CITY OF GREENSBORO,
NORTH CAROLINA

REQUEST FOR QUALIFICATIONS
Event #6602

WHITE STREET LANDFILL
~
LANDFILL GAS UTILIZATION PROJECT

JANUARY 2013

Table of Contents

List of Attachments

I. INTRODUCTION

On behalf of the City of Greensboro Field Operations Department, the Centralized Contracting Division is seeking Statements of Qualifications from qualified and experienced firms providing services outlined herein.

The purpose of this Request for Qualifications (RFQ) is to seek Statements of Qualifications (SOQ) from qualified Project Developers for the design, construction, operation, and other identified activities for the City of Greensboro White Street Landfill - Gas Utilization Project. **Please note White Street Landfill is no longer accepting household trash and landfill gas production is declining; therefore, anticipated project life is approximately 15 years.**

The City of Greensboro by way of this solicitation, invites interested parties to submit their Statements of Qualifications to complete a project for the beneficial use of the methane gas generated by the Landfill. The laws of the State of North Carolina will govern the Request for Qualifications, Request for Proposals, and Contract.

II. EQUAL OPPORTUNITY STATEMENT

The City of Greensboro does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in employment or the provision of or contracting for goods or services. The City promotes equal opportunity through the Greensboro Minority and Women Business Enterprise Program and encourages Minority and Women Business Enterprises (M/WBEs) to participate in City contracting and sub-contracting opportunities through the North Carolina Historically Underutilized Business (HUB) Certification Program.

Minority and Women owned firms are encouraged to become HUB certified and may read about the HUB Certification program at the HUB Certification web site. To become HUB certified firms must:

- Register in the North Carolina on-line Interactive Purchasing System Electronic Vendor Registration system. An email address is required to register.

- Complete the HUB Statewide Uniform Certification Application is required to become a HUB Certified Business. The on-line application must be printed out, completed and submitted by postal mail to the HUB office with additional required documents.

For assistance with the HUB Certification process, please contact the NC HUB Office at 919-807-2330.

III. SUBMISSION OF QUALIFICATIONS

A. General Requirements

All responses to the requested information should be answered thoroughly, but be as succinct as possible. Additional or bulky information (such as brochures, sample contract documents, etc.) may be included as an appendix, but the responses to information requested in Section II.B should be fully contained within the body of the SOQ submittal. No Project Developer may submit more than one response.

B. Specific Requirements

1. Requested Information and Format

The SOQ must be complete, clear, and concise as to the intent of the Project Developer since the short-list will be developed solely upon the submitted qualification statement. The submittal shall not exceed twenty-five (25) 8 ½" X 11" single sided pages, excluding the cover letter, table of contents, tab sheets (if provided), and appendices (if provided). The Project Developer shall submit the following information in the order listed below and clearly identified in separate sections of the qualifications.

2. Business Organization

State the Project Developer's full business name, address and telephone number and the branch office or subordinate component of the firm that will perform or assist in performing the services described herein. At a minimum, this narrative should include:

a) Indicate whether or not the Project Developer operates as a sole proprietorship, individual, partnership, or corporation.
b) List the state in which Project Developer is incorporated or licensed to operate.
c) Describe business size in terms of revenues, market capitalization, number of employees, and geographical presence.
d) Provide a summary of Developer's firm's history.
e) Summarize financial strength of the firm including independent evidence of the firm's credit rating from two reputable rating agencies.

3. Resumes of Key Personnel

A summary of all key staff persons shall be included in this section. Full resumes shall be provided and may be included as an Appendix. All relevant experience should be highlighted on each resume.

4. Previous Experience/Capability

Project Developers shall provide in this section a listing and brief description of the firm's completed projects and those currently underway. Provide a minimum of three (3) references with contact name, phone number, and associated project details such as technology used, project structure, financing, and economic benefit to LFG owner.

5. Summary of Qualifications

Provide a narrative as to why Project Developer is best qualified to perform the required services for the City of Greensboro. At a minimum, this narrative should include:

a) description of the firm's specialized experience and technical competence of key project team members;
b) highlights of past successful projects;
c) ability to assume this additional responsibility;
d) ability and experience in the areas of design, permitting, engineering, and implementing projects in the size and type proposed;
e) indication of an understanding of and a commitment to the City of Greensboro's M/WBE Program as it regards professional services;
f) statement that the qualification statement is valid for acceptance for a period of three (3) months from its submission and thereafter until the Project Developer withdraws it or a contract is executed, whichever first occurs; and
g) any additional information the Project Developer may wish to include.

