - 120        | 1          | 20    |
| Arsenic   | 0.200          | 0.204          |                   | mg/L |   | 102  | 80 - 120        | 1          | 20    |
| Barium    | 0.200          | 0.208          |                   | mg/L |   | 104  | 80 - 120        | 0          | 20    |
| Beryllium | 0.200          | 0.206          |                   | mg/L |   | 103  | 80 - 120        | 0          | 20    |
| Cadmium   | 0.200          | 0.204          |                   | mg/L |   | 102  | 80 - 120        | 0          | 20    |
| Calcium   | 10.0           | 10.6           |                   | mg/L |   | 106  | 80 - 120        | 1          | 20    |
| Chromium  | 0.200          | 0.208          |                   | mg/L |   | 104  | 80 - 120        | 1          | 20    |
| Cobalt    | 0.200          | 0.199          |                   | mg/L |   | 100  | 80 - 120        | 1          | 20    |
| Copper    | 0.200          | 0.208          |                   | mg/L |   | 104  | 80 - 120        | 2          | 20    |
| Iron      | 10.0           | 10.1           |                   | mg/L |   | 101  | 80 - 120        | 0          | 20    |

TestAmerica Buffalo

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

## Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 480-136834/3-B

Matrix: Water

Analysis Batch: 137111

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 136979

| Analyte   | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec.    |  | RPD |       |
|-----------|-------------|-------------|----------------|------|---|------|----------|--|-----|-------|
|           |             |             |                |      |   |      | Limits   |  | RPD | Limit |
| Lead      | 0.200       | 0.198       |                | mg/L |   | 99   | 80 - 120 |  | 1   | 20    |
| Magnesium | 10.0        | 10.2        |                | mg/L |   | 102  | 80 - 120 |  | 0   | 20    |
| Manganese | 0.200       | 0.203       |                | mg/L |   | 101  | 80 - 120 |  | 0   | 20    |
| Nickel    | 0.200       | 0.197       |                | mg/L |   | 98   | 80 - 120 |  | 0   | 20    |
| Potassium | 10.0        | 9.97        |                | mg/L |   | 100  | 80 - 120 |  | 0   | 20    |
| Selenium  | 0.200       | 0.206       |                | mg/L |   | 103  | 80 - 120 |  | 1   | 20    |
| Silver    | 0.0500      | 0.0508      |                | mg/L |   | 102  | 80 - 120 |  | 2   | 20    |
| Sodium    | 10.0        | 9.99        |                | mg/L |   | 100  | 80 - 120 |  | 0   | 20    |
| Thallium  | 0.200       | 0.202       |                | mg/L |   | 101  | 80 - 120 |  | 0   | 20    |
| Vanadium  | 0.200       | 0.206       |                | mg/L |   | 103  | 80 - 120 |  | 0   | 20    |
| Zinc      | 0.200       | 0.205       |                | mg/L |   | 103  | 80 - 120 |  | 1   | 20    |

## Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-135544/1-A

Matrix: Water

Analysis Batch: 135676

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 135544

| Analyte | MB MB  |           | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |         |         |      |   |                |                |         |
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 08/23/13 08:35 | 08/23/13 12:50 | 1       |

Lab Sample ID: LCS 480-135544/2-A

Matrix: Water

Analysis Batch: 135676

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 135544

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec.    |  |
|---------|-------------|------------|---------------|------|---|------|----------|--|
|         |             |            |               |      |   |      | Limits   |  |
| Mercury | 0.00667     | 0.00683    |               | mg/L |   | 102  | 80 - 120 |  |

Lab Sample ID: MB 480-135891/1-D

Matrix: Water

Analysis Batch: 136156

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 136034

| Analyte | MB MB  |           | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |         |         |      |   |                |                |         |
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 08/27/13 08:30 | 08/27/13 13:02 | 1       |

Lab Sample ID: LCS 480-135891/2-D

Matrix: Water

Analysis Batch: 136156

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 136034

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec.    |  |
|---------|-------------|------------|---------------|------|---|------|----------|--|
|         |             |            |               |      |   |      | Limits   |  |
| Mercury | 0.00667     | 0.00653    |               | mg/L |   | 98   | 80 - 120 |  |

Lab Sample ID: LCSD 480-135891/15-D

Matrix: Water

Analysis Batch: 136156

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 136034

| Analyte | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec.    |  | RPD |       |
|---------|-------------|-------------|----------------|------|---|------|----------|--|-----|-------|
|         |             |             |                |      |   |      | Limits   |  | RPD | Limit |
| Mercury | 0.00667     | 0.00643     |                | mg/L |   | 96   | 80 - 120 |  | 2   | 20    |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 480-135512/3

Matrix: Water

Analysis Batch: 135512

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte   | MB<br>Result | MB<br>Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------|--------------|-----------------|-----|-----|------|---|----------|----------------|---------|
| Turbidity | ND           |                 | 1.0 | 1.0 | NTU  |   |          | 08/23/13 06:00 | 1       |

### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-135669/52

Matrix: Water

Analysis Batch: 135669

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL   | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|------|-------|------|---|----------|----------------|---------|
| Bromide  | ND           | ^               | 0.20 | 0.073 | mg/L |   |          | 08/24/13 00:14 | 1       |
| Chloride | ND           |                 | 0.50 | 0.28  | mg/L |   |          | 08/24/13 00:14 | 1       |
| Sulfate  | 0.452        | J ^             | 2.0  | 0.35  | mg/L |   |          | 08/24/13 00:14 | 1       |

Lab Sample ID: LCS 480-135669/51

Matrix: Water

Analysis Batch: 135669

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Bromide  | 2.00           | 2.34          | ^ *              | mg/L |   | 117  | 90 - 110        |
| Chloride | 20.0           | 20.4          |                  | mg/L |   | 102  | 90 - 110        |
| Sulfate  | 20.0           | 21.9          | ^                | mg/L |   | 109  | 90 - 110        |

Lab Sample ID: MB 480-135910/28

Matrix: Water

Analysis Batch: 135910

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL   | MDL   | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|------|-------|------|---|----------|----------------|---------|
| Bromide  | ND           |                 | 0.20 | 0.073 | mg/L |   |          | 08/26/13 17:56 | 1       |
| Chloride | ND           |                 | 0.50 | 0.28  | mg/L |   |          | 08/26/13 17:56 | 1       |
| Sulfate  | ND           |                 | 2.0  | 0.35  | mg/L |   |          | 08/26/13 17:56 | 1       |

Lab Sample ID: LCS 480-135910/27

Matrix: Water

Analysis Batch: 135910

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Bromide  | 2.00           | 2.02          |                  | mg/L |   | 101  | 90 - 110        |
| Chloride | 20.0           | 20.5          |                  | mg/L |   | 102  | 90 - 110        |
| Sulfate  | 20.0           | 21.3          |                  | mg/L |   | 106  | 90 - 110        |

### Method: 310.2 - Alkalinity

Lab Sample ID: MB 480-136002/100

Matrix: Water

Analysis Batch: 136002

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 08/26/13 19:40 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 310.2 - Alkalinity (Continued)

Lab Sample ID: MB 480-136002/126

Matrix: Water

Analysis Batch: 136002

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | 4.05         | J               | 10 | 4.0 | mg/L |   |          | 08/26/13 20:30 | 1       |

Lab Sample ID: MB 480-136002/74

Matrix: Water

Analysis Batch: 136002

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 08/26/13 17:13 | 1       |

Lab Sample ID: LCS 480-136002/125

Matrix: Water

Analysis Batch: 136002

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Alkalinity, Total | 50.0           | 53.4          |                  | mg/L |   | 107  | 90 - 110        |

Lab Sample ID: LCS 480-136002/73

Matrix: Water

Analysis Batch: 136002

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Alkalinity, Total | 50.0           | 50.8          |                  | mg/L |   | 102  | 90 - 110        |

Lab Sample ID: LCS 480-136002/99

Matrix: Water

Analysis Batch: 136002

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Alkalinity, Total | 50.0           | 52.5          |                  | mg/L |   | 105  | 90 - 110        |

### Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-135721/147

Matrix: Water

Analysis Batch: 135721

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 08/23/13 15:59 | 1       |

Lab Sample ID: MB 480-135721/195

Matrix: Water

Analysis Batch: 135721

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 08/23/13 16:46 | 1       |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: MB 480-135721/219  
Matrix: Water  
Analysis Batch: 135721

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 08/23/13 17:10 | 1       |

Lab Sample ID: MB 480-135721/51  
Matrix: Water  
Analysis Batch: 135721

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 08/23/13 14:25 | 1       |

Lab Sample ID: LCS 480-135721/148  
Matrix: Water  
Analysis Batch: 135721

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 1.01          |                  | mg/L |   | 101  | 90 - 110        |

Lab Sample ID: LCS 480-135721/196  
Matrix: Water  
Analysis Batch: 135721

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.991         |                  | mg/L |   | 99   | 90 - 110        |

Lab Sample ID: LCS 480-135721/220  
Matrix: Water  
Analysis Batch: 135721

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.991         |                  | mg/L |   | 99   | 90 - 110        |

Lab Sample ID: LCS 480-135721/52  
Matrix: Water  
Analysis Batch: 135721

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.990         |                  | mg/L |   | 99   | 90 - 110        |

### Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-135895/1-A  
Matrix: Water  
Analysis Batch: 135990

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 135895

| Analyte                 | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------|--------------|-----------------|------|------|------|---|----------------|----------------|---------|
| Total Kjeldahl Nitrogen | ND           |                 | 0.20 | 0.15 | mg/L |   | 08/26/13 07:41 | 08/26/13 16:56 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: LCS 480-135895/2-A  
Matrix: Water  
Analysis Batch: 135990

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 135895

| Analyte                 | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Kjeldahl Nitrogen | 2.50        | 2.53       |               | mg/L |   | 101  | 90 - 110     |

Lab Sample ID: MB 480-135901/1-A  
Matrix: Water  
Analysis Batch: 135990

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 135901

| Analyte                 | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------|-----------|--------------|------|------|------|---|----------------|----------------|---------|
| Total Kjeldahl Nitrogen | 0.167     | J            | 0.20 | 0.15 | mg/L |   | 08/26/13 07:50 | 08/26/13 16:56 | 1       |

Lab Sample ID: LCS 480-135901/2-A  
Matrix: Water  
Analysis Batch: 135990

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 135901

| Analyte                 | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Kjeldahl Nitrogen | 2.50        | 2.54       |               | mg/L |   | 102  | 90 - 110     |

### Method: 410.4 - COD

Lab Sample ID: MB 480-136178/27  
Matrix: Water  
Analysis Batch: 136178

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND        |              | 10 | 5.0 | mg/L |   |          | 08/27/13 16:49 | 1       |

Lab Sample ID: MB 480-136178/3  
Matrix: Water  
Analysis Batch: 136178

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND        |              | 10 | 5.0 | mg/L |   |          | 08/27/13 16:49 | 1       |

Lab Sample ID: LCS 480-136178/28  
Matrix: Water  
Analysis Batch: 136178

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Chemical Oxygen Demand | 25.0        | 22.5       |               | mg/L |   | 90   | 90 - 110     |

Lab Sample ID: LCS 480-136178/4  
Matrix: Water  
Analysis Batch: 136178

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Chemical Oxygen Demand | 25.0        | 25.0       |               | mg/L |   | 100  | 90 - 110     |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 410.4 - COD (Continued)

Lab Sample ID: MB 480-136903/3

Matrix: Water

Analysis Batch: 136903

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND           |                 | 10 | 5.0 | mg/L |   |          | 08/30/13 23:30 | 1       |

Lab Sample ID: LCS 480-136903/4

Matrix: Water

Analysis Batch: 136903

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 200            | 188           |                  | mg/L |   | 94   | 90 - 110        |

### Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-135649/3

Matrix: Water

Analysis Batch: 135649

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Chromium, hexavalent | ND           |                 | 0.010 | 0.0050 | mg/L |   |          | 08/23/13 07:45 | 1       |

Lab Sample ID: LCS 480-135649/4

Matrix: Water

Analysis Batch: 135649

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chromium, hexavalent | 0.0500         | 0.0470        |                  | mg/L |   | 94   | 85 - 115        |

Lab Sample ID: 480-44452-1 MS

Matrix: Water

Analysis Batch: 135649

Client Sample ID: GW-A

Prep Type: Total/NA

| Analyte              | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| Chromium, hexavalent | 0.0087           | J H                 | 0.0500         | 0.0592       |                 | mg/L |   | 101  | 85 - 115        |

Lab Sample ID: 480-44452-2 DU

Matrix: Water

Analysis Batch: 135649

Client Sample ID: GW-B

Prep Type: Total/NA

| Analyte              | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit | D | RPD | RPD<br>Limit |
|----------------------|------------------|---------------------|--------------|-----------------|------|---|-----|--------------|
| Chromium, hexavalent | ND               | H                   | ND           |                 | mg/L |   | NC  | 15           |

### Method: 9012A - Cyanide, Total and/or Amenable

Lab Sample ID: MB 480-135629/1-A

Matrix: Water

Analysis Batch: 135893

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 135629

| Analyte        | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------------|-----------------|-------|--------|------|---|----------------|----------------|---------|
| Cyanide, Total | 0.00623      | J               | 0.010 | 0.0050 | mg/L |   | 08/23/13 11:26 | 08/26/13 09:05 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: 9012A - Cyanide, Total and/or Amenable (Continued)

Lab Sample ID: LCS 480-135629/2-A  
Matrix: Water  
Analysis Batch: 135893

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 135629

| Analyte        | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------|-------------|------------|---------------|------|---|------|--------------|
| Cyanide, Total | 0.400       | 0.390      |               | mg/L |   | 98   | 90 - 110     |

### Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-135841/3  
Matrix: Water  
Analysis Batch: 135841

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Total Organic Carbon | ND        |              | 1.0 | 0.43 | mg/L |   |          | 08/23/13 15:24 | 1       |

Lab Sample ID: LCS 480-135841/4  
Matrix: Water  
Analysis Batch: 135841

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Organic Carbon | 60.0        | 59.1       |               | mg/L |   | 98   | 90 - 110     |

### Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 480-135940/1-A  
Matrix: Water  
Analysis Batch: 136188

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 135940

| Analyte                      | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|-----------|--------------|-------|--------|------|---|----------------|----------------|---------|
| Phenolics, Total Recoverable | ND        |              | 0.010 | 0.0050 | mg/L |   | 08/26/13 08:00 | 08/27/13 16:28 | 1       |

Lab Sample ID: LCS 480-135940/2-A  
Matrix: Water  
Analysis Batch: 136188

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 135940

| Analyte                      | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|-------------|------------|---------------|------|---|------|--------------|
| Phenolics, Total Recoverable | 0.100       | 0.0984     |               | mg/L |   | 98   | 90 - 110     |

Lab Sample ID: 480-44452-2 MS  
Matrix: Water  
Analysis Batch: 136188

Client Sample ID: GW-B  
Prep Type: Total/NA  
Prep Batch: 135940

| Analyte                      | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Phenolics, Total Recoverable | 0.0069        | J                | 0.100       | 0.102     |              | mg/L |   | 95   | 60 - 143     |

Lab Sample ID: 480-44452-1 DU  
Matrix: Water  
Analysis Batch: 136188

Client Sample ID: GW-A  
Prep Type: Total/NA  
Prep Batch: 135940

| Analyte                      | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | Limit |
|------------------------------|---------------|------------------|-----------|--------------|------|---|-----|-------|
| Phenolics, Total Recoverable | ND            |                  | 0.00518   | J            | mg/L |   | NC  | 20    |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: SM 2120B - Color, Colorimetric

Lab Sample ID: MB 480-135638/3

Matrix: Water

Analysis Batch: 135638

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL  | RL  | Unit        | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-----|-----|-------------|---|----------|----------------|---------|
| Color   | ND           |                 | 5.0 | 5.0 | Color Units |   |          | 08/23/13 11:30 | 1       |

Lab Sample ID: LCS 480-135638/4

Matrix: Water

Analysis Batch: 135638

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit        | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|-------------|---|------|-----------------|
| Color   | 30.0           | 30.0          |                  | Color Units |   | 100  | 90 - 110        |

### Method: SM 2340C - Hardness, Total

Lab Sample ID: MB 480-136133/27

Matrix: Water

Analysis Batch: 136133

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Hardness | ND           |                 | 2.0 | 0.53 | mg/L |   |          | 08/27/13 12:48 | 1       |

Lab Sample ID: LCS 480-136133/28

Matrix: Water

Analysis Batch: 136133

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Hardness | 120            | 132           |                  | mg/L |   | 110  | 90 - 110        |

Lab Sample ID: 480-44452-1 MS

Matrix: Water

Analysis Batch: 136133

Client Sample ID: GW-A

Prep Type: Total/NA

| Analyte  | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| Hardness | 180              |                     | 200            | 384          |                 | mg/L |   | 100  | 74 - 130        |

Lab Sample ID: 480-44452-2 DU

Matrix: Water

Analysis Batch: 136133

Client Sample ID: GW-B

Prep Type: Total/NA

| Analyte  | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit | D | RPD | RPD<br>Limit |
|----------|------------------|---------------------|--------------|-----------------|------|---|-----|--------------|
| Hardness | 240              |                     | 256          |                 | mg/L |   | 8   | 15           |

### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-135950/1

Matrix: Water

Analysis Batch: 135950

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND           |                 | 10 | 4.0 | mg/L |   |          | 08/26/13 15:07 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 480-135950/2

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 135950

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Dissolved Solids | 503            | 465           |                  | mg/L |   | 92   | 85 - 115        |

### Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 480-135640/1 USB

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 135640

| Analyte                   | USB<br>Result | USB<br>Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|---------------|------------------|-----|-----|------|---|----------|----------------|---------|
| Biochemical Oxygen Demand | ND            |                  | 2.0 | 2.0 | mg/L |   |          | 08/23/13 10:08 | 1       |

Lab Sample ID: LCS 480-135640/2

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 135640

| Analyte                   | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Biochemical Oxygen Demand | 198            | 213           |                  | mg/L |   | 107  | 85 - 115        |

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## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Metals

#### Prep Batch: 135533

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 3005A  |            |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 3005A  |            |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 3005A  |            |
| LCS 480-135533/2-A | Lab Control Sample | Total/NA  | Water  | 3005A  |            |
| MB 480-135533/1-A  | Method Blank       | Total/NA  | Water  | 3005A  |            |

#### Prep Batch: 135544

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 7470A  |            |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 7470A  |            |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 7470A  |            |
| LCS 480-135544/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  |            |
| MB 480-135544/1-A  | Method Blank       | Total/NA  | Water  | 7470A  |            |

#### Analysis Batch: 135676

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 7470A  | 135544     |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 7470A  | 135544     |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 7470A  | 135544     |
| LCS 480-135544/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  | 135544     |
| MB 480-135544/1-A  | Method Blank       | Total/NA  | Water  | 7470A  | 135544     |

#### Analysis Batch: 135857

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 6010B  | 135533     |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 6010B  | 135533     |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 6010B  | 135533     |
| LCS 480-135533/2-A | Lab Control Sample | Total/NA  | Water  | 6010B  | 135533     |
| MB 480-135533/1-A  | Method Blank       | Total/NA  | Water  | 6010B  | 135533     |

#### Filtration Batch: 135891

| Lab Sample ID        | Client Sample ID       | Prep Type | Matrix | Method     | Prep Batch |
|----------------------|------------------------|-----------|--------|------------|------------|
| 480-44452-3          | GW-D                   | Dissolved | Water  | FILTRATION |            |
| LCS 480-135891/2-B   | Lab Control Sample     | Dissolved | Water  | FILTRATION |            |
| LCS 480-135891/2-D   | Lab Control Sample     | Dissolved | Water  | FILTRATION |            |
| LCSD 480-135891/15-B | Lab Control Sample Dup | Dissolved | Water  | FILTRATION |            |
| LCSD 480-135891/15-D | Lab Control Sample Dup | Dissolved | Water  | FILTRATION |            |
| MB 480-135891/1-B    | Method Blank           | Dissolved | Water  | FILTRATION |            |
| MB 480-135891/1-D    | Method Blank           | Dissolved | Water  | FILTRATION |            |

#### Prep Batch: 136029

| Lab Sample ID        | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 480-44452-3          | GW-D                   | Dissolved | Water  | 3005A  | 135891     |
| LCS 480-135891/2-B   | Lab Control Sample     | Dissolved | Water  | 3005A  | 135891     |
| LCSD 480-135891/15-B | Lab Control Sample Dup | Dissolved | Water  | 3005A  | 135891     |
| MB 480-135891/1-B    | Method Blank           | Dissolved | Water  | 3005A  | 135891     |

#### Prep Batch: 136034

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-3        | GW-D               | Dissolved | Water  | 7470A  | 135891     |
| LCS 480-135891/2-D | Lab Control Sample | Dissolved | Water  | 7470A  | 135891     |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Metals (Continued)

#### Prep Batch: 136034 (Continued)

| Lab Sample ID        | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| LCSD 480-135891/15-D | Lab Control Sample Dup | Dissolved | Water  | 7470A  | 135891     |
| MB 480-135891/1-D    | Method Blank           | Dissolved | Water  | 7470A  | 135891     |

#### Analysis Batch: 136156

| Lab Sample ID        | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 480-44452-3          | GW-D                   | Dissolved | Water  | 7470A  | 136034     |
| LCS 480-135891/2-D   | Lab Control Sample     | Dissolved | Water  | 7470A  | 136034     |
| LCSD 480-135891/15-D | Lab Control Sample Dup | Dissolved | Water  | 7470A  | 136034     |
| MB 480-135891/1-D    | Method Blank           | Dissolved | Water  | 7470A  | 136034     |

#### Analysis Batch: 136502

| Lab Sample ID        | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|----------------------|------------------------|-----------|--------|--------|------------|
| 480-44452-3          | GW-D                   | Dissolved | Water  | 6010B  | 136029     |
| LCS 480-135891/2-B   | Lab Control Sample     | Dissolved | Water  | 6010B  | 136029     |
| LCSD 480-135891/15-B | Lab Control Sample Dup | Dissolved | Water  | 6010B  | 136029     |
| MB 480-135891/1-B    | Method Blank           | Dissolved | Water  | 6010B  | 136029     |

#### Filtration Batch: 136834

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method     | Prep Batch |
|---------------------|------------------------|-----------|--------|------------|------------|
| 480-44452-3         | GW-D                   | Dissolved | Water  | FILTRATION |            |
| LCS 480-136834/2-B  | Lab Control Sample     | Dissolved | Water  | FILTRATION |            |
| LCSD 480-136834/3-B | Lab Control Sample Dup | Dissolved | Water  | FILTRATION |            |
| MB 480-136834/1-B   | Method Blank           | Dissolved | Water  | FILTRATION |            |

#### Prep Batch: 136979

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 480-44452-3         | GW-D                   | Dissolved | Water  | 3005A  | 136834     |
| LCS 480-136834/2-B  | Lab Control Sample     | Dissolved | Water  | 3005A  | 136834     |
| LCSD 480-136834/3-B | Lab Control Sample Dup | Dissolved | Water  | 3005A  | 136834     |
| MB 480-136834/1-B   | Method Blank           | Dissolved | Water  | 3005A  | 136834     |

#### Analysis Batch: 137111

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 480-44452-3         | GW-D                   | Dissolved | Water  | 6010B  | 136979     |
| LCS 480-136834/2-B  | Lab Control Sample     | Dissolved | Water  | 6010B  | 136979     |
| LCSD 480-136834/3-B | Lab Control Sample Dup | Dissolved | Water  | 6010B  | 136979     |
| MB 480-136834/1-B   | Method Blank           | Dissolved | Water  | 6010B  | 136979     |

#### Analysis Batch: 137177

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 480-44452-3   | GW-D             | Dissolved | Water  | 6010B  | 136979     |

### General Chemistry

#### Analysis Batch: 135512

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1      | GW-A               | Total/NA  | Water  | 180.1  |            |
| 480-44452-2      | GW-B               | Total/NA  | Water  | 180.1  |            |
| 480-44452-3      | GW-D               | Total/NA  | Water  | 180.1  |            |
| LCS 480-135512/4 | Lab Control Sample | Total/NA  | Water  | 180.1  |            |

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## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### General Chemistry (Continued)

#### Analysis Batch: 135512 (Continued)

| Lab Sample ID   | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-----------------|------------------|-----------|--------|--------|------------|
| MB 480-135512/3 | Method Blank     | Total/NA  | Water  | 180.1  |            |

#### Prep Batch: 135629

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 9012A  |            |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 9012A  |            |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 9012A  |            |
| LCS 480-135629/2-A | Lab Control Sample | Total/NA  | Water  | 9012A  |            |
| MB 480-135629/1-A  | Method Blank       | Total/NA  | Water  | 9012A  |            |

#### Analysis Batch: 135638

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|------------------|--------------------|-----------|--------|----------|------------|
| 480-44452-1      | GW-A               | Total/NA  | Water  | SM 2120B |            |
| 480-44452-2      | GW-B               | Total/NA  | Water  | SM 2120B |            |
| 480-44452-3      | GW-D               | Total/NA  | Water  | SM 2120B |            |
| LCS 480-135638/4 | Lab Control Sample | Total/NA  | Water  | SM 2120B |            |
| MB 480-135638/3  | Method Blank       | Total/NA  | Water  | SM 2120B |            |

#### Analysis Batch: 135640

| Lab Sample ID        | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|----------------------|--------------------|-----------|--------|----------|------------|
| 480-44452-1          | GW-A               | Total/NA  | Water  | SM 5210B |            |
| 480-44452-2          | GW-B               | Total/NA  | Water  | SM 5210B |            |
| 480-44452-3          | GW-D               | Total/NA  | Water  | SM 5210B |            |
| LCS 480-135640/2     | Lab Control Sample | Total/NA  | Water  | SM 5210B |            |
| USB 480-135640/1 USB | Method Blank       | Total/NA  | Water  | SM 5210B |            |

#### Analysis Batch: 135649

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1      | GW-A               | Total/NA  | Water  | 7196A  |            |
| 480-44452-1 MS   | GW-A               | Total/NA  | Water  | 7196A  |            |
| 480-44452-2      | GW-B               | Total/NA  | Water  | 7196A  |            |
| 480-44452-2 DU   | GW-B               | Total/NA  | Water  | 7196A  |            |
| 480-44452-3      | GW-D               | Total/NA  | Water  | 7196A  |            |
| LCS 480-135649/4 | Lab Control Sample | Total/NA  | Water  | 7196A  |            |
| MB 480-135649/3  | Method Blank       | Total/NA  | Water  | 7196A  |            |

#### Analysis Batch: 135661

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 480-44452-1   | GW-A             | Total/NA  | Water  | 353.2  |            |
| 480-44452-2   | GW-B             | Total/NA  | Water  | 353.2  |            |
| 480-44452-3   | GW-D             | Total/NA  | Water  | 353.2  |            |

#### Analysis Batch: 135669

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1       | GW-A               | Total/NA  | Water  | 300.0  |            |
| 480-44452-2       | GW-B               | Total/NA  | Water  | 300.0  |            |
| 480-44452-3       | GW-D               | Total/NA  | Water  | 300.0  |            |
| LCS 480-135669/51 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| MB 480-135669/52  | Method Blank       | Total/NA  | Water  | 300.0  |            |

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### General Chemistry (Continued)

#### Analysis Batch: 135721

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 350.1  |            |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 350.1  |            |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 350.1  |            |
| LCS 480-135721/148 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| LCS 480-135721/196 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| LCS 480-135721/220 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| LCS 480-135721/52  | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| MB 480-135721/147  | Method Blank       | Total/NA  | Water  | 350.1  |            |
| MB 480-135721/195  | Method Blank       | Total/NA  | Water  | 350.1  |            |
| MB 480-135721/219  | Method Blank       | Total/NA  | Water  | 350.1  |            |
| MB 480-135721/51   | Method Blank       | Total/NA  | Water  | 350.1  |            |

#### Analysis Batch: 135841

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1      | GW-A               | Total/NA  | Water  | 9060   |            |
| 480-44452-2      | GW-B               | Total/NA  | Water  | 9060   |            |
| 480-44452-3      | GW-D               | Total/NA  | Water  | 9060   |            |
| LCS 480-135841/4 | Lab Control Sample | Total/NA  | Water  | 9060   |            |
| MB 480-135841/3  | Method Blank       | Total/NA  | Water  | 9060   |            |

#### Analysis Batch: 135893

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 9012A  | 135629     |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 9012A  | 135629     |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 9012A  | 135629     |
| LCS 480-135629/2-A | Lab Control Sample | Total/NA  | Water  | 9012A  | 135629     |
| MB 480-135629/1-A  | Method Blank       | Total/NA  | Water  | 9012A  | 135629     |

#### Prep Batch: 135895

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 351.2  |            |
| LCS 480-135895/2-A | Lab Control Sample | Total/NA  | Water  | 351.2  |            |
| MB 480-135895/1-A  | Method Blank       | Total/NA  | Water  | 351.2  |            |

#### Prep Batch: 135901

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-2        | GW-B               | Total/NA  | Water  | 351.2  |            |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 351.2  |            |
| LCS 480-135901/2-A | Lab Control Sample | Total/NA  | Water  | 351.2  |            |
| MB 480-135901/1-A  | Method Blank       | Total/NA  | Water  | 351.2  |            |

#### Analysis Batch: 135910

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1       | GW-A               | Total/NA  | Water  | 300.0  |            |
| 480-44452-2       | GW-B               | Total/NA  | Water  | 300.0  |            |
| 480-44452-3       | GW-D               | Total/NA  | Water  | 300.0  |            |
| LCS 480-135910/27 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| MB 480-135910/28  | Method Blank       | Total/NA  | Water  | 300.0  |            |

TestAmerica Buffalo



## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### General Chemistry (Continued)

#### Prep Batch: 135940

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------|----------------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | Distill/Phenol |            |
| 480-44452-1 DU     | GW-A               | Total/NA  | Water  | Distill/Phenol |            |
| 480-44452-2        | GW-B               | Total/NA  | Water  | Distill/Phenol |            |
| 480-44452-2 MS     | GW-B               | Total/NA  | Water  | Distill/Phenol |            |
| 480-44452-3        | GW-D               | Total/NA  | Water  | Distill/Phenol |            |
| LCS 480-135940/2-A | Lab Control Sample | Total/NA  | Water  | Distill/Phenol |            |
| MB 480-135940/1-A  | Method Blank       | Total/NA  | Water  | Distill/Phenol |            |

#### Analysis Batch: 135950

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|------------------|--------------------|-----------|--------|----------|------------|
| 480-44452-1      | GW-A               | Total/NA  | Water  | SM 2540C |            |
| 480-44452-2      | GW-B               | Total/NA  | Water  | SM 2540C |            |
| 480-44452-3      | GW-D               | Total/NA  | Water  | SM 2540C |            |
| LCS 480-135950/2 | Lab Control Sample | Total/NA  | Water  | SM 2540C |            |
| MB 480-135950/1  | Method Blank       | Total/NA  | Water  | SM 2540C |            |

#### Analysis Batch: 135990

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 351.2  | 135895     |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 351.2  | 135901     |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 351.2  | 135901     |
| LCS 480-135895/2-A | Lab Control Sample | Total/NA  | Water  | 351.2  | 135895     |
| LCS 480-135901/2-A | Lab Control Sample | Total/NA  | Water  | 351.2  | 135901     |
| MB 480-135895/1-A  | Method Blank       | Total/NA  | Water  | 351.2  | 135895     |
| MB 480-135901/1-A  | Method Blank       | Total/NA  | Water  | 351.2  | 135901     |

#### Analysis Batch: 136002

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 310.2  |            |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 310.2  |            |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 310.2  |            |
| LCS 480-136002/125 | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| LCS 480-136002/73  | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| LCS 480-136002/99  | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| MB 480-136002/100  | Method Blank       | Total/NA  | Water  | 310.2  |            |
| MB 480-136002/126  | Method Blank       | Total/NA  | Water  | 310.2  |            |
| MB 480-136002/74   | Method Blank       | Total/NA  | Water  | 310.2  |            |

#### Analysis Batch: 136133

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|-------------------|--------------------|-----------|--------|----------|------------|
| 480-44452-1       | GW-A               | Total/NA  | Water  | SM 2340C |            |
| 480-44452-1 MS    | GW-A               | Total/NA  | Water  | SM 2340C |            |
| 480-44452-2       | GW-B               | Total/NA  | Water  | SM 2340C |            |
| 480-44452-2 DU    | GW-B               | Total/NA  | Water  | SM 2340C |            |
| 480-44452-3       | GW-D               | Total/NA  | Water  | SM 2340C |            |
| LCS 480-136133/28 | Lab Control Sample | Total/NA  | Water  | SM 2340C |            |
| MB 480-136133/27  | Method Blank       | Total/NA  | Water  | SM 2340C |            |

#### Analysis Batch: 136178

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 480-44452-1   | GW-A             | Total/NA  | Water  | 410.4  |            |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### General Chemistry (Continued)

#### Analysis Batch: 136178 (Continued)

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-3       | GW-D               | Total/NA  | Water  | 410.4  |            |
| LCS 480-136178/28 | Lab Control Sample | Total/NA  | Water  | 410.4  |            |
| LCS 480-136178/4  | Lab Control Sample | Total/NA  | Water  | 410.4  |            |
| MB 480-136178/27  | Method Blank       | Total/NA  | Water  | 410.4  |            |
| MB 480-136178/3   | Method Blank       | Total/NA  | Water  | 410.4  |            |

#### Analysis Batch: 136188

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-1        | GW-A               | Total/NA  | Water  | 9066   | 135940     |
| 480-44452-1 DU     | GW-A               | Total/NA  | Water  | 9066   | 135940     |
| 480-44452-2        | GW-B               | Total/NA  | Water  | 9066   | 135940     |
| 480-44452-2 MS     | GW-B               | Total/NA  | Water  | 9066   | 135940     |
| 480-44452-3        | GW-D               | Total/NA  | Water  | 9066   | 135940     |
| LCS 480-135940/2-A | Lab Control Sample | Total/NA  | Water  | 9066   | 135940     |
| MB 480-135940/1-A  | Method Blank       | Total/NA  | Water  | 9066   | 135940     |

#### Analysis Batch: 136903

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 480-44452-2      | GW-B               | Total/NA  | Water  | 410.4  |            |
| LCS 480-136903/4 | Lab Control Sample | Total/NA  | Water  | 410.4  |            |
| MB 480-136903/3  | Method Blank       | Total/NA  | Water  | 410.4  |            |

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## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

**Client Sample ID: GW-A**

Date Collected: 08/21/13 16:40

Date Received: 08/23/13 02:00

**Lab Sample ID: 480-44452-1**

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 7470A          |     |                 | 135544       | 08/23/13 08:35       | JRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 135676       | 08/23/13 13:35       | JRK     | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 135533       | 08/23/13 08:20       | NMD2    | TAL BUF |
| Total/NA  | Analysis   | 6010B          |     | 1               | 135857       | 08/23/13 19:17       | LMH     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 135512       | 08/23/13 06:00       | LMK     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 135638       | 08/23/13 11:30       | LAW     | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 135640       | 08/23/13 10:08       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 135649       | 08/23/13 07:45       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 135661       | 08/23/13 10:30       | RMB     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 135669       | 08/24/13 02:26       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 1               | 135721       | 08/23/13 16:01       | KMF     | TAL BUF |
| Total/NA  | Analysis   | 9060           |     | 1               | 135841       | 08/23/13 16:46       | KRC     | TAL BUF |
| Total/NA  | Prep       | 9012A          |     |                 | 135629       | 08/23/13 11:26       | KWJ     | TAL BUF |
| Total/NA  | Analysis   | 9012A          |     | 1               | 135893       | 08/26/13 09:20       | KWJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 135910       | 08/26/13 18:08       | KRC     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 135950       | 08/26/13 15:11       | KS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 135895       | 08/26/13 07:41       | LAW     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 1               | 135990       | 08/26/13 18:41       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 5               | 136002       | 08/26/13 21:27       | JME     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 136133       | 08/27/13 12:49       | KWJ     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 136178       | 08/27/13 16:49       | JMB     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 135940       | 08/26/13 08:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 136188       | 08/27/13 17:35       | NCH     | TAL BUF |

**Client Sample ID: GW-B**

Date Collected: 08/21/13 16:25

Date Received: 08/23/13 02:00

**Lab Sample ID: 480-44452-2**

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 7470A        |     |                 | 135544       | 08/23/13 08:35       | JRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A        |     | 1               | 135676       | 08/23/13 13:37       | JRK     | TAL BUF |
| Total/NA  | Prep       | 3005A        |     |                 | 135533       | 08/23/13 08:20       | NMD2    | TAL BUF |
| Total/NA  | Analysis   | 6010B        |     | 1               | 135857       | 08/23/13 19:19       | LMH     | TAL BUF |
| Total/NA  | Analysis   | 180.1        |     | 1               | 135512       | 08/23/13 06:00       | LMK     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B     |     | 10              | 135638       | 08/23/13 11:30       | LAW     | TAL BUF |
| Total/NA  | Analysis   | SM 5210B     |     | 1               | 135640       | 08/23/13 10:08       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 7196A        |     | 1               | 135649       | 08/23/13 07:45       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 353.2        |     | 1               | 135661       | 08/23/13 10:31       | RMB     | TAL BUF |
| Total/NA  | Analysis   | 300.0        |     | 1               | 135669       | 08/24/13 02:36       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 350.1        |     | 1               | 135721       | 08/23/13 16:02       | KMF     | TAL BUF |
| Total/NA  | Analysis   | 9060         |     | 1               | 135841       | 08/23/13 17:14       | KRC     | TAL BUF |

TestAmerica Buffalo

## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

**Client Sample ID: GW-B**

**Date Collected: 08/21/13 16:25**

**Date Received: 08/23/13 02:00**

**Lab Sample ID: 480-44452-2**

**Matrix: Water**

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 9012A          |     |                 | 135629       | 08/23/13 11:26       | KWJ     | TAL BUF |
| Total/NA  | Analysis   | 9012A          |     | 1               | 135893       | 08/26/13 09:21       | KWJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 135910       | 08/26/13 18:17       | KRC     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 135950       | 08/26/13 15:12       | KS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 135901       | 08/26/13 07:50       | LAW     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 2               | 135990       | 08/26/13 20:17       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 5               | 136002       | 08/26/13 21:27       | JME     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 136133       | 08/27/13 12:49       | KWJ     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 135940       | 08/26/13 08:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 136188       | 08/27/13 17:44       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 136903       | 08/30/13 23:30       | JMB     | TAL BUF |

9

**Client Sample ID: GW-D**

**Date Collected: 08/21/13 16:00**

**Date Received: 08/23/13 02:00**

**Lab Sample ID: 480-44452-3**

**Matrix: Water**

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 7470A        |     |                 | 135544       | 08/23/13 08:35       | JRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A        |     | 1               | 135676       | 08/23/13 13:39       | JRK     | TAL BUF |
| Total/NA  | Prep       | 3005A        |     |                 | 135533       | 08/23/13 08:20       | NMD2    | TAL BUF |
| Total/NA  | Analysis   | 6010B        |     | 1               | 135857       | 08/23/13 19:21       | LMH     | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 135891       | 08/26/13 11:00       | NMD2    | TAL BUF |
| Dissolved | Prep       | 7470A        |     |                 | 136034       | 08/27/13 08:30       | JRK     | TAL BUF |
| Dissolved | Analysis   | 7470A        |     | 1               | 136156       | 08/27/13 13:07       | JRK     | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 135891       | 08/26/13 11:00       | NMD2    | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 136029       | 08/27/13 08:20       | NMD2    | TAL BUF |
| Dissolved | Analysis   | 6010B        |     | 1               | 136502       | 08/28/13 17:10       | AMH     | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 136834       | 08/30/13 15:52       | NMD2    | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 136979       | 09/03/13 09:40       | NMD2    | TAL BUF |
| Dissolved | Analysis   | 6010B        |     | 1               | 137111       | 09/03/13 16:06       | AMH     | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 136834       | 08/30/13 15:52       | NMD2    | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 136979       | 09/03/13 09:40       | NMD2    | TAL BUF |
| Dissolved | Analysis   | 6010B        |     | 1               | 137177       | 09/03/13 18:17       | AMH     | TAL BUF |
| Total/NA  | Analysis   | 180.1        |     | 25              | 135512       | 08/23/13 06:00       | LMK     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B     |     | 10              | 135638       | 08/23/13 11:30       | LAW     | TAL BUF |
| Total/NA  | Analysis   | SM 5210B     |     | 1               | 135640       | 08/23/13 10:08       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 7196A        |     | 1               | 135649       | 08/23/13 07:45       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 353.2        |     | 1               | 135661       | 08/23/13 10:32       | RMB     | TAL BUF |
| Total/NA  | Analysis   | 300.0        |     | 1               | 135669       | 08/24/13 02:46       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 350.1        |     | 5               | 135721       | 08/23/13 17:00       | KMF     | TAL BUF |
| Total/NA  | Analysis   | 9060         |     | 1               | 135841       | 08/23/13 17:41       | KRC     | TAL BUF |
| Total/NA  | Prep       | 9012A        |     |                 | 135629       | 08/23/13 11:26       | KWJ     | TAL BUF |
| Total/NA  | Analysis   | 9012A        |     | 1               | 135893       | 08/26/13 09:22       | KWJ     | TAL BUF |

TestAmerica Buffalo



## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

Client Sample ID: GW-D

Date Collected: 08/21/13 16:00

Date Received: 08/23/13 02:00

Lab Sample ID: 480-44452-3

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 300.0          |     | 1               | 135910       | 08/26/13 18:27       | KRC     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 135950       | 08/26/13 15:13       | KS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 135901       | 08/26/13 07:50       | LAW     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 5               | 135990       | 08/26/13 20:53       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 10              | 136002       | 08/26/13 22:04       | JME     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 136133       | 08/27/13 12:49       | KWJ     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 136178       | 08/27/13 16:49       | JMB     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 135940       | 08/26/13 08:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 136188       | 08/27/13 17:44       | NCH     | TAL BUF |

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Certification Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

### Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority         | Program       | EPA Region | Certification ID | Expiration Date |
|-------------------|---------------|------------|------------------|-----------------|
| Arkansas DEQ      | State Program | 6          | 88-0686          | 10-06-13        |
| California        | NELAP         | 9          | 1169CA           | 09-30-13        |
| Connecticut       | State Program | 1          | PH-0568          | 09-30-14        |
| Florida           | NELAP         | 4          | E87672           | 06-30-14        |
| Georgia           | State Program | 4          | N/A              | 03-31-09 *      |
| Georgia           | State Program | 4          | N/A              | 03-31-14        |
| Georgia           | State Program | 4          | 956              | 03-31-09 *      |
| Illinois          | NELAP         | 5          | 200003           | 09-30-13        |
| Iowa              | State Program | 7          | 374              | 03-01-09 *      |
| Iowa              | State Program | 7          | 374              | 03-15-15        |
| Kansas            | NELAP         | 7          | E-10187          | 01-31-14        |
| Kentucky          | State Program | 4          | 90029            | 12-31-08 *      |
| Kentucky          | State Program | 4          | 90029            | 12-31-13        |
| Kentucky (UST)    | State Program | 4          | 30               | 04-01-14        |
| Louisiana         | NELAP         | 6          | 02031            | 06-30-14        |
| Maine             | State Program | 1          | NY00044          | 12-04-14        |
| Maryland          | State Program | 3          | 294              | 03-31-14        |
| Massachusetts     | State Program | 1          | M-NY044          | 06-30-14        |
| Michigan          | State Program | 5          | 9937             | 04-01-09 *      |
| Michigan          | State Program | 5          | 9937             | 04-01-14        |
| Minnesota         | NELAP         | 5          | 036-999-337      | 12-31-13        |
| New Hampshire     | NELAP         | 1          | 2337             | 11-17-13        |
| New Jersey        | NELAP         | 2          | NY455            | 06-30-14        |
| New York          | NELAP         | 2          | 10026            | 04-01-14        |
| North Dakota      | State Program | 8          | R-176            | 03-31-14        |
| Oklahoma          | State Program | 6          | 9421             | 08-31-14        |
| Oregon            | NELAP         | 10         | NY200003         | 06-09-14        |
| Pennsylvania      | NELAP         | 3          | 68-00281         | 07-31-14        |
| Rhode Island      | State Program | 1          | LAO00328         | 12-31-13        |
| Tennessee         | State Program | 4          | TN02970          | 04-01-14        |
| Texas             | NELAP         | 6          | T104704412-11-2  | 07-31-14        |
| USDA              | Federal       |            | P330-11-00386    | 11-22-14        |
| Virginia          | NELAP         | 3          | 460185           | 09-14-13 *      |
| Washington        | State Program | 10         | C784             | 02-10-14        |
| West Virginia DEP | State Program | 3          | 252              | 09-30-13        |
| Wisconsin         | State Program | 5          | 998310390        | 09-30-13        |

\* Expired certification is currently pending renewal and is considered valid.

TestAmerica Buffalo



## Method Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

| Method   | Method Description             | Protocol | Laboratory |
|----------|--------------------------------|----------|------------|
| 6010B    | Metals (ICP)                   | SW846    | TAL BUF    |
| 7470A    | Mercury (CVAA)                 | SW846    | TAL BUF    |
| 180.1    | Turbidity, Nephelometric       | MCAWW    | TAL BUF    |
| 300.0    | Anions, Ion Chromatography     | MCAWW    | TAL BUF    |
| 310.2    | Alkalinity                     | MCAWW    | TAL BUF    |
| 350.1    | Nitrogen, Ammonia              | MCAWW    | TAL BUF    |
| 351.2    | Nitrogen, Total Kjeldahl       | MCAWW    | TAL BUF    |
| 353.2    | Nitrate                        | MCAWW    | TAL BUF    |
| 410.4    | COD                            | EPA      | TAL BUF    |
| 7196A    | Chromium, Hexavalent           | MCAWW    | TAL BUF    |
| 9012A    | Cyanide, Total and/or Amenable | SW846    | TAL BUF    |
| 9060     | Organic Carbon, Total (TOC)    | SW846    | TAL BUF    |
| 9066     | Phenolics, Total Recoverable   | SW846    | TAL BUF    |
| SM 2120B | Color, Colorimetric            | SM       | TAL BUF    |
| SM 2340C | Hardness, Total                | SM       | TAL BUF    |
| SM 2540C | Solids, Total Dissolved (TDS)  | SM       | TAL BUF    |
| SM 5210B | BOD, 5-Day                     | SM       | TAL BUF    |

### Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Sample Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-44452-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 480-44452-1   | GW-A             | Water  | 08/21/13 16:40 | 08/23/13 02:00 |
| 480-44452-2   | GW-B             | Water  | 08/21/13 16:25 | 08/23/13 02:00 |
| 480-44452-3   | GW-D             | Water  | 08/21/13 16:00 | 08/23/13 02:00 |



## TestAmerica

[illegible][illegible]

## Login Sample Receipt Checklist

Client: Sterling Environmental Engineering PC

Job Number: 480-44452-1

Login Number: 44452

List Source: TestAmerica Buffalo

List Number: 1

Creator: Wienke, Robert K

| Question   | Answer | Comment  |
|--|--------|----------|
| Radioactivity either was not measured or, if measured, is at or below background | True   |          |
| The cooler's custody seal, if present, is intact.                                | True   |          |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |          |
| Samples were received on ice.  | True   |          |
| Cooler Temperature is acceptable.  | True   |          |
| Cooler Temperature is recorded.  | True   |          |
| COC is present.  | True   |          |
| COC is filled out in ink and legible.  | True   |          |
| COC is filled out with all pertinent information.                                | True   |          |
| Is the Field Sampler's name present on COC?                                      | True   |          |
| There are no discrepancies between the sample IDs on the containers and the COC. | True   |          |
| Samples are received within Holding Time.  | True   |          |
| Sample containers have legible labels.   | True   |          |
| Containers are not broken or leaking.  | True   |          |
| Sample collection date/times are provided.                                       | True   |          |
| Appropriate sample containers are used.  | True   |          |
| Sample bottles are completely filled.  | True   |          |
| Sample Preservation Verified   | True   |          |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |          |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | True   |          |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True   |          |
| Multiphasic samples are not present.   | True   |          |
| Samples do not require splitting or compositing.                                 | True   |          |
| Sampling Company provided.   | True   | STERLING |
| Samples received within 48 hours of sampling.                                    | True   |          |
| Samples requiring field filtration have been filtered in the field.              | N/A    |          |
| Chlorine Residual checked.   | N/A    |          |

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-68691-1

Client Project/Site: Orange County Landfill

Sampling Event: Leachate Baseline

For:

Sterling Environmental Engineering PC

24 Wade Road

Latham, New York 12110

Attn: Mr. Mark Williams



Authorized for release by:

10/17/2014 11:26:04 AM

Anne Pridgeon, Project Management Assistant I

[anne.pridgeon@testamericainc.com](mailto:anne.pridgeon@testamericainc.com)

Designee for

Lisa Shaffer, Project Manager II

(716)504-9816

[lisa.shaffer@testamericainc.com](mailto:lisa.shaffer@testamericainc.com)

### LINKS

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[www.testamericainc.com](http://www.testamericainc.com)

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Definitions/Glossary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Qualifiers

#### GC/MS VOA

| Qualifier | Qualifier Description |
|-----------|-----------------------|
|-----------|-----------------------|

|   |  |
|---|--|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
|---|--|

#### Metals

| Qualifier | Qualifier Description |
|-----------|-----------------------|
|-----------|-----------------------|

|   |  |
|---|--|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
|---|--|

|   |   |
|---|---|
| B | Compound was found in the blank and sample. |
|---|---|

#### General Chemistry

| Qualifier | Qualifier Description |
|-----------|-----------------------|
|-----------|-----------------------|

|   |  |
|---|--|
| b | Result Detected in the Unseeded Control blank (USB). |
|---|--|

|   |   |
|---|---|
| B | Compound was found in the blank and sample. |
|---|---|

|   |  |
|---|--|
| J | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
|---|--|

|   |   |
|---|---|
| 4 | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
|---|---|

|    |   |
|----|---|
| F1 | MS and/or MSD Recovery exceeds the control limits |
|----|---|

|   |  |
|---|--|
| A | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits. |
|---|--|

### Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report. |
|--------------|---|
|--------------|---|

|   |  |
|---|--|
| D | Listed under the "D" column to designate that the result is reported on a dry weight basis |
|---|--|

|    |                  |
|----|------------------|
| %R | Percent Recovery |
|----|------------------|

|     |                      |
|-----|----------------------|
| CFL | Contains Free Liquid |
|-----|----------------------|

|    |                         |
|----|-------------------------|
| CF | Contains no Free Liquid |
|----|-------------------------|

|    |  |
|----|--|
| DR | Duplicate error ratio (normalized absolute difference) |
|----|--|

|         |                 |
|---------|-----------------|
| Dil Fac | Dilution Factor |
|---------|-----------------|

|                |   |
|----------------|---|
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
|----------------|---|

|     |                              |
|-----|------------------------------|
| DLC | Decision level concentration |
|-----|------------------------------|

|     |                             |
|-----|-----------------------------|
| MDA | Minimum detectable activity |
|-----|-----------------------------|

|     |                           |
|-----|---------------------------|
| EDL | Estimated Detection Limit |
|-----|---------------------------|

|     |                                  |
|-----|----------------------------------|
| MDC | Minimum detectable concentration |
|-----|----------------------------------|

|     |                        |
|-----|------------------------|
| MDL | Method Detection Limit |
|-----|------------------------|

|    |                        |
|----|------------------------|
| ML | Minimum Level (Dioxin) |
|----|------------------------|

|    |                |
|----|----------------|
| NC | Not Calculated |
|----|----------------|

|    |  |
|----|--|
| ND | Not detected at the reporting limit (or MDL or EDL if shown) |
|----|--|

|     |                              |
|-----|------------------------------|
| PQL | Practical Quantitation Limit |
|-----|------------------------------|

|    |                 |
|----|-----------------|
| QC | Quality Control |
|----|-----------------|

|     |                      |
|-----|----------------------|
| RER | Relative error ratio |
|-----|----------------------|

|    |   |
|----|---|
| RL | Reporting Limit or Requested Limit (Radiochemistry) |
|----|---|

|     |  |
|-----|--|
| RPD | Relative Percent Difference, a measure of the relative difference between two points |
|-----|--|

|     |                                     |
|-----|-------------------------------------|
| TEF | Toxicity Equivalent Factor (Dioxin) |
|-----|-------------------------------------|

|     |                                       |
|-----|---------------------------------------|
| TEQ | Toxicity Equivalent Quotient (Dioxin) |
|-----|---------------------------------------|

## Case Narrative

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

**Job ID: 480-68691-1**

**Laboratory: TestAmerica Buffalo**

### Narrative

**Job Narrative**  
**480-68691-1**

### Comments

No additional comments.

### Receipt

The samples were received on 10/7/2014 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.8° C, 3.9° C and 4.2° C.

### GC/MS VOA

Method(s) 624: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: MH-5 (480-68691-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### Metals

Method(s) 6010C: The method blank for batch 480-206499 contained total iron and zinc above the method detection limits. These target analyte concentrations were less than the reporting limits (RLs); therefore, re-extraction and/or re-analysis of samples MH-5 (480-68691-1) was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### General Chemistry

Method(s) SM 2120B: Associated samples were filtered prior to analysis. Results are reported as true color. MH-5 (480-68691-1)

Method(s) 350.1: The method blank for batch 206737 contained ammonia above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed. MH-5 (480-68691-1)

Method(s) SM 2540C: Due to the matrix, the initial volume(s) used for the following sample(s) deviated from the standard procedure: MH-5 (480-68691-1). The reporting limits (RLs) have been adjusted proportionately.

Method(s) SM 5210B: The USB dilution water D.O. depletion was greater than 0.2 mg/L but less than the reporting limit of 2.0 mg/L. The associated sample results in batch 206654 are reported. (USB 480-206654/1)

Method(s) 310.2: The method blank for batch 207719 contained Alkalinity above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. MH-5 (480-68691-1)

Method(s) 410.4: The method blank for batch 208155 contained chemical oxygen demand above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. MH-5 (480-68691-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

**Client Sample ID: MH-5**

**Lab Sample ID: 480-68691-1**

| Analyte                       | Result | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D | Method   | Prep Type |
|-------------------------------|--------|-----------|--------|---------|-------------|-----|-----|---|----------|-----------|
| Chloroethane                  | 20     | J         | 50     | 8.7     | ug/L        | 10  |     |   | 624      | Total/NA  |
| Aluminum                      | 0.16   | J         | 0.20   | 0.060   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Arsenic                       | 0.031  |           | 0.015  | 0.0056  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Barium                        | 1.9    |           | 0.0020 | 0.00070 | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Boron                         | 1.0    |           | 0.020  | 0.0040  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Calcium                       | 180    |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Chromium                      | 0.0054 |           | 0.0040 | 0.0010  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Copper                        | 0.0038 | J         | 0.010  | 0.0016  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Iron                          | 47     | B         | 0.050  | 0.019   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Magnesium                     | 53     |           | 0.20   | 0.043   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Manganese                     | 2.2    |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Nickel                        | 0.028  |           | 0.010  | 0.0013  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Potassium                     | 67     |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Sodium                        | 370    |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Zinc                          | 0.014  | B         | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Chloride                      | 520    |           | 2.5    | 2.0     | mg/L        | 5   |     |   | 300.0    | Total/NA  |
| Sulfate                       | 4.6    |           | 2.0    | 0.13    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total             | 1300   | B         | 500    | 200     | mg/L        | 50  |     |   | 310.2    | Total/NA  |
| Ammonia                       | 130    | B         | 2.0    | 0.90    | mg/L        | 100 |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen       | 140    |           | 10     | 7.5     | mg/L        | 50  |     |   | 351.2    | Total/NA  |
| Nitrate as N                  | 0.24   |           | 0.050  | 0.020   | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand        | 250    | B         | 40     | 20      | mg/L        | 4   |     |   | 410.4    | Total/NA  |
| Cyanide, Total                | 0.0083 | J         | 0.010  | 0.0050  | mg/L        | 1   |     |   | 9012B    | Total/NA  |
| Total Organic Carbon          | 57     |           | 1.0    | 0.43    | mg/L        | 1   |     |   | 9060A    | Total/NA  |
| Phenolics, Total Recoverable  | 0.0075 | J         | 0.010  | 0.0050  | mg/L        | 1   |     |   | 9066     | Total/NA  |
| Hardness as calcium carbonate | 760    |           | 20     | 5.3     | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids        | 1000   |           | 20     | 8.0     | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand     | 16     | b         | 2.0    | 2.0     | mg/L        | 1   |     |   | SM 5210B | Total/NA  |
| Analyte                       | Result | Qualifier | RL     | RL      | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity                     | 440    |           | 1.0    | 1.0     | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                         | 40     |           | 5.0    | 5.0     | Color Units | 1   |     |   | SM 2120B | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

Client Sample ID: MH-5

Lab Sample ID: 480-68691-1

Date Collected: 10/06/14 15:30

Matrix: Leachate

Date Received: 10/07/14 09:00

## Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|-----|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 50  | 3.9 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,1,2,2-Tetrachloroethane | ND     |           | 50  | 2.6 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,1,2-Trichloroethane     | ND     |           | 50  | 4.8 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,1-Dichloroethane        | ND     |           | 50  | 5.9 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,1-Dichloroethene        | ND     |           | 50  | 8.5 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,2-Dichlorobenzene       | ND     |           | 50  | 4.4 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,2-Dichloroethane        | ND     |           | 50  | 6.0 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,2-Dichloropropane       | ND     |           | 50  | 6.1 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,3-Dichlorobenzene       | ND     |           | 50  | 5.4 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 1,4-Dichlorobenzene       | ND     |           | 50  | 5.1 | ug/L |   |          | 10/09/14 03:54 | 10      |
| 2-Chloroethyl vinyl ether | ND     |           | 250 | 19  | ug/L |   |          | 10/09/14 03:54 | 10      |
| Benzene                   | ND     |           | 50  | 6.0 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Bromodichloromethane      | ND     |           | 50  | 5.4 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Bromoform                 | ND     |           | 50  | 4.7 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Bromomethane              | ND     |           | 50  | 12  | ug/L |   |          | 10/09/14 03:54 | 10      |
| Carbon tetrachloride      | ND     |           | 50  | 5.1 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Chlorobenzene             | ND     |           | 50  | 4.8 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Chloroethane              | 20     | J         | 50  | 8.7 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Chloroform                | ND     |           | 50  | 5.4 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Chloromethane             | ND     |           | 50  | 6.4 | ug/L |   |          | 10/09/14 03:54 | 10      |
| cis-1,2-Dichloroethene    | ND     |           | 50  | 5.7 | ug/L |   |          | 10/09/14 03:54 | 10      |
| cis-1,3-Dichloropropene   | ND     |           | 50  | 3.3 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Dibromochloromethane      | ND     |           | 50  | 4.1 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Dichlorodifluoromethane   | ND     |           | 50  | 2.8 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Ethylbenzene              | ND     |           | 50  | 4.6 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Methylene Chloride        | ND     |           | 50  | 8.1 | ug/L |   |          | 10/09/14 03:54 | 10      |
| m-Xylene & p-Xylene       | ND     |           | 100 | 11  | ug/L |   |          | 10/09/14 03:54 | 10      |
| o-Xylene                  | ND     |           | 50  | 4.3 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Tetrachloroethene         | ND     |           | 50  | 3.4 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Toluene                   | ND     |           | 50  | 4.5 | ug/L |   |          | 10/09/14 03:54 | 10      |
| trans-1,2-Dichloroethene  | ND     |           | 50  | 5.9 | ug/L |   |          | 10/09/14 03:54 | 10      |
| trans-1,3-Dichloropropene | ND     |           | 50  | 4.4 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Trichloroethene           | ND     |           | 50  | 6.0 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Trichlorofluoromethane    | ND     |           | 50  | 4.5 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Vinyl chloride            | ND     |           | 50  | 7.5 | ug/L |   |          | 10/09/14 03:54 | 10      |
| Xylenes, Total            | ND     |           | 100 | 11  | ug/L |   |          | 10/09/14 03:54 | 10      |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 102       |           | 72 - 130 |          | 10/09/14 03:54 | 10      |
| 4-Bromofluorobenzene (Surr)  | 98        |           | 69 - 121 |          | 10/09/14 03:54 | 10      |
| Toluene-d8 (Surr)            | 98        |           | 70 - 123 |          | 10/09/14 03:54 | 10      |

## Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.16   | J         | 0.20   | 0.060   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Arsenic   | 0.031  |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Barium    | 1.9    |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Boron     | 1.0    |           | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

Client Sample ID: MH-5

Lab Sample ID: 480-68691-1

Date Collected: 10/06/14 15:30

Matrix: Leachate

Date Received: 10/07/14 09:00

### Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Calcium   | 180    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Chromium  | 0.0054 |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Copper    | 0.0038 | J         | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Iron      | 47     | B         | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Magnesium | 53     |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Manganese | 2.2    |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Nickel    | 0.028  |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Potassium | 67     |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Sodium    | 370    |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Zinc      | 0.014  | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |

### Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 12:09 | 1       |

### General Chemistry

| Analyte                       | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                      | 520    |           | 2.5   | 2.0    | mg/L        |   |                | 10/13/14 16:15 | 5       |
| Sulfate                       | 4.6    |           | 2.0   | 0.13   | mg/L        |   |                | 10/10/14 03:07 | 1       |
| Alkalinity, Total             | 1300   | B         | 500   | 200    | mg/L        |   |                | 10/14/14 15:32 | 50      |
| Ammonia                       | 130    | B         | 2.0   | 0.90   | mg/L        |   |                | 10/08/14 23:01 | 100     |
| Total Kjeldahl Nitrogen       | 140    |           | 10    | 7.5    | mg/L        |   | 10/09/14 09:14 | 10/10/14 04:23 | 50      |
| Nitrate as N                  | 0.24   |           | 0.050 | 0.020  | mg/L        |   |                | 10/07/14 21:58 | 1       |
| Chemical Oxygen Demand        | 250    | B         | 40    | 20     | mg/L        |   |                | 10/16/14 09:12 | 4       |
| Chromium, hexavalent          | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 10/07/14 11:08 | 1       |
| Cyanide, Total                | 0.0083 | J         | 0.010 | 0.0050 | mg/L        |   | 10/13/14 15:25 | 10/13/14 22:52 | 1       |
| Total Organic Carbon          | 57     |           | 1.0   | 0.43   | mg/L        |   |                | 10/12/14 08:05 | 1       |
| Phenolics, Total Recoverable  | 0.0075 | J         | 0.010 | 0.0050 | mg/L        |   | 10/09/14 09:30 | 10/13/14 20:36 | 1       |
| Hardness as calcium carbonate | 760    |           | 20    | 5.3    | mg/L        |   |                | 10/09/14 11:55 | 1       |
| Total Dissolved Solids        | 1000   |           | 20    | 8.0    | mg/L        |   |                | 10/09/14 23:42 | 1       |
| Biochemical Oxygen Demand     | 16     | b         | 2.0   | 2.0    | mg/L        |   |                | 10/08/14 14:37 | 1       |
| Analyte                       | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                     | 440    |           | 1.0   | 1.0    | NTU         |   |                | 10/07/14 23:00 | 1       |
| Color                         | 40     |           | 5.0   | 5.0    | Color Units |   |                | 10/07/14 23:20 | 1       |

TestAmerica Buffalo

## Surrogate Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 624 - Volatile Organic Compounds (GC/MS)

Matrix: Leachate

Prep Type: Total/NA

| Lab Sample ID                        | Client Sample ID | Percent Surrogate Recovery (Acceptance Limits) |                 |                 |
|--------------------------------------|------------------|--|-----------------|-----------------|
|                                      |                  | 12DCE<br>(72-130)                              | BFB<br>(69-121) | TOL<br>(70-123) |
| 480-68691-1                          | MH-5             | 102  | 98              | 98              |
| <b>Surrogate Legend</b>              |                  |  |                 |                 |
| 12DCE = 1,2-Dichloroethane-d4 (Surr) |                  |  |                 |                 |
| BFB = 4-Bromofluorobenzene (Surr)    |                  |  |                 |                 |
| TOL = Toluene-d8 (Surr)              |                  |  |                 |                 |

### Method: 624 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID                        | Client Sample ID   | Percent Surrogate Recovery (Acceptance Limits) |                 |                 |
|--------------------------------------|--------------------|--|-----------------|-----------------|
|                                      |                    | 12DCE<br>(72-130)                              | BFB<br>(69-121) | TOL<br>(70-123) |
| LCS 480-206699/6                     | Lab Control Sample | 100  | 101             | 101             |
| MB 480-206699/8                      | Method Blank       | 104  | 101             | 99              |
| <b>Surrogate Legend</b>              |                    |  |                 |                 |
| 12DCE = 1,2-Dichloroethane-d4 (Surr) |                    |  |                 |                 |
| BFB = 4-Bromofluorobenzene (Surr)    |                    |  |                 |                 |
| TOL = Toluene-d8 (Surr)              |                    |  |                 |                 |



# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

## Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-206699/8

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                   | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND        |              | 5.0 | 0.39 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2,2-Tetrachloroethane | ND        |              | 5.0 | 0.26 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2-Trichloroethane     | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethane        | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethene        | ND        |              | 5.0 | 0.85 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichlorobenzene       | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloroethane        | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloropropane       | ND        |              | 5.0 | 0.61 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,3-Dichlorobenzene       | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,4-Dichlorobenzene       | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 2-Chloroethyl vinyl ether | ND        |              | 25  | 1.9  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Benzene                   | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromodichloromethane      | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromoform                 | ND        |              | 5.0 | 0.47 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromomethane              | ND        |              | 5.0 | 1.2  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Carbon tetrachloride      | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chlorobenzene             | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroethane              | ND        |              | 5.0 | 0.87 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroform                | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloromethane             | ND        |              | 5.0 | 0.64 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,2-Dichloroethene    | ND        |              | 5.0 | 0.57 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,3-Dichloropropene   | ND        |              | 5.0 | 0.33 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dibromochloromethane      | ND        |              | 5.0 | 0.41 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dichlorodifluoromethane   | ND        |              | 5.0 | 0.28 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Ethylbenzene              | ND        |              | 5.0 | 0.46 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Methylene Chloride        | ND        |              | 5.0 | 0.81 | ug/L |   |          | 10/08/14 23:03 | 1       |
| m-Xylene & p-Xylene       | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |
| o-Xylene                  | ND        |              | 5.0 | 0.43 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Tetrachloroethene         | ND        |              | 5.0 | 0.34 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Toluene                   | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,2-Dichloroethene  | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,3-Dichloropropene | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichloroethene           | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichlorofluoromethane    | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Vinyl chloride            | ND        |              | 5.0 | 0.75 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Xylenes, Total            | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104          |              | 72 - 130 |          | 10/08/14 23:03 | 1       |
| 4-Bromofluorobenzene (Surr)  | 101          |              | 69 - 121 |          | 10/08/14 23:03 | 1       |
| Toluene-d8 (Surr)            | 99           |              | 70 - 123 |          | 10/08/14 23:03 | 1       |

Lab Sample ID: LCS 480-206699/6

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte               | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------------------|-------------|------------|---------------|------|---|------|--------------|
| 1,1,1-Trichloroethane | 20.0        | 18.6       |               | ug/L |   | 93   | 52 - 162     |

TestAmerica Buffalo

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

## Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-206699/6

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------------------------|-------------|------------|---------------|------|---|------|--------------|
| 1,1,2,2-Tetrachloroethane | 20.0        | 18.8       |               | ug/L |   | 94   | 46 - 157     |
| 1,1,2-Trichloroethane     | 20.0        | 18.6       |               | ug/L |   | 93   | 52 - 150     |
| 1,1-Dichloroethane        | 20.0        | 19.6       |               | ug/L |   | 98   | 59 - 155     |
| 1,1-Dichloroethene        | 20.0        | 18.6       |               | ug/L |   | 93   | 1 - 234      |
| 1,2-Dichlorobenzene       | 20.0        | 19.6       |               | ug/L |   | 98   | 18 - 190     |
| 1,2-Dichloroethane        | 20.0        | 19.1       |               | ug/L |   | 96   | 49 - 155     |
| 1,2-Dichloropropane       | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 210      |
| 1,3-Dichlorobenzene       | 20.0        | 19.3       |               | ug/L |   | 97   | 59 - 156     |
| 1,4-Dichlorobenzene       | 20.0        | 19.2       |               | ug/L |   | 96   | 18 - 190     |
| 2-Chloroethyl vinyl ether | 20.0        | 17.0       | J             | ug/L |   | 85   | 1 - 305      |
| Benzene                   | 20.0        | 19.6       |               | ug/L |   | 98   | 37 - 151     |
| Bromodichloromethane      | 20.0        | 18.1       |               | ug/L |   | 91   | 35 - 155     |
| Bromoform                 | 20.0        | 17.4       |               | ug/L |   | 87   | 45 - 169     |
| Bromomethane              | 20.0        | 24.4       |               | ug/L |   | 122  | 1 - 242      |
| Carbon tetrachloride      | 20.0        | 18.1       |               | ug/L |   | 91   | 70 - 140     |
| Chlorobenzene             | 20.0        | 19.1       |               | ug/L |   | 96   | 37 - 160     |
| Chloroethane              | 20.0        | 22.3       |               | ug/L |   | 111  | 14 - 230     |
| Chloroform                | 20.0        | 19.4       |               | ug/L |   | 97   | 51 - 138     |
| Chloromethane             | 20.0        | 19.2       |               | ug/L |   | 96   | 1 - 273      |
| cis-1,2-Dichloroethene    | 20.0        | 19.6       |               | ug/L |   | 98   |              |
| cis-1,3-Dichloropropene   | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 227      |
| Dibromochloromethane      | 20.0        | 18.3       |               | ug/L |   | 91   | 53 - 149     |
| Dichlorodifluoromethane   | 20.0        | 17.2       |               | ug/L |   | 86   |              |
| Ethylbenzene              | 20.0        | 20.1       |               | ug/L |   | 100  | 37 - 162     |
| Methylene Chloride        | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 221      |
| m-Xylene & p-Xylene       | 20.0        | 19.5       |               | ug/L |   | 97   | 79 - 120     |
| o-Xylene                  | 20.0        | 20.8       |               | ug/L |   | 104  | 79 - 120     |
| Tetrachloroethene         | 20.0        | 18.5       |               | ug/L |   | 92   | 64 - 148     |
| Toluene                   | 20.0        | 19.5       |               | ug/L |   | 98   | 47 - 150     |
| trans-1,2-Dichloroethene  | 20.0        | 19.4       |               | ug/L |   | 97   | 54 - 156     |
| trans-1,3-Dichloropropene | 20.0        | 19.6       |               | ug/L |   | 98   | 17 - 183     |
| Trichloroethene           | 20.0        | 19.0       |               | ug/L |   | 95   | 71 - 157     |
| Trichlorofluoromethane    | 20.0        | 18.8       |               | ug/L |   | 94   | 17 - 181     |
| Vinyl chloride            | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 251      |

| Surrogate                    | LCS %Recovery | LCS Qualifier | Limits   |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 100           |               | 72 - 130 |
| 4-Bromofluorobenzene (Surr)  | 101           |               | 69 - 121 |
| Toluene-d8 (Surr)            | 101           |               | 70 - 123 |

## Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-206499/1-A

Matrix: Water

Analysis Batch: 207036

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206499

| Analyte  | MB Result | MB Qualifier | RL   | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|-------|------|---|----------------|----------------|---------|
| Aluminum | ND        |              | 0.20 | 0.060 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |

TestAmerica Buffalo



# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-206499/1-A

Matrix: Water

Analysis Batch: 207036

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206499

| Analyte   | MB Result | MB Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|--------|---------|------|---|----------------|----------------|---------|
| Antimony  | ND        |              | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Arsenic   | ND        |              | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Barium    | ND        |              | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Beryllium | ND        |              | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Boron     | ND        |              | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Cadmium   | ND        |              | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Calcium   | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Chromium  | ND        |              | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Copper    | ND        |              | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Iron      | 0.0326    | J            | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Lead      | ND        |              | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Magnesium | ND        |              | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Manganese | ND        |              | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Nickel    | ND        |              | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Potassium | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Selenium  | ND        |              | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Silver    | ND        |              | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Sodium    | ND        |              | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Thallium  | ND        |              | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Zinc      | 0.00455   | J            | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |

Lab Sample ID: LCS 480-206499/2-A

Matrix: Water

Analysis Batch: 206924

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 206499

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------|-------------|------------|---------------|------|---|------|--------------|
| Aluminum  | 10.0        | 8.95       |               | mg/L |   | 89   | 80 - 120     |
| Antimony  | 0.200       | 0.192      |               | mg/L |   | 96   | 80 - 120     |
| Arsenic   | 0.201       | 0.184      |               | mg/L |   | 92   | 80 - 120     |
| Barium    | 0.200       | 0.217      |               | mg/L |   | 108  | 80 - 120     |
| Beryllium | 0.201       | 0.197      |               | mg/L |   | 98   | 80 - 120     |
| Cadmium   | 0.201       | 0.188      |               | mg/L |   | 94   | 80 - 120     |
| Chromium  | 0.201       | 0.188      |               | mg/L |   | 94   | 80 - 120     |
| Copper    | 0.201       | 0.214      |               | mg/L |   | 107  | 80 - 120     |
| Iron      | 10.0        | 9.07       |               | mg/L |   | 91   | 80 - 120     |
| Lead      | 0.201       | 0.187      |               | mg/L |   | 93   | 80 - 120     |
| Magnesium | 10.0        | 10.2       |               | mg/L |   | 101  | 80 - 120     |
| Manganese | 0.201       | 0.202      |               | mg/L |   | 101  | 80 - 120     |
| Nickel    | 0.201       | 0.183      |               | mg/L |   | 91   | 80 - 120     |
| Potassium | 10.0        | 9.25       |               | mg/L |   | 92   | 80 - 120     |
| Selenium  | 0.201       | 0.189      |               | mg/L |   | 94   | 80 - 120     |
| Silver    | 0.0500      | 0.0528     |               | mg/L |   | 106  | 80 - 120     |
| Sodium    | 10.0        | 9.32       |               | mg/L |   | 93   | 80 - 120     |
| Zinc      | 0.201       | 0.206      |               | mg/L |   | 103  | 80 - 120     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-206575/1-A  
Matrix: Water  
Analysis Batch: 206912

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206575

| Analyte | MB Result | MB Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND        |              | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 12:06 | 1       |

Lab Sample ID: LCS 480-206575/2-A  
Matrix: Water  
Analysis Batch: 206912

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206575

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Mercury | 0.00667     | 0.00675    |               | mg/L |   | 101  | 80 - 120     |

### Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 480-206480/3  
Matrix: Water  
Analysis Batch: 206480

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte   | MB Result | MB Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| Turbidity | ND        |              | 1.0 | 1.0 | NTU  |   |          | 10/07/14 23:00 | 1       |

### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-150879/27  
Matrix: Water  
Analysis Batch: 150879

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|------|------|---|----------|----------------|---------|
| Chloride | ND        |              | 0.50 | 0.41 | mg/L |   |          | 10/10/14 01:10 | 1       |
| Sulfate  | ND        |              | 2.0  | 0.13 | mg/L |   |          | 10/10/14 01:10 | 1       |

Lab Sample ID: LCS 240-150879/28  
Matrix: Water  
Analysis Batch: 150879

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Chloride | 50.0        | 47.7       |               | mg/L |   | 95   | 90 - 110     |
| Sulfate  | 50.0        | 47.3       |               | mg/L |   | 95   | 90 - 110     |

Lab Sample ID: MB 240-151358/27  
Matrix: Water  
Analysis Batch: 151358

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|------|------|---|----------|----------------|---------|
| Chloride | ND        |              | 0.50 | 0.41 | mg/L |   |          | 10/13/14 20:21 | 1       |
| Sulfate  | ND        |              | 2.0  | 0.13 | mg/L |   |          | 10/13/14 20:21 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 240-151358/3

Matrix: Water

Analysis Batch: 151358

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|------|------|------|---|----------|----------------|---------|
| Chloride | ND           |                 | 0.50 | 0.41 | mg/L |   |          | 10/13/14 13:47 | 1       |
| Sulfate  | ND           |                 | 2.0  | 0.13 | mg/L |   |          | 10/13/14 13:47 | 1       |

Lab Sample ID: LCS 240-151358/28

Matrix: Water

Analysis Batch: 151358

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Chloride | 50.0           | 53.2          |                  | mg/L |   | 106  | 90 - 110        |
| Sulfate  | 50.0           | 49.0          |                  | mg/L |   | 98   | 90 - 110        |

Lab Sample ID: LCS 240-151358/4

Matrix: Water

Analysis Batch: 151358

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Chloride | 50.0           | 52.7          |                  | mg/L |   | 105  | 90 - 110        |
| Sulfate  | 50.0           | 48.9          |                  | mg/L |   | 98   | 90 - 110        |

### Method: 310.2 - Alkalinity

Lab Sample ID: MB 480-207719/185

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 10/14/14 15:04 | 1       |

Lab Sample ID: MB 480-207719/192

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 10/14/14 15:06 | 1       |

Lab Sample ID: MB 480-207719/203

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | 4.00         | J               | 10 | 4.0 | mg/L |   |          | 10/14/14 15:17 | 1       |

Lab Sample ID: LCS 480-207719/186

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Alkalinity, Total | 50.0           | 51.4          |                  | mg/L |   | 103  | 90 - 110        |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 310.2 - Alkalinity (Continued)

Lab Sample ID: LCS 480-207719/193

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.0       |               | mg/L |   | 102  | 90 - 110     |

Lab Sample ID: LCS 480-207719/204

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 50.2       |               | mg/L |   | 100  | 90 - 110     |

### Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-206737/3

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|-----------|--------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | 0.00905   | J            | 0.020 | 0.0090 | mg/L |   |          | 10/08/14 22:54 | 1       |

Lab Sample ID: MB 480-206737/75

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|-----------|--------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | 0.0111    | J            | 0.020 | 0.0090 | mg/L |   |          | 10/08/14 23:56 | 1       |

Lab Sample ID: LCS 480-206737/4

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Ammonia | 1.00        | 0.997      |               | mg/L |   | 100  | 90 - 110     |

Lab Sample ID: LCS 480-206737/76

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Ammonia | 1.00        | 0.990      |               | mg/L |   | 99   | 90 - 110     |

Lab Sample ID: 480-68691-1 MS

Matrix: Leachate

Analysis Batch: 206737

Client Sample ID: MH-5

Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Ammonia | 130           | B                | 20.0        | 143       | 4            | mg/L |   | 90   | 90 - 110     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 351.2 - Nitrogen, Total Kjeldahl

| Lab Sample ID: MB 480-206899/1-A |           |              |      |      |      | Client Sample ID: Method Blank |                |                |         |
|----------------------------------|-----------|--------------|------|------|------|--------------------------------|----------------|----------------|---------|
| Matrix: Water                    |           |              |      |      |      | Prep Type: Total/NA            |                |                |         |
| Analysis Batch: 207003           |           |              |      |      |      | Prep Batch: 206899             |                |                |         |
| Analyte                          | MB Result | MB Qualifier | RL   | MDL  | Unit | D                              | Prepared       | Analyzed       | Dil Fac |
| Total Kjeldahl Nitrogen          | ND        |              | 0.20 | 0.15 | mg/L |                                | 10/09/14 09:14 | 10/09/14 18:23 | 1       |

| Lab Sample ID: LCS 480-206899/2-A |             |            |               |      |   | Client Sample ID: Lab Control Sample |              |  |  |
|-----------------------------------|-------------|------------|---------------|------|---|--------------------------------------|--------------|--|--|
| Matrix: Water                     |             |            |               |      |   | Prep Type: Total/NA                  |              |  |  |
| Analysis Batch: 207003            |             |            |               |      |   | Prep Batch: 206899                   |              |  |  |
| Analyte                           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec                                 | %Rec. Limits |  |  |
| Total Kjeldahl Nitrogen           | 2.50        | 2.59       |               | mg/L |   | 104                                  | 90 - 110     |  |  |

### Method: 410.4 - COD

| Lab Sample ID: MB 480-208155/27 |           |              |    |     |      | Client Sample ID: Method Blank |          |                |         |
|---------------------------------|-----------|--------------|----|-----|------|--------------------------------|----------|----------------|---------|
| Matrix: Water                   |           |              |    |     |      | Prep Type: Total/NA            |          |                |         |
| Analysis Batch: 208155          |           |              |    |     |      |                                |          |                |         |
| Analyte                         | MB Result | MB Qualifier | RL | MDL | Unit | D                              | Prepared | Analyzed       | Dil Fac |
| Chemical Oxygen Demand          | 8.34      | J            | 10 | 5.0 | mg/L |                                |          | 10/16/14 09:12 | 1       |

| Lab Sample ID: MB 480-208155/3 |           |              |    |     |      | Client Sample ID: Method Blank |          |                |         |
|--------------------------------|-----------|--------------|----|-----|------|--------------------------------|----------|----------------|---------|
| Matrix: Water                  |           |              |    |     |      | Prep Type: Total/NA            |          |                |         |
| Analysis Batch: 208155         |           |              |    |     |      |                                |          |                |         |
| Analyte                        | MB Result | MB Qualifier | RL | MDL | Unit | D                              | Prepared | Analyzed       | Dil Fac |
| Chemical Oxygen Demand         | ND        |              | 10 | 5.0 | mg/L |                                |          | 10/16/14 09:12 | 1       |

| Lab Sample ID: MB 480-208155/51 |           |              |    |     |      | Client Sample ID: Method Blank |          |                |         |
|---------------------------------|-----------|--------------|----|-----|------|--------------------------------|----------|----------------|---------|
| Matrix: Water                   |           |              |    |     |      | Prep Type: Total/NA            |          |                |         |
| Analysis Batch: 208155          |           |              |    |     |      |                                |          |                |         |
| Analyte                         | MB Result | MB Qualifier | RL | MDL | Unit | D                              | Prepared | Analyzed       | Dil Fac |
| Chemical Oxygen Demand          | 7.37      | J            | 10 | 5.0 | mg/L |                                |          | 10/16/14 09:12 | 1       |

| Lab Sample ID: LCS 480-208155/28 |             |            |               |      |   | Client Sample ID: Lab Control Sample |              |  |  |
|----------------------------------|-------------|------------|---------------|------|---|--------------------------------------|--------------|--|--|
| Matrix: Water                    |             |            |               |      |   | Prep Type: Total/NA                  |              |  |  |
| Analysis Batch: 208155           |             |            |               |      |   |                                      |              |  |  |
| Analyte                          | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec                                 | %Rec. Limits |  |  |
| Chemical Oxygen Demand           | 25.0        | 26.7       |               | mg/L |   | 107                                  | 90 - 110     |  |  |

| Lab Sample ID: LCS 480-208155/4 |             |            |               |      |   | Client Sample ID: Lab Control Sample |              |  |  |
|---------------------------------|-------------|------------|---------------|------|---|--------------------------------------|--------------|--|--|
| Matrix: Water                   |             |            |               |      |   | Prep Type: Total/NA                  |              |  |  |
| Analysis Batch: 208155          |             |            |               |      |   |                                      |              |  |  |
| Analyte                         | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec                                 | %Rec. Limits |  |  |
| Chemical Oxygen Demand          | 25.0        | 25.1       |               | mg/L |   | 100                                  | 90 - 110     |  |  |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 410.4 - COD (Continued)

Lab Sample ID: LCS 480-208155/52

Matrix: Water

Analysis Batch: 208155

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Chemical Oxygen Demand | 25.0        | 22.5       |               | mg/L |   | 90   | 90 - 110     |

### Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-206384/3

Matrix: Water

Analysis Batch: 206384

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte              | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|-----------|--------------|-------|--------|------|---|----------|----------------|---------|
| Chromium, hexavalent | ND        |              | 0.010 | 0.0050 | mg/L |   |          | 10/07/14 11:08 | 1       |

Lab Sample ID: LCS 480-206384/4

Matrix: Water

Analysis Batch: 206384

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|-------------|------------|---------------|------|---|------|--------------|
| Chromium, hexavalent | 0.0500      | 0.0520     |               | mg/L |   | 104  | 85 - 115     |

Lab Sample ID: 480-68691-1 MS

Matrix: Leachate

Analysis Batch: 206384

Client Sample ID: MH-5

Prep Type: Total/NA

| Analyte              | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Chromium, hexavalent | ND            |                  | 0.100       | 0.160     | F1           | mg/L |   | 160  | 85 - 115     |

### Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 480-207517/1-A

Matrix: Water

Analysis Batch: 207541

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 207517

| Analyte        | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|-----------|--------------|-------|--------|------|---|----------------|----------------|---------|
| Cyanide, Total | ND        | A            | 0.010 | 0.0050 | mg/L |   | 10/13/14 15:25 | 10/13/14 22:41 | 1       |

Lab Sample ID: LCS 480-207517/2-A

Matrix: Water

Analysis Batch: 207541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 207517

| Analyte        | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------|-------------|------------|---------------|------|---|------|--------------|
| Cyanide, Total | 0.250       | 0.232      |               | mg/L |   | 93   | 90 - 110     |

Lab Sample ID: 480-68691-1 MS

Matrix: Leachate

Analysis Batch: 207541

Client Sample ID: MH-5

Prep Type: Total/NA

Prep Batch: 207517

| Analyte        | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Cyanide, Total | 0.0083        | J                | 0.100       | 0.0427    | F1           | mg/L |   | 34   | 90 - 110     |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-207429/27  
Matrix: Water  
Analysis Batch: 207429

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB MB  |           | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
|                      | Result | Qualifier |     |      |      |   |          |                |         |
| Total Organic Carbon | ND     |           | 1.0 | 0.43 | mg/L |   |          | 10/12/14 04:47 | 1       |

Lab Sample ID: LCS 480-207429/28  
Matrix: Water  
Analysis Batch: 207429

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |  |  |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|--|--|
|                      |                |               |                  |      |   |      |                 |  |  |
| Total Organic Carbon | 60.0           | 60.8          |                  | mg/L |   | 101  | 90 - 110        |  |  |

### Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 480-206888/1-A  
Matrix: Water  
Analysis Batch: 207542

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206888

| Analyte                      | MB MB  |           | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|------|---|----------------|----------------|---------|
|                              | Result | Qualifier |       |        |      |   |                |                |         |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L |   | 10/09/14 09:30 | 10/13/14 19:12 | 1       |

Lab Sample ID: LCS 480-206888/2-A  
Matrix: Water  
Analysis Batch: 207542

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206888

| Analyte                      | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |  |  |
|------------------------------|----------------|---------------|------------------|------|---|------|-----------------|--|--|
|                              |                |               |                  |      |   |      |                 |  |  |
| Phenolics, Total Recoverable | 0.100          | 0.106         |                  | mg/L |   | 106  | 90 - 110        |  |  |

### Method: SM 2120B - Color, Colorimetric

Lab Sample ID: MB 480-206725/3  
Matrix: Water  
Analysis Batch: 206725

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB MB  |           | RL  | RL  | Unit        | D | Prepared | Analyzed       | Dil Fac |
|---------|--------|-----------|-----|-----|-------------|---|----------|----------------|---------|
|         | Result | Qualifier |     |     |             |   |          |                |         |
| Color   | ND     |           | 5.0 | 5.0 | Color Units |   |          | 10/07/14 23:20 | 1       |

Lab Sample ID: LCS 480-206725/4  
Matrix: Water  
Analysis Batch: 206725

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit        | D | %Rec | %Rec.<br>Limits |  |  |
|---------|----------------|---------------|------------------|-------------|---|------|-----------------|--|--|
|         |                |               |                  |             |   |      |                 |  |  |
| Color   | 30.0           | 30.0          |                  | Color Units |   | 100  | 90 - 110        |  |  |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: SM 2340C - Hardness, Total (mg/l as CaCO3)

Lab Sample ID: MB 480-206969/51  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                       | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Hardness as calcium carbonate | ND           |                 | 2.0 | 0.53 | mg/L |   |          | 10/09/14 11:55 | 1       |

Lab Sample ID: MB 480-206969/75  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                       | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Hardness as calcium carbonate | ND           |                 | 2.0 | 0.53 | mg/L |   |          | 10/09/14 11:55 | 1       |

Lab Sample ID: LCS 480-206969/52  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                       | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Hardness as calcium carbonate | 298            | 288           |                  | mg/L |   | 97   | 90 - 110        |

Lab Sample ID: LCS 480-206969/76  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                       | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Hardness as calcium carbonate | 298            | 284           |                  | mg/L |   | 95   | 90 - 110        |

### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-206989/1  
Matrix: Water  
Analysis Batch: 206989

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND           |                 | 10 | 4.0 | mg/L |   |          | 10/09/14 23:42 | 1       |

Lab Sample ID: LCS 480-206989/2  
Matrix: Water  
Analysis Batch: 206989

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Dissolved Solids | 504            | 485           |                  | mg/L |   | 96   | 85 - 115        |

### Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 480-206654/1  
Matrix: Water  
Analysis Batch: 206654

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                   | USB<br>Result | USB<br>Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|---------------|------------------|-----|-----|------|---|----------|----------------|---------|
| Biochemical Oxygen Demand | ND            |                  | 2.0 | 2.0 | mg/L |   |          | 10/08/14 14:37 | 1       |

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## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: LCS 480-206654/2

Matrix: Water

Analysis Batch: 206654

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                   | Spike | LCS    | LCS       | Unit | D | %Rec | %Rec.    |
|---------------------------|-------|--------|-----------|------|---|------|----------|
|                           | Added | Result | Qualifier |      |   |      | Limits   |
| Biochemical Oxygen Demand | 198   | 203    |           | mg/L |   | 102  | 85 - 115 |



## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### GC/MS VOA

#### Analysis Batch: 206699

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | 624    |            |
| LCS 480-206699/6 | Lab Control Sample | Total/NA  | Water    | 624    |            |
| MB 480-206699/8  | Method Blank       | Total/NA  | Water    | 624    |            |

### Metals

#### Prep Batch: 206499

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 3005A  |            |
| LCS 480-206499/2-A | Lab Control Sample | Total/NA  | Water    | 3005A  |            |
| MB 480-206499/1-A  | Method Blank       | Total/NA  | Water    | 3005A  |            |

#### Prep Batch: 206575

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 7470A  |            |
| LCS 480-206575/2-A | Lab Control Sample | Total/NA  | Water    | 7470A  |            |
| MB 480-206575/1-A  | Method Blank       | Total/NA  | Water    | 7470A  |            |

#### Analysis Batch: 206912

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 7470A  | 206575     |
| LCS 480-206575/2-A | Lab Control Sample | Total/NA  | Water    | 7470A  | 206575     |
| MB 480-206575/1-A  | Method Blank       | Total/NA  | Water    | 7470A  | 206575     |

#### Analysis Batch: 206924

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 6010C  | 206499     |
| LCS 480-206499/2-A | Lab Control Sample | Total/NA  | Water    | 6010C  | 206499     |

#### Analysis Batch: 207036

| Lab Sample ID     | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| MB 480-206499/1-A | Method Blank     | Total/NA  | Water  | 6010C  | 206499     |

### General Chemistry

#### Analysis Batch: 150879

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|-------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1       | MH-5               | Total/NA  | Leachate | 300.0  |            |
| LCS 240-150879/28 | Lab Control Sample | Total/NA  | Water    | 300.0  |            |
| MB 240-150879/27  | Method Blank       | Total/NA  | Water    | 300.0  |            |

#### Analysis Batch: 151358

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|-------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1       | MH-5               | Total/NA  | Leachate | 300.0  |            |
| LCS 240-151358/28 | Lab Control Sample | Total/NA  | Water    | 300.0  |            |
| LCS 240-151358/4  | Lab Control Sample | Total/NA  | Water    | 300.0  |            |
| MB 240-151358/27  | Method Blank       | Total/NA  | Water    | 300.0  |            |
| MB 240-151358/3   | Method Blank       | Total/NA  | Water    | 300.0  |            |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### General Chemistry (Continued)

#### Analysis Batch: 206384

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | 7196A  |            |
| 480-68691-1 MS   | MH-5               | Total/NA  | Leachate | 7196A  |            |
| LCS 480-206384/4 | Lab Control Sample | Total/NA  | Water    | 7196A  |            |
| MB 480-206384/3  | Method Blank       | Total/NA  | Water    | 7196A  |            |

#### Analysis Batch: 206477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix   | Method | Prep Batch |
|---------------|------------------|-----------|----------|--------|------------|
| 480-68691-1   | MH-5             | Total/NA  | Leachate | 353.2  |            |

#### Analysis Batch: 206480

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | 180.1  |            |
| LCS 480-206480/4 | Lab Control Sample | Total/NA  | Water    | 180.1  |            |
| MB 480-206480/3  | Method Blank       | Total/NA  | Water    | 180.1  |            |

#### Analysis Batch: 206654

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method   | Prep Batch |
|------------------|--------------------|-----------|----------|----------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | SM 5210B |            |
| LCS 480-206654/2 | Lab Control Sample | Total/NA  | Water    | SM 5210B |            |
| USB 480-206654/1 | Method Blank       | Total/NA  | Water    | SM 5210B |            |

#### Analysis Batch: 206725

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method   | Prep Batch |
|------------------|--------------------|-----------|----------|----------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | SM 2120B |            |
| LCS 480-206725/4 | Lab Control Sample | Total/NA  | Water    | SM 2120B |            |
| MB 480-206725/3  | Method Blank       | Total/NA  | Water    | SM 2120B |            |

#### Analysis Batch: 206737

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|-------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1       | MH-5               | Total/NA  | Leachate | 350.1  |            |
| 480-68691-1 MS    | MH-5               | Total/NA  | Leachate | 350.1  |            |
| LCS 480-206737/4  | Lab Control Sample | Total/NA  | Water    | 350.1  |            |
| LCS 480-206737/76 | Lab Control Sample | Total/NA  | Water    | 350.1  |            |
| MB 480-206737/3   | Method Blank       | Total/NA  | Water    | 350.1  |            |
| MB 480-206737/75  | Method Blank       | Total/NA  | Water    | 350.1  |            |

#### Prep Batch: 206888

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method         | Prep Batch |
|--------------------|--------------------|-----------|----------|----------------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | Distill/Phenol |            |
| LCS 480-206888/2-A | Lab Control Sample | Total/NA  | Water    | Distill/Phenol |            |
| MB 480-206888/1-A  | Method Blank       | Total/NA  | Water    | Distill/Phenol |            |

#### Prep Batch: 206899

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 351.2  |            |
| LCS 480-206899/2-A | Lab Control Sample | Total/NA  | Water    | 351.2  |            |
| MB 480-206899/1-A  | Method Blank       | Total/NA  | Water    | 351.2  |            |

#### Analysis Batch: 206969

| Lab Sample ID | Client Sample ID | Prep Type | Matrix   | Method   | Prep Batch |
|---------------|------------------|-----------|----------|----------|------------|
| 480-68691-1   | MH-5             | Total/NA  | Leachate | SM 2340C |            |

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TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### General Chemistry (Continued)

#### Analysis Batch: 206969 (Continued)

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|-------------------|--------------------|-----------|--------|----------|------------|
| LCS 480-206969/52 | Lab Control Sample | Total/NA  | Water  | SM 2340C |            |
| LCS 480-206969/76 | Lab Control Sample | Total/NA  | Water  | SM 2340C |            |
| MB 480-206969/51  | Method Blank       | Total/NA  | Water  | SM 2340C |            |
| MB 480-206969/75  | Method Blank       | Total/NA  | Water  | SM 2340C |            |

#### Analysis Batch: 206989

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method   | Prep Batch |
|------------------|--------------------|-----------|----------|----------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | SM 2540C |            |
| LCS 480-206989/2 | Lab Control Sample | Total/NA  | Water    | SM 2540C |            |
| MB 480-206989/1  | Method Blank       | Total/NA  | Water    | SM 2540C |            |

#### Analysis Batch: 207003

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 351.2  | 206899     |
| LCS 480-206899/2-A | Lab Control Sample | Total/NA  | Water    | 351.2  | 206899     |
| MB 480-206899/1-A  | Method Blank       | Total/NA  | Water    | 351.2  | 206899     |

#### Analysis Batch: 207429

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|-------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1       | MH-5               | Total/NA  | Leachate | 9060A  |            |
| LCS 480-207429/28 | Lab Control Sample | Total/NA  | Water    | 9060A  |            |
| MB 480-207429/27  | Method Blank       | Total/NA  | Water    | 9060A  |            |

#### Prep Batch: 207517

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 9012B  |            |
| 480-68691-1 MS     | MH-5               | Total/NA  | Leachate | 9012B  |            |
| LCS 480-207517/2-A | Lab Control Sample | Total/NA  | Water    | 9012B  |            |
| MB 480-207517/1-A  | Method Blank       | Total/NA  | Water    | 9012B  |            |

#### Analysis Batch: 207541

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 9012B  | 207517     |
| 480-68691-1 MS     | MH-5               | Total/NA  | Leachate | 9012B  | 207517     |
| LCS 480-207517/2-A | Lab Control Sample | Total/NA  | Water    | 9012B  | 207517     |
| MB 480-207517/1-A  | Method Blank       | Total/NA  | Water    | 9012B  | 207517     |

#### Analysis Batch: 207542

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 9066   | 206886     |
| LCS 480-206888/2-A | Lab Control Sample | Total/NA  | Water    | 9066   | 206886     |
| MB 480-206888/1-A  | Method Blank       | Total/NA  | Water    | 9066   | 206886     |

#### Analysis Batch: 207719

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 310.2  |            |
| LCS 480-207719/186 | Lab Control Sample | Total/NA  | Water    | 310.2  |            |
| LCS 480-207719/193 | Lab Control Sample | Total/NA  | Water    | 310.2  |            |
| LCS 480-207719/204 | Lab Control Sample | Total/NA  | Water    | 310.2  |            |
| MB 480-207719/185  | Method Blank       | Total/NA  | Water    | 310.2  |            |
| MB 480-207719/192  | Method Blank       | Total/NA  | Water    | 310.2  |            |

TestAmerica Buffalo



## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### General Chemistry (Continued)

#### Analysis Batch: 207719 (Continued)

| Lab Sample ID     | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| MB 480-207719/203 | Method Blank     | Total/NA  | Water  | 310.2  |            |

#### Analysis Batch: 208155

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|-------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1       | MM-5               | Total/NA  | Leachate | 410.4  |            |
| LCS 480-208155/28 | Lab Control Sample | Total/NA  | Water    | 410.4  |            |
| LCS 480-208155/4  | Lab Control Sample | Total/NA  | Water    | 410.4  |            |
| LCS 480-208155/52 | Lab Control Sample | Total/NA  | Water    | 410.4  |            |
| MB 480-208155/27  | Method Blank       | Total/NA  | Water    | 410.4  |            |
| MB 480-208155/3   | Method Blank       | Total/NA  | Water    | 410.4  |            |
| MB 480-208155/51  | Method Blank       | Total/NA  | Water    | 410.4  |            |

## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

**Client Sample ID: MH-5**

**Lab Sample ID: 480-68691-1**

Date Collected: 10/06/14 15:30

Matrix: Leachate

Date Received: 10/07/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624            |     | 10              | 206699       | 10/09/14 03:54       | ABF     | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 206499       | 10/08/14 08:55       | SLB     | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 206924       | 10/08/14 19:44       | AMH     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 206575       | 10/08/14 10:50       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 206912       | 10/09/14 12:09       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 206480       | 10/07/14 23:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 5               | 151358       | 10/13/14 16:15       | LKG     | TAL CAN |
| Total/NA  | Analysis   | 300.0          |     | 1               | 150879       | 10/10/14 03:07       | JMB     | TAL CAN |
| Total/NA  | Analysis   | 310.2          |     | 50              | 207719       | 10/14/14 15:32       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 100             | 206737       | 10/08/14 23:01       | RS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 206899       | 10/09/14 09:14       | LAW     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 50              | 207003       | 10/10/14 04:23       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 206477       | 10/07/14 21:58       | RS      | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 4               | 208155       | 10/16/14 09:12       | KMF     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 206384       | 10/07/14 11:08       | NCH     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 207517       | 10/13/14 15:25       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 207541       | 10/13/14 22:52       | RS      | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 207429       | 10/12/14 08:05       | MRF     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 206888       | 10/09/14 09:30       | MRF     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 207542       | 10/13/14 20:36       | JMB     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 206725       | 10/07/14 23:20       | RS      | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 206969       | 10/09/14 11:55       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 206989       | 10/09/14 23:42       | JMB     | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 206654       | 10/08/14 14:37       | MDL     | TAL BUF |

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

## Certification Summary

Client: Sterling Environmental Engineering PC

TestAmerica Job ID: 480-68691-1

Project/Site: Orange County Landfill

### Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority         | Program       | EPA Region | Certification ID | Expiration Date |
|-------------------|---------------|------------|------------------|-----------------|
| Arkansas DEQ      | State Program | 6          | 88-0688          | 07-06-15        |
| California        | State Program | 9          | 1169CA           | 09-30-14 *      |
| Connecticut       | State Program | 1          | PH-0568          | 09-30-14 *      |
| Florida           | NELAP         | 4          | E87672           | 06-30-15        |
| Georgia           | State Program | 4          | N/A              | 03-31-15        |
| Georgia           | State Program | 4          | 956              | 03-31-15        |
| Illinois          | NELAP         | 5          | 200003           | 09-30-14 *      |
| Iowa              | State Program | 7          | 374              | 03-01-15        |
| Kansas            | NELAP         | 7          | E-10187          | 01-31-15        |
| Kentucky (DW)     | State Program | 4          | 90029            | 12-31-14        |
| Kentucky (UST)    | State Program | 4          | 30               | 03-31-15        |
| Louisiana         | NELAP         | 6          | 02031            | 06-30-14 *      |
| Maine             | State Program | 1          | NY00044          | 12-04-14        |
| Maryland          | State Program | 3          | 294              | 03-31-15        |
| Massachusetts     | State Program | 1          | M-NY044          | 06-30-15        |
| Michigan          | State Program | 5          | 9937             | 03-31-15        |
| Minnesota         | NELAP         | 5          | 036-999-337      | 12-31-14        |
| New Hampshire     | NELAP         | 1          | 2337             | 11-17-14        |
| New Jersey        | NELAP         | 2          | NY455            | 06-30-15        |
| New York          | NELAP         | 2          | 10026            | 03-31-15        |
| North Dakota      | State Program | 8          | R-176            | 03-31-14 *      |
| Oklahoma          | State Program | 6          | 9421             | 08-31-15        |
| Oregon            | NELAP         | 10         | NY200003         | 06-09-15        |
| Pennsylvania      | NELAP         | 3          | 68-00281         | 07-31-15        |
| Rhode Island      | State Program | 1          | LAO00328         | 12-30-14        |
| Tennessee         | State Program | 4          | TN02970          | 03-31-15        |
| Texas             | NELAP         | 6          | T104704412-11-2  | 07-31-15        |
| USDA              | Federal       |            | P330-11-00386    | 11-22-14        |
| Virginia          | NELAP         | 3          | 460185           | 09-14-15        |
| Washington        | State Program | 10         | C784             | 02-10-15        |
| West Virginia DEP | State Program | 3          | 252              | 09-30-14 *      |
| Wisconsin         | State Program | 5          | 998310390        | 08-31-15        |

### Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority      | Program       | EPA Region | Certification ID | Expiration Date |
|----------------|---------------|------------|------------------|-----------------|
| California     | NELAP         | 9          | 01144CA          | 06-30-14 *      |
| California     | State Program | 9          | 2927             | 04-30-15        |
| Connecticut    | State Program | 1          | PH-0590          | 12-31-14        |
| Florida        | NELAP         | 4          | E87225           | 06-30-15        |
| Georgia        | State Program | 4          | N/A              | 06-30-15        |
| Illinois       | NELAP         | 5          | 200004           | 07-31-15        |
| Kansas         | NELAP         | 7          | E-10336          | 01-31-15        |
| Kentucky (UST) | State Program | 4          | 58               | 06-30-15        |
| L-A-B          | DoD ELAP      |            | L2315            | 07-18-16        |
| Minnesota      | NELAP         | 5          | 039-999-348      | 12-31-14        |
| Nevada         | State Program | 9          | OH-000482008A    | 07-31-15        |
| New Jersey     | NELAP         | 2          | OH001            | 06-30-15        |
| New York       | NELAP         | 2          | 10975            | 03-31-15        |

\* Certification renewal pending - certification considered valid.

TestAmerica Buffalo



## Certification Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Laboratory: TestAmerica Canton (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority         | Program       | EPA Region | Certification ID | Expiration Date |
|-------------------|---------------|------------|------------------|-----------------|
| Ohio VAP          | State Program | 5          | CL0024           | 10-31-15        |
| Pennsylvania      | NELAP         | 3          | 68-00340         | 08-31-15        |
| Texas             | NELAP         | 6          |                  | 08-31-15        |
| USDA              | Federal       |            | P330-13-00319    | 11-26-16        |
| Virginia          | NELAP         | 3          | 460175           | 09-14-15        |
| Washington        | State Program | 10         | C971             | 01-12-15        |
| West Virginia DEP | State Program | 3          | 210              | 12-31-14        |
| Wisconsin         | State Program | 5          | 999518190        | 08-31-15        |

## Method Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

| Method   | Method Description                           | Protocol  | Laboratory |
|----------|--|-----------|------------|
| 624      | Volatile Organic Compounds (GC/MS)           | 40CFR136A | TAL BUF    |
| 6010C    | Metals (ICP)                                 | SW846     | TAL BUF    |
| 7470A    | Mercury (CVAA)                               | SW846     | TAL BUF    |
| 180.1    | Turbidity, Nephelometric                     | MCAWW     | TAL BUF    |
| 300.0    | Anions, Ion Chromatography                   | MCAWW     | TAL CAN    |
| 310.2    | Alkalinity                                   | MCAWW     | TAL BUF    |
| 350.1    | Nitrogen, Ammonia                            | MCAWW     | TAL BUF    |
| 351.2    | Nitrogen, Total Kjeldahl                     | MCAWW     | TAL BUF    |
| 353.2    | Nitrate                                      | EPA       | TAL BUF    |
| 410.4    | COD  | MCAWW     | TAL BUF    |
| 7196A    | Chromium, Hexavalent                         | SW846     | TAL BUF    |
| 9012B    | Cyanide, Total and/or Amenable               | SW846     | TAL BUF    |
| 9060A    | Organic Carbon, Total (TOC)                  | SW846     | TAL BUF    |
| 9066     | Phenolics, Total Recoverable                 | SW846     | TAL BUF    |
| SM 2120B | Color, Colorimetric                          | SM        | TAL BUF    |
| SM 2340C | Hardness, Total (mg/l as CaCO <sub>3</sub> ) | SM        | TAL BUF    |
| SM 2540C | Solids, Total Dissolved (TDS)                | SM        | TAL BUF    |
| SM 5210B | BOD, 5-Day                                   | SM        | TAL BUF    |

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### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TestAmerica Buffalo

## Sample Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

| Lab Sample ID | Client Sample ID | Matrix   | Collected      | Received       |
|---------------|------------------|----------|----------------|----------------|
| 480-68691-1   | MH-5             | Leachate | 10/06/14 15:30 | 10/07/14 09:00 |

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## Detection Limit Exceptions Summary

Client: Sterling Environmental Engineering PC

TestAmerica Job ID: 480-68691-1

Project/Site: Orange County Landfill

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

| Method | Matrix   | Analyte  | Units | Client RL | Lab PQL |
|--------|----------|----------|-------|-----------|---------|
| 300.0  | Leachate | Chloride | mg/L  | 0.50      | 1       |

**Schenectady, NY 14223**  
**Phone: 716.691.2606**



480-68691 Chain of Custody

## Chain of Custody Record

040128

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING  
**TestAmerica Laboratories, Inc.**

TAL-8210 (0713)

Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

[illegible]

3.8, 3.9, 4.2, 2

## Login Sample Receipt Checklist

Client: Sterling Environmental Engineering PC

Job Number: 480-68691-1

Login Number: 68691

List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl M

| Question   | Answer | Comment  |
|--|--------|----------|
| Radioactivity either was not measured or, if measured, is at or below background | True   |          |
| The cooler's custody seal, if present, is intact.                                | True   |          |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |          |
| Samples were received on ice.  | True   |          |
| Cooler Temperature is acceptable.  | True   |          |
| Cooler Temperature is recorded.  | True   |          |
| COC is present.  | True   |          |
| COC is filled out in ink and legible.  | True   |          |
| COC is filled out with all pertinent information.                                | True   |          |
| Is the Field Sampler's name present on COC?                                      | True   |          |
| There are no discrepancies between the sample IDs on the containers and the COC. | True   |          |
| Samples are received within Holding Time.  | True   |          |
| Sample containers have legible labels.   | True   |          |
| Containers are not broken or leaking.  | True   |          |
| Sample collection date/times are provided.                                       | True   |          |
| Appropriate sample containers are used.  | True   |          |
| Sample bottles are completely filled.  | True   |          |
| Sample Preservation Verified   | True   |          |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |          |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | True   |          |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True   |          |
| Multiphasic samples are not present.   | True   |          |
| Samples do not require splitting or compositing.                                 | True   |          |
| Sampling Company provided.   | True   | STERLING |
| Samples received within 48 hours of sampling.                                    | True   |          |
| Samples requiring field filtration have been filtered in the field.              | N/A    |          |
| Chlorine Residual checked.   | N/A    |          |

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-68692-1

Client Project/Site: Orange County Landfill

Sampling Event: Groundwater Baseline

For:

Sterling Environmental Engineering PC

24 Wade Road

Latham, New York 12110

Attn: Mr. Mark Williams



Authorized for release by:

10/17/2014 11:17:32 AM

Anne Pridgeon, Project Management Assistant I

[anne.pridgeon@testamericainc.com](mailto:anne.pridgeon@testamericainc.com)

Designee for

Lisa Shaffer, Project Manager II

(716)504-9816

[lisa.shaffer@testamericainc.com](mailto:lisa.shaffer@testamericainc.com)

### LINKS

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Definitions/Glossary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

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### Qualifiers

#### GC/MS VOA

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

#### Metals

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

#### General Chemistry

| Qualifier | Qualifier Description  |
|-----------|--|
| b         | Result Detected in the Unseeded Control blank (USB).   |
| B         | Compound was found in the blank and sample.  |
| F1        | MS and/or MSD Recovery exceeds the control limits  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| ^         | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.   |

### Glossary

| Abbreviation | These commonly used abbreviations may or may not be present in this report.                                 |
|--------------|---|
| α            | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R           | Percent Recovery  |
| CFL          | Contains Free Liquid  |
| CNF          | Contains no Free Liquid   |
| DER          | Duplicate error ratio (normalized absolute difference)  |
| Fac          | Dilution Factor   |
| , RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC          | Decision level concentration  |
| MDA          | Minimum detectable activity   |
| EDL          | Estimated Detection Limit   |
| MDC          | Minimum detectable concentration  |
| MDL          | Method Detection Limit  |
| ML           | Minimum Level (Dioxin)  |
| NC           | Not Calculated  |
| ND           | Not detected at the reporting limit (or MDL or EDL if shown)  |
| PQL          | Practical Quantitation Limit  |
| QC           | Quality Control   |
| RER          | Relative error ratio  |
| RL           | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD          | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF          | Toxicity Equivalent Factor (Dioxin)   |
| TEQ          | Toxicity Equivalent Quotient (Dioxin)   |



## Case Narrative

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Job ID: 480-68692-1**

**Laboratory: TestAmerica Buffalo**

### Narrative

Job Narrative  
480-68692-1

### Comments

No additional comments.

### Receipt

The samples were received on 10/7/2014 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.8° C, 3.9° C and 4.2° C.

### Except:

Method(s) 7196A: The following samples were received outside of holding time: PZ-14-3 (480-68692-2), PZ-14-5 (480-68692-1). No time listed, therefore default TALS time of 00:00 was used.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Metals

Method(s) 6010C: The method blank for batch 480-206494 contained dissolved copper and zinc above the method detection limits. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples PZ-14-3 (480-68692-2), PZ-14-5 (480-68692-1) was not performed.

Method(s) 6010C: The method blank for batch 480-206494 contained dissolved boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples PZ-14-3 (480-68692-2), PZ-14-5 (480-68692-1) was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### General Chemistry

Method(s) SM 2120B: Associated samples were filtered prior to analysis. Results are reported as true color. (480-68692-1 DU), PZ-14-3 (480-68692-2), PZ-14-5 (480-68692-1)

Method(s) 350.1: The method blank for batch 206737 contained ammonia above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed. PZ-14-5 (480-68692-1)

Method(s) SM 5210B: The USB dilution water D.O. depletion was greater than 0.2 mg/L but less than the reporting limit of 2.0 mg/L. The associated sample results in batch 206522 are reported. (USB 480-206522/1)

Method(s) SM 5210B: The sample duplicate precision for the following sample associated with batch 206522 was outside control limits: (480-68692-2 DU).

Method(s) 310.2: The method blank for batch 207719 contained Alkalinity above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PZ-14-5 (480-68692-1)

Method(s) 310.2: The method blank for batch 207973 contained Alkalinity above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PZ-14-3 (480-68692-2)

Method(s) 410.4: The method blank for batch 208155 contained chemical oxygen demand above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. PZ-14-3 (480-68692-2), PZ-14-5 (480-68692-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-5**

**Lab Sample ID: 480-68692-1**

| Analyte                      | Result | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method   | Prep Type |
|------------------------------|--------|-----------|--------|---------|------|-----|-----|---|----------|-----------|
| Aluminum                     | 0.73   |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Arsenic                      | 0.057  |           | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Barium                       | 0.51   |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Boron                        | 0.21   |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Calcium                      | 140    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Chromium                     | 0.0076 |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Copper                       | 0.0072 | J         | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Iron                         | 4.8    | B         | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Magnesium                    | 54     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Manganese                    | 1.0    |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Nickel                       | 0.028  |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Potassium                    | 9.8    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Sodium                       | 87     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Zinc                         | 0.026  | B         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Aluminum                     | 2.7    |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Arsenic                      | 0.055  |           | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Barium                       | 0.47   |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Boron                        | 0.20   | B         | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Calcium                      | 130    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chromium                     | 0.016  |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Copper                       | 0.011  | B         | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Iron                         | 7.7    |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Lead                         | 0.0051 | J         | 0.010  | 0.0030  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Magnesium                    | 52     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Manganese                    | 1.1    |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Nickel                       | 0.032  |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Potassium                    | 9.7    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Sodium                       | 85     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Zinc                         | 0.036  | B         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chloride                     | 79     |           | 0.50   | 0.41    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                      | 30     |           | 2.0    | 0.13    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total            | 600    | B         | 100    | 40      | mg/L | 10  |     |   | 310.2    | Total/NA  |
| Ammonia                      | 9.1    | B         | 0.20   | 0.090   | mg/L | 10  |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen      | 9.2    |           | 1.0    | 0.75    | mg/L | 5   |     |   | 351.2    | Total/NA  |
| Nitrate as N                 | 0.090  |           | 0.050  | 0.020   | mg/L | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand       | 32     | B         | 10     | 5.0     | mg/L | 1   |     |   | 410.4    | Total/NA  |
| Cyanide, Total               | 0.23   |           | 0.010  | 0.0050  | mg/L | 1   |     |   | 9012B    | Total/NA  |
| Total Organic Carbon         | 8.9    |           | 1.0    | 0.43    | mg/L | 1   |     |   | 9060A    | Total/NA  |
| Phenolics, Total Recoverable | 0.026  |           | 0.010  | 0.0050  | mg/L | 1   |     |   | 9066     | Total/NA  |
| Hardness                     | 580    |           | 10     | 2.6     | mg/L | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids       | 780    |           | 10     | 4.0     | mg/L | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand    | 7.1    | b         | 2.0    | 2.0     | mg/L | 1   |     |   | SM 5210B | Total/NA  |
| Analyte                      | Result | Qualifier | RL     | RL      | Unit | Dil | Fac | D | Method   | Prep Type |
| Turbidity                    | 240    |           | 1.0    | 1.0     | NTU  | 1   |     |   | 180.1    | Total/NA  |

**Client Sample ID: PZ-14-3**

**Lab Sample ID: 480-68692-2**

| Analyte  | Result | Qualifier | RL    | MDL    | Unit | Dil | Fac | D | Method | Prep Type |
|----------|--------|-----------|-------|--------|------|-----|-----|---|--------|-----------|
| Aluminum | 6.3    |           | 0.20  | 0.060  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Arsenic  | 0.094  |           | 0.015 | 0.0056 | mg/L | 1   |     |   | 6010C  | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-3 (Continued)**

**Lab Sample ID: 480-68692-2**

| Analyte                 | Result  | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method   | Prep Type |
|-------------------------|---------|-----------|--------|---------|------|-----|-----|---|----------|-----------|
| Barium                  | 0.63    |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Beryllium               | 0.00047 | J         | 0.0020 | 0.00030 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Boron                   | 0.18    |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Calcium                 | 180     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Chromium                | 0.028   |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Copper                  | 0.091   |           | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Iron                    | 18      | B         | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Lead                    | 0.017   |           | 0.010  | 0.0030  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Magnesium               | 56      |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Manganese               | 2.0     |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Nickel                  | 0.025   |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Potassium               | 9.3     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Sodium                  | 60      |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Zinc                    | 0.087   | B         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Aluminum                | 8.7     |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Arsenic                 | 0.092   |           | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Barium                  | 0.59    |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Beryllium               | 0.00048 | J         | 0.0020 | 0.00030 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Boron                   | 0.17    | B         | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Calcium                 | 150     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chromium                | 0.032   |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Copper                  | 0.083   | B         | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Iron                    | 22      |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Lead                    | 0.015   |           | 0.010  | 0.0030  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Magnesium               | 54      |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Manganese               | 1.7     |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Nickel                  | 0.030   |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Potassium               | 9.1     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Sodium                  | 58      |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Zinc                    | 0.087   | B         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chloride                | 61      |           | 0.50   | 0.41    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                 | 34      |           | 2.0    | 0.13    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total       | 570     | B         | 100    | 40      | mg/L | 10  |     |   | 310.2    | Total/NA  |
| Ammonia                 | 5.3     |           | 0.10   | 0.045   | mg/L | 5   |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen | 5.9     |           | 0.40   | 0.30    | mg/L | 2   |     |   | 351.2    | Total/NA  |
| Nitrate as N            | 0.69    |           | 0.050  | 0.020   | mg/L | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand  | 23      | B         | 10     | 5.0     | mg/L | 1   |     |   | 410.4    | Total/NA  |
| Total Organic Carbon    | 3.2     |           | 1.0    | 0.43    | mg/L | 1   |     |   | 9060A    | Total/NA  |
| Hardness                | 610     |           | 10     | 2.6     | mg/L | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids  | 680     |           | 10     | 4.0     | mg/L | 1   |     |   | SM 2540C | Total/NA  |
| Analyte                 | Result  | Qualifier | RL     | RL      | Unit | Dil | Fac | D | Method   | Prep Type |
| Turbidity               | 450     |           | 1.0    | 1.0     | NTU  | 1   |     |   | 180.1    | Total/NA  |

**Client Sample ID: TB1**

**Lab Sample ID: 480-68692-3**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

Client Sample ID: PZ-14-5

Lab Sample ID: 480-68692-1

Date Collected: 10/06/14 12:55

Matrix: Ground Water

Date Received: 10/07/14 09:00

## Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 10/09/14 04:19 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 10/09/14 04:19 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 10/09/14 04:19 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 10/09/14 04:19 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 10/09/14 04:19 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 10/09/14 04:19 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 10/09/14 04:19 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 10/09/14 04:19 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 10/09/14 04:19 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 72 - 130 |          | 10/09/14 04:19 | 1       |
| 4-Bromofluorobenzene (Surr)  | 104       |           | 69 - 121 |          | 10/09/14 04:19 | 1       |
| Toluene-d8 (Surr)            | 99        |           | 70 - 123 |          | 10/09/14 04:19 | 1       |

## Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.73   |           | 0.20   | 0.060   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Arsenic   | 0.057  |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Barium    | 0.51   |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Boron     | 0.21   |           | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:47 | 1       |

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-5**

**Lab Sample ID: 480-68692-1**

Date Collected: 10/06/14 12:55

Matrix: Ground Water

Date Received: 10/07/14 09:00

### Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Calcium   | 140    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:47 | 1       |
| Chromium  | 0.0076 |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Copper    | 0.0072 | J         | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Iron      | 4.8    | B         | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Magnesium | 54     |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Manganese | 1.0    |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Nickel    | 0.028  |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Potassium | 9.8    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Sodium    | 87     |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Zinc      | 0.026  | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |

### Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 2.7    |           | 0.20   | 0.060   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Arsenic   | 0.055  |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Barium    | 0.47   |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Boron     | 0.20   | B         | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:57 | 10/09/14 14:19 | 1       |
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Calcium   | 130    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Chromium  | 0.016  |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Copper    | 0.011  | B         | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Iron      | 7.7    |           | 0.050  | 0.019   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Lead      | 0.0051 | J         | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Magnesium | 52     |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Manganese | 1.1    |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Nickel    | 0.032  |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Potassium | 9.7    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Sodium    | 85     |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |
| Zinc      | 0.036  | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:45 | 1       |

### Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 11:27 | 1       |

### Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/13/14 08:55 | 10/13/14 13:40 | 1       |

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

Client Sample ID: PZ-14-5

Lab Sample ID: 480-68692-1

Date Collected: 10/06/14 12:55

Matrix: Ground Water

Date Received: 10/07/14 09:00

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 79     |           | 0.50  | 0.41   | mg/L        |   |                | 10/10/14 01:49 | 1       |
| Sulfate                      | 30     |           | 2.0   | 0.13   | mg/L        |   |                | 10/10/14 01:49 | 1       |
| Alkalinity, Total            | 600    | B         | 100   | 40     | mg/L        |   |                | 10/14/14 15:18 | 10      |
| Ammonia                      | 9.1    | B         | 0.20  | 0.090  | mg/L        |   |                | 10/08/14 23:04 | 10      |
| Total Kjeldahl Nitrogen      | 9.2    |           | 1.0   | 0.75   | mg/L        |   | 10/09/14 09:14 | 10/10/14 04:00 | 5       |
| Nitrate as N                 | 0.090  |           | 0.050 | 0.020  | mg/L        |   |                | 10/07/14 21:59 | 1       |
| Chemical Oxygen Demand       | 32     | B         | 10    | 5.0    | mg/L        |   |                | 10/16/14 09:12 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 10/07/14 11:08 | 1       |
| Cyanide, Total               | 0.23   |           | 0.010 | 0.0050 | mg/L        |   | 10/13/14 15:25 | 10/13/14 22:55 | 1       |
| Total Organic Carbon         | 8.9    |           | 1.0   | 0.43   | mg/L        |   |                | 10/12/14 08:34 | 1       |
| Phenolics, Total Recoverable | 0.026  |           | 0.010 | 0.0050 | mg/L        |   | 10/09/14 09:30 | 10/13/14 20:36 | 1       |
| Hardness                     | 580    |           | 10    | 2.6    | mg/L        |   |                | 10/09/14 11:55 | 1       |
| Total Dissolved Solids       | 780    |           | 10    | 4.0    | mg/L        |   |                | 10/10/14 23:57 | 1       |
| Biochemical Oxygen Demand    | 7.1    | b         | 2.0   | 2.0    | mg/L        |   |                | 10/07/14 23:53 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 240    |           | 1.0   | 1.0    | NTU         |   |                | 10/07/14 23:00 | 1       |
| Color                        | ND     |           | 5.0   | 5.0    | Color Units |   |                | 10/07/14 23:20 | 1       |



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-3**

**Lab Sample ID: 480-68692-2**

Date Collected: 10/06/14 11:25

Matrix: Ground Water

Date Received: 10/07/14 09:00

### Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                      | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane        | ND        |           | 5.0      | 0.39 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,1,2,2-Tetrachloroethane    | ND        |           | 5.0      | 0.26 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,1,2-Trichloroethane        | ND        |           | 5.0      | 0.48 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,1-Dichloroethane           | ND        |           | 5.0      | 0.59 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,1-Dichloroethene           | ND        |           | 5.0      | 0.85 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,2-Dichlorobenzene          | ND        |           | 5.0      | 0.44 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,2-Dichloroethane           | ND        |           | 5.0      | 0.60 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,2-Dichloropropane          | ND        |           | 5.0      | 0.61 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,3-Dichlorobenzene          | ND        |           | 5.0      | 0.54 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 1,4-Dichlorobenzene          | ND        |           | 5.0      | 0.51 | ug/L |   |          | 10/09/14 04:44 | 1       |
| 2-Chloroethyl vinyl ether    | ND        |           | 25       | 1.9  | ug/L |   |          | 10/09/14 04:44 | 1       |
| Benzene                      | ND        |           | 5.0      | 0.60 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Bromodichloromethane         | ND        |           | 5.0      | 0.54 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Bromoform                    | ND        |           | 5.0      | 0.47 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Bromomethane                 | ND        |           | 5.0      | 1.2  | ug/L |   |          | 10/09/14 04:44 | 1       |
| Carbon tetrachloride         | ND        |           | 5.0      | 0.51 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Chlorobenzene                | ND        |           | 5.0      | 0.48 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Chloroethane                 | ND        |           | 5.0      | 0.87 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Chloroform                   | ND        |           | 5.0      | 0.54 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Chloromethane                | ND        |           | 5.0      | 0.64 | ug/L |   |          | 10/09/14 04:44 | 1       |
| cis-1,2-Dichloroethene       | ND        |           | 5.0      | 0.57 | ug/L |   |          | 10/09/14 04:44 | 1       |
| cis-1,3-Dichloropropene      | ND        |           | 5.0      | 0.33 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Dibromochloromethane         | ND        |           | 5.0      | 0.41 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Dichlorodifluoromethane      | ND        |           | 5.0      | 0.28 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Ethylbenzene                 | ND        |           | 5.0      | 0.46 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Methylene Chloride           | ND        |           | 5.0      | 0.81 | ug/L |   |          | 10/09/14 04:44 | 1       |
| m-Xylene & p-Xylene          | ND        |           | 10       | 1.1  | ug/L |   |          | 10/09/14 04:44 | 1       |
| o-Xylene                     | ND        |           | 5.0      | 0.43 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Tetrachloroethene            | ND        |           | 5.0      | 0.34 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Toluene                      | ND        |           | 5.0      | 0.45 | ug/L |   |          | 10/09/14 04:44 | 1       |
| trans-1,2-Dichloroethene     | ND        |           | 5.0      | 0.59 | ug/L |   |          | 10/09/14 04:44 | 1       |
| trans-1,3-Dichloropropene    | ND        |           | 5.0      | 0.44 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Trichloroethene              | ND        |           | 5.0      | 0.60 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Trichlorofluoromethane       | ND        |           | 5.0      | 0.45 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Vinyl chloride               | ND        |           | 5.0      | 0.75 | ug/L |   |          | 10/09/14 04:44 | 1       |
| Xylenes, Total               | ND        |           | 10       | 1.1  | ug/L |   |          | 10/09/14 04:44 | 1       |
| Surrogate                    | %Recovery | Qualifier | Limits   |      |      |   | Prepared | Analyzed       | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 105       |           | 72 - 130 |      |      |   |          | 10/09/14 04:44 | 1       |
| 4-Bromofluorobenzene (Surr)  | 98        |           | 69 - 121 |      |      |   |          | 10/09/14 04:44 | 1       |
| Toluene-d8 (Surr)            | 99        |           | 70 - 123 |      |      |   |          | 10/09/14 04:44 | 1       |

### Method: 6010C - Metals (ICP)

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 6.3     |           | 0.20   | 0.060   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Antimony  | ND      |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Arsenic   | 0.094   |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Barium    | 0.63    |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Beryllium | 0.00047 | J         | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Boron     | 0.18    |           | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:57 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

Client Sample ID: PZ-14-3

Lab Sample ID: 480-68692-2

Date Collected: 10/06/14 11:25

Matrix: Ground Water

Date Received: 10/07/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Calcium   | 180    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:57 | 1       |
| Chromium  | 0.028  |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Copper    | 0.091  |           | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Iron      | 18     | B         | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Lead      | 0.017  |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Magnesium | 56     |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Manganese | 2.0    |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Nickel    | 0.025  |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Potassium | 9.3    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Sodium    | 60     |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Zinc      | 0.087  | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 8.7     |           | 0.20   | 0.060   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Antimony  | ND      |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Arsenic   | 0.092   |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Barium    | 0.59    |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Beryllium | 0.00048 | J         | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Boron     | 0.17    | B         | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:57 | 10/09/14 14:29 | 1       |
| Cadmium   | ND      |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Calcium   | 150     |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Chromium  | 0.032   |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Copper    | 0.083   | B         | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Iron      | 22      |           | 0.050  | 0.019   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Lead      | 0.015   |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Magnesium | 54      |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Manganese | 1.7     |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Nickel    | 0.030   |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Potassium | 9.1     |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Selenium  | ND      |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Silver    | ND      |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Sodium    | 58      |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Thallium  | ND      |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Zinc      | 0.087   | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 11:29 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/13/14 08:55 | 10/13/14 13:47 | 1       |

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-3**

**Lab Sample ID: 480-68692-2**

Date Collected: 10/06/14 11:25

Matrix: Ground Water

Date Received: 10/07/14 09:00

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 61     |           | 0.50  | 0.41   | mg/L        |   |                | 10/10/14 02:47 | 1       |
| Sulfate                      | 34     |           | 2.0   | 0.13   | mg/L        |   |                | 10/10/14 02:47 | 1       |
| Alkalinity, Total            | 570    | B         | 100   | 40     | mg/L        |   |                | 10/15/14 08:45 | 10      |
| Ammonia                      | 5.3    |           | 0.10  | 0.045  | mg/L        |   |                | 10/09/14 00:43 | 5       |
| Total Kjeldahl Nitrogen      | 5.9    |           | 0.40  | 0.30   | mg/L        |   | 10/09/14 09:14 | 10/10/14 04:00 | 2       |
| Nitrate as N                 | 0.69   |           | 0.050 | 0.020  | mg/L        |   |                | 10/07/14 22:00 | 1       |
| Chemical Oxygen Demand       | 23     | B         | 10    | 5.0    | mg/L        |   |                | 10/16/14 09:12 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 10/07/14 11:08 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 10/13/14 15:25 | 10/13/14 22:56 | 1       |
| Total Organic Carbon         | 3.2    |           | 1.0   | 0.43   | mg/L        |   |                | 10/12/14 09:02 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 10/09/14 09:30 | 10/13/14 20:36 | 1       |
| Hardness                     | 610    |           | 10    | 2.6    | mg/L        |   |                | 10/09/14 11:55 | 1       |
| Total Dissolved Solids       | 680    |           | 10    | 4.0    | mg/L        |   |                | 10/13/14 00:14 | 1       |
| Biochemical Oxygen Demand    | ND     |           | 2.0   | 2.0    | mg/L        |   |                | 10/07/14 23:53 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 450    |           | 1.0   | 1.0    | NTU         |   |                | 10/07/14 23:00 | 1       |
| Color                        | ND     |           | 5.0   | 5.0    | Color Units |   |                | 10/07/14 23:20 | 1       |



# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

Client Sample ID: TB1

Lab Sample ID: 480-68692-3

Date Collected: 10/06/14 00:00

Matrix: Water

Date Received: 10/07/14 09:00

## Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                      | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane        | ND        |           | 5.0      | 0.39 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1,2,2-Tetrachloroethane    | ND        |           | 5.0      | 0.26 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1,2-Trichloroethane        | ND        |           | 5.0      | 0.48 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1-Dichloroethane           | ND        |           | 5.0      | 0.59 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1-Dichloroethene           | ND        |           | 5.0      | 0.85 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,2-Dichlorobenzene          | ND        |           | 5.0      | 0.44 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,2-Dichloroethane           | ND        |           | 5.0      | 0.60 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,2-Dichloropropane          | ND        |           | 5.0      | 0.61 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,3-Dichlorobenzene          | ND        |           | 5.0      | 0.54 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,4-Dichlorobenzene          | ND        |           | 5.0      | 0.51 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 2-Chloroethyl vinyl ether    | ND        |           | 25       | 1.9  | ug/L |   |          | 10/09/14 05:09 | 1       |
| Benzene                      | ND        |           | 5.0      | 0.60 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Bromodichloromethane         | ND        |           | 5.0      | 0.54 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Bromoform                    | ND        |           | 5.0      | 0.47 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Bromomethane                 | ND        |           | 5.0      | 1.2  | ug/L |   |          | 10/09/14 05:09 | 1       |
| Carbon tetrachloride         | ND        |           | 5.0      | 0.51 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chlorobenzene                | ND        |           | 5.0      | 0.48 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chloroethane                 | ND        |           | 5.0      | 0.87 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chloroform                   | ND        |           | 5.0      | 0.54 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chloromethane                | ND        |           | 5.0      | 0.64 | ug/L |   |          | 10/09/14 05:09 | 1       |
| cis-1,2-Dichloroethene       | ND        |           | 5.0      | 0.57 | ug/L |   |          | 10/09/14 05:09 | 1       |
| cis-1,3-Dichloropropene      | ND        |           | 5.0      | 0.33 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Dibromochloromethane         | ND        |           | 5.0      | 0.41 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Dichlorodifluoromethane      | ND        |           | 5.0      | 0.28 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Ethylbenzene                 | ND        |           | 5.0      | 0.46 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Methylene Chloride           | ND        |           | 5.0      | 0.81 | ug/L |   |          | 10/09/14 05:09 | 1       |
| m-Xylene & p-Xylene          | ND        |           | 10       | 1.1  | ug/L |   |          | 10/09/14 05:09 | 1       |
| o-Xylene                     | ND        |           | 5.0      | 0.43 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Tetrachloroethene            | ND        |           | 5.0      | 0.34 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Toluene                      | ND        |           | 5.0      | 0.45 | ug/L |   |          | 10/09/14 05:09 | 1       |
| trans-1,2-Dichloroethene     | ND        |           | 5.0      | 0.59 | ug/L |   |          | 10/09/14 05:09 | 1       |
| trans-1,3-Dichloropropene    | ND        |           | 5.0      | 0.44 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Trichloroethene              | ND        |           | 5.0      | 0.60 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Trichlorofluoromethane       | ND        |           | 5.0      | 0.45 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Vinyl chloride               | ND        |           | 5.0      | 0.75 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Xylenes, Total               | ND        |           | 10       | 1.1  | ug/L |   |          | 10/09/14 05:09 | 1       |
| Surrogate                    | %Recovery | Qualifier | Limits   |      |      |   | Prepared | Analyzed       | Dil Fac |
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 72 - 130 |      |      |   |          | 10/09/14 05:09 | 1       |
| 4-Bromofluorobenzene (Surr)  | 98        |           | 69 - 121 |      |      |   |          | 10/09/14 05:09 | 1       |
| Toluene-d8 (Surr)            | 98        |           | 70 - 123 |      |      |   |          | 10/09/14 05:09 | 1       |

TestAmerica Buffalo

## Surrogate Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 624 - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water

Prep Type: Total/NA

#### Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID | Client Sample ID | 12DCE<br>(72-130) | BFB<br>(69-121) | TOL<br>(70-123) |
|---------------|------------------|-------------------|-----------------|-----------------|
| 480-68692-1   | PZ-14-5          | 104               | 104             | 99              |
| 480-68692-2   | PZ-14-3          | 105               | 98              | 99              |

#### Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

### Method: 624 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

#### Percent Surrogate Recovery (Acceptance Limits)

| Lab Sample ID    | Client Sample ID   | 12DCE<br>(72-130) | BFB<br>(69-121) | TOL<br>(70-123) |
|------------------|--------------------|-------------------|-----------------|-----------------|
| 480-68692-3      | TB1                | 104               | 98              | 98              |
| LCS 480-206699/6 | Lab Control Sample | 100               | 101             | 101             |
| MB 480-206699/8  | Method Blank       | 104               | 101             | 99              |

#### Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

## Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-206699/8

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                   | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND        |              | 5.0 | 0.39 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2,2-Tetrachloroethane | ND        |              | 5.0 | 0.26 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2-Trichloroethane     | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethane        | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethene        | ND        |              | 5.0 | 0.85 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichlorobenzene       | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloroethane        | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloropropane       | ND        |              | 5.0 | 0.61 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,3-Dichlorobenzene       | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,4-Dichlorobenzene       | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 2-Chloroethyl vinyl ether | ND        |              | 25  | 1.9  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Benzene                   | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromodichloromethane      | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromoform                 | ND        |              | 5.0 | 0.47 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromomethane              | ND        |              | 5.0 | 1.2  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Carbon tetrachloride      | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chlorobenzene             | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroethane              | ND        |              | 5.0 | 0.87 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroform                | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloromethane             | ND        |              | 5.0 | 0.64 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,2-Dichloroethene    | ND        |              | 5.0 | 0.57 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,3-Dichloropropene   | ND        |              | 5.0 | 0.33 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dibromochloromethane      | ND        |              | 5.0 | 0.41 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dichlorodifluoromethane   | ND        |              | 5.0 | 0.28 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Ethylbenzene              | ND        |              | 5.0 | 0.46 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Methylene Chloride        | ND        |              | 5.0 | 0.81 | ug/L |   |          | 10/08/14 23:03 | 1       |
| m-Xylene & p-Xylene       | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |
| o-Xylene                  | ND        |              | 5.0 | 0.43 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Tetrachloroethene         | ND        |              | 5.0 | 0.34 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Toluene                   | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,2-Dichloroethene  | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,3-Dichloropropene | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichloroethene           | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichlorofluoromethane    | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Vinyl chloride            | ND        |              | 5.0 | 0.75 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Xylenes, Total            | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104          |              | 72 - 130 |          | 10/08/14 23:03 | 1       |
| 4-Bromofluorobenzene (Surr)  | 101          |              | 69 - 121 |          | 10/08/14 23:03 | 1       |
| Toluene-d8 (Surr)            | 99           |              | 70 - 123 |          | 10/08/14 23:03 | 1       |

Lab Sample ID: LCS 480-206699/6

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte               | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|-----------------------|-------------|------------|---------------|------|---|------|-------------|
| 1,1,1-Trichloroethane | 20.0        | 18.6       |               | ug/L |   | 93   | 52 - 162    |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-206699/6

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |  |
|---------------------------|-------------|------------|---------------|------|---|------|--------------|--|
|                           |             |            |               |      |   |      |              |  |
| 1,1,2,2-Tetrachloroethane | 20.0        | 18.8       |               | ug/L |   | 94   | 46 - 157     |  |
| 1,1,2-Trichloroethane     | 20.0        | 18.6       |               | ug/L |   | 93   | 52 - 150     |  |
| 1,1-Dichloroethane        | 20.0        | 19.6       |               | ug/L |   | 98   | 59 - 155     |  |
| 1,1-Dichloroethene        | 20.0        | 18.6       |               | ug/L |   | 93   | 1 - 234      |  |
| 1,2-Dichlorobenzene       | 20.0        | 19.6       |               | ug/L |   | 98   | 18 - 190     |  |
| 1,2-Dichloroethane        | 20.0        | 19.1       |               | ug/L |   | 96   | 49 - 155     |  |
| 1,2-Dichloropropane       | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 210      |  |
| 1,3-Dichlorobenzene       | 20.0        | 19.3       |               | ug/L |   | 97   | 59 - 156     |  |
| 1,4-Dichlorobenzene       | 20.0        | 19.2       |               | ug/L |   | 96   | 18 - 190     |  |
| 2-Chloroethyl vinyl ether | 20.0        | 17.0       | J             | ug/L |   | 85   | 1 - 305      |  |
| Benzene                   | 20.0        | 19.6       |               | ug/L |   | 98   | 37 - 151     |  |
| Bromodichloromethane      | 20.0        | 18.1       |               | ug/L |   | 91   | 35 - 155     |  |
| Bromoform                 | 20.0        | 17.4       |               | ug/L |   | 87   | 45 - 169     |  |
| Bromomethane              | 20.0        | 24.4       |               | ug/L |   | 122  | 1 - 242      |  |
| Carbon tetrachloride      | 20.0        | 18.1       |               | ug/L |   | 91   | 70 - 140     |  |
| Chlorobenzene             | 20.0        | 19.1       |               | ug/L |   | 96   | 37 - 160     |  |
| Chloroethane              | 20.0        | 22.3       |               | ug/L |   | 111  | 14 - 230     |  |
| Chloroform                | 20.0        | 19.4       |               | ug/L |   | 97   | 51 - 138     |  |
| Chloromethane             | 20.0        | 19.2       |               | ug/L |   | 96   | 1 - 273      |  |
| cis-1,2-Dichloroethene    | 20.0        | 19.6       |               | ug/L |   | 98   |              |  |
| cis-1,3-Dichloropropene   | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 227      |  |
| Dibromochloromethane      | 20.0        | 18.3       |               | ug/L |   | 91   | 53 - 149     |  |
| Dichlorodifluoromethane   | 20.0        | 17.2       |               | ug/L |   | 86   |              |  |
| Ethylbenzene              | 20.0        | 20.1       |               | ug/L |   | 100  | 37 - 162     |  |
| Methylene Chloride        | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 221      |  |
| m-Xylene & p-Xylene       | 20.0        | 19.5       |               | ug/L |   | 97   | 79 - 120     |  |
| o-Xylene                  | 20.0        | 20.8       |               | ug/L |   | 104  | 79 - 120     |  |
| Tetrachloroethene         | 20.0        | 18.5       |               | ug/L |   | 92   | 64 - 148     |  |
| Toluene                   | 20.0        | 19.5       |               | ug/L |   | 98   | 47 - 150     |  |
| trans-1,2-Dichloroethene  | 20.0        | 19.4       |               | ug/L |   | 97   | 54 - 156     |  |
| trans-1,3-Dichloropropene | 20.0        | 19.6       |               | ug/L |   | 98   | 17 - 183     |  |
| Trichloroethene           | 20.0        | 19.0       |               | ug/L |   | 95   | 71 - 157     |  |
| Trichlorofluoromethane    | 20.0        | 18.8       |               | ug/L |   | 94   | 17 - 181     |  |
| Vinyl chloride            | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 251      |  |

| Surrogate                    | LCS LCS   |           | Limits   |
|------------------------------|-----------|-----------|----------|
|                              | %Recovery | Qualifier |          |
| 1,2-Dichloroethane-d4 (Surr) | 100       |           | 72 - 130 |
| 4-Bromofluorobenzene (Surr)  | 101       |           | 69 - 121 |
| Toluene-d8 (Surr)            | 101       |           | 70 - 123 |

### Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-206499/1-A

Matrix: Water

Analysis Batch: 207036

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206499

| Analyte  | MB MB  |           | RL   | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|--------|-----------|------|-------|------|---|----------------|----------------|---------|
|          | Result | Qualifier |      |       |      |   |                |                |         |
| Aluminum | ND     |           | 0.20 | 0.060 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |

TestAmerica Buffalo

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-206499/1-A

Matrix: Water

Analysis Batch: 207036

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206499

| Analyte   | MB MB   |           | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
|           | Result  | Qualifier |        |         |      |   |                |                |         |
| Antimony  | ND      |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Arsenic   | ND      |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Barium    | ND      |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Beryllium | ND      |           | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Boron     | ND      |           | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Cadmium   | ND      |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Calcium   | ND      |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Chromium  | ND      |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Copper    | ND      |           | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Iron      | 0.0326  | J         | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Lead      | ND      |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Magnesium | ND      |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Manganese | ND      |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Nickel    | ND      |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Potassium | ND      |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Selenium  | ND      |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Silver    | ND      |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Sodium    | ND      |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Thallium  | ND      |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Zinc      | 0.00455 | J         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |

Lab Sample ID: LCS 480-206499/2-A

Matrix: Water

Analysis Batch: 206924

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 206499

| Analyte   | Spike Added | LCS LCS |           | Unit | D | %Rec | %Rec.    |  |
|-----------|-------------|---------|-----------|------|---|------|----------|--|
|           |             | Result  | Qualifier |      |   |      | Limits   |  |
| Aluminum  | 10.0        | 8.95    |           | mg/L |   | 89   | 80 - 120 |  |
| Antimony  | 0.200       | 0.192   |           | mg/L |   | 96   | 80 - 120 |  |
| Arsenic   | 0.201       | 0.184   |           | mg/L |   | 92   | 80 - 120 |  |
| Barium    | 0.200       | 0.217   |           | mg/L |   | 108  | 80 - 120 |  |
| Beryllium | 0.201       | 0.197   |           | mg/L |   | 98   | 80 - 120 |  |
| Cadmium   | 0.201       | 0.188   |           | mg/L |   | 94   | 80 - 120 |  |
| Chromium  | 0.201       | 0.188   |           | mg/L |   | 94   | 80 - 120 |  |
| Copper    | 0.201       | 0.214   |           | mg/L |   | 107  | 80 - 120 |  |
| Iron      | 10.0        | 9.07    |           | mg/L |   | 91   | 80 - 120 |  |
| Lead      | 0.201       | 0.187   |           | mg/L |   | 93   | 80 - 120 |  |
| Magnesium | 10.0        | 10.2    |           | mg/L |   | 101  | 80 - 120 |  |
| Manganese | 0.201       | 0.202   |           | mg/L |   | 101  | 80 - 120 |  |
| Nickel    | 0.201       | 0.183   |           | mg/L |   | 91   | 80 - 120 |  |
| Potassium | 10.0        | 9.25    |           | mg/L |   | 92   | 80 - 120 |  |
| Selenium  | 0.201       | 0.189   |           | mg/L |   | 94   | 80 - 120 |  |
| Silver    | 0.0500      | 0.0528  |           | mg/L |   | 106  | 80 - 120 |  |
| Sodium    | 10.0        | 9.32    |           | mg/L |   | 93   | 80 - 120 |  |
| Zinc      | 0.201       | 0.206   |           | mg/L |   | 103  | 80 - 120 |  |

TestAmerica Buffalo

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-206499/2-A  
Matrix: Water  
Analysis Batch: 207036

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206499

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Boron    | 0.200       | 0.201      |               | mg/L |   | 100  | 80 - 120     |
| Calcium  | 10.0        | 9.78       |               | mg/L |   | 98   | 80 - 120     |
| Thallium | 0.200       | 0.206      |               | mg/L |   | 103  | 80 - 120     |

Lab Sample ID: MB 480-206494/1-A  
Matrix: Water  
Analysis Batch: 206785

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 206494

| Analyte   | MB Result | MB Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND        |              | 0.20   | 0.060   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Antimony  | ND        |              | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Arsenic   | ND        |              | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Barium    | ND        |              | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Beryllium | ND        |              | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Cadmium   | ND        |              | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Calcium   | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Chromium  | ND        |              | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Copper    | 0.00182 J |              | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Iron      | ND        |              | 0.050  | 0.019   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Lead      | ND        |              | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Magnesium | ND        |              | 0.20   | 0.043   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Manganese | ND        |              | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Nickel    | ND        |              | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Potassium | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Selenium  | ND        |              | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Silver    | ND        |              | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Thallium  | ND        |              | 0.020  | 0.010   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |
| Zinc      | 0.00545 J |              | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:14 | 1       |

Lab Sample ID: MB 480-206494/1-A  
Matrix: Water  
Analysis Batch: 207038

Client Sample ID: Method Blank  
Prep Type: Total Recoverable  
Prep Batch: 206494

| Analyte | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|-----------|--------------|-------|--------|------|---|----------------|----------------|---------|
| Boron   | 0.0104 J  |              | 0.020 | 0.0040 | mg/L |   | 10/08/14 08:57 | 10/09/14 14:13 | 1       |
| Sodium  | ND        |              | 1.0   | 0.32   | mg/L |   | 10/08/14 08:57 | 10/09/14 14:13 | 1       |

Lab Sample ID: LCS 480-206494/2-A  
Matrix: Water  
Analysis Batch: 206785

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 206494

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------|-------------|------------|---------------|------|---|------|--------------|
| Aluminum  | 10.0        | 8.81       |               | mg/L |   | 88   | 80 - 120     |
| Antimony  | 0.200       | 0.191      |               | mg/L |   | 96   | 80 - 120     |
| Arsenic   | 0.201       | 0.181      |               | mg/L |   | 90   | 80 - 120     |
| Barium    | 0.200       | 0.213      |               | mg/L |   | 106  | 80 - 120     |
| Beryllium | 0.201       | 0.192      |               | mg/L |   | 96   | 80 - 120     |
| Cadmium   | 0.201       | 0.185      |               | mg/L |   | 92   | 80 - 120     |
| Calcium   | 10.0        | 8.46       |               | mg/L |   | 84   | 80 - 120     |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-206494/2-A

Matrix: Water

Analysis Batch: 206785

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 206494

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------|-------------|------------|---------------|------|---|------|--------------|
|           |             |            |               |      |   |      |              |
| Chromium  | 0.201       | 0.182      |               | mg/L |   | 91   | 80 - 120     |
| Copper    | 0.201       | 0.201      |               | mg/L |   | 100  | 80 - 120     |
| Iron      | 10.0        | 8.88       |               | mg/L |   | 89   | 80 - 120     |
| Lead      | 0.201       | 0.182      |               | mg/L |   | 91   | 80 - 120     |
| Magnesium | 10.0        | 9.86       |               | mg/L |   | 99   | 80 - 120     |
| Manganese | 0.201       | 0.198      |               | mg/L |   | 99   | 80 - 120     |
| Nickel    | 0.201       | 0.181      |               | mg/L |   | 90   | 80 - 120     |
| Potassium | 10.0        | 9.19       |               | mg/L |   | 92   | 80 - 120     |
| Selenium  | 0.201       | 0.180      |               | mg/L |   | 90   | 80 - 120     |
| Silver    | 0.0500      | 0.0513     |               | mg/L |   | 103  | 80 - 120     |
| Thallium  | 0.200       | 0.199      |               | mg/L |   | 100  | 80 - 120     |
| Zinc      | 0.201       | 0.196      |               | mg/L |   | 98   | 80 - 120     |

Lab Sample ID: LCS 480-206494/2-A

Matrix: Water

Analysis Batch: 207038

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 206494

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
|         |             |            |               |      |   |      |              |
| Boron   | 0.200       | 0.209      |               | mg/L |   | 104  | 80 - 120     |
| Sodium  | 10.0        | 9.51       |               | mg/L |   | 95   | 80 - 120     |

### Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-206574/1-A

Matrix: Water

Analysis Batch: 206912

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206574

| Analyte | MB MB  |           | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |         |         |      |   |                |                |         |
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 11:15 | 1       |

Lab Sample ID: LCS 480-206574/2-A

Matrix: Water

Analysis Batch: 206912

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 206574

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
|         |             |            |               |      |   |      |              |
| Mercury | 0.00667     | 0.00712    |               | mg/L |   | 107  | 80 - 120     |

Lab Sample ID: MB 480-207374/1-A

Matrix: Water

Analysis Batch: 207557

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 207374

| Analyte | MB MB  |           | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |         |         |      |   |                |                |         |
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/13/14 08:55 | 10/13/14 13:32 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 480-207374/2-A  
Matrix: Water  
Analysis Batch: 207557

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 207374

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Mercury | 0.00667     | 0.00710    |               | mg/L |   | 106  | 80 - 120     |

Lab Sample ID: 480-68692-1 MS  
Matrix: Ground Water  
Analysis Batch: 207557

Client Sample ID: PZ-14-5  
Prep Type: Dissolved  
Prep Batch: 207374

| Analyte | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Mercury | ND            |                  | 0.00667     | 0.00685   |              | mg/L |   | 103  | 80 - 120     |

Lab Sample ID: 480-68692-1 MSD  
Matrix: Ground Water  
Analysis Batch: 207557

Client Sample ID: PZ-14-5  
Prep Type: Dissolved  
Prep Batch: 207374

| Analyte | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|---------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Mercury | ND            |                  | 0.00667     | 0.00675    |               | mg/L |   | 101  | 80 - 120     | 1   | 20        |

### Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 480-206480/3  
Matrix: Water  
Analysis Batch: 206480

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte   | MB Result | MB Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------|-----------|--------------|-----|-----|------|---|----------|----------------|---------|
| Turbidity | ND        |              | 1.0 | 1.0 | NTU  |   |          | 10/07/14 23:00 | 1       |

Lab Sample ID: 480-68692-1 DU  
Matrix: Ground Water  
Analysis Batch: 206480

Client Sample ID: PZ-14-5  
Prep Type: Total/NA

| Analyte   | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|-----------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Turbidity | 240           |                  | 247       |              | NTU  |   | 3   | 20        |

### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 240-150879/27  
Matrix: Water  
Analysis Batch: 150879

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|------|------|---|----------|----------------|---------|
| Chloride | ND        |              | 0.50 | 0.41 | mg/L |   |          | 10/10/14 01:10 | 1       |
| Sulfate  | ND        |              | 2.0  | 0.13 | mg/L |   |          | 10/10/14 01:10 | 1       |

Lab Sample ID: LCS 240-150879/28  
Matrix: Water  
Analysis Batch: 150879

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Chloride | 50.0        | 47.7       |               | mg/L |   | 95   | 90 - 110     |
| Sulfate  | 50.0        | 47.3       |               | mg/L |   | 95   | 90 - 110     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 480-68692-1 MS

Matrix: Ground Water

Analysis Batch: 150879

Client Sample ID: PZ-14-5

Prep Type: Total/NA

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Chloride | 79            |                  | 50.0        | 128       |              | mg/L |   | 98   | 80 - 120     |
| Sulfate  | 30            |                  | 50.0        | 80.2      |              | mg/L |   | 100  | 80 - 120     |

Lab Sample ID: 480-68692-1 MSD

Matrix: Ground Water

Analysis Batch: 150879

Client Sample ID: PZ-14-5

Prep Type: Total/NA

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Chloride | 79            |                  | 50.0        | 123        |               | mg/L |   | 88   | 80 - 120     | 4   | 20        |
| Sulfate  | 30            |                  | 50.0        | 77.2       |               | mg/L |   | 94   | 80 - 120     | 4   | 20        |

### Method: 310.2 - Alkalinity

Lab Sample ID: MB 480-207719/185

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND        |              | 10 | 4.0 | mg/L |   |          | 10/14/14 15:04 | 1       |

Lab Sample ID: MB 480-207719/192

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND        |              | 10 | 4.0 | mg/L |   |          | 10/14/14 15:06 | 1       |

Lab Sample ID: MB 480-207719/203

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | 4.00      | J            | 10 | 4.0 | mg/L |   |          | 10/14/14 15:17 | 1       |

Lab Sample ID: LCS 480-207719/186

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.4       |               | mg/L |   | 103  | 90 - 110     |

Lab Sample ID: LCS 480-207719/193

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.0       |               | mg/L |   | 102  | 90 - 110     |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 310.2 - Alkalinity (Continued)

Lab Sample ID: LCS 480-207719/204

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 50.2       |               | mg/L |   | 100  | 90 - 110     |

Lab Sample ID: MB 480-207973/12

Matrix: Water

Analysis Batch: 207973

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | 5.07      | J            | 10 | 4.0 | mg/L |   |          | 10/15/14 08:34 | 1       |

Lab Sample ID: MB 480-207973/26

Matrix: Water

Analysis Batch: 207973

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | 4.34      | J            | 10 | 4.0 | mg/L |   |          | 10/15/14 08:38 | 1       |

Lab Sample ID: LCS 480-207973/13

Matrix: Water

Analysis Batch: 207973

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 52.6       |               | mg/L |   | 105  | 90 - 110     |

Lab Sample ID: LCS 480-207973/27

Matrix: Water

Analysis Batch: 207973

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.5       |               | mg/L |   | 103  | 90 - 110     |

### Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-206737/123

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|-----------|--------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND        |              | 0.020 | 0.0090 | mg/L |   |          | 10/09/14 00:39 | 1       |

Lab Sample ID: MB 480-206737/3

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|-----------|--------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | 0.00905   | J            | 0.020 | 0.0090 | mg/L |   |          | 10/08/14 22:54 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: MB 480-206737/75  
Matrix: Water  
Analysis Batch: 206737

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | 0.0111       | J               | 0.020 | 0.0090 | mg/L |   |          | 10/08/14 23:56 | 1       |

Lab Sample ID: MB 480-206737/99  
Matrix: Water  
Analysis Batch: 206737

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | 0.00994      | J               | 0.020 | 0.0090 | mg/L |   |          | 10/09/14 00:18 | 1       |

Lab Sample ID: LCS 480-206737/100  
Matrix: Water  
Analysis Batch: 206737

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.990         |                  | mg/L |   | 99   | 90 - 110        |

Lab Sample ID: LCS 480-206737/124  
Matrix: Water  
Analysis Batch: 206737

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.989         |                  | mg/L |   | 99   | 90 - 110        |

Lab Sample ID: LCS 480-206737/4  
Matrix: Water  
Analysis Batch: 206737

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.997         |                  | mg/L |   | 100  | 90 - 110        |

Lab Sample ID: LCS 480-206737/76  
Matrix: Water  
Analysis Batch: 206737

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.990         |                  | mg/L |   | 99   | 90 - 110        |

### Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-206899/1-A  
Matrix: Water  
Analysis Batch: 207003

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206899

| Analyte                 | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------|--------------|-----------------|------|------|------|---|----------------|----------------|---------|
| Total Kjeldahl Nitrogen | ND           |                 | 0.20 | 0.15 | mg/L |   | 10/09/14 09:14 | 10/09/14 18:23 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 351.2 - Nitrogen, Total Kjeldahl (Continued)

Lab Sample ID: LCS 480-206899/2-A

Matrix: Water

Analysis Batch: 207003

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 206899

| Analyte                 | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Kjeldahl Nitrogen | 2.50        | 2.59       |               | mg/L |   | 104  | 90 - 110     |

### Method: 410.4 - COD

Lab Sample ID: MB 480-208155/27

Matrix: Water

Analysis Batch: 208155

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | 8.34      | J            | 10 | 5.0 | mg/L |   |          | 10/16/14 09:12 | 1       |

Lab Sample ID: MB 480-208155/3

Matrix: Water

Analysis Batch: 208155

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND        |              | 10 | 5.0 | mg/L |   |          | 10/16/14 09:12 | 1       |

Lab Sample ID: MB 480-208155/51

Matrix: Water

Analysis Batch: 208155

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | 7.37      | J            | 10 | 5.0 | mg/L |   |          | 10/16/14 09:12 | 1       |

Lab Sample ID: LCS 480-208155/28

Matrix: Water

Analysis Batch: 208155

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Chemical Oxygen Demand | 25.0        | 26.7       |               | mg/L |   | 107  | 90 - 110     |

Lab Sample ID: LCS 480-208155/4

Matrix: Water

Analysis Batch: 208155

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Chemical Oxygen Demand | 25.0        | 25.1       |               | mg/L |   | 100  | 90 - 110     |

Lab Sample ID: LCS 480-208155/52

Matrix: Water

Analysis Batch: 208155

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Chemical Oxygen Demand | 25.0        | 22.5       |               | mg/L |   | 90   | 90 - 110     |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-206384/3

Matrix: Water

Analysis Batch: 206384

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Chromium, hexavalent | ND           |                 | 0.010 | 0.0050 | mg/L |   |          | 10/07/14 11:08 | 1       |

Lab Sample ID: LCS 480-206384/4

Matrix: Water

Analysis Batch: 206384

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chromium, hexavalent | 0.0500         | 0.0520        |                  | mg/L |   | 104  | 85 - 115        |

Lab Sample ID: 480-68692-2 MS

Matrix: Ground Water

Analysis Batch: 206384

Client Sample ID: PZ-14-3

Prep Type: Total/NA

| Analyte              | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| Chromium, hexavalent | ND               |                     | 0.0500         | 0.103        | F1              | mg/L |   | 205  | 85 - 115        |

### Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 480-207517/1-A

Matrix: Water

Analysis Batch: 207541

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 207517

| Analyte        | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------------|-----------------|-------|--------|------|---|----------------|----------------|---------|
| Cyanide, Total | ND           | A               | 0.010 | 0.0050 | mg/L |   | 10/13/14 15:25 | 10/13/14 22:41 | 1       |

Lab Sample ID: LCS 480-207517/2-A

Matrix: Water

Analysis Batch: 207541

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 207517

| Analyte        | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------|----------------|---------------|------------------|------|---|------|-----------------|
| Cyanide, Total | 0.250          | 0.232         |                  | mg/L |   | 93   | 90 - 110        |

### Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-207429/27

Matrix: Water

Analysis Batch: 207429

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Total Organic Carbon | ND           |                 | 1.0 | 0.43 | mg/L |   |          | 10/12/14 04:47 | 1       |

Lab Sample ID: LCS 480-207429/28

Matrix: Water

Analysis Batch: 207429

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Organic Carbon | 60.0           | 60.8          |                  | mg/L |   | 101  | 90 - 110        |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 480-206888/1-A  
Matrix: Water  
Analysis Batch: 207542

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206888

| Analyte                      | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------------|-----------------|-------|--------|------|---|----------------|----------------|---------|
| Phenolics, Total Recoverable | ND           |                 | 0.010 | 0.0050 | mg/L |   | 10/09/14 09:30 | 10/13/14 19:12 | 1       |

Lab Sample ID: LCS 480-206888/2-A  
Matrix: Water  
Analysis Batch: 207542

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206888

| Analyte                      | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Phenolics, Total Recoverable | 0.100          | 0.106         |                  | mg/L |   | 106  | 90 - 110        |

### Method: SM 2120B - Color, Colorimetric

Lab Sample ID: MB 480-206725/3  
Matrix: Water  
Analysis Batch: 206725

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL  | RL  | Unit        | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-----|-----|-------------|---|----------|----------------|---------|
| Color   | ND           |                 | 5.0 | 5.0 | Color Units |   |          | 10/07/14 23:20 | 1       |

Lab Sample ID: LCS 480-206725/4  
Matrix: Water  
Analysis Batch: 206725

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit        | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|-------------|---|------|-----------------|
| Color   | 30.0           | 30.0          |                  | Color Units |   | 100  | 90 - 110        |

Lab Sample ID: 480-68692-1 DU  
Matrix: Ground Water  
Analysis Batch: 206725

Client Sample ID: PZ-14-5  
Prep Type: Total/NA

| Analyte | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit        | D | RPD | RPD<br>Limit |
|---------|------------------|---------------------|--------------|-----------------|-------------|---|-----|--------------|
| Color   | ND               |                     | ND           |                 | Color Units |   | NC  | 20           |

### Method: SM 2340C - Hardness, Total (mg/l as CaCO3)

Lab Sample ID: MB 480-206969/51  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Hardness | ND           |                 | 2.0 | 0.53 | mg/L |   |          | 10/09/14 11:55 | 1       |

Lab Sample ID: MB 480-206969/75  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Hardness | ND           |                 | 2.0 | 0.53 | mg/L |   |          | 10/09/14 11:55 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: SM 2340C - Hardness, Total (mg/l as CaCO3) (Continued)

Lab Sample ID: LCS 480-206969/52

Matrix: Water

Analysis Batch: 206969

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Hardness | 298         | 288        |               | mg/L |   | 97   | 90 - 110     |

Lab Sample ID: LCS 480-206969/76

Matrix: Water

Analysis Batch: 206969

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Hardness | 298         | 284        |               | mg/L |   | 95   | 90 - 110     |

### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-207217/1

Matrix: Water

Analysis Batch: 207217

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND        |              | 10 | 4.0 | mg/L |   |          | 10/10/14 23:57 | 1       |

Lab Sample ID: LCS 480-207217/2

Matrix: Water

Analysis Batch: 207217

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Dissolved Solids | 504         | 500        |               | mg/L |   | 99   | 85 - 115     |

Lab Sample ID: MB 480-207341/1

Matrix: Water

Analysis Batch: 207341

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND        |              | 10 | 4.0 | mg/L |   |          | 10/13/14 00:14 | 1       |

Lab Sample ID: LCS 480-207341/2

Matrix: Water

Analysis Batch: 207341

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Dissolved Solids | 504         | 512        |               | mg/L |   | 102  | 85 - 115     |

### Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 480-206522/1

Matrix: Water

Analysis Batch: 206522

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                   | USB Result | USB Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|------------|---------------|-----|-----|------|---|----------|----------------|---------|
| Biochemical Oxygen Demand | ND         |               | 2.0 | 2.0 | mg/L |   |          | 10/07/14 23:53 | 1       |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: LCS 480-206522/2

Matrix: Water

Analysis Batch: 206522

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                   | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Biochemical Oxygen Demand | 198            | 215           |                  | mg/L |   | 109  | 85 - 115        |

Lab Sample ID: 480-68692-2 DU

Matrix: Ground Water

Analysis Batch: 206522

Client Sample ID: PZ-14-3

Prep Type: Total/NA

| Analyte                   | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit | D | RPD | RPD<br>Limit |
|---------------------------|------------------|---------------------|--------------|-----------------|------|---|-----|--------------|
| Biochemical Oxygen Demand | ND               |                     | 5.02         |                 | mg/L |   | NC  | 20           |

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### GC/MS VOA

#### Analysis Batch: 206699

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | 624    |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | 624    |            |
| 480-68692-3      | TB1                | Total/NA  | Water        | 624    |            |
| LCS 480-206699/6 | Lab Control Sample | Total/NA  | Water        | 624    |            |
| MB 480-206699/8  | Method Blank       | Total/NA  | Water        | 624    |            |

### Metals

#### Prep Batch: 206494

| Lab Sample ID      | Client Sample ID   | Prep Type         | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-------------------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Dissolved         | Ground Water | 3005A  |            |
| 480-68692-2        | PZ-14-3            | Dissolved         | Ground Water | 3005A  |            |
| LCS 480-206494/2-A | Lab Control Sample | Total Recoverable | Water        | 3005A  |            |
| MB 480-206494/1-A  | Method Blank       | Total Recoverable | Water        | 3005A  |            |

#### Prep Batch: 206499

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 3005A  |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 3005A  |            |
| LCS 480-206499/2-A | Lab Control Sample | Total/NA  | Water        | 3005A  |            |
| MB 480-206499/1-A  | Method Blank       | Total/NA  | Water        | 3005A  |            |

#### Prep Batch: 206574

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 7470A  |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 7470A  |            |
| LCS 480-206574/2-A | Lab Control Sample | Total/NA  | Water        | 7470A  |            |
| MB 480-206574/1-A  | Method Blank       | Total/NA  | Water        | 7470A  |            |

#### Analysis Batch: 206785

| Lab Sample ID      | Client Sample ID   | Prep Type         | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-------------------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Dissolved         | Ground Water | 6010C  | 206494     |
| 480-68692-2        | PZ-14-3            | Dissolved         | Ground Water | 6010C  | 206494     |
| LCS 480-206494/2-A | Lab Control Sample | Total Recoverable | Water        | 6010C  | 206494     |
| MB 480-206494/1-A  | Method Blank       | Total Recoverable | Water        | 6010C  | 206494     |

#### Analysis Batch: 206912

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 7470A  | 206574     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 7470A  | 206574     |
| LCS 480-206574/2-A | Lab Control Sample | Total/NA  | Water        | 7470A  | 206574     |
| MB 480-206574/1-A  | Method Blank       | Total/NA  | Water        | 7470A  | 206574     |

#### Analysis Batch: 206924

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 6010C  | 206499     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 6010C  | 206499     |
| LCS 480-206499/2-A | Lab Control Sample | Total/NA  | Water        | 6010C  | 206499     |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Metals (Continued)

#### Analysis Batch: 207036

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 6010C  | 206499     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 6010C  | 206499     |
| LCS 480-206499/2-A | Lab Control Sample | Total/NA  | Water        | 6010C  | 206499     |
| MB 480-206499/1-A  | Method Blank       | Total/NA  | Water        | 6010C  | 206499     |

#### Analysis Batch: 207038

| Lab Sample ID      | Client Sample ID   | Prep Type         | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-------------------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Dissolved         | Ground Water | 6010C  | 206494     |
| 480-68692-2        | PZ-14-3            | Dissolved         | Ground Water | 6010C  | 206494     |
| LCS 480-206494/2-A | Lab Control Sample | Total Recoverable | Water        | 6010C  | 206494     |
| MB 480-206494/1-A  | Method Blank       | Total Recoverable | Water        | 6010C  | 206494     |

#### Prep Batch: 207374

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Dissolved | Ground Water | 7470A  |            |
| 480-68692-1 MS     | PZ-14-5            | Dissolved | Ground Water | 7470A  |            |
| 480-68692-1 MSD    | PZ-14-5            | Dissolved | Ground Water | 7470A  |            |
| 480-68692-2        | PZ-14-3            | Dissolved | Ground Water | 7470A  |            |
| LCS 480-207374/2-A | Lab Control Sample | Total/NA  | Water        | 7470A  |            |
| MB 480-207374/1-A  | Method Blank       | Total/NA  | Water        | 7470A  |            |

#### Analysis Batch: 207557

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Dissolved | Ground Water | 7470A  | 207374     |
| 480-68692-1 MS     | PZ-14-5            | Dissolved | Ground Water | 7470A  | 207374     |
| 480-68692-1 MSD    | PZ-14-5            | Dissolved | Ground Water | 7470A  | 207374     |
| 480-68692-2        | PZ-14-3            | Dissolved | Ground Water | 7470A  | 207374     |
| LCS 480-207374/2-A | Lab Control Sample | Total/NA  | Water        | 7470A  | 207374     |
| MB 480-207374/1-A  | Method Blank       | Total/NA  | Water        | 7470A  | 207374     |

### General Chemistry

#### Analysis Batch: 150879

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|-------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1       | PZ-14-5            | Total/NA  | Ground Water | 300.0  |            |
| 480-68692-1 MS    | PZ-14-5            | Total/NA  | Ground Water | 300.0  |            |
| 480-68692-1 MSD   | PZ-14-5            | Total/NA  | Ground Water | 300.0  |            |
| 480-68692-2       | PZ-14-3            | Total/NA  | Ground Water | 300.0  |            |
| LCS 240-150879/28 | Lab Control Sample | Total/NA  | Water        | 300.0  |            |
| MB 240-150879/27  | Method Blank       | Total/NA  | Water        | 300.0  |            |

#### Analysis Batch: 206384

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | 7196A  |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | 7196A  |            |
| 480-68692-2 MS   | PZ-14-3            | Total/NA  | Ground Water | 7196A  |            |
| LCS 480-206384/4 | Lab Control Sample | Total/NA  | Water        | 7196A  |            |
| MB 480-206384/3  | Method Blank       | Total/NA  | Water        | 7196A  |            |



## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### General Chemistry (Continued)

#### Analysis Batch: 206477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix       | Method | Prep Batch |
|---------------|------------------|-----------|--------------|--------|------------|
| 480-68692-1   | PZ-14-5          | Total/NA  | Ground Water | 353.2  |            |
| 480-68692-2   | PZ-14-3          | Total/NA  | Ground Water | 353.2  |            |

#### Analysis Batch: 206480

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | 180.1  |            |
| 480-68692-1 DU   | PZ-14-5            | Total/NA  | Ground Water | 180.1  |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | 180.1  |            |
| LCS 480-206480/4 | Lab Control Sample | Total/NA  | Water        | 180.1  |            |
| MB 480-206480/3  | Method Blank       | Total/NA  | Water        | 180.1  |            |

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#### Analysis Batch: 206522

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method   | Prep Batch |
|------------------|--------------------|-----------|--------------|----------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | SM 5210B |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | SM 5210B |            |
| 480-68692-2 DU   | PZ-14-3            | Total/NA  | Ground Water | SM 5210B |            |
| LCS 480-206522/2 | Lab Control Sample | Total/NA  | Water        | SM 5210B |            |
| USB 480-206522/1 | Method Blank       | Total/NA  | Water        | SM 5210B |            |

#### Analysis Batch: 206725

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method   | Prep Batch |
|------------------|--------------------|-----------|--------------|----------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | SM 2120B |            |
| 480-68692-1 DU   | PZ-14-5            | Total/NA  | Ground Water | SM 2120B |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | SM 2120B |            |
| LCS 480-206725/4 | Lab Control Sample | Total/NA  | Water        | SM 2120B |            |
| MB 480-206725/3  | Method Blank       | Total/NA  | Water        | SM 2120B |            |

#### Analysis Batch: 206737

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 350.1  |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 350.1  |            |
| LCS 480-206737/100 | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| LCS 480-206737/124 | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| LCS 480-206737/4   | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| LCS 480-206737/76  | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/123  | Method Blank       | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/3    | Method Blank       | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/75   | Method Blank       | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/99   | Method Blank       | Total/NA  | Water        | 350.1  |            |

#### Prep Batch: 206888

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------------|----------------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | Distill/Phenol |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | Distill/Phenol |            |
| LCS 480-206888/2-A | Lab Control Sample | Total/NA  | Water        | Distill/Phenol |            |
| MB 480-206888/1-A  | Method Blank       | Total/NA  | Water        | Distill/Phenol |            |

#### Prep Batch: 206899

| Lab Sample ID | Client Sample ID | Prep Type | Matrix       | Method | Prep Batch |
|---------------|------------------|-----------|--------------|--------|------------|
| 480-68692-1   | PZ-14-5          | Total/NA  | Ground Water | 351.2  |            |
| 480-68692-2   | PZ-14-3          | Total/NA  | Ground Water | 351.2  |            |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### General Chemistry (Continued)

#### Prep Batch: 206899 (Continued)

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| LCS 480-206899/2-A | Lab Control Sample | Total/NA  | Water  | 351.2  |            |
| MB 480-206899/1-A  | Method Blank       | Total/NA  | Water  | 351.2  |            |

#### Analysis Batch: 206969

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix       | Method   | Prep Batch |
|-------------------|--------------------|-----------|--------------|----------|------------|
| 480-68692-1       | PZ-14-5            | Total/NA  | Ground Water | SM 2340C |            |
| 480-68692-2       | PZ-14-3            | Total/NA  | Ground Water | SM 2340C |            |
| LCS 480-206969/52 | Lab Control Sample | Total/NA  | Water        | SM 2340C |            |
| LCS 480-206969/76 | Lab Control Sample | Total/NA  | Water        | SM 2340C |            |
| MB 480-206969/51  | Method Blank       | Total/NA  | Water        | SM 2340C |            |
| MB 480-206969/75  | Method Blank       | Total/NA  | Water        | SM 2340C |            |

#### Analysis Batch: 207003

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 351.2  | 206899     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 351.2  | 206899     |
| LCS 480-206899/2-A | Lab Control Sample | Total/NA  | Water        | 351.2  | 206899     |
| MB 480-206899/1-A  | Method Blank       | Total/NA  | Water        | 351.2  | 206899     |

#### Analysis Batch: 207217

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method   | Prep Batch |
|------------------|--------------------|-----------|--------------|----------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | SM 2540C |            |
| LCS 480-207217/2 | Lab Control Sample | Total/NA  | Water        | SM 2540C |            |
| MB 480-207217/1  | Method Blank       | Total/NA  | Water        | SM 2540C |            |

#### Analysis Batch: 207341

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method   | Prep Batch |
|------------------|--------------------|-----------|--------------|----------|------------|
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | SM 2540C |            |
| LCS 480-207341/2 | Lab Control Sample | Total/NA  | Water        | SM 2540C |            |
| MB 480-207341/1  | Method Blank       | Total/NA  | Water        | SM 2540C |            |

#### Analysis Batch: 207429

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|-------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1       | PZ-14-5            | Total/NA  | Ground Water | 9060A  |            |
| 480-68692-2       | PZ-14-3            | Total/NA  | Ground Water | 9060A  |            |
| LCS 480-207429/28 | Lab Control Sample | Total/NA  | Water        | 9060A  |            |
| MB 480-207429/27  | Method Blank       | Total/NA  | Water        | 9060A  |            |

#### Prep Batch: 207517

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 9012B  |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 9012B  |            |
| LCS 480-207517/2-A | Lab Control Sample | Total/NA  | Water        | 9012B  |            |
| MB 480-207517/1-A  | Method Blank       | Total/NA  | Water        | 9012B  |            |

#### Analysis Batch: 207541

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 9012B  | 207517     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 9012B  | 207517     |
| LCS 480-207517/2-A | Lab Control Sample | Total/NA  | Water        | 9012B  | 207517     |
| MB 480-207517/1-A  | Method Blank       | Total/NA  | Water        | 9012B  | 207517     |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### General Chemistry (Continued)

#### Analysis Batch: 207542

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 9066   | 206888     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 9066   | 206888     |
| LCS 480-206888/2-A | Lab Control Sample | Total/NA  | Water        | 9066   | 206888     |
| MB 480-206888/1-A  | Method Blank       | Total/NA  | Water        | 9066   | 206888     |

#### Analysis Batch: 207719

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 310.2  |            |
| LCS 480-207719/186 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| LCS 480-207719/193 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| LCS 480-207719/204 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| MB 480-207719/185  | Method Blank       | Total/NA  | Water        | 310.2  |            |
| MB 480-207719/192  | Method Blank       | Total/NA  | Water        | 310.2  |            |
| MB 480-207719/203  | Method Blank       | Total/NA  | Water        | 310.2  |            |

#### Analysis Batch: 207973

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|-------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-2       | PZ-14-3            | Total/NA  | Ground Water | 310.2  |            |
| LCS 480-207973/13 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| LCS 480-207973/27 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| MB 480-207973/12  | Method Blank       | Total/NA  | Water        | 310.2  |            |
| MB 480-207973/26  | Method Blank       | Total/NA  | Water        | 310.2  |            |

#### Analysis Batch: 208155

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|-------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1       | PZ-14-5            | Total/NA  | Ground Water | 410.4  |            |
| 480-68692-2       | PZ-14-3            | Total/NA  | Ground Water | 410.4  |            |
| LCS 480-208155/28 | Lab Control Sample | Total/NA  | Water        | 410.4  |            |
| LCS 480-208155/4  | Lab Control Sample | Total/NA  | Water        | 410.4  |            |
| LCS 480-208155/52 | Lab Control Sample | Total/NA  | Water        | 410.4  |            |
| MB 480-208155/27  | Method Blank       | Total/NA  | Water        | 410.4  |            |
| MB 480-208155/3   | Method Blank       | Total/NA  | Water        | 410.4  |            |
| MB 480-208155/51  | Method Blank       | Total/NA  | Water        | 410.4  |            |



# Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

Client Sample ID: PZ-14-5

Lab Sample ID: 480-68692-1

Date Collected: 10/06/14 12:55

Matrix: Ground Water

Date Received: 10/07/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624            |     | 1               | 206699       | 10/09/14 04:19       | ABF     | TAL BUF |
| Dissolved | Prep       | 3005A          |     |                 | 206494       | 10/08/14 08:57       | SLB     | TAL BUF |
| Dissolved | Analysis   | 6010C          |     | 1               | 206785       | 10/08/14 23:45       | LMH     | TAL BUF |
| Dissolved | Prep       | 3005A          |     |                 | 206494       | 10/08/14 08:57       | SLB     | TAL BUF |
| Dissolved | Analysis   | 6010C          |     | 1               | 207038       | 10/09/14 14:19       | LMH     | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 206499       | 10/08/14 08:55       | SLB     | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 206924       | 10/08/14 19:13       | AMH     | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 206499       | 10/08/14 08:55       | SLB     | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 207036       | 10/09/14 13:47       | AMH     | TAL BUF |
| Dissolved | Prep       | 7470A          |     |                 | 207374       | 10/13/14 08:55       | L RK    | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 207557       | 10/13/14 13:40       | L RK    | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 206574       | 10/08/14 10:50       | L RK    | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 206912       | 10/09/14 11:27       | L RK    | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 206480       | 10/07/14 23:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 150879       | 10/10/14 01:49       | JMB     | TAL CAN |
| Total/NA  | Analysis   | 310.2          |     | 10              | 207719       | 10/14/14 15:18       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 10              | 206737       | 10/08/14 23:04       | RS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 206899       | 10/09/14 09:14       | LAW     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 5               | 207003       | 10/10/14 04:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 206477       | 10/07/14 21:59       | RS      | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 208155       | 10/16/14 09:12       | KMF     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 206384       | 10/07/14 11:08       | NCH     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 207517       | 10/13/14 15:25       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 207541       | 10/13/14 22:55       | RS      | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 207429       | 10/12/14 08:34       | MRF     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 206888       | 10/09/14 09:30       | MRF     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 207542       | 10/13/14 20:36       | JMB     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 206725       | 10/07/14 23:20       | RS      | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 206969       | 10/09/14 11:55       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 207217       | 10/10/14 23:57       | JMB     | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 206522       | 10/07/14 23:53       | LAW     | TAL BUF |

Client Sample ID: PZ-14-3

Lab Sample ID: 480-68692-2

Date Collected: 10/06/14 11:25

Matrix: Ground Water

Date Received: 10/07/14 09:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1               | 206699       | 10/09/14 04:44       | ABF     | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 206494       | 10/08/14 08:57       | SLB     | TAL BUF |
| Dissolved | Analysis   | 6010C        |     | 1               | 206785       | 10/08/14 23:47       | LMH     | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 206494       | 10/08/14 08:57       | SLB     | TAL BUF |
| Dissolved | Analysis   | 6010C        |     | 1               | 207038       | 10/09/14 14:29       | LMH     | TAL BUF |

TestAmerica Buffalo

## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-3**

**Lab Sample ID: 480-68692-2**

Date Collected: 10/06/14 11:25

Matrix: Ground Water

Date Received: 10/07/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3005A          |     |                 | 206499       | 10/08/14 08:55       | SLB     | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 206924       | 10/08/14 19:15       | AMH     | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 206499       | 10/08/14 08:55       | SLB     | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 207036       | 10/09/14 13:57       | AMH     | TAL BUF |
| Dissolved | Prep       | 7470A          |     |                 | 207374       | 10/13/14 08:55       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 207557       | 10/13/14 13:47       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 206574       | 10/08/14 10:50       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 206912       | 10/09/14 11:29       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 206480       | 10/07/14 23:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 150879       | 10/10/14 02:47       | JMB     | TAL CAN |
| Total/NA  | Analysis   | 310.2          |     | 10              | 207973       | 10/15/14 08:45       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 5               | 206737       | 10/09/14 00:43       | RS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 206899       | 10/09/14 09:14       | LAW     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 2               | 207003       | 10/10/14 04:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 206477       | 10/07/14 22:00       | RS      | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 208155       | 10/16/14 09:12       | KMF     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 206384       | 10/07/14 11:08       | NCH     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 207517       | 10/13/14 15:25       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 207541       | 10/13/14 22:56       | RS      | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 207429       | 10/12/14 09:02       | MRF     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 206888       | 10/09/14 09:30       | MRF     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 207542       | 10/13/14 20:36       | JMB     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 206725       | 10/07/14 23:20       | RS      | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 206969       | 10/09/14 11:55       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 207341       | 10/13/14 00:14       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 206522       | 10/07/14 23:53       | LAW     | TAL BUF |

**Client Sample ID: TB1**

**Lab Sample ID: 480-68692-3**

Date Collected: 10/06/14 00:00

Matrix: Water

Date Received: 10/07/14 09:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1               | 206699       | 10/09/14 05:09       | ABF     | TAL BUF |

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

TestAmerica Buffalo

## Certification Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority         | Program       | EPA Region | Certification ID | Expiration Date |
|-------------------|---------------|------------|------------------|-----------------|
| Arkansas DEQ      | State Program | 6          | 88-0686          | 07-06-15        |
| California        | State Program | 9          | 1169CA           | 09-30-14 *      |
| Connecticut       | State Program | 1          | PH-0568          | 09-30-14 *      |
| Florida           | NELAP         | 4          | E87672           | 06-30-15        |
| Georgia           | State Program | 4          | N/A              | 03-31-15        |
| Georgia           | State Program | 4          | 956              | 03-31-15        |
| Illinois          | NELAP         | 5          | 200003           | 09-30-14 *      |
| Iowa              | State Program | 7          | 374              | 03-01-15        |
| Kansas            | NELAP         | 7          | E-10187          | 01-31-15        |
| Kentucky (DW)     | State Program | 4          | 90029            | 12-31-14        |
| Kentucky (UST)    | State Program | 4          | 30               | 03-31-15        |
| Louisiana         | NELAP         | 6          | 02031            | 06-30-14 *      |
| Maine             | State Program | 1          | NY00044          | 12-04-14        |
| Maryland          | State Program | 3          | 294              | 03-31-15        |
| Massachusetts     | State Program | 1          | M-NY044          | 06-30-15        |
| Michigan          | State Program | 5          | 9937             | 03-31-15        |
| Minnesota         | NELAP         | 5          | 036-999-337      | 12-31-14        |
| New Hampshire     | NELAP         | 1          | 2337             | 11-17-14        |
| New Jersey        | NELAP         | 2          | NY455            | 06-30-15        |
| New York          | NELAP         | 2          | 10026            | 03-31-15        |
| North Dakota      | State Program | 8          | R-176            | 03-31-14 *      |
| Oklahoma          | State Program | 6          | 9421             | 08-31-15        |
| Oregon            | NELAP         | 10         | NY200003         | 06-09-15        |
| Pennsylvania      | NELAP         | 3          | 68-00281         | 07-31-15        |
| Rhode Island      | State Program | 1          | LAO00328         | 12-30-14        |
| Tennessee         | State Program | 4          | TN02970          | 03-31-15        |
| Texas             | NELAP         | 6          | T104704412-11-2  | 07-31-15        |
| USDA              | Federal       |            | P330-11-00386    | 11-22-14        |
| Virginia          | NELAP         | 3          | 460185           | 09-14-15        |
| Washington        | State Program | 10         | C784             | 02-10-15        |
| West Virginia DEP | State Program | 3          | 252              | 09-30-14 *      |
| Wisconsin         | State Program | 5          | 998310390        | 08-31-15        |

### Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority      | Program       | EPA Region | Certification ID | Expiration Date |
|----------------|---------------|------------|------------------|-----------------|
| California     | NELAP         | 9          | 01144CA          | 06-30-14 *      |
| California     | State Program | 9          | 2927             | 04-30-15        |
| Connecticut    | State Program | 1          | PH-0590          | 12-31-14        |
| Florida        | NELAP         | 4          | E87225           | 06-30-15        |
| Georgia        | State Program | 4          | N/A              | 06-30-15        |
| Illinois       | NELAP         | 5          | 200004           | 07-31-15        |
| Kansas         | NELAP         | 7          | E-10336          | 01-31-15        |
| Kentucky (UST) | State Program | 4          | 58               | 06-30-15        |
| L-A-B          | DoD ELAP      |            | L2315            | 07-18-16        |
| Minnesota      | NELAP         | 5          | 039-999-348      | 12-31-14        |
| Nevada         | State Program | 9          | OH-000482008A    | 07-31-15        |
| New Jersey     | NELAP         | 2          | OH001            | 06-30-15        |
| New York       | NELAP         | 2          | 10975            | 03-31-15        |

\* Certification renewal pending - certification considered valid.

TestAmerica Buffalo



## Certification Summary

Client: Sterling Environmental Engineering PC

TestAmerica Job ID: 480-68692-1

Project/Site: Orange County Landfill

### Laboratory: TestAmerica Canton (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority         | Program       | EPA Region | Certification ID | Expiration Date |
|-------------------|---------------|------------|------------------|-----------------|
| Ohio VAP          | State Program | 5          | CL0024           | 10-31-15        |
| Pennsylvania      | NELAP         | 3          | 68-00340         | 08-31-15        |
| Texas             | NELAP         | 6          |                  | 08-31-15        |
| USDA              | Federal       |            | P330-13-00319    | 11-26-16        |
| Virginia          | NELAP         | 3          | 460175           | 09-14-15        |
| Washington        | State Program | 10         | C971             | 01-12-15        |
| West Virginia DEP | State Program | 3          | 210              | 12-31-14        |
| Wisconsin         | State Program | 5          | 999518190        | 08-31-15        |

## Method Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

| Method   | Method Description                           | Protocol  | Laboratory |
|----------|--|-----------|------------|
| 624      | Volatile Organic Compounds (GC/MS)           | 40CFR136A | TAL BUF    |
| 6010C    | Metals (ICP)                                 | SW846     | TAL BUF    |
| 7470A    | Mercury (CVAA)                               | SW846     | TAL BUF    |
| 180.1    | Turbidity, Nephelometric                     | MCAWW     | TAL BUF    |
| 300.0    | Anions, Ion Chromatography                   | MCAWW     | TAL CAN    |
| 310.2    | Alkalinity                                   | MCAWW     | TAL BUF    |
| 350.1    | Nitrogen, Ammonia                            | MCAWW     | TAL BUF    |
| 351.2    | Nitrogen, Total Kjeldahl                     | MCAWW     | TAL BUF    |
| 353.2    | Nitrate                                      | EPA       | TAL BUF    |
| 410.4    | COD  | MCAWW     | TAL BUF    |
| 7196A    | Chromium, Hexavalent                         | SW846     | TAL BUF    |
| 9012B    | Cyanide, Total and/or Amenable               | SW846     | TAL BUF    |
| 9060A    | Organic Carbon, Total (TOC)                  | SW846     | TAL BUF    |
| 9066     | Phenolics, Total Recoverable                 | SW846     | TAL BUF    |
| SM 2120B | Color, Colorimetric                          | SM        | TAL BUF    |
| SM 2340C | Hardness, Total (mg/l as CaCO <sub>3</sub> ) | SM        | TAL BUF    |
| SM 2540C | Solids, Total Dissolved (TDS)                | SM        | TAL BUF    |
| SM 5210B | BOD, 5-Day                                   | SM        | TAL BUF    |

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

## Sample Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

| Lab Sample ID | Client Sample ID   | Matrix       | Collected      | Received       |
|---------------|--------------------|--------------|----------------|----------------|
| 480-68692-1   | <del>PZ-14-5</del> | Ground Water | 10/06/14 12:55 | 10/07/14 09:00 |
| 480-68692-2   | PZ-14-3            | Ground Water | 10/06/14 11:25 | 10/07/14 09:00 |
| 480-68692-3   | TB1                | Water        | 10/06/14 00:00 | 10/07/14 09:00 |



## Detection Limit Exceptions Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

| Method | Matrix       | Analyte  | Units | Client RL | Lab PQL |
|--------|--------------|----------|-------|-----------|---------|
| 300.0  | Ground Water | Chloride | mg/L  | 0.50      | 1       |

**Amherst, NY 14228**  
**Phone: 716.691.2600**



480-68692 Chain of Custody

## Chain Custody Record

039837

TestAmerica

**THE LEADER IN ENVIRONMENTAL TESTING**  
**TestAmerica Laboratories, Inc.**

TAL-8210 (0713)

Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

|  |      |   |             |                                   |        |                            |   |                        |                        |
|--|------|---|-------------|-----------------------------------|--------|----------------------------|---|------------------------|------------------------|
| Client Contact   |      | Project Manager: Mark Williams  |             | Site Contact: Lady Snyder         |        | Date: 10/6/14              |   | COC No:                |                        |
| Company Name: Sterling Env. Eng, PC  |      | Tel/Fax:  |             | Lab Contact:                      |        | Carrier:                   |   | 1 of 1 COCs            |                        |
| Address: 24 Wade Road  |      | Analysis Turnaround Time  |             |                                   |        |                            |   | Sampler:               |                        |
| City/State/Zip: Latham NY 12110  |      | <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS |             |                                   |        |                            |   | For Lab Use Only:      |                        |
| Phone: 518-456-4400  |      | TAT if different from Below   |             |                                   |        |                            |   | Walk-in Client:        |                        |
| Fax:   |      | <input type="checkbox"/> 2 weeks  |             |                                   |        |                            |   | Lab Sampling:          |                        |
| Project Name: Orange County Landfill   |      | <input checked="" type="checkbox"/> 1 week 5 days                                       |             |                                   |        |                            |   |                        |                        |
| Site:  |      | <input type="checkbox"/> 2 days   |             |                                   |        |                            |   | Job / SDG No.:         |                        |
| P O # 2010-15  |      | <input type="checkbox"/> 1 day  |             |                                   |        |                            |   |                        |                        |
| Sample Identification  |      | Sample Date   | Sample Time | Sample Type (C=Comp, G=Grab)      | Matrix | # of Cont.                 | Filtered Sample (Y/N)   | Perform MS / MSD (Y/N) | Sample Specific Notes: |
| PZ-14-5  | 10/6 |   | G           | GW                                | 18     |                            |   | Chloride, Sulfate      |                        |
| PZ-14-3  | 10/6 |   | G           | GW                                | 18     |                            |   | COD, TKN, Ammonia      |                        |
|  |      |   |             |                                   |        |                            |   | Baseline Metals        |                        |
|  |      |   |             |                                   |        |                            |   | Mercury, Heavy Metals  |                        |
|  |      |   |             |                                   |        |                            |   | Phenolics, TOC         |                        |
|  |      |   |             |                                   |        |                            |   | BOD, TDS, Cyanide      |                        |
|  |      |   |             |                                   |        |                            |   | Volatile Organics      |                        |
|  |      |   |             |                                   |        |                            |   | Nitrite, Nitrate       |                        |
|  |      |   |             |                                   |        |                            |   | Color, Turbidity       |                        |
|  |      |   |             |                                   |        |                            |   | hexavalent chromium    |                        |
|  |      |   |             |                                   |        |                            |   | Alkalinity             |                        |
| Preservation Used: 1=Ice 2=HCl 3=H2SO4 4=HNO3 5=NaOH 6=Other   |      |   |             |                                   |        |                            |   |                        |                        |
| Possible Hazard Identification:<br>Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. |      |   |             |                                   |        |                            | Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)   |                        |                        |
| <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown          |      |   |             |                                   |        |                            | <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input checked="" type="checkbox"/> Archive for 1 Months |                        |                        |
| Special Instructions/QC Requirements & Comments:   |      |   |             |                                   |        |                            |   |                        |                        |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |      | Custody Seal No.:   |             | Cooler Temp. (°C): Obs'd: Corr'd: |        | Therm ID No.:              |   |                        |                        |
| Relinquished by: [Signature]   |      | Company:  |             | Date/Time:                        |        | Received by: [Signature]   |   | Company: [Signature]   |                        |
| Relinquished by:   |      | Company:  |             | Date/Time:                        |        | Received by:               |   | Company:               |                        |
| Relinquished by:   |      | Company:  |             | Date/Time:                        |        | Received in Laboratory by: |   | Company:               |                        |

#2 3.8, 3.9, 4.2

## Login Sample Receipt Checklist

Client: Sterling Environmental Engineering PC

Job Number: 480-68692-1

Login Number: 68692

List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl M

| Question   | Answer | Comment   |
|--|--------|---|
| Radioactivity either was not measured or, if measured, is at or below background | True   |   |
| The cooler's custody seal, if present, is intact.                                | True   |   |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |   |
| Samples were received on ice.  | True   |   |
| Cooler Temperature is acceptable.  | True   |   |
| Cooler Temperature is recorded.  | True   |   |
| COC is present.  | True   |   |
| COC is filled out in ink and legible.  | True   |   |
| COC is filled out with all pertinent information.                                | False  | No: No date or time on COC or containers        |
| Is the Field Sampler's name present on COC?                                      | True   |   |
| There are no discrepancies between the sample IDs on the containers and the COC. | True   |   |
| Samples are received within Holding Time.  | False  | CR+6  |
| Sample containers have legible labels.   | True   |   |
| Containers are not broken or leaking.  | True   |   |
| Sample collection date/times are provided.                                       | False  | No: No date or time on COC or sample containers |
| Appropriate sample containers are used.  | True   |   |
| Sample bottles are completely filled.  | True   |   |
| Sample Preservation Verified   | True   |   |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |   |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | True   |   |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True   |   |
| Multiphasic samples are not present.   | True   |   |
| Samples do not require splitting or compositing.                                 | True   |   |
| Sampling Company provided.   | True   | sterling  |
| Samples received within 48 hours of sampling.                                    | True   |   |
| Samples requiring field filtration have been filtered in the field.              | True   |   |
| Chlorine Residual checked.   | True   |   |



**APPENDIX F**

**STERLING, DECEMBER 18, 2013, ORANGE COUNTY LANDFILL -  
CHEECHUNK CANAL / LANDFILL STABILITY AND SEEP  
EVALUATION**

# STERLING

Sterling Environmental Engineering, P.C.

December 18, 2013

Mr. Bradford Shaw, P.E.  
NYS Department of Environmental Conservation  
RCRA Permitting Section  
Division of Environmental Remediation  
Remedial Bureau E, 12<sup>th</sup> Floor  
625 Broadway  
Albany, New York 12233-7017

Subject: Orange County Landfill  
Cheechunk Canal/Landfill Seep Evaluation  
STERLING File #2010-15 (Task 312)

Dear Mr. Shaw,

In accordance with the schedule provided by Peter Hammond's September 20, 2013 letter, Sterling Environmental Engineering, P.C. (STERLING) provides this work plan to determine if the seeps are impacted by the Landfill and if so, propose mitigation strategies.

In accordance with your letter of November 25, 2013, evaluation of the stability of the slope between the most recent canal slope failure and the closed Orange County Landfill can be deferred.

## Seep Evaluation:

STERLING proposes to install approximately nine (9) temporary piezometers (small diameter groundwater observation wells) between the Landfill and the seeps near the canal bank failure in order to understand the subsurface hydrology between the limit of waste and the seeps (see Figure 1, attached).

The piezometers will be installed using a track-mounted geoprobe to a depth sufficient to straddle the groundwater surface at each location (estimated to be less than 20 feet). At each location, soil samples will be collected on a continuous basis from ground surface to termination depth using the geoprobe soil sampler. Upon completion of sampling, each borehole will be converted into a 1-1/4 inch diameter standpipe piezometer by installing machine slotted PVC well screen and riser. We expect the piezometer installations can be completed in two (2) days depending on depths and conditions encountered at each borehole.

The elevation of the top of the piezometer casings (measuring points) will be measured with an engineer's level from the measuring point of nearby monitoring well MW-3B to allow for direct comparison of groundwater level measurements routinely collected at the Landfill. The apparent elevations of the canal bank seeps downgradient from the piezometers, as well as the water level of the canal, will be determined in the same manner.

Following installation, groundwater in each observation well between the Landfill and the seeps will be sampled for 6 NYCRR Part 360 field parameters (Conductivity, Temperature, pH and Eh). STERLING

*"Serving our clients and the environment since 1993"*

may additionally recommend that groundwater samples be obtained from one or more of the piezometers and analyzed for leachate indicator parameters. Static groundwater levels will be periodically measured, with additional readings as directed by STERLING. County personnel can be trained to assist with periodic readings, if necessary.

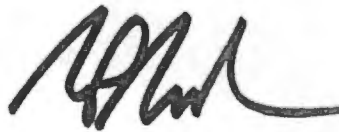
Borehole logs, sampling results, and periodic measurements of groundwater levels will be evaluated to determine the nature of the seep. STERLING will provide a final report providing an opinion as to the impact of the Landfill on the seep, along with mitigation strategies based upon the findings or recommendations for additional investigatory work if necessary.

The investigative work described above can be performed within six (6) weeks of NYSDEC's approval of the Work Plan, weather permitting. Based upon the results of the investigation, the proposed design of a mitigation system will be provided to the NYSDEC which will likely consist of a recovery well (or wells) or collection trench with a sump. Such can be installed following NYSDEC approval of the design.

Please contact me should you have any questions or require additional clarification.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark P. Millspaugh, P.E.

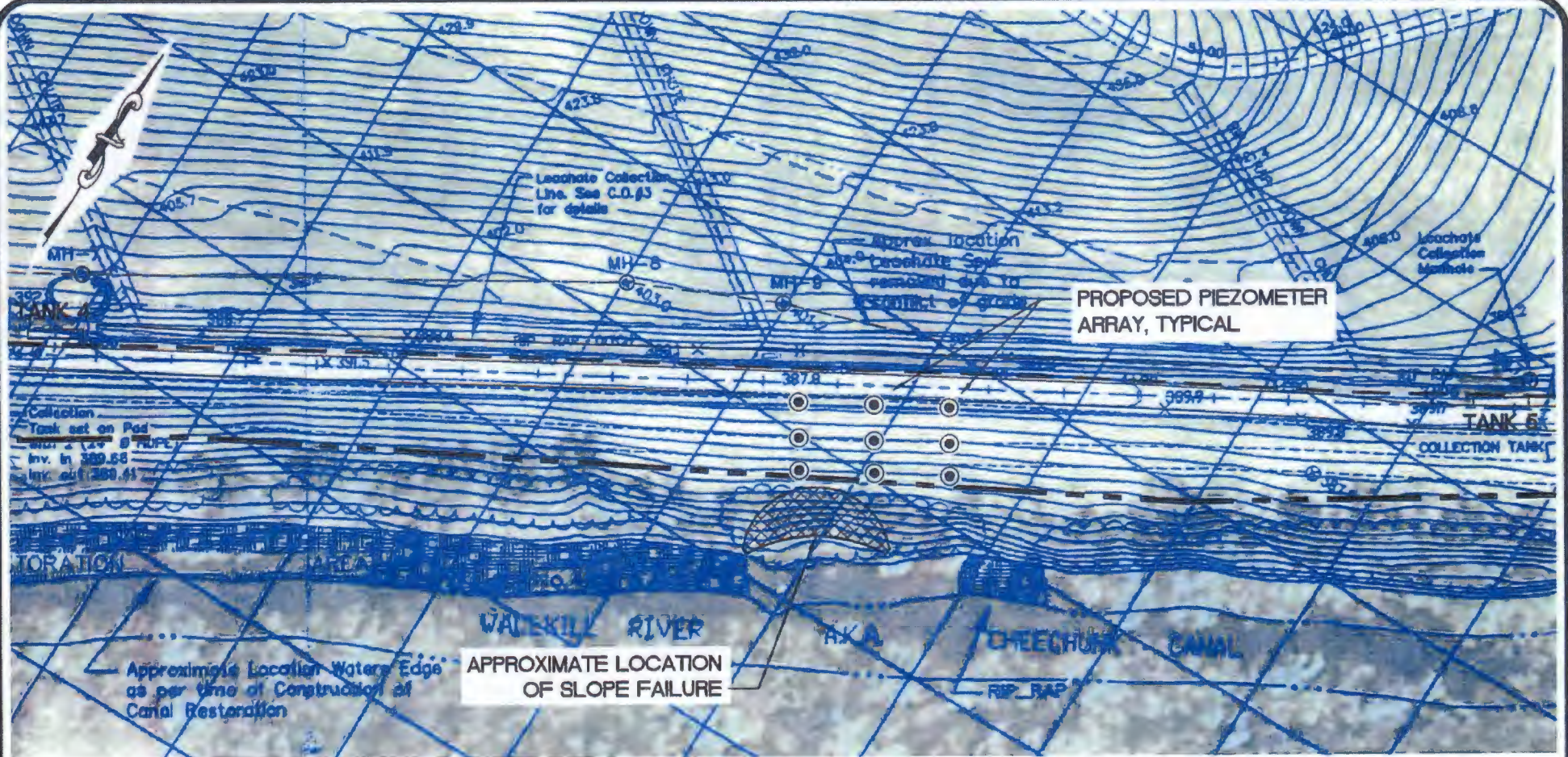
President

[mark.millspaugh@sterlingenvironmental.com](mailto:mark.millspaugh@sterlingenvironmental.com)

MPM/bc  
Email/First Class Mail  
Attachment (Figure 1)

cc: Peter S. Hammond, Orange County  
Joseph F. Mahoney Esq.





#### LEGEND:

- PROPERTY BOUNDARY
- LIMIT OF WASTE
- PROPOSED PIEZOMETER



( IN FEET )  
1 inch = 100 ft.

#### MAP REFERENCES:

1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
2. AERIAL PHOTOGRAPH FROM NEW YORK STATEWIDE DIGITAL ORTHOIMAGERY PROGRAM, PHOTOGRAPHY CIRCA 2010.

# STERLING

Sterling Environmental Engineering, P.C.

24 Wade Road • Latham, New York 12110

SITE PLAN  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE CO. LANDFILL

TOWN OF GOSHEN

ORANGE CO., N.Y.

PROJ. No.: 2010-15 | DATE: 10/4/13 | SCALE: 1" = 100' | DWG. NO. 2010-15013 | FIGURE 1



**APPENDIX G**

**STERLING, APRIL 4, 2014, ORANGE COUNTY LANDFILL -  
CHEECHUNK CANAL / LANDFILL SEEP EVALUATION RESULTS**



Sterling Environmental Engineering, P.C.

April 4, 2014

Mr. Bradford Shaw, P.E.  
NYS Department of Environmental Conservation  
RCRA Permitting Section  
Division of Environmental Remediation  
Remedial Bureau E, 12<sup>th</sup> Floor  
625 Broadway  
Albany, New York 12233-7017

Subject: Orange County Landfill  
Cheechunk Canal/Landfill Seep Evaluation  
STERLING File #2010-15 (Task 313)

Dear Mr. Shaw,

Sterling Environmental Engineering, P.C. (STERLING) provides this letter report to summarize results from our recent investigation to determine if the seeps are impacted by the Landfill, located in the Town of New Hampton, New York (Figure 1). The following includes a summary of work performed, a characterization of the geologic and hydrogeologic setting, recommendations for additional field investigation, and the proposed design of a mitigation system.

#### **SUMMARY OF WORK PERFORMED:**

On February 19 and 20, 2014, six (6) temporary piezometers (PZ-14-1 through PZ-14-6) were installed between the Landfill's perimeter access road and the seeps near the Cheechunk Canal bank (referred to as "Project Area") to better understand the subsurface hydrology between the limit of waste and the seeps (Figure 2).

The temporary piezometers were installed using a track-mounted Geoprobe® to a depth sufficient to encounter the glaciolacustrine sand aquifer, which underlies the Cheechunk Canal (Figure 3). At each location, soil samples were collected on a continuous basis from ground surface to termination depth using the Macro-core® MC5 soil sampler. Each borehole was logged to define the local model of the critical site stratigraphy as it relates to the Landfill and the Cheechunk Canal (Appendix A).

Upon completion of sampling, each borehole was either converted into a 1¼-inch (PZ-14-1, PZ-14-2, PZ-14-4, and PZ-14-6) or a 2-inch inside diameter (I.D.) temporary piezometer (PZ-14-3 and PZ-14-5) with a five (5) foot long section of 0.01-inch (10 slot) machine slotted PVC well. As detailed in Table 1, the total depths ranged from 28.91 feet below ground surface (bgs) at PZ-14-4 to 39.5 feet bgs at PZ-14-1. The screened intervals were set in the uppermost portion of the overburden hydrogeologic unit (glaciolacustrine fine sand) to obtain basic aquifer data (groundwater flow direction, gradients, horizontal hydraulic conductivity, aquifer transmissivity, and aquifer yield) and define the hydrogeologic relationship between the Landfill and the seeps identified on the northern bank of the Cheechunk Canal.

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The elevation for the top of the piezometer casings (measuring points) were measured with an engineer's level from the measuring point of nearby monitoring well MW-3B to allow for direct comparison of groundwater level measurements routinely collected at the Landfill. The apparent elevations of the Canal bank seeps downgradient from the piezometers, as well as the water level of the Canal, were also collected in the same manner. It should be noted that the slope in the Project Area ranged from 24% to 28%.

Following installation, three (3) synoptic rounds of groundwater elevation measurements were collected on February 20, March 18, and March 27, 2014 to gain a complete understanding of the local hydrostratigraphy, define groundwater flow direction and gradients, and build a conceptual profile between the Landfill and the Cheechunk Canal.

In addition, field hydraulic conductivity testing was performed on two (2) of the temporary piezometers (PZ-14-3 and PZ-14-5) to characterize the horizontal hydraulic conductivity of the aquifer and a short-term two (2) hour constant rate pumping test was performed at temporary piezometer PZ-14-3 to further define aquifer characteristics, such as yield and transmissivity (Appendix B).

Groundwater in each temporary piezometer between the Landfill and the seeps were also sampled for 6 NYCRR Part 360 field parameters (specific conductivity, temperature, pH, and Eh). Due to weather conditions, the subject seep area could not be evaluated as it was covered with ice or meltwater runoff.

#### FIELD INVESTIGATION FINDINGS:

The field investigation, performed between February and March 2014, was used to define the local geologic conditions, hydrogeologic setting, and environmental parameters in the Project Area as well as serve as the core of understanding to remediate the subject seep. Findings are detailed below:

- **Geologic Setting**

The critical site stratigraphy in the vicinity of the Project Area has been defined as follows:

*Glaciolacustrine Silt and Clay:* Moist grayish brown clayey silt to silty clay; stiff to moderately stiff; occasionally to frequently varved; lowly permeable; and moderately plastic. As presented in Table 1, this unit was encountered at surface to depths ranging from 24.4 to 34.1 feet bgs, which is consistent with historical data collected near this portion of the Landfill and the Cheechunk Canal. Stearns & Wheler reported that this silt and clay layer thins toward the northeast from approximately 60 feet to 20 feet. The base of the glaciolacustrine silt and clay unit is approximately three (3) to five (5) feet below the subject seep(s).

*Glaciolacustrine Sand:* Wet fine sand; medium dense; moderately permeable; and laminated. The top of this water-bearing unit is between 65.25 (PZ-14-1) and 66.81 (PZ-14-3) feet in elevation (site datum) and slightly tilts to the north away from the Cheechunk Canal (Table 1 and Figure 3). Again, this field data is consistent with historic geoenvironmental data collected near the Project Area which reports this unit as being 25 to 35 feet in thickness. The base of the glaciolacustrine sand unit was not encountered during the course of this investigation.

*Glacial Till:* Basal lodgement till is a dense, unstratified diamict of poorly sorted sediment emplaced on bedrock by the base of the glacier during ice advance. It often has large erratics oriented in the direction of the ice movement. The glacial till unit, which was not encountered during this investigation, is lowly permeable and is not considered a water bearing zone.

- **Hydrogeologic Setting**

The hydrogeologic nature of the Project Area was interpreted using historic well logs, slug tests, groundwater elevation data, geologic cross sections, and publications. The hydrogeologic setting for the Project Area was further refined from information obtained from the recent drilling, surveying, overburden groundwater measurements, hydraulic conductivity testing, and the short-term pumping test.

Complex vertical and horizontal stratigraphic relationships exist between the glacial deposits on the site and Project Area. As shown in Figure 3, the Cheechunk Canal dissects the glacially-derived overburden in the vicinity of the Project Area, often cutting down through the glaciolacustrine silt and clay deposits, creating a hydraulic connection between the overburden groundwater unit (glaciolacustrine sand) and the Cheechunk Canal (Wallkill River). In general, the low hydraulic conductivity of the glaciolacustrine silt and clay, which underlies a large portion of the Landfill, limits recharge to underlying hydrogeologic units such as the glaciolacustrine sand (encountered) and ice contact sand and gravel deposits (not encountered). The glaciolacustrine silt and clay unit is not a water-bearing zone.

