WHITE STREET LANDFILL
INSTALLATION REPORT
EBUFFER® & SENTINEL WELLS
GREENSBORO, NORTH CAROLINA
S&ME Project No. 1584-98-081

Prepared For:

The City of Greensboro

Prepared By:

S&ME, Inc.
3718 Old Battleground Road
Greensboro, North Carolina 27410

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Edmund Q.B. Henriques, L.G.
Environmental Services Leader

Lisa Ennis
Staff Professional

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EXECUTIVE SUMMARY

In accordance with 15A NCAC 13B .1636 S&ME, Inc. prepared a Corrective Action Plan (CAP) on behalf of the City of Greensboro (CITY) to implement the CITY's selected combined remedies of Monitored Natural Attenuation (MNA) coupled with Phytoremediation for Phase II at the White Street Landfill. The CAP dated April 30, 2009 was subsequently approved by North Carolina Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section (NCDENR) on May 14, 2009.

Subsequent to the completion and approval of the CAP additional groundwater quality data was obtained, which demonstrated a reduction in the CAP listed constituents of concern and projecting a potential for achieving groundwater quality compliance near term at select compliance points without implementation of additional corrective measures. On February 3, 2010 S&ME submitted a Request to Suspend Construction of Select Phytoremediation Beds (Amendment to Corrective Action Plan) to NCDENR. On April 29, 2010, NCDENR approved the requested suspension of the installation of sentinel monitoring wells SMW-2 and SMW-5 and the certain Phytoremediation Beds.

This report summarizes the sentinel monitoring well installation and the Phytoremediation system installation as provided for in the CAP and with consideration given to the suspended CAP activities identified herein.

1.0 INTRODUCTION

The White Street Landfill is located at the end of White Street in the City of Greensboro, North Carolina (reference **Figure 1**). The subject landfill contains three distinct phases, I, II, and III, which operated under Permit Nos. 41-03 (Phase I & II) and 41-12 (Phase III). Phase II of the landfill is an active construction, demolition, and debris landfill on top of a closed municipal solid waste (MSW) cell. The Phase II portion of the landfill was included under Permit No. 41-03. A detailed site map is included as **Figure 2**. The NCAC 2L Groundwater Quality Standards (2L Standards) for several target constituents have been exceeded in Phase II of the facility at points near the north-northwestern property boundary. The nearest downgradient receptor north-northwest of the facility is North Buffalo Creek.

A Nature and Extent Study (NES) report was completed by S&ME describing the nature of the primary constituents of concern (COC) within Phase II exceeding their respective 2L Standards, where the exceedances occurred within the compliance network, and to what extent the 2L Standards were exceeded. The results of the NES indicated that organic constituents tetrachloroethene, trichloroethene, benzene, 1,4 dichlorobenzene, and vinyl chloride, as well as inorganic constituent thallium, exceeded the 2L Standards and/or NCDENR Groundwater Protection Standard (GPS) values within certain NES wells.

Subsequent to the completion of the NES, S&ME completed an Assessment of Corrective Measures (ACM) report which documented the potential corrective measure options and recommended, with public input, measures that are appropriate for the facility. The ACM evaluated "The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination; the time required to begin and complete the remedy; the costs of remedy implementation; and the institutional requirements such as State and Local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s)," as per 15A NCAC 13B.1635.

In order to incorporate comments from the general public regarding the selection of the remedy for the Phase II portion of the White Street Landfill, the City of Greensboro held a public meeting on December 20, 2007. Subsequent to the original submittal of the NES and ACM Reports, it was decided between S&ME and the City of Greensboro to include Phytoremediation as an integral part of the Facility's selected remedies to restore groundwater quality and attain the approved Groundwater Protection Standards (GPS). In order to recommend Phytoremediation as part of the selected remedy the Facility's ACM had to be amended to include Phytoremediation as a possible remedy. The ACM was amended to include Phytoremediation, and in order to satisfy the requirements of 15A NCAC 13B.1635 (d), the amended ACM was made available for public review at two public libraries for a 30-day public comment period followed by a subsequent public meeting with interested and affected parties. The second public meeting was held on June 19, 2008.

S&ME completed a CAP dated April 30, 2009. This CAP described the selected remedy of phytoremediation coupled with natural attenuation and maintaining a consistent contour on waste disposal units. In a letter dated May 14, 2009, NCDENR approved the CAP.

Subsequent to the completion and approval of the CAP additional groundwater quality data was obtained, which demonstrated a reduction in the CAP listed constituents of concern (COC) and projecting a potential for achieving groundwater quality compliance near term at select compliance points without implementation of additional corrective measures. On February 3, 2010 S&ME submitted to NCDENR a Request to Suspend Construction of Select Phytoremediation Beds. The request included:

1. Elimination of thallium as a current COCs requiring corrective measure, thereby, eliminating the need to construct phytoremediation beds at locations associated with wells II-6, II-11, and II-12.
2. Installing sentinel well SMW-4 and assessing groundwater quality prior to the installation of the phytoremediation bed associated with well II-6. Considering the close proximity of compliance well II-6 to the waste boundary, if groundwater quality at SMW-4 documented compliant conditions, installation of the phytoremediation bed associated with well II-6 would be postponed until required by regulation.
3. Suspending the installation of phytoremediation beds in the area of well II-7 based the concentrations of COCs at monitoring well II-7 and the minute degree of separation between the current COC concentrations and the corresponding 2L Standards. The CAP approved MNA program would be implemented at II-7.

On April 29, 2010, NCDENR approved the requested suspension of the installation of sentinel monitoring wells SMW-2 and SMW-5 and the certain Phytoremediation Beds. During 2010 additional investigations were completed in order to prepare a final design for the Phytoremediation system.

This report documents the final design and installation of the phytoremediation beds, the installation of certain sentinel monitoring wells, and provides a summary of groundwater quality monitoring associated with the sentinel well locations.

2.0 SENTINEL MONITORING WELL INSTALLATION

Three new sentinel monitoring wells were installed down-gradient of each of the compliance and former NES monitoring well in which current COCs have been detected at concentrations exceeding the 2L Standard.

Between July 8 and 9, 2010, sentinel monitoring wells SMW-1, SMW-3, and SMW-4 were installed down-gradient of monitored unit Phase II, prior to North Buffalo Creek, and prior to the Compliance Boundary. Sentinel well SMW-1 was installed down-gradient of compliance well II-2, SMW-3 was installed down-gradient of NES well II-9, and SMW-4 was installed down-gradient of compliance well II-6. These wells will serve to monitor groundwater quality after interaction with the phytoremediation beds and/or

prior to groundwater discharging to North Buffalo Creek. The wells monitor the same portion of the uppermost aquifer as the affected compliance or NES wells up-gradient of their location. The locations of the sentinel monitoring wells are illustrated on **Figure 2**.

The sentinel monitor wells were installed using decontaminated hollow-stem augers. Ten to 15 feet of 2-inch diameter PVC slotted screen was used for each well with 2-inch diameter PVC pipe for the riser. A clean filter sand pack was placed in the annulus space from the bottom of the screen to approximately two feet above the top of screen and sealed with approximately two feet of bentonite. Portland cement was placed above the bentonite seal. Each well was completed at the surface with a concrete pad and a post-type metal cover. The top of casing was sealed with an expandable locking cap and the protective cover secured with a lock. Well installation records are located in **Appendix I**.

Following installation, each well was developed to remove suspended sediment and reduce well turbidity likely resulting from drilling methods.

2.1 Groundwater Quality

To examine groundwater quality at the new sentinel monitoring wells, S&ME collected groundwater samples on August 2, 2010 and again on October 10, 2010. Prior to sampling, each well was purged using dedicated Micro Purge pumps. At each well, the purge rate and the drawdown of the water table were monitored as an indicator of how much stress the purging placed on the aquifer. The purge rates were calculated by recording the time required to fill a graduated cylinder. The purging flow rate was approximately 100 milliliters/minute (ml/min.). Samples were collected directly into laboratory supplied containers and placed in a cooler with ice to be shipped under chain of custody to ENCO Laboratories. The samples were analyzed for Appendix I constituents.

Table 1 provides a summary of the volatile organic compound detected at the new sentinel wells or at existing compliance wells which will function as sentinel wells for the CAP. **Table 1** is divided into areas of concern (AOCs) based on prior points of non-compliance relative to groundwater quality standards and/or with respect to monitoring wells associated with the phytoremediation beds. **Table 2** provides a summary of the groundwater analytical results for the Appendix I inorganic parameters.

It should be noted that during December 2010, 15A NCAC 2L groundwater quality standards were revised to incorporate new Interim Maximum Allowable Concentrations (IMACs) for select parameters. The solid waste section adopted the IMACs as their current groundwater protection standards (GPS). During 2007, S&ME completed an Alternate Source Demonstration (ASD) for metals. The results of the ASD successfully demonstrated that the concentrations of several naturally-occurring metals including cobalt and vanadium within the in-situ soil at the Facility were sufficient to influence the concentrations of these metals in groundwater samples collected from the down-gradient groundwater monitoring wells. Based on the ASD findings, the reporting of cobalt and vanadium at concentrations above their respective 15A NCAC 2L IMAC standards is not due to a release by the Facility, but instead may be the result of the natural occurrence of

these metals in the native, residual soil. Based on the ASD findings the concentrations of cobalt and vanadium reported herein are thought to reflect naturally occurring conditions, and thus should not be considered an exceedance of the 15A NCAC 2L standards (2L Standards) and therefore, triggering the need for corrective measures.

The following provides a brief discussion of the analytical results for each sentinel well and each area of concern as identified in the CAP and/or the phytoremediation beds discussed in Section 3.0.

Northern EBuffer® Area

Historically, vinyl chloride has been detected in NES well II-9. Sentinel well SMW-3 was installed down-gradient of well II-9, at point near the compliance boundary, and just prior to North Buffalo Creek. As summarized in **Table 1**, vinyl chloride was detected at sentinel well SMW-3 during August and October 2010. The detected concentrations exceed the corresponding 2L Standard for vinyl chloride. This monitoring data represents groundwater quality prior to the installation of the corresponding phytoremediation buffer; hereafter, referred to as the Northern EBuffer®.

Southern EBuffer® Area

As defined in the CAP, due to the proximity of compliance well II-1 to Buffalo Creek, this former compliance well shall functions as the sentinel well for this area of the landfill. The CAP identified vinyl chloride, 1,4-dichlorobenzene, and thallium as the constituents of concern at monitor well II-1. During the April and October 2010 monitoring events, vinyl chloride and 1,4-dichlorobenzene were detected at II-1 at concentrations greater than the corresponding 2L Standard of 6 μg/L. Thallium was not detected above laboratory detection limits.

Benzene was not originally listed as constituent of concern at well II-1 in the CAP; however, it was detected during the April and October 2010 monitoring events at concentrations greater than the corresponding 2L Standard of 1.0 μg/L. This monitoring data represents groundwater quality prior to the installation of the associated phytoremediation bed; hereafter referred to as the *Southern Ebuffer*®.

<u>Area of Concern (AOC) - Well II-6</u>
Compliance well II-6 is located between the waste boundary and the review boundary; up-gradient of sentinel well SMW-4. The CAP identified thallium as a constituent of concern at compliance well II-6; however, it had not been detected at II-6 since April 2006. More recently benzene has been detected periodically at well II-6 at concentrations exceeding the 2L Standard.

Sentinel monitoring well SMW-4 is located down-gradient of well II-6, at a point prior to the Compliance Boundary. During both monitoring events, no target analytes were detected at well SMW-4 with concentrations exceeding the corresponding 2L Standard or GPS. This finding suggests that the CAP specified remediation goals were achieved for this area, represented by sentinel well SMW-4. Based on this finding, installation of

CAP outlined segment of the phytoremediation buffer associated with monitoring well II-6 was suspended.

Area of Concern (AOC) - Well II-7

Tetrachloroethene and vinyl chloride are the CAP listed constituents of concern at the up-gradient compliance monitor well II-7. During the April 10, 2010 sampling event, vinyl chloride was estimated at a concentration of 0.80 μg/L, above the corresponding 2L Standard of 0.03 μg/L; however, it was not detected during the October 2010 monitoring event. Tetrachloroethene was listed as the constituent of concern at NES well II-7B; however, it was not detected above the 2L Standard during the April and October 2010 monitoring events. Although not summarized in Table 1, during the May 2011 monitoring event, no volatile organic compounds were detected at wells II-7 and II-7B, at concentrations exceeding the corresponding NCAC 2L standards. As approved by NCDENR, installation of the phytoremediation bed in the vicinity of compliance well II-7 was suspended.

Area of Concern (AOC) – Well II-2

Benzene, trichloroethene, tetrachloroethene, vinyl chloride, and thallium were constituents of concern in compliance well II-2. As summarized in Table 1, compliance well II-2 had detections of 1,1-dichloroethane, benzene, trichloroethene, tetrachloroethene, and vinyl chloride at concentrations above their corresponding 2L Standards.

Sentinel well SMW-1 was installed down-gradient of compliance well II-2. As summarized in Table 1, groundwater analytical results for well SMW-1 report no targeted Appendix I volatile organic compounds at concentrations exceeding the 2L Standards, for both monitoring events.

As summarized in Table 2, cadmium was reported in well SMW-1 at a concentration of 4.79 μg/L during the October 1, 2010 sampling event. This concentration exceeds the NCAC 2L standard of 2 ug/l. The reported non-detection of cadmium up-gradient of SMW-1 at compliance well II-2 during the April 2010, October 2010, and May 2011 monitoring events, suggests that the landfill may not be source of this constituent. Considering the absence of an established landfill source for the cadmium detected at SMW-1, the October 1, 2010 detection of cadmium is thought to be an anomaly potentially associated with suspended solids in water column. Based on the current Appendix I data set for sentinel well SMW-1, installation of the phytoremediation bed associated with well II-2 was suspended.

Laboratory analytical results for the sentinel monitoring wells are attached in **Appendix II**. Laboratory analytical reports results summarized herein for wells II-2, II-6, II-7, II-7B, and II-9 were submitted as part of the routine monitoring.

3.0 PHYTOREMEDIATION BED INSTALLATION

S&ME teamed with Dr. Licht, with Ecolotree and completed certain site specific pre-design inspections needed to complete the final design and confirm the planned use of a perimeter deep-rooted phytoremediation system, referred to by Ecolotree as an EBuffer®. In concept, the EBuffer® uses poplar trees to remove certain groundwater pollutants as shallow groundwater pass through a dense root zone below the planted buffer. In essence, the EBuffer® is a narrow subsurface reactor that acts as a final filter around selected portions of a landfill, capable of reducing the concentrations of certain contaminants in the shallow groundwater, through biological reduction and absorption methods. The EBuffer® also provides beneficial use of groundwater and reduces plume migration using a "sponge and pump" process.

During March 2010 and again in November 2010, S&ME and Ecolotree completed additional site characterization data gathering, needed to finalize the EBuffer® design. The data gathered is also summarized in the "Ecolotree "Design & Installation Report" contained in **Appendix III**.

On April 3, 2011, S&ME and Ecolotree commenced with the installation of two EBuffer® units along select portion of White Street Landfill, Phase II. One EBuffer® referred to as the North EBuffer® as installed between NES well II-9 and sentinel well SMW-3. The second EBuffer® referred to as the South EBuffer® was installed in the vicinity of compliance well II-1. Figure 2 depicts the EBuffer® locations and the locations for groundwater monitoring wells.

Ecolotree employees utilized a small trencher to cut an approximately 4 foot deep trench for the planting rows and perpendicular to apparent groundwater flow. Following the trenching, Ecolotree utilized an 8 inch augur to create a planting hole approximately 6 feet deep for the hybrid poplars. Hybrid poplar trees were placed approximately six feet between each tree. Willows were placed midway in the trench between the poplars along the row.

Approximately 1-1.5 cubic foot of compost per linear foot of trench was spread between the planting rows. The compost was then skidded into and mixed into the trench lines. The trenches were not completely backfilled in some areas due to saturated soil conditions. Louisiana dried can molasses was placed around the base of the hybrid poplars. Dry fertilize with a 10-10-10 Nitrogen-Phosphorous-Potassium ratio was also placed at the base of the hybrid poplars. Tree guards were placed at the base of the hybrid poplars and grass seed was placed between the rows. Appendix IV contains select photographs taken during the installation of the EBuffers®.

On April 30, 2011, Ecolotree employees band-applied Surflan (approved herbicide) to control pre-emerged annual grasses and some broad-leaf at the base of the trees. To control any grass in the tree row that is green at the time of application, Fusion (approved herbicide) will be added. Additional details regarding the installation are provided in the Ecolotree "Design & Installation Report" contained in **Appendix III**.

Following installation, S&ME has performed monthly inspection of the EBuffer® system to monitor tree growth, tree damage, tree mortality, and other factors. To date, the overall tree growth and survival rates have meet expectations; with one exception. Based on the monthly inspection reports, an isolated segment of the Northern EBuffer® area exhibited evidence of some zonal tree death. After examining the available observation data, Ecolotree recommended a partial replanting of the hybrid poplar trees in the area of concern. On July 13, 2011, 50 hybrid poplar trees were planted to replace dead poplars in the Northern Ebuffer®. Subsequent monthly Ebuffer® inspections indicated survival of some of replanted trees. Ecolotree is schedule to conduct their semi-annual inspection this fall. It is currently believed that minor modifications of the land surface are needed to improve drainage in the area of concern. A fall or early winter replant is also anticipated to address areas of concern and the future effectiveness of the Ebuffer®.

Appendix V contains copies of recent monthly EBuffer® Inspection Reports. Copies of the monthly inspections will be included in the pending and first Corrective Action System Evaluation (CASE) report for the CAP outlined activities.

4.0 CORRECTIVE ACTION MONITORING

The Facility's current Phase II Water Quality Monitoring Plan (WQMP) will be revised to reflect the changes to the groundwater monitoring system at the Facility under this Corrective Action Plan. The revised Water Quality Monitoring Plan will be titled the Corrective Action Monitoring Program (CAMP). The CAMP will describe the revised compliance monitoring network, which will include existing compliance wells and the new sentinel wells. It will also describe the monitored constituent list and the frequency of monitoring. The CAMP will be a complete, stand alone document which will be completed and submitted under a separate cover. A copy of the final NCDENR approved CAMP will be inserted into the Facility's permit amendment as an attachment.

5.0 CONCLUSIONS

Phytoremediation beds have been installed at the White Street Landfill between monitoring wells with historic detected concentrations of constituents above the 2L standard and North Buffalo Creek, as the active remediation component described in the approved CAP. Three sentinel monitor wells have been installed and groundwater quality has been re-examined. Groundwater quality data suggests that several segments of the CAP outlined phytoremediation beds are not currently necessary, supporting the City of Greensboro's prior request to suspend installation of certain phytoremediation beds, a request that was approved by NCDENR.

The additional groundwater quality monitoring obtained following the installation of the sentinel wells has further documented improvements in groundwater quality, which have been vital to effort to suspended implementation of CAP activities that are not currently required by regulation. With the EBuffers® installed and with the additional groundwater quality data gathered for the expanded compliance network, a CAMP will be prepared and submitted to NCDENR under separate cover.

TABLES

TABLE 1
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DETECTED VOLATILE ORGANIC COMPOUNDS
SELECT WELLS LOCATED WITHIN WHITE STREET LANDFILL - PHASE II
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

	Sample Locations																	NC SWSL	NCAC 2L
	AOC II-2 Wells				AOC II-6 Wells				AOC II-7 Wells				Southern Ebuffer Well		Northern Ebuffer Wells				
Well ID	II-2	II-2	SMW-1	SMW-1	II-6	II-6	SMW-4	SMW-4	II-7	II-7	II-7B	II-7B	II-1	II-1	II-9	SMW-3	SMW-3		Std.
Date Collected	4/1/10	10/6/10	8/2/10	10/11/10	4/1/10	10/6/10	8/2/10	10/11/10	4/1/10	10/6/10	4/1/10	10/6/10	4/1/10	10/6/10	4/29/10	8/2/10	10/11/10		
units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
1,1-Dichloroethane	**16**	**17**	ND	ND	ND	ND	ND	ND	**1.1 J**	**0.42 J**	ND	ND	**2.3 J**	**3.0 J**	ND	**4.2 J**	**3.8 J**	5	6
1,1-Dichloroethene	**0.45 J**	**0.49J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	7
1,2-Dichlorobenzene	ND	ND	ND	ND	**0.43 J**	**0.51 J**	ND	ND	ND	ND	ND	ND	ND	**0.43 J**	ND	ND	ND	5	20
1,4-Dichlorobenzene	**0.61 J**	**0.54 J**	ND	ND	**3.4**	**4.7**	ND	ND	**0.53 J**	ND	ND	ND	**6.5**	**7.5**	ND	ND	ND	1	6
4-Methyl 2-Pentanone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**5.1 J**	ND	ND	ND	ND	100	ns
Acetone	ND	**5.2 J**	ND	**1.5 J**	**5.4 J**	ND	ND	ND	**2.0 J**	ND	ND	ND	ND	ND	ND	**3.0 J**	ND	100	6,000
Benzene	**1.2**	**0.67 J**	ND	ND	**1.6**	**2.2**	ND	ND	**0.64 J**	ND	ND	ND	**1.1**	**1.2**	ND	ND	ND	1	1
Chlorobenzene	**0.62 J**	**0.74 J**	ND	ND	**4.5**	**7.4**	ND	ND	ND	ND	ND	ND	**2.2 J**	**3.2**	ND	ND	ND	3	50
Chloroethane	ND	**0.57 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.95 J**	**1.6 J**	ND	ND	ND	10	3,000
Chloromethane	ND	ND	**0.40 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.44 J**	**0.61 J**	1	3
cis 1,2-dichloroethene	**20**	**23**	ND	ND	ND	ND	ND	ND	**3.6 J**	ND	ND	ND	**3.3 J**	**4.2 J**	**11**	**6.9**	**7.8**	5	70
Tetrachloroethene	**4.2**	**3.6**	ND	ND	ND	ND	ND	ND	**0.56 J**	ND	**0.57 J**	**0.57 J**	ND	ND	ND	ND	ND	1	0.7
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	**1.0**	ND	ND	ND	ND	ND	ND	ND	ND	1	600
Trichloroethene	**4.1**	**3.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.53 J**	**0.48 J**	ND	ND	ND	1	3
Trichlorofluoromethane	**2.7**	**2.3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	2,000
Vinyl Chloride	**4.8**	**5.4**	ND	ND	ND	ND	ND	ND	**0.80 J**	ND	ND	ND	**0.90 J**	**1.4**	**0.66 J**	**0.49 J**	**0.68 J**	1	0.03
Xylenes (total)	ND	ND	ND	ND	**1.8 J**	**4.0 J**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5	500

ND = compound not detected
J = Parameters are estimated values between the detection limit and the NC SWSL.
ns = no corresponding NCAC 2L groundwater quality standard
NC SWSL= North Carolina Solid Waste Section Limit (minimum detection limits)
NCAC 2L std. = 15A North Carolina Administrative Code 2L .0200, Groundwater Quality Standards for Class GA groundwater
Quantities highlighted in orange were detected above the 2L standards

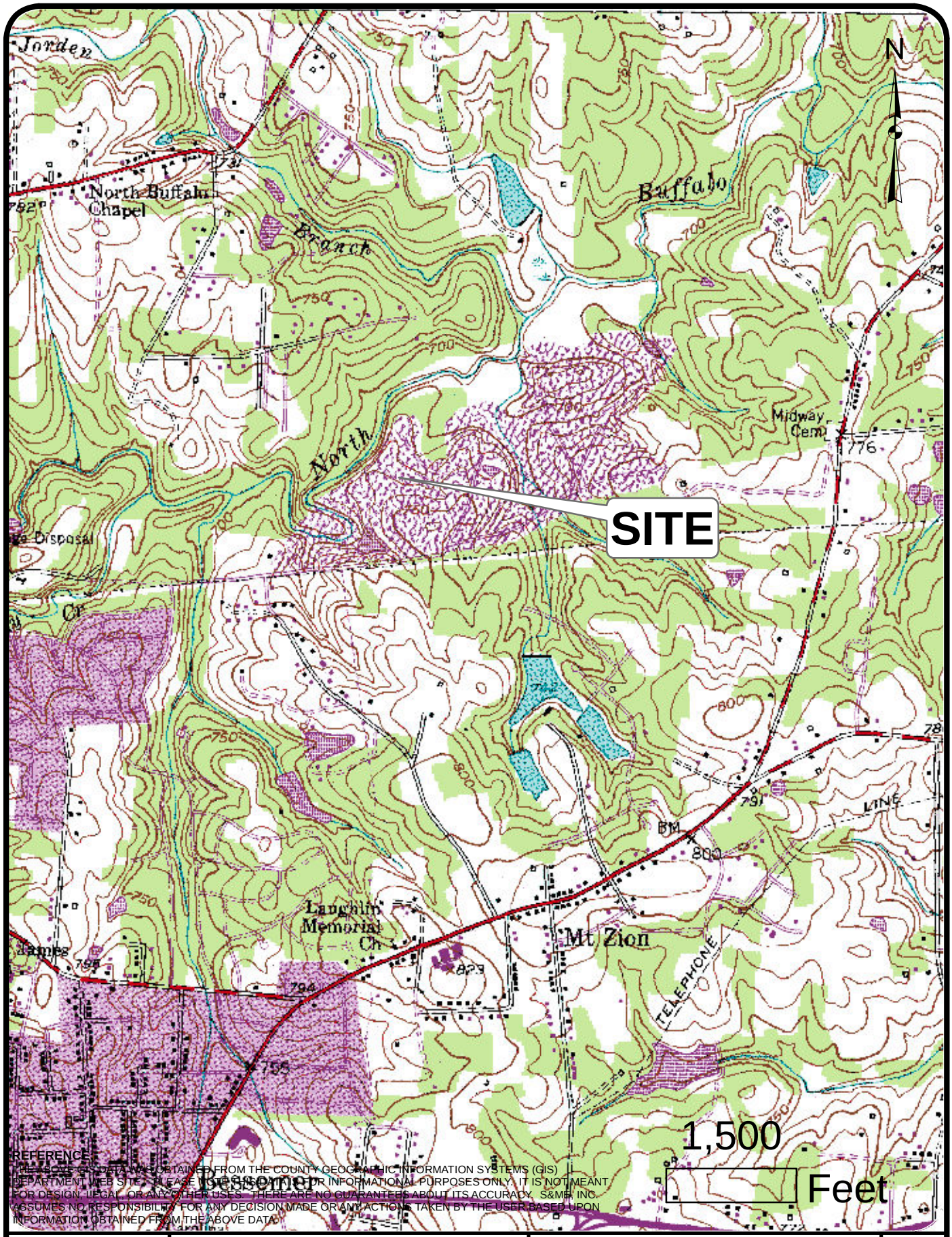
TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
DETECTED INORGANIC CONSTITUENTS
SELECT WELLS LOCATED WITHIN WHITE STREET LANDFILL - PHASE II
GREENSBORO, NORTH CAROLINA
S&ME PROJECT NO. 1584-98-081

