2005 ANNUAL SOURCE TEST REPORT

Kirby Canyon Recycling & Disposal Facility
Landfill Gas Control – Flare

Test Date: January 6, 2005

Submittal Date: February 18, 2005

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Prepared for:

Kirby Canyon Recycling & Disposal Facility
Waste Management of California, Inc.
910 Coyote Creek Golf Drive
Morgan Hill, California 95037

For submittal to:

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, California 94109

Prepared by:

Shaw™ EMCON/OWT, Inc.
2360 Bering Drive
San Jose, California 95131-1121

Project 112184.01000000

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Landfill Gas Control – Flare

The material and data in this report were reviewed by the undersigned.

Shaw™ Shaw Environmental, Inc.

William Johnston
Manager, Source Testing

Shaw™ EMCON/OWT, Inc.

Richard Merrill
Senior Air Quality Engineer

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1.0 Summary and Overview

1.1 Summary

Shaw Environmental, Inc. (Shaw) performed the source testing of the landfill gas flare at the Kirby Canyon Recycling & Disposal Facility, located in Morgan Hill, California. This report presents the results of the test program. Table 1 summarizes the source test information. Table 2 summarizes the test results compared to the permit limits. The flare met all compliance criteria.

Table 1. Source Test Information

Test Location:	Kirby Canyon Recycling and Disposal Facility 910 Coyote Creek Golf Drive Morgan Hill, CA 95037	Contact: Edward W. Pettit Waste Management Tel: (408) 779-2206
Source Tested:	Enclosed Gas Flare	
Test Objective:	Determine compliance with Major Facility Review Permit , Facility Number A1812 and Regulation 8, Rule 34 Flare, Source A-11: Permit Condition Number 1437.	Emission Limits: NO_x: 0.06 lb/MMBtu CO: 0.3 lb/MMBtu SO_2: 300 ppmv NMOC: Destructive Efficiency greater than 98 percent or 30 ppmv @ 3% O_2, as methane
Test Performed By:	Shaw Environmental, Inc. 2360 Bering Drive San Jose, CA 95131	Contact: William R. Johnston Tel: (408) 382-5822 Fax: (408) 433-1912
Test Parameters:	**Inlet—Landfill Gas** O_2, N_2, CO_2, Btu, HHV THC, CH_4 ,NMOC, Sulfur Species Landfill gas volumetric flow rate	**Outlet—Flare** THC, CH_4, NMOC, NO_x, CO, SO_2 Volumetric flow rate

Table 2. Compliance Summary
Test date: January 6, 2005

Condition	Average Result	ATC Permit Limit	Compliance Status
Heat Input MMBtu/day	809	1,080	In Compliance
NO_x lb/MMBtu	0.031	0.06	In Compliance
CO lb/MMBtu	0.035	0.30	In Compliance
SO_2 ppmv	3.9	300	In Compliance
NMOC ppmv @ 3% O_2, dry as methane	< 2.0	30	In Compliance

1.2 Overview

Shaw, an approved California Air Resources Board (ARB) source test contractor, performed the source test program. EMCON/OWT, Inc. (EMCON/OWT), the Solid Waste Management Division of Shaw, reviewed the source test data and report. The test program was designed to demonstrate compliance with the Bay Area Air Quality Management District (BAAQMD) Major Facility Review (MFR) Title V Permit, Facility Number A1812, Condition Number 1437 and Regulation 8, Rule 34 (See Appendix A). The source test was performed on the flare exhaust to assess the emissions of total hydrocarbons (THC), methane (CH_4), non-methane organic compounds (NMOC), nitrogen oxide (NO_x), sulfur dioxide (SO_2), and carbon monoxide (CO). Additionally, a landfill gas (LFG) sample was collected for higher heating value (HHV) and fuel factor (F-Factor).

The source test was conducted on January 6, 2005 and performed by Mr. Bill Johnston of Shaw. The BAAQMD was notified of the test via a letter dated December 27, 2004 that included the Source Test Protocol. The BAAQMD did not have a representative present. A copy of the Source Test Protocol is presented in Appendix B. Source test data are located in Appendix C. A copy of Shaw's ARB Independent Contractor Program certification is included in Appendix G.

The source test program for collecting the required performance data is discussed in Section 2; the source testing results are presented in Section 3; and data review is discussed in Section 4. Supporting documentation is presented in the appendices.

1.3 Source Operating Conditions

The flare is a LFG Specialties Model EF84018 enclosed gas flare with a maximum capacity of 1,480 standard cubic feet per minute (scfm) of LFG and includes a 5 gallons per minute condensate injection system. The flare is operated as a primary landfill gas control device. The flare was operating steadily throughout the test program. A local digital display (data acquisition system) and chart recorder were used to record flare temperatures. Three thermocouples are installed: at the top, middle, and bottom of the flare exhaust stack to provide temperature indication for control of the combustion temperature. The flare operated at an average temperature of 1,497 degrees Fahrenheit (^{o}F) recorded at the top thermocouple.

The flare was fired continuously with LFG. A flow meter incorporating mass thermal flow technology connected to a digital readout and data acquisition system measured a flow of 1,154 scfm. The source test was conducted with the condensate injection system off due to a lack of condensate in the holding tank. Process data documenting the operation of the flare are contained in Appendix D. Pictures of the flare are presented in Appendix H.

Samples were collected at the flare exhaust. The flare has an inner diameter of approximately 96 inches and has two sampling ports that are located at approximately 35 feet above the ground surface.

2.0 Source Test Program

The objective of the flare source test was to demonstrate compliance with requirements of MFR Condition Number 1437 for NO_x, CO, SO_2 and NMOC. In addition, to satisfy the requirements of the permit, an analysis of the LFG was performed for daily heat input.

Measurements of the flare's emissions were conducted at the flare exhaust. LFG was sampled at the inlet to the flare. Table 3 provides a test matrix of the parameters tested at each sample location. U.S. Environmental Protection Agency (EPA) source test methods were used. The source test program consisted of three 30-minute runs to measure gaseous emissions in the flare exhaust and the inlet to the flare. The continuous emission monitoring system (CEMS) equipment was leak-checked before sampling began. Each instrument was calibrated before and after each sampling run with EPA protocol calibrated gas standards and a gas dilution system. The CEMS data are presented in Appendix E.

Concurrent with the exhaust sampling, Shaw collected integrated 5-liter Tedlar® bag samples of the inlet LFG for analysis of HHV, F-Factor and additional fixed gases. (See Appendix F for analytical laboratory results).

The inlet volumetric flow rate was measured with the LFG mass flow meter and continuously recorded by the data acquisition system. The outlet volumetric flow rate was calculated using the fuel flow rate, HHV, exhaust gas oxygen (O_2) content, and the F-Factor according to EPA Method 19.

Results of the emission tests for the LFG and flare exhaust are summarized in Tables 4 and 5 respectively, of Section 3. Compliance for NMOC was demonstrated by verifying that the concentrations of NMOC are less than 30 parts per million by volume (ppmv) at 3 percent O_2, as methane. The source test demonstrated that the flare operates with criteria pollutant emissions below the BAAQMD permit limits. The LFG total reduced sulfur (TRS) results for each run were used to calculate the SO_2 emissions at the flare exhaust.

One bag sample was analyzed for the toxic compounds listed in EPA AP-42, Table 2.4-1, and summarized in Table 6 in Section 3. Analytical results are presented in Appendix F.

Table 3. Source Test Methods and Instrumentation

Method	Inlet (fuel) Analyte	Exhaust Analyte	Instrumentation/ Laboratory	Principle
ASTM D-1945/D-3588	Fixed Gases, HHV and F-Factor	—	Zalco Analytical	Chromatographic Analysis
EPA Method 25 C EPA TO 15 ASTM-5504	NMOC Organic Compounds Sulfur Compounds	—	Atmospheric Analysis & Consulting, Inc.	GC/FID/TCA Analysis
EPA Method 10	—	CO	Horiba VIA 510	IR
EPA Method 25A		$THC/CH_4/NMOC$	TECO Model 51	FID
EPA Method 7E		NO_x	Ecophysics Model 70E	Chemiluminescence
EPA Method 3A		O_2	Teledyne	Fuel Cell
EPA Method 19		Flow rate, dscfm	—	Algorithm

Notes:
ASTM = American Society for Testing and Materials
dscfm = dry standard cubic feet per minute
FID = flame ionization detection
GC = Gas Chromatography
TCA= thermal conductivity analyzer
IR = infrared

3.0 Source Test Results

The source test was performed on the LFG fuel and flare exhaust. Table 4 presents the results of the LFG analysis. The LFG sample was drawn from the inlet to the flare and was analyzed for fixed gases, HHV, and F-Factor. Table 5 present the results of the source test. Triplicate 30-minute runs were performed on the flare exhaust to assess the THC, CH_4, NMOC, NO_x, and CO emissions. Concurrent with each run, the O_2 content of the exhaust gas was also measured. Concentrations of CO and NO_x are reported in units of pounds per million British thermal units (lb/MMBtu). Concentrations of SO_2 are reported in units of ppmv. Concentrations of NMOC are reported in units of ppmv corrected to 3 percent O_2. Because THC concentrations were measured at the THC analyzer reporting limit of 1 ppmv, the methane concentration was not measured.

To comply with Condition Number 1437, Item 13, an LFG gas characterization was performed concurrently with the annual source test. The LFG sample was drawn from the main header to the flare. The Run 2 bag sample was analyzed for the toxic compounds listed in EPA AP-42, Table 2.4-1, and summarized in Table 6. Analytical results are presented in Appendix F. The average gas flow rate to the flare during the test was recorded at 1,154 scfm. This represents approximately 78 percent of the rated flow capacity.

Table 4. Flare Operating Conditions and LFG Analysis
Test date: January 6, 2005

	Run 1	Run 2	Run 3	Average
Time	0949-1019	1038-1108	1127-1201	—
Flare Temperature (°F)	1,496	1,497	1,497	1,497
Recorded Fuel Flow Rate (scfm)	1,161	1,153	1,147	1,154
Heat Input MMBtu/day	806	807	813	809
Fuel Factor (dscf/MMBtu)[1]	9,541.2	9,539.9	9,533.8	9,538.3
O_2 (%)[1]	1.5	1.3	1.2	1.3
CO_2 (%)[1]	35.5	35.8	36.1	35.8
N_2 (%)[1]	14.5	13.9	13.1	13.8
Methane (%)[1]	48.5	48.9	49.5	49.0
NMOC (ppmv)[2]	1,404	1,780	2,066	1,750
THC (%)[3]	48.7	49.1	49.7	49.2

[1] *Analytical results from Zalco Laboratories, Inc.*
[2] *Analytical results from Atmospheric Analysis & Consulting, Inc.*
[3] *Calculated*

Table 5. Source Test Results — Landfill Flare Exhaust
Test date: January 6, 2005

	Run 1	Run 2	Run 3	Average	Permit
Time	0949-1019	1038-1108	1127-1201	—	—
Fuel Factor	9,541	9,540	9,534	9,538	—
Flare Temperature (°F)	1,496	1,497	1,497	1,497	—
Landfill Gas Fuel Flow Rate (scfm)	1,161	1,153	1,147	1,154	—
Exhaust Flow Rate (dscfm)	12,685	12,558	12,641	12,628	—
O_2 (%)	12.1	12.0	12.0	12.0	—
NO_x					—
NO_x (ppmv)	11.6	11.6	11.2	11.5	—
NO_x (lb/MMBtu)	0.031	0.031	0.030	0.031	0.06
CO					—
CO (ppmv)	18.2	24.8	22.0	21.7	—
CO (lb/MMBtu)	0.030	0.040	0.036	0.035	0.30
SO_2					—
SO_2 (ppmv)[1]	3.8	3.8	4.3	3.9	300
Hydrocarbons as Methane					—
THC (ppmv)	< 1	< 1	< 1	< 1	—
NMOC (ppmv)	< 1	< 1	< 1	< 1	—
NMOC (ppmv corrected to 3% O_2 as methane)	< 2	< 2	< 2	< 2	30

Note:

NO_2 = nitrogen dioxide

[1] SO2 concentrations were estimated from the analysis of inlet landfill gas.

In the combustion process, sulfur compounds are oxidized to SO_2. The TRS results in LFG for each run were used to calculate the SO_2 emissions at the flare exhaust. The calculations and concentrations for each run are presented in Appendix C.

Table 6. Summary of Results, Landfill Gas Analysis
Test date: January 6, 2005

Organic Compound	Measured Concentration (ppmv)	
1,1,1-Trichloroethane	0.004	J
1,1,2,2-Tetrachloroethane	0.128	
1,1-Dichloroethane	0.103	
1,1-Dichloroethene	0.051	
1,2-Dichloroethane	0.030	
1,2-Dichloropropane	0.014	
Isopropanol	40.8	E
Acrylonitrile	0.120	
Bromodichloromethane	0.040	
Butane	26.0	
Carbon Disulfide	0.043	
Carbon Tetrachloride	0.008	J
Carbonyl Sulfide	<PQL	
Chlorobenzene	0.227	
Chlorodifluoromethane	0.530	
Chloroethane	0.078	
Chloroform	0.0027	J
Chloromethane	0.031	
Dichlorobenzene	ND	
Dichlorodifluoromethane	1.013	
Dichlorofluoromethane	0.194	
Dichloromethane	0.194	
Dimethyl Sulfide	4.50	
Ethane	ND	
Ethanol	199.2	E
Ethyl Mercaptan	0.010	
Ethylbenzene	3.17	
Ethylene dibromide	ND	
Fluorotrichloromethane	0.063	
Hexane	1.52	
Hydrogen Sulfide	33.0	
Methyl Ethyl Ketone	17.8	E

Table 6. Summary of Results, Landfill Gas Analysis
Test date: January 6, 2005
(concluded)

Organic Compound	Measured Concentration (ppmv)	
Methyl Isobutyl Ketone	1.493	
Methyl Mercaptan	2.0	
Pentane	69.0	
Perchloroethylene	0.483	
Propane	40.0	
Trans-1, 2-Dichloroethene	0.048	
Trichloroethylene	0.216	
Vinyl Chloride	0.335	
Xylenes	7.09	

Notes:
J = Analyte was detected. However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
ND = not detected.
E = Estimated value, result outside linear range of instrument.

4.0 Test Procedures

Shaw conducted the source test according to EPA test methods as described below.

4.1 Continuous Emissions Monitoring

Shaw measured stack gas constituent concentrations, using its CEMS sampling van, according to EPA methods for NMOC, NO_x, CO, and O_2. Figure 1 is a schematic diagram of the Shaw CEMS.

In this source test, a sample pump was used to extract the sample gas continuously from each source through a stainless-steel sampling probe equipped with an in-stack filter, followed by a heated Teflon™ sample line and a Baldwin sample conditioner. The sample line between the sample point and the sample conditioner was heated to 250°F to maintain the gas stream temperatures above the water dew point. Gas flow was controlled with a back-pressure regulator. The sample flow rate to each instrument was controlled with individual rotameters. Instrument output was recorded with a strip chart recorder and a digital data logger (the STRATA data acquisition system). Table 7 lists the specifications of the instruments used in the source test.

Table 7. CEMS Instrument Specifications

Gas	Analyzer/Manufacturer	Principle of Operation	Operating Range
O_2	Teledyne 326A	Fuel Cell	0-25%
THC	TECO Model 51	Flame Ionization	0-50 ppmv as CH_4
NO_x	Ecophysics 70E	Chemiluminescence	0-50 ppmv
CO	Horiba VIA 510	NDIR	0-100 ppmv
Gas Dilution	Environics Model 4000/4040	Calibration date: June 16, 2004	

Note:
NDIR = nondispersive infrared

Prior to testing, the sampling system was assembled at the site and leak-checked. Calibrations were performed on each of the instruments using certified calibration gases and a gas dilution system. In addition, a field evaluation of the gas dilution system was performed according to EPA Method 205 and an NO_x converter check was performed.

A span drift check was performed at the end of each run to measure analyzer drift. The drift check measurement uses a zero gas (N_2) and a mid-range calibration gas. All of the instruments checks conducted for this source test were within the drift limit criterion of 3 percent, as specified in the test methods. Reported values include a correction for the recorded instrument drift, as specified in EPA Method 6C. Copies of data logger printouts, calibration data sheets, strip charts, gas certificates of analysis, EPA Method 205, and NO_x converter are presented in Appendix E.

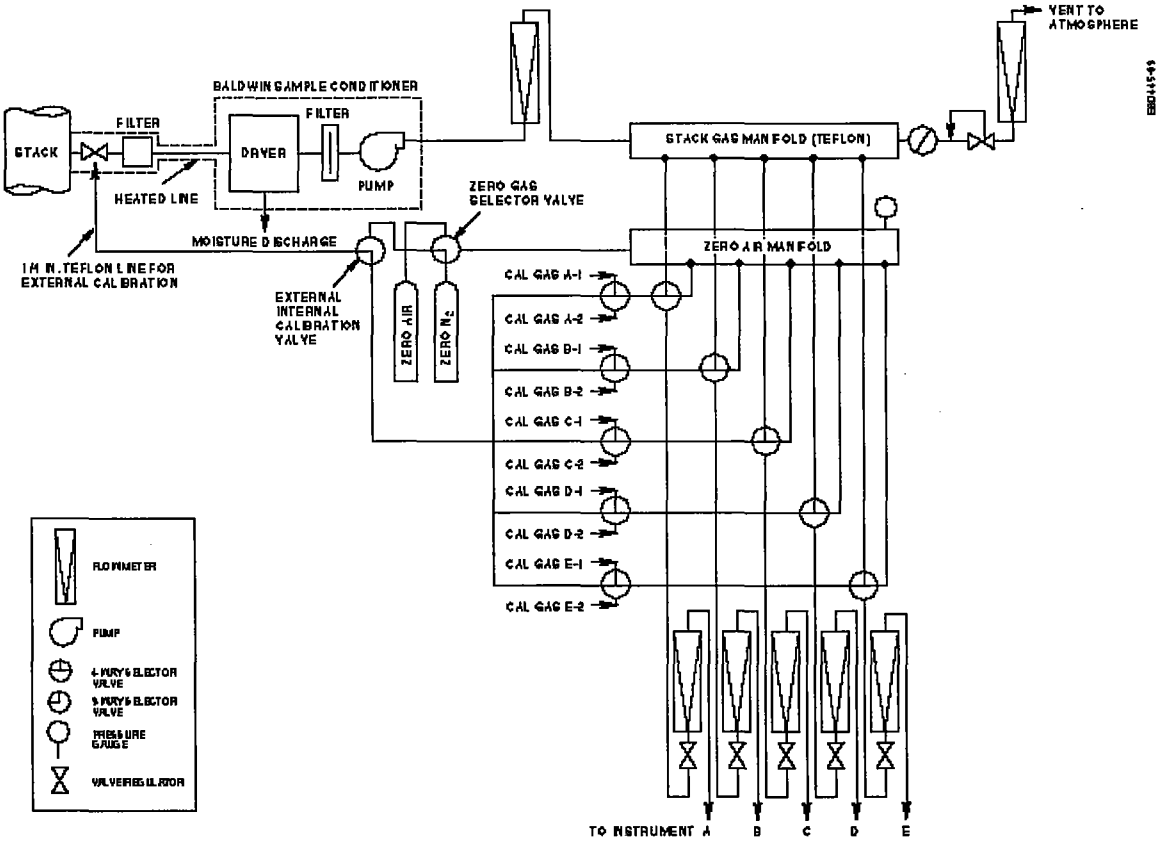

Figure 1. Schematic Diagram of the Shaw CEMS

4.2 Landfill Gas

Shaw measured LFG constituent concentrations according to ASTM test methods. Samples were collected from a sample port located at the flare inlet header. Samples were collected in 5-liter Tedlar® bags under positive pressure through Teflon™ tubing. The sample line was purged with sample gas prior to sampling. The sample flow rate was controlled with rotameters to collect a 30-minute integrated sample. The samples were kept out of sunlight and were analyzed within the method holding times. Analytical results are presented in Appendix F.

5.0 Data Review

EMCON/OWT performed a quality assurance review of the source test data and report. The review included the following activities:

- Review of the general text
- Check of calculation algorithms for correctness
- Review of CEM data extraction
- Determination that all supporting documentation is present

A detailed manual review of the data was completed. Based on our data review, EMCON/OWT concludes the following:

- The source test procedures were followed, and all data were reduced and entered into the reporting spreadsheets properly.
- The instrument drift and other measures of instrument performance were deemed acceptable.

As a result, the data are considered to be acceptable.

Limitations

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, expressed or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

Appendix A
Major Facility Review Permit

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

FINAL
MAJOR FACILITY REVIEW PERMIT

Issued To:
Kirby Canyon Landfill
Facility #A1812

Facility Address:
910 Coyote Creek Golf Drive
San Jose, CA 95198

Mailing Address:
P.O. Box 1870
Morgan Hill, CA 95038

Responsible Official	**Facility Contact**
Joe Morse, Site Manager (408) 779-2206	Joe Morse

Type of Facility:	Landfill	BAAQMD Permit Division Contact:
Primary SIC:	4953	Ted Hull, Air Quality Engineer II
Product:	Non-hazardous Solid Waste	

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Signed by Jack P. Broadbent _____ January 12, 2005
Jack P. Broadbent, Executive Officer/Air Pollution Control Officer Date

VI. PERMIT CONDITIONS

Any condition that is preceded by an asterisk is not federally enforceable.

Condition #1437
For: S-1, Active Landfill with Landfill Gas Collection System;
For:A-11, Landfill Gas Flare

1. The Permit Holder shall comply with the following waste acceptance and disposal limits and shall obtain the appropriate New Source Review permit, if one of the following limits is exceeded:
   a. Except for temporary emergency situations approved by the Local Enforcement Agency, the total waste accepted and placed at the landfill shall not exceed 2600 tons in any day. (Basis: Regulation 2-1-301)
   b. The total cumulative amount of all waste placed in the landfill shall not exceed 19.84 million tons. Exceedance of the cumulative tonnage limit is not a violation of the permit and does not trigger the requirement to obtain a New Source review permit, if the operator can, within 30 days of the date of discovery of the exceedance, provide documentation to the District demonstrating, in accordance with BAAQMD Regulation 2-1-234.3, that the limit should be higher. (Basis: Regulation 2-1-234.3)
   c. The maximum design capacity of the landfill (total volume of all wastes placed in the landfill) shall not exceed 36.40 million cubic yards. (Basis: Regulation 2-1-301)

2. Handling Procedures for Soil Containing Volatile Organic Compounds
   a. The procedures listed below in subparts b-l do not apply if the following criteria are satisfied. However, the record keeping requirements in subpart m, below, are applicable.
      i. The Permit Holder has appropriate documentation demonstrating that either the organic content of the soil or the organic concentration above the soil is below the "contaminated" level (as defined in Regulation 8, Rule 40, Sections 205, 207, and 211). The handling of soil containing VOCs in concentrations below the "contaminated" level is subject to Part 3 below.
      ii. The Permit Holder has no documentation to prove that soil is not contaminated, but source of the soil is known and there is no reason to suspect that the soil might contain organic compounds.