Hydraulic conductivity estimates in the overburden hydrogeologic unit (glaciolacustrine sand) were determined using slug tests. The data obtained from the Project Area were analyzed using the Bouwer and Rice method (1989). This method consists of quickly lowering or raising water levels in a well and measuring its rate of recovery (Appendix B). Although originally designed for use in unconfined aquifers, the authors (Bouwer and Rice) determined that most of the head difference “y” between the static water table and water level in the piezometer is dissipated in the vicinity of the piezometer around the screen and slotted section, the method is also applicable to confined or semi-confined conditions, such as in the Project Area. Hydraulic conductivity of the overburden hydrogeologic unit ranged from  $9.29 \times 10^{-6}$  feet/min ( $4.72 \times 10^{-6}$  cm/sec) to  $2.35 \times 10^{-5}$  feet/min ( $1.19 \times 10^{-5}$  cm/sec).

Groundwater flow in the overburden hydrogeologic unit was determined using depth to groundwater measurements collected from temporary piezometers on February 20, March 18, and March 27, 2014 (Table 2). This data, in conjunction with historical well log data and plots of changes in groundwater elevation over time, suggest that the glaciolacustrine sand unit is currently in semi-confined to confined conditions in the Project Area. Therefore, the directions of groundwater flow are based on the potentiometric surface of the glaciolacustrine sand, not strictly elevations of the water table surface.

Groundwater flow in the overburden west or north of the Canal is to the east-southeast (Figure 4), discharging to the Canal that acts as a discharge zone and a groundwater flow boundary separating flow regimes on either side of the Canal. Overburden piezometer PZ-14-4 is located immediately upgradient of the subject seep(s); although the subject seep could not be directly

measured it is likely less than one (1) foot lower than the potentiometric surface observed at PZ-14-4. The actual location of the piezometer array was successful at locating the groundwater that is likely causing the subject seeps. There is little potential for contamination to flow between the Canal and to areas east or south of the Canal based on previous investigations conducted at the Landfill. The direction of groundwater movement can be understood in the fact that groundwater always flows in the direction of decreasing head. The rate of movement, on the other hand, is dependent on the hydraulic gradient, which is the change in head per unit distance. The change in head measurement is ideally in the direction where the maximum difference of head decrease occurs. In the Project Area, the hydraulic gradient (the change in head divided by the change in distance) ranged from 0.00769 ft./ft. to 0.0133 ft./ft. based on data collected from March 18, 2014 (Figure 4).

An aquifer overlain by a bed of material that has a significantly lower hydraulic conductivity is termed as confined. As was observed during the field investigation, the potentiometric surface of the confined aquifer was 6.5 to 8.5 feet above the base of the overlying confining layer (Tables 1 and 2 and Figure 3). Water levels in confined aquifers are typically slow to respond to storm events or droughts and therefore typically exhibit minor fluctuations. A semi-confined or "leaky" confined aquifer is characterized by a low permeability layer (i.e., glaciolacustrine silt and clay) that permits water to slowly flow through it. Groundwater in these aquifers responds more quickly to changes in precipitation. The similarity between the potentiometric surface elevation and the subject seep(s) elevation suggests that there is seasonal hydraulic connection between the Cheechunk Canal and site groundwater. If groundwater was confined, no hydraulic connection would exist between the Canal and site groundwater. The semi-confinement can be the result of leakage through the saturated overlying low permeability layer (glaciolacustrine silt and clay) or through fractures/varved planes in the silt and clay.

Seepage velocities were also calculated in this overburden hydrogeologic unit using the following equation:

$$V = \frac{KI}{n}$$

Where "V" is the seepage velocity in distance per unit time; "K" is the hydraulic conductivity at the borehole (in distance per unit time); "I" is the hydraulic gradient (dimensionless); and, "n" is the estimated effective porosity. The lowest possible values for "n" were used to estimate highest seepage velocities. Seepage velocities at the Project Area indicate a range from  $2.57 \times 10^{-4}$  feet/day (0.094 feet/year) to  $1.2 \times 10^{-3}$  feet/day (0.438 feet/year).

On March 18, 2014, a two (2) hour constant flow rate pumping test was conducted on PZ-14-3 (Figure 2). Initial pumping at 2 gallons per minute (gpm) resulted in complete drawdown at piezometer PZ-14-3; the pumping rate was reduced to provide further evaluation of the overburden aquifer characteristics. Pump flow rate (0.38 to 0.4 gpm) and overburden piezometer water levels were monitored every 15 minutes throughout the two (2) hour test. A drawdown of 7.8 feet was observed during the pumping period, dropping 7.33 feet in the first five (5) minutes and steadily dropped 0.46 foot over the remainder of the pumping test period (Appendix B). Based on this information, the specific capacity was calculated as being 0.05 gpm/ft with a transmissivity of 75 ft<sup>2</sup>/day. The adjacent piezometers were lowered by 0.19 foot (PZ-14-6) to



0.29 foot (PZ-14-2), demonstrating good connection to the localized low rate pumping activity (Appendix B).

- **Environmental Setting**

On March 27, 2014 overburden groundwater in each temporary piezometer, between the Landfill and the seeps, were sampled for 6 NYCRR Part 360 field parameters, including specific conductivity, temperature, pH, and Eh (Table 3). Due to weather conditions, the subject seep area could not be evaluated as it was covered with ice or submerged during this period.

As detailed in Table 3, the specific conductance from overburden groundwater ranged from 0.607 millisiemens per centimeter (mS/cm) at PZ-14-4 to 1.230 mS/cm at PZ-14-5. The specific conductance of the water sample is the measure of its ability to carry an electrical current under specific conditions and is typically an indication of the concentration of total dissolved solids (TDS) in the groundwater. A specific conductance value that is markedly different (anomalous) from those obtained in nearby piezometers may indicate a different source of the groundwater or leakage from a formation that contains water of a different quality. Specific conductance values from 2012 and 2013 seep sampling ranged from 0.695 mS/cm at Seep 03 on August 22, 2012 to 1.339 mS/cm at GW-03 on August 21, 2013. The specific conductance at PZ-14-5 is considered the most anomalous from the set of field parameters collected on March 27, 2014.

As detailed in Table 3, the redox potential in the overburden aquifer is sensitive to organic matter associated with landfill leachate and of concentrations of redox-active components such as the mineralization of the groundwater. Oxidizing-reducing reactions result in a change of the charge of an ion as it gains or loses an electron. These reactions are almost always facilitated by bacteria that are able to gain energy from the reactions. The most common cause of reducing reactions is organic matter, either in solid form or as dissolved organic carbon. Water in contact with air will have an Eh in the range of 350 millivolts (mV) to 500mV. Microbially mediated redox processes may decrease the redox potential to values as low as -300mV. The redox potential from overburden groundwater ranged from -90.2 mV at PZ-14-1 to 214.8 mV at PZ-14-5. Oxidation Reduction Potential (ORP) values from 2012 and 2013 seep sampling ranged from 9.6 mV at Seep GW-A on August 21, 2013 to -90.6 mV at GW-01 on August 22, 2012. The redox potential at PZ-14-5 is considered the most irregular while the reading at PZ-14-1 is consistent with ORP values at one of the historical seeps.

At any given temperature, there is a specific concentration of a dissolved mineral's constituents in the groundwater that is in contact with that mineral. Even minor changes in groundwater temperature can cause detectable changes in TDS. It should be noted that the temperature of the upper piezometers (PZ-14-1, PZ-14-5, and PZ-14-6) were over 2° Fahrenheit warmer than the lower piezometers (PZ-14-2, PZ-14-3, and PZ-14-4). The temperature at PZ-14-5 is decidedly higher than others collected on March 27, 2014.

The pH is actually a measure of the hydrogen ion (H<sup>+</sup>) availability (activity). The hydrogen ion is very small and is able to enter and disrupt mineral structures so that they can contribute dissolved constituents to groundwater. Consequently, the greater the hydrogen ion availability the lower the pH and the higher the TDS in groundwater. The pH readings collected from

overburden groundwater ranged from 7.0 standard units (s.u.) at PZ-14-1 to 7.41 s.u. at PZ-14-2. In comparison, 2012 and 2013 seep sampling reported pH readings that ranged from 7.03 s.u. (Seep GW-01) on August 22, 2012 to 7.48 s.u. (GW-A) on August 21, 2013. No direct conclusions can be made based on comparison of pH readings obtained within the Project Area.

Two (2) one (1) liter samples were collected for comparison of water quality field parameters at the start and end of the short-term pumping test, which was performed at PZ-14-3. No significant changes or fluctuations were observed in the field parameters.

The current New York State Department of Environmental Conservation (NYSDEC) approved Post-Closure Monitoring (PCM) Program provides for an annual monitoring schedule consisting of sampling twenty six (26) monitoring wells, four (4) surface water locations, and two (2) leachate manholes for field parameters. Annual sampling is performed in accordance with the Field Sampling Plan, Sampling QA/QC protocol, 1999 revision of the Orange County Landfill Post Closure Monitoring and Maintenance Operations Manual, and the 2003 Orange County PCM variance request approved by the NYSDEC.

Orange County provided the NYSDEC with a Site Management Plan (SMP) for the closed landfill. The SMP also included a request to modify the annual PCM Program. Under the prior (6 NYCRR Part 360) closure, the County performed PCM and annual reporting. During 2014, the annual sampling event is to be performed in October. At present, the NYSDEC has not approved or commented upon the SMP and proposed modification to the annual monitoring program. In prior negotiation with the NYSDEC regarding the need for a SMP, Orange County and the NYSDEC agreed the existing post-closure monitoring program should be carefully evaluated in light of the substantial body of available information. The data allows assessment of long-term trends by well location. Overall, the Landfill monitoring data indicates that the system is stable with some wells showing gradual improvement with time.

Design of a seep mitigation system solely based on limited field parameter data is questionable and may not reflect leachate impacted groundwater given that many of these field parameters are also within the observed range of naturally occurring waters. 2013 field parameter and leachate indicator analytical results from nearby environmental monitoring points (four (4) overburden groundwater monitoring wells (MW-3B, PZ-4, MW-220, MW-222), two (2) surface water locations (SW-5 and SW-8), and one (1) leachate location (MH-7)) were reviewed to further evaluate the potential presence of leachate impacted groundwater. Only total dissolved solids (TDS) exceeded the class GA standard (500 mg/L) at these select monitoring wells, ranging from 730 mg/L (MW-3B) to 860 mg/L (MW-222). Ammonia was only detected slightly above the NYSDEC GA standard (2 mg/L) at monitoring wells MW-3B (4.4 mg/L) and MW-222 (12 mg/L). In comparison, 2013 results for TDS and ammonia from nearby leachate (MH-7) was 3,900 mg/L and 0.64 mg/L, respectively. This environmental monitoring data does not reveal that leachate-impacted groundwater exists in this portion of the Landfill. Further, other reliable leachate indicators, such as chloride, field pH, nitrate (as N), phenols, sulfate, and Volatile Organic Compounds (VOCs) were either nondetect or below their respective NYSDEC GA standard.

Review of historical surface water analytical results (water quality parameters) for nearby surface water samples SW-5 and SW-8 revealed no exceedances of Class C Surface Water Quality standards, except for one (1) minor exceedance of field pH (9.33 s.u.) and phenols (0.0072 mg/L) at SW-5 in 1999 and 2000, respectively, and field pH (8.81 s.u.) and phenols (0.0115 mg/L) at SW-8 in 1999 and September 2002, respectively.

## CONCLUSIONS:

Six (6) shallow borings were completed on a moderate to steep slope (24 to 28%) to define the geologic conditions within the Project Area. A lowly permeable glaciolacustrine silt and clay unit exists at surface to depths ranging from 24.4 to 34.1 feet bgs and is characterized as moist grayish brown clayey silt to silty clay that is stiff to moderately stiff and occasionally to frequently varved. The base of this geologic unit is approximately three (3) to five (5) feet below the subject seep(s), which is located along the north or west bank of the Cheechunk Canal. This geologic contact actually tilts to the north away from the Cheechunk Canal. Underlying the silt and clay unit is moderately permeable glaciolacustrine sand, which is wet fine sand that is medium dense, laminated, and typically 25 to 35 feet in thickness.

Each boring was converted into temporary overburden piezometers, screening the uppermost portion of the overburden hydrogeologic unit (glaciolacustrine fine sand). The overlying glaciolacustrine silt and clay unit is not a water-bearing zone and limits recharge to underlying hydrogeologic units. The overburden hydrogeologic unit discharges into and is hydraulically connected to the Cheechunk Canal. Hydraulic conductivity of the overburden hydrogeologic unit ranged from  $9.29 \times 10^{-6}$  feet/min ( $4.72 \times 10^{-6}$  cm/sec) to  $2.35 \times 10^{-5}$  feet/min ( $1.19 \times 10^{-5}$  cm/sec) in the Project Area. Groundwater in the glaciolacustrine sand unit reveals semi-confined conditions with groundwater flow being to the east-southeast with a moderate hydraulic gradient in the Project Area. Two (2) hours of constant rate pumping (0.38 to 0.4 gpm) at PZ-14-3 revealed the following: 1). A drawdown of 7.8 feet at the wellhead; 2). Lowering of the potentiometric surface between 0.19 foot (PZ-14-6) to 0.29 foot (PZ-14-2) within the piezometer array (Project Area), demonstrating a good connection within the overburden hydrogeologic unit and the Cheechunk Canal (at low pumping rates); 3). The specific capacity and transmissivity values are low for the overburden hydrogeologic unit in the Project Area; and, 4). The actual location of the piezometer array was successful at locating the groundwater that is connected to the subject seep(s).

At the time of the field investigation the seep area was covered with ice and/or submerged. Review of field parameter data from the recently installed overburden piezometers revealed elevated temperature, specific conductivity, and ORP at PZ-14-5, which is located in the center of the piezometer array. Figure 4 presents likely groundwater flowlines from the piezometers to the vicinity of SEEP-3, indicating a continuity of groundwater, which was observed to be most anomalous at PZ-14-5.

2013 field parameter and leachate indicator analytical results from nearby environmental monitoring points (four (4) overburden groundwater monitoring wells (MW-3B, PZ-4, MW-220, MW-222), two (2) surface water locations (SW-5 and SW-8), and one (1) leachate location (MH-7)) were reviewed to further evaluate the potential presence of leachate impacted groundwater in the vicinity of the seep. Ammonia was only detected slightly above the NYSDEC GA standard (2 mg/L) at monitoring wells MW-3B (4.4 mg/L) and MW-222 (12 mg/L). In comparison, 2013 results for TDS and ammonia from nearby leachate (MH-7) was 3,900 mg/L and 0.64 mg/L, respectively. This environmental monitoring data does not reveal that leachate-impacted groundwater exists in this portion of the Landfill. Other



reliable leachate indicators, such as chloride, field pH, nitrate (as N), phenols, sulfate, and Volatile Organic Compounds (VOCs) were either nondetect or below their respective NYSDEC GA standard.

#### RECOMMENDATIONS:

Prior seep sampling results were from grab samples. Once the Cheechunk Canal recedes, such that the seep(s) are accessible, a well point should be hand driven (or a concrete/brick containment should be installed) to enable collection of seep samples that are an accurate representation of water quality.

A sample from each overburden piezometer, the subject seep, and the Cheechunk Canal should be collected and analyzed for 6 NYCRR Part 360 leachate indicator parameters to supplement available data in order to develop a clearer picture and to finalize selection and design of a mitigation system. This supplemental data will be coordinated with the ongoing environmental monitoring program and results will be compared to the extensive historic environmental monitoring database and data from the ongoing sampling of leachate, surface water, and groundwater monitoring program, as outlined in the Draft SMP, dated December 13, 2013. The Draft SMP provides that contingency measures are in-place if offsite contaminant migration is identified and, through assessment, is considered a potential threat to human health and the environment.

Additionally, we recommend that static groundwater levels should be periodically measured to better understand the seasonal variability and hydrogeologic relationship between the overburden hydrogeologic unit and the seep(s)/Cheechunk Canal. In addition, additional readings should be collected from the seep(s) and a staff gauge on the Cheechunk Canal.

#### MITIGATION SYSTEM:

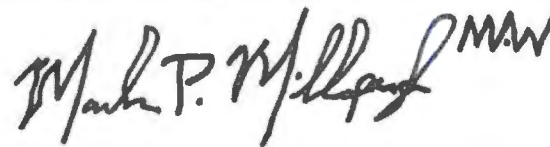
The following mitigation measures are under consideration at this time.

- No Action - Continue regular monitoring of the Cheechunk Canal upstream and downstream of the Landfill to assess impacts to surface water.
- Intercept Impacted Water Upslope of Seep - Install a dry well or recovery well upslope of the seep above the flood elevation to be located along the flowpath indicating the greatest potential impact to groundwater. Use controlled pumping to dewater the seep(s) so it is not discharging at surface.
- Alter Redox Potential of Groundwater in Project Area - Reduction/oxidation (redox) processes affect the quality of groundwater in all aquifer systems. Redox processes can alternately mobilize or immobilize potentially toxic metals associated with naturally occurring aquifer materials, contribute to the degradation or preservation of anthropogenic contaminants, and generate undesirable byproducts, such as dissolved manganese ( $Mn^{2+}$ ), ferrous iron ( $Fe^{2+}$ ), hydrogen sulfide ( $H_2S$ ), and methane ( $CH_4$ ). Changing the redox processes that occur in an aquifer system and documenting the spatial distribution may positively influence the concentrations of natural or anthropogenic contaminants observed in historical seeps along the northern bank of the Cheechunk Canal.

Please contact me should you have any questions or require additional clarification.

Very truly yours,

STERLING ENVIRONMENTAL ENGINEERING, P.C.



Mark P. Millspaugh, P.E.

President

[mark.millspaugh@sterlingenvironmental.com](mailto:mark.millspaugh@sterlingenvironmental.com)

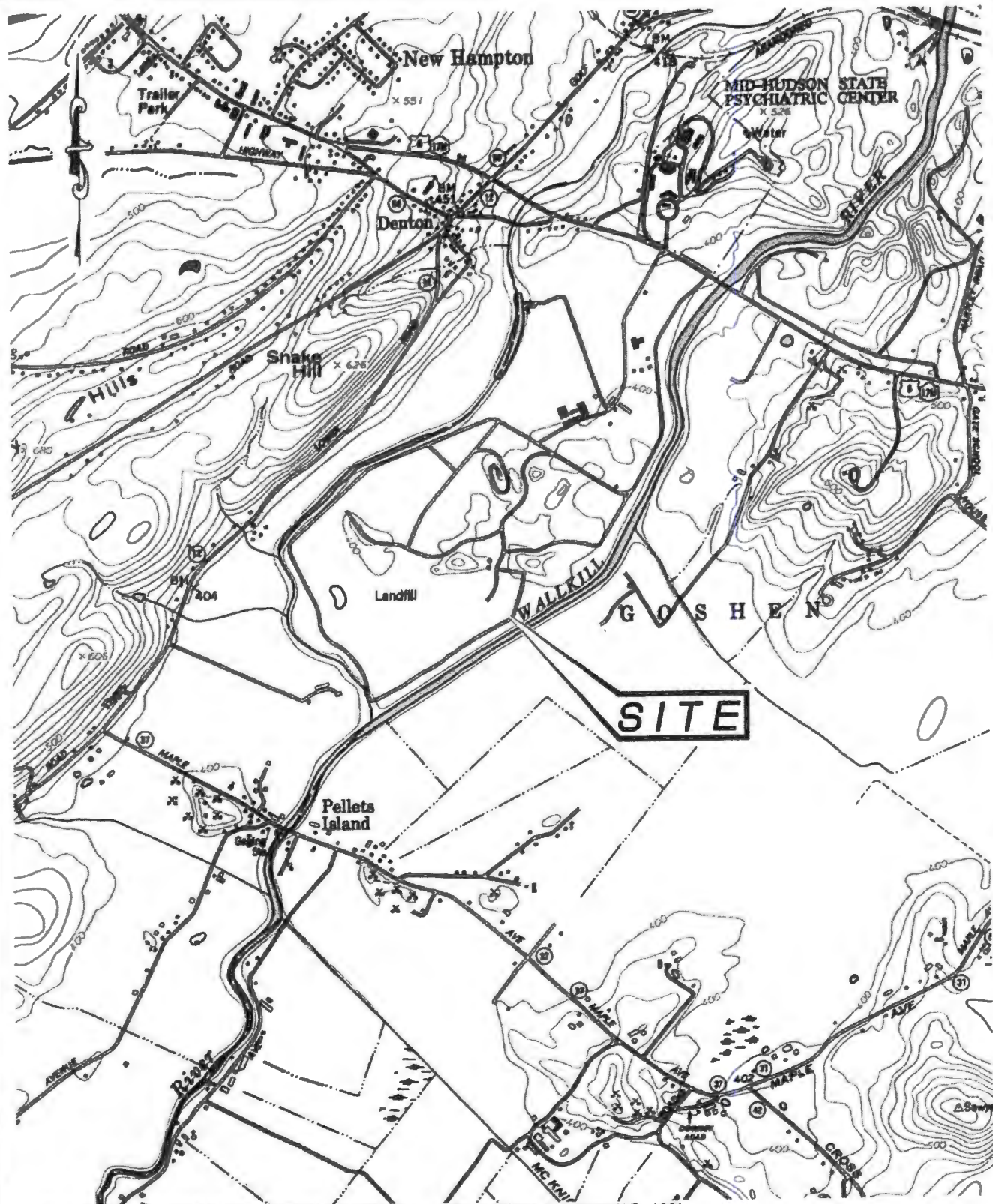
MPM/bc  
Email/First Class Mail  
Attachments

cc: Peter S. Hammond, Orange County  
Joseph F. Mahoney Esq.

S:\Sterling\Projects\2010 Projects\Orange County - 2010-15\Correspondence\NYSDEC\_Summary of Seep Evaluation\_itr\_04\_04\_2014.docx

## FIGURES





MAP REFERENCE: NYSDOT MIDDLETOWN QUADRANGLE, 1991, GOSHEN QUADRANGLE, 1991.

# STERLING

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SITE LOCATION MAP  
ORANGE COUNTY LANDFILL  
21 TRAINING CENTER LANE

TOWN OF NEW HAMPTON

ORANGE CO., N.Y.

PROJ. No.: 2010-15

DATE:

3/28/14

SCALE:

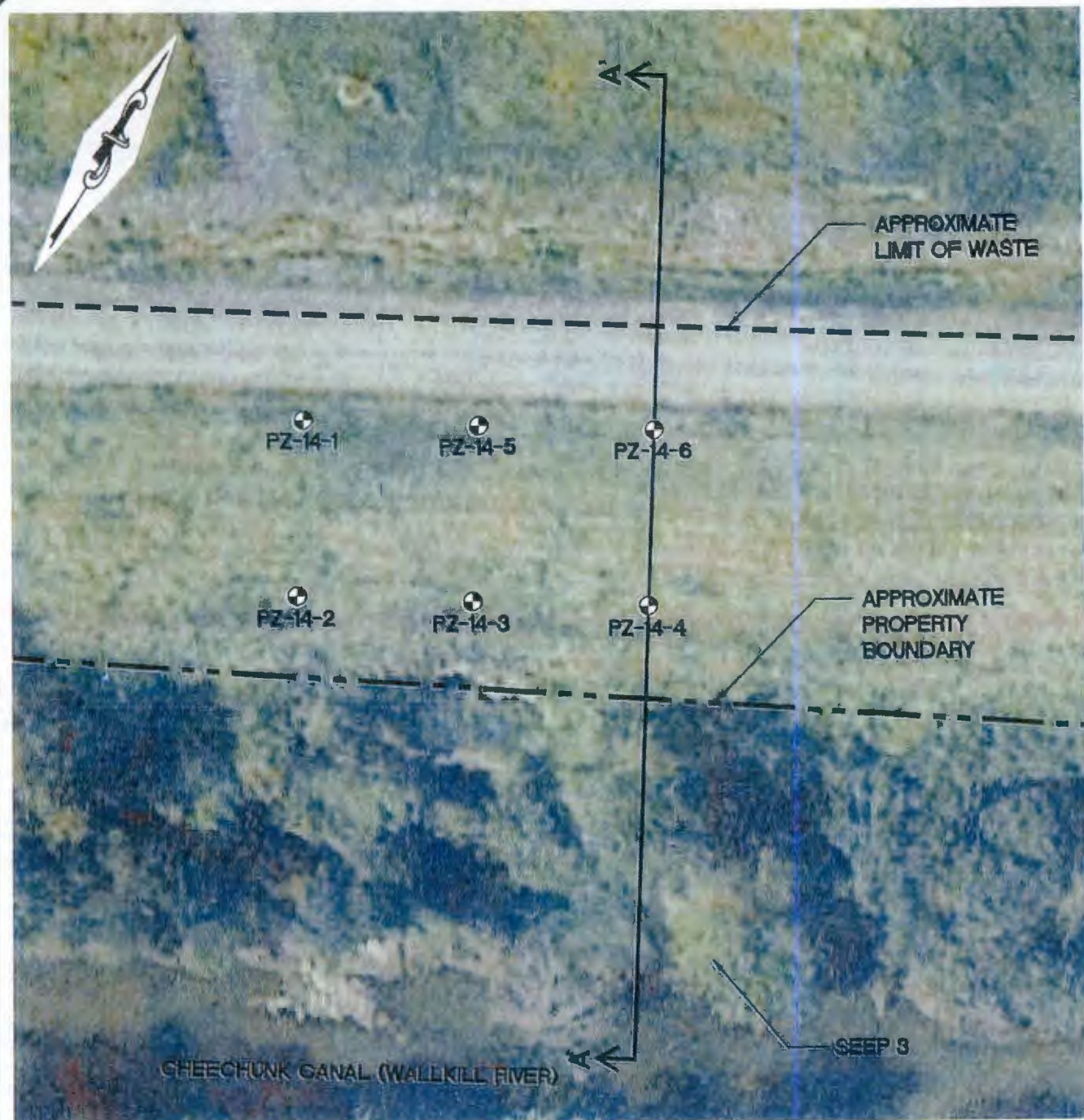
1" = 2000'

DWG. NO. 2010-15014

FIGURE

1



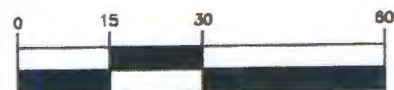


**LEGEND:**

- - - - - PROPERTY BOUNDARY  
 - - - - - LIMIT OF WASTE  
 ⊙ PZ-14-1 APPROXIMATE PIEZOMETER LOCATION

**MAP REFERENCES:**

1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
2. AERIAL PHOTOGRAPH FROM GOOGLE EARTH IMAGERY, DATED 2013.



( IN FEET )  
1 inch = 30 ft.

**S ERLING**

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BORING/PIEZOMETER LOCATION MAP  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE CO. LANDFILL

TOWN OF NEW HAMPTON

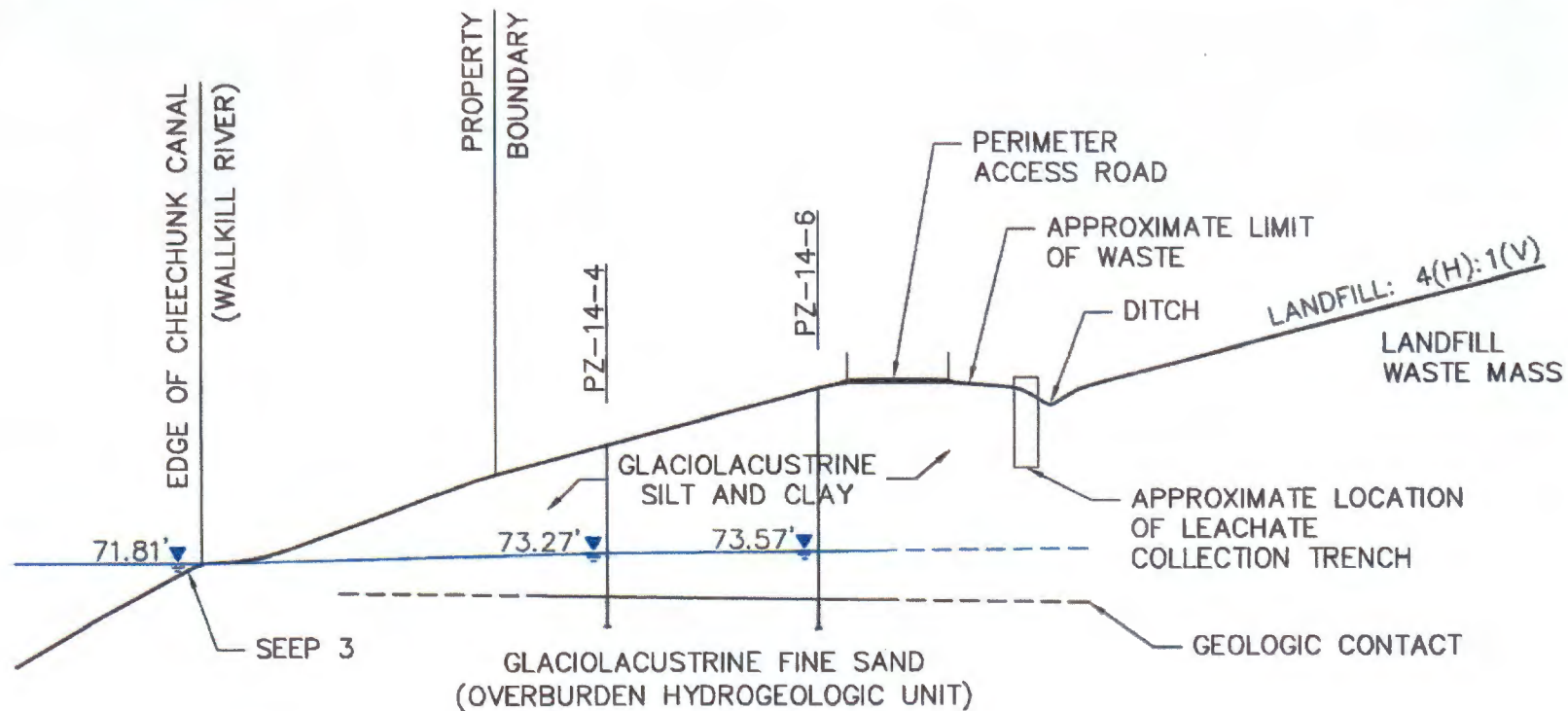
ORANGE CO., N.Y.

PROJ. No.: 2010-15 | DATE: 3/28/14 | SCALE: 1" = 30' | DWG. NO. 2010-15015 | FIGURE 2



A  
SOUTHEAST

A'  
NORTHWEST



▼ POTENTIOMETRIC SURFACE  
(MARCH 18, 2014)

LOOKING SOUTHWEST

**S E R L I N G**

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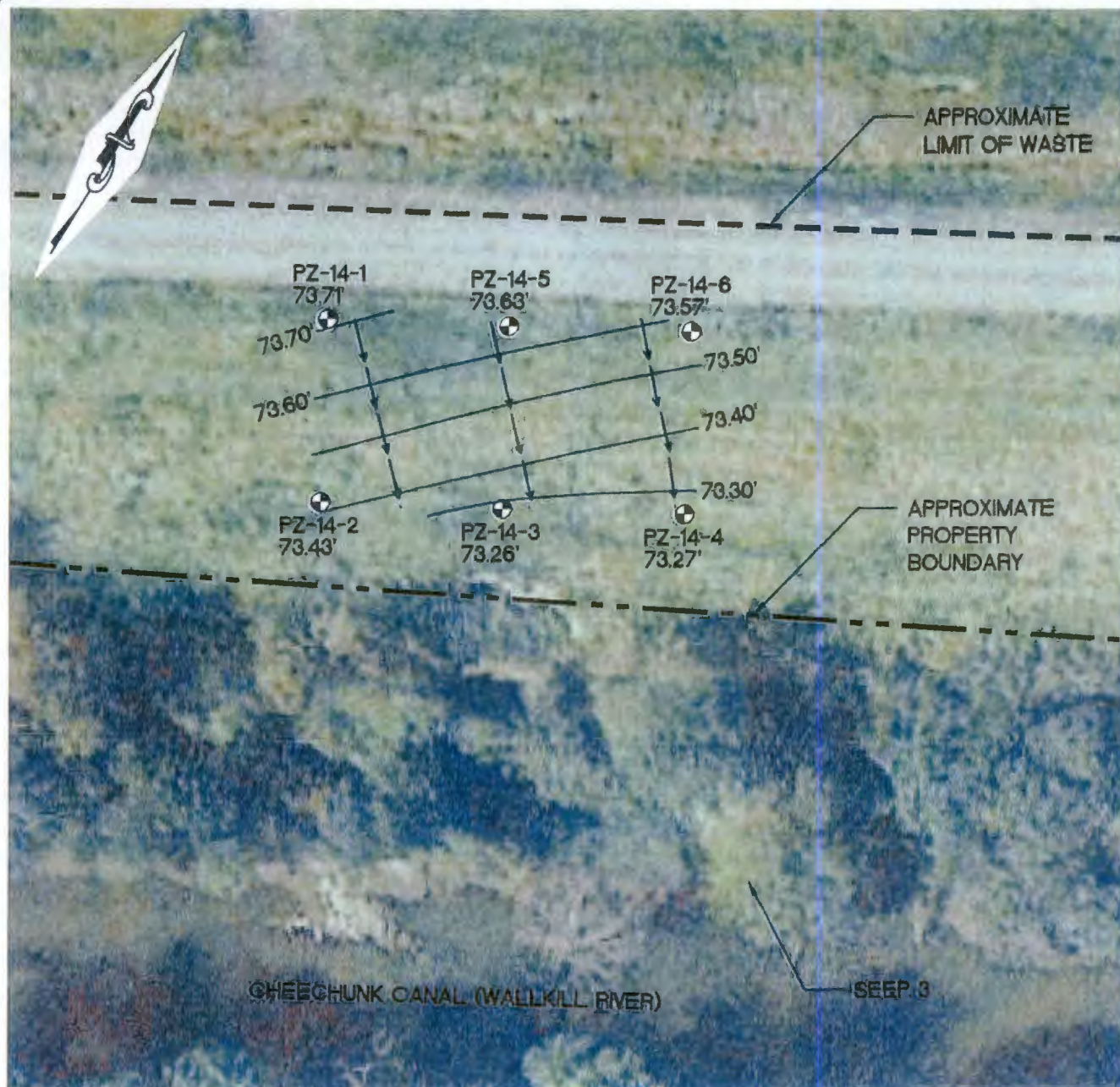
CONCEPTUAL PROFILE  
ORANGE CO. DEPT. OF PUBLIC WORKS  
ORANGE CO. LANDFILL

TOWN OF NEW HAMPTON

ORANGE CO., N.Y.

|                    |              |                     |                     |          |
|--------------------|--------------|---------------------|---------------------|----------|
| PROJ. No.: 2010-15 | DATE: 4/1/14 | SCALE: NOT TO SCALE | DWG. NO. 2010-15016 | FIGURE 3 |
|--------------------|--------------|---------------------|---------------------|----------|





**LEGEND:**

- PROPERTY BOUNDARY
- LIMIT OF WASTE
- **PZ-14-1**  
73.50'      PIEZOMETER LOCATION WITH GROUNDWATER ELEVATION (SITE DATUM)
- GROUNDWATER ELEVATION CONTOURS
- INFERRED GROUNDWATER FLOW DIRECTION

**MAP REFERENCES:**

1. PROPERTY BOUNDARY AND LIMIT OF WASTE FROM DRAWINGS ENTITLED "OVERALL PLAN AND RESTRICTED PARCEL," BY THOMAS J. BARRY, DATED FEBRUARY 14, 2013.
2. AERIAL PHOTOGRAPH FROM GOOGLE EARTH IMAGERY, DATED 2013.



( IN FEET )

1 inch = 30 ft.

# STERLING

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GROUNDWATER CONTOUR MAP  
(OVERBURDEN HYDROGEOLOGIC UNIT)—MARCH 18, 2014  
**ORANGE CO. DEPT. OF PUBLIC WORKS**  
ORANGE CO. LANDFILL

TOWN OF NEW HAMPTON

ORANGE CO., N.Y.

PROJ. No.: 2010-15

DATE:

3/28/14

SCALE:

1" = 30'

DWG. NO. 2010-15017

FIGURE

4



## **TABLES**

**Table 1**

**Summary of Borings/Piezometer Information  
Orange County Landfill, New Hampton, New York**

| <b>Piezometer I.D.</b> | <b>Ground Surface Elevation (Site Datum)</b> | <b>Piezometer Stickup (feet)</b> | <b>Assumed MP Elevation* (Site Datum)</b> | <b>Screened Interval / [Screened Elevation]</b> | <b>Total Depth (Feet BGS) / [Bottom Elevation]</b> | <b>Glaciolacustrine (Silt and Clay)/Glaciolacustrine Sand (Fine Sand) Interface (feet BGS) / [Geologic Contact Elevation]</b> |
|------------------------|--|----------------------------------|---|---|--|---|
| PZ-14-1                | 99.35  | 0.65                             | 100.00                                    | 34.5-39.5 / [64.85 - 59.85]                     | 39.5 / [ 59.85]                                    | 34.1 / [65.25]  |
| PZ-14-2                | 90.87  | 0.80                             | 91.67                                     | 24.5-29.5 / [66.37 - 61.37]                     | 30.26 / [60.61]                                    | 24.6 / [66.27]  |
| PZ-14-3                | 91.21  | 0.35                             | 91.56                                     | 24.92 -29.92 / [66.29 - 61.29]                  | 29.92 / [61.29]                                    | 24.4 / [66.81]  |
| PZ-14-4                | 90.15  | 1.35                             | 91.50                                     | 23.91-28.91 / [66.24 - 61.24]                   | 28.91 / [61.24]                                    | 23.9 / [66.25]  |
| PZ-14-5                | 99.78  | 2.17                             | 101.95                                    | 32.9-37.9 / [66.88 - 61.88]                     | 37.86 / [61.92]                                    | 33.5 / [66.28]  |
| PZ-14-6                | 99.96  | 0.88                             | 100.84                                    | 34.2-39.2 / [65.76 - 60.76]                     | 39.20 / [60.76]                                    | 33.85 / [66.11]   |

\* Assume PZ-14-1 MP (Top of PVC) is elevation 100.00 feet.



Table 2

Summary of Groundwater Elevation Data  
Orange County Landfill, New Hampton, New York

| Piezometer<br>I.D. | February 20, 2014<br>Depth to Groundwater (feet<br>BMP {Top of PVC}) /<br>[Groundwater Elevation] | March 18, 2014<br>Depth to Groundwater (feet<br>BMP {Top of PVC}) /<br>[Groundwater Elevation] | March 27, 2014<br>Depth to Groundwater (feet<br>BMP {Top of PVC}) /<br>[Groundwater Elevation] |
|--------------------|---|--|--|
| PZ-14-1            | 27.69 / [72.31]   | 26.29 / [73.71]  | 26.27 / [73.73]  |
| PZ-14-2            | 20.21 / [71.46]   | 18.24 / [73.43]  | 18.37 / [73.30]  |
| PZ-14-3            | 20.10 / [71.46]   | 18.30 / [73.26]  | 18.31 / [73.25]  |
| PZ-14-4            | 19.88 / [71.62]   | 18.23 / [73.27]  | 18.39 / [73.11]  |
| PZ-14-5            | 29.58 / [72.37]   | 28.32 / [73.63]  | 28.31 / [73.64]  |
| PZ-14-6            | 28.61 / [72.23]   | 27.27 / [73.57]  | 27.15 / [73.69]  |

**Table 3**

**Summary of Water Quality Information  
Orange County Landfill, New Hampton, New York**

| <b>Sample ID</b> | <b>Temperature (°F)</b> | <b>Conductivity (mS/cm)</b> | <b>Dissolved Oxygen (mg/L)</b> | <b>pH (s.u.)</b> | <b>Oxidation Reduction Potential (mV)</b> | <b>Turbidity (NTU)</b> |
|------------------|-------------------------|-----------------------------|--------------------------------|------------------|---|------------------------|
| PZ-14-1          | 56.41                   | 1.113                       | 1.76                           | 7.00             | -90.2                                     | 24.3                   |
| PZ-14-2          | 54.82                   | 0.698                       | 2.77                           | 7.41             | 3.1                                       | 39.0                   |
| PZ-14-3          | 55.33                   | 0.859                       | 1.19                           | 7.03             | 38.2                                      | 102.7                  |
| PZ-14-4          | 54.25                   | 0.607                       | 1.44                           | 7.21             | 47.5                                      | 33.0                   |
| PZ-14-5          | 57.47                   | 1.230                       | 1.29                           | 7.03             | 214.8                                     | 37.8                   |
| PZ-14-6          | 56.59                   | 1.011                       | 1.72                           | 7.12             | -15.9                                     | 117.0                  |



## **APPENDIX A**





## BORING LOG

Boring No. PZ-14-1

Project Name: Orange County Landfill – Cheechunk Canal/Seep Evaluation  
 Client Name: Orange County Department of Public Works  
 Location: Goshen, NY  
 Weather/Temp.: 12°F - 40°F, 1.55" Precip (wintry mix) Winds (1-3mph)

Project No.: 2010-15  
 Date: February 19, 2014  
 Logged By: Mark Williams  
 Checked By: Peter Kelleher, P.E.

Drilling Co.: Zebra Environmental Corp.  
 Driller: Jason Frederick  
 Date Started: February 19, 2014  
 Date Completed: February 19, 2014

Depth: 39.5' bgs  
 Equipment: Geoprobe® 7720 DT  
 Surface Elev.: 99.35' (Site Datum)  
 Depth Elev.: 59.85' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | DESCRIPTIVE LOG<br>(color, grain size and amount, texture, moisture)                                      | COMMENTS |
|-------|------------|-------------|----------------------|-----------------------------|---|----------|
|       |            |             |                      |                             | DEPOSITIONAL UNIT<br>(outwash, till, lacustrine, muck, fill)  |          |
|       |            |             |                      |                             | BrGr Cy\$; occ. mtd; no odor; med. stiff; moist (ML/CL).  |          |
|       |            |             | 5                    |                             | BrGr Cy\$l, fS; no odor; med. stiff; moist (ML).  |          |
|       |            |             | 10                   |                             | BrGr C&\$; no odor; med. stiff; low to mod. plasticity; moist (ML/CL).                                    |          |
|       |            |             | 15                   |                             | BrGr \$&Cl(-),vfS(\$); no odor; stiff; occ. to freq. vvd; low to mod. plasticity; moist (ML/CL).          |          |
|       |            |             | 20                   |                             | Gr C&\$; no odor; stiff to hard; occ. to freq. vvd (partings 0.4 – 0.1'); mod. plasticity; moist (ML/CL). |          |
|       |            |             | 25                   |                             | (GLACIOLACUSTRINE SILT AND CLAY)  |          |



Sterling Environmental Engineering, P.C.


## BORING LOG

Boring No. PZ-14-1

|                       |   |                     |                             |
|-----------------------|---|---------------------|-----------------------------|
| <b>Project Name:</b>  | <u>Orange County Landfill – Cheechunk Canal/Seep Evaluation</u> | <b>Project No.:</b> | <u>2010-15</u>              |
| <b>Client Name:</b>   | <u>Orange County Department of Public Works</u>                 | <b>Date:</b>        | <u>February 19/20, 2014</u> |
| <b>Location:</b>      | <u>Goshen, NY</u>   | <b>Logged By:</b>   | <u>Mark Williams</u>        |
| <b>Weather/Temp.:</b> | <u>See page 1 of 2</u>  | <b>Checked By:</b>  | <u>Peter Kelleher, P.E.</u> |

|                        |                                  |                       |                            |
|------------------------|----------------------------------|-----------------------|----------------------------|
| <b>Drilling Co.:</b>   | <u>Zebra Environmental Corp.</u> | <b>Depth:</b>         | <u>39.5'bgs</u>            |
| <b>Driller:</b>        | <u>Jason Frederick</u>           | <b>Equipment:</b>     | <u>Geoprobe® 7720 DT</u>   |
| <b>Date Started:</b>   | <u>February 19, 2014</u>         | <b>Surface Elev.:</b> | <u>99.35' (Site Datum)</u> |
| <b>Date Completed:</b> | <u>February 19, 2014</u>         | <b>Depth/Datum:</b>   | <u>59.85' (Site Datum)</u> |

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil<br>Classification | <b>DESCRIPTIVE LOG</b><br>(color, grain size and amount, texture, moisture)<br><br><b>DEPOSITIONAL UNIT</b><br>(outwash, till, lacustrine, muck, fill)                        | COMMENTS  |
|-------|------------|-------------|----------------------|--------------------------------|---|---|
|       |            |             |                      |                                | Gr C&S; no odor; soft to mod. stiff; occ. to freq. vvd; mod. plasticity; moist (ML/CL).  | Depth to Groundwater = 26.29' bgs (March 18, 2014)  |
|       |            |             | 30                   |                                | Gr CyS; no odor; mod. stiff to soft; freq. vvd; mod. plasticity; moist to wet (ML).   |   |
|       |            |             |                      |                                | <b>(GLACIOLACUSTRINE SILT AND CLAY) 34.1'</b>   |   |
|       |            |             | 35                   |                                | GrfS, sCyS; no odor; med. dense; wet (SM/ML).   |   |
|       |            |             |                      |                                | GrfS, l(-)CyS; no odor; med. dense; wet (SM/ML).  |   |
|       |            |             |                      |                                | <b>(GLACIOLACUSTRINE SAND) 39.5'</b>  |   |
|       |            |             | 40                   |                                | Boring terminated at 39.5 feet below ground surface (bgs).  | 1 1/4" I.D. Schedule 40 PVC overburden piezometer installed on February 20, 2014. 10-slot PVC screen: 34.5 -39.5'bgs. |
|       |            |             | 45                   |                                |   |   |
|       |            |             | 50                   |                                |   |   |



**BORING LOG**Boring No. PZ-14-2

Project Name: Orange County Landfill – Cheechunk Canal/Seep Evaluation  
 Client Name: Orange County Department of Public Works  
 Location: Goshen, NY  
 Weather/Temp.: 12°F - 40°F, 1.55" Precip (wintry mix) Winds (1-3mph)

Project No.: 2010-15  
 Date: February 19, 2014  
 Logged By: Mark Williams  
 Checked By: Peter Kelleher, P.E.

Drilling Co.: Zebra Environmental Corp.  
 Driller: Jason Frederick  
 Date Started: February 19, 2014  
 Date Completed: February 19, 2014

Depth: 30' bgs  
 Equipment: Geoprobe® 7720 DT  
 Surface Elev.: 90.87' (Site Datum)  
 Depth Elev.: 60.61' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | DESCRIPTIVE LOG<br>(color, grain size and amount, texture, moisture)<br><br>DEPOSITIONAL UNIT<br>(outwash, till, lacustrine, muck, fill) | COMMENTS   |
|-------|------------|-------------|----------------------|-----------------------------|--|--|
|       |            |             |                      |                             |  |  |
|       |            |             |                      |                             | Gr C&S; no odor; mod. stiff; occ. vvd; mod. plasticity; moist (ML/CL).   |  |
|       |            |             | 5                    |                             | Gr S&C; no odor; mod. stiff; occ. to freq. vvd; mod. (0.01' partings); plasticity; moist (ML/CL).  |  |
|       |            |             | 10                   |                             | Gr S&C; no odor; stiff; freq. vvd (0.04 – 0.07' partings); mod. plasticity; moist (ML/CL).   |  |
|       |            |             | 15                   |                             | Gr C&S; no odor; stiff; occ. - freq. vvd; mod. plasticity; moist to wet (ML/CL).   |  |
|       |            |             | 20                   |                             | Gr S&C; no odor; mod. stiff to stiff; occ. - freq. vvd; mod. plasticity; moist to wet (ML/CL).   |  |
|       |            |             | 25                   |                             | (GLACIOLACUSTRINE SILT AND CLAY) 24.6'<br>GrFS, aCyS; no odor; med. dense; wet (SM/ML)<br>(GLACIOLACUSTRINE SAND)                        | Depth to Groundwater<br>= 18.24' bgs<br>(March 18, 2014) |





## BORING LOG

Boring No. PZ-14-2

|                |   |              |                             |
|----------------|---|--------------|-----------------------------|
| Project Name:  | <u>Orange County Landfill – Cheechunk Canal/Seep Evaluation</u> | Project No.: | <u>2010-15</u>              |
| Client Name:   | <u>Orange County Department of Public Works</u>                 | Date:        | <u>February 19, 2014</u>    |
| Location:      | <u>Goshen, NY</u>   | Logged By:   | <u>Mark Williams</u>        |
| Weather/Temp.: | <u>See page 1 of 2</u>  | Checked By:  | <u>Peter Kelleher, P.E.</u> |

|                 |                                  |                |                            |
|-----------------|----------------------------------|----------------|----------------------------|
| Drilling Co.:   | <u>Zebra Environmental Corp.</u> | Depth:         | <u>30'bgs</u>              |
| Driller:        | <u>Jason Frederick</u>           | Equipment:     | <u>Geoprobe® 7720 DT</u>   |
| Date Started:   | <u>February 19, 2014</u>         | Surface Elev.: | <u>90.87' (Site Datum)</u> |
| Date Completed: | <u>February 19, 2014</u>         | Depth/Datum:   | <u>60.61' (Site Datum)</u> |

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | <b>DESCRIPTIVE LOG</b><br>(color, grain size and amount, texture, moisture)<br><br><b>DEPOSITIONAL UNIT</b><br>(outwash, till, lacustrine, muck, fill) | COMMENTS   |
|-------|------------|-------------|----------------------|-----------------------------|--|--|
|       |            |             |                      |                             |  |  |
|       |            |             | 30                   |                             | GrfS, tS; no odor; med. dense; wet; GrmfS @ 27.6 -28.7' bgs (SM).<br><br><b>(GLACIOLACUSTRINE SAND) 30.26'</b>   | 1¼" I.D. Schedule 40 PVC overburden piezometer installed on February 20, 2014. 10-slot PVC screen: 24.5 -29.5'bgs. |
|       |            |             |                      |                             | Boring terminated at 30.26 feet below ground surface (bgs).  |  |
|       |            |             | 35                   |                             |  |  |
|       |            |             | 40                   |                             |  |  |
|       |            |             | 45                   |                             |  |  |
|       |            |             | 50                   |                             |  |  |



# BORING LOG

Boring No. PZ-14-3

**Project Name:** Orange County Landfill – Cheechunk Canal/Seep Evaluation      **Project No.:** 2010-15  
**Client Name:** Orange County Department of Public Works      **Date:** February 19, 2014  
**Location:** Goshen, NY      **Logged By:** Mark Williams  
**Weather/Temp.:** 12°F - 40°F, 1.55" Precip (wintry mix) Winds (1-3mph)      **Checked By:** Peter Kelleher, P.E.

**Drilling Co.:** Zebra Environmental Corp.      **Depth:** 30' bgs  
**Driller:** Jason Frederick      **Equipment:** Geoprobe® 7720 DT  
**Date Started:** February 19, 2014      **Surface Elev.:** 91.21' (Site Datum)  
**Date Completed:** February 19, 2014      **Depth Elev.:** 61.29' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil<br>Classification | <b>DESCRIPTIVE LOG</b><br>(color, grain size and amount, texture, moisture)<br><br><b>DEPOSITIONAL UNIT</b><br>(outwash, till, lacustrine, muck, fill) | COMMENTS   |
|-------|------------|-------------|----------------------|--------------------------------|--|--|
|       |            |             |                      |                                | Br-GrBr Cy\$; no odor; occ. mtld; mod. stiff; occ. vvd; low to mod. plasticity; dry to moist (ML/CL).  |  |
|       |            |             | 5                    |                                | Gr C&\$; no odor; mod. stiff; freq. vvd (partings 0.01'); mod. plasticity; moist to wet (ML/CL).   |  |
|       |            |             | 10                   |                                | BrGr Cy\$; no odor; mod. stiff; freq. vvd (partings 0.01'); mod. plasticity; moist to wet (ML/CL).   |  |
|       |            |             | 15                   |                                | BrGr Cy\$; no odor; mod. stiff to stiff; freq. vvd (partings <0.01'); mod. plasticity; moist (ML/CL).  |  |
|       |            |             | 20                   |                                | BrGr Cy\$; no odor; soft to mod. stiff; massive; mod. plasticity; moist (ML/CL).   |  |
|       |            |             | 25                   |                                | <b>(GLACIOLACUSTRINE SILT AND CLAY)</b> 24.4'<br>DkGrIS, l(-)\$; med. dense; wet (SM/ML).<br><b>(GLACIOLACUSTRINE SAND)</b>                            | Depth to Groundwater<br>= 18.30' bgs<br>(March 18, 2014) |





Sterling Environmental Engineering, P.C.

**BORING LOG**Boring No. PZ-14-3

|                       |   |                     |                             |
|-----------------------|---|---------------------|-----------------------------|
| <b>Project Name:</b>  | <u>Orange County Landfill – Cheechunk Canal/Seep Evaluation</u> | <b>Project No.:</b> | <u>2010-15</u>              |
| <b>Client Name:</b>   | <u>Orange County Department of Public Works</u>                 | <b>Date:</b>        | <u>February 19, 2014</u>    |
| <b>Location:</b>      | <u>Goshen, NY</u>   | <b>Logged By:</b>   | <u>Mark Williams</u>        |
| <b>Weather/Temp.:</b> | <u>See page 1 of 2</u>  | <b>Checked By:</b>  | <u>Peter Kelleher, P.E.</u> |

|                        |                                  |                       |                            |
|------------------------|----------------------------------|-----------------------|----------------------------|
| <b>Drilling Co.:</b>   | <u>Zebra Environmental Corp.</u> | <b>Depth:</b>         | <u>30'bgs</u>              |
| <b>Driller:</b>        | <u>Jason Frederick</u>           | <b>Equipment:</b>     | <u>Geoprobe® 7720 DT</u>   |
| <b>Date Started:</b>   | <u>February 19, 2014</u>         | <b>Surface Elev.:</b> | <u>91.21' (Site Datum)</u> |
| <b>Date Completed:</b> | <u>February 19, 2014</u>         | <b>Depth/Datum:</b>   | <u>61.29' (Site Datum)</u> |

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | <b>DESCRIPTIVE LOG</b><br>(color, grain size and amount, texture, moisture)<br><br><b>DEPOSITIONAL UNIT</b><br>(outwash, till, lacustrine, muck, fill) | COMMENTS   |
|-------|------------|-------------|----------------------|-----------------------------|--|--|
|       |            |             |                      |                             |  |  |
|       |            |             | 30                   |                             | Grmf(+)S; no odor; med.dense; laminated; wet(SM/ML).<br><br><b>(GLACIOLACUSTRINE SAND) 29.92'</b>  | 2" I.D. Schedule 40<br>PVC overburden<br>piezometer installed on<br>February 20, 2014.<br>10-slot PVC screen:<br>24.92 -29.92'bgs. |
|       |            |             |                      |                             | Boring terminated at 29.92 feet below ground surface (bgs).  |  |
|       |            |             | 35                   |                             |  |  |
|       |            |             | 40                   |                             |  |  |
|       |            |             | 45                   |                             |  |  |
|       |            |             | 50                   |                             |  |  |





## BORING LOG

Boring No. PZ-14-4

Project Name: Orange County Landfill – Cheechunk Canal/Seep Evaluation  
 Client Name: Orange County Department of Public Works  
 Location: Goshen, NY  
 Weather/Temp.: 23°F - 50°F, 0" Precip, Winds (1-4mph)

Project No.: 2010-15  
 Date: February 20, 2014  
 Logged By: Mark Williams  
 Checked By: Peter Kelleher, P.E.

Drilling Co.: Zebra Environmental Corp.  
 Driller: Jason Frederick  
 Date Started: February 20, 2014  
 Date Completed: February 20, 2014

Depth: 30' bgs  
 Equipment: Geoprobe® 7720 DT  
 Surface Elev.: 90.15' (Site Datum)  
 Depth Elev.: 61.24' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | DESCRIPTIVE LOG<br>(color, grain size and amount, texture, moisture)  | COMMENTS   |
|-------|------------|-------------|----------------------|-----------------------------|---|--|
|       |            |             |                      |                             | DEPOSITIONAL UNIT<br>(outwash, till, lacustrine, muck, fill)  |  |
|       |            |             |                      |                             | GrBr Cy\$; no odor; occ. mtld; mod. stiff to stiff; occ. vvd (partings 0.01'); low to mod. plasticity; dry to moist (ML). |  |
|       |            |             | 5                    |                             | BrGr \$&C to Cy\$; no odor; mod. stiff to stiff; freq. vvd (partings 0.01'); low to mod. plasticity; moist (ML/CL).       |  |
|       |            |             | 10                   |                             | BrGr \$&C to \$yC; no odor; mod. stiff; occ. to freq. vvd (partings 0.01'); mod. plasticity; moist (ML/CL).               |  |
|       |            |             | 15                   |                             | Gr Cy\$ to \$&C; no odor; mod. stiff; occ. to freq. vvd (partings 0.02 - 0.07'); mod. plasticity; moist to wet (ML/CL).   |  |
|       |            |             | 20                   |                             | GrCy\$ to \$&C; no odor; mod. stiff; massive; moist to wet (ML/CL).   |  |
|       |            |             |                      |                             | (GLACIOLACUSTRINE SILT AND CLAY) 23.9'  |  |
|       |            |             | 25                   |                             | DkGrmf(+)fS, l(-)Cy\$; no odor; med. dense; wet (SM/ML).<br>(GLACIOLACUSTRINE SAND)                                       | Depth to Groundwater<br>= 18.23' bgs<br>(March 18, 2014) |



Sterling Environmental Engineering, P.C.

**BORING LOG**Boring No. PZ-14-4

Project Name: Orange County Landfill – Cheechunk Canal/Seep Evaluation  
 Client Name: Orange County Department of Public Works  
 Location: Goshen, NY  
 Weather/Temp.: See page 1 of 2

Project No.: 2010-15  
 Date: February 20, 2014  
 Logged By: Mark Williams  
 Checked By: Peter Kelleher, P.E.

Drilling Co.: Zebra Environmental Corp.  
 Driller: Jason Frederick  
 Date Started: February 20, 2014  
 Date Completed: February 20, 2014

Depth: 38.91'bgs  
 Equipment: Geoprobe® 7720 DT  
 Surface Elev.: 90.15' (Site Datum)  
 Depth/Datum: 61.24' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | DESCRIPTIVE LOG<br>(color, grain size and amount, texture, moisture)                       | COMMENTS   |
|-------|------------|-------------|----------------------|-----------------------------|--|--|
|       |            |             |                      |                             | DEPOSITIONAL UNIT<br>(outwash, till, lacustrine, muck, fill)                               |  |
|       |            |             | 30                   |                             | Grmf(+)S; no odor; med.dense; laminated; wet(SM/ML).<br><br>(GLACIOLACUSTRINE SAND) 28.91' | 2" I.D. Schedule 40 PVC overburden piezometer installed on February 20, 2014.<br>10-slot PVC screen: 23.91 -28.91'bgs. |
|       |            |             |                      |                             | Boring terminated at 28.91 feet below ground surface (bgs).                                |  |
|       |            |             | 35                   |                             |  |  |
|       |            |             | 40                   |                             |  |  |
|       |            |             | 45                   |                             |  |  |
|       |            |             | 50                   |                             |  |  |





Sterling Environmental Engineering, P.C.

**BORING LOG**Boring No. PZ-14-5

Project Name: Orange County Landfill – Cheechunk Canal/Seep Evaluation  
 Client Name: Orange County Department of Public Works  
 Location: Goshen, NY  
 Weather/Temp.: 23°F - 50°F, 0" Precip, Winds (1-4mph)

Project No.: 2010-15  
 Date: February 20, 2014  
 Logged By: Mark Williams  
 Checked By: Peter Kelleher, P.E.

Drilling Co.: Zebra Environmental Corp.  
 Driller: Jason Frederick  
 Date Started: February 20, 2014  
 Date Completed: February 20, 2014

Depth: 38' bgs  
 Equipment: Geoprobe® 7720 DT  
 Surface Elev.: 99.78' (Site Datum)  
 Depth Elev.: 61.92' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil<br>Classification | DESCRIPTIVE LOG<br>(color, grain size and amount, texture, moisture)   | COMMENTS |
|-------|------------|-------------|----------------------|--------------------------------|--|----------|
|       |            |             |                      |                                | DEPOSITIONAL UNIT<br>(outwash, till, lacustrine, muck, fill)   |          |
|       |            |             |                      |                                | BrGr Cy\$; no odor; occ. mtld; med. stiff; moist (ML/CL).  |          |
|       |            |             | 5                    |                                | BrGr Cy\$; no odor; med. stiff; moist (ML).  |          |
|       |            |             | 10                   |                                | BrGr C&\$; no odor; med. stiff; low to mod. plasticity; moist (ML/CL).   |          |
|       |            |             | 15                   |                                | BrGr-Gr \$&Ct, vfs(\$); no odor; mod. stiff; occ. vvd; low to mod. plasticity; moist (ML/CL).                    |          |
|       |            |             | 20                   |                                | Gr Cy\$ to \$&C; no odor; mod. stiff; occ. vvd (partings = 0.04 – 0.07"); low to mod. plasticity; moist (ML/CL). |          |
|       |            |             | 25                   |                                | (GLACIOLACUSTRINE SILT AND CLAY)   |          |





Sterling Environmental Engineering, P.C.

**BORING LOG**Boring No. PZ-14-5

|                       |   |                     |                             |
|-----------------------|---|---------------------|-----------------------------|
| <b>Project Name:</b>  | <u>Orange County Landfill – Cheechunk Canal/Seep Evaluation</u> | <b>Project No.:</b> | <u>2010-15</u>              |
| <b>Client Name:</b>   | <u>Orange County Department of Public Works</u>                 | <b>Date:</b>        | <u>February 20, 2014</u>    |
| <b>Location:</b>      | <u>Goshen, NY</u>   | <b>Logged By:</b>   | <u>Mark Williams</u>        |
| <b>Weather/Temp.:</b> | <u>See page 1 of 2</u>  | <b>Checked By:</b>  | <u>Peter Kelleher, P.E.</u> |

|                        |                                  |                       |                            |
|------------------------|----------------------------------|-----------------------|----------------------------|
| <b>Drilling Co.:</b>   | <u>Zebra Environmental Corp.</u> | <b>Depth:</b>         | <u>38'bgs</u>              |
| <b>Driller:</b>        | <u>Jason Frederick</u>           | <b>Equipment:</b>     | <u>Geoprobe® 7720 DT</u>   |
| <b>Date Started:</b>   | <u>February 20, 2014</u>         | <b>Surface Elev.:</b> | <u>99.78' (Site Datum)</u> |
| <b>Date Completed:</b> | <u>February 20, 2014</u>         | <b>Depth/Datum:</b>   | <u>61.92' (Site Datum)</u> |

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | <b>DESCRIPTIVE LOG</b><br>(color, grain size and amount, texture, moisture)<br><br><b>DEPOSITIONAL UNIT</b><br>(outwash, till, lacustrine, muck, fill)           | COMMENTS  |
|-------|------------|-------------|----------------------|-----------------------------|--|---|
|       |            |             | 30                   |                             | Gr Cy\$ to \$&C; no odor; mod. stiff; occ. to freq. vvd (partings = 0.05"); mod. plasticity; wet to moist (ML/CL).<br><br>(GLACIOLACUSTRINE SILT AND CLAY) 33.5' | Depth to Groundwater = 28.32' bgs (March 18, 2014)<br><br>2" I.D. Schedule 40 PVC overburden piezometer installed on February 20, 2014. 10-slot PVC screen: 32.9 -34.9'bgs. |
|       |            |             | 35                   |                             | DkGrmf(+)-S, t\$; laminated; med. dense to dense; wet (SM).<br><br>(GLACIOLACUSTRINE SAND) 37.86'  |   |
|       |            |             | 40                   |                             | Boring terminated at 37.86 feet below ground surface (bgs).  |   |
|       |            |             | 45                   |                             |  |   |
|       |            |             | 50                   |                             |  |   |



Sterling Environmental Engineering, P.C.

**BORING LOG**Boring No. PZ-14-6

Project Name: Orange County Landfill – Cheechunk Canal/Seep Evaluation  
 Client Name: Orange County Department of Public Works  
 Location: Goshen, NY  
 Weather/Temp.: 23°F - 50°F, 0" Precip, Winds (1-4mph)

Project No.: 2010-15  
 Date: February 20, 2014  
 Logged By: Mark Williams  
 Checked By: Peter Kelleher, P.E.

Drilling Co.: Zebra Environmental Corp.  
 Driller: Jason Frederick  
 Date Started: February 20, 2014  
 Date Completed: February 20, 2014

Depth: 39.2' bgs  
 Equipment: Geoprobe® 7720 DT  
 Surface Elev.: 99.96' (Site Datum)  
 Depth Elev.: 60.76' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | DESCRIPTIVE LOG<br>(color, grain size and amount, texture, moisture)                       | COMMENTS |
|-------|------------|-------------|----------------------|-----------------------------|--|----------|
|       |            |             |                      |                             | DEPOSITIONAL UNIT<br>(outwash, till, lacustrine, muck, fill)                               |          |
|       |            |             |                      |                             | BrGr Cy\$; no odor; occ. mtd; mod. stiff; moist (ML).                                      |          |
|       |            |             | 5                    |                             | BrGr Cy\$ to \$&C; no odor; mod. stiff; moist (ML/CL).                                     |          |
|       |            |             | 10                   |                             | BrGr C&\$; no odor; mod. stiff; low to mod. plasticity; moist (ML/CL).                     |          |
|       |            |             | 15                   |                             | BrGr-Gr \$&C to Cy\$; no odor; mod. stiff; occ.vvd; low to mod. plasticity; moist (ML/CL). |          |
|       |            |             | 20                   |                             | Gr Cy\$; no odor; mod. stiff; occ.vvd; low to mod. plasticity; moist (ML/CL).              |          |
|       |            |             | 25                   |                             | (GLACIOLACUSTRINE SILT AND CLAY)   |          |





Sterling Environmental Engineering, P.C.

**BORING LOG**Boring No. PZ-14-6

Project Name: Orange County Landfill – Cheechunk Canal/Seep Evaluation  
 Client Name: Orange County Department of Public Works  
 Location: Goshen, NY  
 Weather/Temp.: See page 1 of 2

Project No.: 2010-15  
 Date: February 20, 2014  
 Logged By: Mark Williams  
 Checked By: Peter Kelleher, P.E.