	Sample Locations																	NC SWSL	NCAC 2L	NC GPS
	AOC II-2 Wells				AOC II-6 Wells				AOC II-7 Wells				Southern Ebuffer Well		Northern Ebuffer Wells				Std.	
	II-2	II-2	SMW-1	SMW-1	II-6	II-6	SMW-4	SMW-4	II-7	II-7	II-7B	II-7B	II-1	II-1	II-9	SMW-3	SMW-3			
	4/1/10	10/6/10	8/2/10	10/11/10	4/1/10	10/6/10	8/2/10	10/11/10	4/1/10	10/6/10	4/1/10	10/6/10	4/1/10	10/6/10	4/29/10	8/2/10	10/11/10			
Compound	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
Antimony	ND	ND	ND	ND	**0.242 J**	**0.374 J**	ND	ND	ND	ND	**0.248 J**	ND	ND	**0.224 J**	no data	ND	ND	6	ns	1.4
Arsenic	ND	ND	**4.07 J**	ND	ND	**5.22 J**	ND	ND	ND	ND	**5.22 J**	ND	ND	ND	no data	ND	ND	10	10	
Barium	**63.1 J**	**40.9 J**	**144**	**140**	**339**	**356**	**178**	**164**	**21.7 J**	**14.8 J**	**11.5 J**	**9.15 J**	**309**	**225**	no data	**228**	**301**	100	700	
Cadmium	ND	ND	**1.78**	**4.79**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	no data	ND	ND	1	2	
Chromium	ND	ND	**2.06 J**	**6.52 J**	ND	ND	ND	ND	**1.05 J**	ND	ND	**1.45 J**	**2.40 J**	ND	no data	ND	**7.86 J**	10	10	
Cobalt	ND	ND	**15.5**	**7.34**	**25.8**	**27.7**	**4.55 J**	**1.48 J**	**2.11 J**	ND	ND	ND	**26.4**	**35.8**	no data	**3.12 J**	**13.0**	10	ns	1
Copper	ND	ND	**11.9**	**18.1**	**3.86 J**	ND	ND	**2.35 J**	**1.88 J**	**1.76 J**	ND	**1.67 J**	**4.05 J**	**15.4**	no data	**1.66 J**	**72.0**	10	1000	
Lead	ND	ND	ND	**3.42 J**	**2.41 J**	ND	ND	ND	BQL	ND	ND	ND	ND	ND	no data	ND	ND	10	15	
Nickel	ND	ND	**1.86**	**3.75 J**	**36.6 J**	**40.5 J**	**4.28 J**	**4.15 J**	**1.96 J**	ND	ND	ND	**13.2 J**	**9.47 J**	no data	ND	**5.57 J**	50	100	
Selenium	**5.04 J**	**4.27 J**	ND	ND	**17.3**	**11.6**	**9.47 J**	**5.30 J**	**2.09 J**	ND	ND	ND	**16.1**	**9.61 J**	no data	ND	ND	10	20	
Silver	ND	ND	ND	ND	**4.32 J**	ND	ND	ND	ND	ND	ND	ND	**4.47 J**	**3.27 J**	no data	ND	ND	10	20	
Vanadium	**3.66 J**	**2.11 J**	**9.30 J**	**18.1**	ND	**4.32 J**	**2.14 J**	**2.65 J**	ND	ND	**8.15 J**	**7.99 J**	ND	ND	no data	**3.15 J**	**56.6**	25	ns	0.3
Zinc	ND	ND	**96.8**	**409**	**4.08 J**	ND	**7.60 J**	**8.07 J**	**6.49 J**	ND	ND	ND	**5.77 J**	ND	no data	**5.90 J**	**35.4**	10	1000	

ND = compound not detected
J = Parameters are estimated values between the detection limit and the NC SWSL.
ns = no corresponding NCAC 2L groundwater quality standard
NC SWSL= North Carolina Solid Waste Section Limit
NCAC 2L std = 15A North Carolina Administrative Code 2L .0200, Groundwater Quality Standards for Class GA groundwater
NC GPS = North Carolina Groundwater Protection Standards. If a NCAC 2L is not established the GPS is used
*Quantities highlighted in orange were detected above the 2L standards
*Blue highlights indicate a measurement higher than the North Carolina Groundwater Protection Standard

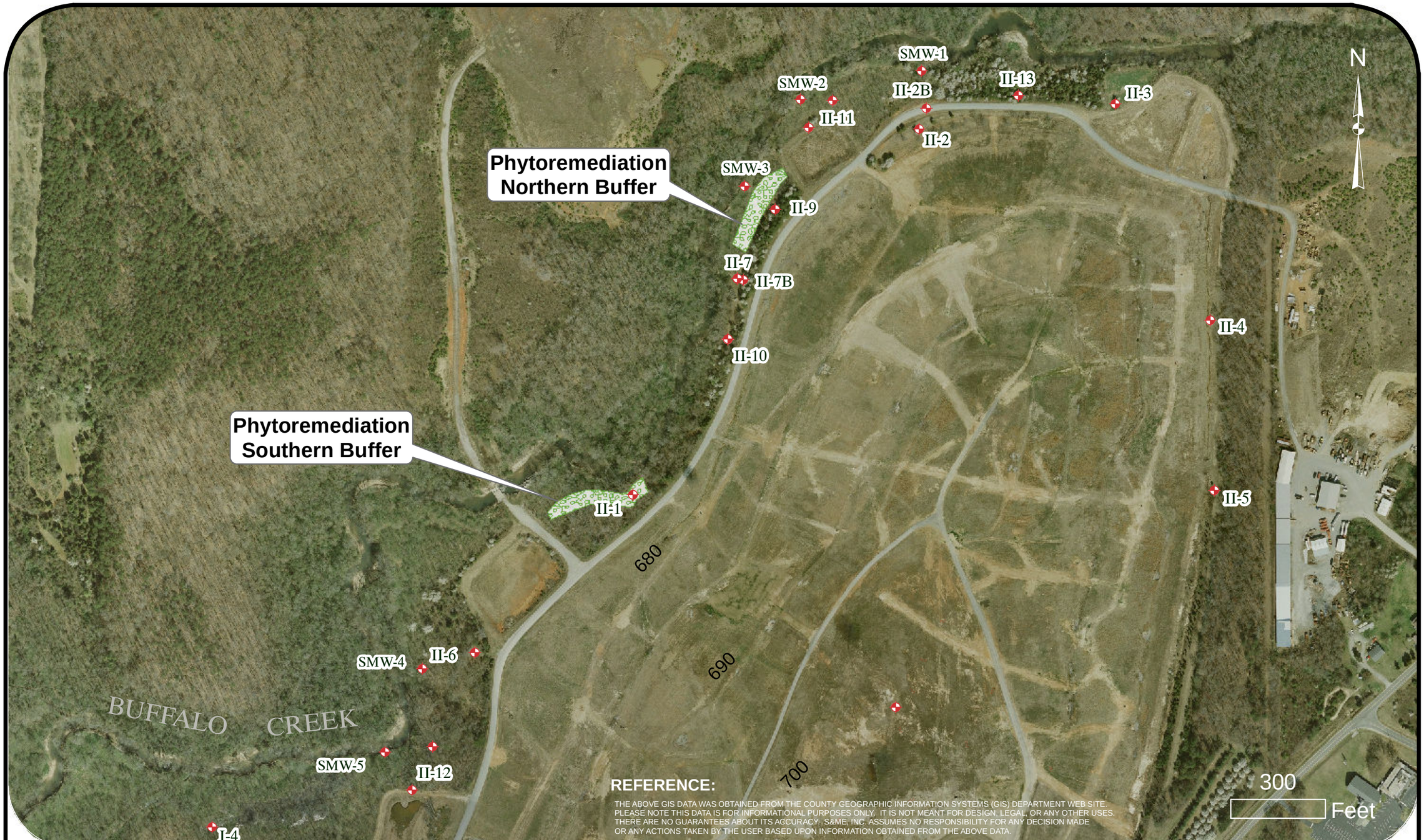
**S&ME's 2007 Alternate Source Demonstration (ASD) found cadmium, cobalt, and vanadium naturally occurring in site soils at levels sufficient to influence local groundwater concentrations. The ASD predicted natural concentrations for these substances are greater than those reported herein, thus the reported concentrations should not represent an exceedance of the IMAC*

FIGURES



REFERENCE:
THE ABOVE GIS DATA WAS OBTAINED FROM THE COUNTY GEOGRAPHIC INFORMATION SYSTEMS (GIS) DEPARTMENT WEB SITE. PLEASE NOTE: THIS DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON INFORMATION OBTAINED FROM THE ABOVE DATA.

SCALE: As Shown	S&ME WWW.SMEINC.COM	**Site Vicinity Map**	FIGURE NO.
DATE: 8-8-11		White Street Landfill Greensboro, North Carolina	1
DRAWN BY: LSE			
PROJECT NO: 1584-98-081			



SCALE: As Shown	DATE: 8-8-11		S&ME WWW.SMEINC.COM	Site Detail	FIGURE NO.
PROJECT NO: 1584-98-081	DRAWN BY: LSE	CHECKED BY:		White Street Landfill Greensboro, North Carolina	2

APPENDIX I
Well Installation Records

#8125

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3576

1. WELL CONTRACTOR:

Stefan Smith
Well Contractor (Individual) Name

SAEDACCO Inc
Well Contractor Company Name

STREET ADDRESS 9088 Northfield Drive

Fort Mill | SC | 29707
City or Town | State | Zip Code

(704)- 622-6920
Area code- Phone number

2. WELL INFORMATION:

SITE WELL ID #(if applicable) SMW-1

STATE WELL PERMIT#(if applicable)

DWQ or OTHER PERMIT #(if applicable)

WELL USE (Check Applicable Box) Monitoring ☒ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 7-8-2010

TIME COMPLETED 12:00 AM ☐ PM ☒

3. WELL LOCATION:

CITY: Greensboro COUNTY Greensboro

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

☒ Slope ☐ Valley ☐ Flat ☐ Ridge ☐ Other
(check appropriate box)

LATITUDE

LONGITUDE

May be in degrees, minutes, seconds or in a decimal format

Latitude/longitude source: ☐ GPS ☐ Topographic map

(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- Is the name of the business where the well is located.

FACILITY ID #(if applicable)

NAME OF FACILITY White Street Landfill

STREET ADDRESS 2503 White Street

Greensboro | NC
City or Town | State | Zip Code

CONTACT PERSON Lyndall Butler

MAILING ADDRESS 3718 Old Battleground Road

Greensboro | NC | 27410
City or Town | State | Zip Code

(336)- 288-7180
Area code - Phone number

5. WELL DETAILS:

a. **TOTAL DEPTH:** 16

b. **DOES WELL REPLACE EXISTING WELL?** YES ☒ NO ☐

c. **WATER LEVEL** Below Top of Casing: _____ FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

From ____ To ____ From ____ To ____
From ____ To ____ From ____ To ____
From ____ To ____ From ____ To ____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From 0	To 6	Ft.	2	40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 0	To 1	Ft.	Portland	pour
From	To	Ft.		
From	To	Ft.		

8. SCREEN:

	Depth		Diameter		Slot Size		Material
From 6	To 16	Ft.	2	in.	010	in.	PVC
From	To	Ft.		in.		in.	
From	To	Ft.		in.		in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 3	To 16	Ft.	pour	sand
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description
0	16	Silt to Silty Clay

11. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Stefan J. Smith — 7-16-2010
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

Stefan Smith
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days. Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

COMPLETION REPORT OF WELL No. SMW-1

PROJECT: **White Street Landfill**
PROJECT NO: **1584-98-081**
PROJECT LOCATION: **Greensboro, NC**

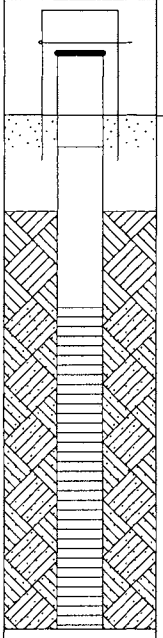
WATER LEVEL:

LATITUDE:
LONGITUDE:
TOP OF CASING ELEVATION: 834.98
DATUM: **MSL**
LOGGED BY: **E. Henriques**

DRILLING CONTRACTOR: **SAEDACCO**
DRILLING METHOD: **H.S.A**
DATE DRILLED: **7/8/10**

STRATA DESCRIPTION	SYMBOL	DEPTH (ft.)
No Recovery		0
Alluvium: Loose Brown Clayey **SILT** with woody organics, slighty Micaous (Moist)		5
Alluvium: Loose Brown Slightly Sandy **SILT** (Moist)		
Loose Dark Brown Slightly Clayey **SILT** (Moist)		10
Firm Gray Brown mottled Clay **SILT** with Roots up to 1/4". Rare small rounded pebbles		
Firm Gray **SILT** (Saturated) micacous with angular rock fragments (saprolite)		15
Firm Gray White Silty Fine **SAND** with angular rock fragments (saprolite) (Saturated)		

WELL DETAILS



DEPTH (ft.)	LEGEND	ELEVATION (ft.)
0.00	GS	
1.00	TSC	
3.00	CG	
6.00	TOC	
16.00	BS BSC	

WELL CONSTRUCTION DETAILS

PROTECTIVE CASING
Diameter:
Type:
Interval:

RISER CASING
Diameter: **2**
Type: **PVC**
Interval: **0.0 - 6.0, +2.7 above grades top of PVC casing**

GROUT
Type: **Portland**
Interval: **0-1'**

SEAL
Type: **Bentonite**
Interval: **2.0-3.0**

FILTERPACK
Type: **#2 Sand**
Interval: **3.0-16**

SCREEN
Diameter: **2**
Type: **PVC**
Interval: **6.0-16.0**

LEGEND
- FILTER PACK
- BENTONITE
- CEMENT GROUT
- CUTTINGS / BACKFILL
- STATIC WATER LEVEL

TOC	TOP OF CASING
GS	GROUND SURFACE
BS	BENTONITE SEAL
FP	FILTER PACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
CG	CEMENT GROUT

MONITORING WELL 1584-98-081 WHITE STREET LANDFILL - 2010 FILE.GPJ S&ME GDT 9/7/10

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3576

1. WELL CONTRACTOR:

Stefan Smith
Well Contractor (Individual) Name

SAEDACCO Inc
Well Contractor Company Name

STREET ADDRESS 9088 Northfield Drive

Fort Mill | SC | 29707
City or Town | State | Zip Code

(704)- 622-6920
Area code- Phone number

2. WELL INFORMATION:

SITE WELL ID #(if applicable) SMW-3

STATE WELL PERMIT#(if applicable)

DWQ or OTHER PERMIT #(if applicable)

WELL USE (Check Applicable Box) Monitoring ☒ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 7-8-2010

TIME COMPLETED 3:00 AM ☐ PM ☒

3. WELL LOCATION:

CITY: Greensboro COUNTY Greensboro

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:

☒ Slope ☐ Valley ☐ Flat ☐ Ridge ☐ Other
(check appropriate box)

LATITUDE

LONGITUDE

May be in degrees, minutes, seconds or in a decimal format

Latitude/longitude source: ☐ GPS ☐ Topographic map

(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- is the name of the business where the well is located.

FACILITY ID #(if applicable)

NAME OF FACILITY White Street Landfill

STREET ADDRESS 2503 White Street

Greensboro | NC
City or Town | State | Zip Code

CONTACT PERSON Lyndall Butler

MAILING ADDRESS 3718 Old Battleground Road

Greensboro | NC | 27410
City or Town | State | Zip Code

(336)- 288-7180
Area code - Phone number

5. WELL DETAILS:

a. **TOTAL DEPTH:** 22

b. **DOES WELL REPLACE EXISTING WELL?** YES ☒ NO ☐

c. **WATER LEVEL** Below Top of Casing: _____ FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

From ____ To ____ From ____ To ____
From ____ To ____ From ____ To ____
From ____ To ____ From ____ To ____

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From 0	To 7	Ft.	2	40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 0	To 3	Ft.	Portland	pour
From	To	Ft.		
From	To	Ft.		

8. SCREEN:

	Depth		Diameter		Slot Size		Material
From 7	To 22	Ft.	2	in.	010	in.	PVC
From	To	Ft.		in.		in.	
From	To	Ft.		in.		in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 5	To 22	Ft.	pour	sand
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description
0	22	Silt to Silty Clay

11. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Stefan J. Smith — 7-16-2010
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE

Stefan Smith
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days. Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

COMPLETION REPORT OF WELL No. SMW-3

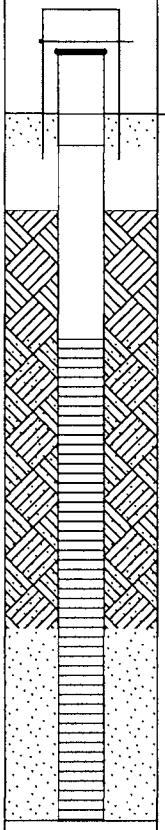
PROJECT: **White Street Landfill**
PROJECT NO: **1584-98-081**
PROJECT LOCATION: **Greensboro, NC**

WATER LEVEL:
LATITUDE:
LONGITUDE:
TOP OF CASING ELEVATION: 834.98
DATUM: **MSL**
LOGGED BY: **E. Henriques**

DRILLING CONTRACTOR: **SAEDACCO**
DRILLING METHOD: **H.S.A**
DATE DRILLED: **7/8/10**

STRATA DESCRIPTION	SYMBOL	DEPTH (ft.)
No Recovery		0
Alluvium: Loose Brown Clayey **SILT** slightly micaceous, roots, moist		5
Alluvium: Loose Brown Slightly Sandy **SILT** slightly micaceous, trace roots, moist		10
Alluvium: Loose Gray Brown Mottled Clay **SILT** with roots, and small rounded pebbles, moist		15
Residuum: Firm Gray Mottled Clay **SILT** with angular rock fragments		
Residuum: Firm Gray White Mottled Clay SILTY SAND saprolite with angular rock fragments		

WELL DETAILS



DEPTH (ft.)	LEGEND	ELEVATION (ft.)
0.00	GS	
1.00	TSC	
7.00	TOC	
16.00	BS	
22.00	BSC	

WELL CONSTRUCTION DETAILS

PROTECTIVE CASING
Diameter:
Type:
Interval:

RISER CASING
Diameter: **2**
Type: **PVC**
Interval: **0-7 +3.1 above grade = top of casing**

GROUT
Type: **Portland**
Interval: **3.0-5.0**

SEAL
Type: **Bentonite**
Interval:

FILTERPACK
Type: **#2 Sand**
Interval: **5.0 - 22'**

SCREEN
Diameter: **2**
Type: **PVC**
Interval: **7-22**

LEGEND

- FILTER PACK
- BENTONITE
- CEMENT GROUT
- CUTTINGS / BACKFILL
- STATIC WATER LEVEL

TOC	TOP OF CASING
GS	GROUND SURFACE
BS	BENTONITE SEAL
FP	FILTER PACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
CG	CEMENT GROUT

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3718 OLD BATTLEGROUND ROAD
GREENSBORO, NC

COMPLETION REPORT OF WELL No. SMW-3

MONITORING WELL 1584-98-081 WHITE STREET LANDFILL - 2010 FILE.GPJ S&ME.GDT 9/7/10

NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 3576

1. WELL CONTRACTOR:

Stefan Smith
Well Contractor (Individual) Name

SAEDACCO Inc
Well Contractor Company Name

STREET ADDRESS 9088 Northfield Drive

Fort Mill | SC | 29707
City or Town | State | Zip Code

(704)- 622-6920
Area code- Phone number

2. WELL INFORMATION:

SITE WELL ID #(if applicable) SMW-4

STATE WELL PERMIT#(if applicable)

DWQ or OTHER PERMIT #(if applicable)

WELL USE (Check Applicable Box) Monitoring ☒ Municipal/Public ☐
Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐
Irrigation ☐ Other ☐ (list use)

DATE DRILLED 7-8-2010

TIME COMPLETED 12:00 AM ☐ PM ☒

3. WELL LOCATION:

CITY: Greensboro COUNTY Greensboro

(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

TOPOGRAPHIC / LAND SETTING:
☒ Slope ☐ Valley ☐ Flat ☐ Ridge ☐ Other
(check appropriate box)

LATITUDE
LONGITUDE

May be in degrees, minutes, seconds or in a decimal format

Latitude/longitude source: ☐ GPS ☐ Topographic map
(location of well must be shown on a USGS topo map and attached to this form if not using GPS)

4. FACILITY- Is the name of the business where the well is located.

FACILITY ID #(if applicable)

NAME OF FACILITY White Street Landfill

STREET ADDRESS 2503 White Street

Greensboro | NC
City or Town | State | Zip Code

CONTACT PERSON Lyndall Butler

MAILING ADDRESS 3718 Old Battleground Road

Greensboro | NC | 27410
City or Town | State | Zip Code

(336)- 288-7180
Area code - Phone number

5. WELL DETAILS:

a. **TOTAL DEPTH:** 21

b. **DOES WELL REPLACE EXISTING WELL?** YES ☒ NO ☐

c. **WATER LEVEL** Below Top of Casing: _____ FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** 3 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

From	To	From	To
From	To	From	To
From	To	From	To

6. CASING:

	Depth		Diameter	Thickness/ Weight	Material
From 0	To 6	Ft.	2	40	PVC
From	To	Ft.			
From	To	Ft.			

7. GROUT:

	Depth		Material	Method
From 0	To 1	Ft.	Portland	pour
From	To	Ft.		
From	To	Ft.		

8. SCREEN:

	Depth		Diameter		Slot Size		Material
From 6	To 21	Ft.	2	in.	010	in.	PVC
From	To	Ft.		in.		in.	
From	To	Ft.		in.		in.	

9. SAND/GRAVEL PACK:

	Depth		Size	Material
From 3	To 21	Ft.	pour	sand
From	To	Ft.		
From	To	Ft.		

10. DRILLING LOG

From	To	Formation Description
0	21	Silt to Silty Clay

11. REMARKS:

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 7-16-2010

Stefan Smith
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

Submit the original to the Division of Water Quality within 30 days. Attn: Information Mgt., 1617 Mail Service Center – Raleigh, NC 27699-1617 Phone No. (919) 733-7015 ext 568.

Form GW-1b
Rev. 7/05

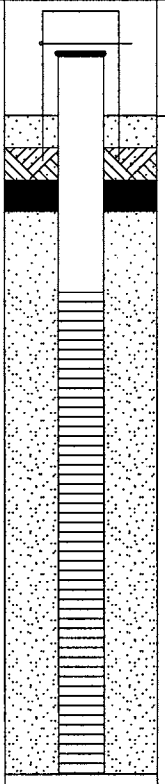
COMPLETION REPORT OF WELL No. SMW-4

PROJECT: **White Street Landfill**
PROJECT NO: **1584-98-081**
PROJECT LOCATION: **Greensboro, NC**

WATER LEVEL: **8.69 below top of casing**
LATITUDE:
LONGITUDE:
TOP OF CASING ELEVATION: 834.98
DATUM: **MSL**
LOGGED BY: **L. Ennis**

DRILLING CONTRACTOR: **SAEDACCO**
DRILLING METHOD: **6¼" H.S.A.**
DATE DRILLED: **7/9/10**

STRATA DESCRIPTION	SYMBOL	DEPTH (ft.)	WELL DETAILS	DEPTH (ft.)	LEGEND	ELEVATION (ft.)
				0.00	GS	
Red Brown Silty Sandy **CLAY**		0		1.00	GS	
				2.00	BS	
				3.00	FP	
Tan Brown Clayey **SILT** and Silty clay alternating layers oxidation staining		5		5.50	TSC	
		10				
Brown Silty Fine Sand (Dry)		15				
Partially Weathered Rock: sampled as Gray Silty **SAND** (Dry)		20		20.50	BSC	



WELL CONSTRUCTION DETAILS

PROTECTIVE CASING
Diameter:
Type:
Interval:

RISER CASING
Diameter: **2**
Type: **PVC**
Interval: **-5.5**

GROUT
Type: **Grout**
Interval: **1.0-2.0**

SEAL
Type: **Bentonite**
Interval: **2.0-3.0**

FILTERPACK
Type: **#2 Sand**
Interval: **3.0-20.5**

SCREEN
Diameter: **2**
Type: **0.010**
Interval: **5.5-20.5**

LEGEND
- FILTER PACK
- BENTONITE
- CEMENT GROUT
- CUTTINGS / BACKFILL
- STATIC WATER LEVEL

TOC	TOP OF CASING
GS	GROUND SURFACE
BS	BENTONITE SEAL
FP	FILTER PACK
TSC	TOP OF SCREEN
BSC	BOTTOM OF SCREEN
TD	TOTAL DEPTH
CG	CEMENT GROUT

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COMPLETION REPORT OF WELL No. SMW-4

MONITORING WELL 1584-98-081 WHITE STREET LANDFILL - 2010 FILE.GPJ S&ME.GDT 9/2/10

APPENDIX II
Laboratory Results Report

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515
www.encolabs.com

Thursday, August 12, 2010

S&ME, Inc. (SM004)

Attn: Connel Ware

3718 Old Battleground Rd.

Greensboro, NC 27410

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: White Street Landfill App Is (SMWs)
ENCO Workorder: C009061

Dear Connel Ware,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, August 4, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 21.