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b. The Permit Holder shall provide verbal notification to the Compliance and Enforcement Division of the Permit Holder's intention to accept contaminated soil at the facility at least 24 hours in advance of receiving the contaminated soil. The Permit Holder shall provide an estimate of the amount of contaminated soil to be received, the degree of contamination (range and average VOC Content), and the type or source of contamination.

c. Any soil received at the facility that is known or suspected to contain volatile organic compounds (VOCs) shall be handled as if the soil were contaminated, unless the Permit Holder receives test results proving that the soil is not contaminated. To prove that the soil is not contaminated, the Permit Holder shall collect soil samples in accordance with Regulation 8-40-601 within 24 hours of receipt of the soil by the facility. The organic content of the collected soil samples shall be determined in accordance with Regulation 8-40-602.

   i. If these test results indicate that the soil is still contaminated or if the soil was not sampled within 24 hours of receipt by the facility, the Permit Holder must continue to handle the soil in accordance with the procedures set forth in subparts e-1, below, until the soil has completed treatment or has been placed in a final disposal location and adequately covered. Storing soil in a temporary stockpile or pit is not considered treatment. Co-mingling, blending, or mixing of soil lots is not considered treatment.

   ii. If these test results indicate that the soil – as received at the facility – has an organic content of 50 ppmw or less, then the soil is no longer contaminated and shall be handled in accordance with the procedures in Part 3 instead of Part 2, subparts e-l.

d. Any contaminated soil received at the facility shall be clearly identified as contaminated soil, shall be handled in accordance with subparts e-l. below, and shall be segregated from non-contaminated soil. Contaminated soil lots may not be co-mingled, blended, or otherwise mixed with non-contaminated soil lots prior to treatment, reuse, or disposal. Mixing soil lots in an attempt to reduce the overall concentration of the contaminated soil or to circumvent any requirements or limits is strictly prohibited.

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For:A-11, Landfill Gas Flare

e. On-site handling of contaminated soil shall be limited to no more than 2 on-site transfers per soil lot. For instance, unloading soil from off-site transport vehicles into a temporary storage pile is 1 transfer. Moving soil from a temporary storage to a staging area is 1 transfer. Moving soil from a temporary storage pile to a final disposal site is 1 transfer. Moving soil from a staging area to a final disposal site is 1 transfer. Therefore, unloading soil from off-site transport into a temporary storage pile and then moving the soil from that temporary storage pile to the final disposal site is allowed. Unloading soil from off-site transport into a staging area and then moving the soil from that staging area to the final disposal site is allowed. However, unloading soil from off-site transport to a temporary storage pile, moving this soil to a staging area, and then moving the soil again to a final disposal site is 3 on-site transfers and is not allowed.

f. If the contaminated soil has an organic content of less than 500 ppmw, the contaminated soil shall be treated, deposited in a final disposal site, or transported off-site for treatment within 90 days of receipt at the facility.

g. If the contaminated soil has an organic content 500 ppmw or more, the contaminated soil shall be treated, deposited in a final disposal site, or transported off-site for treatment within 45 days of receipt at the facility.

h. All active storage piles shall meet the requirements of Regulation 8-40-304 by using water sprays, vapor suppressants or approved coverings to minimize emissions. The exposed surface area of any active storage pile (including the active face at a landfill) shall be limited to 6000 ft^2. The types of storage piles that may become subject to these provisions include (but are not limited to) truck unloading areas, staging areas, temporary stockpiles, soil on conveyors, bulldozers or trucks, the active face of a landfill, or other permanent storage pile at the final disposal location.

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i. All inactive storage piles shall meet the requirements of Regulation 8-40-305 including the requirement to cover contaminated soil during periods of inactivity longer than one hour. The types of storage piles that may become subject to these provisions include (but are not limited to) soil on trucks or other on-site equipment, staging areas, temporary stockpiles, and the permanent storage pile at the final disposal location. District approved coverings for inactive storage piles include continuous heavy-duty plastic sheeting (in good condition, joined at the seams, and securely anchored) or encapsulating vapor suppressants (with re-treatment as necessary to prevent emissions).

j. The Permit Holder must:
   i. Keep contaminated soil covered with continuous heavy-duty plastic sheeting (in good condition, joined at the seams, and securely anchored) whenever soil is to be stored in temporary stockpiles or during on-site transport in trucks. Soil in trucks shall not be left uncovered for more than 1 hour.
   ii. Establish a tipping area for contaminated soils near the active face that is isolated from the tipping area for other wastes.
   iii. Spray contaminated soil with water or vapor suppressant immediately after dumping the soil from a truck at the tipping area.
   iv. Ensure that all contaminated soil is transferred from the tipping area to the active face immediately after spraying with water or vapor suppressant.
   v. Ensure that contaminated soil in the tipping area is not disturbed by subsequent trucks. Trucks shall not drive over contaminated soil in the tipping area or track contaminated soil out of the tipping area on their wheels.
   vi. Spray contaminated soil on the active face with water or vapor suppressant (to keep the soil visibly moist) until the soil can be covered with an approved covering.
   vii. Limit the area of exposed soil on the active face to no more than 6000 ft^2.

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For:A-11, Landfill Gas Flare

viii. Ensure that contaminated soil spread on the active face is completely covered on all sides with one of the following approved coverings: at least 6 inches of clean compacted soil, at least 12 inches of compacted garbage, or at least 12 inches of compacted green waste.

ix. Ensure that covering of soil on the active face is completed within one hour of the time that the soil was first dumped from a truck at the tipping area.

k. Contaminated soil shall not be used as daily, intermediate, or final cover material for landfill waste operations unless the requirements of Regulation 8, Rule 40, Sections 116 or 117 have been satisfied.

l. Contaminated soil is considered to be a decomposable solid waste pursuant to Regulation 8, Rule 34. All contaminated soil disposed of at a site shall be included in any calculations of the amount of decomposable waste in place that are necessary for annual reporting requirements or for purposes of 8-34-111 or 8-34-304.

m. The Permit Holder shall keep the following records for each lot of soil received, in order to demonstrate on-going compliance with the applicable provisions of Regulation 8, Rule 40.

i. For all soil received by the facility (including soil with no known contamination), record the arrival date at the facility, the soil lot number, the amount of soil in the lot, the organic content or organic concentration of the lot (if known), the type of contamination (if any), and keep copies of any test data or other information that documents whether the soil is contaminated (as defined in 8-40-205) or not contaminated, with what, and by how much.

ii. If the soil is tested for organic content after receipt by the facility, record the sampling date, test results, and the date that these results were received.

iii. For all on-site handling of contaminated soil, use a checklist or other approved method to demonstrate that appropriate procedures were followed during all on-site handling activities. One checklist shall be completed for each day and for each soil lot (if multiple lots are handled per day).

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For:A-11, Landfill Gas Flare

iv. For soil aerated in accordance with 8-40-116 or 117 record the soil lot number, the amount of soil in the lot, the organic content, the final placement date, the final placement location, and describe how the soil was handled or used on-site.

v. For final disposal at a landfill, record on a daily basis the soil lot number, the amount of soil placed in the landfill, the disposal date, and the disposal location.

All records shall be retained for at least 5 years from the date of entry and shall be made available for District inspection upon request.

(basis: Regulations 8-40-301, 8-40-304 and 8-40-305)

3. Low VOC soil (soil that contains 50 ppmw or less of VOC) is not considered to be "contaminated soil" and may be used as daily, intermediate, or final cover material for landfill waste operations if the organic concentration above the soil does not exceed 50 ppmv (expressed as methane, C1). To demonstrate compliance with this requirement, each lot of soil to be used as cover material shall be randomly screened for VOC surface emissions (in such a manner as to be representative of the entire lot) using the testing procedures outlined in Regulation 8-40-604. The Permit Holder shall keep the following records for each lot of soil subject to this requirement:
   a. The soil lot number as established in part 2m.i. (above).
   b. The time and date of the soil screening.
   c. The name and affiliation of the person performing the monitoring.
   d. The results of the screening and an acknowledgement that the procedures outlined in Regulation 8-40-604 were used.

   Soil presumed to be low VOC soil that is found to have a surface VOC concentration greater than 50 ppmv as described above shall be considered contaminated soil and will be subject to the requirements of part 2 of these conditions. (basis: Regulations 8-40-205, 8-40-604)

4. Water and/or dust suppressants shall be applied to all unpaved roadways, active soil removal, and fill areas as necessary to prevent visible particulate emissions. Paved roadways shall be kept sufficiently clear of dirt and debris to prevent visible particulate emissions from vehicle traffic or wind. (basis: Regulations 2-1-403, 6-301, and 6-305)

VI. Permit Conditions

Condition #1437
For: S-1, Active Landfill with Landfill Gas Collection System;
For:A-11, Landfill Gas Flare

5. All collected landfill gas shall be vented to properly operating abatement equipment including the Landfill Gas Flare (A-11) and/or the IC Engines (S-5, S-6, and S-7)). Raw landfill gas shall not be vented to the atmosphere, except for unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair that is performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118 and for component or surface leaks that do not exceed the limits specified in 8-34-301.2 or 8-34-303. (basis: Regulation 8-34-301)

6. The Permit Holder shall apply for and receive an Authority to Construct before modifying the landfill gas collection system described in Parts 6a-b below. Increasing or decreasing the number of wells or collectors, changing the length of collectors, or changing the locations of wells or collectors are all considered to be modifications that are subject to the Authority to Construct requirement.
   a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths are as described in detail in Permit Applications #2232 and #7835.

	Current
Total Number of Gas Wells:	34

   b. The Permit Holder has been issued an Authority to Construct for the additional landfill gas collection system components listed below. Specific well locations, depths, and lengths of associated piping are as described in detail in Permit Application #7853. After receiving a written start-up notification for any wells or collectors that have been installed, the APCO will revise the number of wells listed in Parts 6a and 6b using the minor permit amendment procedures identified in Regulation 2-6-414.

	Proposed
Additional Number of Gas Wells:	2

(basis: Regulations 2-1-301, 8-34-301.1, 8-34-304, 8-34-305)

7. The landfill gas collection system described in Part 6a shall be operated continuously as defined in Regulation 8-34-219. Wells shall not be shut off, disconnected or removed from operation without written authorization from the APCO, unless the Permit Holder complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118. (basis: Regulation

VI. Permit Conditions

8-34-301.1)

Condition #1437
For: S-1, Active Landfill with Landfill Gas Collection System;
For:A-11, Landfill Gas Flare

8. The heat input to the A-11 Landfill Gas Flare shall not exceed 1,080 million BTU per day and shall not exceed 394,200 million BTU per year. In order to demonstrate compliance with this part, the Permit Holder shall calculate and record, on a monthly basis, the maximum daily and total monthly heat input to the flare based on: (a) the landfill gas flow rate recorded pursuant to part 14h, (b) the average methane concentration in the landfill gas measured in most recent source test, and (c) a high heating value for methane of 1013 BTU per cubic foot at 60 degrees F. (basis: Regulation 2-1-301)

9. The minimum combustion zone temperature of the Flare A-11 shall be determined by the results of the most recent source test in which compliance with all applicable requirements was demonstrated. The minimum combustion zone temperature shall be the average temperature measured during the complying source test minus 50 degrees F. Once the minimum temperature has been established, it shall be maintained during all periods of flare operation. Compliance with the temperature limit shall be based on a 3-hour averaging period. Under no circumstances shall the minimum flare temperature be less than 1,400 degrees F. Based on the results of required source testing of the flare, the APCO may add an explicit temperature limit to the conditions for the Flare A-11 in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415. (Basis: Regulation 8-34-301.3)

10. Emissions of Nitrogen Oxides (NOx) from the Flare A-11 shall not exceed 0.06 pounds per million BTU (calculated as NO_2). (basis: RACT and Offsets)

11. Emissions of Carbon Monoxide (CO) from the Flare A-11 shall not exceed 0.3 pounds per million BTU. (basis: RACT and Offsets).

12. To demonstrate compliance with Regulation 8, Rule 34, Sections 301.3 and 412, and the above requirements, the Permit Holder shall ensure that a District approved source test is conducted annually on the Landfill Gas Flare (A-11). The annual source test shall determine the following:

VI. Permit Conditions

Condition #1437
For: S-1, Active Landfill with Landfill Gas Collection System;
For:A-11, Landfill Gas Flare

a. landfill gas flow rate to the flare (dry basis);
b. concentrations (dry basis) of carbon dioxide (CO_2), nitrogen (N_2), oxygen (O_2), total hydrocarbons (THC), methane (CH_4), and total non-methane organic compounds (NMOC) in the landfill gas;
c. stack gas flow rate from the flare (dry basis);
d. concentrations (dry basis) of nitrogen oxides (NOx), carbon monoxide (CO), THC, CH_4, NMOC, SO_2, and O_2 in the flare stack gas;
e. the NMOC destruction efficiency achieved by the flare; and
f. the average combustion temperature in the flare during the test period.

Annual source tests shall be conducted no earlier than 9 months and no later than 12 months after the previous source test. The Source Test Section of the District shall be contacted to obtain approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division and to the Source Test Section within 60 days of the test date. This testing shall also be used to determine compliance with the SO2 requirements of Regulation 9-1-302 for the IC Engine Generator Sets S-5, S-6, and S-7. For this purpose, the SO2 concentration shall be corrected to zero percent oxygen. (basis: RACT, Regulations 2-1-301, 8-34-301.3, 8-34-412, and 9-1-302)

13. The Permit Holder shall conduct a characterization of the landfill gas concurrent with the annual source test required by part 11 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in part 11b, the landfill gas shall be analyzed for all the compounds listed in the most recent version of EPA's AP-42 Table 2.4-1 excluding acetone, carbon monoxide, and mercury. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division within 45 days of the test date. After conducting three annual landfill gas characterization tests, the Permit Holder may request to remove specific compounds from the list of compounds to be tested for if the compounds have not been detected, have no significant impact on the cancer risk determination for the site, and have no significant impact on the hazard index determination for the site. (basis: Toxic Risk Management Policy and Regulation 8-34-412)

VI. Permit Conditions

Condition #1437
For: S-1, Active Landfill with Landfill Gas Collection System;
For:A-11, Landfill Gas Flare

*14. The landfill gas condensate injection rate shall not exceed 5 gallons per minute. Total landfill gas condensate injection throughput shall not exceed 375,000 gallons during any consecutive twelve-month period. The Permit Holder for S-1 and A-11 may submit a written petition to the District to increase the landfill gas condensate injection rate subject to current District-approved source test results. (basis: Toxic Risk Management Policy)

15. To demonstrate compliance with the above conditions, the Permit Holder shall maintain the following records in a District approved logbook.
    a. The total amount of municipal solid waste received at S-1 recorded on a daily basis. A summary of the daily waste acceptance records for each calendar month.
    b. For each area or cell that is not controlled by a landfill gas collection system, a record of the date that waste was initially placed in the area or cell. The cumulative amount of waste placed in each uncontrolled area or cell recorded on a monthly basis.
    c. If the Permit Holder plans to exclude an uncontrolled area or cell from the collection system requirement, the Permit Holder shall also record the types and amounts of all non-decomposable waste placed in the area and the percentage (if any) of decomposable waste placed in the area.
    d. Low VOC soil screening data, pursuant to part 3.
    e. The dates, locations, and frequency per day of all watering activities on unpaved roads or active soil or fill areas. The dates, locations, and type of any dust suppressant applications. The dates and description of all paved roadway cleaning activities. All records shall be summarized monthly.
    f. The initial operation date for each new landfill gas well and collector.
    g. An accurate map of the landfill that indicates the locations of all refuse boundaries and the locations of all wells and collectors (using unique identifiers) that are required to be operating continuously pursuant to part 6a. Any areas containing only non-decomposable waste shall be clearly identified. This map shall be updated at least once a year to indicate changes in refuse boundaries and to include any newly installed wells and collectors.
    h. The operating times and the landfill gas flow rate to the A-11 Landfill Gas Flare recorded on a daily basis. A monthly summary of the heat input toA-11, pursuant to part 8 shall be calculated and recorded.
    i. Continuous records of the combustion zone temperature for the A-11 Landfill Gas Flare during all hours of operation.

VI. Permit Conditions

Condition #1437
For: S-1, Active Landfill with Landfill Gas Collection System;
For:A-11, Landfill Gas Flare

j. Records of all test dates and test results performed to maintain compliance with parts 12 and 13 above or any applicable rule or regulation.
k. Records of landfill gas condensate injection throughput and the duration of the injection recorded daily.

All records shall be maintained on site or shall be made readily available to District staff upon request for at least 5 years from the date of entry. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable rules or regulations.
(basis: Cumulative Increase, 2-1-301, 2-6-501, 6-301, 6-305, 8-2-301, 8-34-301, 8-34-304, 8-34-501, and 9-1-302)

16. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting period for the first increment of the Regulation 8-34-411 annual report that is submitted subsequent to the issuance of the MFR Permit for this site shall be from December 1, 2002 through August 31, 2003. This first increment report shall be submitted by September 30, 2003. The reporting periods and report submittal due dates for all subsequent increments of the Regulation 8-34-411 report shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F. of the MFR Permit for this site. (basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))

Condition #21582
For: S-3, S-4; Diesel IC Engines for Flare Generator and Trash Pump

1. The Diesel Engines S-3 and S-4 shall each be limited to 3,120 hours per year of operation. (basis: Offsets)

2. Only low sulfur fuel (<0.5% sulfur by weight) shall be combusted at S-3 and S-4. The maximum sulfur content of the fuel shall be demonstrated by vendor certification. (basis: Regulation 9-1-304)

VII. APPLICABLE LIMITS & COMPLIANCE MONITORING REQUIREMENTS

This section has been included to summarize the applicable emission limits contained in Section IV, Source-Specific Applicable Requirements, of this permit. The following tables show the relationship between each emission limit and the associated compliance monitoring provisions, if any. The monitoring frequency column indicates whether periodic (P) or continuous (C) monitoring is required. For periodic monitoring, the frequency of the monitoring has also been shown using the following codes: annual (A), quarterly (Q), monthly (M), weekly (W), daily (D), or on an event basis (E). No monitoring (N) has been required if the current applicable rule or regulation does not require monitoring, and the operation is unlikely to deviate from the applicable emission limit based upon the nature of the operation.

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Collection System Installation Dates	BAAQMD 8-34-304.1	Y		For Inactive/Closed Areas: collection system components must be installed and operating by 2 years + 60 days after initial waste placement	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition #1437, Parts 15b-c and 15f-g	P/E	Records
Collection System Installation Dates	BAAQMD 8-34-304.2	Y		For Active Areas: Collection system components must be installed and operating by 5 years + 60 days after initial waste placement	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition #1437, Parts 15b-c and 15f-g	P/E	Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Collection System Installa-tion Dates	BAAQMD 8-34-304.3	Y		For Any Uncontrolled Areas or Cells: collection system components must be installed and operating within 60 days after the uncontrolled area or cell accumulates 1,000,000 tons of decomposable waste	BAAQMD 8-34-501.7 and 501.8 and BAAQMD Condition #1437, Parts 15a-c and 15f-g	P/E	Records
Gas Flow	BAAQMD 8-34-301 and 301.1	Y		Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	BAAQMD 8-34-501.10 and 508	C	Gas Flow Meter and Recorder (every 15 minutes)
Gas Flow	BAAQMD Condition #1437, Parts 5, 6, and 7	Y		Landfill gas collection system shall operate continuously and all collected gases shall be vented to a properly operating control system	BAAQMD Condition #1437, Parts 15f-h	P/D	Records of Landfill Gas Flow Rates, Collection and Control Systems Downtime, and Collection System Components
Collection and Control Systems Shutdown Time	BAAQMD 8-34-113.2	Y		Less than 240 hours/year and less than 5 consecutive days	BAAQMD 8-34-501.1	P/D	Operating Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Periods of Inoperation for Parametric Monitors	BAAQMD 1-523.2	Y		15 consecutive days/incident and 30 calendar days/12 month period	BAAQMD 1-523.4	P/D	Operating Records for All Parametric Monitors
Continuous Monitors	40 CFR 60.13(e)	Y		Requires Continuous Operation except for breakdowns, repairs, calibration, and required span adjustments	40 CFR 60.7(b)	P/D	Operating Records for All Continuous Monitors
Wellhead Pressure	BAAQMD 8-34-305.1	Y		< 0 psig	BAAQMD 8-34-414, 501.9 and 505.1	P/M	Monthly Inspection and Records
Temperature of Gas at Wellhead	BAAQMD 8-34-305.2	Y		< 55 °C	BAAQMD 8-34-414, 501.9 and 505.2	P/M	Monthly Inspection and Records
Gas Concentrations at Wellhead	BAAQMD 8-34-305.3 or 305.4	Y		$N_2 < 20\%$ **OR** $O_2 < 5\%$	BAAQMD 8-34-414, 501.9 and 505.3 or 505.4	P/M	Monthly Inspection and Records
Well Shutdown Limits	BAAQMD 8-34-116.2	Y		No more than 5 wells at a time or 10% of total collection system, whichever is less	BAAQMD 8-34-116.5 and 501.1	P/D	Records
Well Shutdown Limits	BAAQMD 8-34-116.3	Y		24 hours per well	BAAQMD 8-34-116.5 and 501.1	P/D	Records
Well Shutdown Limits	BAAQMD 8-34-117.4	Y		No more than 5 wells at a time or 10% of total collection system, whichever is less	BAAQMD 8-34-117.6 and 501.1	P/D	Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Well Shutdown Limits	BAAQMD 8-34-117.5	Y		24 hours per well	BAAQMD 8-34-117.6 and 501.1	P/D	Records
TOC (Total Organic Compounds Plus Methane)	BAAQMD 8-34-301.2	Y		1000 ppmv as methane (component leak limit)	BAAQMD 8-34-501.6 and 503	P/Q	Quarterly Inspection of collection and control system components with OVA and Records
TOC	BAAQMD 8-34-303	Y		500 ppmv as methane at 2 inches above surface	BAAQMD 8-34-415, 416, 501.6, 506 and 510	P/M, Q, and E	Monthly Visual Inspection of Cover, Quarterly Inspection with OVA of Surface, Various Reinspection Times for Leaking Areas, and Records
Non-Methane Organic Compounds (NMOC)	BAAQMD 8-34-301.3	Y		98% removal by weight OR < 30 ppmv, dry basis @ 3% O_2, expressed as methane (applies to A-11 Flare only)	BAAQMD 8-34-412 and 8-34-501.4 and BAAQMD Condition #1437, Part 11	P/A	Initial and Annual Source Tests and Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Temperature of Combustion Zone (CT)	BAAQMD Condition #1437, Part 9	Y		CT ≥ 1400 °F, averaged over any 3-hour period (applies to A-11 Flare only)	BAAQMD 8-34-501.3 and 507, and BAAQMD Condition #1437, Part 15i	C	Temperature Sensor and Recorder (continuous)
Total Carbon	BAAQMD 8-2-301	Y		15 pounds/day or 300 ppm, dry basis (applies only to aeration of or use as cover soil of soil containing ≤ 50 ppmw of volatile organic compounds)	BAAQMD Condition # 1437, Part 15d	P/E	Inspection with Portable Organic Vapor Analyzer and Records
Amount of Contaminated Soil Aerated or Used as Cover	BAAQMD 8-40-116.1 and BAAQMD Condition # 1437, Part 2	Y		1 cubic yard per project	BAAQMD Condition # 1437, Part 2m	P/E	Records
Amount of Contaminated Soil Aerated or Used as Cover	BAAQMD 8-40-116.2 and BAAQMD Condition #1437, Part 2	Y		8 cubic yards per project, provided organic content ≤ 500 ppmw and limited to 1 exempt project per 3 month period	BAAQMD 8-40-116.2 and BAAQMD Condition # 1437, Part 2m	P/E	Records
Amount of Contaminated Soil Aerated or Used as Cover	BAAQMD 8-40-301 and BAAQMD Condition #1437, Part 2	Y		Prohibited for Soil with Organic Content >50 ppmw unless exempt per BAAQMD 8-40-116, 117, or 118	BAAQMD Condition # 1437, Part 2m	P/E	Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Amount of Accidental Spillage	BAAQMD 8-40-117 and BAAQMD Condition # 1437, Part 2	Y		Soil Contaminated by Accidental Spillage of ≤ 5 Gallons of Liquid Organic Compounds	None	N	N/A
Total Aeration Project Emissions	BAAQMD 8-40-118 and BAAQMD Condition # 1437, Part 2	Y		150 pounds per project and toxic air contaminant emissions per year <BAAQMD Table 2-1-316 limits	BAAQMD Condition #1437, Part 2m	P/E	Records
Low VOC Soil	BAAQMD Condition # 1437, Part 3	Y		Soil with Organic Vapor Concentration ≤50 ppmv Acceptable as Cover Material	BAAQMD 8-40-604 and BAAQMD Condition # 1437, Part 3	P/E	Surface Organic Vapor Monitoring
Opacity	BAAQMD 6-301	Y		Ringelmann No. 1 for < 3 minutes/hr (applies to S-1 Landfill operations)	BAAQMD Condition #1437, Part 15e	P/E, M	Records of all site watering and road cleaning events
Opacity	BAAQMD 6-301	Y		Ringelmann No. 1 for < 3 minutes/hr (applies to A-11 Flare)	None	N	N/A
FP	BAAQMD 6-310	Y		≤ 0.15 grains/dscf (applies to A-11 Flare only)	None	N	N/A