Drilling Co.: Zebra Environmental Corp.Depth: 39.2'bgsDriller: Jason FrederickEquipment: Geoprobe® 7720 DTDate Started: February 20, 2014Surface Elev.: 99.96' (Site Datum)Date Completed: February 20, 2014Depth/Datum: 60.76' (Site Datum)

| Depth | Sample No. | Blow Counts | Graphic Log<br>1"=5' | Unified Soil Classification | DESCRIPTIVE LOG<br>(color, grain size and amount, texture, moisture)   | COMMENTS  |
|-------|------------|-------------|----------------------|-----------------------------|--|---|
|       |            |             |                      |                             | DEPOSITIONAL UNIT<br>(outwash, till, lacustrine, muck, fill)   |   |
|       |            |             |                      |                             | Gr Cy\$; no odor; soft to mod. stiff; occ. to freq. vvd (partings = 0.03 - 0.05'); mod. plasticity; moist (ML/CL).               | Depth to Groundwater = 27.27' bgs (March 18, 2014)<br><br>1 1/4" I.D. Schedule 40 PVC overburden piezometer installed on February 20, 2014.<br>10-slot PVC screen: 34.2 - 39.2'bgs. |
|       |            |             | 30                   |                             | Gr Cy\$; no odor; soft to mod. stiff; massive; low plasticity; moist to wet (ML).<br><br>(GLACIOLACUSTRINE SILT AND CLAY) 33.85' |   |
|       |            |             | 35                   |                             | Gr-DkGrfSl(-), Cy\$; no odor; med. dense to dense; wet (SM/ML)<br><br>(GLACIOLACUSTRINE SAND) 39.2'                              |   |
|       |            |             | 40                   |                             | Boring terminated at 39.2 feet below ground surface (bgs).   |   |
|       |            |             | 45                   |                             |  |   |
|       |            |             | 50                   |                             |  |   |



## **APPENDIX B**



Summary of Survey and Project Information - Orange County Landfill Seep Evaluation

Assign PZ-14-1 MP Elev = 100.00 ft

| Piezometer I.D. | Assumed Elevation (Site Datum) | delta Z - 1st Setup | delta Z - 2nd Setup | delta Z - 3rd Setup | Piezometer Stickup (feet) | Ground Surface Elevation (Site Datum) | Glaciolacustrine (Silt and Clay)/Glaciolacustrine (Fine Sand) Interface (feet BGS)/[Geologic Contact Elevation] | Screened Interval / [Screened Elevation] | Total Depth (Feet BGS) / [Bottom Elevation] | February 20, 2014 Depth to Groundwater (feet BMP {Top of PVC}) / [Groundwater Elevation] | March 18, 2014 Depth to Groundwater (feet BMP {Top of PVC}) / [Groundwater Elevation] |
|-----------------|--------------------------------|---------------------|---------------------|---------------------|---------------------------|---------------------------------------|---|--|---|--|---|
|                 | (MP)                           | (to MP)             | (to MP)             | (to MP)             |                           |                                       |   |  |   |  |   |
| PZ-14-1         | 100.00                         | -3.31               |                     |                     | 0.65                      | 99.35                                 | 34.1 / [65.25]  | 34.5-39.5 / [64.85 - 59.85]              | 39.5 / [ 59.85]                             | 27.69 / [72.31]  | 26.29 / [73.71]   |
| PZ-14-2         | 91.67                          | -11.64              |                     |                     | 0.80                      | 90.87                                 | 24.6 / [66.27]  | 24.5-29.5 / [66.37 - 61.37]              | 30.26 / [60.61]                             | 20.21 / [71.46]  | 18.24 / [73.43]   |
| PZ-14-3         | 91.56                          | -11.75              |                     | 0.40                | 0.35                      | 91.21                                 | 24.4 / [66.81]  | 24.92 -29.92 / [66.29 - 61.29]           | 29.92 / [61.29]                             | 20.10 / [71.46]  | 18.30 / [73.26]   |
| PZ-14-4         | 91.50                          | -11.81              |                     |                     | 1.35                      | 90.15                                 | 23.9 / [66.25]  | 23.91-28.91 / [66.24 - 61.24]            | 28.91 / [61.24]                             | 19.88 / [71.62]  | 18.23 / [73.27]   |
| PZ-14-5         | 101.95                         | -1.36               |                     |                     | 2.17                      | 99.78                                 | 33.5 / [66.28]  | 32.9-37.9 / [66.88 - 61.88]              | 37.86 / [61.92]                             | 29.58 / [72.37]  | 28.32 / [73.63]   |
| PZ-14-6         | 100.84                         | -2.47               |                     |                     | 0.88                      | 99.96                                 | 33.85 / [66.11]   | 34.2-39.2 / [65.76 - 60.76]              | 39.20 / [60.76]                             | 28.61 / [72.23]  | 27.27 / [ 73.57]  |
| MW-3B           | 96.16                          | -7.15               | -8.19               |                     |                           |                                       |   |  |   |  |   |
| MH-5            | 102.56                         |                     | -1.80               |                     |                           |                                       |   |  |   |  |   |
| Canal           | 71.81                          |                     |                     | -19.35              |                           |                                       |   |  |   |  |   |

PZ-14-3  
Water  
Level  
(from MP)

|        |       |      |       |                    |
|--------|-------|------|-------|--------------------|
| Static | 18.33 | 1.66 | 1.577 | 18.41 95% recovery |
| 0      | 19.99 |      |       |                    |
| 0.5    | 19.73 |      |       |                    |
| 1      | 19.49 |      |       |                    |
| 1.5    | 19.26 |      |       |                    |
| 2      | 19.11 |      |       |                    |
| 2.5    | 18.97 |      |       |                    |
| 3      | 18.86 |      |       |                    |
| 3.5    | 18.77 |      |       |                    |
| 4      | 18.69 |      |       |                    |
| 4.5    | 18.63 |      |       |                    |
| 5      | 18.58 |      |       |                    |
| 5.5    | 18.54 |      |       |                    |
| 6      | 18.51 |      |       |                    |
| 6.5    | 18.48 |      |       |                    |
| 7      | 18.45 |      |       |                    |
| 7.5    | 18.43 |      |       |                    |
| 8      | 18.42 |      |       |                    |
| 8.5    | 18.41 |      |       |                    |
| 9      | 18.40 |      |       |                    |
| 9.5    | 18.39 |      |       |                    |
| 10     | 18.39 |      |       |                    |



PZ-14-3 Horizontal Hydraulic Conductivity Test

18.00

0

1

2

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4

5

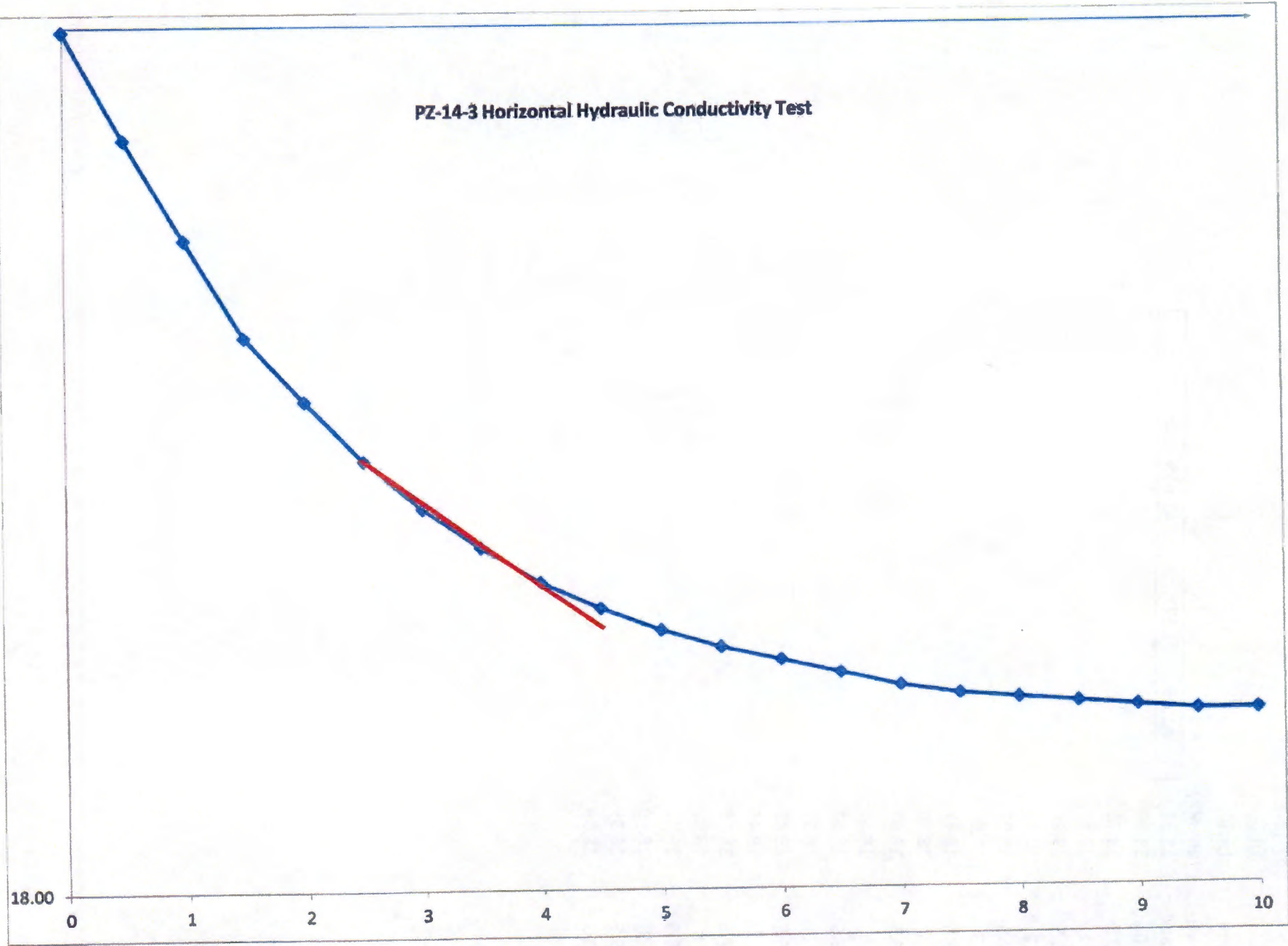
6

7

8

9

10



PZ-14-5  
Water  
Level  
(from MP)

|        |        |      |       |                    |
|--------|--------|------|-------|--------------------|
| Static | 28.35  | 1.66 | 1.577 | 28.43 95% recovery |
| 0      | 30.01  |      |       |                    |
| 0.5    | 29.81  |      |       |                    |
| 1      | 29.70  |      |       |                    |
| 1.5    | 29.61  |      |       |                    |
| 2      | 29.53  |      |       |                    |
| 2.5    | 29.45  |      |       |                    |
| 3      | 29.375 |      |       |                    |
| 3.5    | 29.31  |      |       |                    |
| 4      | 29.25  |      |       |                    |
| 4.5    | 29.19  |      |       |                    |
| 5      | 29.13  |      |       |                    |
| 5.5    | 29.09  |      |       |                    |
| 6      | 29.03  |      |       |                    |
| 6.5    | 28.99  |      |       |                    |
| 7      | 28.95  |      |       |                    |
| 7.5    | 28.91  |      |       |                    |
| 8      | 28.87  |      |       |                    |
| 8.5    | 28.84  |      |       |                    |
| 9      | 28.81  |      |       |                    |
| 9.5    | 28.78  |      |       |                    |
| 10     | 28.75  |      |       |                    |
| 10.5   | 28.73  |      |       |                    |
| 11     | 28.71  |      |       |                    |
| 11.5   | 28.69  |      |       |                    |
| 12     | 28.67  |      |       |                    |
| 12.5   | 28.65  |      |       |                    |
| 13     | 28.63  |      |       |                    |
| 13.5   | 28.61  |      |       |                    |
| 14     | 28.60  |      |       |                    |
| 14.5   | 28.58  |      |       |                    |
| 15     | 28.57  |      |       |                    |
| 15.5   | 28.55  |      |       |                    |
| 16     | 28.54  |      |       |                    |
| 16.5   | 28.53  |      |       |                    |
| 17     | 28.52  |      |       |                    |
| 17.5   | 28.51  |      |       |                    |
| 18     | 28.50  |      |       |                    |
| 18.5   | 28.50  |      |       |                    |
| 19     | 28.49  |      |       |                    |
| 19.5   | 28.48  |      |       |                    |
| 20     | 28.47  |      |       |                    |
| 22     | 28.445 |      |       |                    |
| 23     | 28.44  |      |       |                    |
| 24     | 28.43  |      |       |                    |
| 25     | 28.42  |      |       |                    |

PZ-14-5 Horizontal Hydraulic Conductivity Test

28.10

0

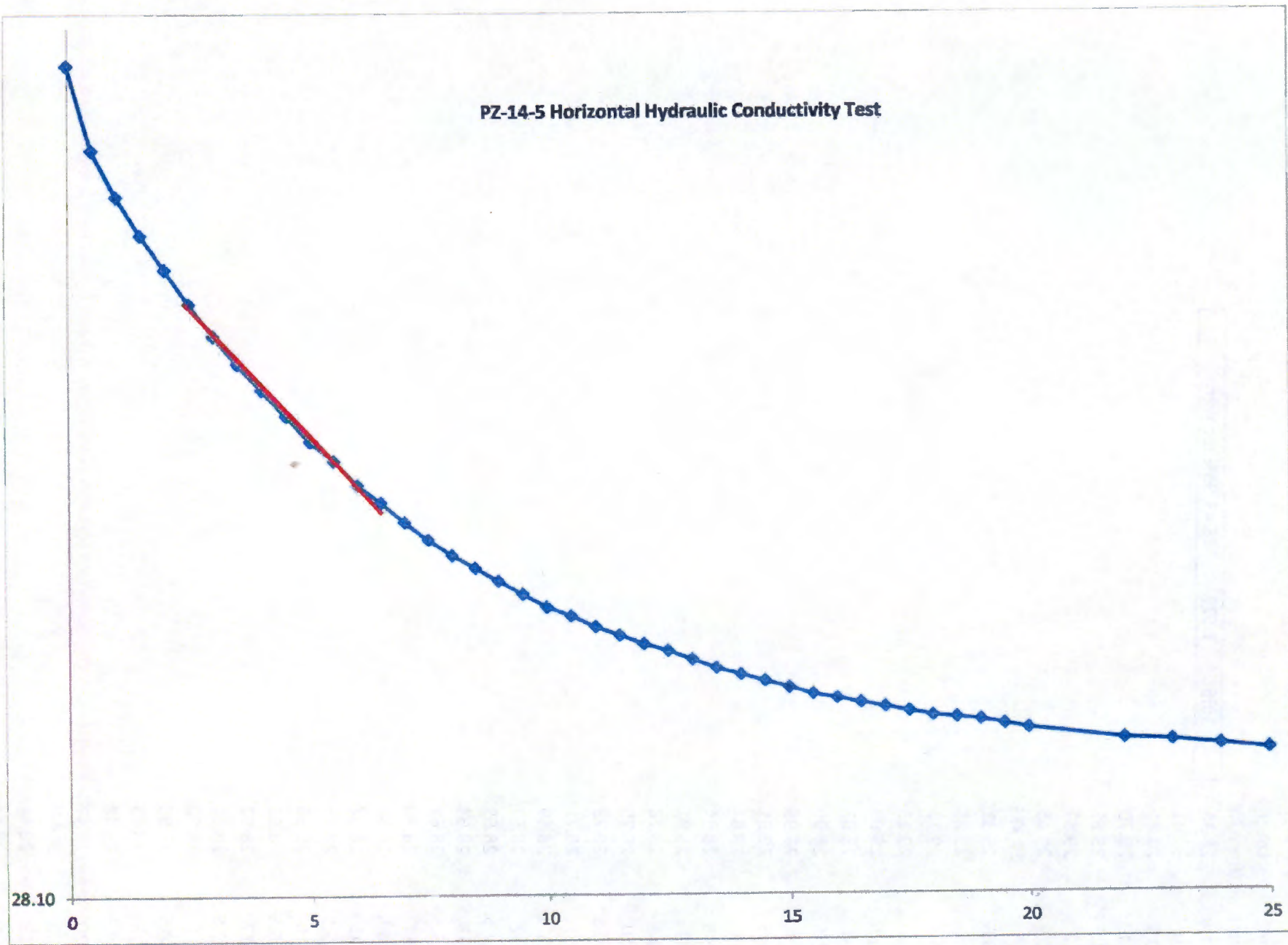
5

10

15

20

25





# Pumping Test Data (PZ-14-3)

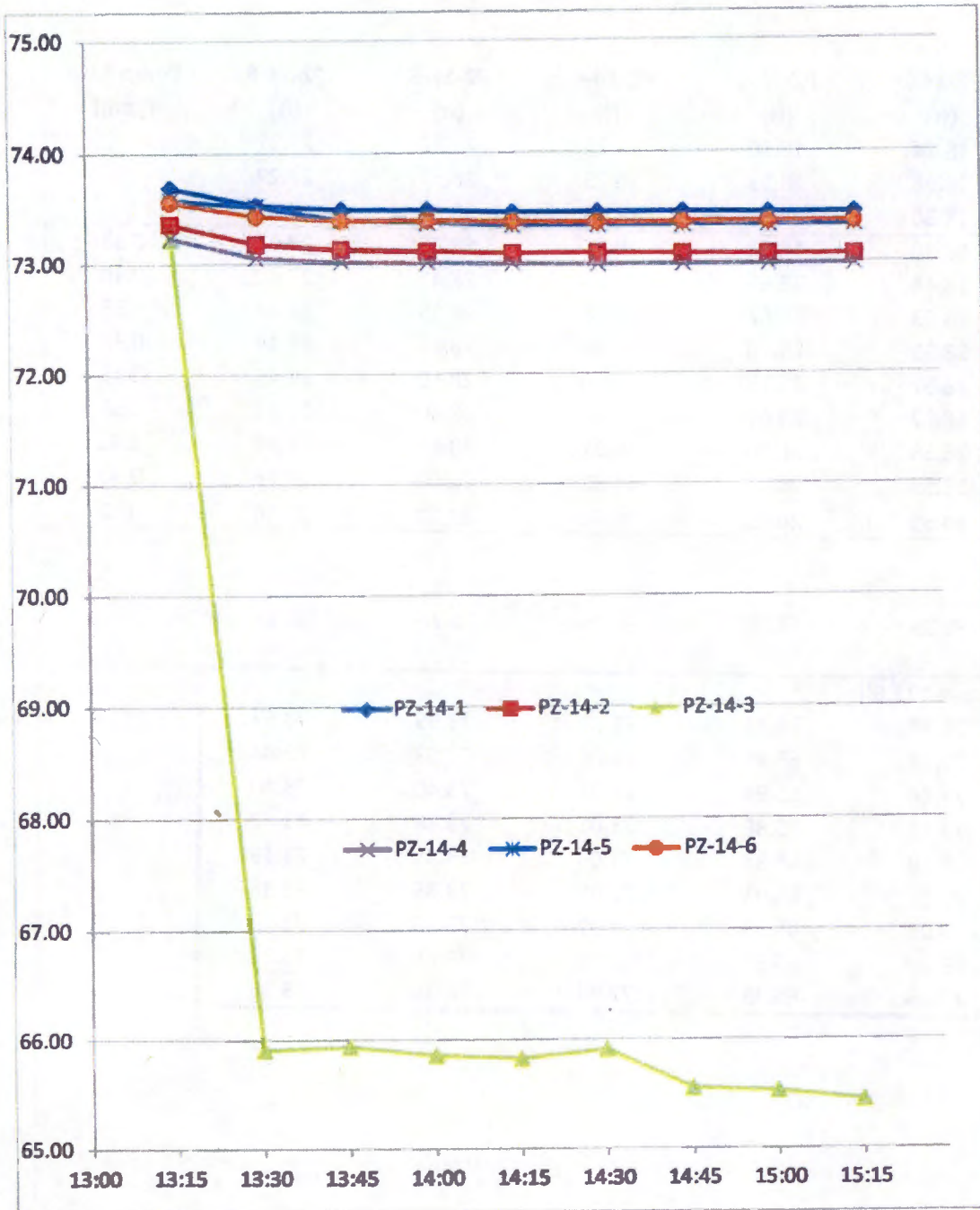
| Time  | PZ-14-1<br>(ft) | PZ-14-2<br>(ft) | PZ-14-3<br>(ft) | PZ-14-4<br>(ft) | PZ-14-5<br>(ft) | PZ-14-6<br>(ft) | Pump Rate<br>(gpm) |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------------|
| 9:30  | 26.29           | 18.24           | 18.30           | 18.23           | 28.32           | 27.27           |                    |
| 11:50 | 26.30           | 18.28           | 18.33           | 18.25           | 28.35           | 27.27           |                    |
| 13:10 | 26.30           | 18.30           | 18.33           | 18.26           | 28.36           | 27.27           |                    |
| 13:15 | 26.30           | 18.30           | 18.33           | 18.26           | 28.36           | 27.27           | 0.33               |
| 13:30 | 26.46           | 18.48           | 25.65           | 18.44           | 28.42           | 27.40           | 0.40               |
| 13:45 | 26.50           | 18.53           | 25.62           | 18.48           | 28.55           | 27.44           | 0.38               |
| 14:00 | 26.51           | 18.55           | 25.70           | 18.49           | 28.57           | 27.44           | 0.38               |
| 14:15 | 26.53           | 18.57           | 25.73           | 18.50           | 28.60           | 27.45           | 0.38               |
| 14:30 | 26.53           | 18.57           | 25.65           | 18.51           | 28.60           | 27.46           | 0.36               |
| 14:45 | 26.53           | 18.58           | 26.00           | 18.51           | 28.60           | 27.46           | 0.41               |
| 15:00 | 26.54           | 18.59           | 26.03           | 18.51           | 28.60           | 27.46           | 0.38               |
| 15:15 | 26.54           | 18.59           | 26.11           | 18.51           | 28.60           | 27.46           | 0.40               |

max delta      -0.24      -0.29      -7.78      -0.25      -0.24      -0.19

## Using water levels as elevations (Canal ~71.8'):

|       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 13:15 | 73.70 | 73.37 | 73.23 | 73.24 | 73.59 | 73.57 |
| 13:30 | 73.54 | 73.19 | 65.91 | 73.06 | 73.53 | 73.44 |
| 13:45 | 73.50 | 73.14 | 65.94 | 73.02 | 73.40 | 73.40 |
| 14:00 | 73.50 | 73.12 | 65.86 | 73.01 | 73.38 | 73.40 |
| 14:15 | 73.47 | 73.10 | 65.83 | 73.00 | 73.35 | 73.39 |
| 14:30 | 73.47 | 73.10 | 65.91 | 72.99 | 73.35 | 73.38 |
| 14:45 | 73.47 | 73.09 | 65.56 | 72.99 | 73.35 | 73.38 |
| 15:00 | 73.46 | 73.09 | 65.53 | 72.99 | 73.35 | 73.38 |
| 15:15 | 73.46 | 73.08 | 65.45 | 72.99 | 73.35 | 73.38 |

Pumping Test Data (PZ-14-3)



[illegible]



**APPENDIX H**

**OCTOBER 20, 2014, ORANGE COUNTY LANDFILL - CHEECHUNK  
CANAL / LANDFILL SEEP EVALUATION, PRE-CONSTRUCTION  
NOTIFICATION TO USACOE**



ORANGE COUNTY  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF ENVIRONMENTAL FACILITIES & SERVICES

---

Charles W. Lee, P.E.  
*Commissioner*

Peter S. Hammond  
*Deputy Commissioner*

Steven M. Neuhaus  
*County Executive*

P.O. Box 637, 2455-2459 Route 17M  
Goshen, New York 10924-0637  
[www.orangecountygov.com/efs](http://www.orangecountygov.com/efs)

Tel: (845) 291-2640 • Fax: (845) 291-2665

October 20, 2014

Department of the Army  
New York District, Corps of Engineers  
ATTN: Regulatory Branch  
26 Federal Plaza  
New York, New York 10278

Subject: Pre-Construction Notification for Nationwide Permit No. 38  
Canal Bank Stabilization  
Orange County, New York

Attached please find form 4345 serving as the Pre-Construction Notification (PCN) for a United States Army Corp of Engineers (USACOE) Nationwide Permit (NWP) 38 to disturb less than 1/10 acre of wetlands for stream bank stabilization of the Cheechunk Canal (Wallkill River) downhill from the closed Orange County Landfill located in the Town of Goshen, Orange County, New York (see attached figures).

Please contact me should you have any questions or comments.

Best regards,

Peter S. Hammond  
Orange County Department of Public Works  
Division of Environmental Facilities and Services

Attachments

Cc: Joseph Mahoney, Orange County  
Mark Millspaugh, Sterling Environmental



**U.S. ARMY CORPS OF ENGINEERS  
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT  
33 CFR 325. The proponent agency is CECW-CO-R.**

*Form Approved -  
OMB No. 0710-0003  
Expires: 31-AUGUST-2013*

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

**PRIVACY ACT STATEMENT**

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

**(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)**

|                    |                      |                  |                              |
|--------------------|----------------------|------------------|------------------------------|
| 1. APPLICATION NO. | 2. FIELD OFFICE CODE | 3. DATE RECEIVED | 4. DATE APPLICATION COMPLETE |
|--------------------|----------------------|------------------|------------------------------|

**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

|   |  |  |  |  |  |
|---|--|--|--|--|--|
| 5. APPLICANT'S NAME<br>First - Peter                      Middle - S.                      Last - Hammond<br>Company - Orange County Dept. of Public Works<br>E-mail Address - phammond@co.orange.ny.us |  |  | 8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)<br>First - Mark                      Middle - P.                      Last - Millsbaugh<br>Company - Sterling Environmental Engineering, P.C.<br>E-mail Address - mark.millsbaugh@sterlingenvironmental.com |  |  |
| 6. APPLICANT'S ADDRESS:<br>Address- 2455-2459 Route 17M, PO Box 637<br>City - Goshen                      State - NY                      Zip - 10924                      Country - USA                |  |  | 9. AGENT'S ADDRESS:<br>Address- 24 Wade Road<br>City - Latham                      State - NY                      Zip - 12110                      Country - USA  |  |  |
| 7. APPLICANT'S PHONE NOS. w/AREA CODE<br>a. Residence                      b. Business                      c. Fax<br>845-742-2852                      845-291-2641                      845-291-2665  |  |  | 10. AGENTS PHONE NOS. w/AREA CODE<br>a. Residence                      b. Business                      c. Fax<br>518-573-4796                      518-456-4900                      518-456-3532   |  |  |

**STATEMENT OF AUTHORIZATION**

11. I hereby authorize, Mark P. Millsbaugh, P.E. to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

\_\_\_\_\_  
SIGNATURE OF APPLICANT

10-20-14  
DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

|  |  |   |
|--|--|---|
| 12. PROJECT NAME OR TITLE (see instructions)<br>Canal Bank Stabilization   |  |   |
| 13. NAME OF WATERBODY, IF KNOWN (if applicable)<br>Cheechunk Canal (AKA Wallkill River)  |  | 14. PROJECT STREET ADDRESS (if applicable)<br>Address 21 Training Center Lane     |
| 15. LOCATION OF PROJECT<br>Latitude: +N 41.38875                      Longitude: +W 74.40061   |  | City - New Hampton                      State- NY                      Zip- 10958 |
| 16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)<br>State Tax Parcel ID 16-1-2.22                      Municipality Orange County, Town of Goshen<br>Section - 16                      Township -                      Town of Goshen                      Range - |  |   |



17. DIRECTIONS TO THE SITE

18. Nature of Activity (Description of project, include all features)

Filter fabric and up to three (3) feet of rip rap fill in certain locations. Fabric will be placed by hand, and stone will be placed by a crane from higher up on the canal bank.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of this project is to stabilize the canal banks at select locations where sloughing is occurring.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Stabilization and erosion control.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

| Type<br>Amount in Cubic Yards      | Type<br>Amount in Cubic Yards | Type<br>Amount in Cubic Yards |
|------------------------------------|-------------------------------|-------------------------------|
| Rip rap - Less than 10 Cubic Yards |                               |                               |

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres Less than 4,356 Square Feet (Less than 1/10 Acre)  
or  
Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Impacts to waters of the United States will be minimized by hand installation of filter fabric, and careful placement of rip rap by crane from above. Excavation of shoreline is not proposed.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- NOTE - CHEECHUNK CANAL IS OWNED BY STATE OF NEW YORK.

City - State - Zip -

b. Address-

City - State - Zip -

c. Address-

City - State - Zip -

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

| AGENCY | TYPE APPROVAL* | IDENTIFICATION<br>NUMBER | DATE APPLIED | DATE APPROVED | DATE DENIED |
|--------|----------------|--------------------------|--------------|---------------|-------------|
| NYSDEC | Landfill SMP   |                          | June 2014    |               |             |
|        |                |                          |              |               |             |
|        |                |                          |              |               |             |
|        |                |                          |              |               |             |

\* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

DATE

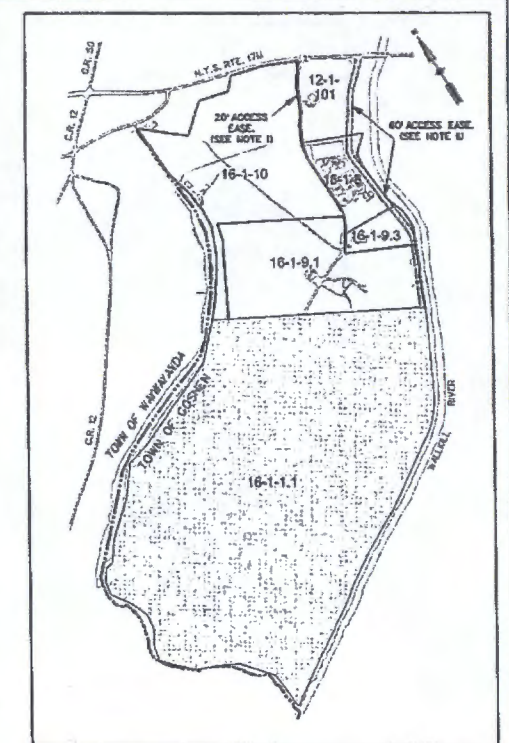
SIGNATURE OF AGENT

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.





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|                                     |          |      |
|-------------------------------------|----------|------|
| NO.                                 | REVISION | DATE |
| ORANGE COUNTY DEPT. OF PUBLIC WORKS |          |      |
| MINOR SUBDIVISION                   |          |      |
| ORANGE COUNTY LANDFILL              |          |      |
| OVERALL PLAN                        |          |      |
| TOWN OF GOSHEN                      |          |      |

| PROJECT NUMBER | DESIGNED BY DATE | SCALE       | T = 200' |
|----------------|------------------|-------------|----------|
| -              | DRAWN BY DATE    | SHEET NO.   | 1 OF 3   |
| BW ✓ BY DATE   | CHECKED BY DATE  | DRAWING No. |          |

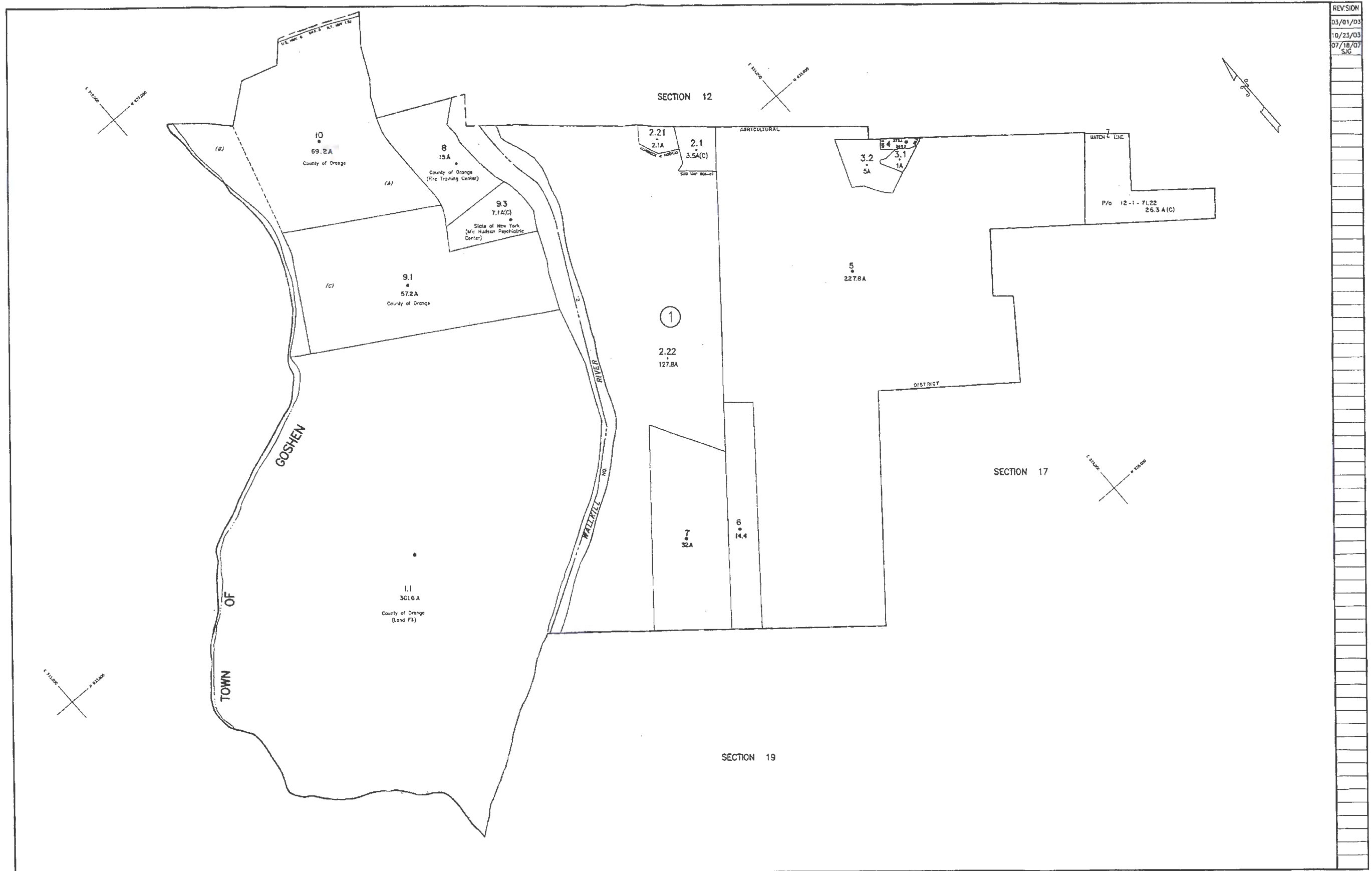
UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY  
MAP BEARING A LICENSED SURVEYOR'S SEAL IS A  
VIOLATION OF SECTION 7209, SUBDIVISION 2 OF THE  
NEW YORK STATE EDUCATION LAW.

THOMAS J. BARRY, U.S.  
N.Y.S. LICENSE No. 050421

DATE: \_\_\_\_\_



| REVISION |
|----------|
| 03/01/03 |
| 10/23/03 |
| 07/18/07 |
| SJG      |



| LEGEND                |                         |   |                                      |
|-----------------------|-------------------------|---|--------------------------------------|
| STATE OR COUNTY LINE  | FILED PLAN LOT LINE     | TAX MAP BLOCK NO. (A)                       | FILED PLAN BLOCK NO. (B) (C)         |
| CITY TOWN OR VILLAGE  | EASEMENT LINE           | TAX MAP PARCEL NO. 32                       | FILED PLAN LOT NO. (3) or (P/a 2)    |
| BLOCK OR SECTION UNIT | WATCH LINE              | AREAS (DEED) 11.1A or (CALCULATED) 11.5A(C) | STATE HIGHWAYS N.Y. STATE HWY NO. 17 |
| SPECIAL DISTRICT LINE | WATER FEATURES          | DIMENSIONS (DEED) 68 or (CALCULATED) 758    | COUNTY HIGHWAYS COUNTY ROAD NO. 4    |
| PROPERTY LINE         | GRID COORDINATE/CONTROL | PORTION OF TAX LOT P/a 1-1-1                | TOWN ROADS TOWN ROAD 1               |

**ORANGE COUNTY-NEW YORK**

Prepared by  
Orange County Tax Map Department  
124 Main Street, Goshen, N.Y. 10924  
Phone 845.291.2488 Fax 845.291.2499

NOTICE  
MAINTENANCE, ALTERATION, SALE OR DISTRIBUTION  
OF ANY PORTION OF THE ORANGE COUNTY TAX  
MAP IS PROHIBITED WITHOUT WRITTEN PERMISSION  
OF THE O.C. REAL PROPERTY TAX SERVICE AGENCY

NOT TO BE REPRODUCED FOR COMMERCIAL  
PURPOSES FOR TAX PURPOSES ONLY  
NOT TO BE USED FOR CONVEYANCE

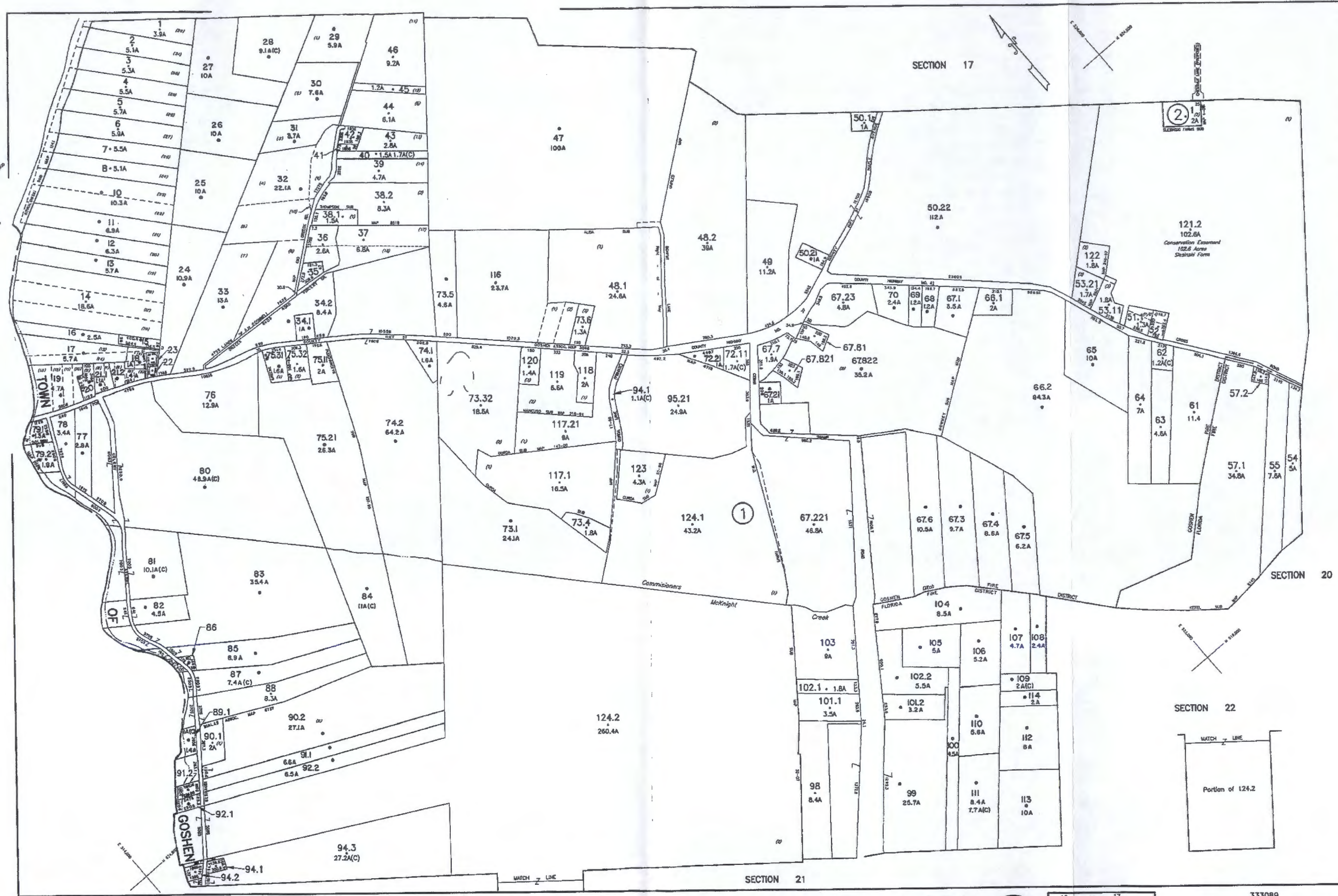
333089  
**TOWN OF GOSHEN**

Scale 1" = 400' Section No. 16

ADJOINING REFERENCE

TAX YEAR 2014

| REVISION |
|----------|
| 03/01/03 |
| 10/23/03 |
| 05/06/04 |
| 02/23/06 |
| 03/01/07 |
| 01/30/08 |
| 10/28/09 |
| 03/01/10 |
| 08/15/10 |
| 08/17/11 |
| 10/05/11 |
| 12/05/12 |
| 02/27/14 |



| LEGEND                                       |                                      |
|--|--------------------------------------|
| STATE OR COUNTY LINE                         | FILED PLAN LOT LINE                  |
| CITY TOWN OR VILLAGE                         | EASEMENT LINE                        |
| BLOCK OR SECTION LINE                        | MATCH LINE                           |
| SPECIAL DISTRICT LINE                        | WATER FEATURES                       |
| PROPERTY LINE                                | GRID COORDINATE/CENTROID             |
| TAX MAP BLOCK NO.                            | FILED PLAN BLOCK NO.                 |
| TAX MAP PARCEL NO.                           | FILED PLAN LOT NO.                   |
| AREAS (DEEDS 11.1A or (CALCULATED) 11.9A(C)) | STATE HIGHWAYS N.Y. STATE HWY NO. 17 |
| DIMENSIONS (DEEDS) OR (CALCULATED) 755       | COUNTY HIGHWAYS COUNTY ROAD NO. 4    |
| PORTRION OF TAX LOT P/a 1-1-1                | TOWN ROADS TOWN ROAD 1               |

# ORANGE COUNTY-NEW YORK

NOTICE  
 MAINTENANCE, ALTERATION, SALE OR DISTRIBUTION  
 OF ANY PORTION OF THE ORANGE COUNTY TAX  
 MAP IS PROHIBITED WITHOUT WRITTEN PERMISSION  
 OF THE O.C. REAL PROPERTY TAX SERVICE AGENCY

Prepared by  
 Orange County Tax Department  
 124 Main Street, Goshen, N.Y. 10924  
 Phone 845.291.2496 Fax 845.291.2499





**APPENDIX I**

**JUNE 12, 2014 ANALYTICAL RESULTS**



# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-61861-1

Client Project/Site: Orange County Landfill

Sampling Event: Groundwater Baseline

For:

Sterling Environmental Engineering PC

24 Wade Road

Latham, New York 12110

Attn: Stephen Burton



Authorized for release by:

6/27/2014 2:51:39 PM

Lisa Shaffer, Project Manager II

(716)504-9816

[lisa.shaffer@testamericainc.com](mailto:lisa.shaffer@testamericainc.com)

### LINKS

Review your project  
results through

**TotalAccess**

Have a Question?

 **Ask  
The  
Expert**

Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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## Definitions/Glossary

Client: Sterling Environmental Engineering PC

TestAmerica Job ID: 480-61861-1

Project/Site: Orange County Landfill

### Qualifiers

#### GC/MS VOA

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

#### Metals

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

#### General Chemistry

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| b         | Result Detected in the Unseeded Control blank (USB).   |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| $\alpha$       | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CNF            | Contains no Free Liquid   |
| DER            | Duplicate error ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision level concentration  |
| MA             | Minimum detectable activity   |
| EDL            | Estimated Detection Limit   |
| MDC            | Minimum detectable concentration  |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| NC             | Not Calculated  |
| ND             | Not detected at the reporting limit (or MDL or EDL if shown)  |
| PQL            | Practical Quantitation Limit  |
| QC             | Quality Control   |
| RER            | Relative error ratio  |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |



## Case Narrative

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Job ID: 480-61861-1**

**Laboratory: TestAmerica Buffalo**

### Narrative

Job Narrative  
480-61861-1

### Comments

No additional comments.

### Receipt

The samples were received on 6/13/2014 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 3.0° C, 3.2° C and 3.5° C.

### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### HPLC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Metals

Method(s) 6010C: The method blank for batch 480-187751 contained total boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples GW-1 (480-61861-7), GW-2 (480-61861-8), GW-3 (480-61861-6), GW-A (480-61861-2), GW-B (480-61861-3), SW-01 (480-61861-5), SW-02 (480-61861-4) was not performed.

Method(s) 6010C: The method blank for batch 480-187896 contained dissolved zinc above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples GW-1 (480-61861-7), GW-2 (480-61861-8), GW-3 (480-61861-6), GW-A (480-61861-2), GW-B (480-61861-3), SW-01 (480-61861-5), SW-02 (480-61861-4) was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### General Chemistry

Method(s) SM 2120B: The sample was filtered prior to analysis, therefore the analytical result must be reported as true color. GW-2 (480-61861-8), GW-3 (480-61861-6), GW-B (480-61861-3)

Method(s) 353.2: The method blank for batch 187689 contained nitrite above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. SW-02 (480-61861-4)

Method(s) SM 5210B: The USB dilution water D.O. depletion was greater than 0.2 mg/L but less than the reporting limit of 2.0 mg/L. The associated sample results in batch 187695 are reported. (USB 480-187695/1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: GW-A**

**Lab Sample ID: 480-61861-2**

| Analyte                 | Result | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D | Method   | Prep Type |
|-------------------------|--------|-----------|--------|---------|-------------|-----|-----|---|----------|-----------|
| Aluminum                | 0.37   |           | 0.20   | 0.060   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Barium                  | 0.021  |           | 0.0020 | 0.00070 | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Boron                   | 0.023  | B         | 0.020  | 0.0040  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Calcium                 | 49     |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Iron                    | 0.53   |           | 0.050  | 0.019   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Magnesium               | 8.8    |           | 0.20   | 0.043   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Manganese               | 0.063  |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Potassium               | 1.8    |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Sodium                  | 24     |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Zinc                    | 0.0029 | J         | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Barium                  | 0.14   |           | 0.0020 | 0.00070 | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Boron                   | 0.022  |           | 0.020  | 0.0040  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Calcium                 | 46     |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Chromium                | 0.0031 | J         | 0.0040 | 0.0010  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Copper                  | 0.0017 | J         | 0.010  | 0.0016  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Iron                    | 0.099  |           | 0.050  | 0.019   | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Magnesium               | 8.4    |           | 0.20   | 0.043   | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Manganese               | 0.038  |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Nickel                  | 0.0013 | J         | 0.010  | 0.0013  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Potassium               | 1.6    |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Sodium                  | 25     |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Zinc                    | 0.0042 | J B       | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Chloride                | 44     |           | 0.50   | 0.28    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                 | 17     |           | 2.0    | 0.35    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total       | 130    |           | 50     | 20      | mg/L        | 5   |     |   | 310.2    | Total/NA  |
| Ammonia                 | 0.016  | J         | 0.020  | 0.0090  | mg/L        | 1   |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen | 0.41   |           | 0.20   | 0.15    | mg/L        | 1   |     |   | 351.2    | Total/NA  |
| Nitrate as N            | 0.45   |           | 0.050  | 0.020   | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand  | 24     |           | 10     | 5.0     | mg/L        | 1   |     |   | 410.4    | Total/NA  |
| Total Organic Carbon    | 6.9    |           | 1.0    | 0.43    | mg/L        | 1   |     |   | 9060A    | Total/NA  |
| Hardness                | 160    |           | 4.0    | 1.1     | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids  | 280    |           | 10     | 4.0     | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Analyte                 | Result | Qualifier | RL     | RL      | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity               | 12     |           | 1.0    | 1.0     | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                   | 60     |           | 5.0    | 5.0     | Color Units | 1   |     |   | SM 2120B | Total/NA  |

**Client Sample ID: GW-B**

**Lab Sample ID: 480-61861-3**

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method | Prep Type |
|-----------|---------|-----------|--------|---------|------|-----|-----|---|--------|-----------|
| Aluminum  | 6.3     |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Arsenic   | 0.0058  | J         | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Barium    | 0.074   |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Beryllium | 0.00045 | J         | 0.0020 | 0.00030 | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Boron     | 0.027   | B         | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Calcium   | 76      |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Chromium  | 0.0078  |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Copper    | 0.012   |           | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Iron      | 8.0     |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Lead      | 0.0070  | J         | 0.010  | 0.0030  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Magnesium | 16      |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C  | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: GW-B (Continued)**

**Lab Sample ID: 480-61861-3**

| Analyte                   | Result | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D | Method   | Prep Type |
|---------------------------|--------|-----------|--------|---------|-------------|-----|-----|---|----------|-----------|
| Manganese                 | 1.0    |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Nickel                    | 0.018  |           | 0.010  | 0.0013  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Potassium                 | 4.4    |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Sodium                    | 3.2    |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Zinc                      | 0.028  |           | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Aluminum                  | 0.14   | J         | 0.20   | 0.060   | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Barium                    | 0.27   |           | 0.0020 | 0.00070 | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Boron                     | 0.020  |           | 0.020  | 0.0040  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Calcium                   | 72     |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Chromium                  | 0.0038 | J         | 0.0040 | 0.0010  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Cobalt                    | 0.0014 | J         | 0.0040 | 0.00063 | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Copper                    | 0.0054 | J         | 0.010  | 0.0016  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Iron                      | 0.22   |           | 0.050  | 0.019   | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Magnesium                 | 15     |           | 0.20   | 0.043   | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Manganese                 | 0.44   |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Nickel                    | 0.010  |           | 0.010  | 0.0013  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Potassium                 | 2.2    |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Sodium                    | 4.1    |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Zinc                      | 0.0055 | J B       | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Chloride                  | 0.82   |           | 0.50   | 0.28    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                   | 23     |           | 2.0    | 0.35    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total         | 260    |           | 100    | 40      | mg/L        | 10  |     |   | 310.2    | Total/NA  |
| Ammonia                   | 0.14   |           | 0.020  | 0.0090  | mg/L        | 1   |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen   | 2.7    |           | 0.20   | 0.15    | mg/L        | 1   |     |   | 351.2    | Total/NA  |
| Nitrate as N              | 0.31   |           | 0.050  | 0.020   | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand    | 110    |           | 10     | 5.0     | mg/L        | 1   |     |   | 410.4    | Total/NA  |
| Total Organic Carbon      | 46     |           | 1.0    | 0.43    | mg/L        | 1   |     |   | 9060A    | Total/NA  |
| Hardness                  | 250    |           | 10     | 2.6     | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids    | 420    |           | 10     | 4.0     | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand | 2.2    | b         | 2.0    | 2.0     | mg/L        | 1   |     |   | SM 5210B | Total/NA  |
| Analyte                   | Result | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity                 | 160    |           | 1.0    | 1.0     | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                     | 140    |           | 10     | 10      | Color Units | 2   |     |   | SM 2120B | Total/NA  |

**Client Sample ID: SW-02**

**Lab Sample ID: 480-61861-4**

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method | Prep Type |
|-----------|--------|-----------|--------|---------|------|-----|-----|---|--------|-----------|
| Aluminum  | 0.55   |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Barium    | 0.024  |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Boron     | 0.023  | B         | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Calcium   | 44     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Copper    | 0.0017 | J         | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Iron      | 0.77   |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Magnesium | 15     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Manganese | 0.11   |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Potassium | 1.8    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Sodium    | 32     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Zinc      | 0.0055 | J         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Barium    | 0.021  |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C  | Dissolved |
| Boron     | 0.021  |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C  | Dissolved |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: SW-02 (Continued)**

**Lab Sample ID: 480-61861-4**

| Analyte                 | Result | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D | Method   | Prep Type |
|-------------------------|--------|-----------|--------|---------|-------------|-----|-----|---|----------|-----------|
| Calcium                 | 42     |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Chromium                | 0.0019 | J         | 0.0040 | 0.0010  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Copper                  | 0.0016 | J         | 0.010  | 0.0016  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Iron                    | 0.026  | J         | 0.050  | 0.019   | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Magnesium               | 15     |           | 0.20   | 0.043   | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Manganese               | 0.0062 |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Potassium               | 1.5    |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Selenium                | 0.0090 | J         | 0.025  | 0.0087  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Sodium                  | 32     |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Zinc                    | 0.0028 | J B       | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010C    | Dissolved |
| Chloride                | 61     |           | 0.50   | 0.28    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                 | 14     |           | 2.0    | 0.35    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total       | 140    |           | 50     | 20      | mg/L        | 5   |     |   | 310.2    | Total/NA  |
| Ammonia                 | 0.053  |           | 0.020  | 0.0090  | mg/L        | 1   |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen | 0.44   |           | 0.20   | 0.15    | mg/L        | 1   |     |   | 351.2    | Total/NA  |
| Nitrate as N            | 0.93   |           | 0.050  | 0.020   | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand  | 9.0    | J         | 10     | 5.0     | mg/L        | 1   |     |   | 410.4    | Total/NA  |
| Total Organic Carbon    | 4.4    |           | 1.0    | 0.43    | mg/L        | 1   |     |   | 9060A    | Total/NA  |
| Hardness                | 180    |           | 4.0    | 1.1     | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids  | 310    |           | 10     | 4.0     | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Analyte                 | Result | Qualifier | RL     | RL      | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity               | 17     |           | 1.0    | 1.0     | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                   | 40     |           | 5.0    | 5.0     | Color Units | 1   |     |   | SM 2120B | Total/NA  |

**Client Sample ID: SW-01**

**Lab Sample ID: 480-61861-5**

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method | Prep Type |
|-----------|--------|-----------|--------|---------|------|-----|-----|---|--------|-----------|
| Aluminum  | 0.57   |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Barium    | 0.024  |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Boron     | 0.022  | B         | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Calcium   | 43     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Iron      | 0.81   |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Magnesium | 15     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Manganese | 0.11   |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Nickel    | 0.0015 | J         | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Potassium | 1.8    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Sodium    | 32     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Zinc      | 0.0060 | J         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Barium    | 0.022  |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C  | Dissolved |
| Boron     | 0.022  |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C  | Dissolved |
| Calcium   | 42     |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C  | Dissolved |
| Chromium  | 0.0015 | J         | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C  | Dissolved |
| Iron      | 0.095  |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C  | Dissolved |
| Magnesium | 16     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C  | Dissolved |
| Manganese | 0.0059 |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C  | Dissolved |
| Potassium | 1.6    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C  | Dissolved |
| Sodium    | 33     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C  | Dissolved |
| Zinc      | 0.0047 | J B       | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C  | Dissolved |
| Chloride  | 61     |           | 0.50   | 0.28    | mg/L | 1   |     |   | 300.0  | Total/NA  |
| Sulfate   | 14     |           | 2.0    | 0.35    | mg/L | 1   |     |   | 300.0  | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Client Sample ID: SW-01 (Continued)

Lab Sample ID: 480-61861-5

| Analyte                 | Result | Qualifier | RL    | MDL    | Unit        | Dil | Fac | D | Method   | Prep Type |
|-------------------------|--------|-----------|-------|--------|-------------|-----|-----|---|----------|-----------|
| Alkalinity, Total       | 130    |           | 50    | 20     | mg/L        | 5   |     |   | 310.2    | Total/NA  |
| Ammonia                 | 0.053  |           | 0.020 | 0.0090 | mg/L        | 1   |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen | 0.41   |           | 0.20  | 0.15   | mg/L        | 1   |     |   | 351.2    | Total/NA  |
| Nitrate as N            | 0.91   |           | 0.050 | 0.020  | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand  | 10     |           | 10    | 5.0    | mg/L        | 1   |     |   | 410.4    | Total/NA  |
| Total Organic Carbon    | 4.4    |           | 1.0   | 0.43   | mg/L        | 1   |     |   | 9060A    | Total/NA  |
| Hardness                | 180    |           | 4.0   | 1.1    | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids  | 310    |           | 10    | 4.0    | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Analyte                 | Result | Qualifier | RL    | RL     | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity               | 16     |           | 1.0   | 1.0    | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                   | 35     |           | 5.0   | 5.0    | Color Units | 1   |     |   | SM 2120B | Total/NA  |

### Client Sample ID: GW-3

Lab Sample ID: 480-61861-6

| Analyte                   | Result | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method   | Prep Type |
|---------------------------|--------|-----------|--------|---------|------|-----|-----|---|----------|-----------|
| Aluminum                  | 0.21   |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Arsenic                   | 0.029  |           | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Barium                    | 0.49   |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Boron                     | 0.17   | B         | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Calcium                   | 150    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Iron                      | 13     |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Magnesium                 | 48     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Manganese                 | 1.4    |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Nickel                    | 0.0073 | J         | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Potassium                 | 8.0    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Sodium                    | 45     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Zinc                      | 0.0054 | J         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Arsenic                   | 0.010  | J         | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Barium                    | 0.43   |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Boron                     | 0.17   |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Calcium                   | 140    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chromium                  | 0.0018 | J         | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Cobalt                    | 0.0024 | J         | 0.0040 | 0.00063 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Magnesium                 | 48     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Manganese                 | 1.2    |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Nickel                    | 0.0064 | J         | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Potassium                 | 7.9    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Selenium                  | 0.0091 | J         | 0.025  | 0.0087  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Sodium                    | 45     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Zinc                      | 0.0041 | J B       | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chloride                  | 54     |           | 0.50   | 0.28    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                   | 67     |           | 2.0    | 0.35    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total         | 630    |           | 100    | 40      | mg/L | 10  |     |   | 310.2    | Total/NA  |
| Ammonia                   | 6.3    |           | 0.10   | 0.045   | mg/L | 5   |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen   | 6.8    |           | 0.40   | 0.30    | mg/L | 2   |     |   | 351.2    | Total/NA  |
| Chemical Oxygen Demand    | 21     |           | 10     | 5.0     | mg/L | 1   |     |   | 410.4    | Total/NA  |
| Total Organic Carbon      | 5.5    |           | 1.0    | 0.43    | mg/L | 1   |     |   | 9060A    | Total/NA  |
| Hardness                  | 600    |           | 20     | 5.3     | mg/L | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids    | 780    |           | 10     | 4.0     | mg/L | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand | 14     | b         | 2.0    | 2.0     | mg/L | 1   |     |   | SM 5210B | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-3 (Continued)

Lab Sample ID: 480-61861-6

| Analyte   | Result | Qualifier | RL  | RL  | Unit        | Dil | Fac | D | Method   | Prep Type |
|-----------|--------|-----------|-----|-----|-------------|-----|-----|---|----------|-----------|
| Turbidity | 150    |           | 1.0 | 1.0 | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color     | 5.0    |           | 5.0 | 5.0 | Color Units | 1   |     |   | SM 2120B | Total/NA  |

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Client Sample ID: GW-1

Lab Sample ID: 480-61861-7

| Analyte                 | Result  | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D  | Method   | Prep Type |
|-------------------------|---------|-----------|--------|---------|-------------|-----|-----|----|----------|-----------|
| Aluminum                | 0.60    |           | 0.20   | 0.060   | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Arsenic                 | 0.12    |           | 0.015  | 0.0056  | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Barium                  | 1.2     |           | 0.0020 | 0.00070 | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Boron                   | 0.27    | B         | 0.020  | 0.0040  | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Cadmium                 | 0.00094 | J         | 0.0020 | 0.00050 | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Calcium                 | 92      |           | 0.50   | 0.10    | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Iron                    | 11      |           | 0.050  | 0.019   | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Magnesium               | 57      |           | 0.20   | 0.043   | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Manganese               | 0.28    |           | 0.0030 | 0.00040 | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Nickel                  | 0.013   |           | 0.010  | 0.0013  | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Potassium               | 19      |           | 0.50   | 0.10    | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Sodium                  | 65      |           | 1.0    | 0.32    | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Zinc                    | 0.012   |           | 0.010  | 0.0015  | mg/L        |     |     | 1  | 6010C    | Total/NA  |
| Arsenic                 | 0.037   |           | 0.015  | 0.0056  | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Barium                  | 1.1     |           | 0.0020 | 0.00070 | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Boron                   | 0.28    |           | 0.020  | 0.0040  | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Calcium                 | 89      |           | 0.50   | 0.10    | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Chromium                | 0.0019  | J         | 0.0040 | 0.0010  | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Cobalt                  | 0.00063 | J         | 0.0040 | 0.00063 | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Iron                    | 0.019   | J         | 0.050  | 0.019   | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Lead                    | 0.0038  | J         | 0.010  | 0.0030  | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Magnesium               | 60      |           | 0.20   | 0.043   | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Manganese               | 0.23    |           | 0.0030 | 0.00040 | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Nickel                  | 0.012   |           | 0.010  | 0.0013  | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Potassium               | 19      |           | 0.50   | 0.10    | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Sodium                  | 65      |           | 1.0    | 0.32    | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Zinc                    | 0.0057  | J B       | 0.010  | 0.0015  | mg/L        |     |     | 1  | 6010C    | Dissolved |
| Chloride                | 73      |           | 0.50   | 0.28    | mg/L        |     |     | 1  | 300.0    | Total/NA  |
| Sulfate                 | 4.7     |           | 2.0    | 0.35    | mg/L        |     |     | 1  | 300.0    | Total/NA  |
| Alkalinity, Total       | 560     |           | 100    | 40      | mg/L        |     |     | 10 | 310.2    | Total/NA  |
| Ammonia                 | 18      |           | 0.20   | 0.090   | mg/L        |     |     | 10 | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen | 16      |           | 2.0    | 1.5     | mg/L        |     |     | 10 | 351.2    | Total/NA  |
| Nitrate as N            | 0.076   |           | 0.050  | 0.020   | mg/L        |     |     | 1  | 353.2    | Total/NA  |
| Chemical Oxygen Demand  | 31      |           | 10     | 5.0     | mg/L        |     |     | 1  | 410.4    | Total/NA  |
| Total Organic Carbon    | 6.0     |           | 1.0    | 0.43    | mg/L        |     |     | 1  | 9060A    | Total/NA  |
| Hardness                | 490     |           | 4.0    | 1.1     | mg/L        |     |     | 1  | SM 2340C | Total/NA  |
| Total Dissolved Solids  | 690     |           | 10     | 4.0     | mg/L        |     |     | 1  | SM 2540C | Total/NA  |
| Analyte                 | Result  | Qualifier | RL     | RL      | Unit        | Dil | Fac | D  | Method   | Prep Type |
| Turbidity               | 320     |           | 1.0    | 1.0     | NTU         |     |     | 1  | 180.1    | Total/NA  |
| Color                   | 25      |           | 5.0    | 5.0     | Color Units |     |     | 1  | SM 2120B | Total/NA  |

Client Sample ID: GW-2

Lab Sample ID: 480-61861-8

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo



## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-2 (Continued)

Lab Sample ID: 480-61861-8

| Analyte                 | Result  | Qualifier | RL     | MDL     | Unit        | Dil Fac | D | Method   | Prep Type |
|-------------------------|---------|-----------|--------|---------|-------------|---------|---|----------|-----------|
| Aluminum                | 1.4     |           | 0.20   | 0.060   | mg/L        | 1       |   | 6010C    | Total/NA  |
| Arsenic                 | 0.086   |           | 0.015  | 0.0056  | mg/L        | 1       |   | 6010C    | Total/NA  |
| Barium                  | 0.38    |           | 0.0020 | 0.00070 | mg/L        | 1       |   | 6010C    | Total/NA  |
| Boron                   | 0.17    | B         | 0.020  | 0.0040  | mg/L        | 1       |   | 6010C    | Total/NA  |
| Cadmium                 | 0.00062 | J         | 0.0020 | 0.00050 | mg/L        | 1       |   | 6010C    | Total/NA  |
| Calcium                 | 120     |           | 0.50   | 0.10    | mg/L        | 1       |   | 6010C    | Total/NA  |
| Chromium                | 0.0020  | J         | 0.0040 | 0.0010  | mg/L        | 1       |   | 6010C    | Total/NA  |
| Copper                  | 0.0027  | J         | 0.010  | 0.0016  | mg/L        | 1       |   | 6010C    | Total/NA  |
| Iron                    | 5.3     |           | 0.050  | 0.019   | mg/L        | 1       |   | 6010C    | Total/NA  |
| Lead                    | 0.0042  | J         | 0.010  | 0.0030  | mg/L        | 1       |   | 6010C    | Total/NA  |
| Magnesium               | 44      |           | 0.20   | 0.043   | mg/L        | 1       |   | 6010C    | Total/NA  |
| Manganese               | 1.8     |           | 0.0030 | 0.00040 | mg/L        | 1       |   | 6010C    | Total/NA  |
| Nickel                  | 0.0091  | J         | 0.010  | 0.0013  | mg/L        | 1       |   | 6010C    | Total/NA  |
| Potassium               | 12      |           | 0.50   | 0.10    | mg/L        | 1       |   | 6010C    | Total/NA  |
| Sodium                  | 45      |           | 1.0    | 0.32    | mg/L        | 1       |   | 6010C    | Total/NA  |
| Zinc                    | 0.020   |           | 0.010  | 0.0015  | mg/L        | 1       |   | 6010C    | Total/NA  |
| Arsenic                 | 0.049   |           | 0.015  | 0.0056  | mg/L        | 1       |   | 6010C    | Dissolved |
| Barium                  | 0.40    |           | 0.0020 | 0.00070 | mg/L        | 1       |   | 6010C    | Dissolved |
| Boron                   | 0.18    |           | 0.020  | 0.0040  | mg/L        | 1       |   | 6010C    | Dissolved |
| Calcium                 | 120     |           | 0.50   | 0.10    | mg/L        | 1       |   | 6010C    | Dissolved |
| Chromium                | 0.0020  | J         | 0.0040 | 0.0010  | mg/L        | 1       |   | 6010C    | Dissolved |
| Cobalt                  | 0.0019  | J         | 0.0040 | 0.00063 | mg/L        | 1       |   | 6010C    | Dissolved |
| Magnesium               | 45      |           | 0.20   | 0.043   | mg/L        | 1       |   | 6010C    | Dissolved |
| Manganese               | 1.6     |           | 0.0030 | 0.00040 | mg/L        | 1       |   | 6010C    | Dissolved |
| Nickel                  | 0.0071  | J         | 0.010  | 0.0013  | mg/L        | 1       |   | 6010C    | Dissolved |
| Potassium               | 12      |           | 0.50   | 0.10    | mg/L        | 1       |   | 6010C    | Dissolved |
| Sodium                  | 47      |           | 1.0    | 0.32    | mg/L        | 1       |   | 6010C    | Dissolved |
| Zinc                    | 0.0088  | J B       | 0.010  | 0.0015  | mg/L        | 1       |   | 6010C    | Dissolved |
| Chloride                | 58      |           | 0.50   | 0.28    | mg/L        | 1       |   | 300.0    | Total/NA  |
| Sulfate                 | 11      |           | 2.0    | 0.35    | mg/L        | 1       |   | 300.0    | Total/NA  |
| Alkalinity, Total       | 610     |           | 100    | 40      | mg/L        | 10      |   | 310.2    | Total/NA  |
| Ammonia                 | 8.8     |           | 0.10   | 0.045   | mg/L        | 5       |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen | 8.6     |           | 1.0    | 0.75    | mg/L        | 5       |   | 351.2    | Total/NA  |
| Nitrate as N            | 0.57    |           | 0.050  | 0.020   | mg/L        | 1       |   | 353.2    | Total/NA  |
| Cyanide, Total          | 0.0053  | J         | 0.010  | 0.0050  | mg/L        | 1       |   | 9012B    | Total/NA  |
| Total Organic Carbon    | 5.9     |           | 1.0    | 0.43    | mg/L        | 1       |   | 9060A    | Total/NA  |
| Hardness                | 500     |           | 10     | 2.6     | mg/L        | 1       |   | SM 2340C | Total/NA  |
| Total Dissolved Solids  | 660     |           | 10     | 4.0     | mg/L        | 1       |   | SM 2540C | Total/NA  |
| Analyte                 | Result  | Qualifier | RL     | RL      | Unit        | Dil Fac | D | Method   | Prep Type |
| Turbidity               | 120     |           | 1.0    | 1.0     | NTU         | 1       |   | 180.1    | Total/NA  |
| Color                   | 15      |           | 5.0    | 5.0     | Color Units | 1       |   | SM 2120B | Total/NA  |

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-61861-9

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-A

Lab Sample ID: 480-61861-2

Date Collected: 06/12/14 14:00

Matrix: Water

Date Received: 06/13/14 09:00

### Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 05:07 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/18/14 05:07 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/18/14 05:07 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/18/14 05:07 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/18/14 05:07 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/18/14 05:07 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 05:07 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 05:07 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 05:07 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/18/14 05:07 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 05:07 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 100       |           | 72 - 130 |          | 06/18/14 05:07 | 1       |
| 4-Bromofluorobenzene (Surr)  | 95        |           | 69 - 121 |          | 06/18/14 05:07 | 1       |
| Toluene-d8 (Surr)            | 97        |           | 70 - 123 |          | 06/18/14 05:07 | 1       |

### Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.37   |           | 0.20   | 0.060   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Arsenic   | ND     |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Barium    | 0.021  |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Boron     | 0.023  | B         | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-A

Lab Sample ID: 480-61861-2

Date Collected: 06/12/14 14:00

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Calcium   | 49     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Chromium  | ND     |           | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Copper    | ND     |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Iron      | 0.53   |           | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Magnesium | 8.8    |           | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Manganese | 0.063  |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Nickel    | ND     |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Potassium | 1.8    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Sodium    | 24     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |
| Zinc      | 0.0029 | J         | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:05 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND     |           | 0.20   | 0.060   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Arsenic   | ND     |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Barium    | 0.14   |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Boron     | 0.022  |           | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Calcium   | 46     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Chromium  | 0.0031 | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Cobalt    | ND     |           | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Copper    | 0.0017 | J         | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Iron      | 0.099  |           | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Magnesium | 8.4    |           | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Manganese | 0.038  |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Nickel    | 0.0013 | J         | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Potassium | 1.6    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Sodium    | 25     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |
| Zinc      | 0.0042 | J B       | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:31 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/16/14 14:30 | 06/17/14 10:03 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:02 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-A

Lab Sample ID: 480-61861-2

Date Collected: 06/12/14 14:00

Matrix: Water

Date Received: 06/13/14 09:00

| General Chemistry            |        |           |       |        |             |   |                |                |         |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Chloride                     | 44     |           | 0.50  | 0.28   | mg/L        |   |                | 06/20/14 11:22 | 1       |
| Sulfate                      | 17     |           | 2.0   | 0.35   | mg/L        |   |                | 06/20/14 11:22 | 1       |
| Alkalinity, Total            | 130    |           | 50    | 20     | mg/L        |   |                | 06/20/14 12:52 | 5       |
| Ammonia                      | 0.016  | J         | 0.020 | 0.0090 | mg/L        |   |                | 06/17/14 12:47 | 1       |
| Total Kjeldahl Nitrogen      | 0.41   |           | 0.20  | 0.15   | mg/L        |   | 06/18/14 19:32 | 06/19/14 10:12 | 1       |
| Nitrate as N                 | 0.45   |           | 0.050 | 0.020  | mg/L        |   |                | 06/13/14 16:24 | 1       |
| Chemical Oxygen Demand       | 24     |           | 10    | 5.0    | mg/L        |   |                | 06/16/14 17:30 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 06/13/14 09:59 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/19/14 17:30 | 06/20/14 10:32 | 1       |
| Total Organic Carbon         | 6.9    |           | 1.0   | 0.43   | mg/L        |   |                | 06/17/14 13:22 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/23/14 17:30 | 06/24/14 11:20 | 1       |
| Hardness                     | 160    |           | 4.0   | 1.1    | mg/L        |   |                | 06/24/14 10:32 | 1       |
| Total Dissolved Solids       | 280    |           | 10    | 4.0    | mg/L        |   |                | 06/16/14 23:16 | 1       |
| Biochemical Oxygen Demand    | ND     |           | 2.0   | 2.0    | mg/L        |   |                | 06/13/14 17:39 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 12     |           | 1.0   | 1.0    | NTU         |   |                | 06/13/14 08:37 | 1       |
| Color                        | 60     |           | 5.0   | 5.0    | Color Units |   |                | 06/13/14 11:17 | 1       |

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-B

Lab Sample ID: 480-61861-3

Date Collected: 06/12/14 14:45

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 05:31 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/18/14 05:31 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/18/14 05:31 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/18/14 05:31 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/18/14 05:31 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/18/14 05:31 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 05:31 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 05:31 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 05:31 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/18/14 05:31 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 05:31 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 103       |           | 72 - 130 |          | 06/18/14 05:31 | 1       |
| 4-Bromofluorobenzene (Surr)  | 94        |           | 69 - 121 |          | 06/18/14 05:31 | 1       |
| Toluene-d8 (Surr)            | 98        |           | 70 - 123 |          | 06/18/14 05:31 | 1       |

## Method: 6010C - Metals (ICP)

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 6.3     |           | 0.20   | 0.060   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Antimony  | ND      |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Arsenic   | 0.0058  | J         | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Barium    | 0.074   |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Beryllium | 0.00045 | J         | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Boron     | 0.027   | B         | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-B

Lab Sample ID: 480-61861-3

Date Collected: 06/12/14 14:45

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Calcium   | 76     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Chromium  | 0.0078 |           | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Copper    | 0.012  |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Iron      | 8.0    |           | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Lead      | 0.0070 | J         | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Magnesium | 16     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Manganese | 1.0    |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Nickel    | 0.018  |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Potassium | 4.4    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Sodium    | 3.2    |           | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |
| Zinc      | 0.028  |           | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:10 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.14   | J         | 0.20   | 0.060   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Arsenic   | ND     |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Barium    | 0.27   |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Boron     | 0.020  |           | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Calcium   | 72     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Chromium  | 0.0038 | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Cobalt    | 0.0014 | J         | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Copper    | 0.0054 | J         | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Iron      | 0.22   |           | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Magnesium | 15     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Manganese | 0.44   |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Nickel    | 0.010  |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Potassium | 2.2    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Sodium    | 4.1    |           | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |
| Zinc      | 0.0055 | J B       | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:34 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/16/14 14:30 | 06/17/14 10:11 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:55 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: GW-B**