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 4103-SMW1	Lab ID: C009061-01	Sampled: 08/02/10 13:40	Received: 08/04/10 11:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	01/29/11	08/05/10 09:48	8/10/2010 14:32
EPA 6020A	01/29/11	08/05/10 14:22	8/10/2010 12:01
EPA 8260B	08/16/10	08/06/10 12:56	8/6/2010 23:17

Client ID: 4103-SMW3	Lab ID: C009061-02	Sampled: 08/02/10 12:40	Received: 08/04/10 11:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	01/29/11	08/05/10 09:48	8/10/2010 14:35
EPA 6020A	01/29/11	08/05/10 14:22	8/10/2010 12:04
EPA 8260B	08/16/10	08/06/10 12:56	8/6/2010 22:16

Client ID: 4103-SMW4	Lab ID: C009061-03	Sampled: 08/02/10 11:30	Received: 08/04/10 11:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	01/29/11	08/05/10 09:48	8/10/2010 14:38
EPA 6020A	01/29/11	08/05/10 14:22	8/10/2010 12:08
EPA 8260B	08/16/10	08/06/10 12:56	8/6/2010 22:47

Client ID: 4103-TripBlank	Lab ID: C009061-04	Sampled: 08/02/10 11:30	Received: 08/04/10 11:15

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	08/16/10	08/06/10 12:56	8/6/2010 21:46

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NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

Client ID: 4103-SMW1 **Lab ID: C009061-01**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Arsenic - Total	4.07	J	1	2.80	10.0	10	ug/L	EPA 6010C	
Barium - Total	144		1	1.00	10.0	100	ug/L	EPA 6010C	
Cadmium - Total	1.78		1	0.360	1.00	1	ug/L	EPA 6010C	
Chloromethane	0.40	J	1	0.34	1.0	1	ug/L	EPA 8260B	
Chromium - Total	2.06	J	1	1.00	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	15.5		1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	11.9		1	1.60	10.0	10	ug/L	EPA 6010C	
Nickel - Total	1.86	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Vanadium - Total	9.30	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	96.8		1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4103-SMW3 **Lab ID: C009061-02**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
1,1-Dichloroethane	4.2	J	1	0.33	1.0	5	ug/L	EPA 8260B	
Acetone	3.0	J	1	1.5	5.0	100	ug/L	EPA 8260B	
Barium - Total	228		1	1.00	10.0	100	ug/L	EPA 6010C	
Chloromethane	0.44	J	1	0.34	1.0	1	ug/L	EPA 8260B	
cis-1,2-Dichloroethene	6.9		1	0.36	1.0	5	ug/L	EPA 8260B	
Cobalt - Total	3.12	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	1.66	J	1	1.60	10.0	10	ug/L	EPA 6010C	
Vanadium - Total	3.15	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Vinyl chloride	0.49	J	1	0.30	1.0	1	ug/L	EPA 8260B	
Zinc - Total	5.90	J	1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4103-SMW4 **Lab ID: C009061-03**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	178		1	1.00	10.0	100	ug/L	EPA 6010C	
Cobalt - Total	4.55	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Nickel - Total	4.28	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Selenium - Total	9.47	J	1	0.830	1.00	10	ug/L	EPA 6020A	
Vanadium - Total	2.14	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	7.60	J	1	3.80	10.0	10	ug/L	EPA 6010C	

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ANALYTICAL RESULTS

Description: 4103-SMW1 **Lab Sample ID:** C009061-01 **Received:** 08/04/10 11:15

Matrix: Ground Water **Sampled:** 08/02/10 13:40 **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 23:17	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	08/06/10 23:17	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	08/06/10 23:17	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	08/06/10 23:17	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/06/10 23:17	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	08/06/10 23:17	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	08/06/10 23:17	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	08/06/10 23:17	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/06/10 23:17	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/06/10 23:17	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	08/06/10 23:17	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	08/06/10 23:17	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	08/06/10 23:17	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	08/06/10 23:17	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	08/06/10 23:17	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	08/06/10 23:17	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	08/06/10 23:17	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	08/06/10 23:17	JKG	
Chloromethane [74-87-3] ^	**0.40**	J	ug/L	1	0.34	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	08/06/10 23:17	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	08/06/10 23:17	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	08/06/10 23:17	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	08/06/10 23:17	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	08/06/10 23:17	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	08/06/10 23:17	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 23:17	JKG	

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Description: 4103-SMW1
Matrix: Ground Water
Project: White Street Landfill App Is (SMWs)

Lab Sample ID: C009061-01
Sampled: 08/02/10 13:40
Sampled By: Gary Simcox

Received: 08/04/10 11:15
Work Order: C009061

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	08/06/10 23:17	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	08/06/10 23:17	JKG	
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 23:17	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*81 %*	*51-122*	*0H06023*	*EPA 8260B*	*08/06/10 23:17*	*JKG*	
Dibromofluoromethane	*43*	*1*	*50.0*	*87 %*	*68-117*	*0H06023*	*EPA 8260B*	*08/06/10 23:17*	*JKG*	
Toluene-d8	*43*	*1*	*50.0*	*85 %*	*69-110*	*0H06023*	*EPA 8260B*	*08/06/10 23:17*	*JKG*	

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Description: 4103-SMW1 | **Lab Sample ID:** C009061-01 | **Received:** 08/04/10 11:15

Matrix: Ground Water | **Sampled:** 08/02/10 13:40 | **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	08/10/10 12:01	VLO	
Arsenic [7440-38-2] ^	**4.07**	J	ug/L	1	2.80	10.0	10	EPA 6010C	08/10/10 14:32	JDH	
Barium [7440-39-3] ^	**144**		ug/L	1	1.00	10.0	100	EPA 6010C	08/10/10 14:32	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	08/10/10 14:32	JDH	
Cadmium [7440-43-9] ^	**1.78**		ug/L	1	0.360	1.00	1	EPA 6010C	08/10/10 14:32	JDH	
Chromium [7440-47-3] ^	**2.06**	J	ug/L	1	1.00	10.0	10	EPA 6010C	08/10/10 14:32	JDH	
Cobalt [7440-48-4] ^	**15.5**		ug/L	1	1.10	10.0	10	EPA 6010C	08/10/10 14:32	JDH	
Copper [7440-50-8] ^	**11.9**		ug/L	1	1.60	10.0	10	EPA 6010C	08/10/10 14:32	JDH	
Lead [7439-92-1] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/10/10 14:32	JDH	
Nickel [7440-02-0] ^	**1.86**	J	ug/L	1	1.80	10.0	50	EPA 6010C	08/10/10 14:32	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	08/10/10 12:01	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/10/10 14:32	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/10/10 12:01	VLO	
Vanadium [7440-62-2] ^	**9.30**	J	ug/L	1	1.40	10.0	25	EPA 6010C	08/10/10 14:32	JDH	
Zinc [7440-66-6] ^	**96.8**		ug/L	1	3.80	10.0	10	EPA 6010C	08/10/10 14:32	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 4103-SMW3 | **Lab Sample ID:** C009061-02 | **Received:** 08/04/10 11:15

Matrix: Ground Water | **Sampled:** 08/02/10 12:40 | **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 22:16	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	08/06/10 22:16	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
1,1-Dichloroethane [75-34-3] ^	**4.2**	J	ug/L	1	0.33	1.0	5	EPA 8260B	08/06/10 22:16	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	08/06/10 22:16	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/06/10 22:16	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	08/06/10 22:16	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	08/06/10 22:16	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	08/06/10 22:16	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/06/10 22:16	JKG	
Acetone [67-64-1] ^	**3.0**	J	ug/L	1	1.5	5.0	100	EPA 8260B	08/06/10 22:16	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	08/06/10 22:16	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	08/06/10 22:16	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	08/06/10 22:16	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	08/06/10 22:16	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	08/06/10 22:16	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	08/06/10 22:16	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	08/06/10 22:16	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	08/06/10 22:16	JKG	
Chloromethane [74-87-3] ^	**0.44**	J	ug/L	1	0.34	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	**6.9**		ug/L	1	0.36	1.0	5	EPA 8260B	08/06/10 22:16	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	08/06/10 22:16	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	08/06/10 22:16	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	08/06/10 22:16	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	08/06/10 22:16	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	08/06/10 22:16	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 22:16	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	08/06/10 22:16	JKG	
Vinyl chloride [75-01-4] ^	**0.49**	J	ug/L	1	0.30	1.0	1	EPA 8260B	08/06/10 22:16	JKG	

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Description: 4103-SMW3 | **Lab Sample ID:** C009061-02 | **Received:** 08/04/10 11:15

Matrix: Ground Water | **Sampled:** 08/02/10 12:40 | **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 22:16	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*51-122*	*0H06023*	*EPA 8260B*	*08/06/10 22:16*	*JKG*	
Dibromofluoromethane	*43*	*1*	*50.0*	*85 %*	*68-117*	*0H06023*	*EPA 8260B*	*08/06/10 22:16*	*JKG*	
Toluene-d8	*43*	*1*	*50.0*	*85 %*	*69-110*	*0H06023*	*EPA 8260B*	*08/06/10 22:16*	*JKG*	

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Description: 4103-SMW3 | **Lab Sample ID:** C009061-02 | **Received:** 08/04/10 11:15

Matrix: Ground Water | **Sampled:** 08/02/10 12:40 | **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	08/10/10 12:04	VLO	
Arsenic [7440-38-2] ^	2.80	U	ug/L	1	2.80	10.0	10	EPA 6010C	08/10/10 14:35	JDH	
Barium [7440-39-3] ^	**228**		ug/L	1	1.00	10.0	100	EPA 6010C	08/10/10 14:35	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	08/10/10 14:35	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	08/10/10 14:35	JDH	
Chromium [7440-47-3] ^	1.00	U	ug/L	1	1.00	10.0	10	EPA 6010C	08/10/10 14:35	JDH	
Cobalt [7440-48-4] ^	**3.12**	J	ug/L	1	1.10	10.0	10	EPA 6010C	08/10/10 14:35	JDH	
Copper [7440-50-8] ^	**1.66**	J	ug/L	1	1.60	10.0	10	EPA 6010C	08/10/10 14:35	JDH	
Lead [7439-92-1] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/10/10 14:35	JDH	
Nickel [7440-02-0] ^	1.80	U	ug/L	1	1.80	10.0	50	EPA 6010C	08/10/10 14:35	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	08/10/10 12:04	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/10/10 14:35	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/10/10 12:04	VLO	
Vanadium [7440-62-2] ^	**3.15**	J	ug/L	1	1.40	10.0	25	EPA 6010C	08/10/10 14:35	JDH	
Zinc [7440-66-6] ^	**5.90**	J	ug/L	1	3.80	10.0	10	EPA 6010C	08/10/10 14:35	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 4103-SMW4 | **Lab Sample ID:** C009061-03 | **Received:** 08/04/10 11:15

Matrix: Ground Water | **Sampled:** 08/02/10 11:30 | **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 22:47	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	08/06/10 22:47	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	08/06/10 22:47	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	08/06/10 22:47	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/06/10 22:47	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	08/06/10 22:47	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	08/06/10 22:47	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	08/06/10 22:47	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/06/10 22:47	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/06/10 22:47	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	08/06/10 22:47	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	08/06/10 22:47	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	08/06/10 22:47	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	08/06/10 22:47	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	08/06/10 22:47	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	08/06/10 22:47	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	08/06/10 22:47	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	08/06/10 22:47	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	08/06/10 22:47	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	08/06/10 22:47	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	08/06/10 22:47	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	08/06/10 22:47	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	08/06/10 22:47	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	08/06/10 22:47	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 22:47	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	08/06/10 22:47	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	08/06/10 22:47	JKG	

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Description: 4103-SMW4 | **Lab Sample ID:** C009061-03 | **Received:** 08/04/10 11:15

Matrix: Ground Water | **Sampled:** 08/02/10 11:30 | **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 22:47	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*83 %*	*51-122*	*0H06023*	*EPA 8260B*	*08/06/10 22:47*	*JKG*	
Dibromofluoromethane	*43*	*1*	*50.0*	*85 %*	*68-117*	*0H06023*	*EPA 8260B*	*08/06/10 22:47*	*JKG*	
Toluene-d8	*43*	*1*	*50.0*	*86 %*	*69-110*	*0H06023*	*EPA 8260B*	*08/06/10 22:47*	*JKG*	

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Description: 4103-SMW4 | **Lab Sample ID:** C009061-03 | **Received:** 08/04/10 11:15

Matrix: Ground Water | **Sampled:** 08/02/10 11:30 | **Work Order:** C009061

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	08/10/10 12:08	VLO	
Arsenic [7440-38-2] ^	2.80	U	ug/L	1	2.80	10.0	10	EPA 6010C	08/10/10 14:38	JDH	
Barium [7440-39-3] ^	**178**		ug/L	1	1.00	10.0	100	EPA 6010C	08/10/10 14:38	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	08/10/10 14:38	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	08/10/10 14:38	JDH	
Chromium [7440-47-3] ^	1.00	U	ug/L	1	1.00	10.0	10	EPA 6010C	08/10/10 14:38	JDH	
Cobalt [7440-48-4] ^	**4.55**	J	ug/L	1	1.10	10.0	10	EPA 6010C	08/10/10 14:38	JDH	
Copper [7440-50-8] ^	1.60	U	ug/L	1	1.60	10.0	10	EPA 6010C	08/10/10 14:38	JDH	
Lead [7439-92-1] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/10/10 14:38	JDH	
Nickel [7440-02-0] ^	**4.28**	J	ug/L	1	1.80	10.0	50	EPA 6010C	08/10/10 14:38	JDH	
Selenium [7782-49-2] ^	**9.47**	J	ug/L	1	0.830	1.00	10	EPA 6020A	08/10/10 12:08	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	08/10/10 14:38	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	08/10/10 12:08	VLO	
Vanadium [7440-62-2] ^	**2.14**	J	ug/L	1	1.40	10.0	25	EPA 6010C	08/10/10 14:38	JDH	
Zinc [7440-66-6] ^	**7.60**	J	ug/L	1	3.80	10.0	10	EPA 6010C	08/10/10 14:38	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 4103-TripBlank
Matrix: Water
Project: White Street Landfill App Is (SMWs)

Lab Sample ID: C009061-04
Sampled: 08/02/10 11:30
Sampled By: ENCO

Received: 08/04/10 11:15
Work Order: C009061

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 21:46	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	08/06/10 21:46	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	08/06/10 21:46	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	08/06/10 21:46	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	08/06/10 21:46	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	08/06/10 21:46	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	08/06/10 21:46	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	08/06/10 21:46	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	08/06/10 21:46	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	08/06/10 21:46	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	08/06/10 21:46	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	08/06/10 21:46	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	08/06/10 21:46	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	08/06/10 21:46	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	08/06/10 21:46	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	08/06/10 21:46	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	08/06/10 21:46	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	08/06/10 21:46	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	08/06/10 21:46	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	08/06/10 21:46	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	08/06/10 21:46	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	08/06/10 21:46	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	08/06/10 21:46	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	08/06/10 21:46	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	08/06/10 21:46	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	08/06/10 21:46	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	08/06/10 21:46	JKG	

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Description: 4103-TripBlank
Matrix: Water
Project: White Street Landfill App Is (SMWs)

Lab Sample ID: C009061-04
Sampled: 08/02/10 11:30
Sampled By: ENCO

Received: 08/04/10 11:15
Work Order: C009061

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	08/06/10 21:46	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*83 %*	*51-122*	*0H06023*	*EPA 8260B*	*08/06/10 21:46*	*JKG*	
Dibromofluoromethane	*40*	*1*	*50.0*	*81 %*	*68-117*	*0H06023*	*EPA 8260B*	*08/06/10 21:46*	*JKG*	
Toluene-d8	*41*	*1*	*50.0*	*83 %*	*69-110*	*0H06023*	*EPA 8260B*	*08/06/10 21:46*	*JKG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 0H06023 - EPA 5030B_MS

Blank (0H06023-BLK1) Prepared: 08/06/2010 11:29 Analyzed: 08/06/2010 14:06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.40	U	1.0	ug/L							
1,1,1-Trichloroethane	0.27	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.33	U	1.0	ug/L							
1,1,2-Trichloroethane	0.37	U	1.0	ug/L							
1,1-Dichloroethane	0.33	U	1.0	ug/L							
1,1-Dichloroethene	0.24	U	1.0	ug/L							
1,2,3-Trichloropropane	0.55	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.27	U	1.0	ug/L							
1,2-Dichloroethane	0.65	U	1.0	ug/L							
1,2-Dichloropropane	0.20	U	1.0	ug/L							
1,4-Dichlorobenzene	0.38	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.20	U	1.0	ug/L							
Bromochloromethane	0.42	U	1.0	ug/L							
Bromodichloromethane	0.37	U	1.0	ug/L							
Bromoform	0.71	U	1.0	ug/L							
Bromomethane	0.49	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.38	U	1.0	ug/L							
Chlorobenzene	0.27	U	1.0	ug/L							
Chloroethane	0.30	U	1.0	ug/L							
Chloroform	0.20	U	1.0	ug/L							
Chloromethane	0.34	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.36	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.28	U	1.0	ug/L							
Dibromochloromethane	0.32	U	1.0	ug/L							
Dibromomethane	0.37	U	1.0	ug/L							
Ethylbenzene	0.20	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.53	U	1.0	ug/L							
Styrene	0.26	U	1.0	ug/L							
Tetrachloroethene	0.36	U	1.0	ug/L							
Toluene	0.27	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.34	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.38	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.38	U	1.0	ug/L							
Trichlorofluoromethane	0.28	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.30	U	1.0	ug/L							
Xylenes (Total)	0.40	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*41*			*ug/L*	*50.0*		*82*	*51-122*			

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 0H06023 - EPA 5030B_MS

Blank (0H06023-BLK1) Continued Prepared: 08/06/2010 11:29 Analyzed: 08/06/2010 14:06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	*43*			*ug/L*	*50.0*		*86*	*68-117*			
Surrogate: Toluene-d8	*42*			*ug/L*	*50.0*		*83*	*69-110*			

LCS (0H06023-BS1) Prepared: 08/06/2010 11:29 Analyzed: 08/06/2010 14:38

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	23		1.0	ug/L	20.0		113	75-133			
Benzene	21		1.0	ug/L	20.0		106	81-134			
Chlorobenzene	20		1.0	ug/L	20.0		102	83-117			
Toluene	21		1.0	ug/L	20.0		103	71-118			
Trichloroethene	20		1.0	ug/L	20.0		99	75-115			

Matrix Spike (0H06023-MS1) Prepared: 08/06/2010 11:29 Analyzed: 08/06/2010 15:11

Source: C009177-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.24 U	111	75-133			
Benzene	22		1.0	ug/L	20.0	0.20 U	108	81-134			
Chlorobenzene	21		1.0	ug/L	20.0	0.27 U	104	83-117			
Toluene	21		1.0	ug/L	20.0	0.27 U	104	71-118			
Trichloroethene	20		1.0	ug/L	20.0	0.38 U	99	75-115			

Matrix Spike Dup (0H06023-MSD1) Prepared: 08/06/2010 11:29 Analyzed: 08/06/2010 15:41

Source: C009177-09

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.24 U	112	75-133	0.5	20	
Benzene	22		1.0	ug/L	20.0	0.20 U	108	81-134	0.4	17	
Chlorobenzene	20		1.0	ug/L	20.0	0.27 U	100	83-117	4	16	
Toluene	21		1.0	ug/L	20.0	0.27 U	104	71-118	0.6	17	
Trichloroethene	19		1.0	ug/L	20.0	0.38 U	97	75-115	2	18	

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0H05016 - EPA 3005A

Blank (0H05016-BLK1) Prepared: 08/05/2010 09:48 Analyzed: 08/10/2010 12:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	2.80	U	10.0	ug/L							
Barium	1.00	U	10.0	ug/L							
Beryllium	0.100	U	1.00	ug/L							
Cadmium	0.360	U	1.00	ug/L							
Chromium	1.00	U	10.0	ug/L							
Cobalt	1.10	U	10.0	ug/L							
Copper	1.60	U	10.0	ug/L							
Lead	1.90	U	10.0	ug/L							
Nickel	1.80	U	10.0	ug/L							

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0H05016 - EPA 3005A

Blank (0H05016-BLK1) Continued Prepared: 08/05/2010 09:48 Analyzed: 08/10/2010 12:26

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Silver	1.90	U	10.0	ug/L							
Vanadium	1.40	U	10.0	ug/L							
Zinc	3.80	U	10.0	ug/L							

LCS (0H05016-BS1) Prepared: 08/05/2010 09:48 Analyzed: 08/10/2010 12:30

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	529		10.0	ug/L	500		106	80-120			
Barium	520		10.0	ug/L	500		104	80-120			
Beryllium	270		1.00	ug/L	250		108	80-120			
Cadmium	259		1.00	ug/L	250		104	80-120			
Chromium	516		10.0	ug/L	500		103	80-120			
Cobalt	520		10.0	ug/L	500		104	80-120			
Copper	260		10.0	ug/L	250		104	80-120			
Lead	533		10.0	ug/L	500		107	80-120			
Nickel	526		10.0	ug/L	500		105	80-120			
Silver	260		10.0	ug/L	250		104	80-120			
Vanadium	252		10.0	ug/L	250		101	80-120			
Zinc	529		10.0	ug/L	500		106	80-120			

Matrix Spike (0H05016-MS1) Prepared: 08/05/2010 09:48 Analyzed: 08/10/2010 12:42

Source: C008622-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	566		10.0	ug/L	500	2.80 U	113	75-125			
Barium	560		10.0	ug/L	500	19.1	108	75-125			
Beryllium	278		1.00	ug/L	250	0.100 U	111	75-125			
Cadmium	265		1.00	ug/L	250	0.360 U	106	75-125			
Chromium	526		10.0	ug/L	500	1.00 U	105	75-125			
Cobalt	555		10.0	ug/L	500	1.10 U	111	75-125			
Copper	270		10.0	ug/L	250	1.60 U	108	75-125			
Lead	565		10.0	ug/L	500	1.90 U	113	75-125			
Nickel	535		10.0	ug/L	500	1.80 U	107	75-125			
Silver	266		10.0	ug/L	250	1.90 U	107	75-125			
Vanadium	261		10.0	ug/L	250	1.40 U	104	75-125			
Zinc	559		10.0	ug/L	500	14.7	109	75-125			

Matrix Spike Dup (0H05016-MSD1) Prepared: 08/05/2010 09:48 Analyzed: 08/10/2010 12:57

Source: C008622-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	577		10.0	ug/L	500	2.80 U	115	75-125	2	20	
Barium	596		10.0	ug/L	500	19.1	115	75-125	6	20	
Beryllium	296		1.00	ug/L	250	0.100 U	119	75-125	7	20	
Cadmium	282		1.00	ug/L	250	0.360 U	113	75-125	6	20	
Chromium	559		10.0	ug/L	500	1.00 U	112	75-125	6	20	
Cobalt	569		10.0	ug/L	500	1.10 U	114	75-125	3	20	

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0H05016 - EPA 3005A

Matrix Spike Dup (0H05016-MSD1) Continued Prepared: 08/05/2010 09:48 Analyzed: 08/10/2010 12:57

Source: C008622-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Copper	285		10.0	ug/L	250	1.60 U	114	75-125	6	20	
Lead	579		10.0	ug/L	500	1.90 U	116	75-125	2	20	
Nickel	570		10.0	ug/L	500	1.80 U	114	75-125	6	20	
Silver	282		10.0	ug/L	250	1.90 U	113	75-125	6	20	
Vanadium	278		10.0	ug/L	250	1.40 U	111	75-125	6	20	
Zinc	597		10.0	ug/L	500	14.7	116	75-125	7	20	

Post Spike (0H05016-PS1) Prepared: 08/05/2010 09:48 Analyzed: 08/10/2010 12:59

Source: C008622-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	1.19		0.0100	mg/L	1.00	-0.000227	119	80-120			
Barium	1.22		0.0100	mg/L	1.00	0.0191	120	80-120			
Beryllium	0.620		0.00100	mg/L	0.500	-4.06E-5	124	80-120			QM-08
Cadmium	0.590		0.00100	mg/L	0.500	0.000129	118	80-120			
Chromium	1.18		0.0100	mg/L	1.00	-2.91E-5	118	80-120			
Cobalt	1.15		0.0100	mg/L	1.00	9.72E-5	115	80-120			
Copper	0.606		0.0100	mg/L	0.500	0.000452	121	80-120			QM-08
Lead	1.18		0.0100	mg/L	1.00	-0.00120	119	80-120			
Nickel	1.18		0.0100	mg/L	1.00	-0.000630	118	80-120			
Silver	0.549		0.0100	mg/L	0.500	0.000633	110	80-120			
Vanadium	0.587		0.0100	mg/L	0.500	0.000491	117	80-120			
Zinc	1.22		0.0100	mg/L	1.00	0.0147	121	80-120			QM-08

Batch 0H05032 - EPA 3005A

Blank (0H05032-BLK1) Prepared: 08/05/2010 14:22 Analyzed: 08/10/2010 11:06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.220	U	2.00	ug/L							
Selenium	0.830	U	1.00	ug/L							
Thallium	0.110	U	1.00	ug/L							

LCS (0H05032-BS1) Prepared: 08/05/2010 14:22 Analyzed: 08/10/2010 11:17

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	25.5		2.00	ug/L	25.0		102	80-120			
Selenium	26.7		1.00	ug/L	25.0		107	80-120			
Thallium	26.5		1.00	ug/L	25.0		106	80-120			

Matrix Spike (0H05032-MS1) Prepared: 08/05/2010 14:22 Analyzed: 08/10/2010 11:24

Source: C009071-05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	25.8		2.00	ug/L	25.0	0.475	101	75-125			
Selenium	26.3		1.00	ug/L	25.0	0.830 U	105	75-125			

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0H05032 - EPA 3005A

Matrix Spike (0H05032-MS1) Continued Prepared: 08/05/2010 14:22 Analyzed: 08/10/2010 11:24

Source: C009071-05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Thallium	25.8		1.00	ug/L	25.0	0.110 U	103	75-125			

Matrix Spike Dup (0H05032-MSD1) Prepared: 08/05/2010 14:22 Analyzed: 08/10/2010 11:28

Source: C009071-05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	25.6		2.00	ug/L	25.0	0.475	101	75-125	0.7	20	
Selenium	25.6		1.00	ug/L	25.0	0.830 U	102	75-125	3	20	
Thallium	25.6		1.00	ug/L	25.0	0.110 U	103	75-125	0.8	20	

Post Spike (0H05032-PS1) Prepared: 08/05/2010 14:22 Analyzed: 08/10/2010 11:31

Source: C009071-05

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	28.0		2.00	ug/L	25.0	0.475	110	80-120			
Selenium	28.9		1.00	ug/L	25.0	-0.0110	116	80-120			
Thallium	27.5		1.00	ug/L	25.0	0.0110	110	80-120			

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.
QM-08	Post-digestion spike did not meet method requirements due to confirmed matrix effects (dilution test).