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
SO_2	BAAQMD 9-1-301	Y		Property Line Ground Level Limits: ≤ 0.5 ppm for 3 minutes and ≤ 0.25 ppm for 60 min. and ≤0.05 ppm for 24 hours (applies to A-11 Flare only)	None	N	N/A
SO_2	BAAQMD Regulation 9-1-302	Y		≤ 300 ppm (dry basis) (applies to A-11 Flare only)	BAAQMD Condition #1437, Part 12	P/A	Annual Source Test
H_2S	BAAQMD 9-2-301	N		Property Line Ground Level Limits: ≤ 0.06 ppm, averaged over 3 minutes and ≤ 0.03 ppm, averaged over 60 minutes	None	N	N/A
NOx	BAAQMD Condition #1437, Part 10	Y		≤ 0.06 lb/MMBTU (calculated as NO_2)	BAAQMD Condition #1437, Part 12	P/A	Annual Source Test
CO	BAAQMD Condition #1437, Part 11	Y		≤ 0.3 lb/MMBTU	BAAQMD Condition #1437, Part 12	P/A	Annual Source Test
Amount of Waste Accepted	BAAQMD Condition #1437, Part 1	Y		≤ 2600 tons/day (except for temporary situations approved by the LEA) and ≤ 19,840,000 tons (cumulative amount of all wastes) and ≤ 36,400,000 yd^3 (cumulative amount of all wastes)	BAAQMD Condition #1437, Part 15a	P/D	Records

VII. Applicable Limits and Compliance Monitoring Requirements

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 ACTIVE LANDFILL
A-11 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Heat Input	BAAQMD Condition #1437, Part 8	Y		≤ 1,080 MM BTU per day and ≤ 394,200 MM BTU per year (applies to A-11 Flare only)	BAAQMD Condition #1437, Part 8	P/D	Records
Landfill Gas Condensate Injection in Flare	BAAQMD Condition #1437, Part 14	N		≤ 5 gallons per minute ≤ 375,000 gallons per year	BAAQMD Condition #1437, Part 15k	P/D	Records
Startup Shutdown or Malfunction Procedures	40 CFR 63.6(e)	Y	1/16/04	Minimize Emissions by Implementing SSM Plan	40 CFR 63.1980(a-b)	P/E	Records (all occurrences, duration of each, corrective actions)

Appendix B
Source Test Protocol

Shaw Environmental, Inc.
2360 Bering Drive
San Jose, California 95131
408-382-5800
FAX: 408-433-1912

Shaw™ Shaw Environmental, Inc.

VIA FAX 415-749-4922

To: Ken Kunaniec, BAAQMD Date: December 27, 2004
Subject: Source Test Protocol & Test Notification

SOURCE TEST PROTOCOL
FOR
KIRBY CANYON LANDFILL
FLARE

Shaw Environmental, Inc. (Shaw) will perform compliance testing on one landfill gas flare (A-11) at the Kirby Canyon Recycling and Disposal Facility (KCRDF) in San Jose, California. The purpose of the test is to demonstrate the performance of the landfill gas flare as specified by the Bay Area Air Quality Management District (BAAQMD) Major Facility Review (MFR) Title V permit and Regulation 8, Rule 34. This protocol is to inform the BAAQMD of the planned test date and testing procedures. Shaw is approved by the California Air Resources Board (ARB) as an independent contractor to conduct compliance emission testing.

Source Test Information

Test Location:	Kirby Landfill 910 Coyote Creek Morgan Hill, CA 95198 BAAQMD MFR Number A1812	Contact: Mr. Eddie Petite 408-779-2206 (Waste Management)
Source to be Tested:	Flare A-11	
Test Objective:	Determine compliance with Title V Permit and Regulation 8, Rule 34 Flare: Permit Condition Number 1437	Emission Limits: NO_x: 0.06 lb/MMBtu CO: 0.2 lb/MMBtu SO_2: 300 ppm NMOC: > 98% destruction efficiency or 30 ppm as methane at 3 % O_2
Test to be Performed By:	Shaw Environmental, Inc. 2360 Bering Drive San Jose, CA 95131	Contact: Bill Johnston Tel: (408) 382-5800
Test Parameters:	Inlet O_2, CO_2, N_2, BTU, HHV THC, CH_4, NMOC, Sulfur Species, VOCs, landfill gas flow rate	Outlet THC, CH_4, NMOC, NO_x, CO, SO_2 Volumetric flow rate

SOURCE DESCRIPTION

The flare is a LFG Specialties Model EF8 4018, 1,480 scfm capacity enclosed gas flare with a 5 GPM condensate injection system. The flare is designated by the BAAQMD as abatement device A-11. A Yokogawa data acquisition system with local digital display and recorder provides the record of flare temperatures and inlet flow rates.

SCOPE OF WORK

A source test will be performed on one flare (A-11) located at the Kirby Canyon Landfill. The flare source test shall determine the following parameters as specified in the facility's Title V permit condition number A1812 and BAAQMD Regulation 8, Rule 34. The following conditions, specified in the referenced Permit, will be met.

- Condition 1437, items 10 and 12d: NOx emissions from the flare shall not exceed 0.06 pounds per million Btu (lb/MMBtu);
- Condition 1437, items 11 and 12d: CO emissions from the flare shall not exceed 0.2 lb/MMBtu;
- Condition 1437, item 12: The source test will determine the following:
    - Landfill gas flow rate to the flare, item 12a
    - Landfill Gas fuel analysis: for Btu/cubic foot of gas, higher heating value (HHV), C_1 through C_6 hydrocarbons, sulfur species, O_2, CO_2, and N_2, item 12b
    - Stack gas flow rate, item 12c
    - Concentrations (dry basis) of THC, CH4, NMOC, SO2, and O2 in the flare stack gas, item 12d
    - The flare destruction efficiency of total non-methane organic compounds (NMOC) shall not be less than 98 percent by weight, unless the outlet NMOC concentration is less than 30 ppmv, expressed as methane at 3 percent oxygen on a dry basis, item 12e
    - The average combustion temperature in the flare. As per Condition 1437, items 9 and 12f, temperature and fuel flow rate shall be recorded over the period of the source test. The source test should be conducted at the minimum combustion zone temperature allowed by the BAAQMD (1450 degrees Fahrenheit) or greater if necessary.
- Condition 1437, item 12 and Rule 9-1-302: SO_2 emissions from the flare shall not exceed 300 ppmv;
- Condition 1437, item 13: a characterization of the landfill gas for all the compounds listed in EPA AP-42, Table 2.4-1 excluding acetone, CO and mercury.

TEST PROCEDURES

The following source test methods (each compliant with the requirements of the BAAQMD) will be utilized to determine the emissions from the flare while the condensate injection system is operating:

- Triplicate landfill gas fuel analysis: ASTM D 1945/3588 for Btu/cubic foot of gas, HHV, C_1 through C_6 hydrocarbons, inclusive, O_2, CO_2, and N_2; H_2S, sulfur species by ASTM D-5504; and landfill organic constituents by TO-15 (only one sample will be analyzed for TO 15 compounds).
- Three (3) thirty-minute test runs will be performed for NOx, CO, NMOC and SO_2. Testing will be performed according to EPA test methods. SO_2 concentrations will not be measured but calculated from the analysis of sulfur species from the landfill gas.

- EPA Method 19: volumetric flow rate at the flare exhaust
- Triplicate integrated samples for the inlet concentration of NMOC by EPA Method 25C, if required

Landfill Gas Fuel Analysis

Integrated Tedlar bag samples will be collected at the inlet to the flare. Samples will be collected concurrently with the outlet sampling. Samples will be analyzed within 72 hours (48 hrs for sulfur). One sample will be collected and analyzed for speciated organics. The sulfur result will be used as a surrogate for monitoring sulfur dioxide in the exhaust gas.

Continuous Emission Monitoring

Single point sampling will be performed. The stratification test performed during the 2004 source test demonstrated that no stratification exists in the flare. All analyzers will be checked for calibration before and after each run. Emission monitoring data will be recorded on strip charts and a data logger. Methane concentrations will be determined by passing sample gas through an activated carbon scrubber prior to the hydrocarbon analyzer. Hydrocarbon emissions will be measured and reported as methane.

Process Parameters

Flare process parameters including the fuel gas flow rate and the flare operating temperature will be measured and recorded during each run using the flare gas measurement system.

REPORT

The final report is due to the BAAQMD 45 days after testing has occurred. The report will describe the tests that were conducted, the operating conditions of the source during the test, and the emission results reported in units of the appropriate standard. All raw data and sample calculations used to obtain the reported results will be included so that the accuracy of the reported results can be verified from the report. The flare process information will be submitted in the report.

TEST SCHEDULE

The source test is scheduled for January 6, 2005.

Appendix C
Source Test Data

Emission Rate Calculations
Stack Gas Flow Rate and Fuel Usage, EPA Method 19

EMISSION RATE CALCULATION

Facility: Kirby
Source : Flare
Test date: 1/6/2005

Temperature Std: 70
Pressure Std: 29.92
O2% correction: 3

Time	0949-1019 Run 1		1038-1108 Run 2		1127-1201 Run 3		Avg		Permit Limits
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	
Flare Temp (F)	1,496		1,497		1,497		1,497		
Fuel factor	9,541		9,540		9,534		9,538		
Oxygen (%)		12.1		12.0		12.0		12.0	
Flowrate (dscfm)	1,161	12,685	1,153	12,558	1,147	12,641	1,154	12,628	
Oxides of Nitrogen									
MW = 46									
NOx, ppm		11.6		11.6		11.2		11.5	
NOx, lb/hr		1.1		1.0		1.0		1.0	
NOx, lb/MMBtu		0.031		0.031		0.030		**0.031**	**0.06**
Carbon Monoxide									
MW = 28									
CO, ppm		18.2		24.8		22.0		21.7	
CO, lb/hr		1.0		1.4		1.2		1.2	
CO, lb/MMBtu		0.030		0.040		0.036		**0.035**	**0.2**
Hydrocarbons as methane									
MW = 16									
THC, ppm	486,764	< 1	491140	< 1	497,586	< 1	491,830	< 1	
THC, lb/hr	1,403	0.03	1,406	0.03	1,417	0.03	1,408	0.03	
Methane, ppm	485,360	NM	489,360	NM	495,520	NM	490,080	NM	
Methane, lb/hr	1,399	NM	1,401	NM	1,410.9	NM	1,403	NM	
NMOC, ppm	1404	< 1	1780	< 1	2066	< 1	1,750	< 1	
NMOC, ppm corrected to 3% O2		< 2		< 2		< 2		**< 2**	**30**
NMOC, lb/hr	4.0	0.031	5.1	0.031	5.9	0.031	5.0	0.031	
SO_2 as H_2S, ppm		3.77		3.78		4.28		**3.94**	**300**
Efficiency %									
THC	100.0%		100.0%		100.0%			100.0%	**98**
NMOC	99.2%		99.4%		99.5%			99.4%	**98**

Calculations

lb/hr = ppm x MW x Qs x 8.223x10-5 / (Tstd + 460)
ppm corrected @ O2 = ppm measured x [(20.9 - O2% correction) / (20.9% O2 - O2 measured)]
lb/MMBtu = F-factor x MW x [1.3711x10-6 / (Tstd + 460)] x [(20.9 /20.9 -O2%)] x ppm
Efficiency (%) = in (lb/hr)-out (lb/hr)/in (lb/hr) x 100

NM = not measured

Stack Gas Flow Rate ---- Fuel Usage

EPA Method 19

Facility Kirby
Source Flare
Date 1/6/2005

		Run 1	Run 2	Run 3	Average
Gross Caloric Value (Btu/ft3)	Btu/ft3	482.2	486.2	492.3	486.9
Stack Oxygen	%	12.1	12.0	12.0	12.0
Fuel factor @ 70 F	DSCF/MMBtu	9,541.2	9,539.9	9,533.8	9,538.3
Corrected Fuel Rate (SCFM) @ Tstd	SCFM	1,161	1,153	1,147	1,154
Fuel Flowrate (SCFH) @ Tstd	SCFH	69,660	69,180	68,820	69,220
Million Btu per minute	MMBtu/min	0.560	0.561	0.565	0.562
Heat Input (MMBtu/hr)	MMBtu/hr	33.6	33.6	33.9	33.7
Heat Input (MMBtu/day)	MMBtu/day	806.1	807.2	813.1	808.8
Stack Gas Flow Rate (dscfm)	dscfm	12,685	12,558	12,641	12,628

Calculations

SCFM = CFM * (Tstd + 460) * gas PSIA) / 14.7 / (gas F + 460)
SCFH = SCFM * 60
MMBtu/min = SCFM * Btu/ft3 / 1,000,000
MMBtu/hr = MMBtu/min * 60
DSCFM = Fuel factor * MMBtu/min * (20.9 / (20.9-O2%)) * (Tstd + 460) / 528

Notes
Corrected Fuel Rate (SCFM) @ Tstd data is from the system data aquistion

Kirby Landfill
Flare Source Test-2005
Calculations of SO2 Emission

Parameters	Run 1	Run 2	Run 3	Average	Units
Fuel Input	1161	1153	1147	1153.7	scfm
Sulfur (as H_2S)	41	41	47	43.0	ppmv
R	0.7302	0.7302	0.7302	0.7302	atm*ft^3/lbmol*R
Fuel Input	3.0113	2.9906	2.9750	2.9923	lbmol/min
Sulfur Input	0.000123	0.000123	0.00014	0.00013	lbmol/min
Sulfur Outlet	0.000123	0.000123	0.00014	0.00013	lbmol/min
SO_2 MW	64.06	64.06	64.06	64.06	lb/lbmol
SO_2 Outlet	0.007909	0.007855	0.008957	0.00824	lb/min
SO_2 Outlet	0.474546	0.471276	0.537432	0.4944	lb/hr
Exhaust Flow rate (dscfm)	12,685	12,558	12,641	12,628	dscfm
SO_2 Outlet	3.77	3.78	4.28	3.94	ppmv

Appendix D
Process Data

Kirby Canyon 2005 Source Test Summary Process Data, Test Date : 1-6-05

Run	Time	Flare Temp degree F	LFG Flow SCFM
1	0949-1019	1496[a]	1161[a]
2	1038-1108	1497[a]	1153[a]
3	1127-1201	1497[a]	1147[a]

Note: [a] Average of minumun and maximum readings for the test duration.

DAQSTANDARD	R2.06	
Data Viewer	R2.06	
I T Corporation	Rebecca Zito	110-24547-4866

Device Type	DX100		
Serial No.	12C716532		
File Message			
Time Correction	None		
Starting Condition	Auto		
Dividing Condition	Auto		
Meas Ch.	6		
Math Ch.	1		
Data Count	4453		
Sampling Interval	120.000	sec	
Start Time	2005/01/01	00:50:00	0.000
Stop Time	2005/01/07	05:14:00	0.000
Trigger Time	2005/01/01	08:48:00	0.000
Trigger No.	239		
Damage Check	Not Damaged		

Converted Group 1 - 1

	Ch.	CH01		CH02	
	Tag	FLARE TEMP		LFG FLOW	
	Unit	F		SCFM	
Run 1: 0949-1019					
Date	**Time**	**sec**	**MIN**	**MAX**	**MIN**	**MAX**
2005/01/06	09:48:00	0.000	1488	1498	1143	1161
2005/01/06	09:50:00	0.000	1493	1501	1161	1172
2005/01/06	09:52:00	0.000	1494	1501	1160	1172
2005/01/06	09:54:00	0.000	1493	1496	1165	1174
2005/01/06	09:56:00	0.000	1491	1498	1160	1170
2005/01/06	09:58:00	0.000	1493	1494	1152	1167
2005/01/06	10:00:00	0.000	1489	1498	1148	1165
2005/01/06	10:02:00	0.000	1493	1501	1149	1165
2005/01/06	10:04:00	0.000	1491	1500	1160	1169
2005/01/06	10:06:00	0.000	1494	1500	1160	1171
2005/01/06	10:08:00	0.000	1491	1494	1149	1170
2005/01/06	10:10:00	0.000	1493	1502	1152	1167
2005/01/06	10:12:00	0.000	1494	1503	1161	1167
2005/01/06	10:14:00	0.000	1491	1498	1152	1166
2005/01/06	10:16:00	0.000	1491	1495	1146	1157
2005/01/06	10:18:00	0.000	1494	1501	1149	1165
2005/01/06	10:20:00	0.000	1489	1501	1144	1162
Average			**1492**	**1499**	**1154**	**1167**
Run 2: 1038-1108						
2005/01/06	10:38:00	0.000	1489	1501	1150	1162
2005/01/06	10:40:00	0.000	1492	1501	1156	1163
2005/01/06	10:42:00	0.000	1491	1501	1153	1160
2005/01/06	10:44:00	0.000	1494	1501	1151	1161
2005/01/06	10:46:00	0.000	1491	1498	1137	1156
2005/01/06	10:48:00	0.000	1493	1499	1138	1157
2005/01/06	10:50:00	0.000	1491	1505	1142	1170
2005/01/06	10:52:00	0.000	1489	1504	1154	1161
2005/01/06	10:54:00	0.000	1489	1501	1151	1161
2005/01/06	10:56:00	0.000	1492	1503	1154	1165
2005/01/06	10:58:00	0.000	1491	1498	1151	1160
2005/01/06	11:00:00	0.000	1493	1501	1148	1158
2005/01/06	11:02:00	0.000	1491	1496	1142	1156
2005/01/06	11:04:00	0.000	1493	1496	1135	1149
2005/01/06	11:06:00	0.000	1493	1503	1137	1153
2005/01/06	11:08:00	0.000	1494	1500	1134	1149
Average			**1492**	**1501**	**1146**	**1159**

Run 3: 1127-1201

		Ch.	CH01		CH02	
		Tag	FLARE TEMP		LFG FLOW	
		Unit	F		SCFM	
Date	Time	sec	MIN	MAX	MIN	MAX
2005/01/06	11:26:00	0.000	1491	1501	1128	1145
2005/01/06	11:28:00	0.000	1493	1501	1139	1153
2005/01/06	11:30:00	0.000	1493	1501	1146	1156
2005/01/06	11:32:00	0.000	1493	1500	1146	1156
2005/01/06	11:34:00	0.000	1493	1500	1136	1153
2005/01/06	11:36:00	0.000	1490	1500	1134	1149
2005/01/06	11:38:00	0.000	1494	1504	1139	1156
2005/01/06	11:40:00	0.000	1493	1503	1143	1155
2005/01/06	11:42:00	0.000	1497	1501	1140	1150
2005/01/06	11:44:00	0.000	1493	1501	1146	1157
2005/01/06	11:46:00	0.000	1492	1495	1134	1154
2005/01/06	11:48:00	0.000	1491	1503	1139	1150
2005/01/06	11:50:00	0.000	1496	1500	1144	1154
2005/01/06	11:52:00	0.000	1494	1500	1135	1155
2005/01/06	11:54:00	0.000	1496	1501	1140	1156
2005/01/06	11:56:00	0.000	1491	1501	1152	1158
2005/01/06	11:58:00	0.000	1491	1498	1138	1155
2005/01/06	12:00:00	0.000	1493	1498	1138	1151
2005/01/06	12:02:00	0.000	1498	1503	1139	1155
Average			**1493**	**1501**	**1140**	**1154**

Landfill Process Data Sheet

Landfill: Kirby

Test date: 1-6-05

Source: (Flare) IC Engine, Turbine
circle one

Landfill Gas Data	Run 1		Run 2		Run 3	
Time	0949	1019	1038	1105	1127	1203
Methane (%)	49.6	–	–	–	50.3	—
O2 (%)	0.7	–	–	–	0.7	—
Landfill Gas Rate (scfm)	1164	1157	1156	1145	1140	1145
Flare Temp (F)	1497	1498	1497	1498	1498	1498

Thermocouple Location: Top

f-factor ~50% methane = 9,450

Appendix E
Continuous Emission Monitoring Data

Data Acquisition
Strip Chart Records
Calibration Gas Certificates of Analysis
EPA Method 205 Field Test Results
NO_x Converter Check

Run averages corrected for bias
Operator: B Johnston
Plant Name: Kirby
Location: Flare
Date 1/6/2005

Run	O2 %	CO ppm	THC ppm	NOx ppm
1	12.1	18.2	0.3	11.6
2	12.0	24.8	0.5	11.6
3	12.0	22.0	0.0	11.2

STRATA Configuration Page 1
01-05-2005 12:55:20
File Name: C:\STRATA\GUADLPE.STR

Operator:	B Johnston
Plant Name:	Kirby
Location:	Flare
Run Length:	30 minutes
Sample Rate:	40 per minute
Average Calibration Results:	1 minutes
Automatic Sequence, Calibration Error:	No
Automatic Sequence, System Bias:	No
Max Response Time:	Manual
Max Response Time:	1 minutes
Traverse During Run:	No

Active	Chan.	Analyte Name	Units	Span Units	Span Volts	Offset Volts
Yes	1	O2	%	25	1	0
Yes	3	CO	ppm	500	1	0
Yes	4	THC	ppm	50	10	0
Yes	5	NOx	ppm	50	10	0

Measurement System Preparation Table

Gas Name	Reference Cylinder Numbers 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
O2	Z	H	M													
CO	Z			H	M											
THC	Z					H	M	L								
NOx	Z								H	M						

CEM Leak check 0.1" for 1 min @ 15" vac.

