

FINAL REPORT

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Landfill and Wastewater Treatment RNG Chemical and Physical Profiling: Increasing the Database Set

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Executive Summary

The purpose of this USDOT PHMSA sponsored research project was to address the continued development of a draft guidance document for the safe introduction of renewable gas into natural gas pipelines. This project was designed to build upon previous studies executed by GTI to further characterize and understand the chemical and biological composition of fully upgraded renewable gas. Gas samples (with an emphasis on post-clean up) were collected from landfills and subjected to quantitative analytical chemical and biological tests to measure the concentration of target species. The focus was on samples from facilities currently producing high BTU renewable gas. The two criteria for target species are that they (1) are likely to be in the product gas and (2) have potential to impact pipeline integrity or end use applications. The results of this study are not intended to endorse any specific clean up technologies or create national standards for concentration limits for constituents of concern.

This project was cancelled before the complete set of samples could be collected and analyzed. To date, samples were collected from six different landfills. Two landfills were collected a second time to examine seasonal variation, for a total of eight sites, and twenty-four samples. The clean up technologies used at the six landfills include membrane (one site), PSA (two sites), and physical solvent (three sites).

The complete database of analytical results collected to date is reported in the Appendix. A limited amount of statistical evaluation was started before the project was cancelled, this data is also presented in the Appendix. The data evaluation, to be performed in Task 2, had not started.

Introduction / Background

Challenge for this Research

Local gas distribution companies (LDCs) and transmission companies are increasingly seeking to purchase and take delivery of renewable natural gas (RNG or biomethane) derived through biomass conversion in order to increase their “green portfolio” of gas products. However, the gas is often not routinely accepted into existing pipeline systems due to perceived quality issues. This perception is caused by a lack of understanding of the composition of the gas.

Although RNG products possess characteristics common to natural gas, the challenge is that there are many components captured under the category of “trace constituents” which may not be similar, and which may influence the overall RNG gas quality. The variances between natural gas and RNG are only beginning to be understood but the implications are clear: while there are limited concerns pertaining to trace constituents in cleaned RNG from dairy waste conversion, landfill and wastewater treatment (WWT) biomethane is more complex and the database for landfill and WWT derived RNG is still incomplete.

Understanding the composition of RNG is key to evaluating its quality and potential as an interchangeable product for general use in gas distribution and transmission networks.

Past Research

GTI responded to a DOT/PHMSA BAA in late 2007 with a proposal to examine biomethane as an issue pertaining to New Fuels Transportation (DTPH56-07-000002). This proposal, *Pipeline Quality Biogas: Guidance Document for Dairy Waste, Waste Water Treatment Sludge and Landfill Conversion*, resulted in Project 250 (completed December 2009). Forty-two raw and cleaned biogas (biomethane) samples from three landfills (one region within the U.S.) and one WWT plant were tested for an exhaustive list of major, minor, and trace constituents, including volatile organic compounds, semi-volatile organic compounds, metals, pesticides, PCBs, siloxanes, and biologicals. The study resulted in the following conclusions:¹

- Constituents present in biogas from landfills and WWT can vary widely.
- Raw biogas requires upgrading and conditioning for production of a suitable product.
- Landfill biogas/biomethane profiles may change with time.
- The database pertaining to landfill and WWT derived biomethane profiling is incomplete.

Because this dataset for landfill and WWT derived RNG was limited, additional characterization of renewable fuels from these sources was warranted in order to provide clear guidance to the industry. There is a concern that constituents resulting from the anaerobic digestion of the wide variety of materials found both in landfills and WWT will remain after the raw biogas has gone through gas processing and upgrading to the final biomethane product.

Work initiated under PHMSA Project 250 began the construction of a database to identify, characterize, and quantify major and trace constituents in RNG from various sources. This project was of high interest to the natural gas community and to those in the biogas cleanup community. The work on PHMSA Project 351 (the current project) was to produce a larger

dataset which could be subjected to statistical analysis in order to discern trends and infer conclusions on to the larger population. This data could influence the types of research, equipment, and monitoring devices required in order to maintain a safe pipeline network. It would further understand this new product, so that interchangeability is seamless and without consequence.

Project Objectives

GTI's goal is to help the natural gas industry establish renewable gas as a fungible zero-carbon product "fit for purpose" for injection into natural gas pipelines. This project was designed to continue the development of a draft guidance document for the safe introduction of renewable gas into natural gas pipelines. This project built upon previous studies executed by GTI to further characterize and understand the chemical and biological composition of fully upgraded renewable gas. Gas samples (with an emphasis on post-clean up) were to be collected from landfills and WWT plants, and subjected to quantitative analytical chemical and biological tests to measure the concentration of target species. The focus was on samples from facilities currently producing high BTU renewable gas.

The two criteria for target species selection were that they

- 1) are likely to be in the product gas and
- 2) have potential to impact pipeline integrity or end use applications.

The analytical results obtained from the testing program were to be combined with past data and used to report most probable concentrations for those constituents found to be present in renewable gas. The results of this study were not intended to endorse any specific clean up technologies or create national standards for concentration limits for constituents of concern.

Project Benefit

This project is relevant to PHMSA's mission of safety and environmental protection in that it addresses safe introduction and distribution of renewable gas to natural gas pipeline networks. Safe and reliable transportation of fuels is a strategic goal of PHMSA. RNG offers an exciting addition to a growing energy demand worldwide.

Research Method / Scope

A short description of each of the research tasks is provided below to explain the methodology and reasoning behind the approach. This project utilized the analytical chemistry, pipeline corrosion, gas combustion, and microbiology technical capabilities and resources within GTI. Through the co-funding project, it also incorporated the expertise and knowledge of those in the biogas cleanup industry through a liaison with the High-BTU group at SWANA (Solid Waste Association of North America). This association facilitated GTI's sampling of landfill gas for inclusion in the study.

The proposed work included four primary Tasks:

Task 1 - Laboratory Testing and Analysis of Biogas/RNG (Months 1-14)

This project's focus is on the sampling and analysis of processed biogas in order to validate the introduction of landfill- and WWTP-derived renewable gas into natural gas pipelines. To that end, the strategy for this project was to select up to three landfill sites per technology for a total of up to nine landfill sites. Up to four wastewater treatment plants sites were to be added to expand the source database. Samples were retrieved from as diverse regions as possible. The exact number and location of sites to be tested was ultimately based on access to sites that upgrade and process raw biogas. At least four sites encompassing the three technologies were to be visited multiple times to look at seasonal variations in the gas output. Sampling techniques will be similar to those in the previously executed PHMSA Project 250, in order to combine results for a common database. An off-site sampling service was used for the sampling services once they were trained on proper sampling techniques.

Only processed gas was sampled for this specific project. There is a 30-year history of raw biogas data, including data obtained from recent GTI projects. Based on feedback from the co-funding project sponsors and participants, the focus of this project was on validating the introduction of renewable gas into the pipeline. Samples were collected in triplicate to allow for statistical comparisons and for conclusions to be drawn.

Previous biogas and biomethane analytical samples were tested for a wide variety of analytes. This project focused on constituents that would have an impact on the fungibility of the renewable gas. The list of analytes was divided into two categories, those constituents with specific natural gas tariff limits, and those constituents known to be present in processed biomethane, or are of concern, due to potential breakthrough because of their presence in untreated biogas. The latter category can be considered the "other" classification in natural gas tariff documents, and is not well defined.

This project was cancelled before the WWT plant portion and some of the seasonal replicates for Task 1 of the project could be executed.

Task 2 - Data Compilation/Final Report (Months 12-16)

Task 2 was designed to compile all results of Task 1 in a comprehensive, organized document. It was to present interpretation of the results from the acquired sample set and to provide data interpretation of the results in light of previously obtained data from Project 250.

This project was cancelled before Task 2 of the project could be executed.

Task 3 - Update the Guidance Document (Months 14-18)

This task was to continue the generation of a draft Guidance Document regarding analytical parameters of consideration for introduction of renewable gas into the natural gas network. Once all of the data was compiled, a statistical analysis was to be performed including determination of means, medians, ranges, and standard deviations for each constituent of interest. The heating value, Wobbe Index, and hydrocarbon dewpoint will be calculated for each sample. The complete analysis was to incorporate the historical data collected from previous projects and data from scientific literature. Probability calculations were to be performed to draw conclusions from the data at different confidence levels to determine most probable concentration limits.

The Guidance Document was to be based on the format of GTI's previous report: *Pipeline Quality Biogas: Guidance Document for Dairy Waste, Waste Water Treatment Sludge and Landfill Conversion*.¹ The goal of the Guidance Document was to provide analytical and other key information to gas transmission companies and LDCs so that

- 1) parameters specific to clean biomethane derived from anaerobic digestion processes can be identified; and
- 2) productive discussion between the biomethane supplier and the gas utility company may be executed.

The draft document was to be reviewed by all project funders along with a panel of GTI experts in transmission, distribution and end use, prior to final publication. No references were to be made to a specific site, and all analytical data is to be presented without reference to its provenance. Activities from this task were to result in a revised draft Guidance Document.

This project was cancelled before Task 3 of the project could be executed.

Task 4: Project Management (Months 1-18)

The purpose of this Task is to manage the project and provide all deliverables to DOT including scheduling, budgeting, and reporting. Project Management also includes all meetings with DOT, peer review meetings, public presentations, and project quality assurance activities at GTI through the Delivery Sector's Technical Quality Plan program and technical review board.

Task 1 - Laboratory Testing and Analysis of Biogas/RNG - Status to Date

Gas samples (post clean up) were collected from landfills and subjected to various chemical and biological testing, focusing on facilities that are currently producing high BTU renewable gas. Target constituents that are likely to be in the product gas and that have an impact on pipeline integrity or end use applications were included in the testing program.

Site and Technology Selection

Considerable background work was completed in a separate project to determine the three most relevant gas cleanup technologies. With input from the High-Btu Group at the Solid Waste Association of North America (SWANA), landfills utilizing these gas cleanup technologies were chosen for this project. SWANA also assisted in obtaining access agreements with the candidate landfills. Per the agreement with SWANA and the co-funding project sponsors, the names of the facilities are being kept confidential.

The three specific gas cleanup technologies selected are

- 1) Physical Solvent;
- 2) Pressure Swing Adsorption; and
- 3) Gas Separation Membrane

While the gas cleanup technologies are divided into the three categories based on their CO₂ removal technology, these systems use multiple unit operations designed to remove other components such as oxygen and water. These add-on units are located either upstream or downstream from the main cleanup system.

Physical solvents preferentially absorb acid gases, unlike chemical solvents that react with acid gases. One popular solvent is based on a mixture of the dimethyl ethers of polyethylene glycol (DEPG). Solvents containing DEPG are licensed and/or manufactured by several companies including Coastal Chemical Company (as Coastal AGR), Dow (Selexol™), and UOP (Selexol™). Other process suppliers, such as Clariant GmbH of Germany, offer similar chemical solvents. The manufacturers claim that DEPG removes carbon dioxide, hydrogen sulfide, other sulfur compounds (COS, mercaptans), ammonia, HCN, and metal carbonyls. SouthTex Treaters is an example of one company that currently uses Selexol™ technology to treat raw landfill gas at three different landfill sites in the US.

Pressure swing adsorption (PSA) separates mixtures of gases according to the species' molecular characteristics, affinity for, and attraction to the surface of an adsorbent material. These materials can be molecular sieves (zeolites), activated carbon, silica gel, and/or alumina. In gas cleanup applications the physical adsorption of CO₂ occurs at high pressure. The process then swings to a lower pressure to desorb the adsorbed gas. In most applications pre- or post-treatment is required to reduce contaminants such as non-methane organics (NMOC's) and hydrogen sulfide. One Midwest landfill that currently upgrades landfill gas uses the QuestAir gas purification system manufactured by Xebec Adsorption. Xebec claims removal of carbon dioxide, water, and some trace contaminants. Another example is Guild Associates who has installed seven landfill gas to high BTU projects. They claim that their Molecular Gate process removes nitrogen and carbon dioxide, or carbon dioxide and water, in a single step. A variant of

PSA is VPSA (V=Vacuum). Adding the vacuum step can improve removal of nitrogen and some oxygen.

Gas separation membranes use selective permeation, driven by partial pressure differences across the membrane, to separate gas components. Air Liquide's MEDAL™ (MEmbrane Systems DuPont Air Liquide) was originally a joint venture begun in 1988 between Air Liquide and DuPont. It uses polymeric fiber spinning technology developed by DuPont, and removes carbon dioxide, hydrogen sulfide, and water. Membranes can also remove about half the O₂. Other species are removed by pre- and post- treatment. Many current landfills are using the MEDAL system for their biogas upgrading.

List of Constituents Analyzed

Previous biogas and biomethane analytical samples were tested for a wide variety of analytes. This project focused on constituents that would have an impact on the fungibility of the landfill-derived renewable gas. The spotlight was on those analytes that have known tariff limits or that may pass through the gas processing and purification equipment.

Gas quality specifications (tariffs) currently exist for traditional natural gas supplies; however, they often do not directly address trace constituents and therefore do not capture potentially significant components found in non-traditional gas such as landfill-derived renewable gas. Special emphasis must be given to constituents that are known to have an impact on pipeline integrity, end use applications, and environmental and human health.

The suggested list of analytes for inclusion in this project can be divided into two categories, those with specific natural gas tariff limits, and those constituents that are known to be present in processed biomethane, or are of interest, due to potential breakthrough because of their presence in untreated biogas. The latter category can be considered the “other” classification in natural gas tariff documents, and is not well defined. The following list specifies the recommended classes of analytes and reasons why they should be monitored.

- Analytes with Known Natural Gas Tariff Limits
 - Major hydrocarbons (C₁-C₆)
 - Major and Minor Non-Hydrocarbons
 - Carbon dioxide, nitrogen, oxygen, etc.
 - Sulfur Compounds
 - H₂S, odorants, and other naturally occurring organic sulfur compounds
 - Mercury
 - Water Vapor
 - Water vapor will not be specifically monitored in this project, but should be included in any monitoring recommendation.

- Analytes Known to be Present or are of Interest¹⁻²¹
 - Halocarbons
 - Chlorinated hydrocarbons can form corrosive acids in the presence of water and oxygen.
 - They are found at ppm to ppb levels in raw and processed landfill-derived renewable gas.
 - For example, vinyl chloride is a common halocarbon found in raw landfill gas and is highly toxic and regulated in some areas.
 - Vinyl chloride is suggested to be the most significant chlorinated compound in unprocessed landfill gas.⁸
 - It has been found up to 48 ppmv in raw landfill gas.¹⁰ Results from processed landfill-derived renewable gas are lower.²
 - The California Public Utility Commission regulates vinyl chloride in landfill-derived gas supplied to an existing gas customer at 1170 ppbv (1.17 ppmv).¹⁹
 - Volatile organics
 - BTEX (benzene, toluene, ethyl benzene, xylenes), and certain aldehydes, ketones, VOCs (volatile organic compounds), SVOCs (semi-volatile organic compounds), and alkyl-PAHs (polycyclic aromatic hydrocarbons) are on the EPA target lists of hazardous compounds.
 - They are found at varying concentrations from ppm to ppb levels in raw and processed landfill-derived renewable gas.
 - Benzene has been found up to 686 ppmv in raw landfill gas.² Results from processed landfill-derived renewable gas are lower.²
 - There are potential health hazards associated with pipeline workers performing odorant sniff tests and end use applications.
 - Siloxanes
 - Siloxanes are known volatile contaminants generated from silicon-containing waste streams during anaerobic digestion.
 - D4 (octamethylcyclotetrasiloxane) and D5 (decamethylcyclopentasiloxane) are the most common compounds found in landfill-derived renewable gas.^{2,8}
 - D4 has been found up to 160 mg/m³ in raw landfill gas.²⁰ Results from processed landfill-derived renewable gas are lower.²
 - Past data has shown that siloxanes (D4) can break through into the processed landfill-derived renewable gas.²
 - During natural gas combustion, siloxanes decompose to a sticky, white powder that can foul end use equipment.
 - Other elements
 - Metals and other elements may be present due to the refuse source the landfill accepts.
 - Elements found include Hg, As, and Sb.^{2,13,18, 21}
 - Mercury levels in raw gas can be as high as 1.7 µg/m³, arsenic as high as 339 µg/m³, and antimony as high as 417 µg/m³.²

- Ammonia
 - Ammonia can be present due to anaerobic digestion sources in landfill-derived renewable gas.
- Bacteria and MIC
 - Total bacteria, sulfate-reducing bacteria, acid-producing bacteria, iron-oxidizing bacteria.
 - Anaerobic and aerobic live bacteria and spores.
 - Some species can produce acidic by-products that can lead to microbially induced corrosion (MIC).
 - Environmental health is also a concern.
 - Levels seen to date are similar to both natural gas and processed renewable gas.²

Table 1 lists the suggested target analytes and suggested sampling and analytical references.