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

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Page 1 of 1

Client Name	S&ME, Inc. (SM004)
Project Number	[none]
Address	3718 Old Battleground Rd.
Project Name/Desc	White Street Landfill App Is (SMWs)
City/ST/Zip	Greensboro, NC 27410
PO # / Billing Info	
Tel	(336) 288-7180
Fax	(336) 288-8980
Reporting Contact	Connel Ware
Sampler(s) Name, Affiliation (Print)	Gary Simcox / S&ME
Billing Contact	Accounts Payable
Sampler(s) Signature	
Site Location / Time Zone	

Requested Analyses: 8260B Appendix 1; Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Tl,V,Zn

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

___ Standard

___ Expedited

Due ___/___/___

Lab Workorder: C009061

Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8260B Appendix 1	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Tl,V,Zn									Sample Comments
	4103-SMW1	8/2/10	1340	G	GW	4	X	X									
	4103-SMW3	8/2/10	1240	G	GW	4	X	X									
	4103-SMW4	8/2/10	1130	G	GW	4	X	X									
	4103-TripBlank				GW	2	X										

<-- Total # of Containers

Sample Kit Prepared By: JK	Date/Time: 7-29-10	Relinquished By: [signature]	Date/Time: 8/4/10 0700	Received By: [signature]	Date/Time: 8-4-10 9:30
Comments/Special Reporting Requirements		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By: [signature]	Date/Time: 8-4-10 11:15
		Cooler #'s & Temps on Receipt: Red 1.8°C		Condition Upon Receipt: X Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

Environmental Conservation Laboratories, Inc.
102-A Woodwinds Industrial Court
Cary NC, 27511
Phone: 919.467.3090 FAX: 919.467.3515
www.encolabs.com

Wednesday, October 27, 2010

S&ME, Inc. (SM004)

Attn: Edmund Henriques

3718 Old Battleground Rd.

Greensboro, NC 27410

RE: Laboratory Results for
Project Number: [none], Project Name/Desc: White Street Landfill App Is (SMWs)
ENCO Workorder: C011803

Dear Edmund Henriques,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, October 12, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 24.

PROJECT NARRATIVE

Client: S&ME, Inc. (SM004)
Project: White Street Landfill App Is (SMWs)
Lab ID: C011803

Overview

Environmental Conservation Laboratories, Inc. (ENCO) analyzed all submitted samples in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling by ENCO are discussed in the QC Remarks section below.

Quality Control Samples

No Comments

Quality Control Remarks

The detection of Chloromethane in sample 4103-SMW3 has been determined to be a laboratory artifact caused by contaminant buildup in one component in the 8260B instrumentation. The contaminated part has been replaced and systems are being developed to prevent future occurrences.

Other Comments

The analytical data presented in this report are consistent with the methods as referenced in the analytical report. Any exceptions or deviations are noted in the QC remarks section of this narrative or in the Flags/Notes and Definitions section of the report.

Released By:
Environmental Conservation Laboratories, Inc.

Chuck Smith
Project Manager

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: 4103-SMW1 **Lab ID: C011803-01** **Sampled: 10/11/10 16:00** **Received: 10/12/10 14:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	04/09/11	10/13/10 10:21	10/19/2010 12:57
EPA 6020A	04/09/11	10/13/10 10:25	10/26/2010 11:32
EPA 8260B	10/25/10	10/16/10 14:08	10/18/2010 11:08

Client ID: 4103-SMW3 **Lab ID: C011803-02** **Sampled: 10/11/10 14:55** **Received: 10/12/10 14:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	04/09/11	10/13/10 10:21	10/19/2010 14:00
EPA 6020A	04/09/11	10/13/10 10:25	10/26/2010 11:35
EPA 8260B	10/25/10	10/16/10 14:08	10/18/2010 11:36

Client ID: 4103-SMW4 **Lab ID: C011803-03** **Sampled: 10/11/10 13:35** **Received: 10/12/10 14:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 6010C	04/09/11	10/13/10 10:21	10/19/2010 14:03
EPA 6020A	04/09/11	10/13/10 10:25	10/26/2010 11:39
EPA 8260B	10/25/10	10/18/10 11:19	10/19/2010 04:06

Client ID: 4103-TripBlank **Lab ID: C011803-04** **Sampled: 10/11/10 13:35** **Received: 10/12/10 14:00**

Parameter	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260B	10/25/10	10/18/10 11:19	10/19/2010 04:35

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NORTH CAROLINA SWS SAMPLE DETECTION SUMMARY

Client ID: 4103-SMW1 **Lab ID: C011803-01**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Acetone	1.5	J	1	1.5	5.0	100	ug/L	EPA 8260B	
Barium - Total	140		1	1.00	10.0	100	ug/L	EPA 6010C	
Cadmium - Total	4.79		1	0.360	1.00	1	ug/L	EPA 6010C	
Chromium - Total	6.52	J	1	1.00	10.0	10	ug/L	EPA 6010C	
Cobalt - Total	7.34	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	18.1		1	1.60	10.0	10	ug/L	EPA 6010C	
Lead - Total	3.42	J	1	1.90	10.0	10	ug/L	EPA 6010C	
Nickel - Total	3.75	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Vanadium - Total	18.1	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	409		1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4103-SMW3 **Lab ID: C011803-02**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
1,1-Dichloroethane	3.8	J	1	0.33	1.0	5	ug/L	EPA 8260B	
Barium - Total	301		1	1.00	10.0	100	ug/L	EPA 6010C	
Chloromethane	0.61	J	1	0.34	1.0	1	ug/L	EPA 8260B	
Chromium - Total	7.86	J	1	1.00	10.0	10	ug/L	EPA 6010C	
cis-1,2-Dichloroethene	7.8		1	0.36	1.0	5	ug/L	EPA 8260B	
Cobalt - Total	13.0		1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	72.0		1	1.60	10.0	10	ug/L	EPA 6010C	
Nickel - Total	5.57	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Vanadium - Total	56.6		1	1.40	10.0	25	ug/L	EPA 6010C	
Vinyl chloride	0.68	J	1	0.30	1.0	1	ug/L	EPA 8260B	
Zinc - Total	35.4		1	3.80	10.0	10	ug/L	EPA 6010C	

Client ID: 4103-SMW4 **Lab ID: C011803-03**

Analyte	Results	Flag	DF	MDL	MRL	NC SWSL	Units	Method	Notes
Barium - Total	164		1	1.00	10.0	100	ug/L	EPA 6010C	
Cobalt - Total	1.48	J	1	1.10	10.0	10	ug/L	EPA 6010C	
Copper - Total	2.35	J	1	1.60	10.0	10	ug/L	EPA 6010C	
Nickel - Total	4.15	J	1	1.80	10.0	50	ug/L	EPA 6010C	
Selenium - Total	5.30	J	1	0.830	1.00	10	ug/L	EPA 6020A	
Vanadium - Total	2.65	J	1	1.40	10.0	25	ug/L	EPA 6010C	
Zinc - Total	8.07	J	1	3.80	10.0	10	ug/L	EPA 6010C	

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ANALYTICAL RESULTS

Description: 4103-SMW1 **Lab Sample ID:** C011803-01 **Received:** 10/12/10 14:00

Matrix: Ground Water **Sampled:** 10/11/10 16:00 **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/18/10 11:08	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	10/18/10 11:08	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	10/18/10 11:08	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	10/18/10 11:08	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	10/18/10 11:08	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	10/18/10 11:08	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	10/18/10 11:08	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	10/18/10 11:08	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	10/18/10 11:08	JKG	
Acetone [67-64-1] ^	**1.5**	J	ug/L	1	1.5	5.0	100	EPA 8260B	10/18/10 11:08	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	10/18/10 11:08	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	10/18/10 11:08	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	10/18/10 11:08	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	10/18/10 11:08	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	10/18/10 11:08	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	10/18/10 11:08	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	10/18/10 11:08	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	10/18/10 11:08	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	10/18/10 11:08	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	10/18/10 11:08	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	10/18/10 11:08	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	10/18/10 11:08	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	10/18/10 11:08	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	10/18/10 11:08	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:08	JKG	

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Description: 4103-SMW1 | **Lab Sample ID:** C011803-01 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 16:00 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	10/18/10 11:08	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	10/18/10 11:08	JKG	
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/18/10 11:08	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*99 %*	*51-122*	*0J16007*	*EPA 8260B*	*10/18/10 11:08*	*JKG*	
Dibromofluoromethane	*49*	*1*	*50.0*	*98 %*	*68-117*	*0J16007*	*EPA 8260B*	*10/18/10 11:08*	*JKG*	
Toluene-d8	*50*	*1*	*50.0*	*101 %*	*69-110*	*0J16007*	*EPA 8260B*	*10/18/10 11:08*	*JKG*	

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Description: 4103-SMW1 | **Lab Sample ID:** C011803-01 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 16:00 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	10/26/10 11:32	VLO	
Arsenic [7440-38-2] ^	2.80	U	ug/L	1	2.80	10.0	10	EPA 6010C	10/19/10 12:57	JDH	
Barium [7440-39-3] ^	**140**		ug/L	1	1.00	10.0	100	EPA 6010C	10/19/10 12:57	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/19/10 12:57	JDH	
Cadmium [7440-43-9] ^	**4.79**		ug/L	1	0.360	1.00	1	EPA 6010C	10/19/10 12:57	JDH	
Chromium [7440-47-3] ^	**6.52**	J	ug/L	1	1.00	10.0	10	EPA 6010C	10/19/10 12:57	JDH	
Cobalt [7440-48-4] ^	**7.34**	J	ug/L	1	1.10	10.0	10	EPA 6010C	10/19/10 12:57	JDH	
Copper [7440-50-8] ^	**18.1**		ug/L	1	1.60	10.0	10	EPA 6010C	10/19/10 12:57	JDH	
Lead [7439-92-1] ^	**3.42**	J	ug/L	1	1.90	10.0	10	EPA 6010C	10/19/10 12:57	JDH	
Nickel [7440-02-0] ^	**3.75**	J	ug/L	1	1.80	10.0	50	EPA 6010C	10/19/10 12:57	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	10/26/10 11:32	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/19/10 12:57	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	10/26/10 11:32	VLO	
Vanadium [7440-62-2] ^	**18.1**	J	ug/L	1	1.40	10.0	25	EPA 6010C	10/19/10 12:57	JDH	
Zinc [7440-66-6] ^	**409**		ug/L	1	3.80	10.0	10	EPA 6010C	10/19/10 12:57	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 4103-SMW3 | **Lab Sample ID:** C011803-02 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 14:55 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/18/10 11:36	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	10/18/10 11:36	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
1,1-Dichloroethane [75-34-3] ^	**3.8**	J	ug/L	1	0.33	1.0	5	EPA 8260B	10/18/10 11:36	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	10/18/10 11:36	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	10/18/10 11:36	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	10/18/10 11:36	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	10/18/10 11:36	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	10/18/10 11:36	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	10/18/10 11:36	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	10/18/10 11:36	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	10/18/10 11:36	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	10/18/10 11:36	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	10/18/10 11:36	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	10/18/10 11:36	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	10/18/10 11:36	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	10/18/10 11:36	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	10/18/10 11:36	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	10/18/10 11:36	JKG	
Chloromethane [74-87-3] ^	**0.61**	J	ug/L	1	0.34	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	**7.8**		ug/L	1	0.36	1.0	5	EPA 8260B	10/18/10 11:36	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	10/18/10 11:36	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	10/18/10 11:36	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	10/18/10 11:36	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	10/18/10 11:36	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	10/18/10 11:36	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/18/10 11:36	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	10/18/10 11:36	JKG	
Vinyl chloride [75-01-4] ^	**0.68**	J	ug/L	1	0.30	1.0	1	EPA 8260B	10/18/10 11:36	JKG	

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Description: 4103-SMW3 | **Lab Sample ID:** C011803-02 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 14:55 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/18/10 11:36	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*48*	*1*	*50.0*	*97 %*	*51-122*	*0J16007*	*EPA 8260B*	*10/18/10 11:36*	*JKG*	
Dibromofluoromethane	*48*	*1*	*50.0*	*97 %*	*68-117*	*0J16007*	*EPA 8260B*	*10/18/10 11:36*	*JKG*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*69-110*	*0J16007*	*EPA 8260B*	*10/18/10 11:36*	*JKG*	

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Description: 4103-SMW3 | **Lab Sample ID:** C011803-02 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 14:55 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	10/26/10 11:35	VLO	
Arsenic [7440-38-2] ^	2.80	U	ug/L	1	2.80	10.0	10	EPA 6010C	10/19/10 14:00	JDH	
Barium [7440-39-3] ^	**301**		ug/L	1	1.00	10.0	100	EPA 6010C	10/19/10 14:00	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/19/10 14:00	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/19/10 14:00	JDH	
Chromium [7440-47-3] ^	**7.86**	J	ug/L	1	1.00	10.0	10	EPA 6010C	10/19/10 14:00	JDH	
Cobalt [7440-48-4] ^	**13.0**		ug/L	1	1.10	10.0	10	EPA 6010C	10/19/10 14:00	JDH	
Copper [7440-50-8] ^	**72.0**		ug/L	1	1.60	10.0	10	EPA 6010C	10/19/10 14:00	JDH	
Lead [7439-92-1] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/19/10 14:00	JDH	
Nickel [7440-02-0] ^	**5.57**	J	ug/L	1	1.80	10.0	50	EPA 6010C	10/19/10 14:00	JDH	
Selenium [7782-49-2] ^	0.830	U	ug/L	1	0.830	1.00	10	EPA 6020A	10/26/10 11:35	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/19/10 14:00	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	10/26/10 11:35	VLO	
Vanadium [7440-62-2] ^	**56.6**		ug/L	1	1.40	10.0	25	EPA 6010C	10/19/10 14:00	JDH	
Zinc [7440-66-6] ^	**35.4**		ug/L	1	3.80	10.0	10	EPA 6010C	10/19/10 14:00	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 4103-SMW4 | **Lab Sample ID:** C011803-03 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 13:35 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/19/10 04:06	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	10/19/10 04:06	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	10/19/10 04:06	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	10/19/10 04:06	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	10/19/10 04:06	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	10/19/10 04:06	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	10/19/10 04:06	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	10/19/10 04:06	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	10/19/10 04:06	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	10/19/10 04:06	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	10/19/10 04:06	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	10/19/10 04:06	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	10/19/10 04:06	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	10/19/10 04:06	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	10/19/10 04:06	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	10/19/10 04:06	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	10/19/10 04:06	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	10/19/10 04:06	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	10/19/10 04:06	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	10/19/10 04:06	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	10/19/10 04:06	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	10/19/10 04:06	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	10/19/10 04:06	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	10/19/10 04:06	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/19/10 04:06	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	10/19/10 04:06	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	10/19/10 04:06	JKG	

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Description: 4103-SMW4 | **Lab Sample ID:** C011803-03 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 13:35 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/19/10 04:06	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*51-122*	*0J18026*	*EPA 8260B*	*10/19/10 04:06*	*JKG*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*68-117*	*0J18026*	*EPA 8260B*	*10/19/10 04:06*	*JKG*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*69-110*	*0J18026*	*EPA 8260B*	*10/19/10 04:06*	*JKG*	

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Description: 4103-SMW4 | **Lab Sample ID:** C011803-03 | **Received:** 10/12/10 14:00

Matrix: Ground Water | **Sampled:** 10/11/10 13:35 | **Work Order:** C011803

Project: White Street Landfill App Is (SMWs) | **Sampled By:** Gary Simcox

Metals (total recoverable) by EPA 6000/7000 Series Methods

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Antimony [7440-36-0] ^	0.220	U	ug/L	1	0.220	2.00	6	EPA 6020A	10/26/10 11:39	VLO	
Arsenic [7440-38-2] ^	2.80	U	ug/L	1	2.80	10.0	10	EPA 6010C	10/19/10 14:03	JDH	
Barium [7440-39-3] ^	**164**		ug/L	1	1.00	10.0	100	EPA 6010C	10/19/10 14:03	JDH	
Beryllium [7440-41-7] ^	0.100	U	ug/L	1	0.100	1.00	1	EPA 6010C	10/19/10 14:03	JDH	
Cadmium [7440-43-9] ^	0.360	U	ug/L	1	0.360	1.00	1	EPA 6010C	10/19/10 14:03	JDH	
Chromium [7440-47-3] ^	1.00	U	ug/L	1	1.00	10.0	10	EPA 6010C	10/19/10 14:03	JDH	
Cobalt [7440-48-4] ^	**1.48**	J	ug/L	1	1.10	10.0	10	EPA 6010C	10/19/10 14:03	JDH	
Copper [7440-50-8] ^	**2.35**	J	ug/L	1	1.60	10.0	10	EPA 6010C	10/19/10 14:03	JDH	
Lead [7439-92-1] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/19/10 14:03	JDH	
Nickel [7440-02-0] ^	**4.15**	J	ug/L	1	1.80	10.0	50	EPA 6010C	10/19/10 14:03	JDH	
Selenium [7782-49-2] ^	**5.30**	J	ug/L	1	0.830	1.00	10	EPA 6020A	10/26/10 11:39	VLO	
Silver [7440-22-4] ^	1.90	U	ug/L	1	1.90	10.0	10	EPA 6010C	10/19/10 14:03	JDH	
Thallium [7440-28-0] ^	0.110	U	ug/L	1	0.110	1.00	5.5	EPA 6020A	10/26/10 11:39	VLO	
Vanadium [7440-62-2] ^	**2.65**	J	ug/L	1	1.40	10.0	25	EPA 6010C	10/19/10 14:03	JDH	
Zinc [7440-66-6] ^	**8.07**	J	ug/L	1	3.80	10.0	10	EPA 6010C	10/19/10 14:03	JDH	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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Description: 4103-TripBlank
Matrix: Water
Project: White Street Landfill App Is (SMWs)

Lab Sample ID: C011803-04
Sampled: 10/11/10 13:35
Sampled By: ENCO

Received: 10/12/10 14:00
Work Order: C011803

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
1,1,1,2-Tetrachloroethane [630-20-6] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/19/10 04:35	JKG	
1,1,1-Trichloroethane [71-55-6] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
1,1,2,2-Tetrachloroethane [79-34-5] ^	0.33	U	ug/L	1	0.33	1.0	3	EPA 8260B	10/19/10 04:35	JKG	
1,1,2-Trichloroethane [79-00-5] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
1,1-Dichloroethane [75-34-3] ^	0.33	U	ug/L	1	0.33	1.0	5	EPA 8260B	10/19/10 04:35	JKG	
1,1-Dichloroethene [75-35-4] ^	0.24	U	ug/L	1	0.24	1.0	5	EPA 8260B	10/19/10 04:35	JKG	
1,2,3-Trichloropropane [96-18-4] ^	0.55	U	ug/L	1	0.55	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
1,2-Dibromo-3-chloropropane [96-12-8] ^	0.48	U	ug/L	1	0.48	1.0	13	EPA 8260B	10/19/10 04:35	JKG	
1,2-Dibromoethane [106-93-4] ^	0.42	U	ug/L	1	0.42	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
1,2-Dichlorobenzene [95-50-1] ^	0.27	U	ug/L	1	0.27	1.0	5	EPA 8260B	10/19/10 04:35	JKG	
1,2-Dichloroethane [107-06-2] ^	0.65	U	ug/L	1	0.65	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
1,2-Dichloropropane [78-87-5] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
1,4-Dichlorobenzene [106-46-7] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
2-Butanone [78-93-3] ^	1.0	U	ug/L	1	1.0	5.0	100	EPA 8260B	10/19/10 04:35	JKG	
2-Hexanone [591-78-6] ^	0.69	U	ug/L	1	0.69	5.0	50	EPA 8260B	10/19/10 04:35	JKG	
4-Methyl-2-pentanone [108-10-1] ^	1.1	U	ug/L	1	1.1	5.0	100	EPA 8260B	10/19/10 04:35	JKG	
Acetone [67-64-1] ^	1.5	U	ug/L	1	1.5	5.0	100	EPA 8260B	10/19/10 04:35	JKG	
Acrylonitrile [107-13-1] ^	2.1	U	ug/L	1	2.1	10	200	EPA 8260B	10/19/10 04:35	JKG	
Benzene [71-43-2] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Bromochloromethane [74-97-5] ^	0.42	U	ug/L	1	0.42	1.0	3	EPA 8260B	10/19/10 04:35	JKG	
Bromodichloromethane [75-27-4] ^	0.37	U	ug/L	1	0.37	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Bromoform [75-25-2] ^	0.71	U	ug/L	1	0.71	1.0	3	EPA 8260B	10/19/10 04:35	JKG	
Bromomethane [74-83-9] ^	0.49	U	ug/L	1	0.49	1.0	10	EPA 8260B	10/19/10 04:35	JKG	
Carbon disulfide [75-15-0] ^	0.54	U	ug/L	1	0.54	5.0	100	EPA 8260B	10/19/10 04:35	JKG	
Carbon tetrachloride [56-23-5] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Chlorobenzene [108-90-7] ^	0.27	U	ug/L	1	0.27	1.0	3	EPA 8260B	10/19/10 04:35	JKG	
Chloroethane [75-00-3] ^	0.30	U	ug/L	1	0.30	1.0	10	EPA 8260B	10/19/10 04:35	JKG	
Chloroform [67-66-3] ^	0.20	U	ug/L	1	0.20	1.0	5	EPA 8260B	10/19/10 04:35	JKG	
Chloromethane [74-87-3] ^	0.34	U	ug/L	1	0.34	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
cis-1,2-Dichloroethene [156-59-2] ^	0.36	U	ug/L	1	0.36	1.0	5	EPA 8260B	10/19/10 04:35	JKG	
cis-1,3-Dichloropropene [10061-01-5] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Dibromochloromethane [124-48-1] ^	0.32	U	ug/L	1	0.32	1.0	3	EPA 8260B	10/19/10 04:35	JKG	
Dibromomethane [74-95-3] ^	0.37	U	ug/L	1	0.37	1.0	10	EPA 8260B	10/19/10 04:35	JKG	
Ethylbenzene [100-41-4] ^	0.20	U	ug/L	1	0.20	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Iodomethane [74-88-4] ^	0.52	U	ug/L	1	0.52	5.0	10	EPA 8260B	10/19/10 04:35	JKG	
Methylene chloride [75-09-2] ^	0.53	U	ug/L	1	0.53	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Styrene [100-42-5] ^	0.26	U	ug/L	1	0.26	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Tetrachloroethene [127-18-4] ^	0.36	U	ug/L	1	0.36	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Toluene [108-88-3] ^	0.27	U	ug/L	1	0.27	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
trans-1,2-Dichloroethene [156-60-5] ^	0.34	U	ug/L	1	0.34	1.0	5	EPA 8260B	10/19/10 04:35	JKG	
trans-1,3-Dichloropropene [10061-02-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
trans-1,4-Dichloro-2-butene [110-57-6] ^	0.54	U	ug/L	1	0.54	1.0	100	EPA 8260B	10/19/10 04:35	JKG	
Trichloroethene [79-01-6] ^	0.38	U	ug/L	1	0.38	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Trichlorofluoromethane [75-69-4] ^	0.28	U	ug/L	1	0.28	1.0	1	EPA 8260B	10/19/10 04:35	JKG	
Vinyl acetate [108-05-4] ^	0.98	U	ug/L	1	0.98	5.0	50	EPA 8260B	10/19/10 04:35	JKG	
Vinyl chloride [75-01-4] ^	0.30	U	ug/L	1	0.30	1.0	1	EPA 8260B	10/19/10 04:35	JKG	

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Description: 4103-TripBlank
Matrix: Water
Project: White Street Landfill App Is (SMWs)

Lab Sample ID: C011803-04
Sampled: 10/11/10 13:35
Sampled By: ENCO

Received: 10/12/10 14:00
Work Order: C011803

Volatile Organic Compounds by GCMS

^ - ENCO Cary certified analyte [NC 591]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	MRL	NC SWSL	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7] ^	0.40	U	ug/L	1	0.40	1.0	5	EPA 8260B	10/19/10 04:35	JKG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*51-122*	*0J18026*	*EPA 8260B*	*10/19/10 04:35*	*JKG*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*68-117*	*0J18026*	*EPA 8260B*	*10/19/10 04:35*	*JKG*	
Toluene-d8	*50*	*1*	*50.0*	*100 %*	*69-110*	*0J18026*	*EPA 8260B*	*10/19/10 04:35*	*JKG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 0J16007 - EPA 5030B_MS