R1 0949 - 1019

R2 1038 - 1108

R3 1127 - 1201

power went off State paused during down time ~ 3 min

STRATA Configuration Page 2

Gas Name	Zero Reference Cylinder No.	Conc	ID Number	Low Reference Cylinder No.	Conc	ID Number
O2	1	0		99	999	
CO	1	0		99	999	
THC	1	0		8	15	Environics
NOx	1	0		99	999	

Gas Name	Mid Reference Cylinder No.	Conc	ID Number	High Reference Cylinder No.	Conc	ID Number
O2	3	7.98	SA10693	2	18.96	CC140645
CO	5	200	Environics	4	450	Environics
THC	7	30	Environics	6	45	Environics
NOx	10	20	Environics	9	40.3	SA15339

Seq Num	Calibration Error Test Sequence O2	CO	THC	NOx
1	Zero	Zero	Zero	Zero
2	High			High
3	Mid			Mid
4		High		
5		Mid		
6			High	
7			Mid	
8				
9				
10				
11				
12				
13				
14				
15				

Environic Gas
- 842 Methane
CC92594
- 819 NOx
SA 8332
- CO 858 ppm
CC 181169

Seq Num	Calibration Error Valve Sequence 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X															
2		X							X							
3			X							X						
4				X												
5					X											
6						X										
7							X									
8																
9																
10																
11																
12																
13																
14																
15																

Seq Num	System Bias Check Sequence O2	CO	THC	NOx
1	Zero	Zero	Zero	Zero
2	Mid			
3				High
4			Mid	
5		Mid		
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Seq Num	System Bias Valve Sequence 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X															
2			X													
3									X							
4							X									
5					X											
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

Calibration Error Test, Run 1 STRATA Version 1.1

	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 08:12:40	0.031	-0.18	-0.076	0.127
01-06-2005 08:13:40	2.237	0.04	-0.076	12.406
01-06-2005 08:14:39	17.782	0.01	-0.076	39.847
01-06-2005 08:15:40	18.947	-0.20	-0.076	40.434
01-06-2005 08:16:39	17.816	-0.23	-0.076	32.927
01-06-2005 08:17:40	8.805	0.17	-0.076	19.057
01-06-2005 08:18:40	8.095	0.17	-0.075	19.278
01-06-2005 08:19:41	8.067	0.16	-0.075	19.439
01-06-2005 08:20:40	8.057	0.09	-0.075	19.587
01-06-2005 08:21:40	2.748	144.39	-0.075	1.783
01-06-2005 08:22:41	0.106	384.31	-0.075	0.135
01-06-2005 08:23:40	0.043	400.72	-0.075	0.125
01-06-2005 08:24:41	0.032	406.45	-0.075	0.125
01-06-2005 08:25:40	0.026	451.47	-0.075	0.125
01-06-2005 08:26:39	0.026	451.01	-0.075	0.125
01-06-2005 08:27:40	0.023	451.41	-0.075	0.125
01-06-2005 08:28:39	0.026	449.25	-0.075	0.125
01-06-2005 08:29:40	0.026	199.69	-0.074	0.129
01-06-2005 08:30:40	0.024	203.78	-0.074	0.125
01-06-2005 08:31:41	0.019	161.03	0.156	0.127
01-06-2005 08:32:40	0.020	0.34	34.779	0.135
01-06-2005 08:33:40	0.023	0.26	41.476	0.127
01-06-2005 08:34:40	0.022	0.20	46.158	0.128
01-06-2005 08:35:41	0.025	0.11	45.281	0.136
01-06-2005 08:36:40	0.021	0.07	45.170	0.138
01-06-2005 08:37:41	0.021	-0.03	45.213	0.143
01-06-2005 08:38:40	0.020	-0.07	41.590	0.130
01-06-2005 08:39:39	0.020	-0.08	30.155	0.135

Calibration Error Test, Run 1 STRATA Version 1.1

Operator: B Johnston
Plant Name: Kirby
Location: Flare

	Reference Cylinder Numbers			
	Zero	Low-range	Mid-range	High-range
O2			SA10693	CC140645
CO			Environics	Environics
THC		Environics	Environics	Environics
NOx			Environics	SA15339

Date/Time	01-06-2005		08:40:05		PASSED
Analyte	O2	CO	THC	NOx	
Units	%	ppm	ppm	ppm	
Zero Ref Cyl	0.000	0.00	0.000	0.000	
Zero Avg	0.028	-0.13	-0.076	0.131	
Zero Error%	0.1%	0.0%	0.2%	0.3%	
Low Ref Cyl					
Low Avg					
Low Error%					
Mid Ref Cyl	7.980	200.00	30.000	20.000	
Mid Avg	8.058	203.53	30.123	19.562	
Mid Error%	0.3%	0.7%	0.2%	0.9%	
High Ref Cyl	18.960	450.00	45.000	40.300	
High Avg	18.982	451.60	45.236	40.395	
High Error%	0.1%	0.3%	0.5%	0.2%	

Calibration Error Test End

Initial System Bias Check, Run 1 STRATA Version 1.1

	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 08:41:09	0.020	-0.24	18.355	0.151
01-06-2005 08:42:08	0.022	-0.24	14.715	0.154
01-06-2005 08:43:09	0.021	-0.08	7.188	0.154
01-06-2005 08:44:09	0.027	-0.13	-0.072	0.153
01-06-2005 08:45:08	2.774	-0.20	-0.072	0.152
01-06-2005 08:46:08	7.806	-0.02	-0.072	0.129
01-06-2005 08:47:09	7.978	0.52	-0.072	0.137
01-06-2005 08:48:08	5.506	0.54	-0.072	23.884
01-06-2005 08:49:09	0.259	0.53	-0.072	40.343
01-06-2005 08:50:08	0.051	0.56	-0.071	40.250
01-06-2005 08:51:09	0.036	0.56	-0.071	40.049
01-06-2005 08:52:08	0.035	0.56	-0.071	40.168
01-06-2005 08:53:09	0.030	1.05	18.458	20.701
01-06-2005 08:54:08	0.028	0.57	30.246	0.138
01-06-2005 08:55:09	0.027	0.60	30.269	0.130
01-06-2005 08:56:09	0.024	29.49	15.638	0.129
01-06-2005 08:57:08	0.030	197.76	-0.070	0.129
01-06-2005 08:58:08	0.026	201.03	-0.071	0.129

Initial System Bias Check for Run 1
Operator: B Johnston
Plant Name: Kirby
Location: Flare

	Reference Cylinder Numbers Zero	Span
O2		SA10693
CO		Environics
THC		Environics
NOx		SA15339

Date/Time 01-06-2005 08:58:32 PASSED

Analyte	O2	CO	THC	NOx
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.00	0.000	0.000
Zero Cal	0.028	-0.13	-0.076	0.131
Zero Avg	0.025	-0.15	-0.072	0.160
Zero Bias%	0.0%	0.0%	0.0%	0.1%
Zero Drift%				
Span Ref Cyl	7.980	200.00	30.000	40.300
Span Cal	8.058	203.53	30.123	40.395
Span Avg	7.980	201.32	30.274	40.177
Span Bias%	0.3%	0.4%	0.3%	0.4%
Span Drift%				

System Bias Check End

Test Run 1 STRATA Version 1.1

	O2	CO	THC	NOx
	%	ppm	ppm	ppm
Begin calculating run averages				
01-06-2005 09:49:56	12.275	15.21	-0.012	11.537
01-06-2005 09:50:57	12.219	7.32	-0.069	11.654
01-06-2005 09:51:57	12.145	7.96	-0.069	11.630
01-06-2005 09:52:56	12.240	11.10	-0.069	11.579
01-06-2005 09:53:57	12.186	15.75	0.373	11.671
01-06-2005 09:54:58	12.163	11.84	-0.063	11.630
01-06-2005 09:55:57	12.202	38.65	1.073	11.514
01-06-2005 09:56:57	12.138	17.48	0.247	11.604
01-06-2005 09:57:56	12.087	20.51	0.814	11.811
01-06-2005 09:58:57	12.147	23.80	0.333	11.595
01-06-2005 09:59:57	12.099	13.51	-0.013	11.741
01-06-2005 10:00:56	12.056	16.22	0.017	11.721
01-06-2005 10:01:57	12.063	16.37	0.138	11.751
01-06-2005 10:02:58	12.071	26.85	0.126	11.708
01-06-2005 10:03:57	12.084	5.40	-0.070	11.767
01-06-2005 10:04:57	12.150	23.64	1.199	11.597
01-06-2005 10:05:56	12.068	18.00	0.087	11.733
01-06-2005 10:06:57	12.048	12.64	0.029	11.656
01-06-2005 10:07:57	12.121	16.96	0.035	11.547
01-06-2005 10:08:56	12.035	7.27	-0.070	11.555
01-06-2005 10:09:57	12.066	8.33	-0.070	11.497
01-06-2005 10:10:58	11.997	33.10	0.818	11.635
01-06-2005 10:11:57	11.899	31.74	0.575	11.738
01-06-2005 10:12:57	11.851	20.90	0.178	11.907
01-06-2005 10:13:56	11.972	25.69	0.789	11.476
01-06-2005 10:14:57	11.952	13.71	-0.067	11.715
01-06-2005 10:15:57	12.089	23.06	0.150	11.514
01-06-2005 10:16:56	12.129	31.56	0.121	11.436
01-06-2005 10:17:57	12.052	38.05	0.961	11.476
01-06-2005 10:18:57	12.061	16.96	-0.024	11.743
Run Averages	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 10:19:04	12.088	18.97	0.248	11.638

Operator: B Johnston
Plant Name: Kirby
Location: Flare
Test Run 1 End

Final System Bias Check, Run 1 STRATA Version 1.1

	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 10:20:07	4.402	9.88	0.017	0.998
01-06-2005 10:21:06	0.147	2.63	-0.072	0.121
01-06-2005 10:22:07	0.053	2.15	-0.072	0.125
01-06-2005 10:23:06	0.037	1.80	-0.072	0.122
01-06-2005 10:24:07	0.502	1.53	-0.072	0.114
01-06-2005 10:25:06	7.254	1.32	-0.072	0.082
01-06-2005 10:26:05	7.992	1.14	-0.072	0.085
01-06-2005 10:27:06	8.024	1.05	-0.073	0.088
01-06-2005 10:28:07	4.888	0.87	-0.073	29.952
01-06-2005 10:29:06	0.214	0.80	-0.073	40.001
01-06-2005 10:30:07	0.064	0.68	-0.073	39.928
01-06-2005 10:31:06	0.042	0.66	3.124	33.256
01-06-2005 10:32:07	0.031	0.59	28.884	0.121
01-06-2005 10:33:06	0.029	0.55	29.917	0.082
01-06-2005 10:34:07	0.025	0.47	21.968	0.087
01-06-2005 10:35:06	0.024	109.64	-0.074	0.097
01-06-2005 10:36:07	0.020	200.85	-0.074	0.093

Final System Bias Check, Run 1 STRATA Version 1.1
Operator: B Johnston
Plant Name: Kirby
Location: Flare

	Reference Cylinder Numbers	
	Zero	Span
O2		SA10693
CO		Environics
THC		Environics
NOx		SA15339

Date/Time 01-06-2005 10:36:47 PASSED

Analyte	O2	CO	THC	NOx
Units	%	ppm	ppm	ppm
Zero Ref Cyl	0.000	0.00	0.000	0.000
Zero Cal	0.028	-0.13	-0.076	0.131
Zero Avg	0.035	1.67	-0.072	0.124
Zero Bias%	0.0%	0.4%	0.0%	0.0%
Zero Drift%	0.0%	0.4%	0.0%	-0.1%
Span Ref Cyl	7.980	200.00	30.000	40.300
Span Cal	8.058	203.53	30.123	40.395
Span Avg	8.022	201.32	29.934	39.884
Span Bias%	0.1%	0.4%	0.4%	1.0%
Span Drift%	0.2%	0.0%	-0.7%	-0.6%
Ini Zero Avg	0.025	-0.15	-0.072	0.160
Ini Span Avg	7.980	201.32	30.274	40.177
Run Avg	12.088	18.97	0.248	11.638
Co	0.030	0.76	-0.072	0.142
Cm	8.001	201.32	30.104	40.030
Correct Avg	12.072	18.15	0.319	11.614

System Bias Check End

Test Run 2 STRATA Version 1.1

	O2	CO	THC	NOx
	%	ppm	ppm	ppm
Begin calculating run averages				
01-06-2005 10:39:08	11.908	17.02	0.031	11.827
01-06-2005 10:40:07	12.007	37.70	0.941	11.502
01-06-2005 10:41:07	12.025	21.83	-0.036	11.509
01-06-2005 10:42:08	12.108	26.96	0.067	11.505
01-06-2005 10:43:07	12.029	26.77	1.006	11.629
01-06-2005 10:44:08	12.147	39.72	1.223	11.399
01-06-2005 10:45:07	12.077	28.24	0.541	11.635
01-06-2005 10:46:07	12.073	34.57	2.587	11.576
01-06-2005 10:47:08	11.971	23.20	0.493	11.756
01-06-2005 10:48:07	12.052	31.36	0.247	11.435
01-06-2005 10:49:07	12.030	14.69	0.285	11.500
01-06-2005 10:50:08	12.025	27.04	0.182	11.484
01-06-2005 10:51:07	11.934	13.18	0.217	11.786
01-06-2005 10:52:08	12.171	39.54	0.421	11.111
01-06-2005 10:53:07	12.063	23.32	0.088	11.507
01-06-2005 10:54:07	12.050	9.54	0.080	11.380
01-06-2005 10:55:08	12.103	30.83	0.457	11.515
01-06-2005 10:56:07	12.022	34.88	0.369	11.412
01-06-2005 10:57:08	12.040	25.55	0.058	11.669
01-06-2005 10:58:07	12.072	29.51	0.133	11.340
01-06-2005 10:59:07	12.096	23.49	0.280	11.437
01-06-2005 11:00:08	12.144	24.14	0.067	11.240
01-06-2005 11:01:07	12.075	20.99	0.100	11.414
01-06-2005 11:02:07	12.008	18.26	-0.005	11.529
01-06-2005 11:03:08	11.998	24.00	0.944	11.629
01-06-2005 11:04:07	12.058	51.92	1.777	11.451
01-06-2005 11:05:08	11.993	14.16	-0.061	11.479
01-06-2005 11:06:07	12.052	11.58	-0.077	11.535
01-06-2005 11:07:07	12.059	30.07	0.330	11.296
01-06-2005 11:08:08	12.143	41.86	1.473	11.187
Run Averages	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 11:08:14	12.052	26.49	0.473	11.487

Operator: B Johnston
Plant Name: Kirby
Location: Flare
Test Run 2 End

Final System Bias Check, Run 2 STRATA Version 1.1

	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 11:09:17	4.500	5.62	-0.078	0.950
01-06-2005 11:10:18	0.123	2.75	-0.078	0.068
01-06-2005 11:11:17	0.025	2.18	-0.078	0.058
01-06-2005 11:12:16	1.001	1.70	-0.078	0.053
01-06-2005 11:13:17	7.484	1.23	-0.078	0.033
01-06-2005 11:14:16	7.968	1.12	-0.078	0.032
01-06-2005 11:15:17	7.393	0.94	-0.078	10.719
01-06-2005 11:16:16	0.705	0.78	-0.078	39.809
01-06-2005 11:17:17	0.037	0.64	-0.078	39.712
01-06-2005 11:18:16	0.009	0.50	-0.079	37.583
01-06-2005 11:19:17	-0.007	0.42	27.153	0.051
01-06-2005 11:20:17	-0.013	0.40	30.188	0.064
01-06-2005 11:21:17	-0.011	0.34	30.237	0.061
01-06-2005 11:22:18	-0.013	77.61	2.613	0.058
01-06-2005 11:23:17	-0.017	198.29	0.407	0.048
01-06-2005 11:24:16	-0.016	199.88	-0.071	0.042

Final System Bias Check, Run 2 STRATA Version 1.1

Operator: B Johnston
Plant Name: Kirby
Location: Flare

	Reference Cylinder Numbers	
	Zero	Span
O2		SA10693
CO		Environics
THC		Environics
NOx		SA15339

Date/Time	01-06-2005		11:24:18		PASSED
Analyte	O2	CO	THC	NOx	
Units	%	ppm	ppm	ppm	
Zero Ref Cyl	0.000	0.00	0.000	0.000	
Zero Cal	0.028	-0.13	-0.076	0.131	
Zero Avg	0.016	1.95	-0.078	0.056	
Zero Bias%	0.0%	0.4%	0.0%	0.1%	
Zero Drift%	-0.1%	0.1%	0.0%	-0.1%	
Span Ref Cyl	7.980	200.00	30.000	40.300	
Span Cal	8.058	203.53	30.123	40.395	
Span Avg	7.986	199.83	30.228	39.772	
Span Bias%	0.3%	0.7%	0.2%	1.2%	
Span Drift%	-0.1%	-0.3%	0.6%	-0.2%	
Ini Zero Avg	0.035	1.67	-0.072	0.124	
Ini Span Avg	8.022	201.32	29.934	39.884	
Run Avg	12.052	26.49	0.473	11.487	
Co	0.025	1.81	-0.075	0.090	
Cm	8.004	200.58	30.081	39.828	
Correct Avg	12.029	24.83	0.545	11.559	

System Bias Check End

Test Run 3 STRATA Version 1.1

	O2	CO	THC	NOx
	%	ppm	ppm	ppm
Begin calculating run averages				
01-06-2005 11:28:17	12.049	28.24	0.222	11.141
01-06-2005 11:29:17	12.043	15.98	-0.016	11.363
Pause				
01-06-2005 11:30:16	6.738	8.67	1.121	7.035
01-06-2005 11:31:17	9.527	-3.20	5.499	3.148
01-06-2005 11:32:17	11.963	47.79	0.603	0.586
End Pause				
01-06-2005 11:33:16	11.866	16.57	-0.035	10.690
01-06-2005 11:34:17	12.062	46.31	1.729	11.208
01-06-2005 11:35:18	12.039	46.21	1.701	11.161
01-06-2005 11:36:17	11.976	17.74	-0.007	11.330
01-06-2005 11:37:17	12.051	9.66	-0.088	11.257
01-06-2005 11:38:16	12.011	8.99	-0.100	11.160
01-06-2005 11:39:17	12.247	50.95	1.628	10.795
01-06-2005 11:40:17	12.090	15.86	-0.092	11.131
01-06-2005 11:41:16	12.176	16.67	-0.017	10.982
01-06-2005 11:42:17	12.134	31.23	0.336	11.038
01-06-2005 11:43:18	12.173	47.01	1.236	10.891
01-06-2005 11:44:17	12.088	19.46	0.175	11.262
01-06-2005 11:45:17	12.054	21.40	0.116	11.162
01-06-2005 11:46:16	12.164	26.37	0.194	11.002
01-06-2005 11:47:17	11.973	16.73	-0.016	11.420
01-06-2005 11:48:17	12.004	20.78	0.243	11.247
01-06-2005 11:49:16	12.050	21.13	0.193	11.219
01-06-2005 11:50:17	11.965	16.81	0.026	11.174
01-06-2005 11:51:18	12.188	9.29	-0.089	10.904
01-06-2005 11:52:17	12.267	26.14	-0.062	10.640
01-06-2005 11:53:17	12.109	18.48	0.257	11.119
01-06-2005 11:54:16	12.062	12.96	-0.036	11.082
01-06-2005 11:55:17	12.221	23.15	0.278	10.783
01-06-2005 11:56:18	12.200	15.70	0.121	10.957
01-06-2005 11:57:17	12.156	23.83	0.141	11.030
01-06-2005 11:58:17	12.172	37.44	0.511	10.948
01-06-2005 11:59:16	11.991	37.49	1.198	11.368
01-06-2005 12:00:17	11.956	15.81	-0.048	11.313
Run Averages	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 12:00:42	12.023	23.63	0.361	11.071