Table 1. List of Suggested Analytes

Analysis	Suggested Sampling Method Reference(s)	Suggested Sampling Material	Suggested Instrument/ Analytical Method
Major and Minor Components	GTI SOP	Inerted Stainless Steel Cylinder	ASTM D1946
Sulfur			ASTM D6228
Siloxane			GC/AED
Ammonia			GC/NCD
Extended Hydrocarbons			GC/FID
Halocarbons and VOCs			EPA TO-14 GC/ELCD
SVOCs / PAHs / alkylPAHs	NIOSH 5515, modified	XAD-2 resin	GC/MS Mod EPA Method 8270C
Aldehydes / Ketones	EPA method TO-11	DNPH coated sorbent media	HPLC EPA Method TO-11, or GC/MS
Mercury	ASTM D5954	Gold plated silica beads	Atomic Absorption Spectroscopy, ASTM D5954
Metals	EPA Method 29 modified	HNO ₃ and H ₂ O ₂ aqueous solutions	Inductively Coupled Plasma Optical Emission Spectroscopy (ICP)
Biologicals	GTI SOP	0.2 µm filter	MPN, qPCR, bacteria + spore identification

Status to Date

To date, samples have been collected from six different landfills. Two landfills were collected a second time to provide for some seasonal variation, for a total of eight sites, and twenty-four samples. The clean up technologies used at the six landfills include membrane (one site), PSA (two sites), and physical solvent (three sites).

The sampling efforts were extensive and samples were acquired as per the QAP and standard sampling protocols set forth in the previous DOT project. Trained personnel collected samples using identical sample collection equipment and sampling conditions. Samples were shipped back to GTI within all approved holding time allotments. Samples were collected in triplicate to allow for statistical comparisons and conclusions to be drawn from the data. They were analyzed promptly within specified hold times. Thus far, the gas collected and analyzed is clean with only minor trace constituents.

The complete database of analytical results collected to date is reported in the Appendix. A limited amount of statistical evaluation was started before the project was cancelled, this data is also presented in the Appendix.

Business Status

Expenditure summary through 8/15/2011

Table 2. Expenditure and Summary

Task No./Name	Federal Obligations Current Budget	Federal Expense To Date
1. Laboratory Testing & Analysis of Biogas/RN	\$283,888	\$88,712
2. Data Compilation / Final Report	\$70,871	\$0
3. Update the Guidance Document	\$40,968	\$0
4. Project Management	\$60, 585	\$19,120
Total	\$456, 312	\$107,832

Appendix 1 - References

1. GTI. 2009. *Pipeline Quality Biogas –Guidance Document for Dairy Waste, Waste Water Treatment and Landfill Conversion*. USDOT/PHMSA Agreement: DTPH56-08-T-000018, Project 250.
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20. Unpublished GTI analytical lab data.
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22. OSHA/EPA Occupational Chemical Database,
<http://www.osha.gov/web/dep/chemicaldata/default.asp>
23. EXTTOXNET, Pesticide Information Profiles (PIPs), <http://exttoxnet.orst.edu/pips/ghindex.html>
24. Agency for Toxic Substances and Disease Registry, <http://www.atsdr.cdc.gov/>
25. Agency for Toxic Substances and Disease Registry,
<http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=99>
26. Agency for Toxic Substances and Disease Registry,
<http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=62>

Appendix 2 - Sample Results and Summary Statistics

The complete data set of samples collected to date follows on pages 15-90.

Some initial summary statistics are shown for each analyte on pages 91-101. Table 3 defines the terms. For calculation purposes, BDL is treated as zero.

Table 3. Description of Statistical Terms

Term	Description
Total # of Samples	The total number of samples collected for that analyte.
Total # of Hits	The total number of samples that had data above BDL.
Average	The arithmetic mean, i.e. the sum of all concentrations divided by the total number of samples. BDL is treated as zero.
Median	The concentration at which half of the concentrations are higher and half are lower. BDL is treated as zero.
Max Value	The largest concentration.
Min Value	The lowest concentration.
0.90 Percentile	The concentration below which 90% of the results lie.

DRAFT

Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	101694-001	101694-002	101694-003
		Processed Gas 01 11/01/10 1834 Landfill #1	Processed Gas 02 11/01/10 1829 Landfill #1	Processed Gas 03 11/01/10 1823 Landfill #1
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	0.76	0.87	0.82
Carbon Dioxide	0.03%	1.24	1.32	1.30
Oxygen/Argon	0.03%	0.90	0.18	0.16
Nitrogen	0.03%	4.79	2.46	2.37
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	92.31	95.17	95.34
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	0.0005	0.0002	0.0009
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99814	0.99808	0.99807
Compressibility Factor [z] (Sat.)	0.99784	0.99777	0.99776
Relative Density (Specific Gravity) (Dry)	0.5879	0.5745	0.5742
Gross HV (Dry) (Btu/ft ³)	938.7	968.2	969.8
Gross HV (Sat.) (Btu/ft ³)	922.7	951.6	953.2
Wobbe Index	1224.2	1277.3	1279.8
Net HV (Dry) (Btu/ft ³)	845.1	871.6	873.0
Net HV (Sat.) (Btu/ft ³)	830.6	856.7	858.1
Real Gas Density (lbs/ft ³)	0.0450	0.0440	0.0439

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	101786-001	101786-002	101786-003
		Processed Gas 01 12/13/10 1542 Landfill #5	Processed Gas 02 12/13/10 1548 Landfill #5	Processed Gas 03 12/13/10 1552 Landfill #5
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	0.47	0.48	0.48
Carbon Dioxide	0.03%	1.68	1.55	1.69
Oxygen/Argon	0.03%	0.33	0.27	0.26
Nitrogen	0.03%	6.03	5.89	5.75
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	91.48	91.81	91.82
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	0.0012	0.0013	0.0011
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99814	0.99814	0.99813
Compressibility Factor [z] (Sat.)	0.99784	0.99783	0.99783
Relative Density (Specific Gravity) (Dry)	0.5956	0.5933	0.5941
Gross HV (Dry) (Btu/ft ³)	929.4	932.8	932.9
Gross HV (Sat.) (Btu/ft ³)	913.5	916.9	916.9
Wobbe Index	1204.3	1211.0	1210.3
Net HV (Dry) (Btu/ft ³)	836.8	839.8	839.9
Net HV (Sat.) (Btu/ft ³)	822.5	825.5	825.5
Real Gas Density (lbs/ft ³)	0.0456	0.0454	0.0455

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	101788-001	101788-002	101788-003
		Processed Gas 01 12/15/10 1230 Landfill #6	Processed Gas 02 12/15/10 1233 Landfill #6	Processed Gas 03 12/15/10 1237 Landfill #6
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	0.41	0.41	0.41
Carbon Dioxide	0.03%	1.82	1.81	1.82
Oxygen/Argon	0.03%	0.09	0.09	0.10
Nitrogen	0.03%	2.77	2.77	2.78
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	94.92	94.91	94.90
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	0.0001	0.0001	0.0001
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99805	0.99805	0.99805
Compressibility Factor [z] (Sat.)	0.99774	0.99774	0.99774
Relative Density (Specific Gravity) (Dry)	0.5823	0.5824	0.5825
Gross HV (Dry) (Btu/ft ³)	964.2	964.1	963.9
Gross HV (Sat.) (Btu/ft ³)	947.7	947.6	947.4
Wobbe Index	1263.5	1263.3	1263.0
Net HV (Dry) (Btu/ft ³)	868.1	868.0	867.8
Net HV (Sat.) (Btu/ft ³)	853.2	853.1	853.0
Real Gas Density (lbs/ft ³)	0.0446	0.0446	0.0446

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	101793-001	101793-002	101793-003
		Processed Gas 01 12/16/10 1702 Landfill #7	Processed Gas 02 12/16/10 1707 Landfill #7	Processed Gas 03 12/16/10 1713 Landfill #7
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	0.16	0.15	0.17
Carbon Dioxide	0.03%	2.21	2.19	2.20
Oxygen/Argon	0.03%	0.41	0.45	0.42
Nitrogen	0.03%	1.66	1.81	1.70
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	95.56	95.40	95.51
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	0.0003	0.0002	0.0002
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99801	0.99801	0.99801
Compressibility Factor [z] (Sat.)	0.99770	0.99770	0.99770
Relative Density (Specific Gravity) (Dry)	0.5846	0.5853	0.5847
Gross HV (Dry) (Btu/ft ³)	969.8	968.2	969.4
Gross HV (Sat.) (Btu/ft ³)	953.2	951.7	952.8
Wobbe Index	1268.4	1265.6	1267.7
Net HV (Dry) (Btu/ft ³)	873.2	871.7	872.8
Net HV (Sat.) (Btu/ft ³)	858.3	856.8	857.9
Real Gas Density (lbs/ft ³)	0.0447	0.0448	0.0447

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	111212-001	111212-002	111212-003
		Processed Gas 01 3/28/11 1633 Landfill #8	Processed Gas 02 3/28/11 1635 Landfill #8	Processed Gas 03 3/28/11 1637 Landfill #8
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	0.50	0.33	0.32
Carbon Dioxide	0.03%	1.85	1.84	1.83
Oxygen/Argon	0.03%	0.10	0.08	0.09
Nitrogen	0.03%	1.50	1.16	1.17
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	96.04	96.60	96.59
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	BDL	BDL	BDL
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99802	0.99801	0.99801
Compressibility Factor [z] (Sat.)	0.99771	0.99770	0.99770
Relative Density (Specific Gravity) (Dry)	0.5771	0.5762	0.5763
Gross HV (Dry) (Btu/ft ³)	975.8	980.9	980.8
Gross HV (Sat.) (Btu/ft ³)	959.1	964.1	964.1
Wobbe Index	1284.5	1292.2	1292.0
Net HV (Dry) (Btu/ft ³)	878.5	883.1	883.1
Net HV (Sat.) (Btu/ft ³)	863.5	868.0	868.0
Real Gas Density (lbs/ft ³)	0.0442	0.0441	0.0441

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	111220-001	111220-002	111220-003
		Processed Gas 01 3/29/11 1650 Landfill #7	Processed Gas 02 3/29/11 1653 Landfill #7	Processed Gas 03 3/29/11 1656 Landfill #7
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	0.28	0.28	0.29
Carbon Dioxide	0.03%	1.70	1.70	1.70
Oxygen/Argon	0.03%	0.36	0.36	0.36
Nitrogen	0.03%	2.44	2.45	2.42
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	95.22	95.21	95.25
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	BDL	BDL	BDL
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99805	0.99805	0.99805
Compressibility Factor [z] (Sat.)	0.99774	0.99774	0.99774
Relative Density (Specific Gravity) (Dry)	0.5820	0.5821	0.5818
Gross HV (Dry) (Btu/ft ³)	966.8	966.6	967.0
Gross HV (Sat.) (Btu/ft ³)	950.2	950.1	950.5
Wobbe Index	1267.2	1267.0	1267.8
Net HV (Dry) (Btu/ft ³)	870.4	870.3	870.7
Net HV (Sat.) (Btu/ft ³)	855.5	855.4	855.8
Real Gas Density (lbs/ft ³)	0.0445	0.0445	0.0445

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	111221-001	111221-002	111221-003
		Processed Gas 01 3/30/11 1345 Landfill #6	Processed Gas 02 3/30/11 1348 Landfill #6	Processed Gas 03 3/30/11 1357 Landfill #6
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	0.36	0.37	0.36
Carbon Dioxide	0.03%	1.60	1.60	1.59
Oxygen/Argon	0.03%	0.19	0.18	0.21
Nitrogen	0.03%	3.93	3.89	3.99
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	93.93	93.96	93.84
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	0.0001	0.0002	0.0001
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99809	0.99809	0.99809
Compressibility Factor [z] (Sat.)	0.99778	0.99778	0.99778
Relative Density (Specific Gravity) (Dry)	0.5858	0.5856	0.5861
Gross HV (Dry) (Btu/ft ³)	953.9	954.2	953.0
Gross HV (Sat.) (Btu/ft ³)	937.6	937.9	936.7
Wobbe Index	1246.2	1246.9	1244.8
Net HV (Dry) (Btu/ft ³)	858.8	859.1	858.0
Net HV (Sat.) (Btu/ft ³)	844.1	844.4	843.3
Real Gas Density (lbs/ft ³)	0.0448	0.0448	0.0449

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Component Analysis by ASTM D1945 / D1946

Component	Detection Limit	111225-001	111225-002	111225-003
		Processed Gas 01 3/31/11 1635 Landfill #9	Processed Gas 02 3/31/11 1637 Landfill #9	Processed Gas 03 3/31/11 1639 Landfill #9
		Mol %	Mol %	Mol %
Helium	0.1%	BDL	BDL	BDL
Hydrogen	0.1%	BDL	BDL	BDL
Carbon Dioxide	0.03%	1.88	1.79	1.85
Oxygen/Argon	0.03%	0.12	0.13	0.12
Nitrogen	0.03%	2.50	2.58	2.52
Carbon Monoxide	0.03%	BDL	BDL	BDL
Methane	0.002%	95.49	95.49	95.51
Ethane	0.002%	BDL	BDL	BDL
Ethene	0.002%	BDL	BDL	BDL
Ethyne	0.002%	BDL	BDL	BDL
Propane	0.002%	BDL	BDL	BDL
Propene	0.002%	BDL	BDL	BDL
Propadiene	0.002%	BDL	BDL	BDL
Propyne	0.002%	BDL	BDL	BDL
i-Butane	0.002%	BDL	BDL	BDL
n-Butane	0.002%	BDL	BDL	BDL
1-Butene	0.002%	BDL	BDL	BDL
i-Butene	0.002%	BDL	BDL	BDL
trans-2-Butene	0.002%	BDL	BDL	BDL
cis-2-Butene	0.002%	BDL	BDL	BDL
1,3-Butadiene	0.002%	BDL	BDL	BDL
i-Pentane	0.002%	BDL	BDL	BDL
n-Pentane	0.002%	BDL	BDL	BDL
neo-Pentane	0.002%	BDL	BDL	BDL
Pentenes	0.002%	BDL	BDL	BDL
Hexane Plus	0.0001%	0.0006	0.0003	0.0002
Ammonia	0.001%	BDL	BDL	BDL

Calculated Real Gas Properties	60 °F, 14.73 psia	60 °F, 14.73 psia	60 °F, 14.73 psia
Compressibility Factor [z] (Dry)	0.99803	0.99803	0.99803
Compressibility Factor [z] (Sat.)	0.99772	0.99772	0.99772
Relative Density (Specific Gravity) (Dry)	0.5841	0.5836	0.5838
Gross HV (Dry) (Btu/ft ³)	968.7	968.8	968.9
Gross HV (Sat.) (Btu/ft ³)	952.2	952.2	952.3
Wobbe Index	1267.5	1268.2	1268.0
Net HV (Dry) (Btu/ft ³)	872.2	872.3	872.4
Net HV (Sat.) (Btu/ft ³)	857.3	857.4	857.5
Real Gas Density (lbs/ft ³)	0.0447	0.0447	0.0447

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	101694-001	101694-002	101694-003
		Processed Gas 01 11/01/10 1834 Landfill #1	Processed Gas 02 11/01/10 1829 Landfill #1	Processed Gas 03 11/01/10 1823 Landfill #1
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	BDL	BDL	BDL
Methylcyclopentane	1	BDL	BDL	BDL
Cyclohexane	1	1	BDL	1
Methylcyclohexane	1	BDL	BDL	1
Aromatics				
Benzene	1	BDL	BDL	1
Toluene	1	BDL	BDL	BDL
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	BDL	BDL	BDL
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	BDL	BDL	BDL
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	2	1	3
Heptanes	1	2	1	2
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	BDL	BDL	1
Nonanes	1	BDL	BDL	BDL
Decanes	1	BDL	BDL	BDL
Undecanes	1	BDL	BDL	BDL
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		5	2	9

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	101786-001	101786-002	101786-003
		Processed Gas 01 12/13/10 1542 Landfill #5	Processed Gas 02 12/13/10 1548 Landfill #5	Processed Gas 03 12/13/10 1552 Landfill #5
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	BDL	BDL	BDL
Methylcyclopentane	1	BDL	BDL	BDL
Cyclohexane	1	BDL	BDL	BDL
Methylcyclohexane	1	BDL	BDL	BDL
Aromatics				
Benzene	1	BDL	BDL	BDL
Toluene	1	1	1	1
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	1	1	1
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	1	1	1
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	BDL	1	1
Heptanes	1	BDL	BDL	BDL
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	1	1	1
Nonanes	1	2	2	1
Decanes	1	4	4	4
Undecanes	1	2	2	1
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		12	13	11

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	101788-001	101788-002	101788-003
		Processed Gas 01 12/15/10 1230 Landfill #6	Processed Gas 02 12/15/10 1233 Landfill #6	Processed Gas 03 12/15/10 1237 Landfill #6
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	BDL	BDL	BDL
Methylcyclopentane	1	BDL	BDL	BDL
Cyclohexane	1	BDL	BDL	BDL
Methylcyclohexane	1	BDL	BDL	BDL
Aromatics				
Benzene	1	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	BDL	BDL	BDL
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	BDL	BDL	BDL
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	BDL	BDL	BDL
Heptanes	1	BDL	BDL	BDL
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	BDL	BDL	BDL
Nonanes	1	BDL	BDL	BDL
Decanes	1	1	1	1
Undecanes	1	BDL	BDL	BDL
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		1	1	1