Blank (0J16007-BLK1) Prepared: 10/16/2010 14:08 Analyzed: 10/18/2010 07:22

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.40	U	1.0	ug/L							
1,1,1-Trichloroethane	0.27	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.33	U	1.0	ug/L							
1,1,2-Trichloroethane	0.37	U	1.0	ug/L							
1,1-Dichloroethane	0.33	U	1.0	ug/L							
1,1-Dichloroethene	0.24	U	1.0	ug/L							
1,2,3-Trichloropropane	0.55	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.27	U	1.0	ug/L							
1,2-Dichloroethane	0.65	U	1.0	ug/L							
1,2-Dichloropropane	0.20	U	1.0	ug/L							
1,4-Dichlorobenzene	0.38	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.20	U	1.0	ug/L							
Bromochloromethane	0.42	U	1.0	ug/L							
Bromodichloromethane	0.37	U	1.0	ug/L							
Bromoform	0.71	U	1.0	ug/L							
Bromomethane	0.49	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.38	U	1.0	ug/L							
Chlorobenzene	0.27	U	1.0	ug/L							
Chloroethane	0.30	U	1.0	ug/L							
Chloroform	0.20	U	1.0	ug/L							
Chloromethane	0.34	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.36	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.28	U	1.0	ug/L							
Dibromochloromethane	0.32	U	1.0	ug/L							
Dibromomethane	0.37	U	1.0	ug/L							
Ethylbenzene	0.20	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.53	U	1.0	ug/L							
Styrene	0.26	U	1.0	ug/L							
Tetrachloroethene	0.36	U	1.0	ug/L							
Toluene	0.27	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.34	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.38	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.38	U	1.0	ug/L							
Trichlorofluoromethane	0.28	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.30	U	1.0	ug/L							
Xylenes (Total)	0.40	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*102*	*51-122*			

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 0J16007 - EPA 5030B_MS

Blank (0J16007-BLK1) Continued Prepared: 10/16/2010 14:08 Analyzed: 10/18/2010 07:22

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Surrogate: Dibromofluoromethane	*56*			*ug/L*	*50.0*		*112*	*68-117*			
Surrogate: Toluene-d8	*50*			*ug/L*	*50.0*		*101*	*69-110*			

LCS (0J16007-BS1) Prepared: 10/16/2010 14:08 Analyzed: 10/18/2010 07:50

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	25		1.0	ug/L	20.0		126	75-133			
Benzene	21		1.0	ug/L	20.0		104	81-134			
Chlorobenzene	21		1.0	ug/L	20.0		107	83-117			
Toluene	21		1.0	ug/L	20.0		104	71-118			
Trichloroethene	21		1.0	ug/L	20.0		107	75-115			

Matrix Spike (0J16007-MS1) Prepared: 10/16/2010 14:08 Analyzed: 10/18/2010 08:18

Source: C012438-10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	25		1.0	ug/L	20.0	0.24 U	124	75-133			
Benzene	21		1.0	ug/L	20.0	0.20 U	105	81-134			
Chlorobenzene	22		1.0	ug/L	20.0	0.27 U	108	83-117			
Toluene	21		1.0	ug/L	20.0	0.27 U	104	71-118			
Trichloroethene	21		1.0	ug/L	20.0	0.38 U	106	75-115			

Matrix Spike Dup (0J16007-MSD1) Prepared: 10/16/2010 14:08 Analyzed: 10/18/2010 08:46

Source: C012438-10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	24		1.0	ug/L	20.0	0.24 U	119	75-133	4	20	
Benzene	21		1.0	ug/L	20.0	0.20 U	103	81-134	2	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.27 U	105	83-117	3	16	
Toluene	20		1.0	ug/L	20.0	0.27 U	101	71-118	2	17	
Trichloroethene	21		1.0	ug/L	20.0	0.38 U	103	75-115	2	18	

Batch 0J18026 - EPA 5030B_MS

Blank (0J18026-BLK1) Prepared: 10/18/2010 14:11 Analyzed: 10/18/2010 20:07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1,2-Tetrachloroethane	0.40	U	1.0	ug/L							
1,1,1-Trichloroethane	0.27	U	1.0	ug/L							
1,1,2,2-Tetrachloroethane	0.33	U	1.0	ug/L							
1,1,2-Trichloroethane	0.37	U	1.0	ug/L							
1,1-Dichloroethane	0.33	U	1.0	ug/L							
1,1-Dichloroethene	0.24	U	1.0	ug/L							
1,2,3-Trichloropropane	0.55	U	1.0	ug/L							
1,2-Dibromo-3-chloropropane	0.48	U	1.0	ug/L							
1,2-Dibromoethane	0.42	U	1.0	ug/L							
1,2-Dichlorobenzene	0.27	U	1.0	ug/L							

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 0J18026 - EPA 5030B_MS

Blank (0J18026-BLK1) Continued Prepared: 10/18/2010 14:11 Analyzed: 10/18/2010 20:07

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	0.65	U	1.0	ug/L							
1,2-Dichloropropane	0.20	U	1.0	ug/L							
1,4-Dichlorobenzene	0.38	U	1.0	ug/L							
2-Butanone	1.0	U	5.0	ug/L							
2-Hexanone	0.69	U	5.0	ug/L							
4-Methyl-2-pentanone	1.1	U	5.0	ug/L							
Acetone	1.5	U	5.0	ug/L							
Acrylonitrile	2.1	U	10	ug/L							
Benzene	0.20	U	1.0	ug/L							
Bromochloromethane	0.42	U	1.0	ug/L							
Bromodichloromethane	0.37	U	1.0	ug/L							
Bromoform	0.71	U	1.0	ug/L							
Bromomethane	0.49	U	1.0	ug/L							
Carbon disulfide	0.54	U	5.0	ug/L							
Carbon tetrachloride	0.38	U	1.0	ug/L							
Chlorobenzene	0.27	U	1.0	ug/L							
Chloroethane	0.30	U	1.0	ug/L							
Chloroform	0.20	U	1.0	ug/L							
Chloromethane	0.34	U	1.0	ug/L							
cis-1,2-Dichloroethene	0.36	U	1.0	ug/L							
cis-1,3-Dichloropropene	0.28	U	1.0	ug/L							
Dibromochloromethane	0.32	U	1.0	ug/L							
Dibromomethane	0.37	U	1.0	ug/L							
Ethylbenzene	0.20	U	1.0	ug/L							
Iodomethane	0.52	U	5.0	ug/L							
Methylene chloride	0.53	U	1.0	ug/L							
Styrene	0.26	U	1.0	ug/L							
Tetrachloroethene	0.36	U	1.0	ug/L							
Toluene	0.27	U	1.0	ug/L							
trans-1,2-Dichloroethene	0.34	U	1.0	ug/L							
trans-1,3-Dichloropropene	0.38	U	1.0	ug/L							
trans-1,4-Dichloro-2-butene	0.54	U	1.0	ug/L							
Trichloroethene	0.38	U	1.0	ug/L							
Trichlorofluoromethane	0.28	U	1.0	ug/L							
Vinyl acetate	0.98	U	5.0	ug/L							
Vinyl chloride	0.30	U	1.0	ug/L							
Xylenes (Total)	0.40	U	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*102*	*51-122*			
Surrogate: Dibromofluoromethane	*54*			*ug/L*	*50.0*		*109*	*68-117*			
Surrogate: Toluene-d8	*50*			*ug/L*	*50.0*		*100*	*69-110*			

LCS (0J18026-BS1) Prepared: 10/18/2010 14:11 Analyzed: 10/18/2010 20:35

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	23		1.0	ug/L	20.0		114	75-133			
Benzene	21		1.0	ug/L	20.0		104	81-134			
Chlorobenzene	22		1.0	ug/L	20.0		110	83-117			
Toluene	21		1.0	ug/L	20.0		104	71-118			

QUALITY CONTROL

Volatile Organic Compounds by GCMS - Quality Control

Batch 0J18026 - EPA 5030B_MS

LCS (0J18026-BS1) Continued Prepared: 10/18/2010 14:11 Analyzed: 10/18/2010 20:35

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Trichloroethene	21		1.0	ug/L	20.0		105	75-115			

Matrix Spike (0J18026-MS1) Prepared: 10/18/2010 14:11 Analyzed: 10/18/2010 21:03

Source: C012522-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	22		1.0	ug/L	20.0	0.24 U	109	75-133			
Benzene	20		1.0	ug/L	20.0	0.20 U	102	81-134			
Chlorobenzene	21		1.0	ug/L	20.0	0.27 U	106	83-117			
Toluene	21		1.0	ug/L	20.0	0.27 U	104	71-118			
Trichloroethene	21		1.0	ug/L	20.0	0.38 U	105	75-115			

Matrix Spike Dup (0J18026-MSD1) Prepared: 10/18/2010 14:11 Analyzed: 10/18/2010 21:32

Source: C012522-04

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	21		1.0	ug/L	20.0	0.24 U	105	75-133	4	20	
Benzene	20		1.0	ug/L	20.0	0.20 U	101	81-134	1	17	
Chlorobenzene	21		1.0	ug/L	20.0	0.27 U	107	83-117	0.6	16	
Toluene	20		1.0	ug/L	20.0	0.27 U	100	71-118	4	17	
Trichloroethene	20		1.0	ug/L	20.0	0.38 U	101	75-115	4	18	

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0J13015 - EPA 3005A

Blank (0J13015-BLK1) Prepared: 10/13/2010 10:21 Analyzed: 10/19/2010 12:50

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	2.80	U	10.0	ug/L							
Barium	1.00	U	10.0	ug/L							
Beryllium	0.100	U	1.00	ug/L							
Cadmium	0.360	U	1.00	ug/L							
Chromium	1.00	U	10.0	ug/L							
Cobalt	1.10	U	10.0	ug/L							
Copper	1.60	U	10.0	ug/L							
Lead	1.90	U	10.0	ug/L							
Nickel	1.80	U	10.0	ug/L							
Silver	1.90	U	10.0	ug/L							
Vanadium	1.40	U	10.0	ug/L							
Zinc	3.80	U	10.0	ug/L							

LCS (0J13015-BS1) Prepared: 10/13/2010 10:21 Analyzed: 10/19/2010 12:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	522		10.0	ug/L	500		104	80-120			
Barium	513		10.0	ug/L	500		103	80-120			
Beryllium	266		1.00	ug/L	250		107	80-120			

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0J13015 - EPA 3005A

LCS (0J13015-BS1) Continued Prepared: 10/13/2010 10:21 Analyzed: 10/19/2010 12:55

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Cadmium	260		1.00	ug/L	250		104	80-120			
Chromium	516		10.0	ug/L	500		103	80-120			
Cobalt	517		10.0	ug/L	500		103	80-120			
Copper	259		10.0	ug/L	250		104	80-120			
Lead	522		10.0	ug/L	500		104	80-120			
Nickel	520		10.0	ug/L	500		104	80-120			
Silver	252		10.0	ug/L	250		101	80-120			
Vanadium	252		10.0	ug/L	250		101	80-120			
Zinc	520		10.0	ug/L	500		104	80-120			

Matrix Spike (0J13015-MS1) Prepared: 10/13/2010 10:21 Analyzed: 10/19/2010 13:00

Source: C011803-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	555		10.0	ug/L	500	2.80 U	111	75-125			
Barium	676		10.0	ug/L	500	140	107	75-125			
Beryllium	279		1.00	ug/L	250	0.100 U	112	75-125			
Cadmium	274		1.00	ug/L	250	4.79	108	75-125			
Chromium	542		10.0	ug/L	500	6.52	107	75-125			
Cobalt	558		10.0	ug/L	500	7.34	110	75-125			
Copper	289		10.0	ug/L	250	18.1	108	75-125			
Lead	554		10.0	ug/L	500	3.42	110	75-125			
Nickel	537		10.0	ug/L	500	3.75	107	75-125			
Silver	263		10.0	ug/L	250	1.90 U	105	75-125			
Vanadium	282		10.0	ug/L	250	18.1	105	75-125			
Zinc	956		10.0	ug/L	500	409	109	75-125			

Matrix Spike Dup (0J13015-MSD1) Prepared: 10/13/2010 10:21 Analyzed: 10/19/2010 13:11

Source: C011803-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	589		10.0	ug/L	500	2.80 U	118	75-125	6	20	
Barium	712		10.0	ug/L	500	140	114	75-125	5	20	
Beryllium	296		1.00	ug/L	250	0.100 U	118	75-125	6	20	
Cadmium	290		1.00	ug/L	250	4.79	114	75-125	6	20	
Chromium	572		10.0	ug/L	500	6.52	113	75-125	5	20	
Cobalt	590		10.0	ug/L	500	7.34	117	75-125	6	20	
Copper	304		10.0	ug/L	250	18.1	114	75-125	5	20	
Lead	586		10.0	ug/L	500	3.42	116	75-125	6	20	
Nickel	570		10.0	ug/L	500	3.75	113	75-125	6	20	
Silver	278		10.0	ug/L	250	1.90 U	111	75-125	5	20	
Vanadium	297		10.0	ug/L	250	18.1	112	75-125	5	20	
Zinc	1010		10.0	ug/L	500	409	120	75-125	5	20	

Post Spike (0J13015-PS1) Prepared: 10/13/2010 10:21 Analyzed: 10/19/2010 13:14

Source: C011803-01

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0J13015 - EPA 3005A

Post Spike (0J13015-PS1) Continued Prepared: 10/13/2010 10:21 Analyzed: 10/19/2010 13:14

Source: C011803-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Arsenic	1.14		0.0100	mg/L	1.00	0.000362	114	80-120			
Barium	1.27		0.0100	mg/L	1.00	0.140	113	80-120			
Beryllium	0.586		0.00100	mg/L	0.500	-7.50E-5	117	80-120			
Cadmium	0.572		0.00100	mg/L	0.500	0.00479	114	80-120			
Chromium	1.14		0.0100	mg/L	1.00	0.00652	113	80-120			
Cobalt	1.11		0.0100	mg/L	1.00	0.00734	111	80-120			
Copper	0.596		0.0100	mg/L	0.500	0.0181	116	80-120			
Lead	1.13		0.0100	mg/L	1.00	0.00342	113	80-120			
Nickel	1.12		0.0100	mg/L	1.00	0.00375	111	80-120			
Silver	0.570		0.0100	mg/L	0.500	-1.19E-5	114	80-120			
Vanadium	0.575		0.0100	mg/L	0.500	0.0181	111	80-120			
Zinc	1.57		0.0100	mg/L	1.00	0.409	116	80-120			

Batch 0J13016 - EPA 3005A

Blank (0J13016-BLK1) Prepared: 10/13/2010 10:25 Analyzed: 10/26/2010 11:06

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	0.220	U	2.00	ug/L							
Selenium	0.830	U	1.00	ug/L							
Thallium	0.110	U	1.00	ug/L							

LCS (0J13016-BS1) Prepared: 10/13/2010 10:25 Analyzed: 10/26/2010 11:10

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	27.4		2.00	ug/L	25.0		110	80-120			
Selenium	27.5		1.00	ug/L	25.0		110	80-120			
Thallium	26.8		1.00	ug/L	25.0		107	80-120			

Matrix Spike (0J13016-MS1) Prepared: 10/13/2010 10:25 Analyzed: 10/26/2010 11:17

Source: C012357-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	20.4		2.00	ug/L	25.0	0.280	80	75-125			
Selenium	23.9		1.00	ug/L	25.0	0.830 U	96	75-125			
Thallium	24.5		1.00	ug/L	25.0	0.110 U	98	75-125			

Matrix Spike Dup (0J13016-MSD1) Prepared: 10/13/2010 10:25 Analyzed: 10/26/2010 11:21

Source: C012357-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	20.3		2.00	ug/L	25.0	0.280	80	75-125	0.7	20	
Selenium	23.2		1.00	ug/L	25.0	0.830 U	93	75-125	3	20	
Thallium	24.9		1.00	ug/L	25.0	0.110 U	100	75-125	2	20	

Post Spike (0J13016-PS1) Prepared: 10/13/2010 10:25 Analyzed: 10/26/2010 11:24

QUALITY CONTROL

Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

Batch 0J13016 - EPA 3005A

Post Spike (0J13016-PS1) Continued Prepared: 10/13/2010 10:25 Analyzed: 10/26/2010 11:24

Source: C012357-01

Analyte	Result	Flag	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Antimony	28.4		2.00	ug/L	25.0	0.280	112	80-120			
Selenium	29.0		1.00	ug/L	25.0	0.142	116	80-120			
Thallium	27.1		1.00	ug/L	25.0	-0.299	109	80-120			

FLAGS/NOTES AND DEFINITIONS

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
MRL	Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content.

ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3515

www.encolabs.com

Page ____ of ____

Client Name: S&ME, Inc. (SM004)	Project Number: [none]
Address: 3718 Old Battleground Rd.	Project Name/Desc: White Street Landfill App Is (SMWs)
City/ST/Zip: Greensboro, NC 27410	PO # / Billing Info:
Tel: (336) 288-7180 / Fax: (336) 288-8980	Reporting Contact: Edmund Henriques
Sampler(s) Name, Affiliation (Print): Gary Simcox / S&ME, Inc	Billing Contact: Accounts Payable
Sampler(s) Signature:	Site Location / Time Zone:

Requested Analyses: 8260B Appendix 1; Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Tl,V,Zn

Requested Turnaround Times

Note : Rush requests subject to acceptance by the facility

___ Standard

___ Expedited

Due ___/___/___

Lab Workorder: C011803

Preservation (See Codes) (Combine as necessary)

Item #	Sample ID (Field Identification)	Collection Date	Collection Time	Comp / Grab	Matrix (see codes)	Total # of Containers	8260B Appendix 1	Ag,As,Ba,Be,Cd,Co,Cr,Cu,Ni,Pb,Sb,Se,Tl,V,Zn								Sample Comments
	4103-SMW1	10/11/10	1600	G	GW	4	X	X								
	4103-SMW3	10/11/10	1455	G	GW	4	X	X								
	4103-SMW4	10/11/10	1335	G	GW	4	X	X								
	4103-TripBlank				GW	2	X									

<-- Total # of Containers

Sample Kit Prepared By	Date/Time	Relinquished By	Date/Time 10/11/10 1720	Received By: Briana Hugery	Date/Time 10/12/10 14:00
Comments/Special Reporting Requirements		Relinquished By	Date/Time	Received By	Date/Time
		Relinquished By	Date/Time	Received By	Date/Time
		Cooler #'s & Temps on Receipt: C790 3.0°C		Condition Upon Receipt: X Acceptable ___ Unacceptable	

Matrix : GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note : All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

APPENDIX III
Design & Installation Report - Ecolotree

July 5, 2011

To: Ed Hendriques, S&ME
Connell Ware, S&ME

From: Dr. Louis Licht, P.E.

3017 Valley View Ln
North Liberty, Iowa 52317
Phone (319) 665-3547
Fax (319) 665-8035
www.ecolotree.com
Email: info@ecolotree.com

RE: Design & Installation Report
White Street Landfill EBuffer®
Greensboro NC

The White Street Landfill is located in Greensboro, North Carolina. Phase II of the White Street Landfill, hereafter referred to as the subject site, is a pre-subtitle D landfill with active post-closure groundwater monitoring at select points along the perimeter. The purpose was improved final closure using a perimeter EBuffer® design to intercept organic contaminants dissolved in shallow groundwater migrating beyond the compliance boundary at select points along the perimeter of the monitored unit. This phytoremediation concept has great potential for future water and leachate management on this facility.

This report summarizes the 2011 EBuffer design and installation effort that has included inspection, installation and early maintenance work involving the staffs from Greensboro City, S&ME and Ecolotree staff.

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Section 1. Phytoremediation Concept

Overall Objective
Ultimately, the EBuffer objective is to decrease the time required to achieve clean closure with no future engineered actions.

On the north toe of Phase II, Ecolotree is demonstrating a deep-rooted EBuffer technique consisting of hybrid poplar and willow trees to intercept shallow groundwater containing volatile organic Contaminants Of Concern (COC) now present above action levels. If the site conditions causing this migration are influenced by this technique, no additional required engineered activities such as leachate-impacted groundwater plume remediation will be required for post-closure groundwater quality compliance.

The desired outcome of the EBuffer® system at the subject site is to develop the following processes:

- During the growing season, beneficially use water and reduce plume migration through the landfill toe by a "sponge and pump" process. This process utilizes the water holding capacity of the existing root zone soils, a sufficiently deep root system for water uptake, and water discharge by evapotranspiration.
- During the dormant season, continue organic and inorganic contaminant treatment.

Primer: Ecolotree® Buffer (EBuffer®)
The Ecolotree® Buffer (EBuffer®) uses poplar trees and understory grasses to remove gases and soluble pollutants from groundwater and surface water. Extensive research at field installations, government laboratories, and over 20 universities across the U.S. and Canada documents how poplar tree roots in trenched soils clean-up organic and inorganic pollutants found in leachate.

Ecolotree installs poplar and willow buffers around landfills to develop deep, dense root systems that enhance microbial breakdown of pollutants in the top 12 - 15 feet below ground surface (bgs). The roots secrete carbon-rich exudates which feed soil microorganisms and increase organic pollutant adsorption. Even if the vegetation cannot remove the pollutants, contaminant mobility can be reduced by reducing water flow and increasing soil adsorption.

EBuffer® can take the form of a grove or a strategically placed narrow buffer reactor that acts as the final filter at streamside or around a landfill perimeter. On a July day in Greensboro NC, an acre of poplar at canopy can pump 10,000 – 12,000 gallons of water per acre per day from soil. Variability is due to weather, soil moisture, plant health, rooting zone, plant size, and surrounding landscape.

Potential Deep-rooted EBuffer Benefits
1. Develop cost-effective remediation once established if all values are accounted.
2. Utilize existing soils that will allow viable rooting
3. Increase bioremediation by phyto-based mineralization of groundwater contaminants of concern
4. Groundwater COC converted to vapor through evaporation and transpiration
5. Develop a stable ecology

6. Demonstrate 'sustainable' and 'real green' solution once established

Possible EBuffer Limitations

1. Plants require land area; this EBuffer site on the north slope of Phase II is still being modified with a new grading plan
2. Contaminant treatment by the root systems typically happen in upper 12 – 15 feet – so deeper contaminants are typically not treated by phyto processes and require other strategies such as chemical oxidation or mass removal.
3. Roots cannot penetrate concrete, bed rock, or other substantial aquitard created by compaction. This site does have isolated areas with bedrock outcrops which likely influence shallow groundwater flow paths.
4. The maximum water pumping and contaminant treatment capacity by plants is defined by total light interception in a full leaf canopy period typically requiring 3 – 4 growing seasons. Depending on how many existing trees are removed, there will be times when there will be shade on the EBuffer.
5. Ground water toxicity can be caused by high concentrations of in-soil chemicals; however, Phase II- is an old landfill without high toxic chemical concentrations currently reported in the shallow groundwater.
6. In the mid-North Carolina climate, green plants normally are most effective in April – November growing season months.

Section 2. Soil Analytical Results

Soil samples were taken from 4 test pits dug in the cover area upgrade in the proposed EBuffer areas. Samples 1 and 2 are from the first test pit; Sample 3 is a blended sample from the send test pit. The soils were then analyzed for agronomic properties, nutrients and texture (Tables 1 - 3, Appendix1). On-site leaf compost was analyzed for nutrients and properties (Table 3).

1. Level of pH: Ranges from 5.7 – 7.1. This range will support the EBuffer poplar and willow. Some lime added to the compost would add alkalinity and help raise the pH.
2. Organic matter: The top soil organic matter is 2.6 – 3.5% of total. Deeper soils have less organic matter. The soil will be amended with leaf compost (22 – 34% OM) or other available materials to increase the soil tilth, nutrition and adsorption properties.
3. Nitrogen: When the final design is begun, the soil nitrogen will be amended with mineral nitrogen fertilizer assuming low nitrogen in the soil.
4. Phosphorus: Phosphorus is adequate in Sample Location 3 top soil and uniformly very low in the deeper soil; the target is 16 – 36 ppm. The P content in the compost is high; P will be adequately supplemented with a large mass of compost and mineral fertilizer.
5. Potassium: Potassium in the soil is low; the target is 100 – 200 ppm. The K content in the compost is very adequate; K will be supplemented with a large mass of compost and mineral fertilizer.
6. Other macronutrients: Magnesium ranges from high in the surface soil to low in subsurface; calcium ranges from adequate in the surface soil to low in subsurface; sulfur is adequate. Magnesium and calcium are both high in the compost.
7. Micronutrients: Iron, manganese, zinc and copper are adequate to high in the cover surface soil; boron is uniformly low. Compost will add these micronutrients so all are adequate.

Section 3. Pre Installation Site Review Summery

Pre-design inspection

A pre-design inspection for an EBuffer at White Street Landfill, Phase II was performed by Lou Licht from Ecolotree with City of Greensboro staff and S&ME staff on March 10, 2010. A follow-up review of the proposed areas and site conditions was performed November 5, 2010 by Lou Licht (Ecolotree) and Ed Hendriques (S&ME).