Operator: B Johnston
Plant Name: Kirby
Location: Flare
Test Run 3 End

Final System Bias Check, Run 3 STRATA Version 1.1

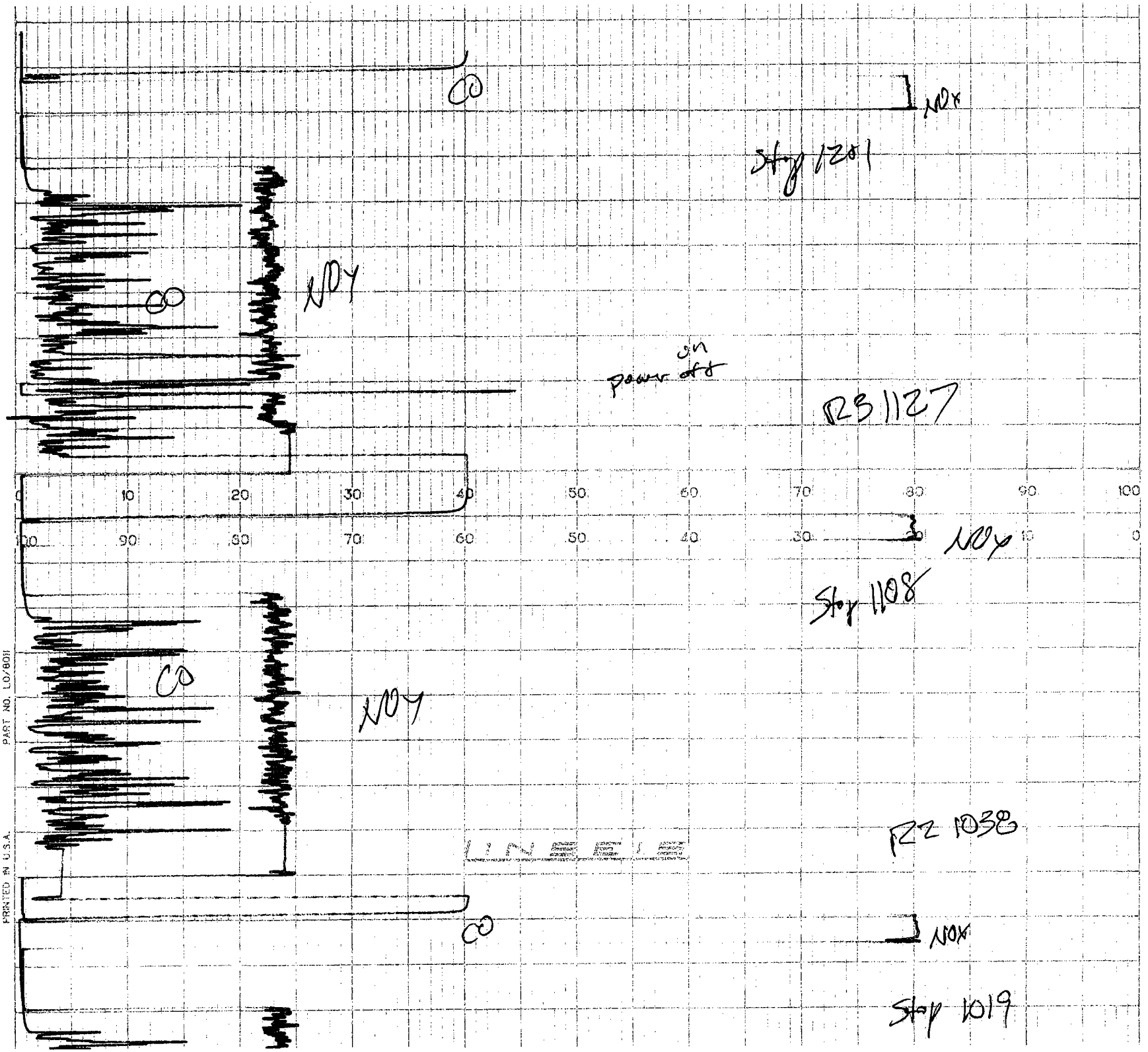
	O2	CO	THC	NOx
	%	ppm	ppm	ppm
01-06-2005 12:01:49	4.149	5.81	-0.082	0.921
01-06-2005 12:02:48	0.096	2.61	-0.059	0.003
01-06-2005 12:03:48	-0.006	2.04	0.786	0.002
01-06-2005 12:04:48	-0.015	1.78	0.775	-0.001
01-06-2005 12:05:49	5.928	1.28	-0.082	-0.001
01-06-2005 12:06:48	7.899	1.16	-0.082	-0.001
01-06-2005 12:07:49	7.946	1.00	-0.083	-0.001
01-06-2005 12:08:48	2.846	0.80	-0.082	37.356
01-06-2005 12:09:49	0.070	0.65	-0.067	39.582
01-06-2005 12:10:48	0.003	0.55	0.062	39.510
01-06-2005 12:11:49	-0.005	0.48	-0.079	39.480
01-06-2005 12:12:48	1.417	0.45	15.580	20.829
01-06-2005 12:13:48	0.177	0.41	30.889	0.001
01-06-2005 12:14:48	-0.018	0.18	30.808	-0.001
01-06-2005 12:15:49	-0.027	0.10	30.812	-0.001
01-06-2005 12:16:49	-0.031	65.73	4.209	-0.001
01-06-2005 12:17:48	-0.029	197.58	-0.082	-0.001
01-06-2005 12:18:49	-0.031	199.57	-0.082	-0.001

Final System Bias Check, Run 3 STRATA Version 1.1
Operator: B Johnston
Plant Name: Kirby
Location: Flare

	Reference Cylinder Numbers Zero	Span
O2		SA10693
CO		Environics
THC		Environics
NOx		SA15339

Date/Time	01-06-2005		12:18:55		PASSED
Analyte	O2	CO	THC	NOx	
Units	%	ppm	ppm	ppm	
Zero Ref Cyl	0.000	0.00	0.000	0.000	
Zero Cal	0.028	-0.13	-0.076	0.131	
Zero Avg	-0.014	1.84	0.806	0.001	
Zero Bias%	0.2%	0.4%	1.8%	0.3%	
Zero Drift%	-0.1%	0.0%	1.8%	-0.1%	
Span Ref Cyl	7.980	200.00	30.000	40.300	
Span Cal	8.058	203.53	30.123	40.395	
Span Avg	7.945	199.56	30.812	39.467	
Span Bias%	0.5%	0.8%	1.4%	1.9%	
Span Drift%	-0.2%	-0.1%	1.2%	-0.6%	
Ini Zero Avg	0.016	1.95	-0.078	0.056	
Ini Span Avg	7.986	199.83	30.228	39.772	
Run Avg	12.023	23.63	0.361	11.071	
Co	0.001	1.90	0.364	0.028	
Cm	7.965	199.69	30.520	39.619	
Correct Avg	12.046	21.97	-0.003	11.241	

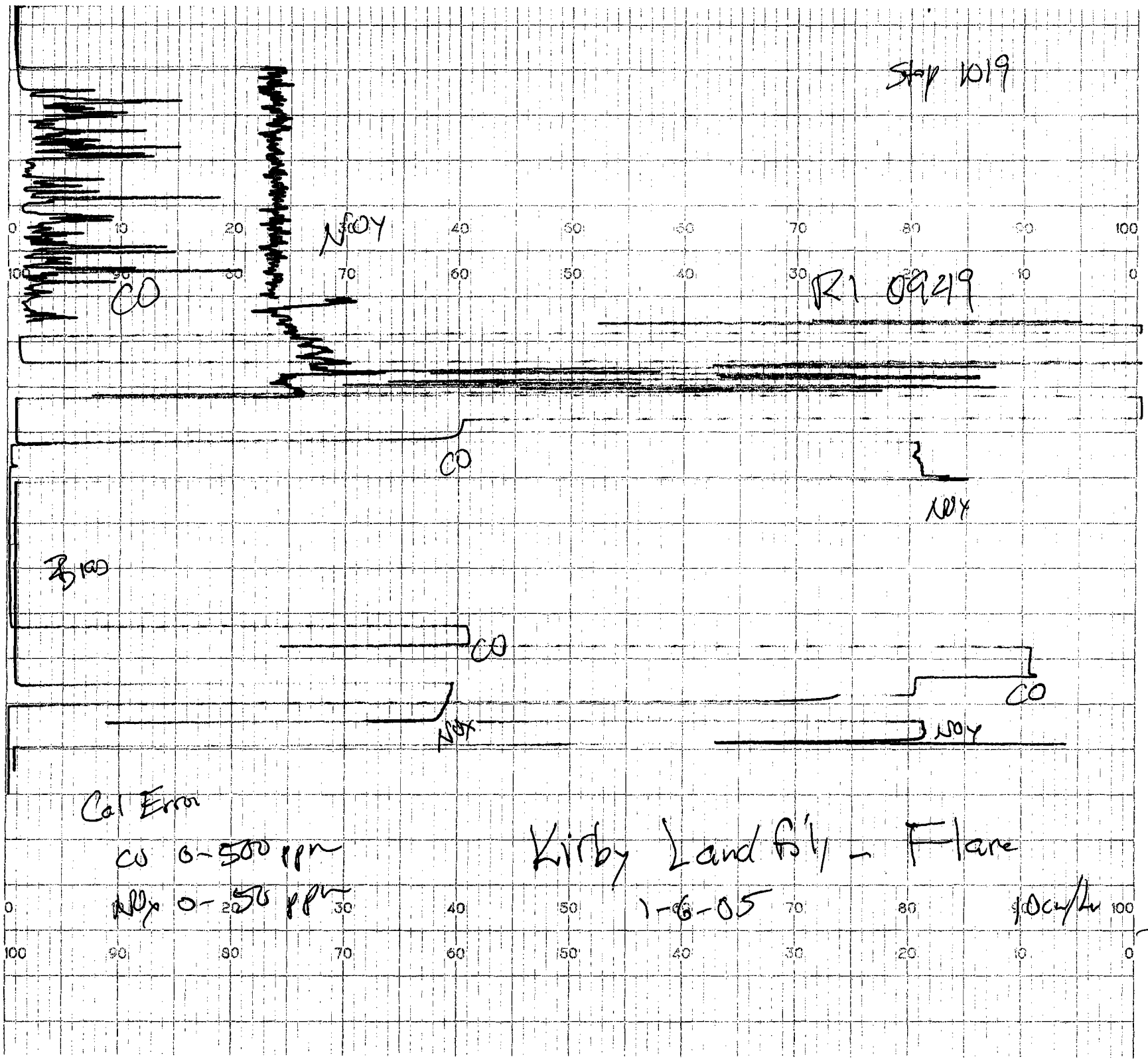
System Bias Check End



PART NO. LO/8011

PRINTED IN U.S.A.

Page 1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CO
R1 09219
CO
NOx
R 100
CO
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NOx
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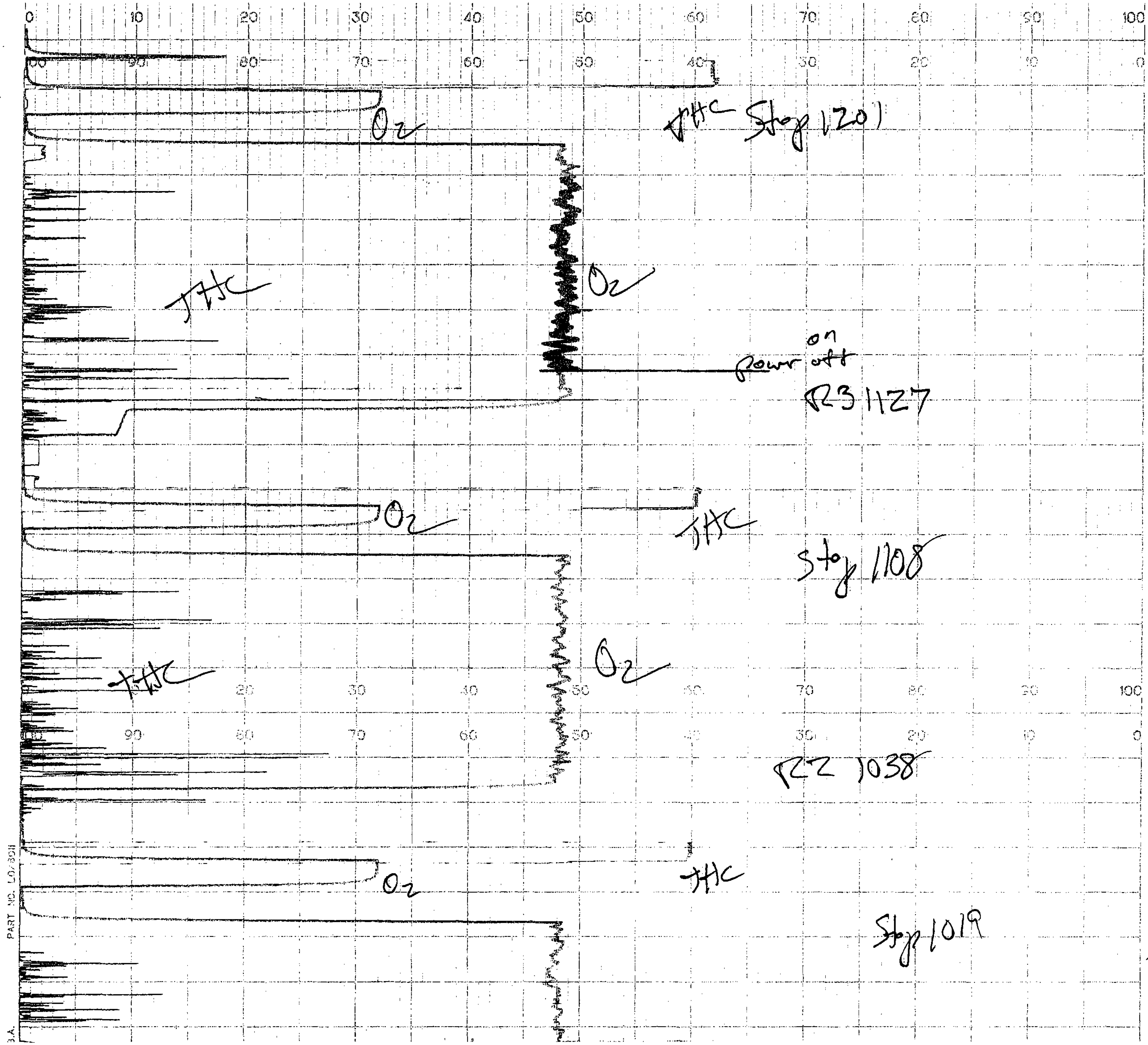
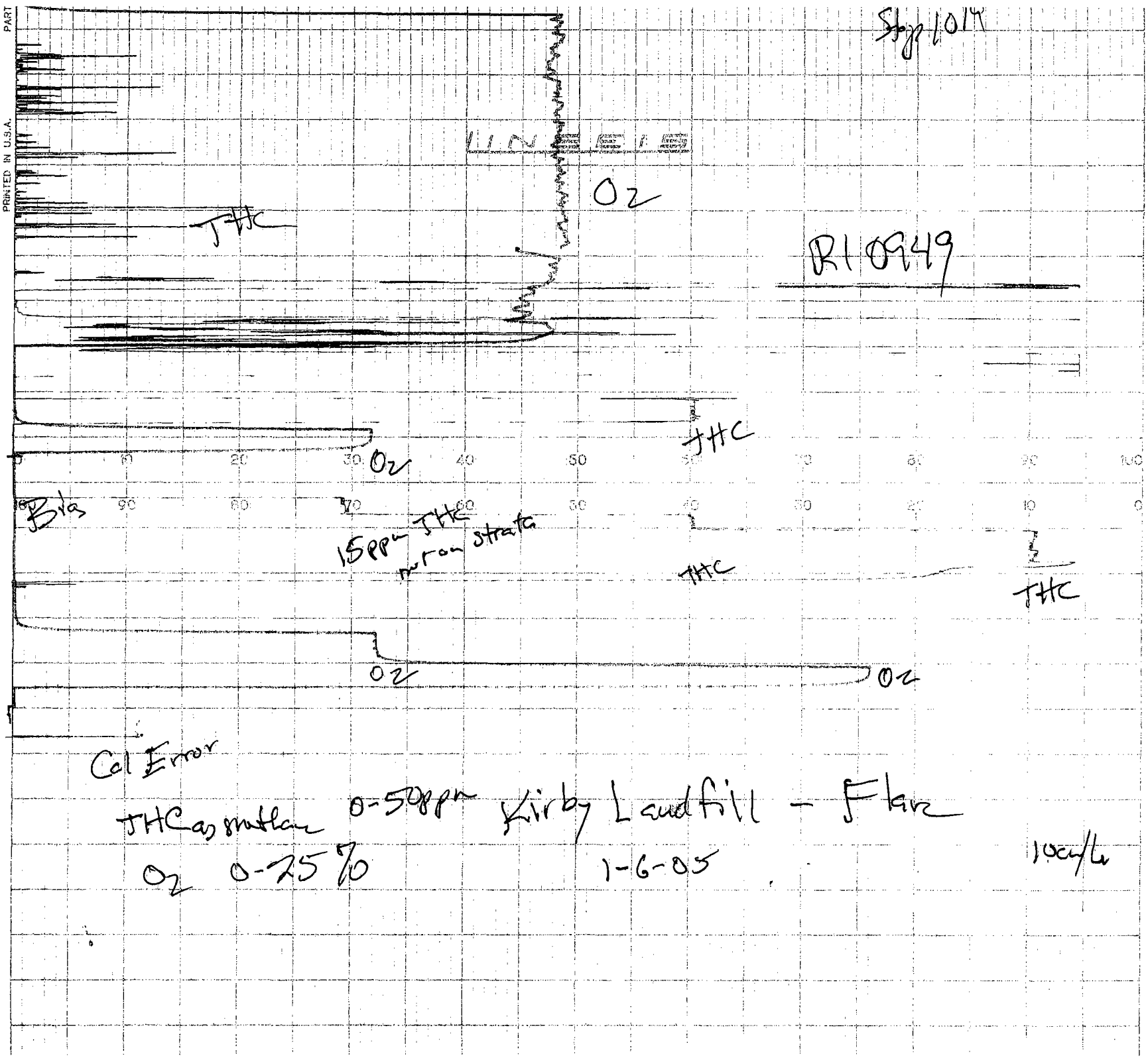
Cal Error
CO 0-500 ppm
NOx 0-250 ppm
Kirby Land fill - Flare
1-6-05
10 Cycles

Page 2


THC Stop 1201
O2
O2
THC
on
power off
R3 1127
O2
THC
Stop 1108
O2
THC
R2 1038
O2
THC
Stop 1019
PART NO. L0/801I

Page 1


Sept 10th
PRINTED IN U.S.A.
THC
O2
R10949
THC
O2
Bias
150ppm THC
THC
THC
O2
O2
Cal Error
THC as methane 0-50ppm
O2 0-25%
Kirby Landfill - Flare
1-6-05
10cm/hr

PRAXAIR

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER TIAX **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON DIOXIDE GMIS	vs.SRM#2745	8747556	17.99 %
OXYGEN GMIS	vs.SRM#2659	CC 92411	20.75 %

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. COMPONENT CARBON DIOXIDE GMIS **ANALYZER MAKE-MODEL-S/N** Siemens Ultramat 5E S/N A12-730

ANALYTICAL PRINCIPLE NDIR **LAST CALIBRATION DATE** 06/05/03

FIRST ANALYSIS DATE 07-01-03 **SECOND ANALYSIS DATE**

Z 0	R 18.00	C 17.92	CONC. 17.91	Z	R	C	CONC.		
R 18.00	Z 0	C 17.92	CONC. 17.91	R	Z	C	CONC.		
Z 0	C 17.92	R 18.00	CONC. 17.91	Z	C	R	CONC.		

U/M % **MEAN TEST ASSAY** 17.91 U/M % **MEAN TEST ASSAY**

2. COMPONENT OXYGEN GMIS **ANALYZER MAKE-MODEL-S/N** Siemens Oxymat 5E S/N A12-839

ANALYTICAL PRINCIPLE Paramagnetic **LAST CALIBRATION DATE** 06/05/03

FIRST ANALYSIS DATE 07-01-03 **SECOND ANALYSIS DATE**

Z 0	R 20.75	C 18.96	CONC. 18.96	Z	R	C	CONC.		
R 20.75	Z 0	C 18.96	CONC. 18.96	R	Z	C	CONC.		
Z 0	C 18.96	R 20.75	CONC. 18.96	Z	C	R	CONC.		

U/M % **MEAN TEST ASSAY** 18.96 U/M % **MEAN TEST ASSAY**

Values not valid below 150 psig

THIS CYLINDER NO. CC 140645
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. Rev. 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 07/01/03
EXPIRATION DATE 07/01/06 **TERM** 36 MONTHS

CERTIFIED CONCENTRATION

CARBON DIOXIDE	17.91 %
OXYGEN	18.96 %
NITROGEN	BALANCE

ANALYZED BY PHU TIEN NGUYEN ***CERTIFIED BY*** VICTOR DOTAN

PRAXAIR

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER TIAX LLC **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
CARBON DIOXIDE GMIS	vs.SRM#1675	CC 92886	10.08 %
OXYGEN GMIS	vs.SRM#2658	CC 72756	10.01 %

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** CARBON DIOXIDE GMIS **ANALYZER MAKE-MODEL-S/N** Siemens Ultramat 5E S/N A12-730

ANALYTICAL PRINCIPLE NDIR **LAST CALIBRATION DATE** 11/03/03

FIRST ANALYSIS DATE 11/12/03 **SECOND ANALYSIS DATE**

Z 0.00	R 10.08	C 10.00	CONC. 10.00	Z	R	C	CONC.
R 10.08	Z 0.00	C 10.00	CONC. 10.00	R	Z	C	CONC.
Z 0.00	C 10.00	R 10.08	CONC. 10.00	Z	C	R	CONC.
U/M %		MEAN TEST ASSAY 10.00		U/M %		MEAN TEST ASSAY	

2. **COMPONENT** OXYGEN GMIS **ANALYZER MAKE-MODEL-S/N** Siemens Oxymat 5E S/N A12-839

ANALYTICAL PRINCIPLE Paramagnetic **LAST CALIBRATION DATE** 11/03/03

FIRST ANALYSIS DATE 11/12/03 **SECOND ANALYSIS DATE**

Z 0.00	R 10.01	C 7.98	CONC. 7.98	Z	R	C	CONC.
R 10.01	Z 0.00	C 7.98	CONC. 7.98	R	Z	C	CONC.
Z 0.00	C 7.98	R 10.01	CONC. 7.98	Z	C	R	CONC.
U/M %		MEAN TEST ASSAY 7.98		U/M %		MEAN TEST ASSAY	

Values not valid below 150 psig

THIS CYLINDER NO. SA 10693
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. Rev. 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 11/12/03
EXPIRATION DATE 11/12/06 **TERM** 36 MONTHS

CERTIFIED CONCENTRATION

CARBON DIOXIDE	10.00 %
OXYGEN	7.98 %
NITROGEN	BALANCE

ANALYZED BY PHU TIEN NGUYEN ***CERTIFIED BY*** VICTOR DOTAN

PRAXAIR

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER TIAX CORP **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
METHANE	vs. SRM#275	164451	888 ppm

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** METHANE **ANALYZER MAKE-MODEL-S/N** HORIBA, FIA-510, 851135122

ANALYTICAL PRINCIPLE Flame Ionization Detector **LAST CALIBRATION DATE** 01/01/04

FIRST ANALYSIS DATE 02/14/04 **SECOND ANALYSIS DATE**

Z	0	R	888	C	842	CONC. 842	Z	R	C	CONC.
R	888	Z	0	C	841	CONC. 841	R	Z	C	CONC.
Z	0	C	842	R	888	CONC. 842	Z	C	R	CONC.

U/M ppm **MEAN TEST ASSAY** 842 **U/M** ppm **MEAN TEST ASSAY**

Values not valid below 150 psig

THIS CYLINDER NO. CC 92594
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. Rev. 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 02/14/04
EXPIRATION DATE 02/14/07 **TERM** 36 MONTHS

CERTIFIED CONCENTRATION

METHANE	842 ppm
AIR	BALANCE

ANALYZED BY PHU TIEN NGUYEN ***CERTIFIED BY*** VICTOR DOTAN

PRAXAIR

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER TIAX LLC **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
NITRIC OXIDE GMIS	vsSRM#1683b	CC 137757	48.4 ppm

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** NITRIC OXIDE GMIS **ANALYZER MAKE-MODEL-S/N** BECKMAN 951A S/N#0101354

ANALYTICAL PRINCIPLE CHEMILUMINESCENCE **LAST CALIBRATION DATE** 11/03/03

FIRST ANALYSIS DATE 11/26/03 **SECOND ANALYSIS DATE** 12/03/03

Z 0.0	R 448.2	C 368.8	CONC. 39.8		Z 0.0	R 448.3	C 368.7	CONC. 39.8			
R 448.3	Z 0.0	C 368.4	CONC. 39.8		R 448.2	Z 0.0	C 369.2	CONC. 39.9			
Z 0.0	C 367.7	R 448.2	CONC. 39.7		Z 0.0	C 369.5	R 448.8	CONC. 39.8			
U/M mV		MEAN TEST ASSAY	39.8 ppm		U/M mV		MEAN TEST ASSAY	39.8 ppm			

VALUES NOT VALID BELOW 150 psig. NOx VALUE FOR REFERENCE ONLY.