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	101793-001	101793-002	101793-003
		Processed Gas 01 12/16/10 1702 Landfill #7	Processed Gas 02 12/16/10 1707 Landfill #7	Processed Gas 03 12/16/10 1713 Landfill #7
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	BDL	BDL	BDL
Methylcyclopentane	1	BDL	BDL	BDL
Cyclohexane	1	BDL	BDL	BDL
Methylcyclohexane	1	BDL	BDL	BDL
Aromatics				
Benzene	1	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	BDL	BDL	BDL
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	BDL	BDL	BDL
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	BDL	BDL	BDL
Heptanes	1	BDL	BDL	BDL
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	BDL	BDL	BDL
Nonanes	1	BDL	BDL	BDL
Decanes	1	2	1	1
Undecanes	1	1	1	1
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		3	2	2

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	111212-001	111212-002	111212-003
		Processed Gas 01 3/28/11 1633 Landfill #8	Processed Gas 02 3/28/11 1635 Landfill #8	Processed Gas 03 3/28/11 1637 Landfill #8
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	BDL	BDL	BDL
Methylcyclopentane	1	BDL	BDL	BDL
Cyclohexane	1	BDL	BDL	BDL
Methylcyclohexane	1	BDL	BDL	BDL
Aromatics				
Benzene	1	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	BDL	BDL	BDL
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	BDL	BDL	BDL
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	BDL	BDL	BDL
Heptanes	1	BDL	BDL	BDL
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	BDL	BDL	BDL
Nonanes	1	BDL	BDL	BDL
Decanes	1	BDL	BDL	BDL
Undecanes	1	BDL	BDL	BDL
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		BDL	BDL	BDL

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	111220-001	111220-002	111220-003
		Processed Gas 01 3/29/11 1650 Landfill #7	Processed Gas 02 3/29/11 1653 Landfill #7	Processed Gas 03 3/29/11 1656 Landfill #7
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	BDL	BDL	BDL
Methylcyclopentane	1	BDL	BDL	BDL
Cyclohexane	1	BDL	BDL	BDL
Methylcyclohexane	1	BDL	BDL	BDL
Aromatics				
Benzene	1	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	BDL	BDL	BDL
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	BDL	BDL	BDL
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	BDL	BDL	BDL
Heptanes	1	BDL	BDL	BDL
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	BDL	BDL	BDL
Nonanes	1	BDL	BDL	BDL
Decanes	1	BDL	BDL	1
Undecanes	1	BDL	BDL	1
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		BDL	BDL	2

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	111221-001	111221-002	111221-003
		Processed Gas 01 3/30/11 1345 Landfill #6	Processed Gas 02 3/30/11 1348 Landfill #6	Processed Gas 03 3/30/11 1357 Landfill #6
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	BDL	BDL	BDL
Methylcyclopentane	1	BDL	BDL	BDL
Cyclohexane	1	BDL	BDL	BDL
Methylcyclohexane	1	BDL	BDL	BDL
Aromatics				
Benzene	1	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	BDL	1	BDL
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	BDL	BDL	BDL
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	BDL	BDL	BDL
Heptanes	1	BDL	BDL	BDL
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	BDL	BDL	BDL
Nonanes	1	BDL	BDL	BDL
Decanes	1	1	1	1
Undecanes	1	BDL	BDL	BDL
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		1	2	1

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID

Component Name	Detection Limit	111225-001	111225-002	111225-003
		Processed Gas 01 3/31/11 1635 Landfill #9	Processed Gas 02 3/31/11 1637 Landfill #9	Processed Gas 03 3/31/11 1639 Landfill #9
		ppmv	ppmv	ppmv
Cycloalkanes				
Cyclopentane	1	1	1	1
Methylcyclopentane	1	1	BDL	BDL
Cyclohexane	1	BDL	BDL	BDL
Methylcyclohexane	1	BDL	BDL	BDL
Aromatics				
Benzene	1	BDL	BDL	BDL
Toluene	1	BDL	BDL	BDL
Ethylbenzene	1	BDL	BDL	BDL
m,p-Xylene	1	BDL	BDL	BDL
Styrene	1	BDL	BDL	BDL
o-Xylene	1	BDL	BDL	BDL
C3 Benzenes	1	BDL	BDL	BDL
Naphthalene	1	BDL	BDL	BDL
C1 Naphthalenes	1	BDL	BDL	BDL
C2 Naphthalenes	1	BDL	BDL	BDL
Paraffins				
Hexanes	1	4	2	1
Heptanes	1	BDL	BDL	BDL
2,2,4-Trimethylpentane	1	BDL	BDL	BDL
Octanes	1	BDL	BDL	BDL
Nonanes	1	BDL	BDL	BDL
Decanes	1	BDL	BDL	BDL
Undecanes	1	BDL	BDL	BDL
Dodecanes	1	BDL	BDL	BDL
Tridecanes	1	BDL	BDL	BDL
Tetradecanes	1	BDL	BDL	BDL
Pentadecanes	1	BDL	BDL	BDL
Hexadecanes	1	BDL	BDL	BDL
Heptadecanes	1	BDL	BDL	BDL
Octadecanes	1	BDL	BDL	BDL
Nonadecanes	1	BDL	BDL	BDL
Eicosanes +	1	BDL	BDL	BDL
Total from Cyclopentane to Eicosanes +		6	3	2

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Trace Sulfur Analysis by ASTM D6228

Component Name	101694-001	101694-002	101694-003
	Processed Gas 01 11/01/10 1834 Landfill #1	Processed Gas 02 11/01/10 1829 Landfill #1	Processed Gas 03 11/01/10 1823 Landfill #1
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	1.20	0.39	1.25
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	1.20	0.39	1.25
As Grains/100 SCF @ 14.73 psia, 60°F	0.071	0.023	0.074

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.



Trace Sulfur Analysis by ASTM D6228

Component Name	101786-001	101786-002	101786-003
	Processed Gas 01	Processed Gas 02	Processed Gas 03
	12/13/10 1542	12/13/10 1548	12/13/10 1552
	Landfill #5	Landfill #5	Landfill #5
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	BDL	BDL	BDL
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	BDL	BDL	BDL
As Grains/100 SCF @ 14.73 psia, 60°F	BDL	BDL	BDL

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.



Trace Sulfur Analysis by ASTM D6228

Component Name	101788-001	101788-002	101788-003
	Processed Gas 01 12/15/10 1230 Landfill #6	Processed Gas 02 12/15/10 1233 Landfill #6	Processed Gas 03 12/15/10 1237 Landfill #6
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	BDL	BDL	BDL
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	BDL	BDL	BDL
As Grains/100 SCF @ 14.73 psia, 60°F	BDL	BDL	BDL

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Trace Sulfur Analysis by ASTM D6228

Component Name	101793-001	101793-002	101793-003
	Processed Gas 01 12/16/10 1702 Landfill #7	Processed Gas 02 12/16/10 1707 Landfill #7	Processed Gas 03 12/16/10 1713 Landfill #7
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	0.08	0.15	0.11
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	0.08	0.15	0.11
As Grains/100 SCF @ 14.73 psia, 60°F	0.005	0.009	0.007

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.



Trace Sulfur Analysis by ASTM D6228

Component Name	111212-001	111212-002	111212-003
	Processed Gas 01 3/28/11 1633 Landfill #8	Processed Gas 02 3/28/11 1635 Landfill #8	Processed Gas 03 3/28/11 1637 Landfill #8
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	0.07	0.08	0.08
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	BDL	BDL	BDL
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	0.07	0.08	0.08
As Grains/100 SCF @ 14.73 psia, 60°F	0.004	0.005	0.005

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.



Trace Sulfur Analysis by ASTM D6228

Component Name	111220-001	111220-002	111220-003
	Processed Gas 01 3/29/11 1650 Landfill #7	Processed Gas 02 3/29/11 1653 Landfill #7	Processed Gas 03 3/29/11 1656 Landfill #7
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	BDL	BDL	BDL
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	BDL	BDL	BDL
As Grains/100 SCF @ 14.73 psia, 60°F	BDL	BDL	BDL

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.



Trace Sulfur Analysis by ASTM D6228

Component Name	111221-001	111221-002	111221-003
	Processed Gas 01 3/30/11 1345 Landfill #6	Processed Gas 02 3/30/11 1348 Landfill #6	Processed Gas 03 3/30/11 1357 Landfill #6
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	BDL	BDL	BDL
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	BDL	BDL	BDL
As Grains/100 SCF @ 14.73 psia, 60°F	BDL	BDL	BDL

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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Trace Sulfur Analysis by ASTM D6228

Component Name	111225-001	111225-002	111225-003
	Processed Gas 01 3/31/11 1635 Landfill #9	Processed Gas 02 3/31/11 1637 Landfill #9	Processed Gas 03 3/31/11 1639 Landfill #9
	ppmv	ppmv	ppmv
Hydrogen Sulfide	BDL	BDL	BDL
Sulfur Dioxide	BDL	BDL	BDL
Carbonyl Sulfide	BDL	BDL	BDL
Carbon Disulfide	BDL	BDL	BDL
Methyl Mercaptan	BDL	BDL	BDL
Ethyl Mercaptan	BDL	BDL	BDL
i-Propyl Mercaptan	BDL	BDL	BDL
n-Propyl Mercaptan	BDL	BDL	BDL
t-Butyl Mercaptan	BDL	BDL	BDL
Dimethyl Sulfide	5.18	5.45	5.45
Methyl Ethyl Sulfide	BDL	BDL	BDL
Diethyl Sulfide	BDL	BDL	BDL
Di-t-Butyl Sulfide	BDL	BDL	BDL
Dimethyl Disulfide	BDL	BDL	BDL
Methyl Ethyl Disulfide	BDL	BDL	BDL
Methyl i-Propyl Disulfide	BDL	BDL	BDL
Diethyl Disulfide	BDL	BDL	BDL
Methyl n-Propyl Disulfide	BDL	BDL	BDL
Methyl t-Butyl Disulfide	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	BDL	BDL	BDL
Di-i-Propyl Disulfide	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	BDL	BDL	BDL
Di-n-Propyl Disulfide	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	BDL	BDL	BDL
Di-t-Butyl Disulfide	BDL	BDL	BDL
Dimethyl Trisulfide	BDL	BDL	BDL
Diethyl Trisulfide	BDL	BDL	BDL
Di-t-Butyl Trisulfide	BDL	BDL	BDL
Thiophene	BDL	BDL	BDL
C1-Thiophenes	BDL	BDL	BDL
C2-Thiophenes	BDL	BDL	BDL
C3-Thiophenes	BDL	BDL	BDL
Benzothiophene	BDL	BDL	BDL
C1-Benzothiophenes	BDL	BDL	BDL
C2-Benzothiophenes	BDL	BDL	BDL
Thiophane	BDL	BDL	BDL
Thiophenol	BDL	BDL	BDL
Total Sulfur			
As molar PPM S	5.18	5.45	5.45
As Grains/100 SCF @ 14.73 psia, 60°F	0.307	0.323	0.323

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101694-001	101694-002	101694-003
		Processed Gas 01 11/01/10 1834 Landfill #1	Processed Gas 02 11/01/10 1829 Landfill #1	Processed Gas 03 11/01/10 1823 Landfill #1
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	0.14	0.11	0.11
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	BDL	BDL	BDL
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.



TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101694-001	101694-002	101694-003
		Processed Gas 01 11/01/10 1834 Landfill #1	Processed Gas 02 11/01/10 1829 Landfill #1	Processed Gas 03 11/01/10 1823 Landfill #1
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	BDL	BDL	BDL
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit



TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101786-001	101786-002	101786-003
		Processed Gas 01 12/13/10 1542 Landfill #5	Processed Gas 02 12/13/10 1548 Landfill #5	Processed Gas 03 12/13/10 1552 Landfill #5
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	BDL	BDL	BDL
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	BDL	BDL	BDL
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101786-001	101786-002	101786-003
		Processed Gas 01 12/13/10 1542 Landfill #5	Processed Gas 02 12/13/10 1548 Landfill #5	Processed Gas 03 12/13/10 1552 Landfill #5
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	1.4	1.3	1.4
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	1.0	BDL	1.0
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit



TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101788-001	101788-002	101788-003
		Processed Gas 01 12/15/10 1230 Landfill #6	Processed Gas 02 12/15/10 1233 Landfill #6	Processed Gas 03 12/15/10 1237 Landfill #6
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	BDL	BDL	BDL
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	BDL	BDL	BDL
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101788-001	101788-002	101788-003
		Processed Gas 01 12/15/10 1230 Landfill #6	Processed Gas 02 12/15/10 1233 Landfill #6	Processed Gas 03 12/15/10 1237 Landfill #6
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	BDL	BDL	BDL
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101793-001	101793-002	101793-003
		Processed Gas 01 12/16/10 1702 Landfill #7	Processed Gas 02 12/16/10 1707 Landfill #7	Processed Gas 03 12/16/10 1713 Landfill #7
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	BDL	BDL	BDL
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	BDL	BDL	BDL
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	101793-001	101793-002	101793-003
		Processed Gas 01 12/16/10 1702 Landfill #7	Processed Gas 02 12/16/10 1707 Landfill #7	Processed Gas 03 12/16/10 1713 Landfill #7
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	BDL	BDL	BDL
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111212-001	111212-002	111212-003
		Processed Gas 01 3/28/11 1633 Landfill #8	Processed Gas 02 3/28/11 1635 Landfill #8	Processed Gas 03 3/28/11 1637 Landfill #8
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	BDL	BDL	BDL
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	BDL	BDL	BDL
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.



TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111212-001	111212-002	111212-003
		Processed Gas 01 3/28/11 1633 Landfill #8	Processed Gas 02 3/28/11 1635 Landfill #8	Processed Gas 03 3/28/11 1637 Landfill #8
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	BDL	BDL	BDL
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111220-001	111220-002	111220-003
		Processed Gas 01 3/29/11 1650 Landfill #7	Processed Gas 02 3/29/11 1653 Landfill #7	Processed Gas 03 3/29/11 1656 Landfill #7
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	BDL	BDL	BDL
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	BDL	BDL	BDL
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.

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TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111220-001	111220-002	111220-003
		Processed Gas 01 3/29/11 1650 Landfill #7	Processed Gas 02 3/29/11 1653 Landfill #7	Processed Gas 03 3/29/11 1656 Landfill #7
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	BDL	BDL	BDL
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit



TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111221-001	111221-002	111221-003
		Processed Gas 01 3/30/11 1345 Landfill #6	Processed Gas 02 3/30/11 1348 Landfill #6	Processed Gas 03 3/30/11 1357 Landfill #6
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	BDL	BDL	BDL
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	BDL	BDL	BDL
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.



TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111221-001	111221-002	111221-003
		Processed Gas 01 3/30/11 1345 Landfill #6	Processed Gas 02 3/30/11 1348 Landfill #6	Processed Gas 03 3/30/11 1357 Landfill #6
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	BDL	BDL	BDL
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit



TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111225-001	111225-002	111225-003
		Processed Gas 01 3/31/11 1635 Landfill #9	Processed Gas 02 3/31/11 1637 Landfill #9	Processed Gas 03 3/31/11 1639 Landfill #9
		ppmv	ppmv	ppmv
Dichlorodifluoromethane (CFC-12)	0.10	2.30	2.28	2.25
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	BDL	BDL	BDL
Chloromethane	0.10	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	BDL	BDL	BDL
Chloroform	0.10	BDL	BDL	BDL
Carbon Tetrachloride	0.10	BDL	BDL	BDL
Chloroethane	0.10	0.31	0.30	0.31
1,1-Dichloroethane	0.10	BDL	BDL	BDL
1,2-Dichloroethane	0.10	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	BDL	BDL	BDL
Hexachloroethane	0.10	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	BDL	BDL	BDL
1,1-Dichloroethene	0.10	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	BDL	BDL	BDL
Trichloroethene	0.10	BDL	BDL	BDL
Tetrachloroethene	0.10	BDL	BDL	BDL
1,2-Dichloropropane	0.10	BDL	BDL	BDL
2,2-Dichloropropane	0.10	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	BDL	BDL	BDL
3-Chloropropene	0.10	BDL	BDL	BDL
1,1-Dichloropropene	0.10	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	BDL	BDL	BDL
Bromomethane	0.10	BDL	BDL	BDL
Dibromomethane	0.10	BDL	BDL	BDL
Bromoform	0.10	BDL	BDL	BDL
1,2-Dibromoethane	0.10	BDL	BDL	BDL
Bromochloromethane	0.10	BDL	BDL	BDL
Bromodichloromethane	0.10	BDL	BDL	BDL
Dibromochloromethane	0.10	BDL	BDL	BDL
Chlorobenzene	0.10	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

TO-14 Halocarbon and Volatile Organic Compound Analysis

Component Name	Detection Limit	111225-001	111225-002	111225-003
		Processed Gas 01 3/31/11 1635 Landfill #9	Processed Gas 02 3/31/11 1637 Landfill #9	Processed Gas 03 3/31/11 1639 Landfill #9
		ppmv	ppmv	ppmv
1,2,3-Trichlorobenzene	0.10	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	BDL	BDL	BDL
Bromobenzene	0.10	BDL	BDL	BDL
2-Chlorotoluene	0.10	BDL	BDL	BDL
4-Chlorotoluene	0.10	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	BDL	BDL	BDL
1,3-Butadiene	1.0	BDL	BDL	BDL
Acrylonitrile	1.0	BDL	BDL	BDL
Benzene	1.0	BDL	BDL	BDL
Toluene	1.0	BDL	BDL	BDL
Ethylbenzene	1.0	BDL	BDL	BDL
m,p-Xylene	1.0	BDL	BDL	BDL
o-Xylene	1.0	BDL	BDL	BDL
Styrene	1.0	BDL	BDL	BDL
i-Propylbenzene	1.0	BDL	BDL	BDL
4-Ethyltoluene	1.0	BDL	BDL	BDL
n-Propylbenzene	1.0	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	BDL	BDL	BDL
t-Butylbenzene	1.0	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	BDL	BDL	BDL
s-Butylbenzene	1.0	BDL	BDL	BDL
p-Isopropyltoluene	1.0	BDL	BDL	BDL
n-Butylbenzene	1.0	BDL	BDL	BDL
Naphthalene	1.0	BDL	BDL	BDL
Pyridine	1.0	BDL	BDL	BDL
Nitrobenzene	1.0	BDL	BDL	BDL

BDL = Below Detection Limit



Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101694-004		101694-005		101694-006	
		Processed Gas 01		Processed Gas 02		Processed Gas 03	
		11/01/10	0957-1357	11/01/10	0957-1357	11/01/10	1410-1810
		Landfill #1	Landfill #1	Landfill #1	Landfill #1	Landfill #1	Landfill #1
		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
N-nitrosodimethylamine	1	BDL	BDL	BDL	BDL	BDL	BDL
Phenol	1	BDL	BDL	BDL	BDL	BDL	BDL
Aniline	1	BDL	BDL	BDL	BDL	BDL	BDL
Bis(2-Chloroethyl) ether	1	BDL	BDL	BDL	BDL	BDL	BDL
2-Chlorophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
Benzyl Alcohol	1	BDL	BDL	BDL	BDL	BDL	BDL
2-methylphenol	1	BDL	BDL	BDL	BDL	BDL	BDL
bis(2-chloroisopropyl)ether	1	BDL	BDL	BDL	BDL	BDL	BDL
N-Nitroso-di-n-propylamine	1	BDL	BDL	BDL	BDL	BDL	BDL
4-methylphenol/3-methylphenol	1	BDL	BDL	BDL	BDL	BDL	BDL
Isophorone	1	BDL	BDL	BDL	BDL	BDL	BDL
2-nitrophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
2,4-dimethylphenol	1	BDL	BDL	BDL	BDL	BDL	BDL
Bis(2-chloroethoxy)methane	1	BDL	BDL	BDL	BDL	BDL	BDL
2,4-dichlorophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
4-Chloroaniline	1	BDL	BDL	BDL	BDL	BDL	BDL
4-chloro-3-methylphenol	1	BDL	BDL	BDL	BDL	BDL	BDL
2-methylnaphthalene	1	BDL	BDL	BDL	BDL	BDL	BDL
1-methylnaphthalene	1	BDL	BDL	BDL	BDL	BDL	BDL
Hexachlorocyclopentadiene	1	BDL	BDL	BDL	BDL	BDL	BDL
2,4,6-trichlorophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
2,4,5-trichlorophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
2-chloronaphthalene	1	BDL	BDL	BDL	BDL	BDL	BDL
2-Nitroaniline	1	BDL	BDL	BDL	BDL	BDL	BDL
1,4-dinitrobenzene	1	BDL	BDL	BDL	BDL	BDL	BDL
Dimethyl phthalate	1	BDL	BDL	BDL	BDL	BDL	BDL
1,3-dinitrobenzene	1	BDL	BDL	BDL	BDL	BDL	BDL
2,6-dinitrotoluene	1	BDL	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	1	BDL	BDL	BDL	BDL	BDL	BDL
1,2-Dinitrobenzene	1	BDL	BDL	BDL	BDL	BDL	BDL
3-Nitroaniline	1	BDL	BDL	BDL	BDL	BDL	BDL
Acenaphthene	1	BDL	BDL	BDL	BDL	BDL	BDL
2,4-dinitrophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
4-nitrophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
Dibenzofuran	1	BDL	BDL	BDL	BDL	BDL	BDL
2,4-dinitrotoluene	1	BDL	BDL	BDL	BDL	BDL	BDL
2,3,4,6-Tetrachlorophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
2,3,5,6-Tetrachlorophenol	1	BDL	BDL	BDL	BDL	BDL	BDL
Diethyl Phthalate	1	BDL	B	BDL	B	BDL	B

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101694-004		101694-005		101694-006	
		Processed Gas 01		Processed Gas 02		Processed Gas 03	
		11/01/10	0957-1357	11/01/10	0957-1357	11/01/10	1410-1810
		Landfill #1	Landfill #1	Landfill #1	Landfill #1	Landfill #1	Landfill #1
		ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
Fluorene	1	BDL		BDL		BDL	
4-chlorophenyl phenyl ether	1	BDL		BDL		BDL	
4-Nitroaniline	1	BDL		BDL		BDL	
4,6-dinitro-2-methylphenol	1	BDL		BDL		BDL	
Diphenylamine	1	BDL		BDL		BDL	
n-Nitrosodiphenylamine	1	BDL		BDL		BDL	
Azobenzene	1	BDL		BDL		BDL	
4-Bromophenyl phenyl ether	1	BDL		BDL		BDL	
Hexachlorobenzene	1	BDL		BDL		BDL	
Pentachlorophenol	1	BDL		BDL		BDL	
Phenanthrene	1	BDL		BDL		BDL	
Anthracene	1	BDL		BDL		BDL	
Carbazole	1	BDL		BDL		BDL	
Di-n-butyl phthalate	1	2.3	J,B	1.2	B	3.1	B
Fluoranthene	1	BDL		BDL		BDL	
Pyrene	1	BDL		BDL		BDL	
Benzyl butyl phthalate	1	0.3	J	BDL		0.3	J
Bis(2-ethylhexyl)adipate	1	BDL		BDL		BDL	
Benzo(a)anthracene	1	BDL		BDL		BDL	
Chrysene	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)phthalate	1	BDL		BDL		BDL	
Di-n-octyl phthalate	1	BDL		BDL		BDL	
Benzo(b)fluoranthene	1	BDL		BDL		BDL	
Benzo(k)fluoranthene	1	BDL		BDL		BDL	
Benzo(a)pyrene	1	BDL		BDL		BDL	
Indeno(1,2,3-cd)pyrene	1	BDL		BDL		BDL	
Dibenzo(a,h)anthracene	1	BDL		BDL		BDL	
Benzo[g,h,i]perylene	1	BDL		BDL		BDL	

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101786-004	101786-005	101786-006
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		12/14/10 1004-1404	12/14/10 1004-1404	12/14/10 1423-1823
		Landfill #5	Landfill #5	Landfill #5
		ppbv	ppbv	ppbv
N-nitrosodimethylamine	1	BDL	BDL	BDL
Phenol	1	BDL	BDL	BDL
Aniline	1	BDL	BDL	BDL
Bis(2-Chloroethyl) ether	1	BDL	BDL	BDL
2-Chlorophenol	1	BDL	BDL	BDL
Benzyl Alcohol	1	BDL	BDL	BDL
2-methylphenol	1	BDL	BDL	BDL
bis(2-chloroisopropyl)ether	1	BDL	BDL	BDL
N-Nitroso-di-n-propylamine	1	BDL	BDL	BDL
4-methylphenol/3-methylphenol	1	BDL	BDL	BDL
Isophorone	1	BDL	BDL	BDL
2-nitrophenol	1	BDL	BDL	BDL
2,4-dimethylphenol	1	BDL	BDL	BDL
Bis(2-chloroethoxy)methane	1	BDL	BDL	BDL
2,4-dichlorophenol	1	BDL	BDL	BDL
4-Chloroaniline	1	BDL	BDL	BDL
4-chloro-3-methylphenol	1	BDL	BDL	BDL
2-methylnaphthalene	1	BDL	BDL	BDL
1-methylnaphthalene	1	BDL	BDL	BDL
Hexachlorocyclopentadiene	1	BDL	BDL	BDL
2,4,6-trichlorophenol	1	BDL	BDL	BDL
2,4,5-trichlorophenol	1	BDL	BDL	BDL
2-chloronaphthalene	1	BDL	BDL	BDL
2-Nitroaniline	1	BDL	BDL	BDL
1,4-dinitrobenzene	1	BDL	BDL	BDL
Dimethyl phthalate	1	BDL	BDL	BDL
1,3-dinitrobenzene	1	BDL	BDL	BDL
2,6-dinitrotoluene	1	BDL	BDL	BDL
Acenaphthylene	1	BDL	BDL	BDL
1,2-Dinitrobenzene	1	BDL	BDL	BDL
3-Nitroaniline	1	BDL	BDL	BDL
Acenaphthene	1	BDL	BDL	BDL
2,4-dinitrophenol	1	BDL	BDL	BDL
4-nitrophenol	1	BDL	BDL	BDL
Dibenzofuran	1	BDL	BDL	BDL
2,4-dinitrotoluene	1	BDL	BDL	BDL
2,3,4,6-Tetrachlorophenol	1	BDL	BDL	BDL
2,3,5,6-Tetrachlorophenol	1	BDL	BDL	BDL
Diethyl Phthalate	1	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101786-004		101786-005		101786-006	
		Processed Gas 01		Processed Gas 02		Processed Gas 03	
		12/14/10 1004-1404		12/14/10 1004-1404		12/14/10 1423-1823	
		Landfill #5		Landfill #5		Landfill #5	
		ppbv		ppbv		ppbv	
Fluorene	1	BDL		BDL		BDL	
4-chlorophenyl phenyl ether	1	BDL		BDL		BDL	
4-Nitroaniline	1	BDL		BDL		BDL	
4,6-dinitro-2-methylphenol	1	BDL		BDL		BDL	
Diphenylamine	1	BDL		BDL		BDL	
n-Nitrosodiphenylamine	1	BDL		BDL		BDL	
Azobenzene	1	BDL		BDL		BDL	
4-Bromophenyl phenyl ether	1	BDL		BDL		BDL	
Hexachlorobenzene	1	BDL		BDL		BDL	
Pentachlorophenol	1	BDL		BDL		BDL	
Phenanthrene	1	BDL		BDL		BDL	
Anthracene	1	BDL		BDL		BDL	
Carbazole	1	BDL		BDL		BDL	
Di-n-butyl phthalate	1	2.5	B	1.9	B	3.3	B
Fluoranthene	1	BDL		BDL		BDL	
Pyrene	1	BDL		BDL		BDL	
Benzyl butyl phthalate	1	BDL	B	BDL	B	0.3	J,B
Bis(2-ethylhexyl)adipate	1	BDL		BDL		BDL	
Benzo(a)anthracene	1	BDL		BDL		BDL	
Chrysene	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)phthalate	1	0.4	J,B	0.5	J,B	0.6	J,B
Di-n-octyl phthalate	1	BDL		BDL		BDL	
Benzo(b)fluoranthene	1	BDL		BDL		BDL	
Benzo(k)fluoranthene	1	BDL		BDL		BDL	
Benzo(a)pyrene	1	BDL		BDL		BDL	
Indeno(1,2,3-cd)pyrene	1	BDL		BDL		BDL	
Dibenzo(a,h)anthracene	1	BDL		BDL		BDL	
Benzo[g,h,i]perylene	1	BDL		BDL		BDL	

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101788-004		101788-005		101788-006	
		Processed Gas 01		Processed Gas 02		Processed Gas 03	
		12/15/10 0915-1315		12/15/10 0915-1315		12/15/10 0915-1315	
		Landfill #6		Landfill #6		Landfill #6	
		ppbv		ppbv		ppbv	
N-nitrosodimethylamine	1	BDL		BDL		BDL	
Phenol	1	BDL		BDL		BDL	
Aniline	1	BDL		BDL		BDL	
Bis(2-Chloroethyl) ether	1	BDL		BDL		BDL	
2-Chlorophenol	1	BDL		BDL		BDL	
Benzyl Alcohol	1	BDL		BDL		BDL	
2-methylphenol	1	BDL		BDL		BDL	
bis(2-chloroisopropyl)ether	1	BDL		BDL		BDL	
N-Nitroso-di-n-propylamine	1	BDL		BDL		BDL	
4-methylphenol/3-methylphenol	1	BDL		BDL		BDL	
Isophorone	1	BDL		BDL		BDL	
2-nitrophenol	1	BDL		BDL		BDL	
2,4-dimethylphenol	1	BDL		BDL		BDL	
Bis(2-chloroethoxy)methane	1	BDL		BDL		BDL	
2,4-dichlorophenol	1	BDL		BDL		BDL	
4-Chloroaniline	1	BDL		BDL		BDL	
4-chloro-3-methylphenol	1	BDL		BDL		BDL	
2-methylnaphthalene	1	0.3	J	0.4	J	BDL	
1-methylnaphthalene	1	BDL		BDL		BDL	
Hexachlorocyclopentadiene	1	BDL		BDL		BDL	
2,4,6-trichlorophenol	1	BDL		BDL		BDL	
2,4,5-trichlorophenol	1	BDL		BDL		BDL	
2-chloronaphthalene	1	BDL		BDL		BDL	
2-Nitroaniline	1	BDL		BDL		BDL	
1,4-dinitrobenzene	1	BDL		BDL		BDL	
Dimethyl phthalate	1	BDL		BDL		BDL	
1,3-dinitrobenzene	1	BDL		BDL		BDL	
2,6-dinitrotoluene	1	BDL		BDL		BDL	
Acenaphthylene	1	BDL		BDL		BDL	
1,2-Dinitrobenzene	1	BDL		BDL		BDL	
3-Nitroaniline	1	BDL		BDL		BDL	
Acenaphthene	1	BDL		BDL		BDL	
2,4-dinitrophenol	1	BDL		BDL		BDL	
4-nitrophenol	1	BDL		BDL		BDL	
Dibenzofuran	1	BDL		BDL		BDL	
2,4-dinitrotoluene	1	BDL		BDL		BDL	
2,3,4,6-Tetrachlorophenol	1	BDL		BDL		BDL	
2,3,5,6-Tetrachlorophenol	1	BDL		BDL		BDL	
Diethyl Phthalate	1	BDL	B	BDL	B	BDL	B

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101788-004	101788-005	101788-006			
		Processed Gas 01	Processed Gas 02	Processed Gas 03			
		12/15/10 0915-1315	12/15/10 0915-1315	12/15/10 0915-1315			
		Landfill #6	Landfill #6	Landfill #6			
		ppbv	ppbv	ppbv			
Fluorene	1	BDL	BDL	BDL			
4-chlorophenyl phenyl ether	1	BDL	BDL	BDL			
4-Nitroaniline	1	BDL	BDL	BDL			
4,6-dinitro-2-methylphenol	1	BDL	BDL	BDL			
Diphenylamine	1	BDL	BDL	BDL			
n-Nitrosodiphenylamine	1	BDL	BDL	BDL			
Azobenzene	1	BDL	BDL	BDL			
4-Bromophenyl phenyl ether	1	BDL	BDL	BDL			
Hexachlorobenzene	1	BDL	BDL	BDL			
Pentachlorophenol	1	BDL	BDL	BDL			
Phenanthrene	1	BDL	BDL	BDL			
Anthracene	1	BDL	BDL	BDL			
Carbazole	1	BDL	BDL	BDL			
Di-n-butyl phthalate	1	BDL	B	BDL	B	0.5	J,B
Fluoranthene	1	BDL	BDL	BDL	BDL	BDL	
Pyrene	1	BDL	BDL	BDL	BDL	BDL	
Benzyl butyl phthalate	1	BDL	BDL	BDL	BDL	BDL	
Bis(2-ethylhexyl)adipate	1	BDL	BDL	BDL	BDL	BDL	
Benzo(a)anthracene	1	BDL	BDL	BDL	BDL	BDL	
Chrysene	1	BDL	BDL	BDL	BDL	BDL	
Bis(2-ethylhexyl)phthalate	1	BDL	B	0.3	J,B	BDL	B
Di-n-octyl phthalate	1	BDL	BDL	BDL	BDL	BDL	
Benzo(b)fluoranthene	1	BDL	BDL	BDL	BDL	BDL	
Benzo(k)fluoranthene	1	BDL	BDL	BDL	BDL	BDL	
Benzo(a)pyrene	1	BDL	BDL	BDL	BDL	BDL	
Indeno(1,2,3-cd)pyrene	1	BDL	BDL	BDL	BDL	BDL	
Dibenzo(a,h)anthracene	1	BDL	BDL	BDL	BDL	BDL	
Benzo[g,h,i]perylene	1	BDL	BDL	BDL	BDL	BDL	