Accomplishments:

1. Reviewed the current site conditions, existing maps and historic leachate monitoring data (Figures 1 - 8)
2. Reviewed to understand what compounds of concern need to be addressed in the EBuffer
3. Reviewed the EBuffer location options for the north –west slope and required site modifications
4. Reviewed the preliminary regulatory acceptance accomplished by S&ME
5. Reviewed the project timing, budgeting, and installation options for EBuffer installation, operation, and cost evaluation
6. Took 10 soil samples and 2 compost samples and sent for analyses by A&L laboratories (Tables 1-3, Appendix1)
7. Presented a PowerPoint slide show to explain phytoremediation, Ecolotree Inc. and similar EBuffer installations on other locations
8. Reviewed past EBuffer installation details used to capture and reduce benzene, chlorinated solvents and some metals

Observations

1. The post-closure landfill practices on the closed White Street Landfill, Phase II have resulted in a stable cover surface (Figure 6).
2. Native forested areas exist on the perimeter of the site and the stream corridor (Figure 7).
3. The Phase II landfill cover appears to have a very stable surface over the completed fill with sufficient slope to shed significant runoff to the perimeter stream.
4. The grass cover has been mowed and well-maintained (Figure 6).
5. The Buffalo Creek on the North West edge of landfill Phase II passes through Greensboro and has a POTW discharge and textile factory discharge upstream. Thus there was significant trash in the stream channel and in the deposition on the buffer vegetation.
6. The Pre-Subtitle D Landfill drains to the stream by both overland flow and subsurface flow that enters at the Buffalo Creek (Figure 6).
7. The shallow groundwater flow to the stream is evident from a monitoring well system with COC documented in various remedial investigations by S&ME.
8. There was no evidence of orange iron oxide in the stream emitting from seeps on the landfill side stream bank
9. There was little evidence of possible waste (tires, plastic, etc.) on the stream bank and in the stream generated by the landfill.
10. The landfill owners were in the process of determining ways to intercept shallow groundwater and surface drainage which may include limited reshaping of select portions of the areas of concern between the landfill and the creek, as wells as maintaining consistent contour over the waste disposal units to reduce surface infiltration into the waste mass.

11. Depending on the length of area selected (Figure 3), riparian EBuffer area (Buffer #1 and #2) approximately 1150 feet long. Assuming a 4-row, 50-foot wide strip, this is approximately 1.3 acres.
12. Ten soil samples were taken from four test pits (Figure 5) for agronomic analyses (Tables 1 - 2).
13. Two compost samples were taken from on-site leaf compost piles for agronomic analyses (Table 3).

Section 4. EBuffer Objectives and Potential Benefits

Ultimately, the EBuffer objective is to decrease the time and cost required to achieve clean closure with no future engineered actions. On the north-west toe of the Phase II (Figure 3), Ecolotree is proposing a deep-rooted EBuffer technique consisting of hybrid poplar and willow trees to intercept shallow groundwater now migrating through to the landfill perimeter to North Buffalo Creek. If the site conditions causing this off-site discharge are sufficiently reduced by maintaining consistent contour over the waste disposal units to reduce surface infiltration into the waste mass and phytoremediation, no additional required engineered activities leachate-impacted groundwater plume remediation may be required.

The desired outcome of the EBuffer system at the Site is to develop the following processes:

- During the growing season, beneficially use water and reduce plume migration through the landfill toe by a "sponge and pump" process. This process utilizes the water holding capacity of the existing root zone soils, a sufficiently deep root system for water uptake, and water discharge by evapotranspiration.
- During the dormant season, continue organic and inorganic contaminant treatment by improved sorption, microbial bioremediation and sequestration.

Objectives:

1. Reduce through-bank flow by increasing evapotranspiration during the growing season.

2. Grow a tree rhizosphere that accelerates the ongoing remediation by natural attenuation processes resulting in a groundwater through the drainage area found within 4 – 8 feet bgs with contaminants of concern achieving permitted concentrations.

3. Install and start this system efficiently to be fully operational within 6 months following start of construction. Full function will be within 3- 4 growing seasons.

4. Stabilize soil and hold the regraded riparian slope in all weather conditions and Buffalo Creek flood events.

5. Eliminate the need for other engineered leachate containment systems.

6. Fit with the local environment, the Landfill maintenance staff skills and available maintenance equipment capability.

EBuffer Designs: Contrast with Conventional Pump-and-Treat System:

Over 40 EBuffers have been designed and installed to intercept contaminant plumes using the basic EBuffer design unit (Figure 1). Based on past experience, an EBuffer phytoremediation system can be compared to a more conventional mechanical ground water pump-and-treat system:

1. With proper installation, the pollutant-of-concern (COC) treatment capacity and efficacy increases with time as the phytoremediation system gains maturity
2. Amendments blended with backfill soils add flexibility to simultaneously remediate multiple and mixed COC's with proper construction, roots, soluble carbon (molasses), fertilizer and compost by increasing soil microbe activity.
3. Lower maintenance costs are often significantly lower because there are no mechanical moving parts; the EBuffer is a passive, in-situ, self-regulating, solar-driven system.
4. Long-term mechanical energy requirement is less with no electric motors to pump and aerate water in a waste water treatment plant
5. Long-term emissions are decreased regarding soil erosion, surface water runoff, and fugitive dust emissions with perennial trees and grass.
6. Secondary benefits includes restored wildlife habitat with maturity.
7. Secondary benefit is a favorable public perception with improved site aesthetics.
8. Secondary but increasing benefit is less green-house gas emissions by carbon dioxide capture and carbon sequestration in wood and humus while there is a long-term decrease in exhaust and ash waste from electricity production.
9. It is estimated that this phytoremediation system, when established and at full canopy in year four, would remove 10,000 to 12,000 gallons per day (gpd) during the active summer growing season. This equates to a 6 to 8 gallon per minute (gpm) "pumping" rate during the most active period of the growing season. Annual water removal rates of up to 800,000+ gallons per year per acre could be achieved with strong survival and growth
10. Healthy EBuffers are cost-effective if displacing a long-term mechanical treatment system designed to capture ground water containing few, dilute contaminants of concern.
11. With experience, other uses of phytoremediation may be evident for managing runoff, landfill surface, and urban waste applications such as biosolids and street sweepings.

Section 5. EBuffer Installation Preparation at White Street Landfill

The basic design unit for a planted EBuffer poplar (Figure 1) creates a predictable root depth (Figure 2) that allows calculating a water balance in the root zone reactor. Using this poplar design unit, the EBuffer design can be reliably installed so the poplar buffers reach the desired root zone depth.

One difference with this design is the lack of a deep trencher; a shallower 4 foot deep trench will be dug by smaller trencher followed by augured holes to reach the desired 6+ ft bgs tree root placement (Figures 9 – 10).

Tasks accomplished before April 4, 2011:

1. The owner accepted the proposed task schedule (Table 4). The resources and responsibilities required for the EBuffer installation were divided between the Site owner and Ecolotree Inc.
2. The necessary NCDENR permits have been allowed for an acceptable EBuffer design.
3. The EBuffer areas have been defined (Figure 3). Four trees rows will be planted establish a riparian buffer approximately 50 feet wide between the Buffalo Creek and landfill perimeter (Figure 8).
4. EBuffers #1 and #2 require an estimated total of 410 large poplar trees and 410 small unrooted willow poles planted into approximately 2,500 feet of trench. It is our understanding that an optional EBuffer #3 was not required by NCDENR.
5. The trees will be planted using a trencher and auger to place roots and compost to a design depth of 6 – 8 ft bgs. A skid loader with tracks will necessary to backfill the trenches if the site remains wet.
6. Local staff removed the trees and partially grubbed in the approved EBuffer zones on the stream riparian plane.
7. HASP is supplied by S&ME and will be available at the initial safety meeting.

Owner responsibility for early April installation

1. Equipment provided by owner for installation:

- Trencher capable of 4 – 5 ft depth and 10+ inch width trench supplied provided by Owner
- Two tracked skid loaders capable of taking large auger, dump bucket, forks supplied provided by Owner
- Skid loader-mounted with 12" auger provided by Ecolotree
- Hand tools provided by both Ecolotree and Owner

2. Labor: the owner will provide 3 laborers to assist in planting for some necessary manual tasks.

3. During construction, on-site soils will be amended with organic matter such as local compost. **Owner provided and stage approximately 150 cubic yards of compost close to the construction site.**

4. Molasses will be added to trenches to increase soluble organic carbon to seep into the deeper subsoil to help bioremediated chlorinated solvents. **Owner stages approximately 1000 pounds of granular molasses in bags for installation with trees.**

5. Grass will be planted between the tree rows that was cleared and grubbed during installation. **Owner will provide and stage in bags approximately 400 pounds of locally recommended grass seed for installation with trees.**

6. The owner and Ecolotree staff will regrade and shape the site to be stable in all predicted flood conditions following EBuffer installation.
7. Deer guards will be installed on the 410 large poplars by local staff is recommended due to the potential deer damage expected in this area. **Owner will provide and stage these tree guards.**

Ecolotree will provide the following for installation

8. Ecolotree will provide 2 equipment operators, 3 technicians, and project manager for installation and required 'field calls' to accommodate the actual site conditions.
9. Ecolotree will provide auger (8+ inch diameter) with extension for 6+ foot deep holes
10. Ecolotree provides the trees delivered by a refrigerated truck
11. The delivered trees include:

- 410 each 12 – 14 ft rooted poplar placed vertically in the trench
- 410 each 7 ft unrooted willow poles interplanted between the poplars where there is a flood potential.
- All trees were harvested the week before delivery from the Ecolofarm tree nursery near Lowden Iowa.

Section 6. EBuffer Installation at White Street Landfill

April 3 – 4, 2011Ecolotree Mobilization

- 2 equipment operators (Austin Lange, Andy Wieland)
- 3 installation technicians (Pierre Mani, Ed Werner and Jody Schnede-Henning)
- project manager (Lou Licht)

April 5 - 7, EBuffer Orientation, Installation

1. Safety meeting: Ed Hendriques, S&ME, started the project by running the safety meeting to list hazards, safety equipment, procedures and equipment
2. Installation delay: There were storms in the vicinity with high winds and rain. After unloading some equipment, the installation was postponed 4 hours.

EBuffer #2 – South Buffer

3. Conditions: The South end adjacent to the access road was very wet and some equipment did get stuck during planting. There was no trash or subsurface debris, rock and roots encountered by the trencher.
4. Tree planting started approximately 2 PM April 5
5. Ecolotree staff laid out the rows and applied approximately 1- 1.5 cubic foot compost per linear foot of trench (Figure 9).
6. A small trencher (Figure 10) capable of digging approximately 4 feet deep. This trencher was found to be underpowered, and was replaced on April 6.
7. Approximately 191 poplars and 156 willows were planted 6 feet between-tree spacing in the row. An auger with an 8-inch auger was used to deepen the planting holes to approximately 6 feet deep.
8. The tree rows were amended with approximately 1.5 cubic feet of compost per lineal foot of trench. The compost was place on the trencher path with to allow the trencher to blend compost with soil.
9. Approximately 2 pounds of Louisiana premium dried cane molasses was placed with the backfill for each planted poplar (400 pounds total).

10. Approximately 1 pound of 10-10-10 NPK Fertilizer was applied in the vicinity of each poplar tree with the backfill soil.
11. The trenches and the area between the tree rows were regraded with a 6" crown on the trench to help refill the trench following settling.
12. Tree guards were put on all poplar.
13. Approximately 50-pounds of blended grass seed was spread on EBuffer #1 following all excavation and regarding.
14. Tree mulch was spread on all the tree rows

EBuffer #1 – North Buffer

15. Tree planting started approximately 3 PM April 6 and completed April 7. There was no significant large rock or roots encountered by the trencher.
16. This EBuffer had significant surface water ponded on the North end of the area. Preliminary surface drainage channels were manually dug to help drain some water but this end of the site was very wet for trenching. Some trees were planted only in auger holes.
17. A total of 213 poplar trees were planted with 213 willow interplanted in 4 rows with 44 poplar and one row of 37
18. Similar to EBuffer #1, the tree rows were amended with approximately 1.5 cubic feet of compost per lineal foot of trench. The compost was place on the trencher path with to allow the trencher to blend compost with soil.
19. Approximately 2 pounds of Louisiana premium dried cane molasses was placed with the backfill for each planted poplar (600 pounds total).
20. Approximately 1 pound of 10-10-10 NPK Fertilizer was applied in the vicinity of each poplar tree with the backfill soil. Fertilizer was broadcast spread across the entire site to help fertilize grass (1000 pounds total).
21. The planting crew finished the installation by carefully back filling the trench to assure good soil to root contact. Some manual soil shoveling was required where backfill soils bridged over the trench; it is important to minimize soil bridging which allows air gaps.
22. The trenches and the area between the tree rows were regraded with a 6 - 12" crown on the trench to help refill the trench following settling.
23. Tree guards were put on all poplar.
24. Approximately 100 pounds of blended grass seed was spread on EBuffer #2 following all excavation and regarding.

Section 7. 2011 Operation and Maintenance

Through 2011 – 2012: Ecolotree staff will work with the Owner and S&ME staff to execute the Operation and Maintenance plan shown in Table 1. Scheduled maintenance tasks include:

Agronomic herbicide application

- Early spring: April 30: Ecolotree staff band-applied Surflan (approved herbicide) to control pre-emerged annual grasses and some broad-leaf at the base of the trees. To control any grass in the tree row that is green at the time of application, Fusion (approved herbicide) will be added.

- Summer: Based on scouting reports from S&ME, a summer repeat application of Fusion alone and Roundup Pro alone may be needed.

Mowing and surface maintenance

- Maintain healthy perimeter forest by river to help provide flood damage (logs) in high flow events
- Replant bare grass areas
- Level any deposited sediment and remove debris that can damage mowing equipment following flooding
- Kill noxious weeds,
- It is expected that a local contractor will mow between the tree rows on a timely basis.
- Rule of thumb is to mow every four weeks or when grass & weeds reach 12+ inches tall – whichever happens first.
- The banded herbicide applications should make the rows more visible on both sides of the tree row.

Mammal Control

- Deer – antler rubbing guards need to be kept in place. It is difficult to control leaf browse and observe the deer grazing pressure
- Vole – scout for root damage and tree death due to vole
- Rabbit – maintain guards at base of tree to offer some protection

Fertilizer application

- The annual applied mass of macro-nutrients Nitrogen, Phosphorus, and Potassium (NPK) are approximately 200-60-60 pounds per acre of poplar trees. The EBuffer will have two applications of fertilizer in 2011.
- Nutrients in the soil humus and decaying plant biomass also become slowly available.
- Plant fertility will be monitored by leaf foliar analyses.

Insecticide

- Mid Spring: April 30; Ecolotree agronomist examined the site and found no cottonwood beetle or other insect damage
- Early summer: June 13: S&ME staff observed cottonwood beetle. S&ME staff hand sprayed with Sevin XRL (approved insecticide) to control the bugs in early development stage.
- Scout bi-weekly and be prepared to spot spray egg masses, larvae, and adult beetle or tent caterpillar
- The most prominent EBuffer insect pest (Figure 23) is the cottonweed beetle which infests native cottonwood trees. Insects are usually scouted before any treatment is applied.

Regrade

- Backfill any trench settling - precipitation will help settle soil in the trenches.
- Regrade surface drainage with potential for both channeling and soil addition – may require 30+ cubic yards

Replant

- June 2011 - 50 poplar replant whips
- Fall 2011 - Replant all dead or stressed poplar and willow
- Spring 2012 – Replant all dead or stressed poplar and willow
- Fall 2012 - Replant all dead or stressed poplar and willow

Measurement and Reporting

- Site maintainers will complete & email to Ecolotree the Site Form to track maintenance tasks, plant healthy, pests, understory, other site activity and new conditions that may cause future plant stress.
- Year-end summary report

Section 8. Tables

Table 1: White Street Soil Analyses – Pits 1 & 2

Site:	White Street Landfill				Legend:	
Location:	Greensboro N.C.				**Bold** = very low/low	
Sampling date:	03/10/10				*Italic* = very high	
Sampled by:	Ecolotree				Normal = sufficient	
Sample ID		Pit #1: Top 1'	Pit #1: 2' - 3'	Pit #1: 4' - 5'	Pit #2: Top 1'	Pit #2 , 2' - 3''
Agronomic Properties:						
Texture	N/A	Sandy Loam	Loamy Sand	Sand	Not measured	Not measured
	% Sand Silt Clay	74/12/14	78/16/6	86/12/2		
Soil pH	N/A	6.9	6.6	6.5	6.9	7.1
Organic matter	%	3.2	**1.2**	**1.0**	3.5	**1.5**
Cation exchange capacity	meq/100 g	9.3	7.2	**1.1**	**7**	**5.5**
Essential Macronutrients:						
Phosphorus	mg/kg	7	**2**	**1**	**1**	**2**
Potassium	mg/kg	**39**	**29**	**13**	**33**	**20**
Magnesium	mg/kg	*213*	*243*	60	164	149
Sulfur	mg/kg	7	5	9	5	12
Calcium	mg/kg	1101	999	**105**	858	807
Essential Micronutrients:						
Iron	mg/kg	*69*	*42*	16	30	*34*
Manganese	mg/kg	13	13	28	24	10
Boron	mg/kg	**0.4**	**0.3**	0.5	0.5	**0.3**
Copper	mg/kg	*3.5*	1.1	0.8	1.0	0.8
Zinc	mg/kg	*88.7*	2.4	1.3	1.2	**0.4**
Non-essential Elements:						
Sodium	mg/kg	**28**	**16**	**17**	**13**	**45**

Table 2: White Street Soil Analyses – Pits 3 & 4

Site:	White Street Landfill				Legend:	
Location:	Greensboro N.C.				**Bold** = very low/low	
Sampling date:	03/10/10				*Italic* = very high	
Sampled by:	Ecolotree				Normal = sufficient	
Sample ID		Pit #3: Top 1'	Pit #3: 2' - 3'	Pit #3: 4' - 5'	Pit #3: 7' - 8'	Pit #4: 2' - 3'
Agronomic Properties:						
Texture	N/A	Sandy Loam	TBD	Loam	Sandy Loam	Sandy Loam
	% Sand Silt Clay	74/16/10	TBD	46/28/26	58/24/18	62/20/18
Soil pH	N/A	6.7	6.7	6.8	**5.7**	**5.7**
Organic matter	%	2.6	**1.6**	2.2	**0.9**	**0.8**
Cation exchange capacity	meq/100 g	8.8	**4.8**	**5**	**4**	**4.3**
Essential Macronutrients:						
Phosphorus	mg/kg	*38*	*72*	**1**	**1**	**1**
Potassium	mg/kg	**32**	**22**	**20**	**9**	**6**
Magnesium	mg/kg	**9**	**45**	91	*240*	*204*
Sulfur	mg/kg	7	7	*31*	14	16
Calcium	mg/kg	775	1101	**328**	**329**	**372**
Essential Micronutrients:						
Iron	mg/kg	*140*	*69*	29	*41*	*33*
Manganese	mg/kg	9	13	18	15	11
Boron	mg/kg	0.5	**0.4**	**0.3**	0.5	0.5
Copper	mg/kg	2.8	*3.5*	1.1	0.8	0.6
Zinc	mg/kg	*74*	*88.7*	*194*	1.7	**0.2**
Non-essential Elements:						
Sodium	mg/kg	**19**	**28**	**13**	**20**	**38**

Table 3: White Street Compost Analyses

Site:	White Street Landfill		Legend:
Location:	Greensboro N.C.		**Bold** = very low/low
Sampling date:	03/10/10		*Italic* = very high
Sampled by:	Ecolotree		Normal = sufficient
Sample ID		Compost #1	Compost #2
Agronomic Properties:			
Texture	N/A		
	% Sand Silt Clay		
Compost pH	N/A	6.3	6.1
Organic matter	%	*34.3*	*21.9*
Cation exchange capacity	meq/100 g	18.1	11.7
Essential Macronutrients:			
Phosphorus	mg/kg	*77*	*59*
Potassium	mg/kg	*249*	*254*
Magnesium	mg/kg	*612*	*434*
Sulfur	mg/kg	9	6
Calcium	mg/kg	*2445*	1477
Essential Micronutrients:			
Iron	mg/kg	23	*42*
Manganese	mg/kg	18	15
Boron	mg/kg	*3.6*	*2.1*
Copper	mg/kg	0.9	0.9
Zinc	mg/kg	*19.6*	*7.6*
Non-essential Elements:			
Sodium	mg/kg	**24**	**19**

Table 4: Recommended installation, operations and maintenance tasks 2011 - 2012

Task	March '11	April '11	May '11	June '11	July '11	August '11	Sept. '11	Oct. '11	Nov. '11	Dec. '11	Jan. '12	Feb. '12	March '12	April '12	May '12	June '12	July '12	August '12	Sept. '12	Oct. '12	Nov. '12	Dec. '12
Predesign site visits, March & Nov 2010																						
Final Design - agronomy, tasks, map, operation plan	X	X																				
Contract - local labor, equipment and Ecolotree	X	X											X	X								
Order trees	X	X																				
Procure amendments	X																					
Mobe and demobe		X	X																			
Tree Installation		X	X																			
Grass Drill/Replant		X	X											X								
Installation Report			X	X																		
Install Deer Guard		X	X																			
Site Inspections				X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	
Grass Mow				X	X	#	#	X						X	X	X	X	#	#	X		
Apply herbicide			X											X		X		X		X		
Scout & apply insecticide			X	#	#	#	#							#	#	#	X	#	#	#		
Scout & apply vole bait			X	#	#	#	#	X						#	#	#	X	#	#	#		
Fertilize the trees			X					X						X			X					
Photo documentation		X	X		X			X						X	X		X		#	X		
Replant whips								X					X	X							X	
Prune trees								X						#			#				X	
Test foliar samples					X												X					
Perform tree audit								X													X	
Regrade trenches								X					X								X	
Submit e-mail memo					X									X		X		X				
Year-end summary report										X												X

X & * = denotes responsibility of Ecolotree Inc. or on-site operator; **X = Critical performed by Ecolotree**
= denotes application applied only as needed