THIS CYLINDER NO. SA 15339
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. REV. 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 12/03/03
EXPIRATION DATE 12/03/05 **TERM** 24 MONTHS

CERTIFIED CONCENTRATION

NITRIC OXIDE	39.8 ppm
NITROGEN	BALANCE
[redacted]	

ANALYZED BY CHRIS VU **CERTIFIED BY** HELENA TRAN

PRAXAIR

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER TAIX **P.O NUMBER**

REFERENCE STANDARD

COMPONENT	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
NITRIC OXIDE GMIS	vs.SRM#1687	CC 108618	1005 ppm

ANALYZER READINGS

R=REFERENCE STANDARD *Z=ZERO GAS* *C=GAS CANDIDATE*

1. **COMPONENT** NITRIC OXIDE GMIS **ANALYZER MAKE-MODEL-S/N** Beckman 951A S/N 0101354

ANALYTICAL PRINCIPLE Chemiluminescence **LAST CALIBRATION DATE** 05/08/03

FIRST ANALYSIS DATE 05/12/03 **SECOND ANALYSIS DATE** 05/19/03

Z 0.0	R 905.1	C 733.1	CONC. 814.0		Z 0.0	R 919.2	C 744.2	CONC. 813.7	
R 912.9	Z 0.0	C 740.6	CONC. 815.3		R 927.4	Z 0.0	C 750.9	CONC. 813.7	
Z 0.0	C 743.8	R 918.1	CONC. 814.2		Z 0.0	C 752.3	R 929.5	CONC. 813.4	
U/M mV		**MEAN TEST ASSAY** 814.5 ppm			**U/M** mV			**MEAN TEST ASSAY** 813.6 ppm	

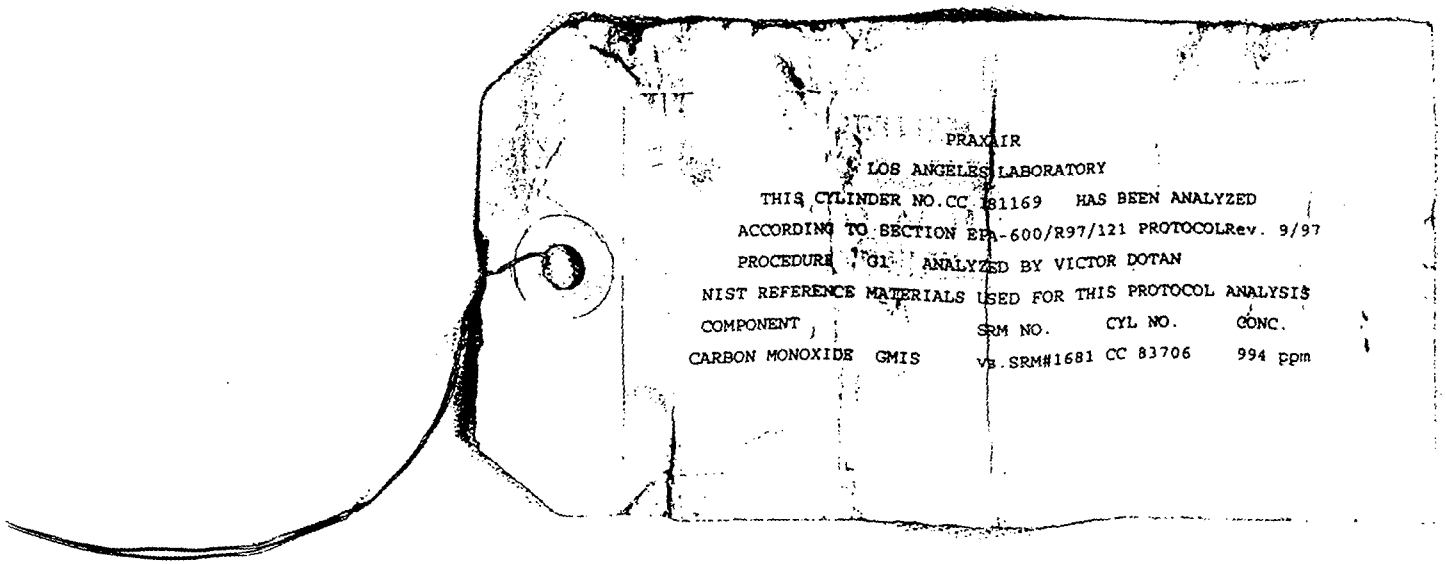
NOx values for reference only.
All values not valid below 150 psig.

THIS CYLINDER NO. SA 8332
HAS BEEN CERTIFIED ACCORDING TO SECTION EPA-600/R97/121
OF TRACEABILITY PROTOCOL NO. Rev. 9/97
PROCEDURE G1
CERTIFIED ACCURACY ± 1 **% NIST TRACEABLE**
CYLINDER PRESSURE 2000 **PSIG**
CERTIFICATION DATE 05/19/03
EXPIRATION DATE 05/19/05 **TERM** 24 MONTHS

CERTIFIED CONCENTRATION

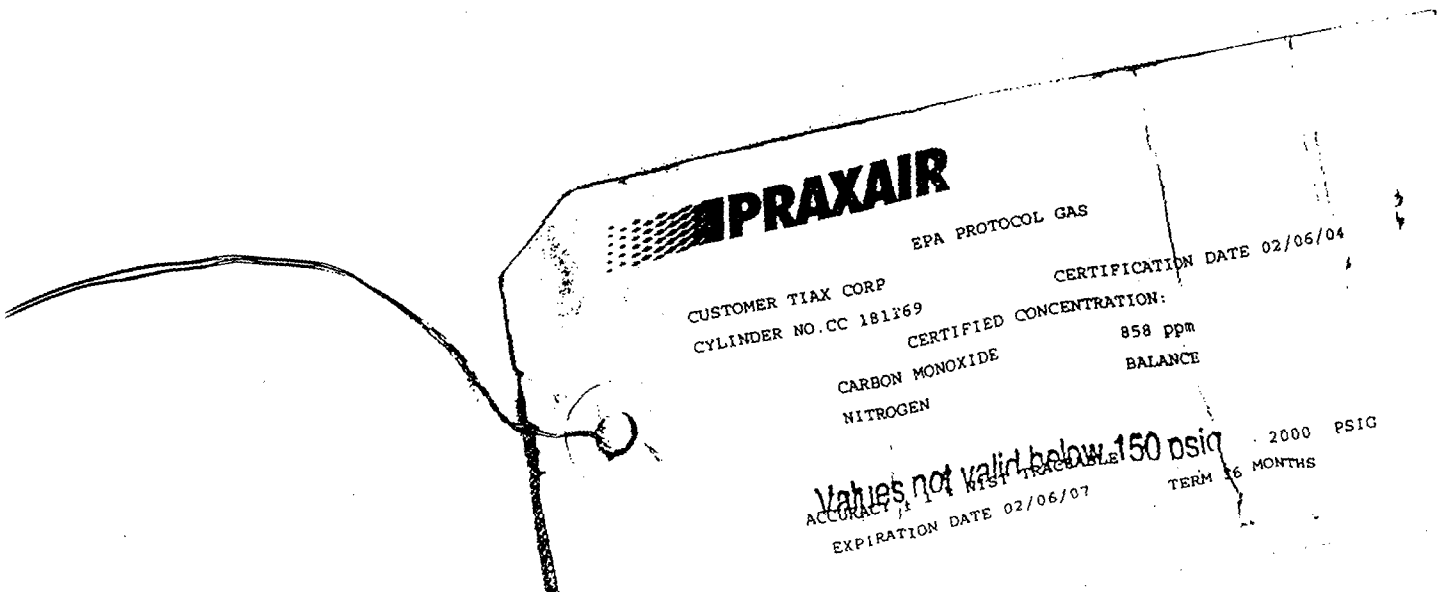
NITRIC OXIDE	814 ppm
NITROGEN	BALANCE
NOx	819 ppm

ANALYZED BY HELENA TRAN ***CERTIFIED BY*** CHRIS VU



PRAXAIR
LOS ANGELES LABORATORY
THIS CYLINDER NO.CC 181169 HAS BEEN ANALYZED
ACCORDING TO SECTION EPA-600/R97/121 PROTOCOLRev. 9/97
PROCEDURE G1 ANALYZED BY VICTOR DOTAN
NIST REFERENCE MATERIALS USED FOR THIS PROTOCOL ANALYSIS

COMPONENT	SRM NO.	CYL NO.	CONC.
CARBON MONOXIDE GMIS	vs.SRM#1681	CC 83706	994 ppm



PRAXAIR
EPA PROTOCOL GAS
CUSTOMER TIAX CORP
CERTIFICATION DATE 02/06/04
CYLINDER NO.CC 181169
CERTIFIED CONCENTRATION:
CARBON MONOXIDE 858 ppm
NITROGEN BALANCE
Values not valid below 150 psig
2000 PSIG
ACCURACY ±1% NIST TRACEABLE
EXPIRATION DATE 02/06/07
TERM 36 MONTHS

EPA METHOD 205
GAS DILUTION SYSTEM FIELD EVALUATION

Manufacture: Environics
Model: Series 4040
S/N: 2254
Last calibration date: 6/16/2004

Client: Kirby Canyon
Date: 1/6/2005
Operator: B Johnston

Calibration analyzer: Ecophysics NOx MFC No: 3
Diluent gas: 819
Clylinder No.: SA8332

Expected Result
High Dilution concentration: 80
Mid Dilution concentration: 40
Mid level calibration gas: 40.3 (must be within 10% of dilution level 1 or 2)
Cylinder No.: SA 15339

Observed Result	High Dilution	Mid Dilution	Cal gas direct	**Result**
Run 1	80.3	39.8	39.9	
Difference from average	-0.2%	-0.6%	-0.3%	**Pass**
Run 2	80.9	40.1	40.0	
Difference from average	0.5%	0.2%	0.0%	**Pass**
Run 3	80.3	40.2	40.1	
Difference from average	-0.2%	0.4%	0.2%	**Pass**
Avg	80.50	40.03	40.00	
Difference	-0.63%	-0.08%	0.74%	**Pass**

All parameters must be within 2%

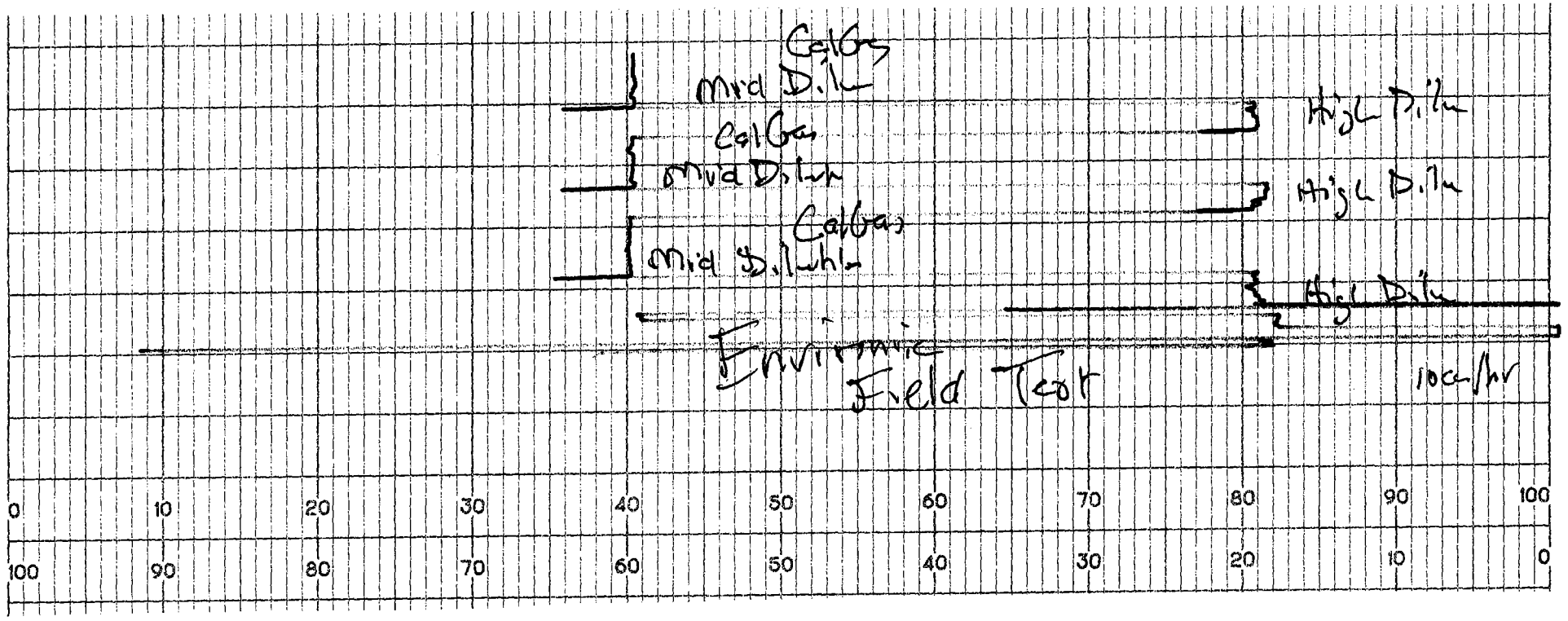
% Difference = (Expected -observed) / expected x 100

A field check must be performed for each mass flow controller used

Environic Field Check

Operator: B Johnston
Plant Name: Kirby
Location: Flare
Date 1/6/2005

		NOx ppm	
Start Averaging			
		80.2	
		80.4	
Average	78 samples	80.3	High Dilution
		54.5	
Start Averaging			
		39.9	
		39.8	
Average	56 samples	39.8	Mid Dilution
		39.9	
Start Averaging			
		39.9	
		39.9	
Average	78 samples	39.9	Cal Gas
Start Averaging			
		71.4	
		80.8	
Average	78 samples	80.9	High Dilution
		78.8	
Start Averaging			
		40.0	
		40.2	
Average	78 samples	40.1	Mid Dilution
Start Averaging			
		40.2	
		39.9	
Average	81 samples	40.0	Cal Gas
		40.1	
Start Averaging			
		79.1	
		80.3	
Average	79 samples	80.3	High Dilution
		70.5	
Start Averaging			
		40.2	
		40.1	
Average	89 samples	40.2	Mid Dilution
Start Averaging			
		40.2	
		40.1	
Average	80 samples	40.1	Cal Gas

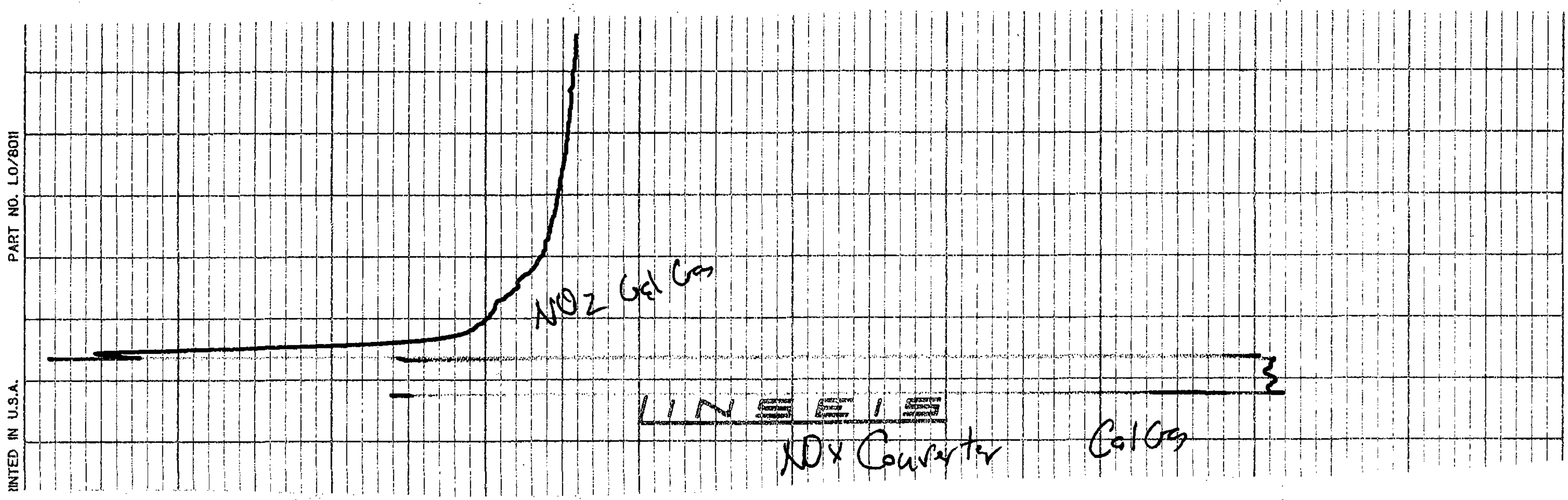

Cal Gas
Mid D.L
Cal Gas
Mid D.L
Cal Gas
Mid D.L
High D.L
High D.L
High D.L
Environic
Field Test
10cm/hr
0
10
20
30
40
50
60
70
80
90
100
100
90
80
70
60
50
40
30
20
10
0

Nox Converter Check

Facility	Kirby Canyon
Date	1/6/2005
Process	Flare

		NOx ppm	
1/6/2005	12:38:09	30.368	
1/6/2005	12:39:09	39.871	
1/6/2005	12:40:09	40.322	NO Cal gas
1/6/2005	12:41:09	40.249	
1/6/2005	12:42:09	11.411	
1/6/2005	12:43:09	14.038	NO2 cal Gas
1/6/2005	12:44:09	15.08	
1/6/2005	12:45:09	15.552	
1/6/2005	12:46:09	15.867	
1/6/2005	12:47:09	16.112	
1/6/2005	12:48:09	16.479	
1/6/2005	12:49:09	16.668	
1/6/2005	12:50:10	16.768	
Start Averaging			
1/6/2005	12:51:10	16.896	
1/6/2005	12:52:10	16.974	
1/6/2005	12:53:10	17.07	
1/6/2005	12:54:10	17.153	
1/6/2005	12:55:10	17.205	
1/6/2005	12:56:10	17.263	
1/6/2005	12:57:10	17.331	
1/6/2005	12:58:10	17.387	
1/6/2005	12:59:10	17.429	
1/6/2005	13:00:10	17.469	
1/6/2005	13:01:09	17.502	
1/6/2005	13:02:10	17.547	
1/6/2005	13:03:10	17.578	
1/6/2005	13:04:10	17.616	
1/6/2005	13:05:10	17.613	
1/6/2005	13:06:09	17.668	
1/6/2005	13:07:10	17.686	
Average	619 samples	17.404	

Result		
Requirement	> 90%	
Efficiency	92.6%	Pass
NOx Cal Gas	40.3	ppm
NO2 Cal gas	18.8	ppm
Calculation		
CEM response/NO2 cal gas		


PART NO. LO/8011
INTED IN U.S.A.
NO2 Cal Gas
NOx Converter
Cal Gas

PRAXAIR

Praxair
5700 South Alameda Street
Los Angeles, CA 90058
Telephone: (323) 585-2154
Facsimile: (714) 542-6689

CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

CUSTOMER SHAW ENV **PO NUMBER** BJ111004

REFERENCE STANDARD

COMPONENT	TYPE	NIST SRM NO.	CYLINDER NO.	CONCENTRATION
NITRIC OXIDE	GMIS	VS.SRM#2629a	CC 145830	24.78 ppm

ANALYZER READINGS

R = REFERENCE STANDARD *Z = ZERO GAS* *C = CANDIDATE GAS*

1. COMPONENT NITROGEN DIOXIDE (as NOx) **ANALYZER MAKE-MODEL-S/N** Thermo Envin. 42H S/N 42-44979-273

ANALYTICAL PRINCIPLE CHEMILUMINESCENCE **LAST CALIBRATION DATE** 12/2/04

FIRST ANALYSIS DATE					12/16/04		
Z	0.00	R	24.85	C	18.84	CONC.	18.8
R	25.00	Z	0.00	C	18.99	CONC.	18.8
Z	0.00	C	19.01	R	25.02	CONC.	18.8
U/M	ppm				MEAN TEST ASSAY		18.8

SECOND ANALYSIS DATE					12/27/04		
Z	0.00	R	24.30	C	18.36	CONC.	18.7
R	24.32	Z	0.00	C	18.34	CONC.	18.7
Z	0.00	C	18.36	R	24.31	CONC.	18.7
U/M	ppm				MEAN TEST ASSAY		18.7

VALUES NOT VALID BELOW 150 PSIG
NO VALUE FOR REFERENCE ONLY, NO=1.0 ppm

CYLINDER NUMBER: FF 36326
HAS BEEN CERTIFIED ACCORDING TO SECTION 2.2
OF TRACEABILITY PROTOCOL NO. EPA-600/R97/121
PROCEDURE G1
CERTIFIED ACCURACY ±1% NIST TRACEABLE
CYLINDER PRESSURE 2000 PSIG
CERTIFICATION DATE 12/27/04
EXPIRATION 6/27/05 TERM 6 MONTHS

CERTIFIED CONCENTRATION

COMPONENT	CONCENTRATION
NITROGEN DIOXIDE (as NOx)	18.8 ppm
NITROGEN	BALANCE

ANALYZED BY JOSEPH CHARLES

CERTIFIED BY PHIL KIM

Appendix F
Analytical Results

Zalco Laboratories, Inc.
Atmospheric Analysis & Consulting, Inc.

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Tuesday, January 11, 2005

JAN 18 2004

Bill Johnston
Shaw Environmental, Inc.
2360 Bering
San Jose, CA 95131

TEL: (408) 382-5800
FAX (408) 433-1912

RE: Kirby Landfill

Order No.: 0501082

Dear Bill Johnston:

Zalco Laboratories, Inc. received 3 sample(s) on 1/7/05 for the analyses presented in the following report.

We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,

Judy Hanson

Zalco Laboratories, Inc.