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101793-004	101793-005	101793-006
		Processed Gas 01 12/17/10 0934-1334	Processed Gas 02 12/17/10 0934-1334	Processed Gas 03 12/17/10 0934-1334
		Landfill #7	Landfill #7	Landfill #7
		ppbv	ppbv	ppbv
N-nitrosodimethylamine	1	BDL	BDL	BDL
Phenol	1	BDL	BDL	BDL
Aniline	1	BDL	BDL	BDL
Bis(2-Chloroethyl) ether	1	BDL	BDL	BDL
2-Chlorophenol	1	BDL	BDL	BDL
Benzyl Alcohol	1	BDL	BDL	BDL
2-methylphenol	1	BDL	BDL	BDL
bis(2-chloroisopropyl)ether	1	BDL	BDL	BDL
N-Nitroso-di-n-propylamine	1	BDL	BDL	BDL
4-methylphenol/3-methylphenol	1	BDL	BDL	BDL
Isophorone	1	BDL	BDL	BDL
2-nitrophenol	1	BDL	BDL	BDL
2,4-dimethylphenol	1	BDL	BDL	BDL
Bis(2-chloroethoxy)methane	1	BDL	BDL	BDL
2,4-dichlorophenol	1	BDL	BDL	BDL
4-Chloroaniline	1	BDL	BDL	BDL
4-chloro-3-methylphenol	1	BDL	BDL	BDL
2-methylnaphthalene	1	BDL	BDL	BDL
1-methylnaphthalene	1	BDL	BDL	BDL
Hexachlorocyclopentadiene	1	BDL	BDL	BDL
2,4,6-trichlorophenol	1	BDL	BDL	BDL
2,4,5-trichlorophenol	1	BDL	BDL	BDL
2-chloronaphthalene	1	BDL	BDL	BDL
2-Nitroaniline	1	BDL	BDL	BDL
1,4-dinitrobenzene	1	BDL	BDL	BDL
Dimethyl phthalate	1	BDL	BDL	BDL
1,3-dinitrobenzene	1	BDL	BDL	BDL
2,6-dinitrotoluene	1	BDL	BDL	BDL
Acenaphthylene	1	BDL	BDL	BDL
1,2-Dinitrobenzene	1	BDL	BDL	BDL
3-Nitroaniline	1	BDL	BDL	BDL
Acenaphthene	1	BDL	BDL	BDL
2,4-dinitrophenol	1	BDL	BDL	BDL
4-nitrophenol	1	BDL	BDL	BDL
Dibenzofuran	1	BDL	BDL	BDL
2,4-dinitrotoluene	1	BDL	BDL	BDL
2,3,4,6-Tetrachlorophenol	1	BDL	BDL	BDL
2,3,5,6-Tetrachlorophenol	1	BDL	BDL	BDL
Diethyl Phthalate	1	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	101793-004	101793-005	101793-006	
		Processed Gas 01	Processed Gas 02	Processed Gas 03	
		12/17/10 0934-1334	12/17/10 0934-1334	12/17/10 0934-1334	
		Landfill #7	Landfill #7	Landfill #7	
		ppbv	ppbv	ppbv	
Fluorene	1	BDL	BDL	BDL	
4-chlorophenyl phenyl ether	1	BDL	BDL	BDL	
4-Nitroaniline	1	BDL	BDL	BDL	
4,6-dinitro-2-methylphenol	1	BDL	BDL	BDL	
Diphenylamine	1	BDL	BDL	BDL	
n-Nitrosodiphenylamine	1	BDL	BDL	BDL	
Azobenzene	1	BDL	BDL	BDL	
4-Bromophenyl phenyl ether	1	BDL	BDL	BDL	
Hexachlorobenzene	1	BDL	BDL	BDL	
Pentachlorophenol	1	BDL	BDL	BDL	
Phenanthrene	1	BDL	BDL	BDL	
Anthracene	1	BDL	BDL	BDL	
Carbazole	1	BDL	BDL	BDL	
Di-n-butyl phthalate	1	BDL	B	BDL	B
Fluoranthene	1	BDL	BDL	BDL	
Pyrene	1	BDL	BDL	BDL	
Benzyl butyl phthalate	1	BDL	BDL	BDL	
Bis(2-ethylhexyl)adipate	1	BDL	BDL	BDL	
Benzo(a)anthracene	1	BDL	BDL	BDL	
Chrysene	1	BDL	BDL	BDL	
Bis(2-ethylhexyl)phthalate	1	BDL	B	BDL	B
Di-n-octyl phthalate	1	BDL	BDL	BDL	
Benzo(b)fluoranthene	1	BDL	BDL	BDL	
Benzo(k)fluoranthene	1	BDL	BDL	BDL	
Benzo(a)pyrene	1	BDL	BDL	BDL	
Indeno(1,2,3-cd)pyrene	1	BDL	BDL	BDL	
Dibenzo(a,h)anthracene	1	BDL	BDL	BDL	
Benzo[g,h,i]perylene	1	BDL	BDL	BDL	

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.



Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111212-011	111212-012	111212-013	
		Processed Gas 01	Processed Gas 02	Processed Gas 03	
		3/28/11 0919-1320	3/28/11 0919-1320	3/28/11 0919-1320	
		Landfill #8	Landfill #8	Landfill #8	
		ppbv	ppbv	ppbv	
N-nitrosodimethylamine	1	BDL	BDL	BDL	
Phenol	1	BDL	BDL	BDL	
Aniline	1	BDL	BDL	BDL	
Bis(2-Chloroethyl) ether	1	BDL	BDL	BDL	
2-Chlorophenol	1	BDL	BDL	BDL	
Benzyl Alcohol	1	BDL	B	BDL	B
2-methylphenol	1	BDL	BDL	BDL	B
bis(2-chloroisopropyl)ether	1	BDL	BDL	BDL	
N-Nitroso-di-n-propylamine	1	BDL	BDL	BDL	
4-methylphenol/3-methylphenol	1	BDL	BDL	BDL	
Isophorone	1	BDL	BDL	BDL	
2-nitrophenol	1	BDL	BDL	BDL	
2,4-dimethylphenol	1	BDL	BDL	BDL	
Bis(2-chloroethoxy)methane	1	BDL	BDL	BDL	
2,4-dichlorophenol	1	BDL	BDL	BDL	
4-Chloroaniline	1	BDL	BDL	BDL	
4-chloro-3-methylphenol	1	BDL	BDL	BDL	
2-methylnaphthalene	1	BDL	BDL	BDL	
1-methylnaphthalene	1	BDL	BDL	BDL	
Hexachlorocyclopentadiene	1	BDL	BDL	BDL	
2,4,6-trichlorophenol	1	BDL	BDL	BDL	
2,4,5-trichlorophenol	1	BDL	BDL	BDL	
2-chloronaphthalene	1	BDL	BDL	BDL	
2-Nitroaniline	1	BDL	BDL	BDL	
1,4-dinitrobenzene	1	BDL	BDL	BDL	
Dimethyl phthalate	1	BDL	BDL	BDL	
1,3-dinitrobenzene	1	BDL	BDL	BDL	
2,6-dinitrotoluene	1	BDL	BDL	BDL	
Acenaphthylene	1	BDL	BDL	BDL	
1,2-Dinitrobenzene	1	BDL	BDL	BDL	
3-Nitroaniline	1	BDL	BDL	BDL	
Acenaphthene	1	BDL	BDL	BDL	
2,4-dinitrophenol	1	BDL	BDL	BDL	
4-nitrophenol	1	BDL	BDL	BDL	
Dibenzofuran	1	BDL	BDL	BDL	
2,4-dinitrotoluene	1	BDL	BDL	BDL	
2,3,4,6-Tetrachlorophenol	1	BDL	BDL	BDL	
2,3,5,6-Tetrachlorophenol	1	BDL	BDL	BDL	
Diethyl Phthalate	1	BDL	BDL	BDL	

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111212-011		111212-012		111212-013	
		Processed Gas 01		Processed Gas 02		Processed Gas 03	
		3/28/11 0919-1320		3/28/11 0919-1320		3/28/11 0919-1320	
		Landfill #8		Landfill #8		Landfill #8	
		ppbv		ppbv		ppbv	
Fluorene	1	BDL		BDL		BDL	
4-chlorophenyl phenyl ether	1	BDL		BDL		BDL	
4-Nitroaniline	1	BDL		BDL		BDL	
4,6-dinitro-2-methylphenol	1	BDL		BDL		BDL	
Diphenylamine	1	BDL		BDL		BDL	
n-Nitrosodiphenylamine	1	BDL		BDL		BDL	
Azobenzene	1	BDL		BDL		BDL	
4-Bromophenyl phenyl ether	1	BDL		BDL		BDL	
Hexachlorobenzene	1	BDL		BDL		BDL	
Pentachlorophenol	1	BDL		BDL		BDL	
Phenanthrene	1	BDL		BDL		BDL	
Anthracene	1	BDL		BDL		BDL	
Carbazole	1	BDL		BDL		BDL	
Di-n-butyl phthalate	1	1.4	B	1.0	B	1.0	B
Fluoranthene	1	BDL		BDL		BDL	
Pyrene	1	BDL		BDL		BDL	
Benzyl butyl phthalate	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)adipate	1	BDL		BDL		BDL	
Benzo(a)anthracene	1	BDL		BDL		BDL	
Chrysene	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)phthalate	1	0.9	J,B	3.4	B	0.6	J,B
Di-n-octyl phthalate	1	BDL		BDL		BDL	
Benzo(b)fluoranthene	1	BDL		BDL		BDL	
Benzo(k)fluoranthene	1	BDL		BDL		BDL	
Benzo(a)pyrene	1	BDL		BDL		BDL	
Indeno(1,2,3-cd)pyrene	1	BDL		BDL		BDL	
Dibenzo(a,h)anthracene	1	BDL		BDL		BDL	
Benzo[g,h,i]perylene	1	BDL		BDL		BDL	

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111220-011	111220-012	111220-013
		Processed Gas 01 3/29/11 1043-1450 Landfill #7	Processed Gas 02 3/29/11 1043-1450 Landfill #7	Processed Gas 03 3/29/11 1043-1450 Landfill #7
		ppbv	ppbv	ppbv
N-nitrosodimethylamine	1	BDL	BDL	BDL
Phenol	1	BDL	BDL	BDL
Aniline	1	BDL	BDL	BDL
Bis(2-Chloroethyl) ether	1	BDL	BDL	BDL
2-Chlorophenol	1	BDL	BDL	BDL
Benzyl Alcohol	1	BDL	BDL	BDL
2-methylphenol	1	BDL	BDL	BDL
bis(2-chloroisopropyl)ether	1	BDL	BDL	BDL
N-Nitroso-di-n-propylamine	1	BDL	BDL	BDL
4-methylphenol/3-methylphenol	1	BDL	BDL	BDL
Isophorone	1	BDL	BDL	BDL
2-nitrophenol	1	BDL	BDL	BDL
2,4-dimethylphenol	1	BDL	BDL	BDL
Bis(2-chloroethoxy)methane	1	BDL	BDL	BDL
2,4-dichlorophenol	1	BDL	BDL	BDL
4-Chloroaniline	1	BDL	BDL	BDL
4-chloro-3-methylphenol	1	BDL	BDL	BDL
2-methylnaphthalene	1	BDL	BDL	BDL
1-methylnaphthalene	1	BDL	BDL	BDL
Hexachlorocyclopentadiene	1	BDL	BDL	BDL
2,4,6-trichlorophenol	1	BDL	BDL	BDL
2,4,5-trichlorophenol	1	BDL	BDL	BDL
2-chloronaphthalene	1	BDL	BDL	BDL
2-Nitroaniline	1	BDL	BDL	BDL
1,4-dinitrobenzene	1	BDL	BDL	BDL
Dimethyl phthalate	1	BDL	BDL	BDL
1,3-dinitrobenzene	1	BDL	BDL	BDL
2,6-dinitrotoluene	1	BDL	BDL	BDL
Acenaphthylene	1	BDL	BDL	BDL
1,2-Dinitrobenzene	1	BDL	BDL	BDL
3-Nitroaniline	1	BDL	BDL	BDL
Acenaphthene	1	BDL	BDL	BDL
2,4-dinitrophenol	1	BDL	BDL	BDL
4-nitrophenol	1	BDL	BDL	BDL
Dibenzofuran	1	BDL	BDL	BDL
2,4-dinitrotoluene	1	BDL	BDL	BDL
2,3,4,6-Tetrachlorophenol	1	BDL	BDL	BDL
2,3,5,6-Tetrachlorophenol	1	BDL	BDL	BDL
Diethyl Phthalate	1	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111220-011 Processed Gas 01 3/29/11 1043-1450		111220-012 Processed Gas 02 3/29/11 1043-1450		111220-013 Processed Gas 03 3/29/11 1043-1450	
		Landfill #7 ppbv		Landfill #7 ppbv		Landfill #7 ppbv	
Fluorene	1	BDL		BDL		BDL	
4-chlorophenyl phenyl ether	1	BDL		BDL		BDL	
4-Nitroaniline	1	BDL		BDL		BDL	
4,6-dinitro-2-methylphenol	1	BDL		BDL		BDL	
Diphenylamine	1	BDL		BDL		BDL	
n-Nitrosodiphenylamine	1	BDL		BDL		BDL	
Azobenzene	1	BDL		BDL		BDL	
4-Bromophenyl phenyl ether	1	BDL		BDL		BDL	
Hexachlorobenzene	1	BDL		BDL		BDL	
Pentachlorophenol	1	BDL		BDL		BDL	
Phenanthrene	1	BDL		BDL		BDL	
Anthracene	1	BDL		BDL		BDL	
Carbazole	1	BDL		BDL		BDL	
Di-n-butyl phthalate	1	1.1	B	1.1	B	0.8	J,B
Fluoranthene	1	BDL		BDL		BDL	
Pyrene	1	BDL		BDL		BDL	
Benzyl butyl phthalate	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)adipate	1	BDL		BDL		BDL	
Benzo(a)anthracene	1	BDL		BDL		BDL	
Chrysene	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)phthalate	1	BDL		BDL		BDL	
Di-n-octyl phthalate	1	BDL		BDL		BDL	
Benzo(b)fluoranthene	1	BDL		BDL		BDL	
Benzo(k)fluoranthene	1	BDL		BDL		BDL	
Benzo(a)pyrene	1	BDL		BDL		BDL	
Indeno(1,2,3-cd)pyrene	1	BDL		BDL		BDL	
Dibenzo(a,h)anthracene	1	BDL		BDL		BDL	
Benzo[g,h,i]perylene	1	BDL		BDL		BDL	

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111221-012	111221-013	111221-014
		Processed Gas 01 3/30/11 0911-1315	Processed Gas 02 3/30/11 0911-1315	Processed Gas 03 3/30/11 0911-1315
		Landfill #6	Landfill #6	Landfill #6
		ppbv	ppbv	ppbv
N-nitrosodimethylamine	1	BDL	BDL	BDL
Phenol	1	BDL	BDL	BDL
Aniline	1	BDL	BDL	BDL
Bis(2-Chloroethyl) ether	1	BDL	BDL	BDL
2-Chlorophenol	1	BDL	BDL	BDL
Benzyl Alcohol	1	BDL	BDL	BDL
2-methylphenol	1	BDL	BDL	BDL
bis(2-chloroisopropyl)ether	1	BDL	BDL	BDL
N-Nitroso-di-n-propylamine	1	BDL	BDL	BDL
4-methylphenol/3-methylphenol	1	BDL	BDL	BDL
Isophorone	1	BDL	BDL	BDL
2-nitrophenol	1	BDL	BDL	BDL
2,4-dimethylphenol	1	BDL	BDL	BDL
Bis(2-chloroethoxy)methane	1	BDL	BDL	BDL
2,4-dichlorophenol	1	BDL	BDL	BDL
4-Chloroaniline	1	BDL	BDL	BDL
4-chloro-3-methylphenol	1	BDL	BDL	BDL
2-methylnaphthalene	1	BDL	BDL	BDL
1-methylnaphthalene	1	BDL	BDL	BDL
Hexachlorocyclopentadiene	1	BDL	BDL	BDL
2,4,6-trichlorophenol	1	BDL	BDL	BDL
2,4,5-trichlorophenol	1	BDL	BDL	BDL
2-chloronaphthalene	1	BDL	BDL	BDL
2-Nitroaniline	1	BDL	BDL	BDL
1,4-dinitrobenzene	1	BDL	BDL	BDL
Dimethyl phthalate	1	BDL	BDL	BDL
1,3-dinitrobenzene	1	BDL	BDL	BDL
2,6-dinitrotoluene	1	BDL	BDL	BDL
Acenaphthylene	1	BDL	BDL	BDL
1,2-Dinitrobenzene	1	BDL	BDL	BDL
3-Nitroaniline	1	BDL	BDL	BDL
Acenaphthene	1	BDL	BDL	BDL
2,4-dinitrophenol	1	BDL	BDL	BDL
4-nitrophenol	1	BDL	BDL	BDL
Dibenzofuran	1	BDL	BDL	BDL
2,4-dinitrotoluene	1	BDL	BDL	BDL
2,3,4,6-Tetrachlorophenol	1	BDL	BDL	BDL
2,3,5,6-Tetrachlorophenol	1	BDL	BDL	BDL
Diethyl Phthalate	1	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111221-012	111221-013	111221-014
		Processed Gas 01 3/30/11 0911-1315	Processed Gas 02 3/30/11 0911-1315	Processed Gas 03 3/30/11 0911-1315
		Landfill #6	Landfill #6	Landfill #6
		ppbv	ppbv	ppbv
Fluorene	1	BDL	BDL	BDL
4-chlorophenyl phenyl ether	1	BDL	BDL	BDL
4-Nitroaniline	1	BDL	BDL	BDL
4,6-dinitro-2-methylphenol	1	BDL	BDL	BDL
Diphenylamine	1	BDL	BDL	BDL
n-Nitrosodiphenylamine	1	BDL	BDL	BDL
Azobenzene	1	BDL	BDL	BDL
4-Bromophenyl phenyl ether	1	BDL	BDL	BDL
Hexachlorobenzene	1	BDL	BDL	BDL
Pentachlorophenol	1	BDL	BDL	BDL
Phenanthrene	1	BDL	BDL	BDL
Anthracene	1	BDL	BDL	BDL
Carbazole	1	BDL	BDL	BDL
Di-n-butyl phthalate	1	BDL	BDL	0.5 J
Fluoranthene	1	BDL	BDL	BDL
Pyrene	1	BDL	BDL	BDL
Benzyl butyl phthalate	1	BDL	BDL	BDL
Bis(2-ethylhexyl)adipate	1	BDL	BDL	BDL
Benzo(a)anthracene	1	BDL	BDL	BDL
Chrysene	1	BDL	BDL	BDL
Bis(2-ethylhexyl)phthalate	1	BDL	BDL	1.1
Di-n-octyl phthalate	1	BDL	BDL	BDL
Benzo(b)fluoranthene	1	BDL	BDL	BDL
Benzo(k)fluoranthene	1	BDL	BDL	BDL
Benzo(a)pyrene	1	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	1	BDL	BDL	BDL
Dibenzo(a,h)anthracene	1	BDL	BDL	BDL
Benzo[g,h,i]perylene	1	BDL	BDL	BDL