**Date Collected: 06/12/14 14:45**

**Date Received: 06/13/14 09:00**

**Lab Sample ID: 480-61861-3**

**Matrix: Water**

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 0.82   |           | 0.50  | 0.28   | mg/L        |   |                | 06/20/14 11:32 | 1       |
| Sulfate                      | 23     |           | 2.0   | 0.35   | mg/L        |   |                | 06/20/14 11:32 | 1       |
| Alkalinity, Total            | 260    |           | 100   | 40     | mg/L        |   |                | 06/20/14 12:30 | 10      |
| Ammonia                      | 0.14   |           | 0.020 | 0.0090 | mg/L        |   |                | 06/24/14 18:38 | 1       |
| Total Kjeldahl Nitrogen      | 2.7    |           | 0.20  | 0.15   | mg/L        |   | 06/18/14 19:32 | 06/19/14 10:12 | 1       |
| Nitrate as N                 | 0.31   |           | 0.050 | 0.020  | mg/L        |   |                | 06/13/14 16:27 | 1       |
| Chemical Oxygen Demand       | 110    |           | 10    | 5.0    | mg/L        |   |                | 06/16/14 17:30 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 06/13/14 10:03 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/20/14 15:55 | 06/23/14 08:24 | 1       |
| Total Organic Carbon         | 46     |           | 1.0   | 0.43   | mg/L        |   |                | 06/17/14 14:19 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/23/14 17:30 | 06/24/14 11:14 | 1       |
| Hardness                     | 250    |           | 10    | 2.6    | mg/L        |   |                | 06/24/14 10:29 | 1       |
| Total Dissolved Solids       | 420    |           | 10    | 4.0    | mg/L        |   |                | 06/16/14 23:18 | 1       |
| Biochemical Oxygen Demand    | 2.2    | b         | 2.0   | 2.0    | mg/L        |   |                | 06/13/14 17:39 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 160    |           | 1.0   | 1.0    | NTU         |   |                | 06/13/14 10:32 | 1       |
| Color                        | 140    |           | 10    | 10     | Color Units |   |                | 06/13/14 11:17 | 2       |

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: SW-02

Lab Sample ID: 480-61861-4

Date Collected: 06/12/14 14:30

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 05:55 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/18/14 05:55 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/18/14 05:55 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/18/14 05:55 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/18/14 05:55 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/18/14 05:55 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 05:55 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 05:55 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 05:55 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/18/14 05:55 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 05:55 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 72 - 130 |          | 06/18/14 05:55 | 1       |
| 4-Bromofluorobenzene (Surr)  | 96        |           | 69 - 121 |          | 06/18/14 05:55 | 1       |
| Toluene-d8 (Surr)            | 100       |           | 70 - 123 |          | 06/18/14 05:55 | 1       |

## Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.55   |           | 0.20   | 0.060   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Arsenic   | ND     |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Barium    | 0.024  |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Boron     | 0.023  | B         | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: SW-02

Lab Sample ID: 480-61861-4

Date Collected: 06/12/14 14:30

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Calcium   | 44     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Chromium  | ND     |           | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Copper    | 0.0017 | J         | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Iron      | 0.77   |           | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Magnesium | 15     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Manganese | 0.11   |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Nickel    | ND     |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Potassium | 1.8    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Sodium    | 32     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |
| Zinc      | 0.0055 | J         | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:08 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND     |           | 0.20   | 0.060   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Arsenic   | ND     |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Barium    | 0.021  |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Boron     | 0.021  |           | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Calcium   | 42     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Chromium  | 0.0019 | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Cobalt    | ND     |           | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Copper    | 0.0016 | J         | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Iron      | 0.026  | J         | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Magnesium | 15     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Manganese | 0.0062 |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Nickel    | ND     |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Potassium | 1.5    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Selenium  | 0.0090 | J         | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Sodium    | 32     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |
| Zinc      | 0.0028 | J B       | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:37 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/16/14 14:30 | 06/17/14 10:09 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:28 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: SW-02

Lab Sample ID: 480-61861-4

Date Collected: 06/12/14 14:30

Matrix: Water

Date Received: 06/13/14 09:00

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 61     |           | 0.50  | 0.28   | mg/L        |   |                | 06/20/14 11:43 | 1       |
| Sulfate                      | 14     |           | 2.0   | 0.35   | mg/L        |   |                | 06/20/14 11:43 | 1       |
| Alkalinity, Total            | 140    |           | 50    | 20     | mg/L        |   |                | 06/20/14 12:52 | 5       |
| Ammonia                      | 0.053  |           | 0.020 | 0.0090 | mg/L        |   |                | 06/17/14 12:54 | 1       |
| Total Kjeldahl Nitrogen      | 0.44   |           | 0.20  | 0.15   | mg/L        |   | 06/18/14 19:32 | 06/19/14 10:12 | 1       |
| Nitrate as N                 | 0.93   |           | 0.050 | 0.020  | mg/L        |   |                | 06/13/14 17:05 | 1       |
| Chemical Oxygen Demand       | 9.0    | J         | 10    | 5.0    | mg/L        |   |                | 06/16/14 17:30 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 06/13/14 10:45 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/20/14 15:55 | 06/23/14 08:25 | 1       |
| Total Organic Carbon         | 4.4    |           | 1.0   | 0.43   | mg/L        |   |                | 06/17/14 17:10 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/23/14 17:30 | 06/24/14 11:20 | 1       |
| Hardness                     | 180    |           | 4.0   | 1.1    | mg/L        |   |                | 06/24/14 10:39 | 1       |
| Total Dissolved Solids       | 310    |           | 10    | 4.0    | mg/L        |   |                | 06/16/14 23:20 | 1       |
| Biochemical Oxygen Demand    | ND     |           | 2.0   | 2.0    | mg/L        |   |                | 06/13/14 17:39 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 17     |           | 1.0   | 1.0    | NTU         |   |                | 06/13/14 10:32 | 1       |
| Color                        | 40     |           | 5.0   | 5.0    | Color Units |   |                | 06/13/14 11:17 | 1       |

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: SW-01**

**Lab Sample ID: 480-61861-5**

Date Collected: 06/12/14 15:12

Matrix: Water

Date Received: 06/13/14 09:00

### Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 06:19 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/18/14 06:19 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/18/14 06:19 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/18/14 06:19 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/18/14 06:19 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/18/14 06:19 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 06:19 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 06:19 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 06:19 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/18/14 06:19 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 06:19 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 72 - 130 |          | 06/18/14 06:19 | 1       |
| 4-Bromofluorobenzene (Surr)  | 97        |           | 69 - 121 |          | 06/18/14 06:19 | 1       |
| Toluene-d8 (Surr)            | 100       |           | 70 - 123 |          | 06/18/14 06:19 | 1       |

### Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.57   |           | 0.20   | 0.060   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Arsenic   | ND     |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Barium    | 0.024  |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Boron     | 0.022  | B         | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: SW-01

Lab Sample ID: 480-61861-5

Date Collected: 06/12/14 15:12

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Calcium   | 43     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Chromium  | ND     |           | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Copper    | ND     |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Iron      | 0.81   |           | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Magnesium | 15     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Manganese | 0.11   |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Nickel    | 0.0015 | J         | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Potassium | 1.8    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Sodium    | 32     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |
| Zinc      | 0.0060 | J         | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:13 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND     |           | 0.20   | 0.060   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Arsenic   | ND     |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Barium    | 0.022  |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Boron     | 0.022  |           | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Calcium   | 42     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Chromium  | 0.0015 | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Cobalt    | ND     |           | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Copper    | ND     |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Iron      | 0.095  |           | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Magnesium | 16     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Manganese | 0.0059 |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Nickel    | ND     |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Potassium | 1.6    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Sodium    | 33     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |
| Zinc      | 0.0047 | J B       | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:40 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/16/14 14:30 | 06/17/14 10:13 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:37 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: SW-01**

**Lab Sample ID: 480-61861-5**

Date Collected: 06/12/14 15:12

Matrix: Water

Date Received: 06/13/14 09:00

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 61     |           | 0.50  | 0.28   | mg/L        |   |                | 06/20/14 11:53 | 1       |
| Sulfate                      | 14     |           | 2.0   | 0.35   | mg/L        |   |                | 06/20/14 11:53 | 1       |
| Alkalinity, Total            | 130    |           | 50    | 20     | mg/L        |   |                | 06/20/14 12:51 | 5       |
| Ammonia                      | 0.053  |           | 0.020 | 0.0090 | mg/L        |   |                | 06/17/14 12:55 | 1       |
| Total Kjeldahl Nitrogen      | 0.41   |           | 0.20  | 0.15   | mg/L        |   | 06/18/14 19:32 | 06/19/14 10:12 | 1       |
| Nitrate as N                 | 0.91   |           | 0.050 | 0.020  | mg/L        |   |                | 06/13/14 16:30 | 1       |
| Chemical Oxygen Demand       | 10     |           | 10    | 5.0    | mg/L        |   |                | 06/16/14 17:30 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 06/13/14 10:08 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/19/14 17:30 | 06/20/14 10:33 | 1       |
| Total Organic Carbon         | 4.4    |           | 1.0   | 0.43   | mg/L        |   |                | 06/17/14 17:39 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/23/14 20:30 | 06/24/14 11:08 | 1       |
| Hardness                     | 180    |           | 4.0   | 1.1    | mg/L        |   |                | 06/24/14 10:57 | 1       |
| Total Dissolved Solids       | 310    |           | 10    | 4.0    | mg/L        |   |                | 06/16/14 23:22 | 1       |
| Biochemical Oxygen Demand    | ND     |           | 2.0   | 2.0    | mg/L        |   |                | 06/13/14 17:39 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 16     |           | 1.0   | 1.0    | NTU         |   |                | 06/13/14 10:32 | 1       |
| Color                        | 35     |           | 5.0   | 5.0    | Color Units |   |                | 06/13/14 11:17 | 1       |

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-3

Lab Sample ID: 480-61861-6

Date Collected: 06/12/14 16:40

Matrix: Water

Date Received: 06/13/14 09:00

### Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,1,1,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 06:43 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/18/14 06:43 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/18/14 06:43 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/18/14 06:43 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/18/14 06:43 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/18/14 06:43 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 06:43 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 06:43 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 06:43 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/18/14 06:43 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 06:43 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 103       |           | 72 - 130 |          | 06/18/14 06:43 | 1       |
| 4-Bromofluorobenzene (Surr)  | 94        |           | 69 - 121 |          | 06/18/14 06:43 | 1       |
| Toluene-d8 (Surr)            | 99        |           | 70 - 123 |          | 06/18/14 06:43 | 1       |

### Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.21   |           | 0.20   | 0.060   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Arsenic   | 0.029  |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Barium    | 0.49   |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Boron     | 0.17   | B         | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-3

Lab Sample ID: 480-61861-6

Date Collected: 06/12/14 16:40

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Calcium   | 150    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Chromium  | ND     |           | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Copper    | ND     |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Iron      | 13     |           | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Magnesium | 48     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Manganese | 1.4    |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Nickel    | 0.0073 | J         | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Potassium | 8.0    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Sodium    | 45     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |
| Zinc      | 0.0054 | J         | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:16 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND     |           | 0.20   | 0.060   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Arsenic   | 0.010  | J         | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Barium    | 0.43   |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Boron     | 0.17   |           | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Calcium   | 140    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Chromium  | 0.0018 | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Cobalt    | 0.0024 | J         | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Copper    | ND     |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Iron      | ND     |           | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Magnesium | 48     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Manganese | 1.2    |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Nickel    | 0.0064 | J         | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Potassium | 7.9    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Selenium  | 0.0091 | J         | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Sodium    | 45     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |
| Zinc      | 0.0041 | J B       | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:52 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/16/14 14:30 | 06/17/14 10:14 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:46 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-3

Lab Sample ID: 480-61861-6

Date Collected: 06/12/14 16:40

Matrix: Water

Date Received: 06/13/14 09:00

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 54     |           | 0.50  | 0.28   | mg/L        |   |                | 06/20/14 12:03 | 1       |
| Sulfate                      | 67     |           | 2.0   | 0.35   | mg/L        |   |                | 06/20/14 12:03 | 1       |
| Alkalinity, Total            | 630    |           | 100   | 40     | mg/L        |   |                | 06/20/14 12:30 | 10      |
| Ammonia                      | 6.3    |           | 0.10  | 0.045  | mg/L        |   |                | 06/17/14 15:07 | 5       |
| Total Kjeldahl Nitrogen      | 6.8    |           | 0.40  | 0.30   | mg/L        |   | 06/18/14 19:32 | 06/19/14 10:43 | 2       |
| Nitrate as N                 | ND     |           | 0.050 | 0.020  | mg/L        |   |                | 06/13/14 16:31 | 1       |
| Chemical Oxygen Demand       | 21     |           | 10    | 5.0    | mg/L        |   |                | 06/16/14 17:30 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 06/13/14 10:13 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/19/14 17:30 | 06/20/14 10:34 | 1       |
| Total Organic Carbon         | 5.5    |           | 1.0   | 0.43   | mg/L        |   |                | 06/17/14 18:07 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/25/14 12:19 | 06/26/14 09:50 | 1       |
| Hardness                     | 600    |           | 20    | 5.3    | mg/L        |   |                | 06/24/14 11:04 | 1       |
| Total Dissolved Solids       | 780    |           | 10    | 4.0    | mg/L        |   |                | 06/16/14 23:23 | 1       |
| Biochemical Oxygen Demand    | 14     | b         | 2.0   | 2.0    | mg/L        |   |                | 06/13/14 17:39 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 150    |           | 1.0   | 1.0    | NTU         |   |                | 06/13/14 10:32 | 1       |
| Color                        | 5.0    |           | 5.0   | 5.0    | Color Units |   |                | 06/13/14 11:17 | 1       |

6

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-1

Lab Sample ID: 480-61861-7

Date Collected: 06/12/14 16:15

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 07:07 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/18/14 07:07 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/18/14 07:07 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/18/14 07:07 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/18/14 07:07 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/18/14 07:07 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 07:07 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 07:07 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 07:07 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/18/14 07:07 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 07:07 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 108       |           | 72 - 130 |          | 06/18/14 07:07 | 1       |
| 4-Bromofluorobenzene (Surr)  | 96        |           | 69 - 121 |          | 06/18/14 07:07 | 1       |
| Toluene-d8 (Surr)            | 102       |           | 70 - 123 |          | 06/18/14 07:07 | 1       |

## Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.60   |           | 0.20   | 0.060   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Arsenic   | 0.12   |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Barium    | 1.2    |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Boron     | 0.27   | B         | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-1

Lab Sample ID: 480-61861-7

Date Collected: 06/12/14 16:15

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | 0.00094 | J         | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Calcium   | 92      |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Chromium  | ND      |           | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Copper    | ND      |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Iron      | 11      |           | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Lead      | ND      |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Magnesium | 57      |           | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Manganese | 0.28    |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Nickel    | 0.013   |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Potassium | 19      |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Selenium  | ND      |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Silver    | ND      |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Sodium    | 65      |           | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Thallium  | ND      |           | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |
| Zinc      | 0.012   |           | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:19 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND      |           | 0.20   | 0.060   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Antimony  | ND      |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Arsenic   | 0.037   |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Barium    | 1.1     |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Beryllium | ND      |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Boron     | 0.28    |           | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Cadmium   | ND      |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Calcium   | 89      |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Chromium  | 0.0019  | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Cobalt    | 0.00063 | J         | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Copper    | ND      |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Iron      | 0.019   | J         | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Lead      | 0.0038  | J         | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Magnesium | 60      |           | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Manganese | 0.23    |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Nickel    | 0.012   |           | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Potassium | 19      |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Selenium  | ND      |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Silver    | ND      |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Sodium    | 65      |           | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Thallium  | ND      |           | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Vanadium  | ND      |           | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |
| Zinc      | 0.0057  | J B       | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:56 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 15:19 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:58 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: GW-1**

**Lab Sample ID: 480-61861-7**

Date Collected: 06/12/14 16:15

Matrix: Water

Date Received: 06/13/14 09:00

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 73     |           | 0.50  | 0.28   | mg/L        |   |                | 06/20/14 12:13 | 1       |
| Sulfate                      | 4.7    |           | 2.0   | 0.35   | mg/L        |   |                | 06/20/14 12:13 | 1       |
| Alkalinity, Total            | 560    |           | 100   | 40     | mg/L        |   |                | 06/19/14 11:34 | 10      |
| Ammonia                      | 18     |           | 0.20  | 0.090  | mg/L        |   |                | 06/17/14 15:08 | 10      |
| Total Kjeldahl Nitrogen      | 16     |           | 2.0   | 1.5    | mg/L        |   | 06/18/14 19:32 | 06/19/14 10:39 | 10      |
| Nitrate as N                 | 0.076  |           | 0.050 | 0.020  | mg/L        |   |                | 06/13/14 16:32 | 1       |
| Chemical Oxygen Demand       | 31     |           | 10    | 5.0    | mg/L        |   |                | 06/19/14 10:09 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 06/13/14 10:17 | 1       |
| Cyanide, Total               | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/20/14 15:55 | 06/23/14 08:29 | 1       |
| Total Organic Carbon         | 6.0    |           | 1.0   | 0.43   | mg/L        |   |                | 06/17/14 18:35 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/23/14 20:30 | 06/24/14 11:08 | 1       |
| Hardness                     | 490    |           | 4.0   | 1.1    | mg/L        |   |                | 06/24/14 09:36 | 1       |
| Total Dissolved Solids       | 690    |           | 10    | 4.0    | mg/L        |   |                | 06/16/14 23:25 | 1       |
| Biochemical Oxygen Demand    | ND     |           | 2.0   | 2.0    | mg/L        |   |                | 06/13/14 17:39 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 320    |           | 1.0   | 1.0    | NTU         |   |                | 06/13/14 10:32 | 1       |
| Color                        | 25     |           | 5.0   | 5.0    | Color Units |   |                | 06/13/14 11:17 | 1       |

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-2

Lab Sample ID: 480-61861-8

Date Collected: 06/12/14 16:30

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 07:30 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/18/14 07:30 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/18/14 07:30 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/18/14 07:30 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/18/14 07:30 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/18/14 07:30 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 07:30 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 07:30 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/18/14 07:30 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/18/14 07:30 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/18/14 07:30 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 100       |           | 72 - 130 |          | 06/18/14 07:30 | 1       |
| 4-Bromofluorobenzene (Surr)  | 96        |           | 69 - 121 |          | 06/18/14 07:30 | 1       |
| Toluene-d8 (Surr)            | 99        |           | 70 - 123 |          | 06/18/14 07:30 | 1       |

## Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 1.4    |           | 0.20   | 0.060   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Arsenic   | 0.086  |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Barium    | 0.38   |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Boron     | 0.17   | B         | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-2

Lab Sample ID: 480-61861-8

Date Collected: 06/12/14 16:30

Matrix: Water

Date Received: 06/13/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | 0.00062 | J         | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Calcium   | 120     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Chromium  | 0.0020  | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Copper    | 0.0027  | J         | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Iron      | 5.3     |           | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Lead      | 0.0042  | J         | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Magnesium | 44      |           | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Manganese | 1.8     |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Nickel    | 0.0091  | J         | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Potassium | 12      |           | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Selenium  | ND      |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Silver    | ND      |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Sodium    | 45      |           | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Thallium  | ND      |           | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |
| Zinc      | 0.020   |           | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 22:22 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND     |           | 0.20   | 0.080   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Arsenic   | 0.049  |           | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Barium    | 0.40   |           | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Boron     | 0.18   |           | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Calcium   | 120    |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Chromium  | 0.0020 | J         | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Cobalt    | 0.0019 | J         | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Copper    | ND     |           | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Iron      | ND     |           | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Magnesium | 45     |           | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Manganese | 1.6    |           | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Nickel    | 0.0071 | J         | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Potassium | 12     |           | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Sodium    | 47     |           | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Vanadium  | ND     |           | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |
| Zinc      | 0.0088 | J B       | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:59 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 15:11 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:43 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-2

Lab Sample ID: 480-61861-8

Date Collected: 06/12/14 16:30

Matrix: Water

Date Received: 06/13/14 09:00

### General Chemistry

| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                     | 58     |           | 0.50  | 0.28   | mg/L        |   |                | 06/20/14 12:23 | 1       |
| Sulfate                      | 11     |           | 2.0   | 0.35   | mg/L        |   |                | 06/20/14 12:23 | 1       |
| Alkalinity, Total            | 610    |           | 100   | 40     | mg/L        |   |                | 06/20/14 12:30 | 10      |
| Ammonia                      | 8.8    |           | 0.10  | 0.045  | mg/L        |   |                | 06/17/14 15:09 | 5       |
| Total Kjeldahl Nitrogen      | 8.6    |           | 1.0   | 0.75   | mg/L        |   | 06/18/14 19:32 | 06/19/14 10:39 | 5       |
| Nitrate as N                 | 0.57   |           | 0.050 | 0.020  | mg/L        |   |                | 06/13/14 16:33 | 1       |
| Chemical Oxygen Demand       | ND     |           | 10    | 5.0    | mg/L        |   |                | 06/19/14 10:09 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 06/13/14 10:22 | 1       |
| Cyanide, Total               | 0.0053 | J         | 0.010 | 0.0050 | mg/L        |   | 06/19/14 17:30 | 06/20/14 10:36 | 1       |
| Total Organic Carbon         | 5.9    |           | 1.0   | 0.43   | mg/L        |   |                | 06/17/14 19:03 | 1       |
| Phenolics, Total Recoverable | ND     |           | 0.010 | 0.0050 | mg/L        |   | 06/23/14 20:30 | 06/24/14 11:09 | 1       |
| Hardness                     | 500    |           | 10    | 2.6    | mg/L        |   |                | 06/24/14 11:08 | 1       |
| Total Dissolved Solids       | 660    |           | 10    | 4.0    | mg/L        |   |                | 06/16/14 23:27 | 1       |
| Biochemical Oxygen Demand    | ND     |           | 2.0   | 2.0    | mg/L        |   |                | 06/13/14 17:39 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 120    |           | 1.0   | 1.0    | NTU         |   |                | 06/13/14 10:32 | 1       |
| Color                        | 15     |           | 5.0   | 5.0    | Color Units |   |                | 06/13/14 11:17 | 1       |

TestAmerica Buffalo

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-61861-9

Date Collected: 06/12/14 13:25

Matrix: Water

Date Received: 06/13/14 09:00

| Method: 624 - Volatile Organic Compounds (GC/MS) |           |           |          |      |      |   |          |                |         |
|--|-----------|-----------|----------|------|------|---|----------|----------------|---------|
| Analyte  | Result    | Qualifier | RL       | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
| 1,1,1-Trichloroethane                            | ND        |           | 5.0      | 0.39 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,1,2,2-Tetrachloroethane                        | ND        |           | 5.0      | 0.26 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,1,2-Trichloroethane                            | ND        |           | 5.0      | 0.48 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,1-Dichloroethane                               | ND        |           | 5.0      | 0.59 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,1-Dichloroethene                               | ND        |           | 5.0      | 0.85 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,2-Dichlorobenzene                              | ND        |           | 5.0      | 0.44 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,2-Dichloroethane                               | ND        |           | 5.0      | 0.60 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,2-Dichloropropane                              | ND        |           | 5.0      | 0.61 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,3-Dichlorobenzene                              | ND        |           | 5.0      | 0.54 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 1,4-Dichlorobenzene                              | ND        |           | 5.0      | 0.51 | ug/L |   |          | 06/18/14 07:54 | 1       |
| 2-Chloroethyl vinyl ether                        | ND        |           | 25       | 1.9  | ug/L |   |          | 06/18/14 07:54 | 1       |
| Benzene  | ND        |           | 5.0      | 0.60 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Bromodichloromethane                             | ND        |           | 5.0      | 0.54 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Bromoform  | ND        |           | 5.0      | 0.47 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Bromomethane                                     | ND        |           | 5.0      | 1.2  | ug/L |   |          | 06/18/14 07:54 | 1       |
| Carbon tetrachloride                             | ND        |           | 5.0      | 0.51 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Chlorobenzene                                    | ND        |           | 5.0      | 0.48 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Chloroethane                                     | ND        |           | 5.0      | 0.87 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Chloroform                                       | ND        |           | 5.0      | 0.54 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Chloromethane                                    | ND        |           | 5.0      | 0.64 | ug/L |   |          | 06/18/14 07:54 | 1       |
| cis-1,2-Dichloroethene                           | ND        |           | 5.0      | 0.57 | ug/L |   |          | 06/18/14 07:54 | 1       |
| cis-1,3-Dichloropropene                          | ND        |           | 5.0      | 0.33 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Dibromochloromethane                             | ND        |           | 5.0      | 0.41 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Dichlorodifluoromethane                          | ND        |           | 5.0      | 0.28 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Ethylbenzene                                     | ND        |           | 5.0      | 0.46 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Methylene Chloride                               | ND        |           | 5.0      | 0.81 | ug/L |   |          | 06/18/14 07:54 | 1       |
| m-Xylene & p-Xylene                              | ND        |           | 10       | 1.1  | ug/L |   |          | 06/18/14 07:54 | 1       |
| o-Xylene   | ND        |           | 5.0      | 0.43 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Tetrachloroethene                                | ND        |           | 5.0      | 0.34 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Toluene  | ND        |           | 5.0      | 0.45 | ug/L |   |          | 06/18/14 07:54 | 1       |
| trans-1,2-Dichloroethene                         | ND        |           | 5.0      | 0.59 | ug/L |   |          | 06/18/14 07:54 | 1       |
| trans-1,3-Dichloropropene                        | ND        |           | 5.0      | 0.44 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Trichloroethene                                  | ND        |           | 5.0      | 0.60 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Trichlorofluoromethane                           | ND        |           | 5.0      | 0.45 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Vinyl chloride                                   | ND        |           | 5.0      | 0.75 | ug/L |   |          | 06/18/14 07:54 | 1       |
| Xylenes, Total                                   | ND        |           | 10       | 1.1  | ug/L |   |          | 06/18/14 07:54 | 1       |
| Surrogate  | %Recovery | Qualifier | Limits   |      |      |   | Prepared | Analyzed       | Dil Fac |
| 1,2-Dichloroethane-d4 (Sum)                      | 104       |           | 72 - 130 |      |      |   |          | 06/18/14 07:54 | 1       |
| 4-Bromofluorobenzene (Sum)                       | 97        |           | 69 - 121 |      |      |   |          | 06/18/14 07:54 | 1       |
| Toluene-d8 (Sum)                                 | 99        |           | 70 - 123 |      |      |   |          | 06/18/14 07:54 | 1       |

## Surrogate Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Method: 624 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

| Lab Sample ID    | Client Sample ID   | Percent Surrogate Recovery (Acceptance Limits) |                 |                 |
|------------------|--------------------|--|-----------------|-----------------|
|                  |                    | 12DCE<br>(72-130)                              | BFB<br>(69-121) | TOL<br>(70-123) |
| 480-61861-2      | GW-A               | 100  | 95              | 97              |
| 480-61861-3      | GW-B               | 103  | 94              | 98              |
| 480-61861-4      | SW-02              | 104  | 96              | 100             |
| 480-61861-5      | SW-01              | 104  | 97              | 100             |
| 480-61861-6      | GW-3               | 103  | 94              | 99              |
| 480-61861-7      | GW-1               | 106  | 96              | 102             |
| 480-61861-8      | GW-2               | 100  | 96              | 99              |
| 480-61861-9      | TRIP BLANK         | 104  | 97              | 99              |
| LCS 480-188163/5 | Lab Control Sample | 96   | 97              | 98              |
| MB 480-188163/7  | Method Blank       | 101  | 97              | 98              |

### Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

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## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-188163/7

Matrix: Water

Analysis Batch: 188163

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                   | MB     | MB        | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
|                           | Result | Qualifier |     |      |      |   |          |                |         |
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/17/14 13:19 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 06/17/14 13:19 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 06/17/14 13:19 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 06/17/14 13:19 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 06/17/14 13:19 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 06/17/14 13:19 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 06/17/14 13:19 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/17/14 13:19 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 06/17/14 13:19 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 06/17/14 13:19 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 06/17/14 13:19 | 1       |

| Surrogate                    | MB        | MB        | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
|                              | %Recovery | Qualifier |          |          |                |         |
| 1,2-Dichloroethane-d4 (Surr) | 101       |           | 72 - 130 |          | 06/17/14 13:19 | 1       |
| 4-Bromofluorobenzene (Surr)  | 97        |           | 69 - 121 |          | 06/17/14 13:19 | 1       |
| Toluene-d8 (Surr)            | 98        |           | 70 - 123 |          | 06/17/14 13:19 | 1       |

Lab Sample ID: LCS 480-188163/5

Matrix: Water

Analysis Batch: 188163

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte               | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------------------|-------------|------------|---------------|------|---|------|--------------|
|                       |             |            |               |      |   |      |              |
| 1,1,1-Trichloroethane | 20.0        | 20.0       |               | ug/L |   | 100  | 52 - 162     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-188163/5

Matrix: Water

Analysis Batch: 188163

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------------------------|-------------|------------|---------------|------|---|------|--------------|
| 1,1,2,2-Tetrachloroethane | 20.0        | 19.2       |               | ug/L |   | 96   | 46 - 157     |
| 1,1,2-Trichloroethane     | 20.0        | 19.1       |               | ug/L |   | 96   | 52 - 150     |
| 1,1-Dichloroethane        | 20.0        | 19.5       |               | ug/L |   | 98   | 59 - 155     |
| 1,1-Dichloroethene        | 20.0        | 20.2       |               | ug/L |   | 101  | 1 - 234      |
| 1,2-Dichlorobenzene       | 20.0        | 20.5       |               | ug/L |   | 102  | 18 - 190     |
| 1,2-Dichloroethane        | 20.0        | 19.0       |               | ug/L |   | 95   | 49 - 155     |
| 1,2-Dichloropropane       | 20.0        | 19.0       |               | ug/L |   | 95   | 1 - 210      |
| 1,3-Dichlorobenzene       | 20.0        | 19.6       |               | ug/L |   | 98   | 59 - 156     |
| 1,4-Dichlorobenzene       | 20.0        | 19.8       |               | ug/L |   | 99   | 18 - 190     |
| 2-Chloroethyl vinyl ether | 20.0        | 16.9       | J             | ug/L |   | 84   | 1 - 305      |
| Benzene                   | 20.0        | 20.0       |               | ug/L |   | 100  | 37 - 151     |
| Bromodichloromethane      | 20.0        | 19.2       |               | ug/L |   | 96   | 35 - 155     |
| Bromoform                 | 20.0        | 16.5       |               | ug/L |   | 83   | 45 - 169     |
| Bromomethane              | 20.0        | 24.9       |               | ug/L |   | 125  | 1 - 242      |
| Carbon tetrachloride      | 20.0        | 21.9       |               | ug/L |   | 109  | 70 - 140     |
| Chlorobenzene             | 20.0        | 20.1       |               | ug/L |   | 100  | 37 - 160     |
| Chloroethane              | 20.0        | 22.2       |               | ug/L |   | 111  | 14 - 230     |
| Chloroform                | 20.0        | 19.7       |               | ug/L |   | 99   | 51 - 138     |
| Chloromethane             | 20.0        | 20.1       |               | ug/L |   | 101  | 1 - 273      |
| cis-1,2-Dichloroethene    | 20.0        | 20.1       |               | ug/L |   | 100  |              |
| cis-1,3-Dichloropropene   | 20.0        | 18.4       |               | ug/L |   | 92   | 1 - 227      |
| Dibromochloromethane      | 20.0        | 18.4       |               | ug/L |   | 92   | 53 - 149     |
| Dichlorodifluoromethane   | 20.0        | 20.7       |               | ug/L |   | 104  |              |
| Ethylbenzene              | 20.0        | 20.6       |               | ug/L |   | 103  | 37 - 162     |
| Methylene Chloride        | 20.0        | 17.3       |               | ug/L |   | 86   | 1 - 221      |
| m-Xylene & p-Xylene       | 20.0        | 19.6       |               | ug/L |   | 98   | 79 - 120     |
| o-Xylene                  | 20.0        | 20.0       |               | ug/L |   | 100  | 79 - 120     |
| Tetrachloroethene         | 20.0        | 20.2       |               | ug/L |   | 101  | 64 - 148     |
| Toluene                   | 20.0        | 19.5       |               | ug/L |   | 98   | 47 - 150     |
| trans-1,2-Dichloroethene  | 20.0        | 20.3       |               | ug/L |   | 102  | 54 - 156     |
| trans-1,3-Dichloropropene | 20.0        | 18.9       |               | ug/L |   | 95   | 17 - 183     |
| Trichloroethene           | 20.0        | 19.7       |               | ug/L |   | 99   | 71 - 157     |
| Trichlorofluoromethane    | 20.0        | 20.9       |               | ug/L |   | 105  | 17 - 181     |
| Vinyl chloride            | 20.0        | 20.4       |               | ug/L |   | 102  | 1 - 251      |

| Surrogate                    | LCS %Recovery | LCS Qualifier | Limits   |
|------------------------------|---------------|---------------|----------|
| 1,2-Dichloroethane-d4 (Surr) | 96            |               | 72 - 130 |
| 4-Bromofluorobenzene (Surr)  | 97            |               | 69 - 121 |
| Toluene-d8 (Surr)            | 98            |               | 70 - 123 |

### Method: 6010C - Metals (ICP)

Lab Sample ID: MB 480-187751/1-A

Matrix: Water

Analysis Batch: 188615

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 187751

| Analyte  | MB Result | MB Qualifier | RL   | MDL   | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------|-----------|--------------|------|-------|------|---|----------------|----------------|---------|
| Aluminum | ND        |              | 0.20 | 0.060 | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |

TestAmerica Buffalo

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-187751/1-A

Matrix: Water

Analysis Batch: 188615

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 187751

| Analyte   | MB Result | MB Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|--------|---------|------|---|----------------|----------------|---------|
| Antimony  | ND        |              | 0.020  | 0.0068  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Arsenic   | ND        |              | 0.015  | 0.0056  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Barium    | ND        |              | 0.0020 | 0.00070 | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Beryllium | ND        |              | 0.0020 | 0.00030 | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Boron     | 0.00443   | J            | 0.020  | 0.0040  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Cadmium   | ND        |              | 0.0020 | 0.00050 | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Calcium   | ND        |              | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Chromium  | ND        |              | 0.0040 | 0.0010  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Copper    | ND        |              | 0.010  | 0.0016  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Iron      | ND        |              | 0.050  | 0.019   | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Lead      | ND        |              | 0.010  | 0.0030  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Magnesium | ND        |              | 0.20   | 0.043   | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Manganese | ND        |              | 0.0030 | 0.00040 | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Nickel    | ND        |              | 0.010  | 0.0013  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Potassium | ND        |              | 0.50   | 0.10    | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Selenium  | ND        |              | 0.025  | 0.0087  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Silver    | ND        |              | 0.0060 | 0.0017  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Sodium    | ND        |              | 1.0    | 0.32    | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Thallium  | ND        |              | 0.020  | 0.010   | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |
| Zinc      | ND        |              | 0.010  | 0.0015  | mg/L |   | 06/16/14 08:00 | 06/18/14 21:37 | 1       |

Lab Sample ID: LCS 480-187751/2-A

Matrix: Water

Analysis Batch: 188615

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 187751

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|-----------|-------------|------------|---------------|------|---|------|-------------|
| Aluminum  | 10.0        | 10.4       |               | mg/L |   | 104  | 80 - 120    |
| Antimony  | 0.200       | 0.204      |               | mg/L |   | 102  | 80 - 120    |
| Arsenic   | 0.200       | 0.201      |               | mg/L |   | 100  | 80 - 120    |
| Barium    | 0.200       | 0.206      |               | mg/L |   | 103  | 80 - 120    |
| Beryllium | 0.200       | 0.202      |               | mg/L |   | 101  | 80 - 120    |
| Boron     | 0.200       | 0.209      |               | mg/L |   | 105  | 80 - 120    |
| Cadmium   | 0.200       | 0.205      |               | mg/L |   | 102  | 80 - 120    |
| Calcium   | 10.0        | 9.76       |               | mg/L |   | 98   | 80 - 120    |
| Chromium  | 0.200       | 0.210      |               | mg/L |   | 105  | 80 - 120    |
| Copper    | 0.200       | 0.207      |               | mg/L |   | 103  | 80 - 120    |
| Iron      | 10.0        | 9.75       |               | mg/L |   | 97   | 80 - 120    |
| Lead      | 0.200       | 0.203      |               | mg/L |   | 102  | 80 - 120    |
| Magnesium | 10.0        | 10.8       |               | mg/L |   | 108  | 80 - 120    |
| Manganese | 0.200       | 0.212      |               | mg/L |   | 106  | 80 - 120    |
| Nickel    | 0.200       | 0.201      |               | mg/L |   | 100  | 80 - 120    |
| Potassium | 10.0        | 9.78       |               | mg/L |   | 98   | 80 - 120    |
| Selenium  | 0.200       | 0.205      |               | mg/L |   | 103  | 80 - 120    |
| Silver    | 0.0500      | 0.0500     |               | mg/L |   | 100  | 80 - 120    |
| Sodium    | 10.0        | 9.62       |               | mg/L |   | 96   | 80 - 120    |
| Thallium  | 0.200       | 0.214      |               | mg/L |   | 107  | 80 - 120    |
| Zinc      | 0.200       | 0.208      |               | mg/L |   | 104  | 80 - 120    |

TestAmerica Buffalo



# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-187770/1-B

Matrix: Water

Analysis Batch: 189205

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 187888

| Analyte   | Result  | MB MB Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | ND      |                 | 0.20   | 0.060   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Antimony  | ND      |                 | 0.020  | 0.0068  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Arsenic   | ND      |                 | 0.015  | 0.0056  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Barium    | ND      |                 | 0.0020 | 0.00070 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Beryllium | ND      |                 | 0.0020 | 0.00030 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Boron     | ND      |                 | 0.020  | 0.0040  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Cadmium   | ND      |                 | 0.0020 | 0.00050 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Calcium   | ND      |                 | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Chromium  | ND      |                 | 0.0040 | 0.0010  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Cobalt    | ND      |                 | 0.0040 | 0.00063 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Copper    | ND      |                 | 0.010  | 0.0016  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Iron      | ND      |                 | 0.050  | 0.019   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Lead      | ND      |                 | 0.010  | 0.0030  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Magnesium | ND      |                 | 0.20   | 0.043   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Manganese | ND      |                 | 0.0030 | 0.00040 | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Nickel    | ND      |                 | 0.010  | 0.0013  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Potassium | ND      |                 | 0.50   | 0.10    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Selenium  | ND      |                 | 0.025  | 0.0087  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Silver    | ND      |                 | 0.0060 | 0.0017  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Sodium    | ND      |                 | 1.0    | 0.32    | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Thallium  | ND      |                 | 0.020  | 0.010   | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Vanadium  | ND      |                 | 0.0050 | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |
| Zinc      | 0.00158 | J               | 0.010  | 0.0015  | mg/L |   | 06/16/14 12:05 | 06/20/14 14:22 | 1       |

Lab Sample ID: LCS 480-187770/2-B

Matrix: Water

Analysis Batch: 189205

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 187888

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------|-------------|------------|---------------|------|---|------|--------------|
| Aluminum  | 10.0        | 10.3       |               | mg/L |   | 103  | 80 - 120     |
| Antimony  | 0.200       | 0.202      |               | mg/L |   | 101  | 80 - 120     |
| Arsenic   | 0.200       | 0.202      |               | mg/L |   | 101  | 80 - 120     |
| Barium    | 0.200       | 0.216      |               | mg/L |   | 108  | 80 - 120     |
| Beryllium | 0.200       | 0.204      |               | mg/L |   | 102  | 80 - 120     |
| Boron     | 0.200       | 0.206      |               | mg/L |   | 103  | 80 - 120     |
| Cadmium   | 0.200       | 0.200      |               | mg/L |   | 100  | 80 - 120     |
| Calcium   | 10.0        | 9.43       |               | mg/L |   | 94   | 80 - 120     |
| Chromium  | 0.200       | 0.198      |               | mg/L |   | 99   | 80 - 120     |
| Cobalt    | 0.200       | 0.201      |               | mg/L |   | 101  | 80 - 120     |
| Copper    | 0.200       | 0.204      |               | mg/L |   | 102  | 80 - 120     |
| Iron      | 10.0        | 9.96       |               | mg/L |   | 100  | 80 - 120     |
| Lead      | 0.200       | 0.199      |               | mg/L |   | 100  | 80 - 120     |
| Magnesium | 10.0        | 10.5       |               | mg/L |   | 105  | 80 - 120     |
| Manganese | 0.200       | 0.205      |               | mg/L |   | 102  | 80 - 120     |
| Nickel    | 0.200       | 0.196      |               | mg/L |   | 98   | 80 - 120     |
| Potassium | 10.0        | 9.86       |               | mg/L |   | 99   | 80 - 120     |
| Selenium  | 0.200       | 0.204      |               | mg/L |   | 102  | 80 - 120     |
| Silver    | 0.0500      | 0.0518     |               | mg/L |   | 104  | 80 - 120     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-187770/2-B

Matrix: Water

Analysis Batch: 189205

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Prep Batch: 187888

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Sodium   | 10.0        | 10.1       |               | mg/L |   | 101  | 80 - 120     |
| Thallium | 0.200       | 0.210      |               | mg/L |   | 105  | 80 - 120     |
| Vanadium | 0.200       | 0.210      |               | mg/L |   | 105  | 80 - 120     |
| Zinc     | 0.200       | 0.197      |               | mg/L |   | 98   | 80 - 120     |

Lab Sample ID: LCSD 480-187770/3-B

Matrix: Water

Analysis Batch: 189205

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Prep Batch: 187888

| Analyte   | Spike Added | LCSD Result | LCSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|-----------|-------------|-------------|----------------|------|---|------|--------------|-----|-----------|
| Aluminum  | 10.0        | 10.4        |                | mg/L |   | 104  | 80 - 120     | 1   | 20        |
| Antimony  | 0.200       | 0.201       |                | mg/L |   | 101  | 80 - 120     | 0   | 20        |
| Arsenic   | 0.200       | 0.199       |                | mg/L |   | 99   | 80 - 120     | 2   | 20        |
| Barium    | 0.200       | 0.215       |                | mg/L |   | 107  | 80 - 120     | 0   | 20        |
| Beryllium | 0.200       | 0.205       |                | mg/L |   | 103  | 80 - 120     | 1   | 20        |
| Boron     | 0.200       | 0.208       |                | mg/L |   | 104  | 80 - 120     | 1   | 20        |
| Cadmium   | 0.200       | 0.203       |                | mg/L |   | 101  | 80 - 120     | 1   | 20        |
| Calcium   | 10.0        | 9.73        |                | mg/L |   | 97   | 80 - 120     | 3   | 20        |
| Chromium  | 0.200       | 0.204       |                | mg/L |   | 102  | 80 - 120     | 3   | 20        |
| Cobalt    | 0.200       | 0.205       |                | mg/L |   | 102  | 80 - 120     | 2   | 20        |
| Copper    | 0.200       | 0.207       |                | mg/L |   | 103  | 80 - 120     | 1   | 20        |
| Iron      | 10.0        | 10.1        |                | mg/L |   | 101  | 80 - 120     | 2   | 20        |
| Lead      | 0.200       | 0.201       |                | mg/L |   | 100  | 80 - 120     | 1   | 20        |
| Magnesium | 10.0        | 10.5        |                | mg/L |   | 105  | 80 - 120     | 1   | 20        |
| Manganese | 0.200       | 0.207       |                | mg/L |   | 104  | 80 - 120     | 1   | 20        |
| Nickel    | 0.200       | 0.199       |                | mg/L |   | 99   | 80 - 120     | 1   | 20        |
| Potassium | 10.0        | 9.89        |                | mg/L |   | 99   | 80 - 120     | 0   | 20        |
| Selenium  | 0.200       | 0.204       |                | mg/L |   | 102  | 80 - 120     | 0   | 20        |
| Silver    | 0.0500      | 0.0518      |                | mg/L |   | 104  | 80 - 120     | 0   | 20        |
| Sodium    | 10.0        | 10.1        |                | mg/L |   | 101  | 80 - 120     | 0   | 20        |
| Thallium  | 0.200       | 0.210       |                | mg/L |   | 105  | 80 - 120     | 0   | 20        |
| Vanadium  | 0.200       | 0.212       |                | mg/L |   | 106  | 80 - 120     | 1   | 20        |
| Zinc      | 0.200       | 0.202       |                | mg/L |   | 101  | 80 - 120     | 3   | 20        |

### Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-187990/1-A

Matrix: Water

Analysis Batch: 188161

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 187990

| Analyte | MB Result | MB Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | DII Fac |
|---------|-----------|--------------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND        |              | 0.00020 | 0.00012 | mg/L |   | 06/16/14 14:30 | 06/17/14 09:26 | 1       |

Lab Sample ID: LCS 480-187990/2-A

Matrix: Water

Analysis Batch: 188161

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 187990

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Mercury | 0.00667     | 0.00613    |               | mg/L |   | 92   | 80 - 120     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: MB 480-187992/1-A  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 187992

| Analyte | MB<br>Result | MB<br>Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------------|-----------------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND           |                 | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 13:11 | 1       |

Lab Sample ID: LCS 480-187992/2-A  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 187992

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Mercury | 0.00667        | 0.00707       |                  | mg/L |   | 106  | 80 - 120        |

Lab Sample ID: MB 480-188082/1-A  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 188082

| Analyte | MB<br>Result | MB<br>Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------------|-----------------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND           |                 | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 14:05 | 1       |

Lab Sample ID: LCS 480-188082/2-A  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 188082

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Mercury | 0.00667        | 0.00693       |                  | mg/L |   | 104  | 80 - 120        |

Lab Sample ID: MB 480-188119/1-A  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 188119

| Analyte | MB<br>Result | MB<br>Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------------|-----------------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND           |                 | 0.00020 | 0.00012 | mg/L |   | 06/17/14 10:15 | 06/17/14 15:04 | 1       |

Lab Sample ID: LCS 480-188119/2-A  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 188119

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Mercury | 0.00667        | 0.00697       |                  | mg/L |   | 104  | 80 - 120        |

Lab Sample ID: 480-61861-8 MS  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: GW-2  
Prep Type: Total/NA  
Prep Batch: 188119

| Analyte | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| Mercury | ND               |                     | 0.00667        | 0.00693      |                 | mg/L |   | 104  | 75 - 125        |

Lab Sample ID: 480-61861-8 MSD  
Matrix: Water  
Analysis Batch: 188305

Client Sample ID: GW-2  
Prep Type: Total/NA  
Prep Batch: 188119

| Analyte | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MSD<br>Result | MSD<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits | RPD<br>Limit |
|---------|------------------|---------------------|----------------|---------------|------------------|------|---|------|-----------------|--------------|
| Mercury | ND               |                     | 0.00667        | 0.00710       |                  | mg/L |   | 106  | 75 - 125        | 20           |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 480-187550/27  
Matrix: Water  
Analysis Batch: 187550

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte   | MB<br>Result | MB<br>Qualifier | RL  | RL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|-----------|--------------|-----------------|-----|-----|------|---|----------|----------------|---------|
| Turbidity | ND           |                 | 1.0 | 1.0 | NTU  |   |          | 06/13/14 08:37 | 1       |

Lab Sample ID: 480-61861-5 DU  
Matrix: Water  
Analysis Batch: 187550

Client Sample ID: SW-01  
Prep Type: Total/NA

| Analyte   | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit | D | Prepared | RPD | RPD<br>Limit |
|-----------|------------------|---------------------|--------------|-----------------|------|---|----------|-----|--------------|
| Turbidity | 18               |                     | 14.7         |                 | NTU  |   |          | 7   | 20           |

### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 480-188730/100  
Matrix: Water  
Analysis Batch: 188730

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|------|------|------|---|----------|----------------|---------|
| Chloride | ND           |                 | 0.50 | 0.28 | mg/L |   |          | 06/20/14 09:31 | 1       |
| Sulfate  | ND           |                 | 2.0  | 0.35 | mg/L |   |          | 06/20/14 09:31 | 1       |

Lab Sample ID: LCS 480-188730/99  
Matrix: Water  
Analysis Batch: 188730

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|----------------|
| Chloride | 20.0           | 19.8          |                  | mg/L |   | 99   | 90 - 110       |
| Sulfate  | 20.0           | 19.3          |                  | mg/L |   | 96   | 90 - 110       |

### Method: 310.2 - Alkalinity

Lab Sample ID: MB 480-188771/28  
Matrix: Water  
Analysis Batch: 188771

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 06/19/14 10:07 | 1       |

Lab Sample ID: MB 480-188771/46  
Matrix: Water  
Analysis Batch: 188771

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 06/19/14 11:04 | 1       |

Lab Sample ID: MB 480-188771/58  
Matrix: Water  
Analysis Batch: 188771

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 06/19/14 11:22 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 310.2 - Alkalinity (Continued)

Lab Sample ID: LCS 480-188771/27

Matrix: Water

Analysis Batch: 188771

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 45.3       |               | mg/L |   | 91   | 90 - 110     |

Lab Sample ID: LCS 480-188771/45

Matrix: Water

Analysis Batch: 188771

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 52.7       |               | mg/L |   | 105  | 90 - 110     |

Lab Sample ID: LCS 480-188771/57

Matrix: Water

Analysis Batch: 188771

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.1       |               | mg/L |   | 102  | 90 - 110     |

Lab Sample ID: MB 480-189017/67

Matrix: Water

Analysis Batch: 189017

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND        |              | 10 | 4.0 | mg/L |   |          | 06/20/14 12:17 | 1       |

Lab Sample ID: MB 480-189017/92

Matrix: Water

Analysis Batch: 189017

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND        |              | 10 | 4.0 | mg/L |   |          | 06/20/14 12:51 | 1       |

Lab Sample ID: LCS 480-189017/66

Matrix: Water

Analysis Batch: 189017

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 49.2       |               | mg/L |   | 98   | 90 - 110     |

Lab Sample ID: LCS 480-189017/91

Matrix: Water

Analysis Batch: 189017

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.4       |               | mg/L |   | 103  | 90 - 110     |

TestAmerica Buffalo

# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

## Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 480-188210/147  
Matrix: Water  
Analysis Batch: 188210

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 06/17/14 12:31 | 1       |

Lab Sample ID: MB 480-188210/171  
Matrix: Water  
Analysis Batch: 188210

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 06/17/14 12:52 | 1       |

Lab Sample ID: MB 480-188210/51  
Matrix: Water  
Analysis Batch: 188210

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 06/17/14 11:07 | 1       |

Lab Sample ID: LCS 480-188210/148  
Matrix: Water  
Analysis Batch: 188210

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 1.03          |                  | mg/L |   | 103  | 90 - 110        |

Lab Sample ID: LCS 480-188210/172  
Matrix: Water  
Analysis Batch: 188210

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 1.03          |                  | mg/L |   | 103  | 90 - 110        |

Lab Sample ID: LCS 480-188210/52  
Matrix: Water  
Analysis Batch: 188210

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 1.04          |                  | mg/L |   | 104  | 90 - 110        |

Lab Sample ID: MB 480-188240/27  
Matrix: Water  
Analysis Batch: 188240

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 06/17/14 14:01 | 1       |

Lab Sample ID: MB 480-188240/75  
Matrix: Water  
Analysis Batch: 188240

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND           |                 | 0.020 | 0.0090 | mg/L |   |          | 06/17/14 14:49 | 1       |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Lab Sample ID: LCS 480-188240/28

Matrix: Water

Analysis Batch: 188240

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Ammonia | 1.00        | 1.02       |               | mg/L |   | 102  | 90 - 110     |

Lab Sample ID: LCS 480-188240/76

Matrix: Water

Analysis Batch: 188240

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Ammonia | 1.00        | 1.01       |               | mg/L |   | 101  | 90 - 110     |

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Lab Sample ID: MB 480-189620/15

Matrix: Water

Analysis Batch: 189620

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|-----------|--------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | ND        |              | 0.020 | 0.0090 | mg/L |   |          | 06/24/14 18:28 | 1       |

Lab Sample ID: LCS 480-189620/16

Matrix: Water

Analysis Batch: 189620

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|------|---|------|--------------|
| Ammonia | 1.00        | 1.03       |               | mg/L |   | 103  | 90 - 110     |

### Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-188543/1-A

Matrix: Water

Analysis Batch: 188683

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 188543

| Analyte                 | MB Result | MB Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------|-----------|--------------|------|------|------|---|----------------|----------------|---------|
| Total Kjeldahl Nitrogen | ND        |              | 0.20 | 0.15 | mg/L |   | 06/18/14 19:32 | 06/19/14 09:26 | 1       |

Lab Sample ID: LCS 480-188543/2-A

Matrix: Water

Analysis Batch: 188683

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 188543

| Analyte                 | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Kjeldahl Nitrogen | 2.50        | 2.34       |               | mg/L |   | 94   | 90 - 110     |

### Method: 410.4 - COD

Lab Sample ID: MB 480-188035/27

Matrix: Water

Analysis Batch: 188035

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND        |              | 10 | 5.0 | mg/L |   |          | 06/16/14 17:30 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 410.4 - COD (Continued)

Lab Sample ID: MB 480-188035/3

Matrix: Water

Analysis Batch: 188035

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND           |                 | 10 | 5.0 | mg/L |   |          | 06/16/14 17:30 | 1       |

Lab Sample ID: LCS 480-188035/28

Matrix: Water

Analysis Batch: 188035

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 25.0           | 24.0          |                  | mg/L |   | 96   | 90 - 110        |

Lab Sample ID: LCS 480-188035/4

Matrix: Water

Analysis Batch: 188035

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 25.0           | 24.9          |                  | mg/L |   | 100  | 90 - 110        |

Lab Sample ID: 480-61861-4 MS

Matrix: Water

Analysis Batch: 188035

Client Sample ID: SW-02

Prep Type: Total/NA

| Analyte                | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 9.0              | J                   | 50.0           | 59.4         |                 | mg/L |   | 101  | 75 - 125        |

Lab Sample ID: 480-61861-5 DU

Matrix: Water

Analysis Batch: 188035

Client Sample ID: SW-01

Prep Type: Total/NA

| Analyte                | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit | D | RPD | RPD<br>Limit |
|------------------------|------------------|---------------------|--------------|-----------------|------|---|-----|--------------|
| Chemical Oxygen Demand | 10               |                     | 6.08         | J               | mg/L |   | 49  | 20           |

Lab Sample ID: MB 480-188711/27

Matrix: Water

Analysis Batch: 188711

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND           |                 | 10 | 5.0 | mg/L |   |          | 06/19/14 10:17 | 1       |

Lab Sample ID: MB 480-188711/3

Matrix: Water

Analysis Batch: 188711

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND           |                 | 10 | 5.0 | mg/L |   |          | 06/19/14 09:56 | 1       |

Lab Sample ID: LCS 480-188711/28

Matrix: Water

Analysis Batch: 188711

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 25.0           | 28.9          |                  | mg/L |   | 108  | 90 - 110        |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Lab Sample ID: LCS 480-188711/4

Matrix: Water

Analysis Batch: 188711

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 25.0           | 25.6          |                  | mg/L |   | 102  | 90 - 110        |

### Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-187532/27

Matrix: Water

Analysis Batch: 187532

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Chromium, hexavalent | ND           |                 | 0.010 | 0.0050 | mg/L |   |          | 06/13/14 10:36 | 1       |

Lab Sample ID: MB 480-187532/3

Matrix: Water

Analysis Batch: 187532

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Chromium, hexavalent | ND           |                 | 0.010 | 0.0050 | mg/L |   |          | 06/13/14 08:44 | 1       |

Lab Sample ID: LCS 480-187532/28

Matrix: Water

Analysis Batch: 187532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chromium, hexavalent | 0.0500         | 0.0454        |                  | mg/L |   | 91   | 85 - 115        |

Lab Sample ID: LCS 480-187532/4

Matrix: Water

Analysis Batch: 187532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chromium, hexavalent | 0.0500         | 0.0470        |                  | mg/L |   | 94   | 85 - 115        |

Lab Sample ID: 480-61861-4 MS

Matrix: Water

Analysis Batch: 187532

Client Sample ID: SW-02

Prep Type: Total/NA

| Analyte              | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| Chromium, hexavalent | ND               |                     | 0.0500         | 0.0511       |                 | mg/L |   | 102  | 85 - 115        |

Lab Sample ID: 480-61861-4 DU

Matrix: Water

Analysis Batch: 187532

Client Sample ID: SW-02

Prep Type: Total/NA

| Analyte              | Sample<br>Result | Sample<br>Qualifier | DU<br>Result | DU<br>Qualifier | Unit | D | RPD | RPD<br>Limit |
|----------------------|------------------|---------------------|--------------|-----------------|------|---|-----|--------------|
| Chromium, hexavalent | ND               |                     | ND           |                 | mg/L |   | NC  | 15           |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 480-188827/1-A  
Matrix: Water  
Analysis Batch: 188961

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 188827

| Analyte        | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------------|-----------------|-------|--------|------|---|----------------|----------------|---------|
| Cyanide, Total | ND           |                 | 0.010 | 0.0050 | mg/L |   | 06/19/14 17:30 | 06/20/14 10:20 | 1       |

Lab Sample ID: LCS 480-188827/2-A  
Matrix: Water  
Analysis Batch: 188961

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 188827

| Analyte        | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------|----------------|---------------|------------------|------|---|------|-----------------|
| Cyanide, Total | 0.250          | 0.244         |                  | mg/L |   | 98   | 90 - 110        |

Lab Sample ID: MB 480-189045/1-A  
Matrix: Water  
Analysis Batch: 189315

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 189045

| Analyte        | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------------|-----------------|-------|--------|------|---|----------------|----------------|---------|
| Cyanide, Total | ND           |                 | 0.010 | 0.0050 | mg/L |   | 06/20/14 15:55 | 06/23/14 08:12 | 1       |

Lab Sample ID: LCS 480-189045/2-A  
Matrix: Water  
Analysis Batch: 189315

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 189045

| Analyte        | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------|----------------|---------------|------------------|------|---|------|-----------------|
| Cyanide, Total | 0.400          | 0.372         |                  | mg/L |   | 93   | 90 - 110        |

### Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-188308/15  
Matrix: Water  
Analysis Batch: 188308

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Total Organic Carbon | ND           |                 | 1.0 | 0.43 | mg/L |   |          | 06/17/14 04:48 | 1       |

Lab Sample ID: MB 480-188308/39  
Matrix: Water  
Analysis Batch: 188308

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Total Organic Carbon | ND           |                 | 1.0 | 0.43 | mg/L |   |          | 06/17/14 16:13 | 1       |

Lab Sample ID: LCS 480-188308/16  
Matrix: Water  
Analysis Batch: 188308

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Organic Carbon | 60.0           | 62.8          |                  | mg/L |   | 105  | 90 - 110        |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 480-188308/40

Matrix: Water

Analysis Batch: 188308

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte              | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Organic Carbon | 60.0        | 62.1       |               | mg/L |   | 104  | 90 - 110     |

Lab Sample ID: 480-61861-3 MS

Matrix: Water

Analysis Batch: 188308

Client Sample ID: GW-B

Prep Type: Total/NA

| Analyte              | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------------------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Total Organic Carbon | 46            |                  | 20.0        | 60.8      |              | mg/L |   | 76   | 54 - 131     |

Lab Sample ID: 480-61861-2 DU

Matrix: Water

Analysis Batch: 188308

Client Sample ID: GW-A

Prep Type: Total/NA

| Analyte              | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|----------------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Total Organic Carbon | 6.9           |                  | 6.95      |              | mg/L |   | 1   | 20        |

Lab Sample ID: 480-61861-8 DU

Matrix: Water

Analysis Batch: 188308

Client Sample ID: GW-2

Prep Type: Total/NA

| Analyte              | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | RPD Limit |
|----------------------|---------------|------------------|-----------|--------------|------|---|-----|-----------|
| Total Organic Carbon | 5.9           |                  | 5.92      |              | mg/L |   | 0.4 | 20        |

### Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 480-189398/1-A

Matrix: Water

Analysis Batch: 189543

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 189398

| Analyte                      | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|-----------|--------------|-------|--------|------|---|----------------|----------------|---------|
| Phenolics, Total Recoverable | ND        |              | 0.010 | 0.0050 | mg/L |   | 06/23/14 17:30 | 06/24/14 11:25 | 1       |

Lab Sample ID: LCS 480-189398/2-A

Matrix: Water

Analysis Batch: 189543

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 189398

| Analyte                      | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|-------------|------------|---------------|------|---|------|--------------|
| Phenolics, Total Recoverable | 0.100       | 0.105      |               | mg/L |   | 105  | 90 - 110     |

Lab Sample ID: MB 480-189401/1-A

Matrix: Water

Analysis Batch: 189543

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 189401

| Analyte                      | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|-----------|--------------|-------|--------|------|---|----------------|----------------|---------|
| Phenolics, Total Recoverable | ND        |              | 0.010 | 0.0050 | mg/L |   | 06/23/14 20:30 | 06/24/14 11:20 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: 9066 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: LCS 480-189401/2-A  
Matrix: Water  
Analysis Batch: 189543

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 189401

| Analyte                      | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|-------------|------------|---------------|------|---|------|--------------|
| Phenolics, Total Recoverable | 0.100       | 0.100      |               | mg/L |   | 100  | 90 - 110     |

Lab Sample ID: 480-61861-5 DU  
Matrix: Water  
Analysis Batch: 189543

Client Sample ID: SW-01  
Prep Type: Total/NA  
Prep Batch: 189401

| Analyte                      | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit | D | RPD | Limit |
|------------------------------|---------------|------------------|-----------|--------------|------|---|-----|-------|
| Phenolics, Total Recoverable | ND            |                  | ND        |              | mg/L |   | NC  | 20    |

Lab Sample ID: MB 480-189825/1-A  
Matrix: Water  
Analysis Batch: 190040

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 189825

| Analyte                      | MB Result | MB Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|-----------|--------------|-------|--------|------|---|----------------|----------------|---------|
| Phenolics, Total Recoverable | ND        |              | 0.010 | 0.0050 | mg/L |   | 06/25/14 12:19 | 06/26/14 08:51 | 1       |

Lab Sample ID: LCS 480-189825/2-A  
Matrix: Water  
Analysis Batch: 190040

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 189825

| Analyte                      | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------------|-------------|------------|---------------|------|---|------|--------------|
| Phenolics, Total Recoverable | 0.100       | 0.0974     |               | mg/L |   | 97   | 90 - 110     |

### Method: SM 2120B - Color, Colorimetric

Lab Sample ID: MB 480-187631/27  
Matrix: Water  
Analysis Batch: 187631

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL  | RL  | Unit        | D | Prepared | Analyzed       | Dil Fac |
|---------|-----------|--------------|-----|-----|-------------|---|----------|----------------|---------|
| Color   | ND        |              | 5.0 | 5.0 | Color Units |   |          | 06/13/14 11:17 | 1       |

Lab Sample ID: MB 480-187631/3  
Matrix: Water  
Analysis Batch: 187631

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB Result | MB Qualifier | RL  | RL  | Unit        | D | Prepared | Analyzed       | Dil Fac |
|---------|-----------|--------------|-----|-----|-------------|---|----------|----------------|---------|
| Color   | ND        |              | 5.0 | 5.0 | Color Units |   |          | 06/13/14 11:17 | 1       |

Lab Sample ID: LCS 480-187631/28  
Matrix: Water  
Analysis Batch: 187631

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit        | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|-------------|---|------|--------------|
| Color   | 30.0        | 30.0       |               | Color Units |   | 100  | 90 - 110     |

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## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: SM 2120B - Color, Colorimetric (Continued)

Lab Sample ID: LCS 480-187631/4  
Matrix: Water  
Analysis Batch: 187631

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit        | D | %Rec | %Rec. Limits |
|---------|-------------|------------|---------------|-------------|---|------|--------------|
| Color   | 30.0        | 30.0       |               | Color Units |   | 100  | 90 - 110     |

Lab Sample ID: 480-61861-7 DU  
Matrix: Water  
Analysis Batch: 187631

Client Sample ID: GW-1  
Prep Type: Total/NA

| Analyte | Sample Result | Sample Qualifier | DU Result | DU Qualifier | Unit        | D | RPD | RPD Limit |
|---------|---------------|------------------|-----------|--------------|-------------|---|-----|-----------|
| Color   | 25            |                  | 25.0      |              | Color Units |   | 0   | 20        |

### Method: SM 2340C - Hardness, Total

Lab Sample ID: MB 480-189609/27  
Matrix: Water  
Analysis Batch: 189609

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Hardness | ND        |              | 2.0 | 0.53 | mg/L |   |          | 06/24/14 10:50 | 1       |

Lab Sample ID: MB 480-189609/3  
Matrix: Water  
Analysis Batch: 189609

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| Hardness | ND        |              | 2.0 | 0.53 | mg/L |   |          | 06/24/14 09:26 | 1       |

Lab Sample ID: LCS 480-189609/28  
Matrix: Water  
Analysis Batch: 189609

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Hardness | 298         | 288        |               | mg/L |   | 97   | 90 - 110     |

Lab Sample ID: LCS 480-189609/4  
Matrix: Water  
Analysis Batch: 189609

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Hardness | 298         | 292        |               | mg/L |   | 98   | 90 - 110     |

### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-188045/1  
Matrix: Water  
Analysis Batch: 188045

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND        |              | 10 | 4.0 | mg/L |   |          | 06/16/14 22:59 | 1       |

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## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 480-188045/2  
Matrix: Water  
Analysis Batch: 188045

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Dissolved Solids | 503            | 488           |                  | mg/L |   | 97   | 85 - 115        |

### Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 480-187695/1  
Matrix: Water  
Analysis Batch: 187695

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                   | USB<br>Result | USB<br>Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|---------------|------------------|-----|-----|------|---|----------|----------------|---------|
| Biochemical Oxygen Demand | ND            |                  | 2.0 | 2.0 | mg/L |   |          | 06/13/14 17:39 | 1       |

Lab Sample ID: LCS 480-187695/2  
Matrix: Water  
Analysis Batch: 187695

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                   | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Biochemical Oxygen Demand | 198            | 208           |                  | mg/L |   | 105  | 85 - 115        |

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### GC/MS VOA

#### Analysis Batch: 188163

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2      | <del>GW-A</del>    | Total/NA  | Water  | 624    |            |
| 480-61861-3      | GW-B               | Total/NA  | Water  | 624    |            |
| 480-61861-4      | SW-02              | Total/NA  | Water  | 624    |            |
| 480-61861-5      | SW-01              | Total/NA  | Water  | 624    |            |
| 480-61861-6      | GW-3               | Total/NA  | Water  | 624    |            |
| 480-61861-7      | GW-1               | Total/NA  | Water  | 624    |            |
| 480-61861-8      | GW-2               | Total/NA  | Water  | 624    |            |
| 480-61861-9      | TRIP BLANK         | Total/NA  | Water  | 624    |            |
| LCS 480-188163/5 | Lab Control Sample | Total/NA  | Water  | 624    |            |
| MB 480-188163/7  | Method Blank       | Total/NA  | Water  | 624    |            |

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### Metals

#### Prep Batch: 187751

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | <del>GW-A</del>    | Total/NA  | Water  | 3005A  |            |
| 480-61861-3        | GW-B               | Total/NA  | Water  | 3005A  |            |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 3005A  |            |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 3005A  |            |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 3005A  |            |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 3005A  |            |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 3005A  |            |
| LCS 480-187751/2-A | Lab Control Sample | Total/NA  | Water  | 3005A  |            |
| MB 480-187751/1-A  | Method Blank       | Total/NA  | Water  | 3005A  |            |

#### Filtration Batch: 187770

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method     | Prep Batch |
|---------------------|------------------------|-----------|--------|------------|------------|
| 480-61861-2         | <del>GW-A</del>        | Dissolved | Water  | FILTRATION |            |
| 480-61861-3         | GW-B                   | Dissolved | Water  | FILTRATION |            |
| 480-61861-4         | SW-02                  | Dissolved | Water  | FILTRATION |            |
| 480-61861-5         | SW-01                  | Dissolved | Water  | FILTRATION |            |
| 480-61861-6         | GW-3                   | Dissolved | Water  | FILTRATION |            |
| 480-61861-7         | GW-1                   | Dissolved | Water  | FILTRATION |            |
| 480-61861-8         | GW-2                   | Dissolved | Water  | FILTRATION |            |
| LCS 480-187770/2-B  | Lab Control Sample     | Dissolved | Water  | FILTRATION |            |
| LCSD 480-187770/3-B | Lab Control Sample Dup | Dissolved | Water  | FILTRATION |            |
| MB 480-187770/1-B   | Method Blank           | Dissolved | Water  | FILTRATION |            |

#### Prep Batch: 187888

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 480-61861-2         | <del>GW-A</del>        | Dissolved | Water  | 3005A  | 187770     |
| 480-61861-3         | GW-B                   | Dissolved | Water  | 3005A  | 187770     |
| 480-61861-4         | SW-02                  | Dissolved | Water  | 3005A  | 187770     |
| 480-61861-5         | SW-01                  | Dissolved | Water  | 3005A  | 187770     |
| 480-61861-6         | GW-3                   | Dissolved | Water  | 3005A  | 187770     |
| 480-61861-7         | GW-1                   | Dissolved | Water  | 3005A  | 187770     |
| 480-61861-8         | GW-2                   | Dissolved | Water  | 3005A  | 187770     |
| LCS 480-187770/2-B  | Lab Control Sample     | Dissolved | Water  | 3005A  | 187770     |
| LCSD 480-187770/3-B | Lab Control Sample Dup | Dissolved | Water  | 3005A  | 187770     |
| MB 480-187770/1-B   | Method Blank           | Dissolved | Water  | 3005A  | 187770     |

TestAmerica Buffalo



## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Metals (Continued)

#### Prep Batch: 187990

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 7470A  |            |
| 480-61861-3        | GW-B               | Total/NA  | Water  | 7470A  |            |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 7470A  |            |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 7470A  |            |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 7470A  |            |
| LCS 480-187990/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  |            |
| MB 480-187990/1-A  | Method Blank       | Total/NA  | Water  | 7470A  |            |

#### Prep Batch: 187992

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Dissolved | Water  | 7470A  | 187770     |
| LCS 480-187992/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  |            |
| MB 480-187992/1-A  | Method Blank       | Total/NA  | Water  | 7470A  |            |