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Shaw Environmental Inc.
2360 Bering
San Jose CA 95131

Attention: Bill Johnston

Laboratory No: 0501082-001
Date Received: 01/07/2005
Date Analyzed: 01/07/2005
Purchase Order:
Date Reprinted: 01/07/2005
Test Code: 1635

Sample Description: **R1, Landfill Gas**
Sampled: 01/06/2005 @ 9:49AM by Client

Chromatographic Analysis, ASTM D-1945-81, ASTM D-3588-89, GPA 2145-94

Constituent:	Mole %	Weight %	Gas Liquids, Gallons per 1000 cubic feet	CHONS%
				Carbon, C
Oxygen	1.496	1.714		36.11
Nitrogen	14.471	14.508		
				Hydrogen, H
Carbon Dioxide	35.496	55.910		7.00
Carbon Monoxide	0.000	0.000		
				Oxygen, O
Methane	48.536	27.868		42.38
Ethane	0.000	0.000		
Propane	0.000	0.000	0.000	Nitrogen, N
IsoButane	0.000	0.000	0.000	14.51
n-Butane	0.000	0.000	0.000	
IsoPentane	0.000	0.000	0.000	Sulfur, S
n-Pentane	0.000	0.000	0.000	0.00
Hexanes +	0.000	0.000	0.000	
Totals:	100.000	100.000	0.000	100.00

Gas Properties calculated at STP: degrees F.	60.00	H/C Ratio:
Measurement Base Pressure at STP: psia	14.696	0.19

482.2 @ 70°F

Gross Btu/Cu.Ft.,	Dry Gas HHV	491.5	Relative Gas Density; Ideal gas:	0.9647
Ideal Gross Btu/Lb	Dry Gas HHV	6658.0	Specific Gravity, (Air = 1) Real gas:	0.9667
Net Btu/Cu.Ft.	Dry Gas LHV	442.6	Real Gas Density, Lb/Cu.Ft.	0.07382
Ideal Net Btu/Lb	Dry Gas LHV	5994.7	Specific Volume, Cu.Ft./Lb	13.5458
Gross Btu/Cu.Ft.,	water saturated	490.2	Compressibility, 'z'	0.9974

		Gross or HHV:	Net or LHV:
"F" Factor,	DSCF/MMBtu at 60F.	9362.5	10556.7
"F" Factor,	DSCF/MMBtu at 68F.	9505.1	10556.7
"F" Factor,	DSCF/MMBtu at 70F.	9541.2	10596.9
"FC" Factor,	DSCF CO2/MMBtu60F.	1715.0	1904.7
"FC" Factor,	DSCF CO2/MMBtu68F.	1741.1	1933.7

Robert Cortez, Laboratory Manager

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Shaw Environmental Inc.
2360 Bering
San Jose CA 95131

Attention: Bill Johnston

Laboratory No: 0501082-002
Date Received: 01/07/2005
Date Analyzed: 01/07/2005
Purchase Order:
Date Reprinted: 01/07/2005
Test Code: 1635

Sample Description: **R2, Landfill Gas**
Sampled: 01/06/2005 @ 10:38AM by Client

Chromatographic Analysis, ASTM D-1945-81, ASTM D-3588-89, GPA 2145-94

Constituent:	Mole %	Weight %	Gas Liquids, Gallons per 1000 cubic feet	CHONS%
				Carbon, C
Oxygen	1.348	1.545		36.42
Nitrogen	13.934	13.974		
				Hydrogen, H
Carbon Dioxide	35.781	56.375		7.06
Carbon Monoxide	0.000	0.000		
				Oxygen, O
Methane	48.936	28.106		42.54
Ethane	0.000	0.000		
Propane	0.000	0.000	0.000	Nitrogen, N
IsoButane	0.000	0.000	0.000	13.97
n-Butane	0.000	0.000	0.000	
IsoPentane	0.000	0.000	0.000	Sulfur, S
n-Pentane	0.000	0.000	0.000	0.00
Hexanes +	0.000	0.000	0.000	

Totals:	100.000	100.000	0.000	100.00

Gas Properties calculated at STP: degrees F.	60.00	H/C Ratio:
Measurement Base Pressure at STP: psia	14.696	0.19

486.2 @ 70°F

Gross Btu/Cu.Ft.,	Dry Gas HHV	495.6	Relative Gas Density; Ideal gas:	0.9645
Ideal Gross Btu/Lb.	Dry Gas HHV	6714.8	Specific Gravity, (Air = 1) Real gas:	0.9665
Net Btu/Cu.Ft.	Dry Gas LHV	446.2	Real Gas Density, Lb/Cu.Ft.	0.07380
Ideal Net Btu/Lb	Dry Gas LHV	6045.9	Specific Volume, Cu.Ft./Lb	13.5494
Gross Btu/Cu.Ft.,	water saturated	494.3	Compressibility, 'z'	0.9973

		Gross or HHV:	Net or LHV:
"F" Factor,	DSCF/MMBtu at 60F.	9361.2	10555.3
"F" Factor,	DSCF/MMBtu at 68F.	9503.8	10555.3
"F" Factor,	DSCF/MMBtu at 70F.	9539.9	10595.4
"FC" Factor,	DSCF CO2/MMBtu60F.	1714.8	1904.6
"FC" Factor,	DSCF CO2/MMBtu68F.	1740.9	1933.6

Robert Cortez, Laboratory Manager

ZALCO LABORATORIES, INC.
Analytical & Consulting Services

4309 Armour Avenue
Bakersfield, California 93308

(661) 395-0539
FAX (661) 395-3069

Shaw Environmental Inc.
2360 Bering
San Jose CA 95131

Attention: Bill Johnston

Laboratory No: 0501082-003
Date Received: 01/07/2005
Date Analyzed: 01/07/2005
Purchase Order:
Date Reprinted: 01/07/2005
Test Code: 1635

Sample Description: **R3, Landfill Gas**
Sampled: 01/06/2005 @ 11:27AM by Client

Chromatographic Analysis, ASTM D-1945-81, ASTM D-3588-89, GPA 2145-94

Constituent:	Mole %	Weight %	Gas Liquids, Gallons per 1000 cubic feet	CHONS%
				Carbon, C
Oxygen	1.164	1.334		36.87
Nitrogen	13.136	13.184		
				Hydrogen, H
Carbon Dioxide	36.148	56.998		7.16
Carbon Monoxide	0.000	0.000		
				Oxygen, O
Methane	49.552	28.483		42.79
Ethane	0.000	0.000		
Propane	0.000	0.000	0.000	Nitrogen, N
IsoButane	0.000	0.000	0.000	13.18
n-Butane	0.000	0.000	0.000	
IsoPentane	0.000	0.000	0.000	Sulfur, S
n-Pentane	0.000	0.000	0.000	0.00
Hexanes +	0.000	0.000	0.000	
Totals:	100.000	100.000	0.000	100.00

Gas Properties calculated at STP:	degrees F.	60.00	H/C Ratio:
Measurement Base Pressure at STP:	psia	14.696	0.19

492.3 @ 70°F

Gross Btu/Cu.Ft.,	Dry Gas HHV	501.8	Relative Gas Density; Ideal gas:	0.9637
Ideal Gross Btu/Lb.	Dry Gas HHV	6804.8	Specific Gravity, (Air = 1) Real gas:	0.9657
Net Btu/Cu.Ft.	Dry Gas LHV	451.8	Real Gas Density, Lb/Cu.Ft.	0.07375
Ideal Net Btu/Lb	Dry Gas LHV	6126.9	Specific Volume, Cu.Ft./Lb	13.5598
Gross Btu/Cu.Ft.,	water saturated	500.5	Compressibility, 'z'	0.9973

		Gross or HHV:	Net or LHV:
"F" Factor,	DSCF/MMBtu at 60F.	9355.3	10548.6
"F" Factor,	DSCF/MMBtu at 68F.	9497.7	10548.6
"F" Factor,	DSCF/MMBtu at 70F.	9533.8	10588.6
"FC" Factor,	DSCF CO2/MMBtu60F.	1713.1	1902.7
"FC" Factor,	DSCF CO2/MMBtu68F.	1739.2	1931.7

Judy Hanson
Robert Cortez, Laboratory Manager

Laboratory Zalco

Shaw Environmental Chain Of Custody Record

CLIENT: Kirby Landfill — 0501082

DATE: 1-6-05

PAGE: 1 of 1

SAMPLING COMPANY: Shaw Environmental, Inc.

LOG CODE:

SITE ADDRESS (Street and City):

ADDRESS: 2360 Bering San Jose, CA 95131

EDF DELIVERABLE TO (Responsible Party or Designee):

PHONE NO.:

E-MAIL:

CONSULTANT PROJECT NO.:

PROJECT CONTACT (Hardcopy or PDF Report to): Bill Johnston

SAMPLER NAME(S) (Print):

TELEPHONE: 408.382.5800

FAX: 408.433.1912

E-MAIL:

TURNAROUND TIME (BUSINESS DAYS):

☐ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES:

Report NMOC concentrations as methane

REQUESTED ANALYSIS

FIELD NOTES:

Container/Preservative or PID Readings or Laboratory Notes

Landfill Gas ↓

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Compliance Landfill Gas	D1945-81, 3588-89, GPA 2145-94	TO 15, report AP 42 list	Sulfur species, TRS D-5504	EPA M25-C, NMOC as methane
	R1, Landfill Gas	1-6-05	0949	air	1	X				
	R2, "	↓	1038		1	X				
	R3, "	↓	1127		1	X				

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	UPS		
UPS	Elaine Mayfield	1/7/05	0823
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

03/06/03 Revision

Atmospheric Analysis & Consulting, Inc.

CLIENT : Shaw Environmental, Inc.
PROJECT NAME : Kirby Landfill
AAC PROJECT NO. : 050008
REPORT DATE : 01/10/2005

On January 07, 2005, Atmospheric Analysis & Consulting, Inc. received three (3) Tedlar bags for AP42 analysis, Volatile Organic Compounds analysis by SCAQMD 25C, Sulfur Analysis by ASTM D-5504, Hydrocarbons analysis by EPA method 18 and fixed gas analysis by EPA 3C. Upon receipt the samples were assigned unique Laboratory ID numbers as follows:

Client ID	Lab No.
R1, Landfill Gas	050008-8853
R2, Landfill Gas	050008-8854
R3, Landfill Gas	050008-8855

EPA 25C Analysis - Up to a 1 ml aliquot of gaseous sample is injected into the GC/FID for analysis following EPA25C as specified in the SOW.

ASTM D-5504 – Up to a 1ml aliquot of sample is injected into the GC/SCD for analysis following ASTM D-5504 as specified in the SOW.

EPA 18 Analysis - Up to a 1 ml aliquot of samples is injected into the GC/FID for analysis following EPA 18 as specified in the SOW.

EPA 3C Analysis - Up to a 1 ml aliquot of samples is injected into the GC/TCD for analysis following EPA 3C as specified in the SOW.

No problems were encountered during receiving, preparation and/ or analysis of these samples. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# AACI- SCAQMD 25C,D-5504, EPA 18 & EPA 3C.

I certify that this data is technically accurate, complete and in compliance with the terms and conditions of the contract. The Laboratory Director or his designee, as verified by the following signature, has authorized release of the data contained in this hardcopy data package.

Sucha S. Parmar, PhD
Technical Director

This report consists of 10 pages.

ACCREDITED IN ACCORDANCE WITH nelac Certificate #E87837

1993 - 2003 10 YEARS OF EXCELLENCE Atmospheric Analysis & Consulting, Inc.

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

Client:	**: Shaw Environmental, Inc.**	**Sampling Date**	**: 01/06/2005**
Project No.	**: 050008**	**Receiving Date**	**: 01/07/2005**
Matrix	**: air**	**Analysis Date**	**: 01/07/2005**
Units	**: %**	**Report Date**	**: 01/10/2005**

EPA Method 3C

Detection Limit: 0.1 %		Analyte				
Client ID	**AAC ID**	**Oxygen**	**Nitrogen**	**CO**	**Methane**	**CO2**
R1, Landfill	050008-8853	1.6	15	ND	49	35
R2, Landfill	050008-8854	1.4	15	ND	49	35
R3, Landfill	050008-8855	1.6	15	ND	49	35

Dr. Sucha Parmar
Technical Director

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT	**: Shaw Environmental, Inc.**	**SAMPLING DATE**	**: 01/06/2005**
PROJECT N	**: 050008**	**RECEIVING DATE**	**: 01/07/2005**
UNITS	**: PPMV**	**ANALYSIS DATE**	**: 01/07/2005**
		REPORT DATE	**: 01/10/2005**

Total Reduced Sulfur Compounds Analysis by ASTM D-5504

	Client ID.	R1, Landfill	R2, Landfill	R3, Landfill	MDL
Compounds	**AAC ID**	**050008-8853**	**050008-8854**	**050008-8855**	
Analysis Dilution Factor		**1**	**1**	**1**	
Can Dilution Factor		**1**	**1**	**1**	
H_2S		33	33	37	0.05
Carbonyl Sulfide & SO2		<PQL	<PQL	<PQL	0.05
Methyl Mercaptan		2.1	2.0	2.2	0.05
Ethyl Mercaptan		0.2	0.1	0.3	0.05
Dimethyl Sulfide		4.6	4.5	5.0	0.05
n-Butyl mercaptan		<PQL	<PQL	<PQL	0.05
Carbon Disulfide		0.1	0.1	0.1	0.05
Allyl Sulfide		<PQL	<PQL	<PQL	0.05
Propyl Sulfide		<PQL	<PQL	<PQL	0.05
Allyl disulfide		<PQL	<PQL	<PQL	0.05
Isopropyl Mercaptan		0.41	0.4	0.5	0.05
t-Butyl mercaptan		<PQL	<PQL	0.1	0.05
Propyl Mercaptan		<PQL	<PQL	<PQL	0.05
Butyl Sulfide		0.1	<PQL	0.1	0.05
Ethyl methyl sulfide		<PQL	<PQL	<PQL	0.05
Thiophene		<PQL	<PQL	<PQL	0.05
Isobutyl mercaptan		<PQL	<PQL	<PQL	0.05
Dimethyl disulfide		0.1	0.1	0.1	0.05
Allyl mercaptan		<PQL	<PQL	<PQL	0.05
3-Methylthiophene		<PQL	<PQL	<PQL	0.05
Tetrahydrothiophene		<PQL	<PQL	<PQL	0.05
Diethyl sulfide		<PQL	<PQL	<PQL	0.05
2-Ethylthiophene		<PQL	<PQL	<PQL	0.05
2,5-Dimethylthiophene		<PQL	<PQL	<PQL	0.05
Diethyl disulfide		<PQL	<PQL	<PQL	0.05
Total Unidentified Sulfurs as H_2S		1.3	1.1	1.6	0.05
Total Reduced Sulfurs		41	41	47	0.05

PQL = Practical Quantitation Limit (MDL x AnalysisDilution factor)
All compounds concentrations expressed in terms of H_2S.

Dr. Sucha Parmar
Technical Director

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

Client	**: Shaw Environmental, Inc.**	**Sampling Date**	**: 01/06/2005**
Project No.	**: 050008**	**Receiving Date**	**: 01/07/2005**
Matrix	**: air**	**Analysis Date**	**: 01/07/2005**
Units	**: ppmv**	**Report Date**	**: 01/10/2005**

EPA Method 25C

Detection Limit:		0.3 ppmv
Client Sample ID	**AAC ID**	**NMHC****
Run 1, Land Fill Gas	**050008-8853**	**1404**
Run 2, Land Fill Gas	**050008-8854**	**1780**
Run 3, Land Fill Gas	**050008-8855**	**2066**

****Non-Methane Hydrocarbons as methane**

Dr. Sucha Parmar
Technical Director

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT:	**: Shaw Environmental, Inc.**	**SAMPLING DATE**	: 01/06/2005
PROJECT NO.	**: 050008**	**RECEIVING DATE**	: 01/07/2005
MATRIX	**: AIR**	**ANALYSIS DATE**	: 01/07/2005
UNITS	**: PPMV**	**REPORT DATE**	: 01/10/2005

Client ID	AAC ID	*ANALYSIS METHOD*		*EPA Method 18*				
		Detection Limit		*0.3 ppmv*				
		C1*	C2	C3	C4	C5	C6	C6+
R1, Landfill Gas	040570-8303	*	ND	37	29	59	57	176
R2, Landfill Gas	040570-8303	*	ND	40	26	69	63	171
R3, Landfill Gas	040570-8303	*	ND	34	31	83	79	232

*** C1 values form EPA 3C**

Dr. Sucha Parmar
Technical Director

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed : 01/07/2005

I-Method Blank EPA method 25C

Analyte	Units	Sample Analysis
NMHC	ppm	ND

II-LCS

Analyte	Units	True Conc.	LCS Conc.	LCS Conc. Dup	% Rec	% RPD
NMHC	ppm	100	89	91	90	1.7

III-Duplicate Analysis - 050008-8853

Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
NMHC	ppm	519	502	511	3.3

IV-Matrix Spikes - 050008-8853

Analyte	Units	Sample Conc.	Spike Added	Sample Spike Conc.	Sample Spike Dupl. Conc.	Spike % Rec.	Spike Dupl % Rec.	% RPD
NMHC	ppm	251	50	287	296	72	90	22

Dr. Sucha Parmar,
President

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed : 01/07/2005

I-Method Blank - EPA 3C

	Analyte	Units	Sample Analysis
Method Blank	Hydrogen	%	ND
	Oxygen	%	ND
	Nitrogen	%	ND
	CO	%	ND
	Methane	%	ND
	CO2	%	ND

II-LCS - EPA 3C

	Analyte	Spike Conc.	LCS Conc.	LCS Dup Conc.	% Rec	% RPD
LCS	Hydrogen	20	22	20	105	6.3
	Nitrogen	20	26	25	128	0.2
	CO	20	21	21	105	2.9
	Methane	20	24	24	119	2.2
	CO2	20	23	23	114	2.2

III-Duplicate Analysis -EPA 3C

AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
050008-8853	Hydrogen	%	0.0	0.0	0.0	0.0
	Oxygen	%	1.6	1.8	1.7	7.1
	Nitrogen	%	16	17	17	1.4
	CO	%	0.0	0.0	0.0	0.0
	Methane	%	53	52	53	1.1
	CO2	%	38	37	38	1.0

IV-Matrix Spike Analysis -EPA 3C-050008-8853

Analyte	Sample Conc.	Spike Added	Sample Spike Conc.	Sample Spike Dupl. Conc.	Spike % Rec.	Spike Dupl % Rec.	% RPD
Hydrogen	0.0	10	9.4	9.2	94	92	1.9
Nitrogen	8.3	10	19	19	108	111	2.6
Carbon Monoxide	0.0	10	10	10	101	100	0.7
Methane	26	10	38	38	119	116	2.6
Carbon Dioxide	19	10	30	29	108	106	2.1

Dr. Sucha Parmar
Technical Director

Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed : 01/07/2005

I - Method Blank

	Analyte	Units	MB Conc.
AAC ID	C1	ppmv	ND
	C2	ppmv	ND
Method Blank	C3	ppmv	ND
	C4	ppmv	ND
	C5	ppmv	ND
	C6	ppmv	ND

II - LCS

AAC ID	Analyte	Theoretical Conc.	LCS Conc.	LCS Conc. Dup	% Rec	% RPD
Lab Control Standard	Methane	100	88	86	87	2.7
	Ethane	101	89	87	87	2.4
	Propane	100	88	86	87	2.5
	Butane	100	88	87	88	2.0
	Pentane	100	90	88	89	2.5
	Hexane	98	94	91	95	3.0

III - Duplicate Analysis

AAC ID	Analyte	Units	Sample Conc.	Duplicate Conc.	Mean	%RPD
050008-8853	Propane	ppmv	20	18	19	11
	Butane	ppmv	4.0	4.5	4.3	11
	Pentane	ppmv	0.4	0.4	0.4	0.0
	Hexane	ppmv	4.5	4.8	4.7	7.1

IV-Spiked Sample - 050008-8853

Units = ppmv

Analyte	Sample Conc.	Spike Added	Spike Res	Dup Spike Res	Spike % Rec *	Spike Dup % Rec *	RPD** %
Propane	9.3	50	50	49	81	80	**1.5**
Butane	2.1	50	45	46	86	87	**1.5**
Pentane	0.2	50	46	46	92	91	**0.6**
Hexane	2.3	50	50	49	95	93	**2.6**

Dr. Sucha Parmar
Technical Director

Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

CLIENT ID	**: Stewart & Stevenson**	**DATE ANALYZED**	**: 1/7/2005**
AAC ID	**: 050006**	**DATE REPORTED**	**: 1/7/2005**
MEDIA	**: AIR**	**UNITS**	**: ppmv**

I - Duplicate Analysis Report-ASTM D-5504-050006-8848

Compound	Sample Conc	Duplicate Conc	% RPD
H2S	5.4	5.6	**2.4**

II-LCS - ASTM D-5504

Analyte	Spike Added	Spike Res	Dup Spike Res	Spike % Rec *	Spike Dup % Rec *	RPD** %
H2S	20	22	21	108	103	5.1

III-Matrix Spike - ASTM D-5504 - 050006-8848

Analyte	Sample Conc.	Spike Added	Spike Res	Dup Spike Res	Spike % Rec *	Spike Dup % Rec *	RPD** %
H2S	2.7	10	12	13	93	103	10

Dr. Sucha Parmar
Technical Director

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Laboratory AAC

Shaw Environmental Chain Of Custody Record

CLIENT: Kirby Landfill 050004

DATE: 1-6-05

PAGE: 1 of 1

Page 10

SAMPLING COMPANY: Shaw Environmental, Inc.

LOG CODE:

SITE ADDRESS (Street and City):

ADDRESS: 2360 Bering San Jose, CA 95131

EDF DELIVERABLE TO (Responsible Party or Designee):

PHONE NO.:

E-MAIL:

CONSULTANT PROJECT NO.:

PROJECT CONTACT (Hardcopy or PDF Report to): Bill Johnston

SAMPLER NAME(S) (Print):

TELEPHONE: 408.382.5800

FAX: 408.433.1912

E-MAIL:

TURNAROUND TIME (BUSINESS DAYS):

☐ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES:

Report TO-15 list attached

Report NMOC concentrations as methane

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Compliance Landfill Gas	D1945-81, 3588-89, GPA 2145-94			TO 15, report AP 42 list	Sulfur species, TRS D-5504		EPA M25-C, NMOC as methane					
	R1, Landfill Gas	1-6-05	0949	air	1						X		X	55453				
	R2, "	↓	1038		1					X	X		X	55454				
	R3, "	↓	1127		1						X		X	55455				

FIELD NOTES:

Container/Preservative or PID Readings or Laboratory Notes

Landfill Gas

↓

* Report all compounds on AP 42 list which is attached

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature) Bill Johnston	Received by: (Signature)	Date: 1/6/05	Time: 1140

03/06/03 Revision

Atmospheric Analysis & Consulting, Inc.

CLIENT : Shaw Environmental
PROJECT NAME : Kirby Landfill
AAC PROJECT NO. : 050008
REPORT DATE : 01/11/05

On January 7, 2005, Atmospheric Analysis & Consulting, Inc. received one (1) tedlar bag for VOC analysis by EPA method TO-15. Upon receipt the sample was assigned a unique Laboratory ID number as follows:

Client ID	Lab No.
R2, Landfill Gas	050008-8854

TO-14/15 Analysis - Up to a 500ml aliquot of the sample is concentrated, put through a water and CO2 management system, cryofocused, and injected in the GC/MS (full scan mode) for analysis following EPA Method TO-14/15 as specified in the SOW. Holding times for preparation and analysis were complied with.

No problems were encountered during receiving, preparation and/ or analysis of these samples. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# AACI-TO-15. Estimated uncertainty of the test results will be provided upon request.

I certify that this data is technically accurate, complete and in compliance with the terms and conditions of the contract. The Laboratory Director or his designee, as verified by the following signature, has authorized release of the data contained in this hardcopy data package.