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111225-007	111225-008	111225-009
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		3/31/2011 1020-1422	3/31/2011 1020-1422	3/31/2011 1020-1422
		Landfill #9	Landfill #9	Landfill #9
		ppbv	ppbv	ppbv
N-nitrosodimethylamine	1	BDL	BDL	BDL
Phenol	1	BDL	BDL	BDL
Aniline	1	BDL	BDL	BDL
Bis(2-Chloroethyl) ether	1	BDL	BDL	BDL
2-Chlorophenol	1	BDL	BDL	BDL
Benzyl Alcohol	1	BDL	BDL	BDL
2-methylphenol	1	BDL	BDL	BDL
bis(2-chloroisopropyl)ether	1	BDL	BDL	BDL
N-Nitroso-di-n-propylamine	1	BDL	BDL	BDL
4-methylphenol/3-methylphenol	1	BDL	BDL	BDL
Isophorone	1	BDL	BDL	BDL
2-nitrophenol	1	BDL	BDL	BDL
2,4-dimethylphenol	1	BDL	BDL	BDL
Bis(2-chloroethoxy)methane	1	BDL	BDL	BDL
2,4-dichlorophenol	1	BDL	BDL	BDL
4-Chloroaniline	1	BDL	BDL	BDL
4-chloro-3-methylphenol	1	BDL	BDL	BDL
2-methylnaphthalene	1	BDL	BDL	BDL
1-methylnaphthalene	1	BDL	BDL	BDL
Hexachlorocyclopentadiene	1	BDL	BDL	BDL
2,4,6-trichlorophenol	1	BDL	BDL	BDL
2,4,5-trichlorophenol	1	BDL	BDL	BDL
2-chloronaphthalene	1	BDL	BDL	BDL
2-Nitroaniline	1	BDL	BDL	BDL
1,4-dinitrobenzene	1	BDL	BDL	BDL
Dimethyl phthalate	1	BDL	BDL	BDL
1,3-dinitrobenzene	1	BDL	BDL	BDL
2,6-dinitrotoluene	1	BDL	BDL	BDL
Acenaphthylene	1	BDL	BDL	BDL
1,2-Dinitrobenzene	1	BDL	BDL	BDL
3-Nitroaniline	1	BDL	BDL	BDL
Acenaphthene	1	BDL	BDL	BDL
2,4-dinitrophenol	1	BDL	BDL	BDL
4-nitrophenol	1	BDL	BDL	BDL
Dibenzofuran	1	BDL	BDL	BDL
2,4-dinitrotoluene	1	BDL	BDL	BDL
2,3,4,6-Tetrachlorophenol	1	BDL	BDL	BDL
2,3,5,6-Tetrachlorophenol	1	BDL	BDL	BDL
Diethyl Phthalate	1	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis

Analyte	detection limit	111225-007		111225-008		111225-009	
		Processed Gas 01		Processed Gas 02		Processed Gas 03	
		3/31/2011	1020-1422	3/31/2011	1020-1422	3/31/2011	1020-1422
		Landfill #9		Landfill #9		Landfill #9	
		ppbv		ppbv		ppbv	
Fluorene	1	BDL		BDL		BDL	
4-chlorophenyl phenyl ether	1	BDL		BDL		BDL	
4-Nitroaniline	1	BDL		BDL		BDL	
4,6-dinitro-2-methylphenol	1	BDL		BDL		BDL	
Diphenylamine	1	BDL		BDL		BDL	
n-Nitrosodiphenylamine	1	BDL		BDL		BDL	
Azobenzene	1	BDL		BDL		BDL	
4-Bromophenyl phenyl ether	1	BDL		BDL		BDL	
Hexachlorobenzene	1	BDL		BDL		BDL	
Pentachlorophenol	1	BDL		BDL		BDL	
Phenanthrene	1	BDL		BDL		BDL	
Anthracene	1	BDL		BDL		BDL	
Carbazole	1	BDL		BDL		BDL	
Di-n-butyl phthalate	1	0.9	J,B	1.3		0.8	J,B
Fluoranthene	1	BDL		BDL		BDL	
Pyrene	1	BDL		BDL		BDL	
Benzyl butyl phthalate	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)adipate	1	BDL		BDL		BDL	
Benzo(a)anthracene	1	BDL		BDL		BDL	
Chrysene	1	BDL		BDL		BDL	
Bis(2-ethylhexyl)phthalate	1	BDL	B	BDL	B	BDL	B
Di-n-octyl phthalate	1	BDL		BDL		BDL	
Benzo(b)fluoranthene	1	BDL		BDL		BDL	
Benzo(k)fluoranthene	1	BDL		BDL		BDL	
Benzo(a)pyrene	1	BDL		BDL		BDL	
Indeno(1,2,3-cd)pyrene	1	BDL		BDL		BDL	
Dibenzo(a,h)anthracene	1	BDL		BDL		BDL	
Benzo[g,h,i]perylene	1	BDL		BDL		BDL	

BDL - Below Detection Limit

B - Analyte detected in the Blank.

J - Estimated value; detected between the RL and DL.

D - Analyte reported from a diluted extract.

E - Estimate, result detected above calibration range.

I - Concentration/Peak ID uncertain due to potential interference.



Aldehyde and Ketone Compounds

Analyte	detection limit	101694-007	101694-008	101694-009
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		11/01/10 0957-1357	11/01/10 0957-1357	11/01/10 1402-1802
		Landfill #1	Landfill #1	Landfill #1
		ppbv	ppbv	ppbv
Formaldehyde	10	1	1	1
Acetaldehyde	7	BDL	BDL	BDL
Acetone	5	BDL	BDL	BDL
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	BDL	BDL	BDL
Crotonaldehyde	5	BDL	BDL	BDL
2-Butanone (MEK)	5	BDL *	BDL *	BDL *
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	BDL
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	BDL	BDL	BDL
p-Tolualdehyde	5	BDL	BDL	BDL
Hexanal	5	BDL	BDL	BDL

* Detection limit for MEK for this sample set is 30 ppbv

Analyte		101786-008	101786-009	101786-010
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		12/14/10 1004-1404	12/14/10 1004-1404	12/14/10 1004-1404
		Landfill #5	Landfill #5	Landfill #5
		ppbv	ppbv	ppbv
Formaldehyde	10	BDL	BDL	BDL
Acetaldehyde	7	14	10	BDL
Acetone	5	96	54	39
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	BDL	BDL	BDL
Crotonaldehyde	5	BDL	BDL	BDL
2-Butanone (MEK)	5	18	11	7
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	BDL
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	BDL	BDL	BDL
p-Tolualdehyde	5	BDL	BDL	BDL
Hexanal	5	BDL	BDL	BDL

BDL - Below Detection Limit

The results within this report relate only to the items tested.



Aldehyde and Ketone Compounds

Analyte	detection limit	101788-008	101788-009	101788-010
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		12/15/10 1351-1751	12/15/10 1351-1751	12/15/10 1351-1751
		Landfill #6	Landfill #6	Landfill #6
		ppbv	ppbv	ppbv
Formaldehyde	10	BDL	BDL	BDL
Acetaldehyde	7	15	14	11
Acetone	5	22	23	16
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	BDL	BDL	BDL
Crotonaldehyde	5	BDL	BDL	BDL
2-Butanone (MEK)	5	15	15	12
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	BDL
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	BDL	BDL	BDL
p-Tolualdehyde	5	BDL	BDL	BDL
Hexanal	5	BDL	BDL	BDL

Analyte	detection limit	101793-008	101793-009	101793-010
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		12/17/10 0934-1334	12/17/10 0934-1334	12/17/10 0934-1334
		Landfill #7	Landfill #7	Landfill #7
		ppbv	ppbv	ppbv
Formaldehyde	10	BDL	BDL	BDL
Acetaldehyde	7	22	31	32
Acetone	5	41	60	49
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	BDL	BDL	BDL
Crotonaldehyde	5	BDL	BDL	BDL
2-Butanone (MEK)	5	17	32	28
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	BDL
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	BDL	BDL	BDL
p-Tolualdehyde	5	BDL	BDL	BDL
Hexanal	5	BDL	BDL	BDL

BDL - Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Aldehyde and Ketone Compounds

Analyte	detection limit	111212-015	111212-016	111212-017
		Processed Gas 01 3/28/11 0920-1320	Processed Gas 02 3/28/11 0920-1320	Processed Gas 03 3/28/11 0920-1320
		Landfill #8	Landfill #8	Landfill #8
		ppbv	ppbv	ppbv
Formaldehyde	10	33	BDL	19
Acetaldehyde	7	BDL	11	8
Acetone	5	14	9	11
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	10	BDL	BDL
Crotonaldehyde	5	BDL	BDL	BDL
2-Butanone (MEK)	5	BDL	BDL	96
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	BDL
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	10	4	BDL
p-Tolualdehyde	5	BDL	BDL	BDL
Hexanal	5	BDL	BDL	BDL

Analyte		111220-015	111220-016	111220-017
		Processed Gas 01 3/29/11 1043-1450	Processed Gas 02 3/29/11 1043-1450	Processed Gas 03 3/29/11 1043-1450
		Landfill #7	Landfill #7	Landfill #7
		ppbv	ppbv	ppbv
Formaldehyde	10	12	BDL	57
Acetaldehyde	7	35	BDL	147
Acetone	5	177	26	180
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	BDL	BDL	BDL
Crotonaldehyde	5	26	4	54
2-Butanone (MEK)	5	95	9	81
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	BDL
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	BDL	BDL	107
p-Tolualdehyde	5	BDL	BDL	BDL
Hexanal	5	36	BDL	250

BDL - Below Detection Limit

highlighted cells are for data outside the calibration range
results are estimated

The results within this report relate only to the items tested.

DRAFT

Aldehyde and Ketone Compounds

Analyte	detection limit	111221-016	111221-017	111221-018
		Processed Gas 01 3/30/11 0911-1315	Processed Gas 02 3/30/11 0911-1315	Processed Gas 03 3/30/11 0911-1315
		Landfill #6	Landfill #6	Landfill #6
		ppbv	ppbv	ppbv
Formaldehyde	10	BDL	23	18
Acetaldehyde	7	7	20	11
Acetone	5	22	52	31
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	BDL	BDL	BDL
Crotonaldehyde	5	6	10	8
2-Butanone (MEK)	5	8	16	19
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	69
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	BDL	BDL	BDL
p-Tolualdehyde	5	5	11	8
Hexanal	5	BDL	BDL	BDL

Analyte		111225-011	111225-012	111225-013
		Processed Gas 01 3/31/2011 1020-1422	Processed Gas 02 3/31/2011 1020-1422	Processed Gas 03 3/31/2011 1020-1422
		Landfill #9	Landfill #9	Landfill #9
		ppbv	ppbv	ppbv
Formaldehyde	10	17	14	15
Acetaldehyde	7	70	68	66
Acetone	5	461	444	522
Acrolein (2-propenal)	6	BDL	BDL	BDL
Propionaldehyde	5	BDL	BDL	BDL
Crotonaldehyde	5	BDL	BDL	BDL
2-Butanone (MEK)	5	BDL	BDL	BDL
Methacrolein (Isobutenal)	5	BDL	BDL	BDL
Butanal	5	BDL	BDL	BDL
Benzaldehyde	5	BDL	BDL	BDL
Pentanal	5	BDL	BDL	BDL
p-Tolualdehyde	5	BDL	BDL	BDL
Hexanal	5	BDL	BDL	BDL

BDL - Below Detection Limit

highlighted cells are for data outside the calibration range
results are estimated

The results within this report relate only to the items tested.



Total Organic Silicon, including Siloxanes

	Detection Limit	101694-001	101694-002	101694-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		11/01/10 1834	11/01/10 1829	11/01/10 1823
		Landfill #1	Landfill #1	Landfill #1
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	BDL	BDL	BDL
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit

	Detection Limit	101786-001	101786-002	101786-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		12/13/10 1542	12/13/10 1548	12/13/10 1552
		Landfill #5	Landfill #5	Landfill #5
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	0.4	0.3	0.3
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit



Total Organic Silicon, including Siloxanes

	Detection Limit	101788-001	101788-002	101788-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		12/15/10 1230	12/15/10 1233	12/15/10 1237
		Landfill #6	Landfill #6	Landfill #6
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	BDL	BDL	BDL
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit

	Detection Limit	101793-001	101793-002	101793-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		12/16/10 1702	12/16/10 1707	12/16/10 1713
		Landfill #7	Landfill #7	Landfill #7
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	BDL	0.1	0.1
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit



Total Organic Silicon, including Siloxanes

	Detection Limit	111212-001	111212-002	111212-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		3/28/11 1633	3/28/11 1635	3/28/11 1637
		Landfill #8	Landfill #8	Landfill #8
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	BDL	BDL	BDL
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit

	Detection Limit	111220-001	111220-002	111220-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		3/29/11 1650	3/29/11 1653	3/29/11 1656
		Landfill #7	Landfill #7	Landfill #7
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	BDL	BDL	BDL
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit



Total Organic Silicon, including Siloxanes

	Detection Limit	111221-001	111221-002	111221-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		3/30/11 1345	3/30/11 1348	3/30/11 1357
		Landfill #6	Landfill #6	Landfill #6
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	BDL	BDL	BDL
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit

	Detection Limit	111225-001	111225-002	111225-003
		Processed Gas 01	Processed Gas 02	Processed Gas 03
		3/31/11 1635	3/31/11 1637	3/31/11 1639
		Landfill #9	Landfill #9	Landfill #9
		mg Si / M ³	mg Si / M ³	mg Si / M ³
1,1,3,3-Tetramethyldisiloxane	0.1	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	BDL	BDL	BDL
Hexamethyldisilane	0.1	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	BDL	BDL	BDL
Decamethyltetrasiloxane (L4, MD2M)	0.1	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	BDL	BDL	BDL

BDL = Below Detection Limit

The results within this report relate only to the items tested.



Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101694-010	101694-011	101694-012
		HG Tube 1	HG Tube 2	HG Tube 3
		11/01/10 1018-1318	11/01/10 1325-1625	11/01/10 1415-1715
		Landfill #1	Landfill #1	Landfill #1
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	BDL	BDL	BDL

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101694-017	101694-018	101694-020
		Impinger 1	Impinger 2	Impinger 3
		11/30/10 1524-1826	11/30/10 1524-1826	12/1/10 0746-1050
		Landfill #1	Landfill #1	Landfill #1
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	175
Copper *	30	BDL	118	BDL
Manganese	30	BDL	BDL	BDL
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	BDL	BDL	BDL
Antimony	30	BDL	BDL	BDL
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	219	253	BDL

* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.



Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101786-015	101786-016	101786-017
		HG Tube 1	HG Tube 2	HG Tube 3
		12/14/10 1456-1656	12/14/10 1456-1656	12/14/10 1456-1656
		Landfill #5	Landfill #5	Landfill #5
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	BDL	BDL	BDL

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101786-019	101786-020	101786-021
		Impinger 1	Impinger 2	Impinger 3
		12/14/10 0912-1236	12/14/10 0912-1236	12/14/10 1257-1603
		Landfill #5	Landfill #5	Landfill #5
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	BDL
Copper *	30	BDL	BDL	38
Manganese	30	BDL	BDL	BDL
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	BDL	BDL	BDL
Antimony	30	BDL	BDL	BDL
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	BDL	BDL	BDL

* Zinc and copper found in field blanks.
 Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.



Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101788-015	101788-016	101788-017
		HG Tube 1	HG Tube 2	HG Tube 3
		12/15/10 0915-1115	12/15/10 1355-1555	12/15/10 1510-1710
		Landfill #6	Landfill #6	Landfill #6
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	0.02	BDL	BDL

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101788-019	101788-020	101788-021
		Impinger 1	Impinger 2	Impinger 3
		12/15/10 0954-1308	12/15/10 0954-1308	12/15/10 1333-1635
		Landfill #6	Landfill #6	Landfill #6
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	BDL
Copper *	30	BDL	BDL	BDL
Manganese	30	BDL	BDL	65
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	BDL	BDL	BDL
Antimony	30	BDL	BDL	BDL
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	BDL	31	BDL

* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.



Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101793-015	101793-016	101793-017
		HG Tube 1	HG Tube 2	HG Tube 3
		12/17/10 1425-1625	12/17/10 1425-1625	12/17/10 1425-1625
		Landfill #7	Landfill #7	Landfill #7
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	BDL	BDL	BDL

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	101793-019	101793-020	101793-021
		Impinger 1	Impinger 2	Impinger 3
		12/17/10 1341-1642	12/17/10 1341-1642	12/17/10 1341-1644
		Landfill #7	Landfill #7	Landfill #7
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	BDL
Copper *	30	BDL	BDL	BDL
Manganese	30	BDL	BDL	BDL
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	155	BDL	39
Antimony	30	BDL	BDL	BDL
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	BDL	BDL	BDL

* Zinc and copper found in field blanks.
 Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

DRAFT

Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111212-019	111212-020	111212-021
		HG Tube 1	HG Tube 2	HG Tube 3
		3/28/11 0921-1239	3/28/11 0921-1239	3/28/11 0921-1239
		Landfill #8	Landfill #8	Landfill #8
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	0.04	0.05	0.04

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111212-008	111212-009	111212-010
		Impinger 1	Impinger 2	Impinger 3
		3/28/11 1347-1550	3/28/11 1347-1550	3/28/11 1347-1550
		Landfill #8	Landfill #8	Landfill #8
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	BDL
Copper *	30	45	BDL	BDL
Manganese	30	BDL	BDL	BDL
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	BDL	18	BDL
Antimony	30	BDL	BDL	BDL
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	23	BDL	BDL

* Zinc and copper found in field blanks.

Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.



Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111220-019	111220-020	111220-021
		HG Tube 1	HG Tube 2	HG Tube 3
		3/29/11 1043-1412	3/29/11 1043-1412	3/29/11 1043-1412
		Landfill #7	Landfill #7	Landfill #7
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	sorbent blown out during sampling	BDL	BDL

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111220-005	111220-006	111220-007
		Impinger 1	Impinger 2	Impinger 3
		3/29/11 1429-1640	3/29/11 1429-1640	3/29/11 1429-1640
		Landfill #7	Landfill #7	Landfill #7
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	BDL
Copper *	30	BDL	BDL	BDL
Manganese	30	BDL	BDL	BDL
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	BDL	BDL	BDL
Antimony	30	BDL	BDL	BDL
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	BDL	BDL	BDL

* Zinc and copper found in field blanks.
 Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.



Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111221-020	111221-021	111221-022
		HG Tube 1	HG Tube 2	HG Tube 3
		3/30/11 0911-1214	3/30/11 0911-1214	3/30/11 0911-1214
		Landfill #6	Landfill #6	Landfill #6
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	BDL	BDL	bad sample collected

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111221-005	111221-006	111221-007
		Impinger 1	Impinger 2	Impinger 3
		3/30/11 1403-1612	3/30/11 1403-1612	3/30/11 1403-1612
		Landfill #6	Landfill #6	Landfill #6
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	BDL
Copper *	30	BDL	BDL	BDL
Manganese	30	BDL	BDL	BDL
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	BDL	BDL	BDL
Antimony	30	BDL	BDL	BDL
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	BDL	BDL	BDL

* Zinc and copper found in field blanks.
 Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.



Volatile Metals Analysis

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111225-015	111225-016	111225-017
		HG Tube 1	HG Tube 2	HG Tube 3
		3/31/2011 1020-1405	3/31/2011 1020-1405	3/31/2011 1020-1405
		Landfill #9	Landfill #9	Landfill #9
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Mercury	0.01	BDL	0.01	BDL

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	111225-004	111225-005	111225-006
		Impinger 1	Impinger 2	Impinger 3
		3/31/2011 1435-1640	3/31/2011 1435-1640	3/31/2011 1435-1640
		Landfill #9	Landfill #9	Landfill #9
		$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$	$\mu\text{g}/\text{M}^3$
Arsenic	30	BDL	BDL	BDL
Barium	30	BDL	BDL	BDL
Beryllium	30	BDL	BDL	BDL
Cadmium	30	BDL	BDL	BDL
Cobalt	30	BDL	BDL	BDL
Chromium	30	BDL	BDL	BDL
Copper *	30	BDL	BDL	BDL
Manganese	30	BDL	BDL	BDL
Molybdenum	30	BDL	BDL	BDL
Nickel	30	BDL	BDL	BDL
Lead	30	BDL	BDL	BDL
Antimony	30	BDL	BDL	32
Selenium	30	BDL	BDL	BDL
Strontium	30	BDL	BDL	BDL
Thallium	30	BDL	BDL	BDL
Zinc *	30	BDL	BDL	BDL

* Zinc and copper found in field blanks.
 Inconsistent metals data is likely due to particulate contamination from the gas stream, especially those metals that are part of the pipeline construction materials.

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qPCR and Bacteria/Spore Biological Analysis

	101694-013 Filter 1 11/01/10 1334-1415 Landfill #1 # per 100 scf	101694-014 Filter 2 11/01/10 1129-1209 Landfill #1 # per 100 scf	101694-015 Filter 3 11/01/10 1034-1100 Landfill #1 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	4.80E+06	4.16E+06	3.17E+06
Total acid-producing bacteria (APB)	5.13E+04	5.85E+04	1.59E+04
Total iron-oxidizing bacteria (IOB)	ND	ND	ND
Total sulfate-reducing bacteria (SRB)	ND	ND	ND
Live Bacteria			
Anaerobic	<130	<172	<133
Aerobic	<130	<172	<133
Total	<260	<344	<266
Spores			
Anaerobic	217	ND	ND
Aerobic	ND	ND	ND
Total	217	ND	ND

ND=Not Detected

	101786-012 Filter 1 12/14/10 1505-1525 Landfill #5 # per 100 scf	101786-013 Filter 2 12/14/10 1532-1552 Landfill #5 # per 100 scf	101786-014 Filter 3 12/14/10 1558-1618 Landfill #5 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	1.48E+06	6.39E+06	5.13E+05
Total acid-producing bacteria (APB)	1.42E+05	6.94E+04	7.98E+04
Total iron-oxidizing bacteria (IOB)	BDL	1.27E+04	2.23E+04
Total sulfate-reducing bacteria (SRB)	BDL	BDL	BDL
Live Bacteria			
Anaerobic	<158	<152	<172
Aerobic	<158	<152	<172
Total	<316	<304	<344
Spores			
Anaerobic	ND	ND	ND
Aerobic	ND	ND	ND
Total	ND	ND	ND

ND=Not Detected

The results within this report relate only to the items tested.



qPCR and Bacteria/Spore Biological Analysis

	101788-012 Filter 1 12/15/10 1707-1727 Landfill #6 # per 100 scf	101788-013 Filter 2 12/15/10 1737-1758 Landfill #6 # per 100 scf	101788-014 Filter 3 12/15/10 1737-1758 Landfill #6 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	7.09E+05	5.28E+05	7.52E+05
Total acid-producing bacteria (APB)	9.41E+04	6.20E+04	5.39E+04
Total iron-oxidizing bacteria (IOB)	BDL	BDL	BDL
Total sulfate-reducing bacteria (SRB)	BDL	BDL	BDL
Live Bacteria			
Anaerobic	<165	<130	<140
Aerobic	<165	<130	<140
Total	<330	<260	<280
Spores			
Anaerobic	ND	ND	ND
Aerobic	ND	ND	ND
Total	ND	ND	ND

ND=Not Detected

	101793-012 Filter 1 12/17/10 1004-1025 Landfill #7 # per 100 scf	101793-013 Filter 2 12/17/10 1035-1056 Landfill #7 # per 100 scf	101793-014 Filter 3 12/17/10 1035-1055 Landfill #7 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	5.24E+05	6.93E+05	7.60E+05
Total acid-producing bacteria (APB)	8.83E+04	1.35E+05	6.81E+04
Total iron-oxidizing bacteria (IOB)	BDL	1.43E+04	BDL
Total sulfate-reducing bacteria (SRB)	BDL	BDL	BDL
Live Bacteria			
Anaerobic	<165	<166	<163
Aerobic	220	<166	<163
Total	220	<332	<326
Spores			
Anaerobic	ND	ND	ND
Aerobic	ND	ND	ND
Total	ND	ND	ND

ND=Not Detected

The results within this report relate only to the items tested.



qPCR and Bacteria/Spore Biological Analysis

	111212-004 Filter 1 3/28/11 1415-1446 Landfill #8 # per 100 scf	111212-005 Filter 2 3/28/11 1443-1527 Landfill #8 # per 100 scf	111212-006 Filter 3 3/28/11 1530-1602 Landfill #8 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	2.37E+06	9.11E+05	6.67E+06
Total acid-producing bacteria (APB)	BDL	BDL	3.01E+04
Total iron-oxidizing bacteria (IOB)	4.29E+04	BDL	4.14E+04
Total sulfate-reducing bacteria (SRB)	BDL	BDL	2.27E+03
Live Bacteria			
Anaerobic	<126	960	1020
Aerobic	<126	<115	<122
Total	<252	960	1020
Spores			
Anaerobic	ND	ND	ND
Aerobic	ND	ND	ND
Total	ND	ND	ND

ND=Not Detected

	111220-008 Filter 1 3/29/11 1533-1605 Landfill #7 # per 100 scf	111220-009 Filter 2 3/29/11 1533-1605 Landfill #7 # per 100 scf	111220-010 Filter 3 3/29/11 1533-1605 Landfill #7 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	1.07E+06	1.61E+06	2.00E+06
Total acid-producing bacteria (APB)	1.93E+05	2.93E+04	8.27E+04
Total iron-oxidizing bacteria (IOB)	7.02E+04	5.49E+04	BDL
Total sulfate-reducing bacteria (SRB)	BDL	BDL	BDL
Live Bacteria			
Anaerobic	<128	<128	<128
Aerobic	<128	<128	<128
Total	<256	<256	<256
Spores			
Anaerobic	ND	ND	ND
Aerobic	ND	ND	ND
Total	ND	ND	ND

ND=Not Detected

The results within this report relate only to the items tested.



qPCR and Bacteria/Spore Biological Analysis

	111221-008 Filter 1 3/30/11 1740-1810 Landfill #6 # per 100 scf	111221-009 Filter 2 3/30/11 1740-1810 Landfill #6 # per 100 scf	111221-010 Filter 3 3/30/11 1740-1810 Landfill #6 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	2.38E+06	2.95E+06	1.82E+07
Total acid-producing bacteria (APB)	7.95E+04	2.02E+05	1.81E+05
Total iron-oxidizing bacteria (IOB)	5.59E+04	6.25E+04	BDL
Total sulfate-reducing bacteria (SRB)	BDL	BDL	BDL
Live Bacteria			
Anaerobic	<180	<180	<180
Aerobic	<180	<180	<180
Total	<360	<360	<360
Spores			
Anaerobic	ND	ND	ND
Aerobic	ND	ND	ND
Total	ND	ND	ND

ND=Not Detected

	111225-019 Filter 1 3/31/11 1545-1639 Landfill #9 # per 100 scf	111225-020 Filter 2 3/31/11 1545-1639 Landfill #9 # per 100 scf	111225-021 Filter 3 3/31/11 1545-1639 Landfill #9 # per 100 scf
qPCR Biological Analysis			
Total Bacteria	3.54E+06	2.22E+06	2.76E+06
Total acid-producing bacteria (APB)	BDL	7.57E+04	1.10E+05
Total iron-oxidizing bacteria (IOB)	7.61E+04	6.26E+04	7.67E+04
Total sulfate-reducing bacteria (SRB)	BDL	BDL	BDL
Live Bacteria			
Anaerobic	<170	228	<171
Aerobic	<170	<171	<171
Total	<340	228	<342
Spores			
Anaerobic	ND	ND	ND
Aerobic	ND	ND	ND
Total	ND	ND	ND

ND=Not Detected

The results within this report relate only to the items tested.

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Analysis by ASTM D1945 / D1946

Summary Statistics

Component	total # of samples	total # of hits	Average	Median	Max value	Min value	0.90 Percentile
Helium	24	0	BDL	BDL	BDL	BDL	BDL
Hydrogen	24	21	0.36	0.36	0.87	BDL	0.68
Carbon Dioxide	24	24	1.74	1.74	2.21	1.24	2.10
Oxygen/Argon	24	24	0.25	0.19	0.90	0.08	0.42
Nitrogen	24	24	2.97	2.51	6.03	1.16	5.47
Carbon Monoxide	24	0	BDL	BDL	BDL	BDL	BDL
Methane	24	24	94.68	95.22	96.60	91.48	95.89
Ethane	24	0	BDL	BDL	BDL	BDL	BDL
Ethene	24	0	BDL	BDL	BDL	BDL	BDL
Ethyne	24	0	BDL	BDL	BDL	BDL	BDL
Propane	24	0	BDL	BDL	BDL	BDL	BDL
Propene	24	0	BDL	BDL	BDL	BDL	BDL
Propadiene	24	0	BDL	BDL	BDL	BDL	BDL
Propyne	24	0	BDL	BDL	BDL	BDL	BDL
i-Butane	24	0	BDL	BDL	BDL	BDL	BDL
n-Butane	24	0	BDL	BDL	BDL	BDL	BDL
1-Butene	24	0	BDL	BDL	BDL	BDL	BDL
i-Butene	24	0	BDL	BDL	BDL	BDL	BDL
trans-2-Butene	24	0	BDL	BDL	BDL	BDL	BDL
cis-2-Butene	24	0	BDL	BDL	BDL	BDL	BDL
1,3-Butadiene	24	0	BDL	BDL	BDL	BDL	BDL
i-Pentane	24	0	BDL	BDL	BDL	BDL	BDL
n-Pentane	24	0	BDL	BDL	BDL	BDL	BDL
neo-Pentane	24	0	BDL	BDL	BDL	BDL	BDL
Pentenes	24	0	BDL	BDL	BDL	BDL	BDL
Hexane Plus	24	18	0.0003	0.0002	0.0013	BDL	0.0010
Ammonia	24	0	BDL	BDL	BDL	BDL	BDL

Calculated Real Gas Properties

Compressibility Factor [z] (Di	24	24	0.99806	0.99805	0.99814	0.99801	0.99814
Compressibility Factor [z] (S _c	24	24	0.99775	0.99774	0.99784	0.99770	0.99783
Relative Density (Specific Gra	24	24	0.5836	0.5837	0.5956	0.5742	0.5917
Gross HV (Dry) (Btu/ft ³)	24	24	961.5	966.9	980.9	929.4	974.0
Gross HV (Sat.) (Btu/ft ³)	24	24	945.1	950.4	964.1	913.5	957.4
Wobbe Index	24	24	1258.8	1267.1	1292.2	1204.3	1283.1
Net HV (Dry) (Btu/ft ³)	24	24	865.7	870.5	883.1	836.8	876.9
Net HV (Sat.) (Btu/ft ³)	24	24	850.9	855.7	868.0	822.5	861.9
Real Gas Density (lbs/ft ³)	24	24	0.0447	0.0447	0.0456	0.0439	0.0453

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

Extended Hydrocarbon Analysis by GC/FID Summary Statistics

Component Name	Detection Limit	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
				----- ppmv -----				
Cycloalkanes								
Cyclopentane	1	24	3	BDL	BDL	1	BDL	BDL
Methylcyclopentane	1	24	1	BDL	BDL	1	BDL	BDL
Cyclohexane	1	24	2	BDL	BDL	1	BDL	BDL
Methylcyclohexane	1	24	1	BDL	BDL	1	BDL	BDL
Aromatics								
Benzene	1	24	1	BDL	BDL	1	BDL	BDL
Toluene	1	24	3	BDL	BDL	1	BDL	BDL
Ethylbenzene	1	24	0	BDL	BDL	BDL	BDL	BDL
m,p-Xylene	1	24	4	BDL	BDL	1	BDL	1
Styrene	1	24	0	BDL	BDL	BDL	BDL	BDL
o-Xylene	1	24	0	BDL	BDL	BDL	BDL	BDL
C3 Benzenes	1	24	3	BDL	BDL	1	BDL	BDL
Naphthalene	1	24	0	BDL	BDL	BDL	BDL	BDL
C1 Naphthalenes	1	24	0	BDL	BDL	BDL	BDL	BDL
C2 Naphthalenes	1	24	0	BDL	BDL	BDL	BDL	BDL
Paraffins								
Hexanes	1	24	8	1	BDL	4	BDL	2
Heptanes	1	24	3	BDL	BDL	2	BDL	BDL
2,2,4-Trimethylpentane	1	24	0	BDL	BDL	BDL	BDL	BDL
Octanes	1	24	4	BDL	BDL	1	BDL	1
Nonanes	1	24	3	BDL	BDL	2	BDL	BDL
Decanes	1	24	13	1	1	4	BDL	3
Undecanes	1	24	7	BDL	BDL	2	BDL	1
Dodecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Tridecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Tetradecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Pentadecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Hexadecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Heptadecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Octadecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Nonadecanes	1	24	0	BDL	BDL	BDL	BDL	BDL
Eicosanes +	1	24	0	BDL	BDL	BDL	BDL	BDL

Total from Cyclopentane
to Eicosanes +

BDL = Below Detection Limit

The results within this report relate only to the items tested.