Section 9: Figures

Figure 1: EBuffer Design Unit with Water Balance Equation

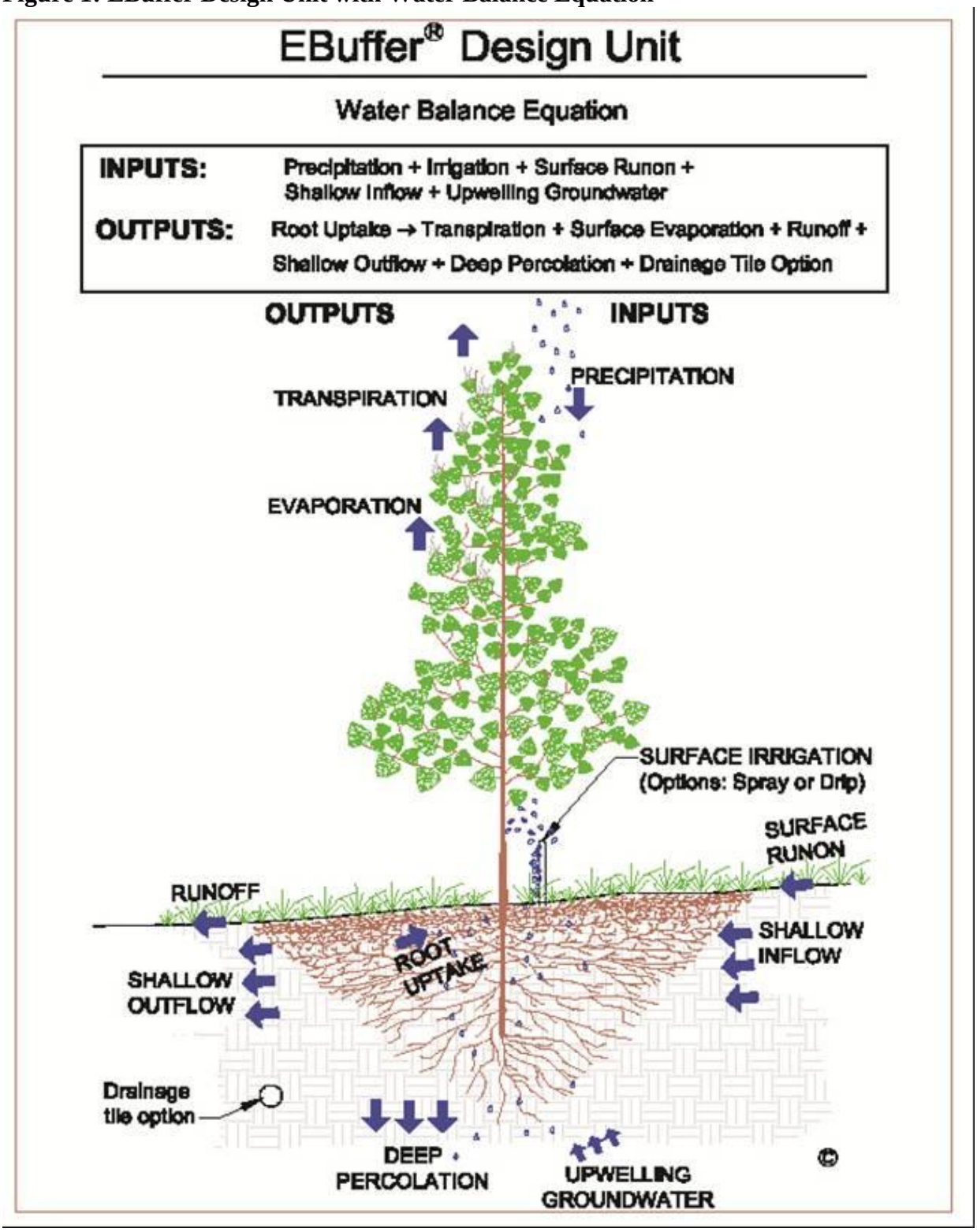


Figure 2: Roots developed from similar trees planted in six-foot deep trenches

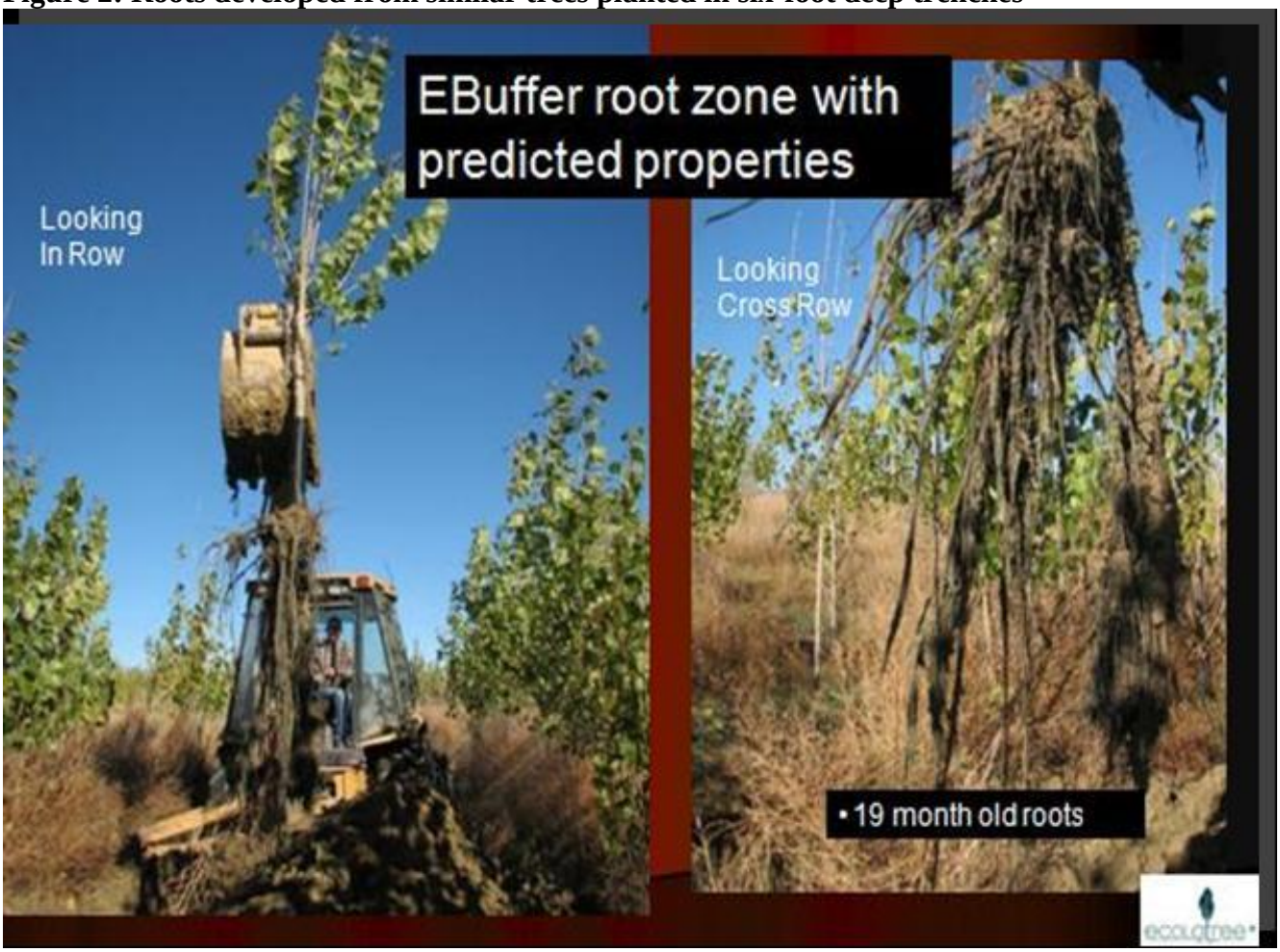


Figure 3: Google earth aerial photo showing NW landfill with EBuffer locations

Figure 4: S&ME Map of landfill with proposed north riparian EBuffer location

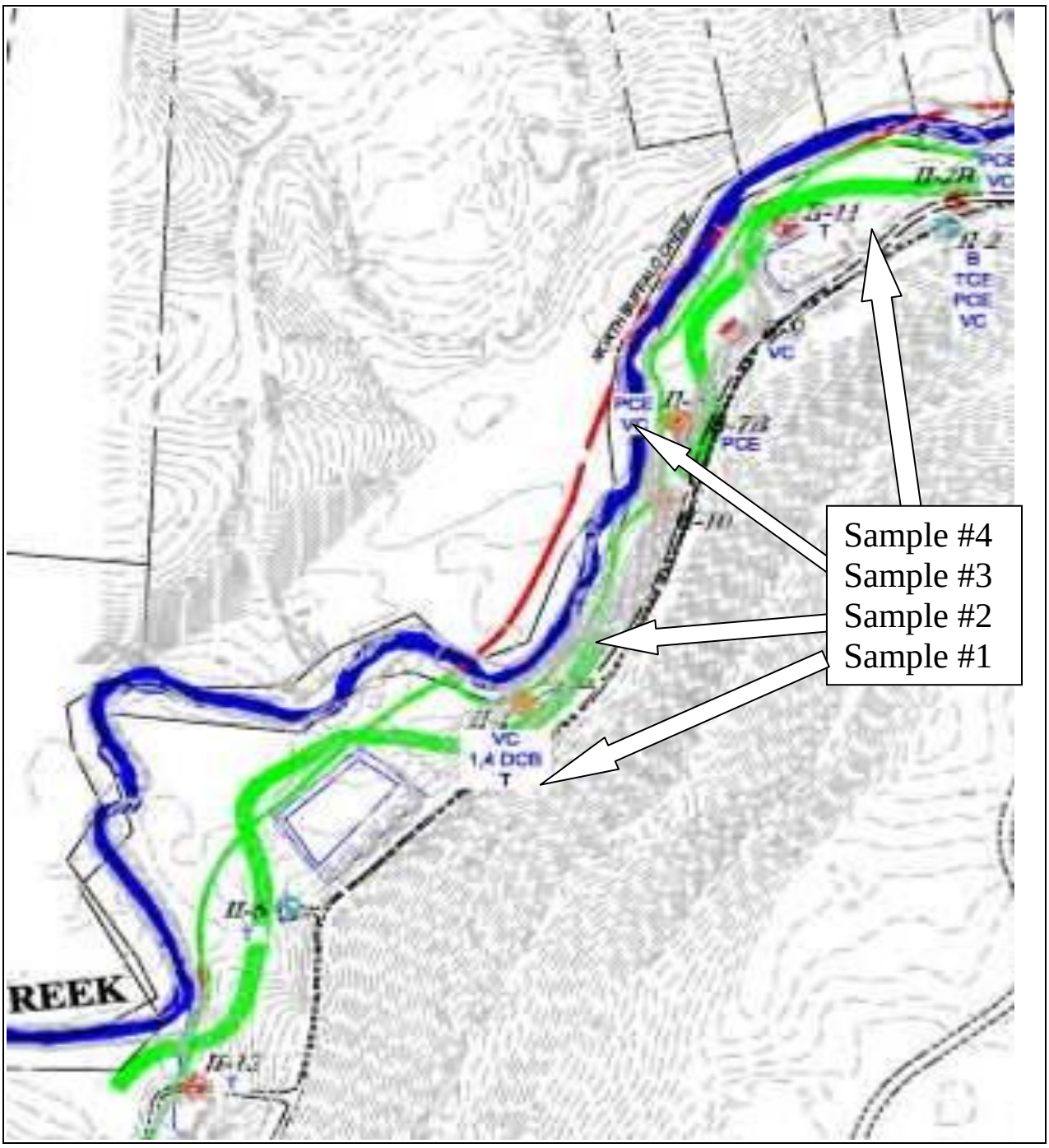


Figure 5: Looking north with EBuffer location on left and closed landfill on right

Figure 6: Buffalo Creek flows along west side of landfill.

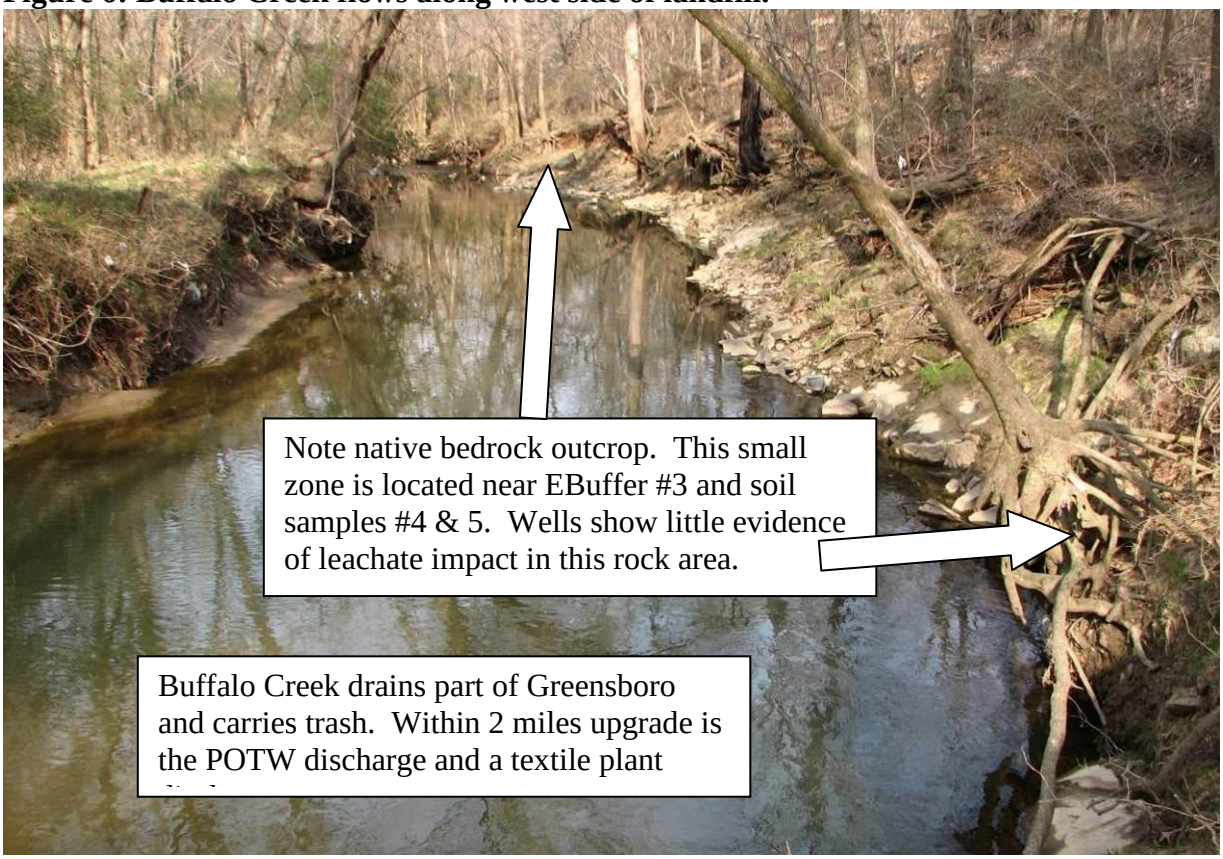
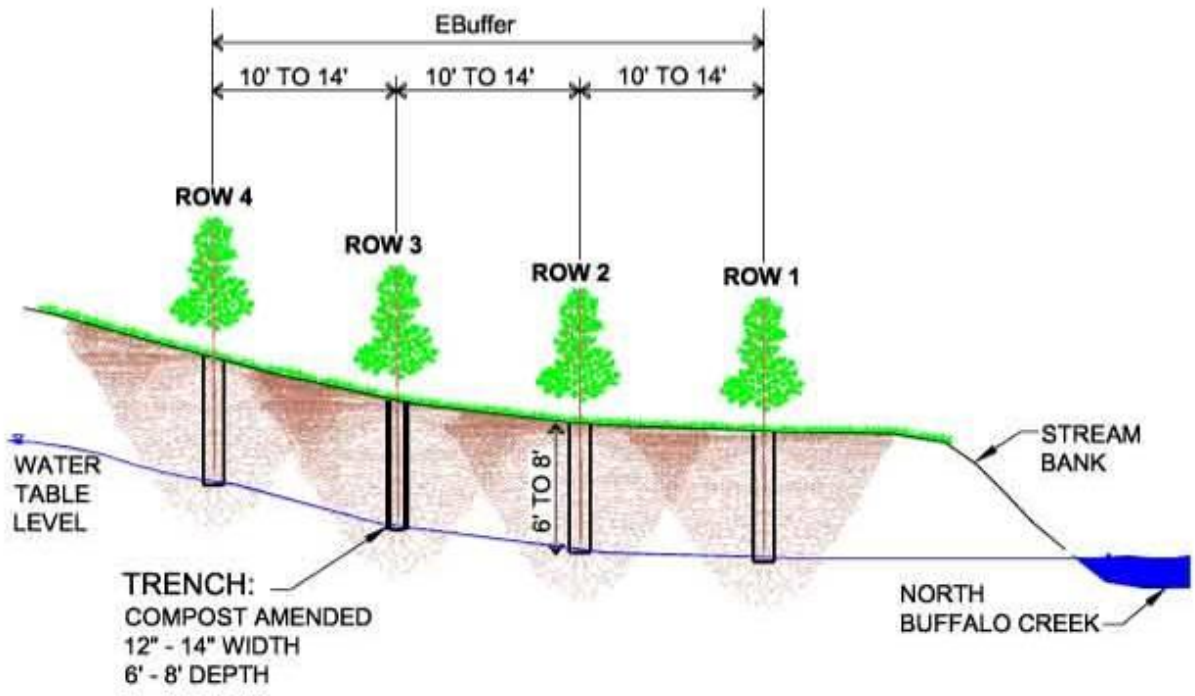


Figure 7: EBuffer cross section shows how roots grow in subsurface to intercept seep



Note:
1. Not to scale.
2. Four deep-rooted tree rows will be planted in the EBuffer upgradient to the Buffalo Creek. Upgrade trees use water and reduce subsurface leachate flow.
3. Trees in the EBuffer zone will be removed and chipped. Wood chips can be used as finish mulch.
4. Roots develop in compost-amended zone to remove water, adsorb organics, and help filter metal oxides.
5. Compost and molasses added to the trench backfill will leach available carbon to subsurface soil.

Figure 8: 4.5.11 EBuffer #2 area trees removed and compost placed on row before trenching

Figure 9: 4.5.11 EBuffer #2 tree planting with fertilizer added to trench

Figure 10: 4.5.11 EBuffer #2 trenching to 4 ft bgs followed by auger hole to 6+ ft bgs

Figure 11: 4.6.11 EBuffer #2 shows auger on skid loader with manual backfilling of holes

Figure 12: 4.7.11 EBuffer #2 following completed tree and grass planting

Figure 13: 4.30.11 EBuffer #2 shows bud break and leaves emerging

Figure 14: 6.12.11 EBuffer #2 shows very complete survival and new growth

Photo by L.Ennis, S&ME

Figure 15: 4.7.11 EBuffer #1 has poor drainage on entire north end

Figure 16: 4.7.11 EBuffer #1north end looking south was difficult to plant and deeply rutted

Figure 17: 4.7.11 EBuffer #1 required more manual backfilling because of wetter soils

Figure 18: 4.30.11 Bud break is occurring in saturated soils with ponded surface water

Figure 19: 6.12.11 EBuffer #1 had poor survival in zones with ponded water

Photo by L.Ennis, S&ME

Figure 20: 6.12.11 EBuffer #1 had zonal stress and less survival in zones with ponded water

Photo by L.Ennis, S&ME

Figure 21: 6.12.11 EBuffer #1 typical view of ponded water and tree death

Figure 22: 6.12.11 The cottonwood beetle larvae grow from egg masses to mature insects

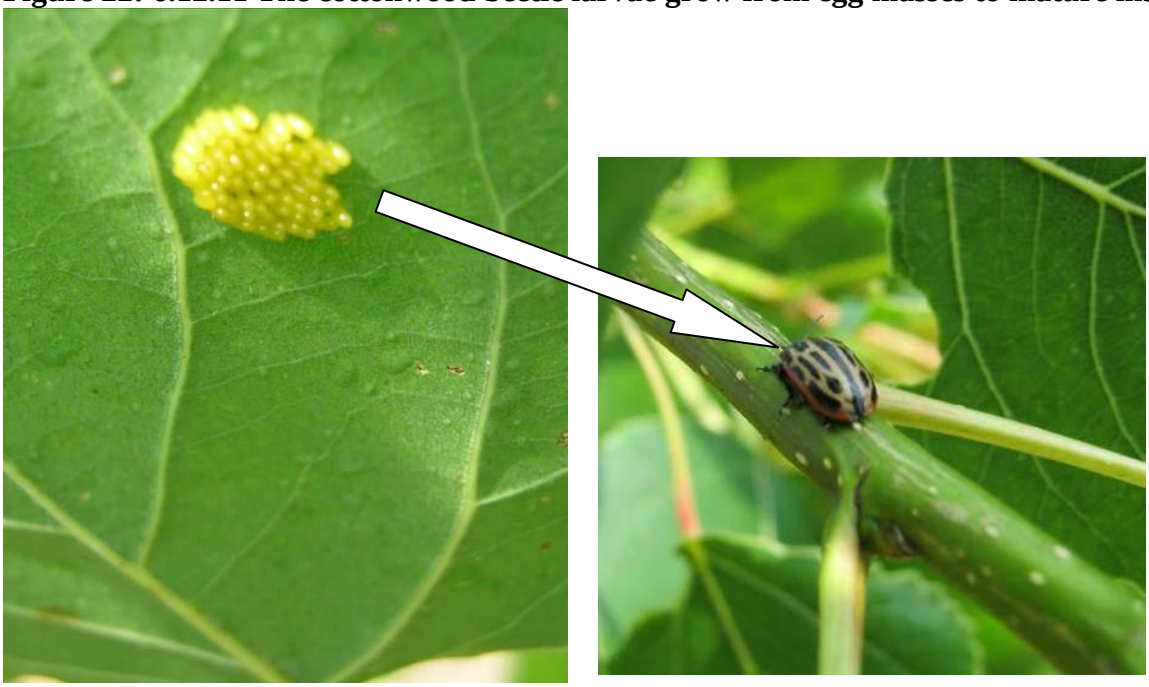


Figure 23: 6.12.11 There is no obvious agronomic fatal flaw to healthy EBuffer growth

Photo by L.Ennis, S&ME

Figure 24: 6.12.11 EBuffer #1 Site map showing tree row locations

Graphic by L.Ennis, S&ME

Figure 25: 6.12.11 EBuffer #2 Site map showing tree row locations

Graphic by L.Ennis, S&ME

Section 10. EBuffer® O&M Inspection Log

May 25, 2011

EBUFFER® O&M INSPECTION LOG

2011 Installation Summary
White St. Landfill EBuffer®

3017 Valley View Ln
North Liberty, Iowa 52317
Phone (319) 665-3547
Fax (319) 665-8035
www.ecolotree.com
Email: info@ecolotree.com

To: **Mr. Ed Hendriques, S&ME**

By: **Dr. Louis Licht, P.E.**
Matt Wilshusen, Staff Agronomist

Site: **_White Street Landfill_____**
Location: _Greensboro, NC_____

Site Assessment: On-Site Date: __4/30-2011: Start Time: _1 PM
Site Staff: Name: __ Matt Wilshusen **Title: __**Agronomist**_Company:__**Ecolotree____
Name**: __Ed Werner** Title**: __Technician_**Company**:__Ecolotree____**
Name**: __Lisa Ennis** Title**: _Support staff_**Company**:__S&ME____**
Weather conditions (sunny, rainy, temperature, etc.): **__sunny 75F**
Ground conditions (saturated, moist, dry, etc.): _Ground was ponding in many areas. Most areas were dry, but planting conditions caused some bridging and hard clods

Site conditions:

1. **Has the surface been disturbed by rutting, erosion channels, tire tracks, settlement, etc**?

   Ponded areas had tracks and need to be leveled. No cross erosion rills were observed. The side hill and turf are holding very well.

2. **Are there any indications of vandalism or trespassing?**

   None

3. **Have the tree planting trenches, tree planting holes, or other areas settled below grade?**

   No, most areas trench spoils are still above grade. The trenches need several more large rains to settle the soil before final backfilling. Many areas had bridging.

4. **Is there ponded water at the site?** Yes, North end of north site and a few low areas in larger field. Willows in these areas are growing well, but poplars do not look like they will make it.

5. **Have the number of live/dead trees changed since the last inspection?**

No changes since installation. Plenty of moisture, with all trees leafing out, and no die back

6. **Do the leaves look damaged, discolored?** Trees are green and growing like other healthy poplar planted in spring 2011.

7. **Has the outer bark been damaged by deer rubbing, rabbit gnawing, equipment damage, etc.?**

   None at this time

8. **Are there visible animal burrows next to the trees?** No.

9. **Are there visible insects on the tree bark or on the leaves (check the underside)?** Yes, insects were observed, Particularly the Cottonwood Beetles, regular inspections need to be completed, and insecticide applied if needed.

10. **Are there holes in the bark, oozing sap, wood fras, or other sign of borer activity?** No

11. **Does the grass look healthy**? Yes, the understory looks healthy but sparse in some areas.

12. **How tall is the grass (in inches)?** 6-8 inches

Maintenance performed:

1. Inspection was for the overall tree population and health. The trees are healthy and growing to the capacity of the site soils and climate.
2. Met with S&ME staff Lisa Ennis. She scouted the site for cottonwood beetles to help determine need for an insecticide treatment.
3. Cottonwood beetles and larva at different stages of growth were found. An insecticide application was completed by Ecolotree Staff.
4. Band applied herbicide to the tree row to reduce grass and weed competition on the tree rows.
5. Filled in settled soil in the auger holes, and spaded in as many bridged areas as we could find.

Comments or additional observations:

1. Overall, both sections looked very good, with trees leafing out and expanding on 12 inch stems. Only found five trees dead, but poplars in the ponded areas are struggling. One of the first things you notice on the north section is a little less than half of it is ponded.
2. Trees that were planted exclusively with an auger are not growing as fast as trenched trees. This slower growth is due in part to more confined root expansion.
3. Soil work will need to be completed in the fall to tip in the edges of the trench spoil after a good settling timeframe. May need to use backhoe to reduce air pockets, too thick for hand tools.
4. The grass understory is still sparse, but looks like it will keep filling in on its own.
5. The tree guards should help deter the deer from grubbing or rubbing, but a watchful eye will be needed to prevent damage.
6. The 4 wheeler was the right pieces of equipment to make it through the wet areas without causing any further rutting.

Recommended 2011 O&M actions:

1. The first three years after installation are very important to stay on top of maintenance and scouting. This is a living biological system designed to provide clients with valuable solutions. After making the investment, it is imperative to follow through on O&M.
2. Continue to scout for insects, take pictures to consult with Matt Wilshusen, Ecolotree's agronomist. Depending on the insect population, damage and upcoming weather patterns insecticide may need to prevent defoliation or deformation threat.
3. Follow the Ecolotree agronomy plan.
4. Scout for mammal and rodent activity. Some trees closest to the creek are normally expected to be effected. Take pictures, and then email Matt Wilshusen, Ecolotree's agronomist to discuss solutions. Keeping grass thatch off the tree rows helps reduce rodent habitat. The tree rows should be sprayed with herbicide again in 2012 and 2013.
5. Mowing maintenance is required in the future by local mowers. The EBuffer should be mowed at least 2 times in 2011 – July, and early October.
6. In Fall 2011Ecolotree staff will work with local contractors to replant and regrade
7. A summary report will be prepared to document the EBuffer Installation year.

Figure 26: 4.30.11 Buffer#2 breaking bud

Figure 27: EBuffer #1 has had standing water on one south end due to poor drainage

Figure 28: Insecticide (Sevin) was applied by Ecolotree staff to control insects.

Note: **Always spray downwind into the tree foliage to prevent contact with product.**

APPENDIX IV
EBuffer® Installation Photographs

APPENDIX V
EBuffer® Inspection Reports

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

DATE: 6/7/2011

INSPECTOR: Lisa Ennis

SITE NAME: **WHITE STREET LANDFILL**

E-BUFFER AREA INSPECTED: **AREA II-2** **or** **AREA II-9**

Weather conditions (sunny, rainy, temperature, etc.):

Sunny, clear, 90°

Ground conditions (saturated, moist, dry, etc.):

Dry

Site conditions: Briefly answer the questions below:

1. **Has the surface been disturbed by rutting, erosion channels, tire tracks, settlement, etc?**

   NO YES (if yes describe and depict on Buffer Plan Map)

2. **Are there any indications of vandalism or trespassing?**

   NO YES (specify)

3. **Have the tree planting trenches, tree-planting holes, or other areas settled below grade?**

   NO YES (if yes describe and depict on Buffer Plan Map)

   <10% - random

4. **Is there ponded water at the site?**

   NO YES (if yes describe and depict on Buffer Plan Map)

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

5. **Number of dead Willow Trees (depict locations on map)** 1
6. **Number of dead Poplar Trees (depict locations on map)** 13
7. **Have the number of live/dead trees changed since the last inspection? Is the death random or zones?**

   NA, Random

8. **Do the leaves look damaged, discolored, veins darker than the webbing?**

   No

9. **Has the outer bark been damaged by deer rubbing, rabbit gnawing, equipment damage, etc.?**

   No

10. **Do the tips of the branches look eaten?**

    No

11. **Are there visible animal burrows next to the trees?**

    No

12. **Are there visible insects on the tree bark or on the leaves (check the underside)?**

    Some

13. **Are there holes in the bark, oozing sap, wood fras, or other sign of borer activity?**

    No

14. **Does the grass look green and healthy?**

    Yes

15. **Does the grass need to mowed?**

    Yes

Please take pictures, and send ones that help illustrate any problems to Ecolotree

147 end
146 end
51
50 end
40
50
140
160
20
120
80
180
169 end
100
99 end
1
w = 1
P = 4
1111 4
Area
II - 9
Death
Total
Poplars = 13
Willows = 1

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

DATE: 6/7/11

INSPECTOR: Lisa Ennis

SITE NAME: **WHITE STREET LANDFILL**

E-BUFFER AREA INSPECTED: **AREA II-2** **or** **AREA II-9**

Weather conditions (sunny, rainy, temperature, etc.)