Sucha S. Parmar, PhD
Technical Director

This report consists of 8 pages.

1993 - 2003 10 YEARS OF EXCELLENCE Atmospheric Analysis & Consulting, Inc.

ACCREDITED IN ACCORDANCE WITH nelac Certificate #E87837

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT	**: Shaw Environmental**	**DATE RECEIVED**	**: 01/07/05**
PROJECT NO	**: 050008**	**DATE REPORTED**	**: 01/11/05**
MATRIX	**: AIR**		
UNITS	**: PPB (v/v)**		

VOLATILE ORGANIC COMPOUNDS BY EPA TO-15

Client ID	R2, Landfill Gas			
AAC ID	050008-8854			
Date Sampled	1/6/2005		PQL	MDL
Date Analyzed	1/7/2005			
Can Dilution Factor	1.0			
Chlorodifluoromethane	530		20	1.0
Dichlorodifluoromethane	1013		10	0.5
Chloromethane	31		10	0.5
Vinyl Chloride	335		10	0.5
Chloroethane	78		10	0.5
Dichlorofluoromethane	194		10	0.5
Ethanol	199217	E	50	2.5
Trichlorofluoromethane	63		10	0.5
Isopropanol	40768	E	20	1.0
Acrylonitrile	120		10	0.5
1,1-Dichloroethylene	51		10	0.5
Methylene Chloride	194		20	1.0
Carbon Disulfide	43		10	0.5
t-1,2-Dichloroethylene	48		10	0.5
1,1-Dichloroethane	103		10	0.5
2-Butanone (MEK)	17783	E	20	1.0
Hexane	1524		10	0.5
Chloroform	2.7	J	10	0.5
1,2-Dichloroethane	30		20	1.0
1,1,1-Trichloroethane	3.9	J	10	0.5
Carbon Tetrachloride	7.6	J	10	0.5
1,2-Dichloropropane	14		10	0.5
Bromodichloromethane	40		10	0.5
Trichloroethene	216		20	1.0
4-Methyl-2-Pentanone (MiBK)	1493		10	0.5
Tetrachloroethylene	483		10	0.5
Chlorobenzene	227		10	0.5
Ethylbenzene	3166		10	0.5
m- & p-Xylenes	5283		10	0.5
1,1,2,2-Tetrachloroethane	128		10	0.5
o-Xylene	1805		10	0.5
BFB-Surrogate Std. % Recovery	107%			48-151

J- Analyte was detected. However the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Pratical Quantitation Limit (PQL).
E - Estimated value, result outside linear range of instrument.
U - Compound was analyzed for, but was not detected.

Dr. Sucha Parmar
Technical Director

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

CLIENT ID	**: Laboratory Control Spike**	**DATE ANALYZED**	**: 01/07/05**
AAC ID	**: LCS**	**DATE REPORTED**	**: 01/10/05**
MEDIA	**: Air**	**UNITS**	**: ppbv**

TO-14/15 Laboratory Control Spike Recovery

Compound	Sample Conc.	Spike Added	Spike Res	Dup Spike Res	Spike % Rec *	Spike Dup % Rec *	RPD** %
1,1-DICHLOROETHYLENE	0.0	50	44	44	88	87	1.1
METHYLENE CHLORIDE	0.0	50	44	44	87	88	1.4
BENZENE	0.0	50	45	51	90	103	13
TRICHLOROETHENE	0.0	50	47	54	95	108	14
TOLUENE	0.0	50	47	57	94	115	19
TETRACHLOROETHYLENE	0.0	50	47	56	95	112	17
CHLOROBENZENE	0.0	50	43	46	86	92	7.0
ETHYLBENZENE	0.0	50	45	49	91	97	6.8
m-, & p- XYLENES	0.0	100	97	103	97	103	6.5
o- XYLENE	0.0	50	47	50	94	100	5.7

* Must be 75-125%

** Must be $\leq$ 25%

Dr. Sucha Parmar
President

Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

CLIENT ID	**: R-1 RTO Inlet**	**DATE ANALYZED**	**: 01/07/05**
AAC ID	**: 050010-8858**	**DATE REPORTED**	**: 01/10/05**
MATRIX	**: Air**	**UNITS**	**: ppbv**

TO-14/TO-15 Duplicate Analysis

Compound	Sample Conc	Duplicate Conc	% RPD
Chlorodifluoromethane*	<PQL	<PQL	0.0
Propylene*	22	21	6.4
DiClDIFMethane*	<PQL	<PQL	0.0
CHLOROMETHANE*	<PQL	<PQL	0.0
1,2 DiCl-1,1,2,2-TetraFEthane*	<PQL	<PQL	0.0
VINYL CHLORIDE*	<PQL	<PQL	0.0
Methanol*	621	641	3.1
1,3-Butadiene*	<PQL	<PQL	0.0
BROMOMETHANE*	<PQL	<PQL	0.0
CHLOROETHANE*	<PQL	<PQL	0.0
Dichlorofluoromethane	<PQL	<PQL	0.0
Ethanol*	500	395	24
Vinyl Bromide*	<PQL	<PQL	0.0
Acetone*	10355	9291	11
TRICHLOROFLUOROMETHANE*	<PQL	<PQL	0.0
Isopropyl Alcohol*	<PQL	<PQL	0.0
Acrylonitrile*	<PQL	<PQL	0.0
1,1 DICHLOROETHENE*	<PQL	<PQL	0.0
METHYLENE CHLORIDE*	<PQL	<PQL	0.0
Allyl CHLORIDE*	9.3	6.7	32
Carbon disulfide*	<PQL	<PQL	0.0
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE*	<PQL	<PQL	0.0
trans-1,2- DICHLOROETHYLENE*	<PQL	<PQL	0.0
1,1- DICHLOROETHANE*	<PQL	<PQL	0.0
MTBE*	<PQL	<PQL	0.0
Vinyl Acetate*	318	358	12
MEK*	303	286	6.0
cis-1,2- DICHLOROETHYLENE*	<PQL	<PQL	0.0
Hexane*	<PQL	<PQL	0.0
CHLOROFORM*	<PQL	<PQL	0.0
Ethyl Acetate*	15	14	6.7
Tetrahydrofuran*	<PQL	<PQL	0.0
1,2-DICHLOROETHANE*	<PQL	<PQL	0.0
1,1,1-TRICHLOROETHANE*	<PQL	<PQL	0.0
BENZENE**	<PQL	<PQL	0.0
CARBON TETRACHLORIDE**	<PQL	<PQL	0.0
Cyclohexane**	<PQL	<PQL	0.0

Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

CLIENT ID	**: R-1 RTO Inlet**	**DATE ANALYZED**	**: 01/07/05**
AAC ID	**: 050010-8858**	**DATE REPORTED**	**: 01/10/05**
MATRIX	**: Air**	**UNITS**	**: ppbv**

TO-14/TO-15 Duplicate Analysis

Compound	Sample Conc	Duplicate Conc	% RPD
1,2-DICHLOROPROPANE**	<PQL	<PQL	0.0
Bromodichloromethane**	<PQL	<PQL	0.0
1,4-Dioxane**	<PQL	<PQL	0.0
TRICHLOROETHENE**	<PQL	<PQL	0.0
2,2,4-Trimethylpentane**	<PQL	<PQL	0.0
Heptane**	<PQL	<PQL	0.0
cis- 1,3 DICHLOROPROPENE**	<PQL	<PQL	0.0
MiBK**	<PQL	<PQL	0.0
trans 1,3 DICHLOROPROPENE**	<PQL	<PQL	0.0
1,1,2-TRICHLOROETHANE**	<PQL	<PQL	0.0
TOLUENE**	44	50	13
2-Hexanone**	<PQL	<PQL	0.0
Dibromochloromethane**	<PQL	<PQL	0.0
1,2 DIBROMOETHANE**	<PQL	<PQL	0.0
TETRACHLOROETHYLENE**	<PQL	<PQL	0.0
CHLOROBENZENE***	<PQL	<PQL	0.0
ETHYLBENZENE***	7.4	7.1	4.7
m-, & p- XYLENES***	24	23	6.3
Bromoform***	<PQL	<PQL	0.0
STYRENE***	4981	6237	22
1,1, 2,2- TETRACHLORETHANE***	<PQL	<PQL	0.0
o- XYLENE***	7.9	8.2	4.1
Ethyltoluene***	<PQL	<PQL	0.0
1,3,5- TRIMETHYLBENZENE***	<PQL	<PQL	0.0
1,2,4- TRIMETHYLBENZENE***	<PQL	<PQL	0.0
Benzyl Chloride***	<PQL	<PQL	0.0
1,3- DICHLOROBENZENE***	<PQL	<PQL	0.0
1,4- DICHLOROBENZENE***	<PQL	<PQL	0.0
1,2-DICHLOROBENZENE***	<PQL	<PQL	0.0
1,2,4 TRICHLOROBENZENE***	<PQL	<PQL	0.0
Hexachlorobutadiene	<PQL	<PQL	0.0
System Monitoring Compounds			
BFB-Surrogate Std. % Recovery	86	81	6.0

Dr. Sucha Parmar
Technical Director

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

Method Blank Analysis Report

MATRIX : **AIR** **ANALYSIS DATE** : **01/07/05**
UNITS : **ppbv** **REPORT DATE** : **01/10/05**

VOLATILE ORGANIC COMPOUNDS BY EPA TO-14/TO-15

Client ID / *AAC ID*	Method Blank MB010705#1	MDL
Chlorodifluoromethane*	<PQL	1.0
Propylene*	<PQL	0.5
DiClDIFMethane*	<PQL	0.5
CHLOROMETHANE*	<PQL	0.5
1,2 DiCl-1,1,2,2-TetraFEthane*	<PQL	0.5
VINYL CHLORIDE*	<PQL	0.5
Methanol*	<PQL	20
1,3-Butadiene*	<PQL	0.5
BROMOMETHANE*	<PQL	0.5
Dichlorofluoromethane	<PQL	0.5
CHLOROETHANE*	<PQL	0.5
Vinyl Bromide*	<PQL	0.5
Acetone*	<PQL	1.0
TRICHLOROFLUOROMETHANE*	<PQL	0.5
Acrylonitrile*	<PQL	0.5
1,1 DICHLOROETHENE*	<PQL	0.5
METHYLENE CHLORIDE*	<PQL	1.0
Allyl CHLORIDE*	<PQL	0.5
Carbon disulfide*	<PQL	0.5
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE*	<PQL	0.5
trans-1,2- DICHLOROETHYLENE*	<PQL	0.5
1,1- DICHLOROETHANE*	<PQL	0.5
MTBE*	<PQL	0.5
Vinyl Acetate*	<PQL	0.5
MEK*	<PQL	1.0
cis-1,2- DICHLOROETHYLENE*	<PQL	0.5
Hexane*	<PQL	0.5
CHLOROFORM*	<PQL	0.5
Ethyl Acetate*	<PQL	0.5
Tetrahydrofuran*	<PQL	0.5
1,2-DICHLOROETHANE*	<PQL	1.0
1,1,1-TRICHLOROETHANE*	<PQL	0.5
BENZENE**	<PQL	0.5
CARBON TETRACHLORIDE**	<PQL	0.5
Cyclohexane**	<PQL	0.5
1,2-DICHLOROPROPANE**	<PQL	0.5
Bromodichloromethane**	<PQL	0.5
1,4-Dioxane**	<PQL	1.0
TRICHLOROETHENE**	<PQL	1.0
2,2,4-Trimethylpentane**	<PQL	0.5

Atmospheric Analysis & Consulting, Inc.

Method Blank Analysis Report

MATRIX : **AIR** **ANALYSIS DATE** : **01/07/05**
UNITS : **ppbv** **REPORT DATE** : **01/10/05**

VOLATILE ORGANIC COMPOUNDS BY EPA TO-14/TO-15

Client ID / *AAC ID*	Method Blank MB010705#1	MDL
Heptane**	<PQL	0.5
cis- 1,3 DICHLOROPROPENE**	<PQL	0.5
trans 1,3 DICHLOROPROPENE**	<PQL	0.5
MiBK**	<PQL	0.5
1,1,2-TRICHLOROETHANE**	<PQL	0.5
TOLUENE**	<PQL	0.5
2-Hexanone**	<PQL	1.0
Dibromochloromethane**	<PQL	0.5
1,2 DIBROMOETHANE**	<PQL	0.5
TETRACHLOROETHYLENE**	<PQL	0.5
CHLOROBENZENE***	<PQL	0.5
ETHYLBENZENE***	<PQL	0.5
m-, & p- XYLENES***	<PQL	0.5
Bromoform***	<PQL	0.5
STYRENE***	1.65	0.5
1,1, 2,2- TETRACHLORETHANE***	<PQL	0.5
o- XYLENE***	<PQL	0.5
Ethyltoluene***	<PQL	0.5
1,3,5- TRIMETHYLBENZENE***	<PQL	0.5
1,2,4- TRIMETHYLBENZENE***	<PQL	0.5
Benzyl Chloride***	<PQL	1.0
1,3- DICHLOROBENZENE***	<PQL	0.5
1,4- DICHLOROBENZENE***	<PQL	0.5
1,2-DICHLOROBENZENE***	<PQL	0.5
1,2,4 TRICHLOROBENZENE***	<PQL	1.0
HEXACHLOROBUTADIENE***	<PQL	1.0
System Monitoring Compounds		
BFB-Surrogate Std. % Recovery	69%	48-151

PQL - Practical Quantitation Limit

Dr. Sucha Parmar
Technical Director

Laboratory AAC

Shaw Environmental Chain Of Custody Record

Page 8

CLIENT: Kirby Landfill — 050006

DATE: 1-6-05

PAGE: 1 of 1

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	
Shaw Environmental, Inc.			
ADDRESS: 2360 Bering San Jose, CA 95131		EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.: / E-MAIL: / CONSULTANT PROJECT NO.:
PROJECT CONTACT (Hardcopy or PDF Report to): Bill Johnston		SAMPLER NAME(S) (Print):	
TELEPHONE: 408.382.5800	FAX: 408.433.1912	E-MAIL:	

TURNAROUND TIME (BUSINESS DAYS):
☐ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

SPECIAL INSTRUCTIONS OR NOTES:

Report TO-15 list attached
Report NMOC concentrations as methane

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Compliance Landfill Gas	D1945-81, 3588-89, GPA 2145-94	TO 15, report AP 42 list	Sulfur species, TRS D-5504	EPA M25-C, NMOC as methane	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
	R1, Landfill Gas	1-6-05	0949	air	1				X	X	6853
	R2, "	↓	1038		1			X	X	X	6854
	R3, "	↓	1127		1				X	X	6855

Landfill Gas ↓

X Report all compounds on AP 42 list which is attached

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature) Bill Johnston	Received by: (Signature)	Date: 1/7/05	Time: 1140

03/06/03 Revision

Appendix G
ARB Independent Contractor Program Certification

State of California

Air Resources Board

Approved Independent Contractor

Shaw Environmental, Inc.

This is to certify that the company listed above has been approved by the Air Resources Board to conduct compliance testing pursuant to section 91207, Title 17, California Code of Regulations, until June 30, 2005 for those test methods listed below:

ARB Source Test Methods:

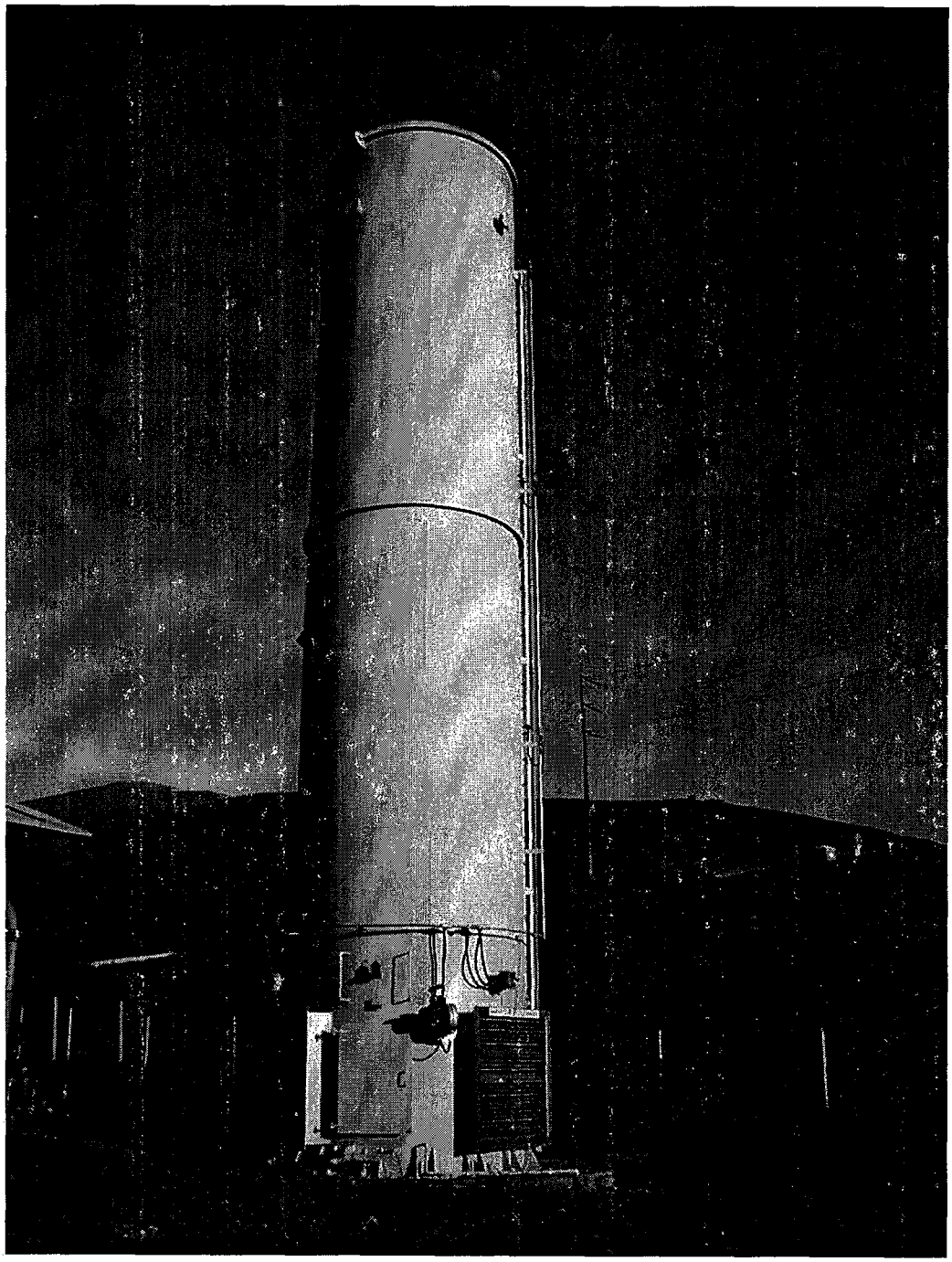
1, 2, 3, 4, 5, 8, 100 (CO, CO_2, NO_x, O_2, SO_2, THC)

Visible Emissions Evaluation

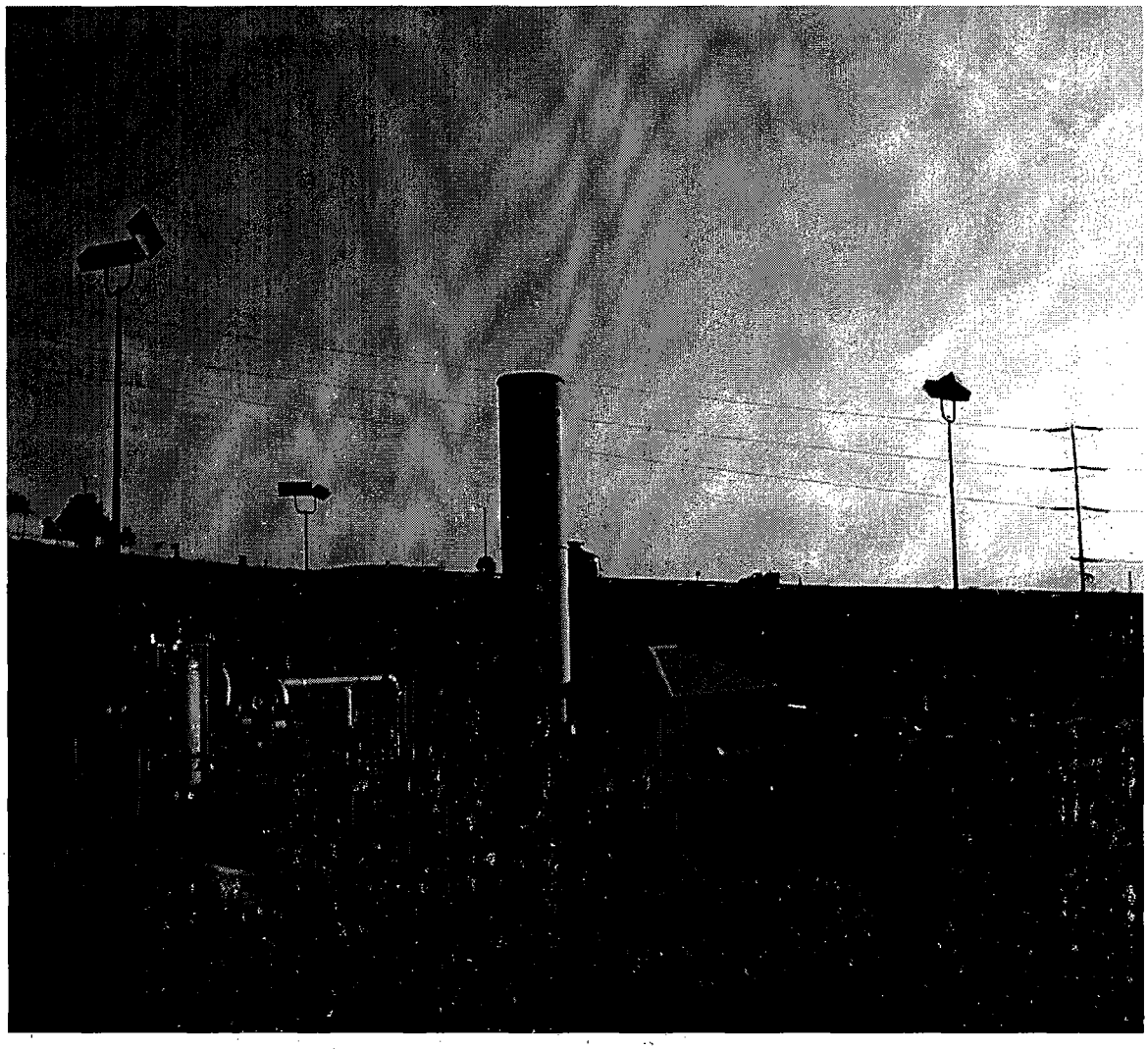
William V. Loscutoff, Chief
Monitoring and Laboratory Division

90 56165

Appendix H
Site Pictures



KIRBY LANDFILL GAS FLARE A-11



KIRBY GAS CONTROL SYSTEM