#### Prep Batch: 188082

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-3        | GW-B               | Dissolved | Water  | 7470A  | 187770     |
| 480-61861-4        | SW-02              | Dissolved | Water  | 7470A  | 187770     |
| 480-61861-5        | SW-01              | Dissolved | Water  | 7470A  | 187770     |
| 480-61861-6        | GW-3               | Dissolved | Water  | 7470A  | 187770     |
| 480-61861-7        | GW-1               | Dissolved | Water  | 7470A  | 187770     |
| 480-61861-8        | GW-2               | Dissolved | Water  | 7470A  | 187770     |
| LCS 480-188082/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  |            |
| MB 480-188082/1-A  | Method Blank       | Total/NA  | Water  | 7470A  |            |

#### Prep Batch: 188119

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-7        | GW-1               | Total/NA  | Water  | 7470A  |            |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 7470A  |            |
| 480-61861-8 MS     | GW-2               | Total/NA  | Water  | 7470A  |            |
| 480-61861-8 MSD    | GW-2               | Total/NA  | Water  | 7470A  |            |
| LCS 480-188119/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  |            |
| MB 480-188119/1-A  | Method Blank       | Total/NA  | Water  | 7470A  |            |

#### Analysis Batch: 188161

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 7470A  | 187990     |
| 480-61861-3        | GW-B               | Total/NA  | Water  | 7470A  | 187990     |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 7470A  | 187990     |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 7470A  | 187990     |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 7470A  | 187990     |
| LCS 480-187990/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  | 187990     |
| MB 480-187990/1-A  | Method Blank       | Total/NA  | Water  | 7470A  | 187990     |

#### Analysis Batch: 188305

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 480-61861-2   | GW-A             | Dissolved | Water  | 7470A  | 187992     |
| 480-61861-3   | GW-B             | Dissolved | Water  | 7470A  | 188082     |
| 480-61861-4   | SW-02            | Dissolved | Water  | 7470A  | 188082     |
| 480-61861-5   | SW-01            | Dissolved | Water  | 7470A  | 188082     |
| 480-61861-6   | GW-3             | Dissolved | Water  | 7470A  | 188082     |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Metals (Continued)

#### Analysis Batch: 188305 (Continued)

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-7        | GW-1               | Dissolved | Water  | 7470A  | 188082     |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 7470A  | 188119     |
| 480-61861-8        | GW-2               | Dissolved | Water  | 7470A  | 188082     |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 7470A  | 188119     |
| 480-61861-8 MS     | GW-2               | Total/NA  | Water  | 7470A  | 188119     |
| 480-61861-8 MSD    | GW-2               | Total/NA  | Water  | 7470A  | 188119     |
| LCS 480-187992/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  | 187992     |
| LCS 480-188082/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  | 188082     |
| LCS 480-188119/2-A | Lab Control Sample | Total/NA  | Water  | 7470A  | 188119     |
| MB 480-187992/1-A  | Method Blank       | Total/NA  | Water  | 7470A  | 187992     |
| MB 480-188082/1-A  | Method Blank       | Total/NA  | Water  | 7470A  | 188082     |
| MB 480-188119/1-A  | Method Blank       | Total/NA  | Water  | 7470A  | 188119     |

#### Analysis Batch: 188615

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 6010C  | 187751     |
| 480-61861-3        | GW-B               | Total/NA  | Water  | 6010C  | 187751     |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 6010C  | 187751     |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 6010C  | 187751     |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 6010C  | 187751     |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 6010C  | 187751     |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 6010C  | 187751     |
| LCS 480-187751/2-A | Lab Control Sample | Total/NA  | Water  | 6010C  | 187751     |
| MB 480-187751/1-A  | Method Blank       | Total/NA  | Water  | 6010C  | 187751     |

#### Analysis Batch: 189205

| Lab Sample ID       | Client Sample ID       | Prep Type | Matrix | Method | Prep Batch |
|---------------------|------------------------|-----------|--------|--------|------------|
| 480-61861-2         | GW-A                   | Dissolved | Water  | 6010C  | 187888     |
| 480-61861-3         | GW-B                   | Dissolved | Water  | 6010C  | 187888     |
| 480-61861-4         | SW-02                  | Dissolved | Water  | 6010C  | 187888     |
| 480-61861-5         | SW-01                  | Dissolved | Water  | 6010C  | 187888     |
| 480-61861-6         | GW-3                   | Dissolved | Water  | 6010C  | 187888     |
| 480-61861-7         | GW-1                   | Dissolved | Water  | 6010C  | 187888     |
| 480-61861-8         | GW-2                   | Dissolved | Water  | 6010C  | 187888     |
| LCS 480-187770/2-B  | Lab Control Sample     | Dissolved | Water  | 6010C  | 187888     |
| LCSD 480-187770/3-B | Lab Control Sample Dup | Dissolved | Water  | 6010C  | 187888     |
| MB 480-187770/1-B   | Method Blank           | Dissolved | Water  | 6010C  | 187888     |

### General Chemistry

#### Analysis Batch: 187532

| Lab Sample ID  | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|----------------|------------------|-----------|--------|--------|------------|
| 480-61861-2    | GW-A             | Total/NA  | Water  | 7196A  |            |
| 480-61861-3    | GW-B             | Total/NA  | Water  | 7196A  |            |
| 480-61861-4    | SW-02            | Total/NA  | Water  | 7196A  |            |
| 480-61861-4 DU | SW-02            | Total/NA  | Water  | 7196A  |            |
| 480-61861-4 MS | SW-02            | Total/NA  | Water  | 7196A  |            |
| 480-61861-5    | SW-01            | Total/NA  | Water  | 7196A  |            |
| 480-61861-6    | GW-3             | Total/NA  | Water  | 7196A  |            |
| 480-61861-7    | GW-1             | Total/NA  | Water  | 7196A  |            |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### General Chemistry (Continued)

#### Analysis Batch: 187532 (Continued)

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-8       | GW-2               | Total/NA  | Water  | 7196A  |            |
| LCS 480-187532/28 | Lab Control Sample | Total/NA  | Water  | 7196A  |            |
| LCS 480-187532/4  | Lab Control Sample | Total/NA  | Water  | 7196A  |            |
| MB 480-187532/27  | Method Blank       | Total/NA  | Water  | 7196A  |            |
| MB 480-187532/3   | Method Blank       | Total/NA  | Water  | 7196A  |            |

#### Analysis Batch: 187550

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2       | GW-A               | Total/NA  | Water  | 180.1  |            |
| 480-61861-3       | GW-B               | Total/NA  | Water  | 180.1  |            |
| 480-61861-4       | SW-02              | Total/NA  | Water  | 180.1  |            |
| 480-61861-5       | SW-01              | Total/NA  | Water  | 180.1  |            |
| 480-61861-5 DU    | SW-01              | Total/NA  | Water  | 180.1  |            |
| 480-61861-6       | GW-3               | Total/NA  | Water  | 180.1  |            |
| 480-61861-7       | GW-1               | Total/NA  | Water  | 180.1  |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | 180.1  |            |
| LCS 480-187550/28 | Lab Control Sample | Total/NA  | Water  | 180.1  |            |
| MB 480-187550/27  | Method Blank       | Total/NA  | Water  | 180.1  |            |

#### Analysis Batch: 187631

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|-------------------|--------------------|-----------|--------|----------|------------|
| 480-61861-2       | GW-A               | Total/NA  | Water  | SM 2120B |            |
| 480-61861-3       | GW-B               | Total/NA  | Water  | SM 2120B |            |
| 480-61861-4       | SW-02              | Total/NA  | Water  | SM 2120B |            |
| 480-61861-5       | SW-01              | Total/NA  | Water  | SM 2120B |            |
| 480-61861-6       | GW-3               | Total/NA  | Water  | SM 2120B |            |
| 480-61861-7       | GW-1               | Total/NA  | Water  | SM 2120B |            |
| 480-61861-7 DU    | GW-1               | Total/NA  | Water  | SM 2120B |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | SM 2120B |            |
| LCS 480-187631/28 | Lab Control Sample | Total/NA  | Water  | SM 2120B |            |
| LCS 480-187631/4  | Lab Control Sample | Total/NA  | Water  | SM 2120B |            |
| MB 480-187631/27  | Method Blank       | Total/NA  | Water  | SM 2120B |            |
| MB 480-187631/3   | Method Blank       | Total/NA  | Water  | SM 2120B |            |

#### Analysis Batch: 187693

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|---------------|------------------|-----------|--------|--------|------------|
| 480-61861-2   | GW-A             | Total/NA  | Water  | 353.2  |            |
| 480-61861-3   | GW-B             | Total/NA  | Water  | 353.2  |            |
| 480-61861-4   | SW-02            | Total/NA  | Water  | 353.2  |            |
| 480-61861-5   | SW-01            | Total/NA  | Water  | 353.2  |            |
| 480-61861-6   | GW-3             | Total/NA  | Water  | 353.2  |            |
| 480-61861-7   | GW-1             | Total/NA  | Water  | 353.2  |            |
| 480-61861-8   | GW-2             | Total/NA  | Water  | 353.2  |            |

#### Analysis Batch: 187695

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method   | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 480-61861-2   | GW-A             | Total/NA  | Water  | SM 5210B |            |
| 480-61861-3   | GW-B             | Total/NA  | Water  | SM 5210B |            |
| 480-61861-4   | SW-02            | Total/NA  | Water  | SM 5210B |            |
| 480-61861-5   | SW-01            | Total/NA  | Water  | SM 5210B |            |
| 480-61861-6   | GW-3             | Total/NA  | Water  | SM 5210B |            |

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## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### General Chemistry (Continued)

#### Analysis Batch: 187695 (Continued)

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|------------------|--------------------|-----------|--------|----------|------------|
| 480-61861-7      | GW-1               | Total/NA  | Water  | SM 5210B |            |
| 480-61861-8      | GW-2               | Total/NA  | Water  | SM 5210B |            |
| LCS 480-187695/2 | Lab Control Sample | Total/NA  | Water  | SM 5210B |            |
| USB 480-187695/1 | Method Blank       | Total/NA  | Water  | SM 5210B |            |

#### Analysis Batch: 188035

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2       | GW-A               | Total/NA  | Water  | 410.4  |            |
| 480-61861-3       | GW-B               | Total/NA  | Water  | 410.4  |            |
| 480-61861-4       | SW-02              | Total/NA  | Water  | 410.4  |            |
| 480-61861-4 MS    | SW-02              | Total/NA  | Water  | 410.4  |            |
| 480-61861-5       | SW-01              | Total/NA  | Water  | 410.4  |            |
| 480-61861-5 DU    | SW-01              | Total/NA  | Water  | 410.4  |            |
| 480-61861-6       | GW-3               | Total/NA  | Water  | 410.4  |            |
| LCS 480-188035/28 | Lab Control Sample | Total/NA  | Water  | 410.4  |            |
| LCS 480-188035/4  | Lab Control Sample | Total/NA  | Water  | 410.4  |            |
| MB 480-188035/27  | Method Blank       | Total/NA  | Water  | 410.4  |            |
| MB 480-188035/3   | Method Blank       | Total/NA  | Water  | 410.4  |            |

#### Analysis Batch: 188045

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|------------------|--------------------|-----------|--------|----------|------------|
| 480-61861-2      | GW-A               | Total/NA  | Water  | SM 2540C |            |
| 480-61861-3      | GW-B               | Total/NA  | Water  | SM 2540C |            |
| 480-61861-4      | SW-02              | Total/NA  | Water  | SM 2540C |            |
| 480-61861-5      | SW-01              | Total/NA  | Water  | SM 2540C |            |
| 480-61861-6      | GW-3               | Total/NA  | Water  | SM 2540C |            |
| 480-61861-7      | GW-1               | Total/NA  | Water  | SM 2540C |            |
| 480-61861-8      | GW-2               | Total/NA  | Water  | SM 2540C |            |
| LCS 480-188045/2 | Lab Control Sample | Total/NA  | Water  | SM 2540C |            |
| MB 480-188045/1  | Method Blank       | Total/NA  | Water  | SM 2540C |            |

#### Analysis Batch: 188210

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 350.1  |            |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 350.1  |            |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 350.1  |            |
| LCS 480-188210/148 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| LCS 480-188210/172 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| LCS 480-188210/52  | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| MB 480-188210/147  | Method Blank       | Total/NA  | Water  | 350.1  |            |
| MB 480-188210/171  | Method Blank       | Total/NA  | Water  | 350.1  |            |
| MB 480-188210/51   | Method Blank       | Total/NA  | Water  | 350.1  |            |

#### Analysis Batch: 188240

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-6       | GW-3               | Total/NA  | Water  | 350.1  |            |
| 480-61861-7       | GW-1               | Total/NA  | Water  | 350.1  |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | 350.1  |            |
| LCS 480-188240/28 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| LCS 480-188240/76 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| MB 480-188240/27  | Method Blank       | Total/NA  | Water  | 350.1  |            |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### General Chemistry (Continued)

#### Analysis Batch: 188240 (Continued)

| Lab Sample ID    | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|------------------|------------------|-----------|--------|--------|------------|
| MB 480-188240/75 | Method Blank     | Total/NA  | Water  | 350.1  |            |

#### Analysis Batch: 188308

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2       | GW-A               | Total/NA  | Water  | 9060A  |            |
| 480-61861-2 DU    | GW-A               | Total/NA  | Water  | 9060A  |            |
| 480-61861-3       | GW-B               | Total/NA  | Water  | 9060A  |            |
| 480-61861-3 MS    | GW-B               | Total/NA  | Water  | 9060A  |            |
| 480-61861-4       | SW-02              | Total/NA  | Water  | 9060A  |            |
| 480-61861-5       | SW-01              | Total/NA  | Water  | 9060A  |            |
| 480-61861-6       | GW-3               | Total/NA  | Water  | 9060A  |            |
| 480-61861-7       | GW-1               | Total/NA  | Water  | 9060A  |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | 9060A  |            |
| 480-61861-8 DU    | GW-2               | Total/NA  | Water  | 9060A  |            |
| LCS 480-188308/16 | Lab Control Sample | Total/NA  | Water  | 9060A  |            |
| LCS 480-188308/40 | Lab Control Sample | Total/NA  | Water  | 9060A  |            |
| MB 480-188308/15  | Method Blank       | Total/NA  | Water  | 9060A  |            |
| MB 480-188308/39  | Method Blank       | Total/NA  | Water  | 9060A  |            |

#### Prep Batch: 188543

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 351.2  |            |
| 480-61861-3        | GW-B               | Total/NA  | Water  | 351.2  |            |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 351.2  |            |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 351.2  |            |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 351.2  |            |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 351.2  |            |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 351.2  |            |
| LCS 480-188543/2-A | Lab Control Sample | Total/NA  | Water  | 351.2  |            |
| MB 480-188543/1-A  | Method Blank       | Total/NA  | Water  | 351.2  |            |

#### Analysis Batch: 188683

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 351.2  | 188543     |
| 480-61861-3        | GW-B               | Total/NA  | Water  | 351.2  | 188543     |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 351.2  | 188543     |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 351.2  | 188543     |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 351.2  | 188543     |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 351.2  | 188543     |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 351.2  | 188543     |
| LCS 480-188543/2-A | Lab Control Sample | Total/NA  | Water  | 351.2  | 188543     |
| MB 480-188543/1-A  | Method Blank       | Total/NA  | Water  | 351.2  | 188543     |

#### Analysis Batch: 188711

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-7       | GW-1               | Total/NA  | Water  | 410.4  |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | 410.4  |            |
| LCS 480-188711/28 | Lab Control Sample | Total/NA  | Water  | 410.4  |            |
| LCS 480-188711/4  | Lab Control Sample | Total/NA  | Water  | 410.4  |            |
| MB 480-188711/27  | Method Blank       | Total/NA  | Water  | 410.4  |            |
| MB 480-188711/3   | Method Blank       | Total/NA  | Water  | 410.4  |            |

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## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### General Chemistry (Continued)

#### Analysis Batch: 188730

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2       | GW-A               | Total/NA  | Water  | 300.0  |            |
| 480-61861-3       | GW-B               | Total/NA  | Water  | 300.0  |            |
| 480-61861-4       | SW-02              | Total/NA  | Water  | 300.0  |            |
| 480-61861-5       | SW-01              | Total/NA  | Water  | 300.0  |            |
| 480-61861-6       | GW-3               | Total/NA  | Water  | 300.0  |            |
| 480-61861-7       | GW-1               | Total/NA  | Water  | 300.0  |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | 300.0  |            |
| LCS 480-188730/99 | Lab Control Sample | Total/NA  | Water  | 300.0  |            |
| MB 480-188730/100 | Method Blank       | Total/NA  | Water  | 300.0  |            |

#### Analysis Batch: 188771

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-7       | GW-1               | Total/NA  | Water  | 310.2  |            |
| LCS 480-188771/27 | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| LCS 480-188771/45 | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| LCS 480-188771/57 | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| MB 480-188771/28  | Method Blank       | Total/NA  | Water  | 310.2  |            |
| MB 480-188771/46  | Method Blank       | Total/NA  | Water  | 310.2  |            |
| MB 480-188771/58  | Method Blank       | Total/NA  | Water  | 310.2  |            |

#### Prep Batch: 188827

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 9012B  |            |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 9012B  |            |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 9012B  |            |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 9012B  |            |
| LCS 480-188827/2-A | Lab Control Sample | Total/NA  | Water  | 9012B  |            |
| MB 480-188827/1-A  | Method Blank       | Total/NA  | Water  | 9012B  |            |

#### Analysis Batch: 188961

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 9012B  | 188827     |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 9012B  | 188827     |
| 480-61861-6        | GW-3               | Total/NA  | Water  | 9012B  | 188827     |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 9012B  | 188827     |
| LCS 480-188827/2-A | Lab Control Sample | Total/NA  | Water  | 9012B  | 188827     |
| MB 480-188827/1-A  | Method Blank       | Total/NA  | Water  | 9012B  | 188827     |

#### Analysis Batch: 189017

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2       | GW-A               | Total/NA  | Water  | 310.2  |            |
| 480-61861-3       | GW-B               | Total/NA  | Water  | 310.2  |            |
| 480-61861-4       | SW-02              | Total/NA  | Water  | 310.2  |            |
| 480-61861-5       | SW-01              | Total/NA  | Water  | 310.2  |            |
| 480-61861-6       | GW-3               | Total/NA  | Water  | 310.2  |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | 310.2  |            |
| LCS 480-189017/66 | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| LCS 480-189017/91 | Lab Control Sample | Total/NA  | Water  | 310.2  |            |
| MB 480-189017/67  | Method Blank       | Total/NA  | Water  | 310.2  |            |
| MB 480-189017/92  | Method Blank       | Total/NA  | Water  | 310.2  |            |

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## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### General Chemistry (Continued)

#### Prep Batch: 189045

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-3        | GW-B               | Total/NA  | Water  | 9012B  |            |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 9012B  |            |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 9012B  |            |
| LCS 480-189045/2-A | Lab Control Sample | Total/NA  | Water  | 9012B  |            |
| MB 480-189045/1-A  | Method Blank       | Total/NA  | Water  | 9012B  |            |

#### Analysis Batch: 189315

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-3        | GW-B               | Total/NA  | Water  | 9012B  | 189045     |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 9012B  | 189045     |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 9012B  | 189045     |
| LCS 480-189045/2-A | Lab Control Sample | Total/NA  | Water  | 9012B  | 189045     |
| MB 480-189045/1-A  | Method Blank       | Total/NA  | Water  | 9012B  | 189045     |

#### Prep Batch: 189398

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------|----------------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | Distill/Phenol |            |
| 480-61861-3        | GW-B               | Total/NA  | Water  | Distill/Phenol |            |
| 480-61861-4        | SW-02              | Total/NA  | Water  | Distill/Phenol |            |
| LCS 480-189398/2-A | Lab Control Sample | Total/NA  | Water  | Distill/Phenol |            |
| MB 480-189398/1-A  | Method Blank       | Total/NA  | Water  | Distill/Phenol |            |

#### Prep Batch: 189401

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------|----------------|------------|
| 480-61861-5        | SW-01              | Total/NA  | Water  | Distill/Phenol |            |
| 480-61861-5 DU     | SW-01              | Total/NA  | Water  | Distill/Phenol |            |
| 480-61861-7        | GW-1               | Total/NA  | Water  | Distill/Phenol |            |
| 480-61861-8        | GW-2               | Total/NA  | Water  | Distill/Phenol |            |
| LCS 480-189401/2-A | Lab Control Sample | Total/NA  | Water  | Distill/Phenol |            |
| MB 480-189401/1-A  | Method Blank       | Total/NA  | Water  | Distill/Phenol |            |

#### Analysis Batch: 189543

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-2        | GW-A               | Total/NA  | Water  | 9066   | 189398     |
| 480-61861-3        | GW-B               | Total/NA  | Water  | 9066   | 189398     |
| 480-61861-4        | SW-02              | Total/NA  | Water  | 9066   | 189398     |
| 480-61861-5        | SW-01              | Total/NA  | Water  | 9066   | 189401     |
| 480-61861-5 DU     | SW-01              | Total/NA  | Water  | 9066   | 189401     |
| 480-61861-7        | GW-1               | Total/NA  | Water  | 9066   | 189401     |
| 480-61861-8        | GW-2               | Total/NA  | Water  | 9066   | 189401     |
| LCS 480-189398/2-A | Lab Control Sample | Total/NA  | Water  | 9066   | 189398     |
| LCS 480-189401/2-A | Lab Control Sample | Total/NA  | Water  | 9066   | 189401     |
| MB 480-189398/1-A  | Method Blank       | Total/NA  | Water  | 9066   | 189398     |
| MB 480-189401/1-A  | Method Blank       | Total/NA  | Water  | 9066   | 189401     |

#### Analysis Batch: 189609

| Lab Sample ID | Client Sample ID | Prep Type | Matrix | Method   | Prep Batch |
|---------------|------------------|-----------|--------|----------|------------|
| 480-61861-2   | GW-A             | Total/NA  | Water  | SM 2340C |            |
| 480-61861-3   | GW-B             | Total/NA  | Water  | SM 2340C |            |
| 480-61861-4   | SW-02            | Total/NA  | Water  | SM 2340C |            |
| 480-61861-5   | SW-01            | Total/NA  | Water  | SM 2340C |            |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### General Chemistry (Continued)

#### Analysis Batch: 189609 (Continued)

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method   | Prep Batch |
|-------------------|--------------------|-----------|--------|----------|------------|
| 480-61861-6       | GW-3               | Total/NA  | Water  | SM 2340C |            |
| 480-61861-7       | GW-1               | Total/NA  | Water  | SM 2340C |            |
| 480-61861-8       | GW-2               | Total/NA  | Water  | SM 2340C |            |
| LCS 480-189609/28 | Lab Control Sample | Total/NA  | Water  | SM 2340C |            |
| LCS 480-189609/4  | Lab Control Sample | Total/NA  | Water  | SM 2340C |            |
| MB 480-189609/27  | Method Blank       | Total/NA  | Water  | SM 2340C |            |
| MB 480-189609/3   | Method Blank       | Total/NA  | Water  | SM 2340C |            |

#### Analysis Batch: 189620

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|-------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-3       | GW-B               | Total/NA  | Water  | 350.1  |            |
| LCS 480-189620/16 | Lab Control Sample | Total/NA  | Water  | 350.1  |            |
| MB 480-189620/15  | Method Blank       | Total/NA  | Water  | 350.1  |            |

#### Prep Batch: 189825

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------|----------------|------------|
| 480-61861-6        | GW-3               | Total/NA  | Water  | Distill/Phenol |            |
| LCS 480-189825/2-A | Lab Control Sample | Total/NA  | Water  | Distill/Phenol |            |
| MB 480-189825/1-A  | Method Blank       | Total/NA  | Water  | Distill/Phenol |            |

#### Analysis Batch: 190040

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix | Method | Prep Batch |
|--------------------|--------------------|-----------|--------|--------|------------|
| 480-61861-6        | GW-3               | Total/NA  | Water  | 9066   | 189825     |
| LCS 480-189825/2-A | Lab Control Sample | Total/NA  | Water  | 9066   | 189825     |
| MB 480-189825/1-A  | Method Blank       | Total/NA  | Water  | 9066   | 189825     |

# Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-A

Lab Sample ID: 480-61861-2

Date Collected: 06/12/14 14:00

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624            |     | 1               | 188163       | 06/18/14 05:07       | RAS     | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 3005A          |     |                 | 187888       | 06/16/14 12:05       | EHD     | TAL BUF |
| Dissolved | Analysis   | 6010C          |     | 1               | 189205       | 06/20/14 14:31       | MTM2    | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 187751       | 06/16/14 08:00       | ZL      | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 188615       | 06/18/14 22:05       | MTM2    | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 7470A          |     |                 | 187992       | 06/17/14 10:15       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 188305       | 06/17/14 14:02       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 187990       | 06/16/14 14:30       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 188161       | 06/17/14 10:03       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 187550       | 06/13/14 08:37       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 188730       | 06/20/14 11:22       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 5               | 189017       | 06/20/14 12:52       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 1               | 188210       | 06/17/14 12:47       | KMF     | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 188543       | 06/18/14 19:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 1               | 188683       | 06/19/14 10:12       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 187693       | 06/13/14 16:24       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 188035       | 06/16/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 187532       | 06/13/14 09:59       | KJ1     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 188827       | 06/19/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 188961       | 06/20/14 10:32       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 188308       | 06/17/14 13:22       | KRC     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 189398       | 06/23/14 17:30       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 189543       | 06/24/14 11:20       | NCH     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 187631       | 06/13/14 11:17       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 189609       | 06/24/14 10:32       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 188045       | 06/16/14 23:16       | KS      | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 187695       | 06/13/14 17:39       | CLT     | TAL BUF |

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Client Sample ID: GW-B

Lab Sample ID: 480-61861-3

Date Collected: 06/12/14 14:45

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1               | 188163       | 06/18/14 05:31       | RAS     | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 187888       | 06/16/14 12:05       | EHD     | TAL BUF |
| Dissolved | Analysis   | 6010C        |     | 1               | 189205       | 06/20/14 14:34       | MTM2    | TAL BUF |
| Total/NA  | Prep       | 3005A        |     |                 | 187751       | 06/16/14 08:00       | ZL      | TAL BUF |
| Total/NA  | Analysis   | 6010C        |     | 1               | 188615       | 06/18/14 22:10       | MTM2    | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |

TestAmerica Buffalo



## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: GW-B**

**Lab Sample ID: 480-61861-3**

Date Collected: 06/12/14 14:45

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Dissolved | Prep       | 7470A          |     |                 | 188082       | 06/17/14 10:15       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 188305       | 06/17/14 14:55       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 187990       | 06/16/14 14:30       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 188161       | 06/17/14 10:11       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 187550       | 06/13/14 10:32       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 188730       | 06/20/14 11:32       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 10              | 189017       | 06/20/14 12:30       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 1               | 189620       | 06/24/14 18:38       | RS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 188543       | 06/18/14 19:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 1               | 188683       | 06/19/14 10:12       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 187693       | 06/13/14 16:27       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 188035       | 06/16/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 187532       | 06/13/14 10:03       | KJ1     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 189045       | 06/20/14 15:55       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 189315       | 06/23/14 08:24       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 188308       | 06/17/14 14:19       | KRC     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 189398       | 06/23/14 17:30       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 189543       | 06/24/14 11:14       | NCH     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 2               | 187631       | 06/13/14 11:17       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 189609       | 06/24/14 10:29       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 188045       | 06/16/14 23:18       | KS      | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 187695       | 06/13/14 17:39       | CLT     | TAL BUF |

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**Client Sample ID: SW-02**

**Lab Sample ID: 480-61861-4**

Date Collected: 06/12/14 14:30

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1               | 188163       | 06/18/14 05:55       | RAS     | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 187888       | 06/16/14 12:05       | EHD     | TAL BUF |
| Dissolved | Analysis   | 6010C        |     | 1               | 189205       | 06/20/14 14:37       | MTM2    | TAL BUF |
| Total/NA  | Prep       | 3005A        |     |                 | 187751       | 06/16/14 08:00       | ZL      | TAL BUF |
| Total/NA  | Analysis   | 6010C        |     | 1               | 188615       | 06/18/14 22:08       | MTM2    | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 7470A        |     |                 | 188082       | 06/17/14 10:15       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A        |     | 1               | 188305       | 06/17/14 14:28       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A        |     |                 | 187990       | 06/16/14 14:30       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A        |     | 1               | 188161       | 06/17/14 10:09       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1        |     | 1               | 187550       | 06/13/14 10:32       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0        |     | 1               | 188730       | 06/20/14 11:43       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 310.2        |     | 5               | 189017       | 06/20/14 12:52       | JTS     | TAL BUF |

TestAmerica Buffalo

## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: SW-02**

**Lab Sample ID: 480-61861-4**

Date Collected: 06/12/14 14:30

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 350.1          |     | 1               | 188210       | 06/17/14 12:54       | KMF     | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 188543       | 06/18/14 19:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 1               | 188683       | 06/19/14 10:12       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 187693       | 06/13/14 17:05       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 188035       | 06/16/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 187532       | 06/13/14 10:45       | KJ1     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 189045       | 06/20/14 15:55       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 189315       | 06/23/14 08:25       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 188308       | 06/17/14 17:10       | KRC     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 189398       | 06/23/14 17:30       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 189543       | 06/24/14 11:20       | NCH     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 187631       | 06/13/14 11:17       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 189609       | 06/24/14 10:39       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 188045       | 06/16/14 23:20       | KS      | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 187695       | 06/13/14 17:39       | CLT     | TAL BUF |

**Client Sample ID: SW-01**

**Lab Sample ID: 480-61861-5**

Date Collected: 06/12/14 15:12

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1               | 188163       | 06/18/14 06:19       | RAS     | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 3005A        |     |                 | 187888       | 06/16/14 12:05       | EHD     | TAL BUF |
| Dissolved | Analysis   | 6010C        |     | 1               | 189205       | 06/20/14 14:40       | MTM2    | TAL BUF |
| Total/NA  | Prep       | 3005A        |     |                 | 187751       | 06/16/14 08:00       | ZL      | TAL BUF |
| Total/NA  | Analysis   | 6010C        |     | 1               | 188615       | 06/18/14 22:13       | MTM2    | TAL BUF |
| Dissolved | Filtration | FILTRATION   |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 7470A        |     |                 | 188082       | 06/17/14 10:15       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A        |     | 1               | 188305       | 06/17/14 14:37       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A        |     |                 | 187990       | 06/16/14 14:30       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A        |     | 1               | 188161       | 06/17/14 10:13       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1        |     | 1               | 187550       | 06/13/14 10:32       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0        |     | 1               | 188730       | 06/20/14 11:53       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 310.2        |     | 5               | 189017       | 06/20/14 12:51       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 350.1        |     | 1               | 188210       | 06/17/14 12:55       | KMF     | TAL BUF |
| Total/NA  | Prep       | 351.2        |     |                 | 188543       | 06/18/14 19:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 351.2        |     | 1               | 188683       | 06/19/14 10:12       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 353.2        |     | 1               | 187693       | 06/13/14 16:30       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 410.4        |     | 1               | 188035       | 06/16/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 7196A        |     | 1               | 187532       | 06/13/14 10:08       | KJ1     | TAL BUF |
| Total/NA  | Prep       | 9012B        |     |                 | 188827       | 06/19/14 17:30       | JMB     | TAL BUF |

TestAmerica Buffalo

# Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: SW-01

Lab Sample ID: 480-61861-5

Date Collected: 06/12/14 15:12

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 9012B          |     | 1               | 188961       | 06/20/14 10:33       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 188308       | 06/17/14 17:39       | KRC     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 189401       | 06/23/14 20:30       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 189543       | 06/24/14 11:08       | NCH     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 187631       | 06/13/14 11:17       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 189609       | 06/24/14 10:57       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 188045       | 06/16/14 23:22       | KS      | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 187695       | 06/13/14 17:39       | CLT     | TAL BUF |

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Client Sample ID: GW-3

Lab Sample ID: 480-61861-6

Date Collected: 06/12/14 16:40

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624            |     | 1               | 188163       | 06/18/14 06:43       | RAS     | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 3005A          |     |                 | 187888       | 06/16/14 12:05       | EHD     | TAL BUF |
| Dissolved | Analysis   | 6010C          |     | 1               | 189205       | 06/20/14 14:52       | MTM2    | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 187751       | 06/16/14 08:00       | ZL      | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 188615       | 06/18/14 22:16       | MTM2    | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 7470A          |     |                 | 188082       | 06/17/14 10:15       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 188305       | 06/17/14 14:46       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 187990       | 06/16/14 14:30       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 188161       | 06/17/14 10:14       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 187550       | 06/13/14 10:32       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 188730       | 06/20/14 12:03       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 10              | 189017       | 06/20/14 12:30       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 5               | 188240       | 06/17/14 15:07       | KMF     | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 188543       | 06/18/14 19:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 2               | 188683       | 06/19/14 10:43       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 187693       | 06/13/14 16:31       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 188035       | 06/16/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 187532       | 06/13/14 10:13       | KJ1     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 188827       | 06/19/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 188961       | 06/20/14 10:34       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 188308       | 06/17/14 18:07       | KRC     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 189825       | 06/25/14 12:19       | RP      | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 190040       | 06/26/14 09:50       | NCH     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 187631       | 06/13/14 11:17       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 189609       | 06/24/14 11:04       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 188045       | 06/16/14 23:23       | KS      | TAL BUF |

TestAmerica Buffalo



## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

**Client Sample ID: GW-3**

Date Collected: 06/12/14 16:40

Date Received: 06/13/14 09:00

**Lab Sample ID: 480-61861-6**

Matrix: Water

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | SM 5210B     |     | 1               | 187695       | 06/13/14 17:39       | CLT     | TAL BUF |

**Client Sample ID: GW-1**

Date Collected: 06/12/14 16:15

Date Received: 06/13/14 09:00

**Lab Sample ID: 480-61861-7**

Matrix: Water

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624            |     | 1               | 188163       | 06/18/14 07:07       | RAS     | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 3005A          |     |                 | 187888       | 06/16/14 12:05       | EHD     | TAL BUF |
| Dissolved | Analysis   | 6010C          |     | 1               | 189205       | 06/20/14 14:56       | MTM2    | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 187751       | 06/16/14 08:00       | ZL      | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 188615       | 06/18/14 22:19       | MTM2    | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 7470A          |     |                 | 188082       | 06/17/14 10:15       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 188305       | 06/17/14 14:58       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 188119       | 06/17/14 10:15       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 188305       | 06/17/14 15:19       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 187550       | 06/13/14 10:32       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 188730       | 06/20/14 12:13       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 10              | 188771       | 06/19/14 11:34       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 10              | 188240       | 06/17/14 15:08       | KMF     | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 188543       | 06/18/14 19:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 10              | 188683       | 06/19/14 10:39       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 187693       | 06/13/14 16:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 188711       | 06/19/14 10:09       | KJ1     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 187532       | 06/13/14 10:17       | KJ1     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 189045       | 06/20/14 15:55       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 189315       | 06/23/14 08:29       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 188308       | 06/17/14 18:35       | KRC     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 189401       | 06/23/14 20:30       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 189543       | 06/24/14 11:08       | NCH     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 187631       | 06/13/14 11:17       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 189609       | 06/24/14 09:36       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 188045       | 06/16/14 23:25       | KS      | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 187695       | 06/13/14 17:39       | CLT     | TAL BUF |

TestAmerica Buffalo

# Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

Client Sample ID: GW-2

Lab Sample ID: 480-61861-8

Date Collected: 06/12/14 16:30

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624            |     | 1               | 188163       | 06/18/14 07:30       | RAS     | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 3005A          |     |                 | 187888       | 06/16/14 12:05       | EHD     | TAL BUF |
| Dissolved | Analysis   | 6010C          |     | 1               | 189205       | 06/20/14 14:59       | MTM2    | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 187751       | 06/16/14 08:00       | ZL      | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 188615       | 06/18/14 22:22       | MTM2    | TAL BUF |
| Dissolved | Filtration | FILTRATION     |     |                 | 187770       | 06/14/14 11:38       | ZL      | TAL BUF |
| Dissolved | Prep       | 7470A          |     |                 | 188082       | 06/17/14 10:15       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 188305       | 06/17/14 14:43       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 188119       | 06/17/14 10:15       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 188305       | 06/17/14 15:11       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 187550       | 06/13/14 10:32       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 188730       | 06/20/14 12:23       | KRC     | TAL BUF |
| Total/NA  | Analysis   | 310.2          |     | 10              | 189017       | 06/20/14 12:30       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 5               | 188240       | 06/17/14 15:09       | KMF     | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 188543       | 06/18/14 19:32       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 5               | 188683       | 06/19/14 10:39       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 187693       | 06/13/14 16:33       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 188711       | 06/19/14 10:09       | KJ1     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 187532       | 06/13/14 10:22       | KJ1     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 188827       | 06/19/14 17:30       | JMB     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 188961       | 06/20/14 10:36       | JTS     | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 188308       | 06/17/14 19:03       | KRC     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 189401       | 06/23/14 20:30       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 189543       | 06/24/14 11:09       | NCH     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 187631       | 06/13/14 11:17       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 189609       | 06/24/14 11:08       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 188045       | 06/16/14 23:27       | KS      | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 187695       | 06/13/14 17:39       | CLT     | TAL BUF |

Client Sample ID: TRIP BLANK

Lab Sample ID: 480-61861-9

Date Collected: 06/12/14 13:25

Matrix: Water

Date Received: 06/13/14 09:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1               | 188163       | 06/18/14 07:54       | RAS     | TAL BUF |

## Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TestAmerica Buffalo

## Certification Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

### Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority      | Program       | EPA Region | Certification ID | Expiration Date |
|----------------|---------------|------------|------------------|-----------------|
| Arkansas DEQ   | State Program | 6          | 88-0686          | 07-06-14        |
| California     | State Program | 9          | 1169CA           | 09-30-14        |
| Connecticut    | State Program | 1          | PH-0568          | 09-30-14        |
| Florida        | NELAP         | 4          | E87672           | 06-30-14 *      |
| Georgia        | State Program | 4          | N/A              | 03-31-15        |
| Illinois       | NELAP         | 5          | 200003           | 09-30-14        |
| Iowa           | State Program | 7          | 374              | 03-01-15        |
| Kansas         | NELAP         | 7          | E-10187          | 01-31-15        |
| Kentucky (DW)  | State Program | 4          | 90029            | 12-31-14        |
| Kentucky (UST) | State Program | 4          | 30               | 03-31-15        |
| Louisiana      | NELAP         | 6          | 02031            | 06-30-14 *      |
| Maine          | State Program | 1          | NY00044          | 12-04-14        |
| Maryland       | State Program | 3          | 294              | 03-31-15        |
| Massachusetts  | State Program | 1          | M-NY044          | 06-30-14 *      |
| Michigan       | State Program | 5          | 9937             | 03-31-15        |
| Minnesota      | NELAP         | 5          | 036-999-337      | 12-31-14        |
| New Hampshire  | NELAP         | 1          | 2337             | 11-17-14        |
| New Jersey     | NELAP         | 2          | NY455            | 06-30-14 *      |
| New York       | NELAP         | 2          | 10026            | 03-31-15        |
| North Dakota   | State Program | 8          | R-176            | 03-31-14 *      |
| Oklahoma       | State Program | 6          | 9421             | 08-31-14        |
| Oregon         | NELAP         | 10         | NY200003         | 06-09-15        |
| Pennsylvania   | NELAP         | 3          | 68-00281         | 07-31-14        |
| Rhode Island   | State Program | 1          | LAO00328         | 12-30-14        |
| Tennessee      | State Program | 4          | TN02970          | 03-31-15        |
| Texas          | NELAP         | 6          | T104704412-11-2  | 07-31-14        |
| USDA           | Federal       |            | P330-11-00386    | 11-22-14        |
| Virginia       | NELAP         | 3          | 460185           | 09-14-14        |
| Washington     | State Program | 10         | C784             | 02-10-15        |
| Wisconsin      | State Program | 5          | 998310390        | 08-31-14        |

\* Certification renewal pending - certification considered valid.

TestAmerica Buffalo



## Method Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

| Method   | Method Description                 | Protocol  | Laboratory |
|----------|------------------------------------|-----------|------------|
| 624      | Volatile Organic Compounds (GC/MS) | 40CFR136A | TAL BUF    |
| 6010C    | Metals (ICP)                       | SW846     | TAL BUF    |
| 7470A    | Mercury (CVAA)                     | SW846     | TAL BUF    |
| 180.1    | Turbidity, Nephelometric           | MCAWW     | TAL BUF    |
| 300.0    | Anions, Ion Chromatography         | MCAWW     | TAL BUF    |
| 310.2    | Alkalinity                         | MCAWW     | TAL BUF    |
| 350.1    | Nitrogen, Ammonia                  | MCAWW     | TAL BUF    |
| 351.2    | Nitrogen, Total Kjeldahl           | MCAWW     | TAL BUF    |
| 353.2    | Nitrate                            | EPA       | TAL BUF    |
| 410.4    | COD                                | MCAWW     | TAL BUF    |
| 7196A    | Chromium, Hexavalent               | SW846     | TAL BUF    |
| 9012B    | Cyanide, Total and/or Amenable     | SW846     | TAL BUF    |
| 9060A    | Organic Carbon, Total (TOC)        | SW846     | TAL BUF    |
| 9066     | Phenolics, Total Recoverable       | SW846     | TAL BUF    |
| SM 2120B | Color, Colorimetric                | SM        | TAL BUF    |
| SM 2340C | Hardness, Total                    | SM        | TAL BUF    |
| SM 2540C | Solids, Total Dissolved (TDS)      | SM        | TAL BUF    |
| SM 5210B | BOD, 5-Day                         | SM        | TAL BUF    |

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

## Sample Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-61861-1

| Lab Sample ID | Client Sample ID | Matrix | Collected      | Received       |
|---------------|------------------|--------|----------------|----------------|
| 480-61861-2   | <del>GW-A</del>  | Water  | 06/12/14 14:00 | 06/13/14 09:00 |
| 480-61861-3   | GW-B             | Water  | 06/12/14 14:45 | 06/13/14 09:00 |
| 480-61861-4   | SW-02            | Water  | 06/12/14 14:30 | 06/13/14 09:00 |
| 480-61861-5   | SW-01            | Water  | 06/12/14 15:12 | 06/13/14 09:00 |
| 480-61861-6   | GW-3             | Water  | 06/12/14 16:40 | 06/13/14 09:00 |
| 480-61861-7   | GW-1             | Water  | 06/12/14 16:15 | 06/13/14 09:00 |
| 480-61861-8   | GW-2             | Water  | 06/12/14 16:30 | 06/13/14 09:00 |
| 480-61861-9   | TRIP BLANK       | Water  | 06/12/14 13:25 | 06/13/14 09:00 |

**TestAmerica Albany**

25 Kraft Road  
Albany, NY 12205

**Chain of Custody**


480-61861 Chain of Custody

**TestAmerica**

THE LEADER IN ENVIRONMENTAL TESTING

JC No:  
480-50696-13527.1

Page:  
Page 1 of 2

Job #:

|                                |                            |  |
|--------------------------------|----------------------------|--|
| <b>Client Information</b>      | Sampler: <b>SDB</b>        | Lab PM: Shaffer, Lisa E                        |
| Client Contact: Stephen Burton | Phone: <b>518 456 4900</b> | E-Mail: <b>lisa.shaffer@testamericainc.com</b> |

|   |                                   |
|---|-----------------------------------|
| Company: Sterling Environmental Engineering PC  |                                   |
| Address: 24 Wade Road                           | Due Date Requested:               |
| City: Latham                                    | TAT Requested (days):             |
| State, Zip: NY, 12110                           | PO #: Purchase Order not required |
| Phone:  | WO #:                             |
| Email: stephen.burton@sterlingenvironmental.com | Project #: 48005786               |
| Project Name: Orange County Landfill            | SSOW#:                            |
| Site: New York                                  |                                   |

**Analysis Requested**
**Preservation Codes:**

|                   |                       |
|-------------------|-----------------------|
| A - HCL           | M - Hexane            |
| B - NaOH          | N - None              |
| C - Zn Acetate    | O - AsNaO2            |
| D - Nitric Acid   | P - Na2O4S            |
| E - NaHSO4        | Q - Na2SO3            |
| F - MeOH          | R - Na2S2SO3          |
| G - Amchlor       | S - H2SO4             |
| H - Ascorbic Acid | T - TSP Dodecahydrate |
| I - Ice           | U - Acetone           |
| J - DI Water      | V - MCAA              |
| K - EDTA          | W - ph 4-5            |
| L - EDA           | Z - other (specify)   |

Other:

| Sample Identification | Sample Date | Sample Time | Sample Type (C=Comp, G=grab) | Matrix (W=water, S=solid, O=soil, BT=tissue, A=air) | Field Filtered Sample (Yes or No) | 300.0 - 280 - Chloride, Sulfate, Bromide | 350.1, 351.2, 410.4 | 6010C - NY Part 360 Baseline Metals | 2340C - Hardness | 6010C, 7470A | 9066 - Phenolics, Total Recoverable | 9060A - Total Organic Carbon | 6210B - Biochemical Oxygen Demand | 2540C, Calcd - Total Dissolved Solids | 9012B - Cyanide, Total | 180.1, 2120B, 353.2, 353.2, Nitrite, Nitrate, Calc | 7196A - Chromium, hexavalent | 310.2 - Alkalinity, Total | Total Number of Containers |
|-----------------------|-------------|-------------|------------------------------|---|-----------------------------------|--|---------------------|-------------------------------------|------------------|--------------|-------------------------------------|------------------------------|-----------------------------------|---------------------------------------|------------------------|--|------------------------------|---------------------------|----------------------------|
| GW-A                  | 6/12/14     | 14:00       | G                            | Water   | N                                 | N  | X                   | X                                   | X                | X            | X                                   | X                            | X                                 | X                                     | X                      | X  | X                            | X                         | 5                          |
| GW-B                  |             | 14:45       |                              | Water   |                                   |  |                     |                                     |                  |              |                                     |                              |                                   |                                       |                        |  |                              |                           | 5                          |
| SW-02                 |             | 14:30       |                              | Water   |                                   |  |                     |                                     |                  |              |                                     |                              |                                   |                                       |                        |  |                              |                           | 5                          |
| SW-01                 |             | 15:42       |                              | Water   |                                   |  |                     |                                     |                  |              |                                     |                              |                                   |                                       |                        |  |                              |                           |                            |
| GW-3                  |             | 16:40       |                              | Water   |                                   |  |                     |                                     |                  |              |                                     |                              |                                   |                                       |                        |  |                              |                           |                            |
| GW-1                  |             | 16:15       |                              |   |                                   |  |                     |                                     |                  |              |                                     |                              |                                   |                                       |                        |  |                              |                           |                            |
| GW-2                  |             | 16:30       |                              |   |                                   |  |                     |                                     |                  |              |                                     |                              |                                   |                                       |                        |  |                              |                           |                            |

|  |  |   |  |
|--|--|---|--|
| <b>Possible Hazard Identification</b><br><input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |  | <b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b><br><input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months |  |
| Deliverable Requested: I, II, III, IV, Other (specify)   |  | Special Instructions/QC Requirements:   |  |
| Empty Kit Relinquished by: <b>SDB</b>  |  | Date: 6/12/14 20:00   |  |
| Relinquished by: <b>SDB</b>  |  | Date/Time: 6/12/14 20:00  |  |
| Relinquished by:   |  | Date/Time:  |  |
| Relinquished by:   |  | Date/Time:  |  |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No   |  | Custody Seal No.:   |  |
| Cooler Temperature(s) °C and Other Remarks: 3.0, 3.2, 3.5 #1   |  |   |  |



**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

| <b>Client Information</b>   |            | Sampler: SDB                | Lab PM: Shaffer, Lisa E                 | Carrier Tracking No(s):                     | COC No: 480-50696-13527.2  |   |                            |   |
|---|------------|-----------------------------|---|---|--|---|----------------------------|---|
| Client Contact:<br>Stephen Burton   |            | Phone: 518 4564900          | E-Mail: lisa.shaffer@testamericainc.com |   | Page: Page 2 of 2  |   |                            |   |
| Company:<br>Sterling Environmental Engineering PC   |            |                             | <b>Analysis Requested</b>               |   |  |   |                            |   |
| Address:<br>24 Wade Road  |            | Due Date Requested:         |   |   |  |   |                            |   |
| City:<br>Latham   |            | TAT Requested (days):       |   |   |  |   |                            |   |
| State, Zip:<br>NY, 12110  |            | PO #:                       |   |   |  |   |                            |   |
| Phone:  |            | Purchase Order not required |   |   |  |   |                            |   |
| Email:<br>stephen.burton@sterlingenvironmental.com  |            | WO #:                       |   |   |  |   |                            |   |
| Project Name:<br>Orange County Landfill   |            | Project #:<br>48005786      |   |   |  |   |                            |   |
| Site:<br>New York   |            | SSOW#:                      |   |   |  |   |                            |   |
| Sample Identification   |            | Sample Date                 | Sample Time                             | Sample Type<br>(C=Comp, G=grab)             | Matrix<br>(W=water, S=solid, O=waste/sludg)<br><small>ST=Tissue, A=Air</small> | Field Filled Sample Yes or No<br><small>Barium Isotopes, Mercury</small>  | Total Number of Containers | Preservation Codes:   |
|   |            |                             |   |   |  |   |                            | A - HCL<br>B - NaOH<br>C - Zn Acetate<br>D - Nitric Acid<br>E - NaHSO4<br>F - MeOH<br>G - Amchlor<br>H - Ascorbic Acid<br>I - Ice<br>J - DI Water<br>K - EDTA<br>L - EDA<br>M - Hexane<br>N - None<br>O - AsNaO2<br>P - Na2O4S<br>Q - Na2SO3<br>R - Na2S2O5<br>S - H2SO4<br>T - TSP Dodecahydrate<br>U - Acetone<br>V - MCAA<br>W - ph 4-5<br>Z - other (specify) |
|   |            |                             |   |   |  |   |                            | Other:  |
|   |            |                             |   |   |  |   |                            | Special Instructions/Note:  |
| GW-A  | 6/12/14    | 14:00                       | G                                       | Water                                       | N  | X   |                            |   |
| GW-B  |            | 14:45                       |   | Water                                       |  | X   |                            |   |
| SW-O2   |            | 14:30                       |   | Water                                       |  | X   |                            |   |
| SW-O1   |            | 15:12                       |   | Water                                       |  |   |                            |   |
| GW-3  |            | 16:40                       |   | Water                                       |  |   |                            |   |
| GW-1  |            | 16:15                       |   |   |  |   |                            |   |
| GW-2  |            | 16:30                       |   |   |  |   |                            |   |
| <b>Possible Hazard Identification</b>   |            |                             |   |   |  | <b>Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)</b>   |                            |   |
| <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |            |                             |   |   |  | <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months |                            |   |
| Deliverable Requested: I, II, III, IV, Other (specify)  |            |                             |   |   |  | Special Instructions/QC Requirements:   |                            |   |
| Empty Kit Relinquished by:  |            | Date:                       | Time:                                   |   | Method of Shipment:  |   |                            |   |
| Relinquished by:  | Date/Time: | Company                     | Received by:                            | Date/Time:                                  | Company  |   |                            |   |
| Relinquished by:  | Date/Time: | Company                     | Received by:                            | Date/Time:                                  | Company  |   |                            |   |
| Relinquished by:  | Date/Time: | Company                     | Received by:                            | Date/Time:                                  | Company  |   |                            |   |
| Custody Seals Intact: <input checked="" type="checkbox"/>   |            | Custody Seal No.:           |   | Cooler Temperature(s) °C and Other Remarks: |  |   |                            |   |
|   |            |                             |   | 3.0, 3.2, 3.5 #1                            |  |   |                            |   |



## Chain of Custody Record

|   |         |  |             |  |  |                                   |                                   |                                   |                                   |
|---|---------|--|-------------|--|--|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| <b>Client Information</b>   |         | Sampler: SOB   |             | Lab PM: Shaffer, Lisa E                                      |  | Carrier Tracking No(s):           |                                   | COC No: 480-50833-13578.1         |                                   |
| Client Contact: Stephen Burton  |         | Phone: 518 456 4900  |             | E-Mail: lisa.shaffer@testamericainc.com                      |  |                                   |                                   | Page: Page 1 of 1                 |                                   |
| Company: Sterling Environmental Engineering PC  |         |  |             |  |  |                                   |                                   | Job #:                            |                                   |
| Address: 24 Wade Road   |         | Due Date Requested:  |             | Analysis Requested   |  | Preservation Codes:               |                                   | Special Instructions/Note:        |                                   |
| City: Latham  |         | TAT Requested (days):  |             |  |  |                                   |                                   |                                   |                                   |
| State, Zip: NY, 12110   |         |  |             |  |  |                                   |                                   |                                   |                                   |
| Phone:  |         | PO #: Purchase Order not required  |             |  |  |                                   |                                   |                                   |                                   |
| Email: stephen.burton@sterlingenvironmental.com   |         | WO #:  |             |  |  |                                   |                                   |                                   |                                   |
| Project Name: Orange County Landfill  |         | Project #: 48005786  |             |  |  |                                   |                                   |                                   |                                   |
| Site: New York  |         | SSOW#:   |             |  |  |                                   |                                   |                                   |                                   |
| Sample Identification   |         | Sample Date  | Sample Time | Sample Type (C=Comp, G=grab)                                 | Matrix (W=water, S=solid, O=waste/oil, BT=biological, A=air) | Field Filtered Sample (Yes or No) | Field Filtered Sample (Yes or No) | Field Filtered Sample (Yes or No) | Field Filtered Sample (Yes or No) |
| SW-01   | 6/12/14 | 15:12  | G           | Water  | W  | N                                 | X                                 |                                   |                                   |
| GW-3  |         | 16:40  |             | Water  |  |                                   |                                   |                                   |                                   |
| GW-2  |         | 16:15  |             | Water  |  |                                   |                                   |                                   |                                   |
| GW-A  |         | 14:00  |             | Water  |  |                                   |                                   |                                   |                                   |
| GW-B  |         | 14:45  |             | Water  |  |                                   |                                   |                                   |                                   |
| SW-02   |         | 14:30  |             | Water  |  |                                   |                                   |                                   |                                   |
| GW-2  |         | 16:30  |             | Water  |  |                                   |                                   |                                   |                                   |
| TRIP BLANK  |         | 13:25  |             | Water  |  |                                   |                                   |                                   |                                   |
|   |         |  |             | Water  |  |                                   |                                   |                                   |                                   |
|   |         |  |             | Water  |  |                                   |                                   |                                   |                                   |
| Possible Hazard Identification  |         | Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  |             |  |  |                                   |                                   |                                   |                                   |
| <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological |         | <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months |             |  |  |                                   |                                   |                                   |                                   |
| Deliverable Requested: I, II, III, IV, Other (specify)  |         | Special Instructions/QC Requirements:  |             |  |  |                                   |                                   |                                   |                                   |
| Empty Kit Relinquished by:  |         | Date:  |             | Time:  |  | Method of Shipment:               |                                   |                                   |                                   |
| Relinquished by: SOB  |         | Date/Time: 6/12/14 20:00   |             | Company: STERLING  |  | Received by: [Signature]          |                                   | Date/Time: 6/13/14 09:00          |                                   |
| Relinquished by:  |         | Date/Time:   |             | Company:   |  | Received by:                      |                                   | Date/Time:                        |                                   |
| Relinquished by:  |         | Date/Time:   |             | Company:   |  | Received by:                      |                                   | Date/Time:                        |                                   |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No  |         | Custody Seal No.:  |             | Cooler Temperature(s) °C and Other Remarks: 3.0, 3.2, 3.5 #1 |  |                                   |                                   |                                   |                                   |

## Login Sample Receipt Checklist

Client: Sterling Environmental Engineering PC

Job Number: 480-61861-1

Login Number: 61861

List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl M

| Question   | Answer | Comment  |
|--|--------|----------|
| Radioactivity either was not measured or, if measured, is at or below background | True   |          |
| The cooler's custody seal, if present, is intact.                                | True   |          |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |          |
| Samples were received on ice.  | True   |          |
| Cooler Temperature is acceptable.  | True   |          |
| Cooler Temperature is recorded.  | True   |          |
| COC is present.  | True   |          |
| COC is filled out in ink and legible.  | True   |          |
| COC is filled out with all pertinent information.                                | True   |          |
| Is the Field Sampler's name present on COC?                                      | True   |          |
| There are no discrepancies between the sample IDs on the containers and the COC. | True   |          |
| Samples are received within Holding Time.  | True   |          |
| Sample containers have legible labels.   | True   |          |
| Containers are not broken or leaking.  | True   |          |
| Sample collection date/times are provided.                                       | True   |          |
| Appropriate sample containers are used.  | True   |          |
| Sample bottles are completely filled.  | True   |          |
| Sample Preservation Verified   | True   |          |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |          |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | True   |          |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True   |          |
| Multiphasic samples are not present.   | True   |          |
| Samples do not require splitting or compositing.                                 | True   |          |
| Sampling Company provided.   | True   | STERLING |
| Samples received within 48 hours of sampling.                                    | True   |          |
| Samples requiring field filtration have been filtered in the field.              | True   |          |
| Chlorine Residual checked.   | True   |          |



**APPENDIX J**

**OCTOBER 6, 2014 ANALYTICAL RESULTS**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-68691-1

Client Project/Site: Orange County Landfill

Sampling Event: Leachate Baseline

For:

Sterling Environmental Engineering PC

24 Wade Road

Latham, New York 12110

Attn: Mr. Mark Williams



Authorized for release by:

10/17/2014 11:26:04 AM

Anne Pridgeon, Project Management Assistant I

[anne.pridgeon@testamericainc.com](mailto:anne.pridgeon@testamericainc.com)

Designee for

Lisa Shaffer, Project Manager II

(716)504-9816

[lisa.shaffer@testamericainc.com](mailto:lisa.shaffer@testamericainc.com)

### LINKS

Review your project  
results through

**Total Access**

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

## Definitions/Glossary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Qualifiers

#### GC/MS VOA

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

#### Metals

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| B         | Compound was found in the blank and sample.  |

#### General Chemistry

| Qualifier | Qualifier Description   |
|-----------|---|
| b         | Result Detected in the Unseeded Control blank (USB).  |
| B         | Compound was found in the blank and sample.   |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.  |
| 4         | MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable. |
| F1        | MS and/or MSD Recovery exceeds the control limits   |
| ^         | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.  |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| α              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CNF            | Contains no Free Liquid   |
| DER            | Duplicate error ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional initial metals/anion analysis of the sample |
| DLC            | Decision level concentration  |
| MDA            | Minimum detectable activity   |
| EDL            | Estimated Detection Limit   |
| MDC            | Minimum detectable concentration  |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| NC             | Not Calculated  |
| ND             | Not detected at the reporting limit (or MDL or EDL if shown)  |
| PQL            | Practical Quantitation Limit  |
| QC             | Quality Control   |
| RER            | Relative error ratio  |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |



## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

Client Sample ID: MH-5

Lab Sample ID: 480-68691-1

| Analyte                       | Result | Qualifier | RL     | MDL     | Unit        | Dil | Fac | D | Method   | Prep Type |
|-------------------------------|--------|-----------|--------|---------|-------------|-----|-----|---|----------|-----------|
| Chloroethane                  | 20     | J         | 50     | 8.7     | ug/L        | 10  |     |   | 624      | Total/NA  |
| Aluminum                      | 0.16   | J         | 0.20   | 0.060   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Arsenic                       | 0.031  |           | 0.015  | 0.0056  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Barium                        | 1.9    |           | 0.0020 | 0.00070 | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Boron                         | 1.0    |           | 0.020  | 0.0040  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Calcium                       | 180    |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Chromium                      | 0.0054 |           | 0.0040 | 0.0010  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Copper                        | 0.0038 | J         | 0.010  | 0.0016  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Iron                          | 47     | B         | 0.050  | 0.019   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Magnesium                     | 53     |           | 0.20   | 0.043   | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Manganese                     | 2.2    |           | 0.0030 | 0.00040 | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Nickel                        | 0.028  |           | 0.010  | 0.0013  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Potassium                     | 67     |           | 0.50   | 0.10    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Sodium                        | 370    |           | 1.0    | 0.32    | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Zinc                          | 0.014  | B         | 0.010  | 0.0015  | mg/L        | 1   |     |   | 6010C    | Total/NA  |
| Chloride                      | 520    |           | 2.5    | 2.0     | mg/L        | 5   |     |   | 300.0    | Total/NA  |
| Sulfate                       | 4.6    |           | 2.0    | 0.13    | mg/L        | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total             | 1300   | B         | 500    | 200     | mg/L        | 50  |     |   | 310.2    | Total/NA  |
| Ammonia                       | 130    | B         | 2.0    | 0.90    | mg/L        | 100 |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen       | 140    |           | 10     | 7.5     | mg/L        | 50  |     |   | 351.2    | Total/NA  |
| Nitrate as N                  | 0.24   |           | 0.050  | 0.020   | mg/L        | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand        | 250    | B         | 40     | 20      | mg/L        | 4   |     |   | 410.4    | Total/NA  |
| Cyanide, Total                | 0.0083 | J         | 0.010  | 0.0050  | mg/L        | 1   |     |   | 9012B    | Total/NA  |
| Total Organic Carbon          | 57     |           | 1.0    | 0.43    | mg/L        | 1   |     |   | 9060A    | Total/NA  |
| Phenolics, Total Recoverable  | 0.0075 | J         | 0.010  | 0.0050  | mg/L        | 1   |     |   | 9066     | Total/NA  |
| Hardness as calcium carbonate | 760    |           | 20     | 5.3     | mg/L        | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids        | 1000   |           | 20     | 8.0     | mg/L        | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand     | 16     | b         | 2.0    | 2.0     | mg/L        | 1   |     |   | SM 5210B | Total/NA  |
| Analyte                       | Result | Qualifier | RL     | RL      | Unit        | Dil | Fac | D | Method   | Prep Type |
| Turbidity                     | 440    |           | 1.0    | 1.0     | NTU         | 1   |     |   | 180.1    | Total/NA  |
| Color                         | 40     |           | 5.0    | 5.0     | Color Units | 1   |     |   | SM 2120B | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

**Client Sample ID: MH-5**

**Lab Sample ID: 480-68691-1**

Date Collected: 10/06/14 15:30

Matrix: Leachate

Date Received: 10/07/14 09:00

### Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Calcium   | 180    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Chromium  | 0.0054 |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Copper    | 0.0038 | J         | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Iron      | 47     | B         | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Lead      | ND     |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Magnesium | 53     |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Manganese | 2.2    |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Nickel    | 0.028  |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Potassium | 67     |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Sodium    | 370    |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |
| Zinc      | 0.014  | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:44 | 1       |

### Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 12:09 | 1       |

### General Chemistry

| Analyte                       | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Chloride                      | 520    |           | 2.5   | 2.0    | mg/L        |   |                | 10/13/14 16:15 | 5       |
| Sulfate                       | 4.6    |           | 2.0   | 0.13   | mg/L        |   |                | 10/10/14 03:07 | 1       |
| Alkalinity, Total             | 1300   | B         | 500   | 200    | mg/L        |   |                | 10/14/14 15:32 | 50      |
| Ammonia                       | 130    | B         | 2.0   | 0.90   | mg/L        |   |                | 10/08/14 23:01 | 100     |
| Total Kjeldahl Nitrogen       | 140    |           | 10    | 7.5    | mg/L        |   | 10/09/14 09:14 | 10/10/14 04:23 | 50      |
| Nitrate as N                  | 0.24   |           | 0.050 | 0.020  | mg/L        |   |                | 10/07/14 21:58 | 1       |
| Chemical Oxygen Demand        | 250    | B         | 40    | 20     | mg/L        |   |                | 10/16/14 09:12 | 4       |
| Chromium, hexavalent          | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 10/07/14 11:08 | 1       |
| Cyanide, Total                | 0.0083 | J         | 0.010 | 0.0050 | mg/L        |   | 10/13/14 15:25 | 10/13/14 22:52 | 1       |
| Total Organic Carbon          | 57     |           | 1.0   | 0.43   | mg/L        |   |                | 10/12/14 08:05 | 1       |
| Phenolics, Total Recoverable  | 0.0075 | J         | 0.010 | 0.0050 | mg/L        |   | 10/09/14 09:30 | 10/13/14 20:36 | 1       |
| Hardness as calcium carbonate | 760    |           | 20    | 5.3    | mg/L        |   |                | 10/09/14 11:55 | 1       |
| Total Dissolved Solids        | 1000   |           | 20    | 8.0    | mg/L        |   |                | 10/09/14 23:42 | 1       |
| Biochemical Oxygen Demand     | 16     | b         | 2.0   | 2.0    | mg/L        |   |                | 10/08/14 14:37 | 1       |
| Analyte                       | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                     | 440    |           | 1.0   | 1.0    | NTU         |   |                | 10/07/14 23:00 | 1       |
| Color                         | 40     |           | 5.0   | 5.0    | Color Units |   |                | 10/07/14 23:20 | 1       |

# QC Sample Results

Client: Sterling Environmental Engineering PC

TestAmerica Job ID: 480-68691-1

Project/Site: Orange County Landfill

## Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-206699/8

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                   | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND        |              | 5.0 | 0.39 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2,2-Tetrachloroethane | ND        |              | 5.0 | 0.26 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2-Trichloroethane     | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethane        | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethene        | ND        |              | 5.0 | 0.85 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichlorobenzene       | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloroethane        | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloropropane       | ND        |              | 5.0 | 0.61 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,3-Dichlorobenzene       | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,4-Dichlorobenzene       | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 2-Chloroethyl vinyl ether | ND        |              | 25  | 1.9  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Benzene                   | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromodichloromethane      | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromoform                 | ND        |              | 5.0 | 0.47 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromomethane              | ND        |              | 5.0 | 1.2  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Carbon tetrachloride      | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chlorobenzene             | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroethane              | ND        |              | 5.0 | 0.87 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroform                | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloromethane             | ND        |              | 5.0 | 0.64 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,2-Dichloroethene    | ND        |              | 5.0 | 0.57 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,3-Dichloropropene   | ND        |              | 5.0 | 0.33 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dibromochloromethane      | ND        |              | 5.0 | 0.41 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dichlorodifluoromethane   | ND        |              | 5.0 | 0.28 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Ethylbenzene              | ND        |              | 5.0 | 0.46 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Methylene Chloride        | ND        |              | 5.0 | 0.81 | ug/L |   |          | 10/08/14 23:03 | 1       |
| m-Xylene & p-Xylene       | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |
| o-Xylene                  | ND        |              | 5.0 | 0.43 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Tetrachloroethene         | ND        |              | 5.0 | 0.34 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Toluene                   | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,2-Dichloroethene  | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,3-Dichloropropene | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichloroethene           | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichlorofluoromethane    | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Vinyl chloride            | ND        |              | 5.0 | 0.75 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Xylenes, Total            | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104          |              | 72 - 130 |          | 10/08/14 23:03 | 1       |
| 4-Bromofluorobenzene (Surr)  | 101          |              | 69 - 121 |          | 10/08/14 23:03 | 1       |
| Toluene-d8 (Surr)            | 99           |              | 70 - 123 |          | 10/08/14 23:03 | 1       |

Lab Sample ID: LCS 480-206699/6

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte               | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------------------|-------------|------------|---------------|------|---|------|--------------|
| 1,1,1-Trichloroethane | 20.0        | 18.6       |               | ug/L |   | 93   | 52 - 162     |

TestAmerica Buffalo



# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

## Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-206499/1-A

Matrix: Water

Analysis Batch: 207036

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206499

| Analyte   | MB Result | MB Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|--------|---------|------|---|----------------|----------------|---------|
| Antimony  | ND        |              | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Arsenic   | ND        |              | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Barium    | ND        |              | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Beryllium | ND        |              | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Boron     | ND        |              | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Cadmium   | ND        |              | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Calcium   | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Chromium  | ND        |              | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Copper    | ND        |              | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Iron      | 0.0326    | J            | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Lead      | ND        |              | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Magnesium | ND        |              | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Manganese | ND        |              | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Nickel    | ND        |              | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Potassium | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Selenium  | ND        |              | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Silver    | ND        |              | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Sodium    | ND        |              | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Thallium  | ND        |              | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Zinc      | 0.00455   | J            | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |

Lab Sample ID: LCS 480-206499/2-A

Matrix: Water

Analysis Batch: 206924

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 206499

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|-----------|-------------|------------|---------------|------|---|------|-------------|
| Aluminum  | 10.0        | 8.95       |               | mg/L |   | 89   | 80 - 120    |
| Antimony  | 0.200       | 0.192      |               | mg/L |   | 96   | 80 - 120    |
| Arsenic   | 0.201       | 0.184      |               | mg/L |   | 92   | 80 - 120    |
| Barium    | 0.200       | 0.217      |               | mg/L |   | 108  | 80 - 120    |
| Beryllium | 0.201       | 0.197      |               | mg/L |   | 98   | 80 - 120    |
| Cadmium   | 0.201       | 0.188      |               | mg/L |   | 94   | 80 - 120    |
| Chromium  | 0.201       | 0.188      |               | mg/L |   | 94   | 80 - 120    |
| Copper    | 0.201       | 0.214      |               | mg/L |   | 107  | 80 - 120    |
| Iron      | 10.0        | 9.07       |               | mg/L |   | 91   | 80 - 120    |
| Lead      | 0.201       | 0.187      |               | mg/L |   | 93   | 80 - 120    |
| Magnesium | 10.0        | 10.2       |               | mg/L |   | 101  | 80 - 120    |
| Manganese | 0.201       | 0.202      |               | mg/L |   | 101  | 80 - 120    |
| Nickel    | 0.201       | 0.183      |               | mg/L |   | 91   | 80 - 120    |
| Potassium | 10.0        | 9.25       |               | mg/L |   | 92   | 80 - 120    |
| Selenium  | 0.201       | 0.189      |               | mg/L |   | 94   | 80 - 120    |
| Silver    | 0.0500      | 0.0528     |               | mg/L |   | 106  | 80 - 120    |
| Sodium    | 10.0        | 9.32       |               | mg/L |   | 93   | 80 - 120    |
| Zinc      | 0.201       | 0.206      |               | mg/L |   | 103  | 80 - 120    |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 240-151358/3  
Matrix: Water  
Analysis Batch: 151358

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte  | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------|--------------|-----------------|------|------|------|---|----------|----------------|---------|
| Chloride | ND           |                 | 0.50 | 0.41 | mg/L |   |          | 10/13/14 13:47 | 1       |
| Sulfate  | ND           |                 | 2.0  | 0.13 | mg/L |   |          | 10/13/14 13:47 | 1       |