Trace Sulfur Analysis by ASTM D6228 Summary Statistics

Component Name	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
Hydrogen Sulfide	24	0	BDL	BDL	BDL	BDL	BDL
Sulfur Dioxide	24	0	BDL	BDL	BDL	BDL	BDL
Carbonyl Sulfide	24	3	0.01	BDL	0.08	BDL	0.05
Carbon Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Methyl Mercaptan	24	0	BDL	BDL	BDL	BDL	BDL
Ethyl Mercaptan	24	0	BDL	BDL	BDL	BDL	BDL
i-Propyl Mercaptan	24	0	BDL	BDL	BDL	BDL	BDL
n-Propyl Mercaptan	24	0	BDL	BDL	BDL	BDL	BDL
t-Butyl Mercaptan	24	0	BDL	BDL	BDL	BDL	BDL
Dimethyl Sulfide	24	9	0.80	BDL	5.45	BDL	4.00
Methyl Ethyl Sulfide	24	0	BDL	BDL	BDL	BDL	BDL
Diethyl Sulfide	24	0	BDL	BDL	BDL	BDL	BDL
Di-t-Butyl Sulfide	24	0	BDL	BDL	BDL	BDL	BDL
Dimethyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Methyl Ethyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Methyl i-Propyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Diethyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Methyl n-Propyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Methyl t-Butyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Ethyl i-Propyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Ethyl n-Propyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Ethyl t-Butyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Di-i-Propyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
i-Propyl n-Propyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Di-n-Propyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
i-Propyl t-Butyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
n-Propyl t-Butyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Di-t-Butyl Disulfide	24	0	BDL	BDL	BDL	BDL	BDL
Dimethyl Trisulfide	24	0	BDL	BDL	BDL	BDL	BDL
Diethyl Trisulfide	24	0	BDL	BDL	BDL	BDL	BDL
Di-t-Butyl Trisulfide	24	0	BDL	BDL	BDL	BDL	BDL
Thiophene	24	0	BDL	BDL	BDL	BDL	BDL
C1-Thiophenes	24	0	BDL	BDL	BDL	BDL	BDL
C2-Thiophenes	24	0	BDL	BDL	BDL	BDL	BDL
C3-Thiophenes	24	0	BDL	BDL	BDL	BDL	BDL
Benzothiophene	24	0	BDL	BDL	BDL	BDL	BDL
C1-Benzothiophenes	24	0	BDL	BDL	BDL	BDL	BDL
C2-Benzothiophenes	24	0	BDL	BDL	BDL	BDL	BDL
Thiophane	24	0	BDL	BDL	BDL	BDL	BDL
Thiophenol	24	0	BDL	BDL	BDL	BDL	BDL
Total Sulfur							
As molar PPM S	24	12	0.81	0.04	5.45	BDL	4.00
As Grains/100 SCF @ 14.73 psia, 60°F	24	12	0.048	0.002	0.323	BDL	0.237

Detection Limit = 0.05 ppmv S

BDL = Below Detection Limit

The results within this report relate only to the items tested.

DRAFT

TO-14 Halocarbon and Volatile Organic Compound Analysis Summary Statistics

Component Name	Limit	total # of Detection samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
Dichlorodifluoromethane (CFC-12)	0.10	24	6	0.3	BDL	2.3	BDL	1.6
1,2-Dichlorotetrafluoroethane (CFC-114)	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloro-1,2,2-trifluoroethane (CFC-113)	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Trichlorofluoromethane (CFC-11)	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Chloromethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Dichloromethane (Methylene Chloride)	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Chloroform	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Carbon Tetrachloride	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Chloroethane	0.10	24	3	BDL	BDL	0.3	BDL	0.2
1,1-Dichloroethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,2-Dichloroethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,1,1-Trichloroethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,1,2-Trichloroethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,1,1,2-Tetrachloroethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,1,2,2-Tetrachloroethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Hexachloroethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Chloroethene (Vinyl Chloride)	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,1-Dichloroethene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
cis-1,2-Dichloroethene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
trans-1,2-Dichloroethene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Trichloroethene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Tetrachloroethene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,2-Dichloropropane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
2,2-Dichloropropane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,2,3-Trichloropropane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
3-Chloropropene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,1-Dichloropropene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
cis-1,3-Dichloropropene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
trans-1,3-Dichloropropene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Bromomethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Dibromomethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Bromoform	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,2-Dibromoethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Bromochloromethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Bromodichloromethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Dibromochloromethane	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Chlorobenzene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,2-Dichlorobenzene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,3-Dichlorobenzene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,4-Dichlorobenzene	0.10	24	0	BDL	BDL	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

TO-14 Halocarbon and Volatile Organic Compound Analysis Summary Statistics

Component Name	Detection Limit	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
1,2,3-Trichlorobenzene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,2,4-Trichlorobenzene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Bromobenzene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
2-Chlorotoluene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
4-Chlorotoluene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,2-Dibromo-3-chloropropene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
Hexachloro-1,3-butadiene	0.10	24	0	BDL	BDL	BDL	BDL	BDL
1,3-Butadiene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
Acrylonitrile	1.0	24	0	BDL	BDL	BDL	BDL	BDL
Benzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
Toluene	1.0	24	3	BDL	BDL	1.4	BDL	BDL
Ethylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
m,p-Xylene	1.0	24	2	BDL	BDL	1.0	BDL	BDL
o-Xylene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
Styrene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
i-Propylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
4-Ethyltoluene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
n-Propylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
1,3,5-Trimethylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
t-Butylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
1,2,4-Trimethylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
s-Butylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
p-Isopropyltoluene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
n-Butylbenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
Naphthalene	1.0	24	0	BDL	BDL	BDL	BDL	BDL
Pyridine	1.0	24	0	BDL	BDL	BDL	BDL	BDL
Nitrobenzene	1.0	24	0	BDL	BDL	BDL	BDL	BDL

BDL = Below Detection Limit

DRAFT

Semi- Volatile Organic Compound Analysis Summary Statistics

Analyte	detection limit	total # of samples	total # of hits	Average	Median	Max Value ppbv	Min Value	0.90 Percentile
N-nitrosodimethylamine	1	24	0	BDL	BDL	BDL	BDL	BDL
Phenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Aniline	1	24	0	BDL	BDL	BDL	BDL	BDL
Bis(2-Chloroethyl) ether	1	24	0	BDL	BDL	BDL	BDL	BDL
2-Chlorophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Benzyl Alcohol	1	24	0	BDL	BDL	BDL	BDL	BDL
2-methylphenol	1	24	0	BDL	BDL	BDL	BDL	BDL
bis(2-chloroisopropyl)ether	1	24	0	BDL	BDL	BDL	BDL	BDL
N-Nitroso-di-n-propylamine	1	24	0	BDL	BDL	BDL	BDL	BDL
4-methylphenol/3-methylphenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Isophorone	1	24	0	BDL	BDL	BDL	BDL	BDL
2-nitrophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
2,4-dimethylphenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Bis(2-chloroethoxy)methane	1	24	0	BDL	BDL	BDL	BDL	BDL
2,4-dichlorophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
4-Chloroaniline	1	24	0	BDL	BDL	BDL	BDL	BDL
4-chloro-3-methylphenol	1	24	0	BDL	BDL	BDL	BDL	BDL
2-methylnaphthalene	1	24	2	BDL	BDL	0.4	BDL	BDL
1-methylnaphthalene	1	24	0	BDL	BDL	BDL	BDL	BDL
Hexachlorocyclopentadiene	1	24	0	BDL	BDL	BDL	BDL	BDL
2,4,6-trichlorophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
2,4,5-trichlorophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
2-chloronaphthalene	1	24	0	BDL	BDL	BDL	BDL	BDL
2-Nitroaniline	1	24	0	BDL	BDL	BDL	BDL	BDL
1,4-dinitrobenzene	1	24	0	BDL	BDL	BDL	BDL	BDL
Dimethyl phthalate	1	24	0	BDL	BDL	BDL	BDL	BDL
1,3-dinitrobenzene	1	24	0	BDL	BDL	BDL	BDL	BDL
2,6-dinitrotoluene	1	24	0	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	1	24	0	BDL	BDL	BDL	BDL	BDL
1,2-Dinitrobenzene	1	24	0	BDL	BDL	BDL	BDL	BDL
3-Nitroaniline	1	24	0	BDL	BDL	BDL	BDL	BDL
Acenaphthene	1	24	0	BDL	BDL	BDL	BDL	BDL
2,4-dinitrophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
4-nitrophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Dibenzofuran	1	24	0	BDL	BDL	BDL	BDL	BDL
2,4-dinitrotoluene	1	24	0	BDL	BDL	BDL	BDL	BDL
2,3,4,6-Tetrachlorophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
2,3,5,6-Tetrachlorophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Diethyl Phthalate	1	24	0	BDL	BDL	BDL	BDL	BDL

The results within this report relate only to the items tested.

DRAFT

Semi- Volatile Organic Compound Analysis Summary Statistics

Analyte	detection limit	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
Fluorene	1	24	0	BDL	BDL	BDL	BDL	BDL
4-chlorophenyl phenyl ether	1	24	0	BDL	BDL	BDL	BDL	BDL
4-Nitroaniline	1	24	0	BDL	BDL	BDL	BDL	BDL
4,6-dinitro-2-methylphenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Diphenylamine	1	24	0	BDL	BDL	BDL	BDL	BDL
n-Nitrosodiphenylamine	1	24	0	BDL	BDL	BDL	BDL	BDL
Azobenzene	1	24	0	BDL	BDL	BDL	BDL	BDL
4-Bromophenyl phenyl ether	1	24	0	BDL	BDL	BDL	BDL	BDL
Hexachlorobenzene	1	24	0	BDL	BDL	BDL	BDL	BDL
Pentachlorophenol	1	24	0	BDL	BDL	BDL	BDL	BDL
Phenanthrene	1	24	0	BDL	BDL	BDL	BDL	BDL
Anthracene	1	24	0	BDL	BDL	BDL	BDL	BDL
Carbazole	1	24	0	BDL	BDL	BDL	BDL	BDL
Di-n-butyl phthalate	1	24	17	1.0	1.0	3.3	BDL	2.5
Fluoranthene	1	24	0	BDL	BDL	BDL	BDL	BDL
Pyrene	1	24	0	BDL	BDL	BDL	BDL	BDL
Benzyl butyl phthalate	1	24	3	BDL	BDL	0.3	BDL	BDL
Bis(2-ethylhexyl)adipate	1	24	0	BDL	BDL	BDL	BDL	BDL
Benzo(a)anthracene	1	24	0	BDL	BDL	BDL	BDL	BDL
Chrysene	1	24	0	BDL	BDL	BDL	BDL	BDL
Bis(2-ethylhexyl)phthalate	1	24	8	0.3	BDL	3.4	BDL	0.8
Di-n-octyl phthalate	1	24	0	BDL	BDL	BDL	BDL	BDL
Benzo(b)fluoranthene	1	24	0	BDL	BDL	BDL	BDL	BDL
Benzo(k)fluoranthene	1	24	0	BDL	BDL	BDL	BDL	BDL
Benzo(a)pyrene	1	24	0	BDL	BDL	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	1	24	0	BDL	BDL	BDL	BDL	BDL
Dibenzo(a,h)anthracene	1	24	0	BDL	BDL	BDL	BDL	BDL
Benzo[g,h,i]perylene	1	24	0	BDL	BDL	BDL	BDL	BDL

BDL = Below Detection Limit



Aldehyde and Ketone Compounds Summary Statistics

Analyte	detection limit	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
						----- ppbv -----		
Formaldehyde	10	24	12	BDL	BDL	57	BDL	22
Acetaldehyde	7	24	18	25	12	147	BDL	67
Acetone	5	24	21	98	35	522	BDL	364
Acrolein (2-propenal)	6	24	0	BDL	BDL	BDL	BDL	BDL
Propionaldehyde	5	24	1	BDL	BDL	10	BDL	BDL
Crotonaldehyde	5	24	6	5	BDL	54	BDL	9
2-Butanone (MEK)	5	24	16	23	15	96	BDL	81
Methacrolein (Isobutenal)	5	24	0	BDL	BDL	BDL	BDL	BDL
Butanal	5	24	1	BDL	BDL	69	BDL	BDL
Benzaldehyde	5	24	0	BDL	BDL	BDL	BDL	BDL
Pentanal	5	24	3	5	BDL	107	BDL	BDL
p-Tolualdehyde	5	24	3	BDL	BDL	11	BDL	BDL
Hexanal	5	24	2	12	BDL	250	BDL	BDL

BDL = Below Detection Limit



Total Organic Silicon, including Siloxanes Summary Statistics

	Detection Limit	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
				----- mg Si / M3 -----				
1,1,3,3-Tetramethyldisiloxane	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Pentamethyldisiloxane	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Hexamethyldisilane	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Hexamethyldisiloxane (L2, MM)	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Octamethyltrisiloxane (L3, MDM)	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Octamethylcyclotetrasiloxane (D4)	0.1	24	5	BDL	BDL	0.3	BDL	0.2
Decamethyltetrasiloxane (L4, MD2M)	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Decamethylcyclopentasiloxane (D5)	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Dodecamethylpentasiloxane (L5, MD3M)	0.1	24	0	BDL	BDL	BDL	BDL	BDL
Dodecamethylcyclohexasiloxane (D6)	0.1	24	0	BDL	BDL	BDL	BDL	BDL

0 = Below Detection Limit



Volatile Metals Analysis Summary Statistics

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
						$\mu\text{g}/\text{M}^3$		
Mercury	0.01	22	5	BDL	BDL	0.05	BDL	0.04

Component	Detection Limit, $\mu\text{g}/\text{M}^3$	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
						$\mu\text{g}/\text{M}^3$		
Arsenic	30	24	0	BDL	BDL	BDL	BDL	BDL
Barium	30	24	0	BDL	BDL	BDL	BDL	BDL
Beryllium	30	24	0	BDL	BDL	BDL	BDL	BDL
Cadmium	30	24	0	BDL	BDL	BDL	BDL	BDL
Cobalt	30	24	0	BDL	BDL	BDL	BDL	BDL
Chromium	30	24	1	BDL	BDL	175	BDL	BDL
Copper *	30	24	3	BDL	BDL	118	BDL	27
Manganese	30	24	1	BDL	BDL	65	BDL	BDL
Molybdenum	30	24	0	BDL	BDL	BDL	BDL	BDL
Nickel	30	24	0	BDL	BDL	BDL	BDL	BDL
Lead	30	24	3	BDL	BDL	155	BDL	BDL
Antimony	30	24	1	BDL	BDL	32	BDL	BDL
Selenium	30	24	0	BDL	BDL	BDL	BDL	BDL
Strontium	30	24	0	BDL	BDL	BDL	BDL	BDL
Thallium	30	24	0	BDL	BDL	BDL	BDL	BDL
Zinc *	30	24	4	BDL	BDL	253	BDL	29

The results within this report relate only to the items tested.



qPCR and Bacteria/Spore Biological Analysis Summary Statistics

	total # of samples	total # of hits	Average	Median	Max Value	Min Value	0.90 Percentile
	----- # per 100 scf -----						
qPCR Biological Analysis							
Total Bacteria	24	24	2.97E+06	2.11E+06	1.82E+07	5.13E+05	5.91E+06
Total acid-producing bacteria (APB)	24	21	7.92E+04	7.26E+04	2.02E+05	ND	1.69E+05
Total iron-oxidizing bacteria (IOB)	24	12	2.47E+04	6.37E+03	7.67E+04	ND	6.79E+04
Total sulfate-reducing bacteria (SRB)	24	1	9.48E+01	ND	2.27E+03	ND	ND
Live Bacteria							
Anaerobic	24	3	9.20E+01	ND	1.02E+03	ND	1.60E+02
Aerobic	24	1	9.17E+00	ND	2.20E+02	ND	ND
Total	24	4	1.01E+02	ND	1.02E+03	ND	2.26E+02
Spores							
Anaerobic	24	1	ND	ND	2.17E+02	ND	ND
Aerobic	24	0	ND	ND	ND	ND	ND
Total	24	1	ND	ND	2.17E+02	ND	ND

ND=Not Detected