Sunny, clear, 90°

Ground conditions (saturated, moist, dry, etc.):

Dry

Site conditions. Briefly answer the questions below:

1 **Has the surface been disturbed by rutting, erosion channels, tire tracks, settlement, etc**?

NO YES (if yes describe and depict on Buffer Plan Map)

2. **Are there any indications of vandalism or trespassing?**

NO YES (specify)

3 **Have the tree planting trenches, tree-planting holes, or other areas settled below grade?**

NO YES (if yes describe and depict on Buffer Plan Map)

90% of trees have settlement, some significant, with standing water in bottom

4. Is there ponded water at the site?

NO YES (if yes describe and depict on Buffer Plan Map)

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

5. **Number of dead Willow Trees (depict locations on map)** 9
6. **Number of dead Poplar Trees (depict locations on map)** 31
7. **Have the number of live/dead trees changed since the last inspection? Is the death random or zones?**

   NA, both

8. **Do the leaves look damaged, discolored, veins darker than the webbing?**

   Yes

9. **Has the outer bark been damaged by deer rubbing, rabbit gnawing, equipment damage, etc.?**

   No

10. **Do the tips of the branches look eaten?**

    No

11. **Are there visible animal burrows next to the trees?**

    No

12. **Are there visible insects on the tree bark or on the leaves (check the underside)?**

    Yes, on most

13. **Are there holes in the bark, oozing sap, wood fras, or other sign of borer activity?**

    No

14. **Does the grass look green and healthy?**

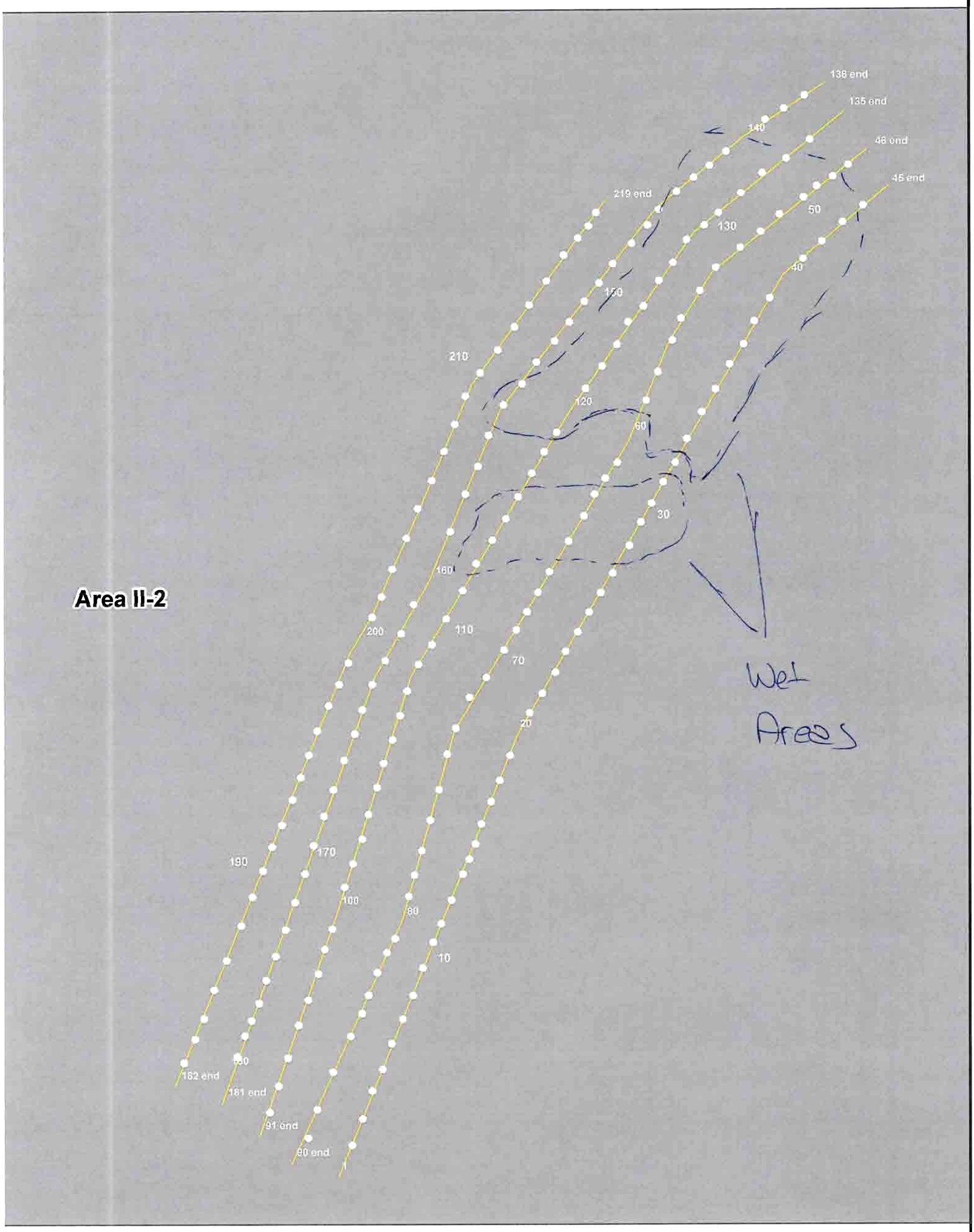
    Yes

15. **Does the grass need to mowed?**

    No

Please take pictures, and send ones that help illustrate any problems to Ecolotree

P =
W =
36 end
135 end
40 end
45 end
120
60
160
200
20
100
80
182 end
180
181 end
90 end
91 end
1
Death
Total
Poplars: 31
Willows: 9
Area
II-2
M =
D =


Area II-2
138 end
135 end
46 end
45 end
140
219 end
50
130
40
150
210
120
60
30
160
200
110
70
20
190
170
100
80
10
182 end
181 end
91 end
90 end
Wet
Areas

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

5. **Number of dead Willow Trees (depict locations on map)** 11

6. **Number of dead Poplar Trees (depict locations on map)** 15

7. **Have the number of live/dead trees changed since the last inspection? Is the death random or zones?**

   Yes, yes

8. **Do the leaves look damaged, discolored, veins darker than the webbing?**

   Some are pinkish-red

9. **Has the outer bark been damaged by deer rubbing, rabbit gnawing, equipment damage, etc.?**

   No

10. **Do the tips of the branches look eaten?**

    No

11. **Are there visible animal burrows next to the trees?**

    No

12. **Are there visible insects on the tree bark or on the leaves (check the underside)?**

    No

13. **Are there holes in the bark, oozing sap, wood fras, or other sign of borer activity?**

    No

14. **Does the grass look green and healthy?**

    No, it is dying

15. **Does the grass need to mowed?**

    No

Please take pictures, and send ones that help illustrate any problems to Ecolotree

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

DATE: 7/13/11

INSPECTOR: Lisa Ennis

SITE NAME: **WHITE STREET LANDFILL**

E-BUFFER AREA INSPECTED: **AREA II-2** **or** **AREA II-9**

Weather conditions (sunny, rainy, temperature, etc.):

Sunny 90°

Ground conditions (saturated, moist, dry, etc.):

moist to dry

Site conditions: Briefly answer the questions below:

1. **Has the surface been disturbed by rutting, erosion channels, tire tracks, settlement, etc?**

   NO YES (if yes describe and depict on Buffer Plan Map)

2. **Are there any indications of vandalism or trespassing?**

   NO YES (specify)

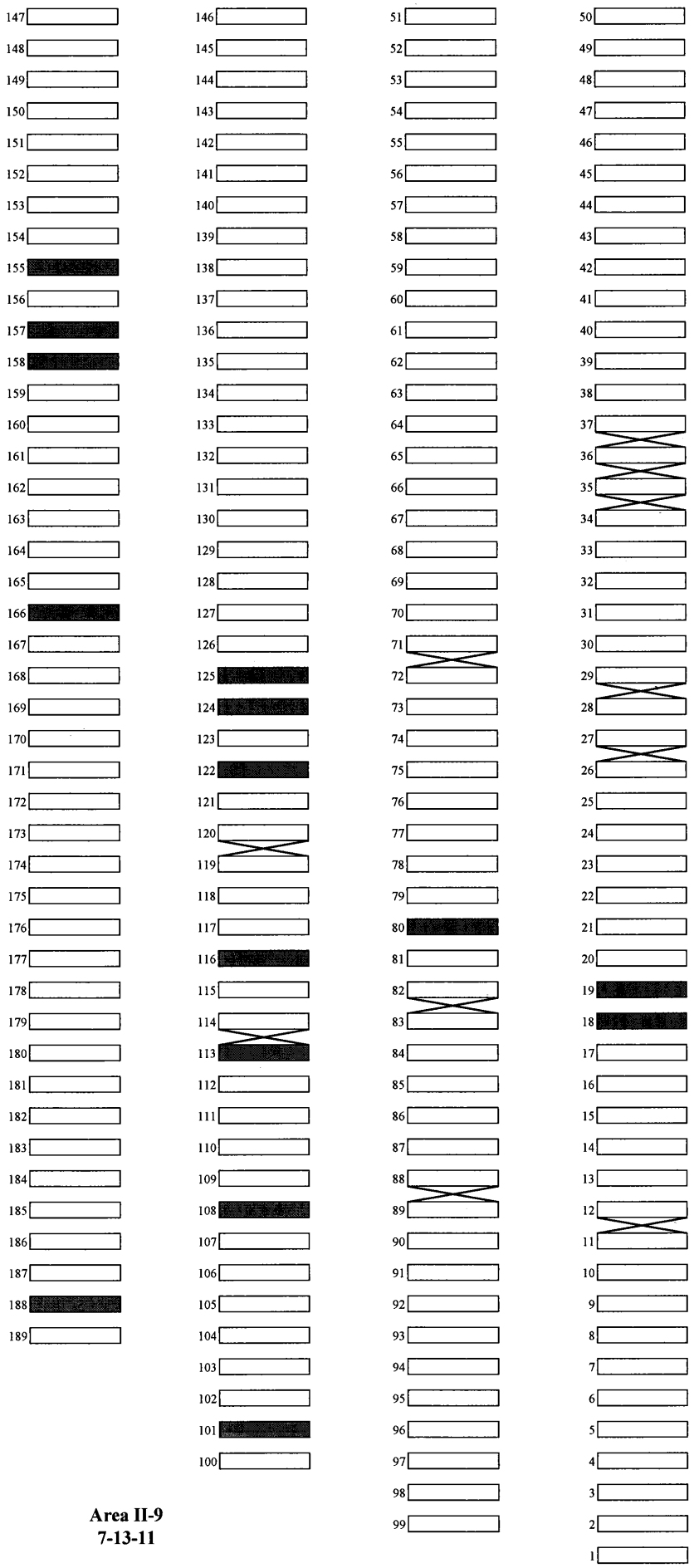
3. **Have the tree planting trenches, tree-planting holes, or other areas settled below grade?**

   NO YES (if yes describe and depict on Buffer Plan Map)

   < 10%

4. **Is there ponded water at the site?**

   NO YES (if yes describe and depict on Buffer Plan Map)



Area II-9
7-13-11

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

DATE: 7/13/11

INSPECTOR: Lisa Ennis

SITE NAME: **WHITE STREET LANDFILL**

E-BUFFER AREA INSPECTED: **AREA II-2** **or** **AREA II-9**

Weather conditions (sunny, rainy, temperature, etc.):

Sunny, 90°

Ground conditions (saturated, moist, dry, etc.):

Saturated + Moist

Site conditions: Briefly answer the questions below:

1. **Has the surface been disturbed by rutting, erosion channels, tire tracks, settlement, etc?**

   NO YES (if yes describe and depict on Buffer Plan Map)

2. **Are there any indications of vandalism or trespassing?**

   NO YES (specify)

3. **Have the tree planting trenches, tree-planting holes, or other areas settled below grade?**

   NO YES (if yes describe and depict on Buffer Plan Map)

   Same as previous

4. **Is there ponded water at the site?**

   NO YES (if yes describe and depict on Buffer Plan Map)

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

5. **Number of dead Willow Trees (depict locations on map)** 17

6. **Number of dead Poplar Trees (depict locations on map)** 32

7. **Have the number of live/dead trees changed since the last inspection? Is the death random or zones?**

   Yes. Mostly in areas that are saturated or have standing water in hole.

8. **Do the leaves look damaged, discolored, veins darker than the webbing?**

   Some leaves are pinkish-red.

9. **Has the outer bark been damaged by deer rubbing, rabbit gnawing, equipment damage, etc.?**

   No

10. **Do the tips of the branches look eaten?**

    No

11. **Are there visible animal burrows next to the trees?**

    No

12. **Are there visible insects on the tree bark or on the leaves (check the underside)?**

    No

13. **Are there holes in the bark, oozing sap, wood fras, or other sign of borer activity?**

    No

14. **Does the grass look green and healthy?**

    Yes

15. **Does the grass need to mowed?**

    Yes

Please take pictures, and send ones that help illustrate any problems to Ecolotree

Area II-2
7-13-11

219		136		135		46		45	New Poplar
218		137		134		47		44	New Poplar
217		138		133		48		43	New Poplar
216		139		132		49		42	New Poplar
215		140		131		50		41	New Poplar
214		141		130		51		40	New Poplar
213		142		129		52		39	New Poplar
212		143		128		53	New Poplar	38	New Poplar
211		144		127		54	New Poplar	37	New Poplar
210		145		126		55	New Poplar	36	New Poplar
209		146		125		56	New Poplar	35	New Poplar
208		147		124		57	New Poplar	34	New Poplar
207		148		123		58	New Poplar	33	New Poplar
206		149		122		59	New Poplar	32	New Poplar
205		150		121		60		31	New Poplar
204		151		120		61	New Poplar	30	New Poplar
203		152		119		62	New Poplar	29	New Poplar
202		153		118		63	New Poplar	28	New Poplar
201		154		117		64	New Poplar	27	New Poplar
200		155		116		65		26	New Poplar
199		156		115		66	New Poplar	25	New Poplar
198		157		114		67	New Poplar	24	New Poplar
197		158		113		68	New Poplar	23	
196		159		112		69	New Poplar	22	New Poplar
195		160		111		70	New Poplar	21	
194		161		110		71		20	
193		162		109		72		19	New Poplar
192		163		108		73		18	
191		164		107		74	New Poplar	17	
190		165		106		75	New Poplar	16	
189		166		105		76	New Poplar	15	
188		167		104		77	New Poplar	14	
187		168		103		78		13	New Poplar
186		169		102		79		12	
185		170		101		80	New Poplar	11	
184		171		100		81		10	
183		172		99		82	New Poplar	9	
182		173		98		83	New Poplar	8	
		174		97		84	New Poplar	7	
		175		96		85	New Poplar	6	
		176		95		86		5	
		177		94		87		4	
		178		93		88		3	
		179		92		89		2	
		180		91		90	New Poplar	1	
		181							

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

DATE: 8-12-11

INSPECTOR: Martin Nabe

SITE NAME: **WHITE STREET LANDFILL**

E-BUFFER AREA INSPECTED: **AREA II-2** **or** **AREA II-9**

Weather conditions (sunny, rainy, temperature, etc.):
83°F

Ground conditions (saturated, moist, dry, etc.):
Dry -> Moist

Site conditions: Briefly answer the questions below:

1. **Has the surface been disturbed by rutting, erosion channels, tire tracks, settlement, etc?**

   NO YES (if yes describe and depict on Buffer Plan Map)
   Not since last inspection

2. **Are there any indications of vandalism or trespassing?**

   NO YES (specify)

3. **Have the tree planting trenches, tree-planting holes, or other areas settled below grade?**

   NO YES (if yes describe and depict on Buffer Plan Map)
   Same as previous

4. **Is there ponded water at the site?**

   NO YES (if yes describe and depict on Buffer Plan Map)
   Hole 41 contained standing water

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

5. **Number of dead Willow Trees (depict locations on map)** 116

6. **Number of dead Poplar Trees (depict locations on map)** 31

7. **Have the number of live/dead trees changed since the last inspection? Is the death random or zones?** Yes - Random and zones (NE in particular)

8. **Do the leaves look damaged, discolored, veins darker than the webbing?** No

9. **Has the outer bark been damaged by deer rubbing, rabbit gnawing, equipment damage, etc.?** No

10. **Do the tips of the branches look eaten?** Yes- deer are browsing on willows

11. **Are there visible animal burrows next to the trees?** No

12. **Are there visible insects on the tree bark or on the leaves (check the underside)?** No

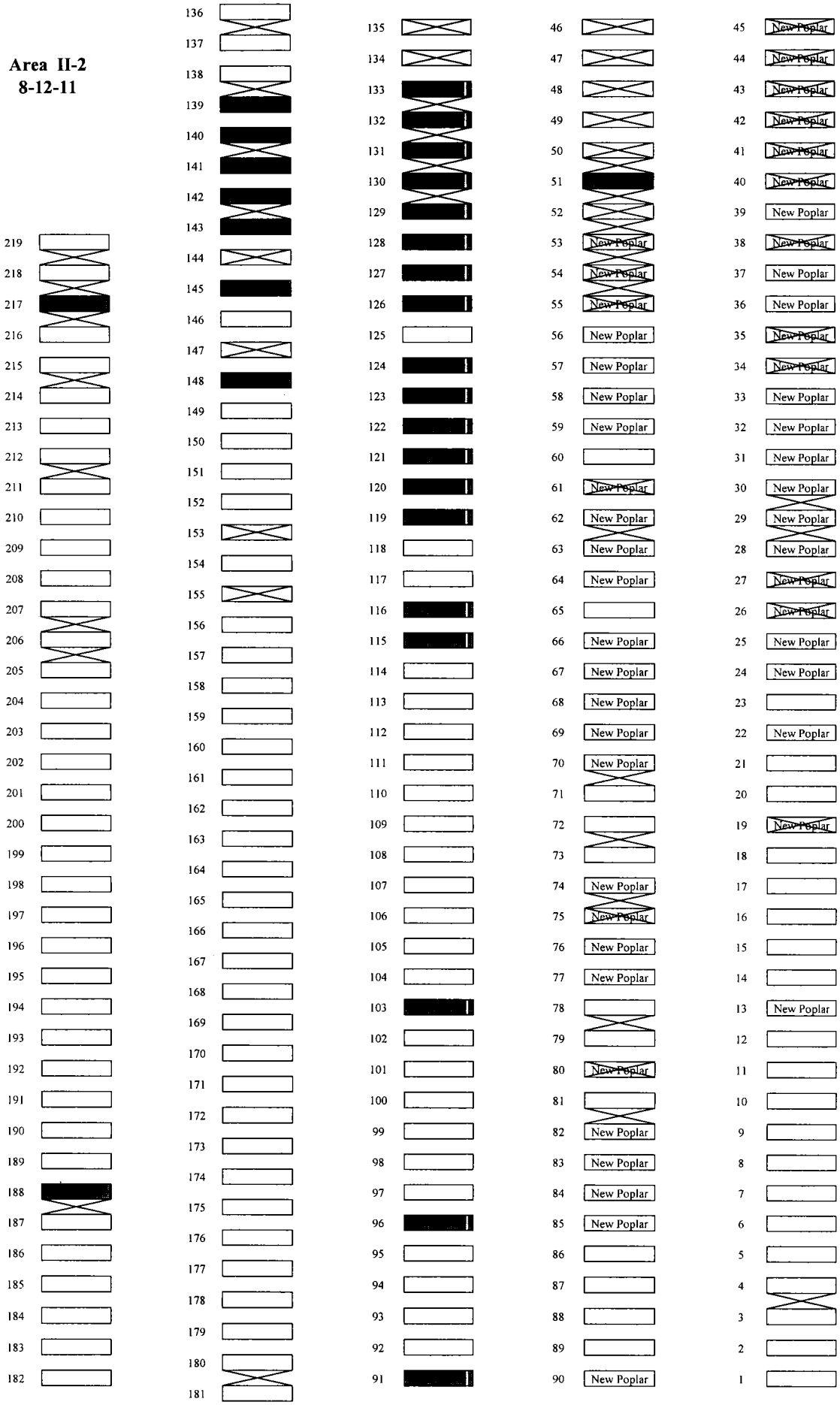
13. **Are there holes in the bark, oozing sap, wood fras, or other sign of borer activity?** No

14. **Does the grass look green and healthy?** Yes - waist to chest high

15. **Does the grass need to mowed?** Yes

Please take pictures, and send ones that help illustrate any problems to Ecolotree

Area II-2
8-12-11



WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

DATE: 8-12-4

INSPECTOR: Martin Mabe

SITE NAME: **WHITE STREET LANDFILL**

E-BUFFER AREA INSPECTED: **AREA II-2** **or** **AREA II-9**

Weather conditions (sunny, rainy, temperature, etc.): Sunny 83°F

Ground conditions (saturated, moist, dry, etc.): Dry

Site conditions: Briefly answer the questions below:

1. **Has the surface been disturbed by rutting, erosion channels, tire tracks, settlement, etc?**

   NO YES (if yes describe and depict on Buffer Plan Map)

2. **Are there any indications of vandalism or trespassing?**

   NO YES (specify)

3. **Have the tree planting trenches, tree-planting holes, or other areas settled below grade?**

   NO YES (if yes describe and depict on Buffer Plan Map)

   <10%

4. **Is there ponded water at the site?**

   NO YES (if yes describe and depict on Buffer Plan Map)

WHITE STREET LANDFILL
EBUFFER® MONTHLY INSPECTION REPORT

5. **Number of dead Willow Trees (depict locations on map)** 6

6. **Number of dead Poplar Trees (depict locations on map)** 1

7. **Have the number of live/dead trees changed since the last inspection? Is the death random or zones?** Yes Random

8. **Do the leaves look damaged, discolored, veins darker than the webbing?** No

9. **Has the outer bark been damaged by deer rubbing, rabbit gnawing, equipment damage, etc.?** No

10. **Do the tips of the branches look eaten?** Yes willows have deer browsing on them regularly.

11. **Are there visible animal burrows next to the trees?** No

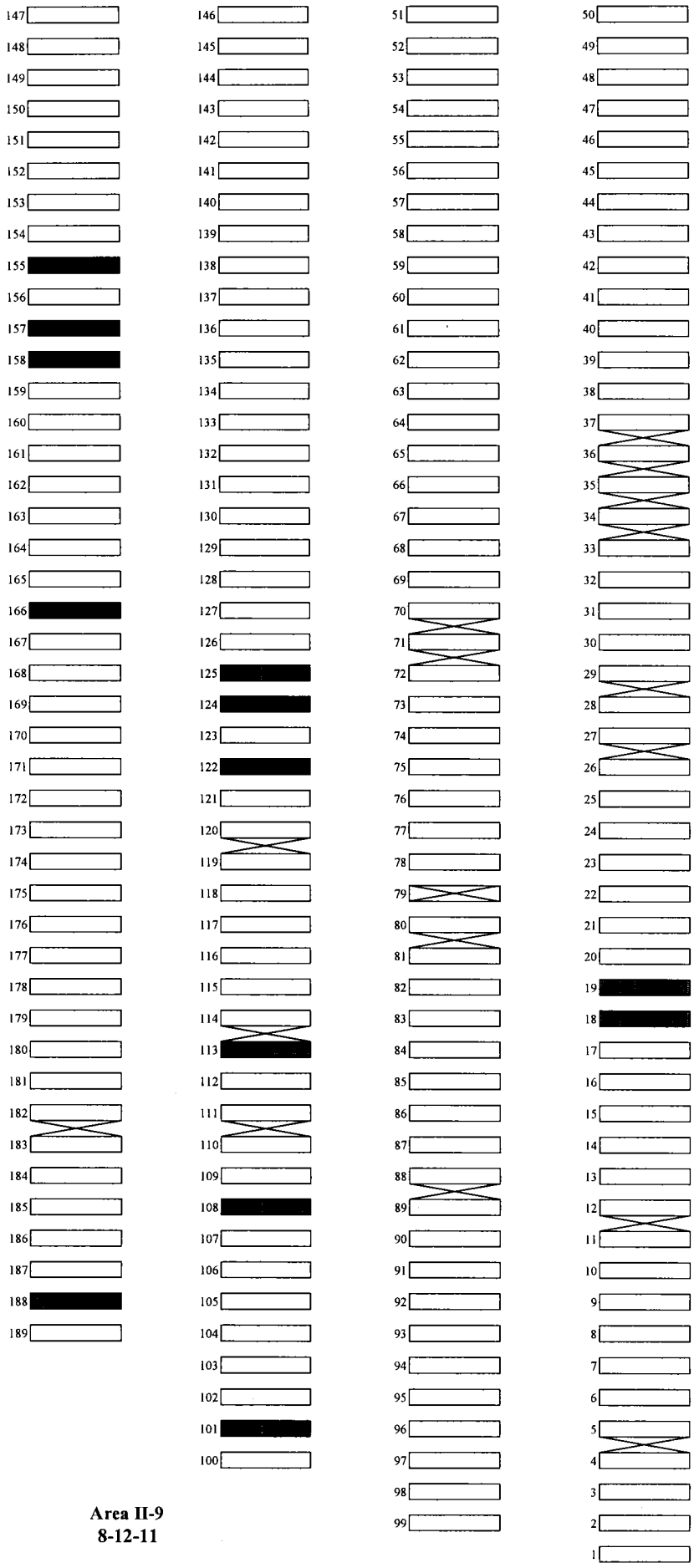
12. **Are there visible insects on the tree bark or on the leaves (check the underside)?** No

13. **Are there holes in the bark, oozing sap, wood fras, or other sign of borer activity?** No

14. **Does the grass look green and healthy?** Green but very sparse

15. **Does the grass need to mowed?** Yes

Please take pictures, and send ones that help illustrate any problems to Ecolotree



Area II-9
8-12-11