Lab Sample ID: LCS 240-151358/28  
Matrix: Water  
Analysis Batch: 151358

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Chloride | 50.0           | 53.2          |                  | mg/L |   | 106  | 90 - 110        |
| Sulfate  | 50.0           | 49.0          |                  | mg/L |   | 98   | 90 - 110        |

Lab Sample ID: LCS 240-151358/4  
Matrix: Water  
Analysis Batch: 151358

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------|----------------|---------------|------------------|------|---|------|-----------------|
| Chloride | 50.0           | 52.7          |                  | mg/L |   | 105  | 90 - 110        |
| Sulfate  | 50.0           | 48.9          |                  | mg/L |   | 98   | 90 - 110        |

### Method: 310.2 - Alkalinity

Lab Sample ID: MB 480-207719/185  
Matrix: Water  
Analysis Batch: 207719

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 10/14/14 15:04 | 1       |

Lab Sample ID: MB 480-207719/192  
Matrix: Water  
Analysis Batch: 207719

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND           |                 | 10 | 4.0 | mg/L |   |          | 10/14/14 15:06 | 1       |

Lab Sample ID: MB 480-207719/203  
Matrix: Water  
Analysis Batch: 207719

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte           | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | 4.00         | J               | 10 | 4.0 | mg/L |   |          | 10/14/14 15:17 | 1       |

Lab Sample ID: LCS 480-207719/186  
Matrix: Water  
Analysis Batch: 207719

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte           | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Alkalinity, Total | 50.0           | 51.4          |                  | mg/L |   | 103  | 90 - 110        |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-206899/1-A  
Matrix: Water  
Analysis Batch: 207003

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206899

| Analyte                 | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------|--------------|-----------------|------|------|------|---|----------------|----------------|---------|
| Total Kjeldahl Nitrogen | ND           |                 | 0.20 | 0.15 | mg/L |   | 10/09/14 09:14 | 10/09/14 18:23 | 1       |

Lab Sample ID: LCS 480-206899/2-A  
Matrix: Water  
Analysis Batch: 207003

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206899

| Analyte                 | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|-------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Kjeldahl Nitrogen | 2.50           | 2.59          |                  | mg/L |   | 104  | 90 - 110        |

### Method: 410.4 - COD

Lab Sample ID: MB 480-208155/27  
Matrix: Water  
Analysis Batch: 208155

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | 8.34         | J               | 10 | 5.0 | mg/L |   |          | 10/16/14 09:12 | 1       |

Lab Sample ID: MB 480-208155/3  
Matrix: Water  
Analysis Batch: 208155

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | ND           |                 | 10 | 5.0 | mg/L |   |          | 10/16/14 09:12 | 1       |

Lab Sample ID: MB 480-208155/51  
Matrix: Water  
Analysis Batch: 208155

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB<br>Result | MB<br>Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|--------------|-----------------|----|-----|------|---|----------|----------------|---------|
| Chemical Oxygen Demand | 7.37         | J               | 10 | 5.0 | mg/L |   |          | 10/16/14 09:12 | 1       |

Lab Sample ID: LCS 480-208155/28  
Matrix: Water  
Analysis Batch: 208155

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 25.0           | 26.7          |                  | mg/L |   | 107  | 90 - 110        |

Lab Sample ID: LCS 480-208155/4  
Matrix: Water  
Analysis Batch: 208155

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chemical Oxygen Demand | 25.0           | 25.1          |                  | mg/L |   | 100  | 90 - 110        |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-207429/27  
Matrix: Water  
Analysis Batch: 207429

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Total Organic Carbon | ND           |                 | 1.0 | 0.43 | mg/L |   |          | 10/12/14 04:47 | 1       |

Lab Sample ID: LCS 480-207429/28  
Matrix: Water  
Analysis Batch: 207429

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Organic Carbon | 60.0           | 60.8          |                  | mg/L |   | 101  | 90 - 110        |

### Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 480-206888/1-A  
Matrix: Water  
Analysis Batch: 207542

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206888

| Analyte                      | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|------------------------------|--------------|-----------------|-------|--------|------|---|----------------|----------------|---------|
| Phenolics, Total Recoverable | ND           |                 | 0.010 | 0.0050 | mg/L |   | 10/09/14 09:30 | 10/13/14 19:12 | 1       |

Lab Sample ID: LCS 480-206888/2-A  
Matrix: Water  
Analysis Batch: 207542

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206888

| Analyte                      | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|------------------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Phenolics, Total Recoverable | 0.100          | 0.106         |                  | mg/L |   | 106  | 90 - 110        |

### Method: SM 2120B - Color, Colorimetric

Lab Sample ID: MB 480-206725/3  
Matrix: Water  
Analysis Batch: 206725

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL  | RL  | Unit        | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-----|-----|-------------|---|----------|----------------|---------|
| Color   | ND           |                 | 5.0 | 5.0 | Color Units |   |          | 10/07/14 23:20 | 1       |

Lab Sample ID: LCS 480-206725/4  
Matrix: Water  
Analysis Batch: 206725

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit        | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|-------------|---|------|-----------------|
| Color   | 30.0           | 30.0          |                  | Color Units |   | 100  | 90 - 110        |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Method: SM 5210B - BOD, 5-Day (Continued)

Lab Sample ID: LCS 480-206654/2

Matrix: Water

Analysis Batch: 206654

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                   | Spike | LCS    | LCS       | Unit | D | %Rec | %Rec.    |
|---------------------------|-------|--------|-----------|------|---|------|----------|
|                           | Added | Result | Qualifier |      |   |      | Limits   |
| Biochemical Oxygen Demand | 108   | 203    |           | mg/L |   | 102  | 85 - 115 |

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## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### General Chemistry (Continued)

#### Analysis Batch: 206384

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | 7196A  |            |
| 480-68691-1 MS   | MH-5               | Total/NA  | Leachate | 7196A  |            |
| LCS 480-206384/4 | Lab Control Sample | Total/NA  | Water    | 7196A  |            |
| MB 480-206384/3  | Method Blank       | Total/NA  | Water    | 7196A  |            |

#### Analysis Batch: 206477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix   | Method | Prep Batch |
|---------------|------------------|-----------|----------|--------|------------|
| 480-68691-1   | MH-5             | Total/NA  | Leachate | 353.2  |            |

#### Analysis Batch: 206480

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | 180.1  |            |
| LCS 480-206480/4 | Lab Control Sample | Total/NA  | Water    | 180.1  |            |
| MB 480-206480/3  | Method Blank       | Total/NA  | Water    | 180.1  |            |

#### Analysis Batch: 206654

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method   | Prep Batch |
|------------------|--------------------|-----------|----------|----------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | SM 5210B |            |
| LCS 480-206654/2 | Lab Control Sample | Total/NA  | Water    | SM 5210B |            |
| USB 480-206654/1 | Method Blank       | Total/NA  | Water    | SM 5210B |            |

#### Analysis Batch: 206725

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix   | Method   | Prep Batch |
|------------------|--------------------|-----------|----------|----------|------------|
| 480-68691-1      | MH-5               | Total/NA  | Leachate | SM 2120B |            |
| LCS 480-206725/4 | Lab Control Sample | Total/NA  | Water    | SM 2120B |            |
| MB 480-206725/3  | Method Blank       | Total/NA  | Water    | SM 2120B |            |

#### Analysis Batch: 206737

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|-------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1       | MH-5               | Total/NA  | Leachate | 350.1  |            |
| 480-68691-1 MS    | MH-5               | Total/NA  | Leachate | 350.1  |            |
| LCS 480-206737/4  | Lab Control Sample | Total/NA  | Water    | 350.1  |            |
| LCS 480-206737/76 | Lab Control Sample | Total/NA  | Water    | 350.1  |            |
| MB 480-206737/3   | Method Blank       | Total/NA  | Water    | 350.1  |            |
| MB 480-206737/75  | Method Blank       | Total/NA  | Water    | 350.1  |            |

#### Prep Batch: 206888

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method         | Prep Batch |
|--------------------|--------------------|-----------|----------|----------------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | Distill/Phenol |            |
| LCS 480-206888/2-A | Lab Control Sample | Total/NA  | Water    | Distill/Phenol |            |
| MB 480-206888/1-A  | Method Blank       | Total/NA  | Water    | Distill/Phenol |            |

#### Prep Batch: 206899

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|--------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1        | MH-5               | Total/NA  | Leachate | 351.2  |            |
| LCS 480-206899/2-A | Lab Control Sample | Total/NA  | Water    | 351.2  |            |
| MB 480-206899/1-A  | Method Blank       | Total/NA  | Water    | 351.2  |            |

#### Analysis Batch: 206969

| Lab Sample ID | Client Sample ID | Prep Type | Matrix   | Method   | Prep Batch |
|---------------|------------------|-----------|----------|----------|------------|
| 480-68691-1   | MH-5             | Total/NA  | Leachate | SM 2340C |            |

TestAmerica Buffalo



## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### General Chemistry (Continued)

#### Analysis Batch: 207719 (Continued)

| Lab Sample ID     | Client Sample ID | Prep Type | Matrix | Method | Prep Batch |
|-------------------|------------------|-----------|--------|--------|------------|
| MB 480-207719/203 | Method Blank     | Total/NA  | Water  | 310.2  |            |

#### Analysis Batch: 208155

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix   | Method | Prep Batch |
|-------------------|--------------------|-----------|----------|--------|------------|
| 480-68691-1       | MH-5               | Total/NA  | Leachate | 410.4  |            |
| LCS 480-208155/28 | Lab Control Sample | Total/NA  | Water    | 410.4  |            |
| LCS 480-208155/4  | Lab Control Sample | Total/NA  | Water    | 410.4  |            |
| LCS 480-208155/52 | Lab Control Sample | Total/NA  | Water    | 410.4  |            |
| MB 480-208155/27  | Method Blank       | Total/NA  | Water    | 410.4  |            |
| MB 480-208155/3   | Method Blank       | Total/NA  | Water    | 410.4  |            |
| MB 480-208155/51  | Method Blank       | Total/NA  | Water    | 410.4  |            |

## Certification Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

### Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority         | Program       | EPA Region | Certification ID | Expiration Date |
|-------------------|---------------|------------|------------------|-----------------|
| Arkansas DEQ      | State Program | 6          | 88-0688          | 07-06-15        |
| California        | State Program | 9          | 1169CA           | 09-30-14 *      |
| Connecticut       | State Program | 1          | PH-0568          | 09-30-14 *      |
| Florida           | NELAP         | 4          | E87672           | 06-30-15        |
| Georgia           | State Program | 4          | N/A              | 03-31-15        |
| Georgia           | State Program | 4          | 956              | 03-31-15        |
| Illinois          | NELAP         | 5          | 200003           | 09-30-14 *      |
| Iowa              | State Program | 7          | 374              | 03-01-15        |
| Kansas            | NELAP         | 7          | E-10187          | 01-31-15        |
| Kentucky (DW)     | State Program | 4          | 90029            | 12-31-14        |
| Kentucky (UST)    | State Program | 4          | 30               | 03-31-15        |
| Louisiana         | NELAP         | 6          | 02031            | 06-30-14 *      |
| Maine             | State Program | 1          | NY00044          | 12-04-14        |
| Maryland          | State Program | 3          | 294              | 03-31-15        |
| Massachusetts     | State Program | 1          | M-NY044          | 06-30-15        |
| Michigan          | State Program | 5          | 9937             | 03-31-15        |
| Minnesota         | NELAP         | 5          | 036-999-337      | 12-31-14        |
| New Hampshire     | NELAP         | 1          | 2337             | 11-17-14        |
| New Jersey        | NELAP         | 2          | NY455            | 06-30-15        |
| New York          | NELAP         | 2          | 10026            | 03-31-15        |
| North Dakota      | State Program | 8          | R-176            | 03-31-14 *      |
| Oklahoma          | State Program | 6          | 9421             | 08-31-15        |
| Oregon            | NELAP         | 10         | NY200003         | 06-09-15        |
| Pennsylvania      | NELAP         | 3          | 68-00281         | 07-31-15        |
| Rhode Island      | State Program | 1          | LAO00328         | 12-30-14        |
| Tennessee         | State Program | 4          | TN02970          | 03-31-15        |
| Texas             | NELAP         | 6          | T104704412-11-2  | 07-31-15        |
| USDA              | Federal       |            | P330-11-00386    | 11-22-14        |
| Virginia          | NELAP         | 3          | 460185           | 09-14-15        |
| Washington        | State Program | 10         | C784             | 02-10-15        |
| West Virginia DEP | State Program | 3          | 252              | 09-30-14 *      |
| Wisconsin         | State Program | 5          | 998310390        | 08-31-15        |

### Laboratory: TestAmerica Canton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority      | Program       | EPA Region | Certification ID | Expiration Date |
|----------------|---------------|------------|------------------|-----------------|
| California     | NELAP         | 9          | 01144CA          | 06-30-14 *      |
| California     | State Program | 9          | 2927             | 04-30-15        |
| Connecticut    | State Program | 1          | PH-0590          | 12-31-14        |
| Florida        | NELAP         | 4          | E87225           | 06-30-15        |
| Georgia        | State Program | 4          | N/A              | 06-30-15        |
| Illinois       | NELAP         | 5          | 200004           | 07-31-15        |
| Kansas         | NELAP         | 7          | E-10336          | 01-31-15        |
| Kentucky (UST) | State Program | 4          | 58               | 06-30-15        |
| L-A-B          | DoD ELAP      |            | L2315            | 07-18-16        |
| Minnesota      | NELAP         | 5          | 039-999-348      | 12-31-14        |
| Nevada         | State Program | 9          | OH-000482008A    | 07-31-15        |
| New Jersey     | NELAP         | 2          | OH001            | 06-30-15        |
| New York       | NELAP         | 2          | 10975            | 03-31-15        |

\* Certification renewal pending - certification considered valid.

TestAmerica Buffalo

## Method Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68691-1

| Method   | Method Description                           | Protocol  | Laboratory |
|----------|--|-----------|------------|
| 624      | Volatile Organic Compounds (GC/MS)           | 40CFR136A | TAL BUF    |
| 6010C    | Metals (ICP)                                 | SW846     | TAL BUF    |
| 7470A    | Mercury (CVAA)                               | SW846     | TAL BUF    |
| 180.1    | Turbidity, Nephelometric                     | MCAWW     | TAL BUF    |
| 300.0    | Anions, Ion Chromatography                   | MCAWW     | TAL CAN    |
| 310.2    | Alkalinity                                   | MCAWW     | TAL BUF    |
| 350.1    | Nitrogen, Ammonia                            | MCAWW     | TAL BUF    |
| 351.2    | Nitrogen, Total Kjeldahl                     | MCAWW     | TAL BUF    |
| 353.2    | Nitrate                                      | EPA       | TAL BUF    |
| 410.4    | COD  | MCAWW     | TAL BUF    |
| 7196A    | Chromium, Hexavalent                         | SW846     | TAL BUF    |
| 9012B    | Cyanide, Total and/or Amenable               | SW846     | TAL BUF    |
| 9060A    | Organic Carbon, Total (TOC)                  | SW846     | TAL BUF    |
| 9066     | Phenolics, Total Recoverable                 | SW846     | TAL BUF    |
| SM 2120B | Color, Colorimetric                          | SM        | TAL BUF    |
| SM 2340C | Hardness, Total (mg/l as CaCO <sub>3</sub> ) | SM        | TAL BUF    |
| SM 2540C | Solids, Total Dissolved (TDS)                | SM        | TAL BUF    |
| SM 5210B | BOD, 5-Day                                   | SM        | TAL BUF    |

### Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

### Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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## Detection Limit Exceptions Summary

Client: Sterling Environmental Engineering PC

TestAmerica Job ID: 480-68691-1

Project/Site: Orange County Landfill

The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

| Method | Matrix   | Analyte  | Units | Client RL | Lab PQL |
|--------|----------|----------|-------|-----------|---------|
| 300.0  | Leachate | Chloride | mg/L  | 0.50      | 1       |

## Login Sample Receipt Checklist

Client: Sterling Environmental Engineering PC

Job Number: 480-68691-1

Login Number: 68691

List Source: TestAmerica Buffalo

List Number: 1

Creator: Janish, Carl M

| Question   | Answer | Comment  |
|--|--------|----------|
| Radioactivity either was not measured or, if measured, is at or below background | True   |          |
| The cooler's custody seal, if present, is intact.                                | True   |          |
| The cooler or samples do not appear to have been compromised or tampered with.   | True   |          |
| Samples were received on ice.  | True   |          |
| Cooler Temperature is acceptable.  | True   |          |
| Cooler Temperature is recorded.  | True   |          |
| COC is present.  | True   |          |
| COC is filled out in ink and legible.  | True   |          |
| COC is filled out with all pertinent information.                                | True   |          |
| Is the Field Sampler's name present on COC?                                      | True   |          |
| There are no discrepancies between the sample IDs on the containers and the COC. | True   |          |
| Samples are received within Holding Time.  | True   |          |
| Sample containers have legible labels.   | True   |          |
| Containers are not broken or leaking.  | True   |          |
| Sample collection date/times are provided.                                       | True   |          |
| Appropriate sample containers are used.  | True   |          |
| Sample bottles are completely filled.  | True   |          |
| Sample Preservation Verified   | True   |          |
| There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs | True   |          |
| VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.     | True   |          |
| If necessary, staff have been informed of any short hold time or quick TAT needs | True   |          |
| Multiphasic samples are not present.   | True   |          |
| Samples do not require splitting or compositing.                                 | True   |          |
| Sampling Company provided.   | True   | STERLING |
| Samples received within 48 hours of sampling.                                    | True   |          |
| Samples requiring field filtration have been filtered in the field.              | N/A    |          |
| Chlorine Residual checked.   | N/A    |          |

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# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-68692-1

Client Project/Site: Orange County Landfill

Sampling Event: Groundwater Baseline

For:

Sterling Environmental Engineering PC

24 Wade Road

Latham, New York 12110

Attn: Mr. Mark Williams



Authorized for release by:

10/17/2014 11:17:32 AM

Anne Pridgeon, Project Management Assistant I

[anne.pridgeon@testamericainc.com](mailto:anne.pridgeon@testamericainc.com)

Designee for

Lisa Shaffer, Project Manager II

(716)504-9816

[lisa.shaffer@testamericainc.com](mailto:lisa.shaffer@testamericainc.com)

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*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



## Definitions/Glossary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Qualifiers

#### GC/MS VOA

| Qualifier | Qualifier Description  |
|-----------|--|
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

#### Metals

| Qualifier | Qualifier Description  |
|-----------|--|
| B         | Compound was found in the blank and sample.  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |

#### General Chemistry

| Qualifier | Qualifier Description  |
|-----------|--|
| b         | Result Detected in the Unseeded Control blank (USB).   |
| B         | Compound was found in the blank and sample.  |
| F1        | MS and/or MSD Recovery exceeds the control limits  |
| J         | Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value. |
| A         | ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.   |

### Glossary

| Abbreviation   | These commonly used abbreviations may or may not be present in this report.                                 |
|----------------|---|
| □              | Listed under the "D" column to designate that the result is reported on a dry weight basis                  |
| %R             | Percent Recovery  |
| CFL            | Contains Free Liquid  |
| CNF            | Contains no Free Liquid   |
| DER            | Duplicate error ratio (normalized absolute difference)  |
| Dil Fac        | Dilution Factor   |
| DL, RA, RE, IN | Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample |
| DLC            | Decision level concentration  |
| MDA            | Minimum detectable activity   |
| EDL            | Estimated Detection Limit   |
| MDC            | Minimum detectable concentration  |
| MDL            | Method Detection Limit  |
| ML             | Minimum Level (Dioxin)  |
| NC             | Not Calculated  |
| ND             | Not detected at the reporting limit (or MDL or EDL if shown)  |
| PQL            | Practical Quantitation Limit  |
| QC             | Quality Control   |
| RER            | Relative error ratio  |
| RL             | Reporting Limit or Requested Limit (Radiochemistry)   |
| RPD            | Relative Percent Difference, a measure of the relative difference between two points                        |
| TEF            | Toxicity Equivalent Factor (Dioxin)   |
| TEQ            | Toxicity Equivalent Quotient (Dioxin)   |

## Detection Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-5**

**Lab Sample ID: 480-68692-1**

| Analyte                      | Result | Qualifier | RL     | MDL     | Unit | Dil | Fac | D | Method   | Prep Type |
|------------------------------|--------|-----------|--------|---------|------|-----|-----|---|----------|-----------|
| Aluminum                     | 0.73   |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Arsenic                      | 0.057  |           | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Barium                       | 0.51   |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Boron                        | 0.21   |           | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Calcium                      | 140    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Chromium                     | 0.0076 |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Copper                       | 0.0072 | J         | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Iron                         | 4.8    | B         | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Magnesium                    | 54     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Manganese                    | 1.0    |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Nickel                       | 0.028  |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Potassium                    | 9.8    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Sodium                       | 87     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Zinc                         | 0.026  | B         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Total/NA  |
| Aluminum                     | 2.7    |           | 0.20   | 0.060   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Arsenic                      | 0.055  |           | 0.015  | 0.0056  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Barium                       | 0.47   |           | 0.0020 | 0.00070 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Boron                        | 0.20   | B         | 0.020  | 0.0040  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Calcium                      | 130    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chromium                     | 0.016  |           | 0.0040 | 0.0010  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Copper                       | 0.011  | B         | 0.010  | 0.0016  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Iron                         | 7.7    |           | 0.050  | 0.019   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Lead                         | 0.0051 | J         | 0.010  | 0.0030  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Magnesium                    | 52     |           | 0.20   | 0.043   | mg/L | 1   |     |   | 6010C    | Dissolved |
| Manganese                    | 1.1    |           | 0.0030 | 0.00040 | mg/L | 1   |     |   | 6010C    | Dissolved |
| Nickel                       | 0.032  |           | 0.010  | 0.0013  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Potassium                    | 9.7    |           | 0.50   | 0.10    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Sodium                       | 85     |           | 1.0    | 0.32    | mg/L | 1   |     |   | 6010C    | Dissolved |
| Zinc                         | 0.036  | B         | 0.010  | 0.0015  | mg/L | 1   |     |   | 6010C    | Dissolved |
| Chloride                     | 79     |           | 0.50   | 0.41    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Sulfate                      | 30     |           | 2.0    | 0.13    | mg/L | 1   |     |   | 300.0    | Total/NA  |
| Alkalinity, Total            | 600    | B         | 100    | 40      | mg/L | 10  |     |   | 310.2    | Total/NA  |
| Ammonia                      | 9.1    | B         | 0.20   | 0.090   | mg/L | 10  |     |   | 350.1    | Total/NA  |
| Total Kjeldahl Nitrogen      | 9.2    |           | 1.0    | 0.75    | mg/L | 5   |     |   | 351.2    | Total/NA  |
| Nitrate as N                 | 0.090  |           | 0.050  | 0.020   | mg/L | 1   |     |   | 353.2    | Total/NA  |
| Chemical Oxygen Demand       | 32     | B         | 10     | 5.0     | mg/L | 1   |     |   | 410.4    | Total/NA  |
| Cyanide, Total               | 0.23   |           | 0.010  | 0.0050  | mg/L | 1   |     |   | 9012B    | Total/NA  |
| Total Organic Carbon         | 8.9    |           | 1.0    | 0.43    | mg/L | 1   |     |   | 9060A    | Total/NA  |
| Phenolics, Total Recoverable | 0.026  |           | 0.010  | 0.0050  | mg/L | 1   |     |   | 9066     | Total/NA  |
| Hardness                     | 580    |           | 10     | 2.6     | mg/L | 1   |     |   | SM 2340C | Total/NA  |
| Total Dissolved Solids       | 780    |           | 10     | 4.0     | mg/L | 1   |     |   | SM 2540C | Total/NA  |
| Biochemical Oxygen Demand    | 7.1    | b         | 2.0    | 2.0     | mg/L | 1   |     |   | SM 5210B | Total/NA  |
| Analyte                      | Result | Qualifier | RL     | RL      | Unit | Dil | Fac | D | Method   | Prep Type |
| Turbidity                    | 240    |           | 1.0    | 1.0     | NTU  | 1   |     |   | 180.1    | Total/NA  |

**Client Sample ID: PZ-14-3**

**Lab Sample ID: 480-68692-2**

| Analyte  | Result | Qualifier | RL    | MDL    | Unit | Dil | Fac | D | Method | Prep Type |
|----------|--------|-----------|-------|--------|------|-----|-----|---|--------|-----------|
| Aluminum | 6.3    |           | 0.20  | 0.060  | mg/L | 1   |     |   | 6010C  | Total/NA  |
| Arsenic  | 0.094  |           | 0.015 | 0.0056 | mg/L | 1   |     |   | 6010C  | Total/NA  |

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-5**

**Lab Sample ID: 480-68692-1**

Date Collected: 10/06/14 12:55

Matrix: Ground Water

Date Received: 10/07/14 09:00

### Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 10/09/14 04:19 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 10/09/14 04:19 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 10/09/14 04:19 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 10/09/14 04:19 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 10/09/14 04:19 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 10/09/14 04:19 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 10/09/14 04:19 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 10/09/14 04:19 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 10/09/14 04:19 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 10/09/14 04:19 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 10/09/14 04:19 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 72 - 130 |          | 10/09/14 04:19 | 1       |
| 4-Bromofluorobenzene (Surr)  | 104       |           | 69 - 121 |          | 10/09/14 04:19 | 1       |
| Toluene-d8 (Surr)            | 99        |           | 70 - 123 |          | 10/09/14 04:19 | 1       |

### Method: 6010C - Metals (ICP)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 0.73   |           | 0.20   | 0.060   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Antimony  | ND     |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Arsenic   | 0.057  |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Barium    | 0.51   |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Beryllium | ND     |           | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:13 | 1       |
| Boron     | 0.21   |           | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:47 | 1       |

TestAmerica Buffalo



## Client Sample Results

Client: Sterling Environmental Engineering PC

TestAmerica Job ID: 480-68692-1

Project/Site: Orange County Landfill

**Client Sample ID: PZ-14-5**

**Lab Sample ID: 480-68692-1**

Date Collected: 10/06/14 12:55

Matrix: Ground Water

Date Received: 10/07/14 09:00

| General Chemistry            |        |           |       |        |             |   |                |                |         |
|------------------------------|--------|-----------|-------|--------|-------------|---|----------------|----------------|---------|
| Analyte                      | Result | Qualifier | RL    | MDL    | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Chloride                     | 79     |           | 0.50  | 0.41   | mg/L        |   |                | 10/10/14 01:49 | 1       |
| Sulfate                      | 30     |           | 2.0   | 0.13   | mg/L        |   |                | 10/10/14 01:49 | 1       |
| Alkalinity, Total            | 600    | B         | 100   | 40     | mg/L        |   |                | 10/14/14 15:18 | 10      |
| Ammonia                      | 9.1    | B         | 0.20  | 0.090  | mg/L        |   |                | 10/08/14 23:04 | 10      |
| Total Kjeldahl Nitrogen      | 9.2    |           | 1.0   | 0.75   | mg/L        |   | 10/09/14 09:14 | 10/10/14 04:00 | 5       |
| Nitrate as N                 | 0.090  |           | 0.050 | 0.020  | mg/L        |   |                | 10/07/14 21:59 | 1       |
| Chemical Oxygen Demand       | 32     | B         | 10    | 5.0    | mg/L        |   |                | 10/16/14 09:12 | 1       |
| Chromium, hexavalent         | ND     |           | 0.010 | 0.0050 | mg/L        |   |                | 10/07/14 11:08 | 1       |
| Cyanide, Total               | 0.23   |           | 0.010 | 0.0050 | mg/L        |   | 10/13/14 15:25 | 10/13/14 22:55 | 1       |
| Total Organic Carbon         | 8.9    |           | 1.0   | 0.43   | mg/L        |   |                | 10/12/14 08:34 | 1       |
| Phenolics, Total Recoverable | 0.026  |           | 0.010 | 0.0050 | mg/L        |   | 10/09/14 09:30 | 10/13/14 20:36 | 1       |
| Hardness                     | 580    |           | 10    | 2.6    | mg/L        |   |                | 10/09/14 11:55 | 1       |
| Total Dissolved Solids       | 780    |           | 10    | 4.0    | mg/L        |   |                | 10/10/14 23:57 | 1       |
| Biochemical Oxygen Demand    | 7.1    | b         | 2.0   | 2.0    | mg/L        |   |                | 10/07/14 23:53 | 1       |
| Analyte                      | Result | Qualifier | RL    | RL     | Unit        | D | Prepared       | Analyzed       | Dil Fac |
| Turbidity                    | 240    |           | 1.0   | 1.0    | NTU         |   |                | 10/07/14 23:00 | 1       |
| Color                        | ND     |           | 5.0   | 5.0    | Color Units |   |                | 10/07/14 23:20 | 1       |

# Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

Client Sample ID: PZ-14-3

Lab Sample ID: 480-68692-2

Date Collected: 10/06/14 11:25

Matrix: Ground Water

Date Received: 10/07/14 09:00

## Method: 6010C - Metals (ICP) (Continued)

| Analyte   | Result | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|--------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Cadmium   | ND     |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Calcium   | 180    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:57 | 1       |
| Chromium  | 0.028  |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Copper    | 0.091  |           | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Iron      | 18     | B         | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Lead      | 0.017  |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Magnesium | 56     |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Manganese | 2.0    |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Nickel    | 0.025  |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Potassium | 9.3    |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Selenium  | ND     |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Silver    | ND     |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Sodium    | 60     |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Thallium  | ND     |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |
| Zinc      | 0.087  | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/08/14 19:15 | 1       |

## Method: 6010C - Metals (ICP) - Dissolved

| Analyte   | Result  | Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|---------|-----------|--------|---------|------|---|----------------|----------------|---------|
| Aluminum  | 8.7     |           | 0.20   | 0.060   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Antimony  | ND      |           | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Arsenic   | 0.092   |           | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Barium    | 0.59    |           | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Beryllium | 0.00048 | J         | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Boron     | 0.17    | B         | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:57 | 10/09/14 14:29 | 1       |
| Cadmium   | ND      |           | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Calcium   | 150     |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Chromium  | 0.032   |           | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Copper    | 0.083   | B         | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Iron      | 22      |           | 0.050  | 0.019   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Lead      | 0.015   |           | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Magnesium | 54      |           | 0.20   | 0.043   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Manganese | 1.7     |           | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Nickel    | 0.030   |           | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Potassium | 9.1     |           | 0.50   | 0.10    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Selenium  | ND      |           | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Silver    | ND      |           | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Sodium    | 58      |           | 1.0    | 0.32    | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Thallium  | ND      |           | 0.020  | 0.010   | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |
| Zinc      | 0.087   | B         | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:57 | 10/08/14 23:47 | 1       |

## Method: 7470A - Mercury (CVAA)

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 11:29 | 1       |

## Method: 7470A - Mercury (CVAA) - Dissolved

| Analyte | Result | Qualifier | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/13/14 08:55 | 10/13/14 13:47 | 1       |

TestAmerica Buffalo

## Client Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

Client Sample ID: TB1

Lab Sample ID: 480-68692-3

Date Collected: 10/06/14 00:00

Matrix: Water

Date Received: 10/07/14 09:00

### Method: 624 - Volatile Organic Compounds (GC/MS)

| Analyte                   | Result | Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|--------|-----------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND     |           | 5.0 | 0.39 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1,2,2-Tetrachloroethane | ND     |           | 5.0 | 0.26 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1,2-Trichloroethane     | ND     |           | 5.0 | 0.48 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1-Dichloroethane        | ND     |           | 5.0 | 0.59 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,1-Dichloroethene        | ND     |           | 5.0 | 0.85 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,2-Dichlorobenzene       | ND     |           | 5.0 | 0.44 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,2-Dichloroethane        | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,2-Dichloropropane       | ND     |           | 5.0 | 0.61 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,3-Dichlorobenzene       | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 1,4-Dichlorobenzene       | ND     |           | 5.0 | 0.51 | ug/L |   |          | 10/09/14 05:09 | 1       |
| 2-Chloroethyl vinyl ether | ND     |           | 25  | 1.9  | ug/L |   |          | 10/09/14 05:09 | 1       |
| Benzene                   | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Bromodichloromethane      | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Bromoform                 | ND     |           | 5.0 | 0.47 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Bromomethane              | ND     |           | 5.0 | 1.2  | ug/L |   |          | 10/09/14 05:09 | 1       |
| Carbon tetrachloride      | ND     |           | 5.0 | 0.51 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chlorobenzene             | ND     |           | 5.0 | 0.48 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chloroethane              | ND     |           | 5.0 | 0.87 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chloroform                | ND     |           | 5.0 | 0.54 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Chloromethane             | ND     |           | 5.0 | 0.64 | ug/L |   |          | 10/09/14 05:09 | 1       |
| cis-1,2-Dichloroethene    | ND     |           | 5.0 | 0.57 | ug/L |   |          | 10/09/14 05:09 | 1       |
| cis-1,3-Dichloropropene   | ND     |           | 5.0 | 0.33 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Dibromochloromethane      | ND     |           | 5.0 | 0.41 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Dichlorodifluoromethane   | ND     |           | 5.0 | 0.28 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Ethylbenzene              | ND     |           | 5.0 | 0.46 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Methylene Chloride        | ND     |           | 5.0 | 0.81 | ug/L |   |          | 10/09/14 05:09 | 1       |
| m-Xylene & p-Xylene       | ND     |           | 10  | 1.1  | ug/L |   |          | 10/09/14 05:09 | 1       |
| o-Xylene                  | ND     |           | 5.0 | 0.43 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Tetrachloroethene         | ND     |           | 5.0 | 0.34 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Toluene                   | ND     |           | 5.0 | 0.45 | ug/L |   |          | 10/09/14 05:09 | 1       |
| trans-1,2-Dichloroethene  | ND     |           | 5.0 | 0.59 | ug/L |   |          | 10/09/14 05:09 | 1       |
| trans-1,3-Dichloropropene | ND     |           | 5.0 | 0.44 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Trichloroethene           | ND     |           | 5.0 | 0.60 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Trichlorofluoromethane    | ND     |           | 5.0 | 0.45 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Vinyl chloride            | ND     |           | 5.0 | 0.75 | ug/L |   |          | 10/09/14 05:09 | 1       |
| Xylenes, Total            | ND     |           | 10  | 1.1  | ug/L |   |          | 10/09/14 05:09 | 1       |

| Surrogate                    | %Recovery | Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|-----------|-----------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104       |           | 72 - 130 |          | 10/09/14 05:09 | 1       |
| 4-Bromofluorobenzene (Surr)  | 98        |           | 69 - 121 |          | 10/09/14 05:09 | 1       |
| Toluene-d8 (Surr)            | 98        |           | 70 - 123 |          | 10/09/14 05:09 | 1       |

TestAmerica Buffalo



# QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

## Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-206699/8

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte                   | MB Result | MB Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|-----------|--------------|-----|------|------|---|----------|----------------|---------|
| 1,1,1-Trichloroethane     | ND        |              | 5.0 | 0.39 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2,2-Tetrachloroethane | ND        |              | 5.0 | 0.26 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1,2-Trichloroethane     | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethane        | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,1-Dichloroethene        | ND        |              | 5.0 | 0.85 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichlorobenzene       | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloroethane        | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,2-Dichloropropane       | ND        |              | 5.0 | 0.61 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,3-Dichlorobenzene       | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 1,4-Dichlorobenzene       | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| 2-Chloroethyl vinyl ether | ND        |              | 25  | 1.9  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Benzene                   | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromodichloromethane      | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromoform                 | ND        |              | 5.0 | 0.47 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Bromomethane              | ND        |              | 5.0 | 1.2  | ug/L |   |          | 10/08/14 23:03 | 1       |
| Carbon tetrachloride      | ND        |              | 5.0 | 0.51 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chlorobenzene             | ND        |              | 5.0 | 0.48 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroethane              | ND        |              | 5.0 | 0.87 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloroform                | ND        |              | 5.0 | 0.54 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Chloromethane             | ND        |              | 5.0 | 0.64 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,2-Dichloroethene    | ND        |              | 5.0 | 0.57 | ug/L |   |          | 10/08/14 23:03 | 1       |
| cis-1,3-Dichloropropene   | ND        |              | 5.0 | 0.33 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dibromochloromethane      | ND        |              | 5.0 | 0.41 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Dichlorodifluoromethane   | ND        |              | 5.0 | 0.28 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Ethylbenzene              | ND        |              | 5.0 | 0.46 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Methylene Chloride        | ND        |              | 5.0 | 0.81 | ug/L |   |          | 10/08/14 23:03 | 1       |
| m-Xylene & p-Xylene       | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |
| o-Xylene                  | ND        |              | 5.0 | 0.43 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Tetrachloroethene         | ND        |              | 5.0 | 0.34 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Toluene                   | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,2-Dichloroethene  | ND        |              | 5.0 | 0.59 | ug/L |   |          | 10/08/14 23:03 | 1       |
| trans-1,3-Dichloropropene | ND        |              | 5.0 | 0.44 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichloroethene           | ND        |              | 5.0 | 0.60 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Trichlorofluoromethane    | ND        |              | 5.0 | 0.45 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Vinyl chloride            | ND        |              | 5.0 | 0.75 | ug/L |   |          | 10/08/14 23:03 | 1       |
| Xylenes, Total            | ND        |              | 10  | 1.1  | ug/L |   |          | 10/08/14 23:03 | 1       |

| Surrogate                    | MB %Recovery | MB Qualifier | Limits   | Prepared | Analyzed       | Dil Fac |
|------------------------------|--------------|--------------|----------|----------|----------------|---------|
| 1,2-Dichloroethane-d4 (Surr) | 104          |              | 72 - 130 |          | 10/08/14 23:03 | 1       |
| 4-Bromofluorobenzene (Surr)  | 101          |              | 69 - 121 |          | 10/08/14 23:03 | 1       |
| Toluene-d8 (Surr)            | 99           |              | 70 - 123 |          | 10/08/14 23:03 | 1       |

Lab Sample ID: LCS 480-206699/6

Matrix: Water

Analysis Batch: 206699

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte               | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-----------------------|-------------|------------|---------------|------|---|------|--------------|
| 1,1,1-Trichloroethane | 20.0        | 18.6       |               | ug/L |   | 93   | 52 - 162     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 480-206499/1-A  
Matrix: Water  
Analysis Batch: 207036

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206499

| Analyte   | MB Result | MB Qualifier | RL     | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-----------|-----------|--------------|--------|---------|------|---|----------------|----------------|---------|
| Antimony  | ND        |              | 0.020  | 0.0068  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Arsenic   | ND        |              | 0.015  | 0.0056  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Barium    | ND        |              | 0.0020 | 0.00070 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Beryllium | ND        |              | 0.0020 | 0.00030 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Boron     | ND        |              | 0.020  | 0.0040  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Cadmium   | ND        |              | 0.0020 | 0.00050 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Calcium   | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Chromium  | ND        |              | 0.0040 | 0.0010  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Copper    | ND        |              | 0.010  | 0.0016  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Iron      | 0.0326    | J            | 0.050  | 0.019   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Lead      | ND        |              | 0.010  | 0.0030  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Magnesium | ND        |              | 0.20   | 0.043   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Manganese | ND        |              | 0.0030 | 0.00040 | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Nickel    | ND        |              | 0.010  | 0.0013  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Potassium | ND        |              | 0.50   | 0.10    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Selenium  | ND        |              | 0.025  | 0.0087  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Silver    | ND        |              | 0.0060 | 0.0017  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Sodium    | ND        |              | 1.0    | 0.32    | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Thallium  | ND        |              | 0.020  | 0.010   | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |
| Zinc      | 0.00455   | J            | 0.010  | 0.0015  | mg/L |   | 10/08/14 08:55 | 10/09/14 13:26 | 1       |

Lab Sample ID: LCS 480-206499/2-A  
Matrix: Water  
Analysis Batch: 206924

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206499

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec Limits |
|-----------|-------------|------------|---------------|------|---|------|-------------|
| Aluminum  | 10.0        | 8.95       |               | mg/L |   | 89   | 80 - 120    |
| Antimony  | 0.200       | 0.192      |               | mg/L |   | 96   | 80 - 120    |
| Arsenic   | 0.201       | 0.184      |               | mg/L |   | 92   | 80 - 120    |
| Barium    | 0.200       | 0.217      |               | mg/L |   | 108  | 80 - 120    |
| Beryllium | 0.201       | 0.197      |               | mg/L |   | 98   | 80 - 120    |
| Cadmium   | 0.201       | 0.188      |               | mg/L |   | 94   | 80 - 120    |
| Chromium  | 0.201       | 0.188      |               | mg/L |   | 94   | 80 - 120    |
| Copper    | 0.201       | 0.214      |               | mg/L |   | 107  | 80 - 120    |
| Iron      | 10.0        | 9.07       |               | mg/L |   | 91   | 80 - 120    |
| Lead      | 0.201       | 0.187      |               | mg/L |   | 93   | 80 - 120    |
| Magnesium | 10.0        | 10.2       |               | mg/L |   | 101  | 80 - 120    |
| Manganese | 0.201       | 0.202      |               | mg/L |   | 101  | 80 - 120    |
| Nickel    | 0.201       | 0.183      |               | mg/L |   | 91   | 80 - 120    |
| Potassium | 10.0        | 9.25       |               | mg/L |   | 92   | 80 - 120    |
| Selenium  | 0.201       | 0.189      |               | mg/L |   | 94   | 80 - 120    |
| Silver    | 0.0500      | 0.0528     |               | mg/L |   | 106  | 80 - 120    |
| Sodium    | 10.0        | 9.32       |               | mg/L |   | 93   | 80 - 120    |
| Zinc      | 0.201       | 0.206      |               | mg/L |   | 103  | 80 - 120    |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 480-206494/2-A  
Matrix: Water  
Analysis Batch: 206785

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 206494

| Analyte   | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |  |
|-----------|-------------|------------|---------------|------|---|------|--------------|--|
|           |             |            |               |      |   |      |              |  |
| Chromium  | 0.201       | 0.182      |               | mg/L |   | 91   | 80 - 120     |  |
| Copper    | 0.201       | 0.201      |               | mg/L |   | 100  | 80 - 120     |  |
| Iron      | 10.0        | 8.88       |               | mg/L |   | 89   | 80 - 120     |  |
| Lead      | 0.201       | 0.182      |               | mg/L |   | 91   | 80 - 120     |  |
| Magnesium | 10.0        | 9.86       |               | mg/L |   | 99   | 80 - 120     |  |
| Manganese | 0.201       | 0.198      |               | mg/L |   | 99   | 80 - 120     |  |
| Nickel    | 0.201       | 0.181      |               | mg/L |   | 90   | 80 - 120     |  |
| Potassium | 10.0        | 9.19       |               | mg/L |   | 92   | 80 - 120     |  |
| Selenium  | 0.201       | 0.180      |               | mg/L |   | 90   | 80 - 120     |  |
| Silver    | 0.0500      | 0.0513     |               | mg/L |   | 103  | 80 - 120     |  |
| Thallium  | 0.200       | 0.199      |               | mg/L |   | 100  | 80 - 120     |  |
| Zinc      | 0.201       | 0.196      |               | mg/L |   | 98   | 80 - 120     |  |

Lab Sample ID: LCS 480-206494/2-A  
Matrix: Water  
Analysis Batch: 207038

Client Sample ID: Lab Control Sample  
Prep Type: Total Recoverable  
Prep Batch: 206494

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |  |
|---------|-------------|------------|---------------|------|---|------|--------------|--|
|         |             |            |               |      |   |      |              |  |
| Boron   | 0.200       | 0.209      |               | mg/L |   | 104  | 80 - 120     |  |
| Sodium  | 10.0        | 9.51       |               | mg/L |   | 95   | 80 - 120     |  |

### Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 480-206574/1-A  
Matrix: Water  
Analysis Batch: 206912

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 206574

| Analyte | MB MB  |           | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |         |         |      |   |                |                |         |
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/08/14 10:50 | 10/09/14 11:15 | 1       |

Lab Sample ID: LCS 480-206574/2-A  
Matrix: Water  
Analysis Batch: 206912

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 206574

| Analyte | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |  |
|---------|-------------|------------|---------------|------|---|------|--------------|--|
|         |             |            |               |      |   |      |              |  |
| Mercury | 0.00667     | 0.00712    |               | mg/L |   | 107  | 80 - 120     |  |

Lab Sample ID: MB 480-207374/1-A  
Matrix: Water  
Analysis Batch: 207557

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 207374

| Analyte | MB MB  |           | RL      | MDL     | Unit | D | Prepared       | Analyzed       | Dil Fac |
|---------|--------|-----------|---------|---------|------|---|----------------|----------------|---------|
|         | Result | Qualifier |         |         |      |   |                |                |         |
| Mercury | ND     |           | 0.00020 | 0.00012 | mg/L |   | 10/13/14 08:55 | 10/13/14 13:32 | 1       |



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 480-68692-1 MS

Matrix: Ground Water

Analysis Batch: 150879

Client Sample ID: PZ-14-5

Prep Type: Total/NA

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MS Result | MS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|---------------|------------------|-------------|-----------|--------------|------|---|------|--------------|
| Chloride | 79            |                  | 50.0        | 128       |              | mg/L |   | 98   | 80 - 120     |
| Sulfate  | 30            |                  | 50.0        | 80.2      |              | mg/L |   | 100  | 80 - 120     |

Lab Sample ID: 480-68692-1 MSD

Matrix: Ground Water

Analysis Batch: 150879

Client Sample ID: PZ-14-5

Prep Type: Total/NA

| Analyte  | Sample Result | Sample Qualifier | Spike Added | MSD Result | MSD Qualifier | Unit | D | %Rec | %Rec. Limits | RPD | RPD Limit |
|----------|---------------|------------------|-------------|------------|---------------|------|---|------|--------------|-----|-----------|
| Chloride | 79            |                  | 50.0        | 123        |               | mg/L |   | 88   | 80 - 120     | 4   | 20        |
| Sulfate  | 30            |                  | 50.0        | 77.2       |               | mg/L |   | 94   | 80 - 120     | 4   | 20        |

### Method: 310.2 - Alkalinity

Lab Sample ID: MB 480-207719/185

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND        |              | 10 | 4.0 | mg/L |   |          | 10/14/14 15:04 | 1       |

Lab Sample ID: MB 480-207719/192

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | ND        |              | 10 | 4.0 | mg/L |   |          | 10/14/14 15:06 | 1       |

Lab Sample ID: MB 480-207719/203

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte           | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|-------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Alkalinity, Total | 4.00      | J            | 10 | 4.0 | mg/L |   |          | 10/14/14 15:17 | 1       |

Lab Sample ID: LCS 480-207719/186

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.4       |               | mg/L |   | 103  | 90 - 110     |

Lab Sample ID: LCS 480-207719/193

Matrix: Water

Analysis Batch: 207719

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte           | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|-------------------|-------------|------------|---------------|------|---|------|--------------|
| Alkalinity, Total | 50.0        | 51.0       |               | mg/L |   | 102  | 90 - 110     |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: MB 480-206737/75

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | 0.0111       | J               | 0.020 | 0.0090 | mg/L |   |          | 10/08/14 23:56 | 1       |

Lab Sample ID: MB 480-206737/99

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Method Blank

Prep Type: Total/NA

| Analyte | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Ammonia | 0.00994      | J               | 0.020 | 0.0090 | mg/L |   |          | 10/09/14 00:18 | 1       |

Lab Sample ID: LCS 480-206737/100

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.990         |                  | mg/L |   | 99   | 90 - 110        |

Lab Sample ID: LCS 480-206737/124

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.989         |                  | mg/L |   | 99   | 90 - 110        |

Lab Sample ID: LCS 480-206737/4

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.997         |                  | mg/L |   | 100  | 90 - 110        |

Lab Sample ID: LCS 480-206737/76

Matrix: Water

Analysis Batch: 206737

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

| Analyte | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|---------|----------------|---------------|------------------|------|---|------|-----------------|
| Ammonia | 1.00           | 0.990         |                  | mg/L |   | 99   | 90 - 110        |

### Method: 351.2 - Nitrogen, Total Kjeldahl

Lab Sample ID: MB 480-206899/1-A

Matrix: Water

Analysis Batch: 207003

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206899

| Analyte                 | MB<br>Result | MB<br>Qualifier | RL   | MDL  | Unit | D | Prepared       | Analyzed       | Dil Fac |
|-------------------------|--------------|-----------------|------|------|------|---|----------------|----------------|---------|
| Total Kjeldahl Nitrogen | ND           |                 | 0.20 | 0.15 | mg/L |   | 10/09/14 09:14 | 10/09/14 18:23 | 1       |

TestAmerica Buffalo

## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: 7196A - Chromium, Hexavalent

Lab Sample ID: MB 480-206384/3  
Matrix: Water  
Analysis Batch: 206384

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-------|--------|------|---|----------|----------------|---------|
| Chromium, hexavalent | ND           |                 | 0.010 | 0.0050 | mg/L |   |          | 10/07/14 11:08 | 1       |

Lab Sample ID: LCS 480-206384/4  
Matrix: Water  
Analysis Batch: 206384

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Chromium, hexavalent | 0.0500         | 0.0520        |                  | mg/L |   | 104  | 85 - 115        |

Lab Sample ID: 480-68692-2 MS  
Matrix: Ground Water  
Analysis Batch: 206384

Client Sample ID: PZ-14-3  
Prep Type: Total/NA

| Analyte              | Sample<br>Result | Sample<br>Qualifier | Spike<br>Added | MS<br>Result | MS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|------------------|---------------------|----------------|--------------|-----------------|------|---|------|-----------------|
| Chromium, hexavalent | ND               |                     | 0.0500         | 0.103        | F1              | mg/L |   | 205  | 85 - 115        |

### Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 480-207517/1-A  
Matrix: Water  
Analysis Batch: 207541

Client Sample ID: Method Blank  
Prep Type: Total/NA  
Prep Batch: 207517

| Analyte        | MB<br>Result | MB<br>Qualifier | RL    | MDL    | Unit | D | Prepared       | Analyzed       | Dil Fac |
|----------------|--------------|-----------------|-------|--------|------|---|----------------|----------------|---------|
| Cyanide, Total | ND           | A               | 0.010 | 0.0050 | mg/L |   | 10/13/14 15:25 | 10/13/14 22:41 | 1       |

Lab Sample ID: LCS 480-207517/2-A  
Matrix: Water  
Analysis Batch: 207541

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA  
Prep Batch: 207517

| Analyte        | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------|----------------|---------------|------------------|------|---|------|-----------------|
| Cyanide, Total | 0.250          | 0.232         |                  | mg/L |   | 93   | 90 - 110        |

### Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 480-207429/27  
Matrix: Water  
Analysis Batch: 207429

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte              | MB<br>Result | MB<br>Qualifier | RL  | MDL  | Unit | D | Prepared | Analyzed       | Dil Fac |
|----------------------|--------------|-----------------|-----|------|------|---|----------|----------------|---------|
| Total Organic Carbon | ND           |                 | 1.0 | 0.43 | mg/L |   |          | 10/12/14 04:47 | 1       |

Lab Sample ID: LCS 480-207429/28  
Matrix: Water  
Analysis Batch: 207429

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte              | Spike<br>Added | LCS<br>Result | LCS<br>Qualifier | Unit | D | %Rec | %Rec.<br>Limits |
|----------------------|----------------|---------------|------------------|------|---|------|-----------------|
| Total Organic Carbon | 60.0           | 60.8          |                  | mg/L |   | 101  | 90 - 110        |

TestAmerica Buffalo



## QC Sample Results

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Method: SM 2340C - Hardness, Total (mg/l as CaCO3) (Continued)

Lab Sample ID: LCS 480-206969/52  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Hardness | 298         | 288        |               | mg/L |   | 97   | 90 - 110     |

Lab Sample ID: LCS 480-206969/76  
Matrix: Water  
Analysis Batch: 206969

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte  | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|----------|-------------|------------|---------------|------|---|------|--------------|
| Hardness | 298         | 284        |               | mg/L |   | 95   | 90 - 110     |

### Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 480-207217/1  
Matrix: Water  
Analysis Batch: 207217

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND        |              | 10 | 4.0 | mg/L |   |          | 10/10/14 23:57 | 1       |

Lab Sample ID: LCS 480-207217/2  
Matrix: Water  
Analysis Batch: 207217

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Dissolved Solids | 504         | 500        |               | mg/L |   | 99   | 85 - 115     |

Lab Sample ID: MB 480-207341/1  
Matrix: Water  
Analysis Batch: 207341

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                | MB Result | MB Qualifier | RL | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|------------------------|-----------|--------------|----|-----|------|---|----------|----------------|---------|
| Total Dissolved Solids | ND        |              | 10 | 4.0 | mg/L |   |          | 10/13/14 00:14 | 1       |

Lab Sample ID: LCS 480-207341/2  
Matrix: Water  
Analysis Batch: 207341

Client Sample ID: Lab Control Sample  
Prep Type: Total/NA

| Analyte                | Spike Added | LCS Result | LCS Qualifier | Unit | D | %Rec | %Rec. Limits |
|------------------------|-------------|------------|---------------|------|---|------|--------------|
| Total Dissolved Solids | 504         | 512        |               | mg/L |   | 102  | 85 - 115     |

### Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 480-206522/1  
Matrix: Water  
Analysis Batch: 206522

Client Sample ID: Method Blank  
Prep Type: Total/NA

| Analyte                   | USB Result | USB Qualifier | RL  | MDL | Unit | D | Prepared | Analyzed       | Dil Fac |
|---------------------------|------------|---------------|-----|-----|------|---|----------|----------------|---------|
| Biochemical Oxygen Demand | ND         |               | 2.0 | 2.0 | mg/L |   |          | 10/07/14 23:53 | 1       |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### GC/MS VOA

#### Analysis Batch: 206699

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | 624    |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | 624    |            |
| 480-68692-3      | TB1                | Total/NA  | Water        | 624    |            |
| LCS 480-206699/6 | Lab Control Sample | Total/NA  | Water        | 624    |            |
| MB 480-206699/8  | Method Blank       | Total/NA  | Water        | 624    |            |

### Metals

#### Prep Batch: 206494

| Lab Sample ID      | Client Sample ID   | Prep Type         | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-------------------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Dissolved         | Ground Water | 3005A  |            |
| 480-68692-2        | PZ-14-3            | Dissolved         | Ground Water | 3005A  |            |
| LCS 480-206494/2-A | Lab Control Sample | Total Recoverable | Water        | 3005A  |            |
| MB 480-206494/1-A  | Method Blank       | Total Recoverable | Water        | 3005A  |            |

#### Prep Batch: 206499

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 3005A  |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 3005A  |            |
| LCS 480-206499/2-A | Lab Control Sample | Total/NA  | Water        | 3005A  |            |
| MB 480-206499/1-A  | Method Blank       | Total/NA  | Water        | 3005A  |            |

#### Prep Batch: 206574

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 7470A  |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 7470A  |            |
| LCS 480-206574/2-A | Lab Control Sample | Total/NA  | Water        | 7470A  |            |
| MB 480-206574/1-A  | Method Blank       | Total/NA  | Water        | 7470A  |            |

#### Analysis Batch: 206785

| Lab Sample ID      | Client Sample ID   | Prep Type         | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-------------------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Dissolved         | Ground Water | 6010C  | 206494     |
| 480-68692-2        | PZ-14-3            | Dissolved         | Ground Water | 6010C  | 206494     |
| LCS 480-206494/2-A | Lab Control Sample | Total Recoverable | Water        | 6010C  | 206494     |
| MB 480-206494/1-A  | Method Blank       | Total Recoverable | Water        | 6010C  | 206494     |

#### Analysis Batch: 206912

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 7470A  | 206574     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 7470A  | 206574     |
| LCS 480-206574/2-A | Lab Control Sample | Total/NA  | Water        | 7470A  | 206574     |
| MB 480-206574/1-A  | Method Blank       | Total/NA  | Water        | 7470A  | 206574     |

#### Analysis Batch: 206924

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 6010C  | 206499     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 6010C  | 206499     |
| LCS 480-206499/2-A | Lab Control Sample | Total/NA  | Water        | 6010C  | 206499     |

TestAmerica Buffalo

## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### General Chemistry (Continued)

#### Analysis Batch: 206477

| Lab Sample ID | Client Sample ID | Prep Type | Matrix       | Method | Prep Batch |
|---------------|------------------|-----------|--------------|--------|------------|
| 480-68692-1   | PZ-14-5          | Total/NA  | Ground Water | 353.2  |            |
| 480-68692-2   | PZ-14-3          | Total/NA  | Ground Water | 353.2  |            |

#### Analysis Batch: 206480

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | 180.1  |            |
| 480-68692-1 DU   | PZ-14-5            | Total/NA  | Ground Water | 180.1  |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | 180.1  |            |
| LCS 480-206480/4 | Lab Control Sample | Total/NA  | Water        | 180.1  |            |
| MB 480-206480/3  | Method Blank       | Total/NA  | Water        | 180.1  |            |

#### Analysis Batch: 206522

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method   | Prep Batch |
|------------------|--------------------|-----------|--------------|----------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | SM 5210B |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | SM 5210B |            |
| 480-68692-2 DU   | PZ-14-3            | Total/NA  | Ground Water | SM 5210B |            |
| LCS 480-206522/2 | Lab Control Sample | Total/NA  | Water        | SM 5210B |            |
| USB 480-206522/1 | Method Blank       | Total/NA  | Water        | SM 5210B |            |

#### Analysis Batch: 206725

| Lab Sample ID    | Client Sample ID   | Prep Type | Matrix       | Method   | Prep Batch |
|------------------|--------------------|-----------|--------------|----------|------------|
| 480-68692-1      | PZ-14-5            | Total/NA  | Ground Water | SM 2120B |            |
| 480-68692-1 DU   | PZ-14-5            | Total/NA  | Ground Water | SM 2120B |            |
| 480-68692-2      | PZ-14-3            | Total/NA  | Ground Water | SM 2120B |            |
| LCS 480-206725/4 | Lab Control Sample | Total/NA  | Water        | SM 2120B |            |
| MB 480-206725/3  | Method Blank       | Total/NA  | Water        | SM 2120B |            |

#### Analysis Batch: 206737

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 350.1  |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 350.1  |            |
| LCS 480-206737/100 | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| LCS 480-206737/124 | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| LCS 480-206737/4   | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| LCS 480-206737/76  | Lab Control Sample | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/123  | Method Blank       | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/3    | Method Blank       | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/75   | Method Blank       | Total/NA  | Water        | 350.1  |            |
| MB 480-206737/99   | Method Blank       | Total/NA  | Water        | 350.1  |            |

#### Prep Batch: 206888

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method         | Prep Batch |
|--------------------|--------------------|-----------|--------------|----------------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | Distill/Phenol |            |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | Distill/Phenol |            |
| LCS 480-206888/2-A | Lab Control Sample | Total/NA  | Water        | Distill/Phenol |            |
| MB 480-206888/1-A  | Method Blank       | Total/NA  | Water        | Distill/Phenol |            |

#### Prep Batch: 206899

| Lab Sample ID | Client Sample ID | Prep Type | Matrix       | Method | Prep Batch |
|---------------|------------------|-----------|--------------|--------|------------|
| 480-68692-1   | PZ-14-5          | Total/NA  | Ground Water | 351.2  |            |
| 480-68692-2   | PZ-14-3          | Total/NA  | Ground Water | 351.2  |            |

TestAmerica Buffalo



## QC Association Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### General Chemistry (Continued)

#### Analysis Batch: 207542

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 9066   | 206888     |
| 480-68692-2        | PZ-14-3            | Total/NA  | Ground Water | 9066   | 206888     |
| LCS 480-206888/2-A | Lab Control Sample | Total/NA  | Water        | 9066   | 206888     |
| MB 480-206888/1-A  | Method Blank       | Total/NA  | Water        | 9066   | 206888     |

#### Analysis Batch: 207719

| Lab Sample ID      | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|--------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1        | PZ-14-5            | Total/NA  | Ground Water | 310.2  |            |
| LCS 480-207719/186 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| LCS 480-207719/193 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| LCS 480-207719/204 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| MB 480-207719/185  | Method Blank       | Total/NA  | Water        | 310.2  |            |
| MB 480-207719/192  | Method Blank       | Total/NA  | Water        | 310.2  |            |
| MB 480-207719/203  | Method Blank       | Total/NA  | Water        | 310.2  |            |

#### Analysis Batch: 207973

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|-------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-2       | PZ-14-3            | Total/NA  | Ground Water | 310.2  |            |
| LCS 480-207973/13 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| LCS 480-207973/27 | Lab Control Sample | Total/NA  | Water        | 310.2  |            |
| MB 480-207973/12  | Method Blank       | Total/NA  | Water        | 310.2  |            |
| MB 480-207973/26  | Method Blank       | Total/NA  | Water        | 310.2  |            |

#### Analysis Batch: 208155

| Lab Sample ID     | Client Sample ID   | Prep Type | Matrix       | Method | Prep Batch |
|-------------------|--------------------|-----------|--------------|--------|------------|
| 480-68692-1       | PZ-14-5            | Total/NA  | Ground Water | 410.4  |            |
| 480-68692-2       | PZ-14-3            | Total/NA  | Ground Water | 410.4  |            |
| LCS 480-208155/28 | Lab Control Sample | Total/NA  | Water        | 410.4  |            |
| LCS 480-208155/4  | Lab Control Sample | Total/NA  | Water        | 410.4  |            |
| LCS 480-208155/52 | Lab Control Sample | Total/NA  | Water        | 410.4  |            |
| MB 480-208155/27  | Method Blank       | Total/NA  | Water        | 410.4  |            |
| MB 480-208155/3   | Method Blank       | Total/NA  | Water        | 410.4  |            |
| MB 480-208155/51  | Method Blank       | Total/NA  | Water        | 410.4  |            |

## Lab Chronicle

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

**Client Sample ID: PZ-14-3**

**Lab Sample ID: 480-68692-2**

Date Collected: 10/06/14 11:25

Matrix: Ground Water

Date Received: 10/07/14 09:00

| Prep Type | Batch Type | Batch Method   | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|----------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Prep       | 3005A          |     |                 | 206499       | 10/08/14 08:55       | SLB     | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 206924       | 10/08/14 19:15       | AMH     | TAL BUF |
| Total/NA  | Prep       | 3005A          |     |                 | 206499       | 10/08/14 08:55       | SLB     | TAL BUF |
| Total/NA  | Analysis   | 6010C          |     | 1               | 207036       | 10/09/14 13:57       | AMH     | TAL BUF |
| Dissolved | Prep       | 7470A          |     |                 | 207374       | 10/13/14 08:55       | LRK     | TAL BUF |
| Dissolved | Analysis   | 7470A          |     | 1               | 207557       | 10/13/14 13:47       | LRK     | TAL BUF |
| Total/NA  | Prep       | 7470A          |     |                 | 206574       | 10/08/14 10:50       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 7470A          |     | 1               | 206912       | 10/09/14 11:29       | LRK     | TAL BUF |
| Total/NA  | Analysis   | 180.1          |     | 1               | 206480       | 10/07/14 23:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 300.0          |     | 1               | 150879       | 10/10/14 02:47       | JMB     | TAL CAN |
| Total/NA  | Analysis   | 310.2          |     | 10              | 207973       | 10/15/14 08:45       | NCH     | TAL BUF |
| Total/NA  | Analysis   | 350.1          |     | 5               | 206737       | 10/09/14 00:43       | RS      | TAL BUF |
| Total/NA  | Prep       | 351.2          |     |                 | 206899       | 10/09/14 09:14       | LAW     | TAL BUF |
| Total/NA  | Analysis   | 351.2          |     | 2               | 207003       | 10/10/14 04:00       | CLT     | TAL BUF |
| Total/NA  | Analysis   | 353.2          |     | 1               | 206477       | 10/07/14 22:00       | RS      | TAL BUF |
| Total/NA  | Analysis   | 410.4          |     | 1               | 208155       | 10/16/14 09:12       | KMF     | TAL BUF |
| Total/NA  | Analysis   | 7196A          |     | 1               | 206384       | 10/07/14 11:08       | NCH     | TAL BUF |
| Total/NA  | Prep       | 9012B          |     |                 | 207517       | 10/13/14 15:25       | MDL     | TAL BUF |
| Total/NA  | Analysis   | 9012B          |     | 1               | 207541       | 10/13/14 22:56       | RS      | TAL BUF |
| Total/NA  | Analysis   | 9060A          |     | 1               | 207429       | 10/12/14 09:02       | MRF     | TAL BUF |
| Total/NA  | Prep       | Distill/Phenol |     |                 | 206888       | 10/09/14 09:30       | MRF     | TAL BUF |
| Total/NA  | Analysis   | 9066           |     | 1               | 207542       | 10/13/14 20:36       | JMB     | TAL BUF |
| Total/NA  | Analysis   | SM 2120B       |     | 1               | 206725       | 10/07/14 23:20       | RS      | TAL BUF |
| Total/NA  | Analysis   | SM 2340C       |     | 1               | 206969       | 10/09/14 11:55       | KMF     | TAL BUF |
| Total/NA  | Analysis   | SM 2540C       |     | 1               | 207341       | 10/13/14 00:14       | VAJ     | TAL BUF |
| Total/NA  | Analysis   | SM 5210B       |     | 1               | 206522       | 10/07/14 23:53       | LAW     | TAL BUF |

**Client Sample ID: TB1**

**Lab Sample ID: 480-68692-3**

Date Collected: 10/06/14 00:00

Matrix: Water

Date Received: 10/07/14 09:00

| Prep Type | Batch Type | Batch Method | Run | Dilution Factor | Batch Number | Prepared or Analyzed | Analyst | Lab     |
|-----------|------------|--------------|-----|-----------------|--------------|----------------------|---------|---------|
| Total/NA  | Analysis   | 624          |     | 1               | 206699       | 10/09/14 05:09       | ABF     | TAL BUF |

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

## Certification Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

### Laboratory: TestAmerica Canton (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

| Authority         | Program       | EPA Region | Certification ID | Expiration Date |
|-------------------|---------------|------------|------------------|-----------------|
| Ohio VAP          | State Program | 5          | CL0024           | 10-31-15        |
| Pennsylvania      | NELAP         | 3          | 68-00340         | 08-31-15        |
| Texas             | NELAP         | 6          |                  | 08-31-15        |
| USDA              | Federal       |            | P330-13-00319    | 11-26-16        |
| Virginia          | NELAP         | 3          | 460175           | 09-14-15        |
| Washington        | State Program | 10         | C971             | 01-12-15        |
| West Virginia DEP | State Program | 3          | 210              | 12-31-14        |
| Wisconsin         | State Program | 5          | 999518190        | 08-31-15        |



## Sample Summary

Client: Sterling Environmental Engineering PC  
Project/Site: Orange County Landfill

TestAmerica Job ID: 480-68692-1

| Lab Sample ID | Client Sample ID | Matrix       | Collected      | Received       |
|---------------|------------------|--------------|----------------|----------------|
| 480-68692-1   | PZ-14-5          | Ground Water | 10/06/14 12:55 | 10/07/14 09:00 |
| 480-68692-2   | PZ-14-3          | Ground Water | 10/06/14 11:25 | 10/07/14 09:00 |
| 480-68692-3   | TB1              | Water        | 10/06/14 00:00 | 10/07/14 09:00 |



## 039837

**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING  
**TestAmerica Laboratories, Inc.**  
TAL-8210 (0713)

|   |      |   |             |   |        |                            |                       |                      |                        |
|---|------|---|-------------|---|--------|----------------------------|-----------------------|----------------------|------------------------|
| Client Contact  |      | Project Manager: Mark Williams  |             | Site Contact: Lady Snyder   |        | Date: 10/6/14              |                       | COC No:              |                        |
| Company Name: Sterling Env. Eng, PC   |      | Tel/Fax:  |             | Lab Contact:  |        | Carrier:                   |                       | 1 of 1 COCs          |                        |
| Address: 24 Wade Road   |      | Analysis Turnaround Time  |             |   |        |                            |                       | Sampler:             |                        |
| City/State/Zip: Latham NY 12110   |      | <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS   |             |   |        |                            |                       | For Lab Use Only:    |                        |
| Phone: 518-456-4900   |      | TAT if different from Below   |             |   |        |                            |                       | Walk-in Client:      |                        |
| Fax:  |      | <input type="checkbox"/> 2 weeks  |             |   |        |                            |                       | Lab Sampling:        |                        |
| Project Name: Orange County Landfill  |      | <input checked="" type="checkbox"/> 1 week 5 days   |             |   |        |                            |                       |                      |                        |
| Site:   |      | <input type="checkbox"/> 2 days   |             |   |        |                            |                       | Job / SDG No.:       |                        |
| P O # 2010-15   |      | <input type="checkbox"/> 1 day  |             |   |        |                            |                       |                      |                        |
| Sample Identification   |      | Sample Date   | Sample Time | Sample Type (C=Comp, G=Grab)  | Matrix | # of Cont.                 | Filtered Sample (Y/N) | Perform MS/MSD (Y/N) | Sample Specific Notes: |
| PZ-14-5   | 10/6 |   | G           | GW  | 18     |                            |                       |                      |                        |
| PZ-14-3   | 10/6 |   | G           | GW  | 18     |                            |                       |                      |                        |
| Preservation Used: 1=Ice 2=HCl 3=H2SO4 4=HNO3 5=NaOH 6=Other  |      | Possible Hazard Identification:   |             | Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)   |        |                            |                       |                      |                        |
| Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. |      | <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown |             | <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input checked="" type="checkbox"/> Archive for 1 Months |        |                            |                       |                      |                        |
| Special Instructions/QC Requirements & Comments:  |      |   |             |   |        |                            |                       |                      |                        |
| Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No  |      | Custody Seal No.:   |             | Cooler Temp. (°C): Obs'd:   |        | Cor'd:                     |                       | Therm ID No.:        |                        |
| Relinquished by: [Signature]  |      | Company:  |             | Date/Time:  |        | Received by: [Signature]   |                       | Company: [Signature] |                        |
| Relinquished by:  |      | Company:  |             | Date/Time:  |        | Received by:               |                       | Company:             |                        |
| Relinquished by:  |      | Company:  |             | Date/Time:  |        | Received in Laboratory by: |                       | Company:             |                        |

#2 3.8, 3.9, 4.2

**APPENDIX K**  
**REFERENCES**



## References

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- Stearns & Wheler. "Remedial Investigation Orange County Landfill: Appendices A through M." Orange County, NY. March 1995.
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