6. Project Understanding and Approach

Provide a narrative of the development plan(s) for the City of Greensboro for an estimated 15-year project life. At a minimum, this narrative should include:

a) an understanding of the City's current system,
b) Project Developer's approach to landfill gas utilization including the technology proposed, and
c) an explanation of the anticipated economic benefit to the City of Greensboro.

7. Operation and Maintenance Services

Describe Project Developer's ability to provide ongoing operations and service support for the proposed project.

IV. SUBMITTAL PROCESS

A. Electronic GEPS Submission Required

GEPS is the web based on-line Greensboro Electronic Procurement System. Vendors must register in the on-line system to submit SOQs for this event. All response documentation required in this Request for Qualifications shall be submitted electronically through GEPS. Questions shall also be submitted and answered through GEPS. The City will not respond to verbal inquiries.

Proposals submitted by facsimile or e-mail will not be accepted or considered in the selection process. Failure to include the requested information through the online GEPS system may result in the elimination of Project Developer candidates from consideration.

B. Rules of Contact

An opportunity to ask questions will be provided at the Voluntary Site Meeting. All other questions regarding this RFQ shall be submitted through GEPS. Any attempt to contact or influence outside of these channels may, at the sole discretion of the City of Greensboro, result in immediate disqualification from this RFQ process.

C. Submission Schedule

Submission Period begins	January 11, 2013 at 10:00 a.m.
Question and Answer Period begins	January 11, 2013 at 10:05 a.m.
Voluntary Site Meeting	January 23, 2013 at 10:00 a.m.
Question and Answer Period ends	January 29, 2013 at 5:00 p.m.
Addendum issued, if required	February 5, 2013 at 5:00 p.m.
Submission Period ends	**February 19, 2013 at 5:00 p.m. (EST)**

The voluntary site visit and informational conference will be held on Wednesday, January 23, 2013 at 10:00 a.m. at the White Street Landfill, 2503 White Street, Greensboro, North Carolina.

Project Developers are strongly encouraged to submit SOQs in GEPS at least 24 hours before the Request for Qualifications Event closing time as the City cannot be responsible for any gaps in internet services that may occur. **Statements of Qualifications will be received up to, but not later than, 5:00 pm (EST) on Tuesday, February 19, 2013, when the online event will close.**

V. TECHNICAL ASSISTANCE

If technical assistance is needed to register, log in, or submit SOQs in the Greensboro Electronic Purchasing System, inquiries shall be made to the Purchasing Division of the City of Greensboro at 336-373-2192.

VI. LEGAL DISCLAIMER

A. Proprietary Ownership

Any reservations on the use of information contained in a SOQ must be clearly identified in the submittal itself. The City assumes that, unless otherwise stated, information submitted in response to this Request for Qualifications may be used by the City as public information after a short-list or Project Developer has been selected and all other Project Developers have been notified.

B. Legal Relationship

This RFQ does not constitute an offer by the City of Greensboro to enter into a contract with any Project Developer. The City, at its sole discretion, reserves the right to accept or reject any SOQ for any reason. The City further reserves the right to negotiate with any responder following an evaluation of all submittals.

VII. SITE INFORMATION

A. Landfill History

The facility encompasses an area of approximately 980 acres in the northeast quadrant of Greensboro at the east end of White Street. The White Street Landfill, hereinafter referred to as Landfill, is permitted for the disposal of waste generated within Greensboro and Guilford County (Solid Waste Permit Nos. 41-03 and 41-12).

Beginning in 1943, waste handling at the Landfill consisted primarily of incineration. Burning operations ceased in 1965 and since that time refuse has been landfilled on site. The Landfill consists of three distinct municipal solid waste (MSW) landfill areas designated as Phase I, Phase II, and Phase III. Phase I is approximately 85 acres in size and contains land clearing and inert debris (LCID) deposited on top of MSW. This phase was filled with MSW between the years of 1965 and 1978 and contains approximately 3.0 million tons of MSW. In addition, the City disposed of LCID on top of the MSW from 1999 to 2004. There is approximately 20 to 25 feet of LCID on top of the MSW.

Phase II is an unlined, 135-acre area that received approximately 5.4 million tons of MSW from 1978 to 1997. Additionally, the City began depositing construction and demolition (C&D) debris on top of portions of MSW in Phase II in 1998 and is currently continuing this disposal.

Phase III is a Subtitle-D lined, 52-acre area unit consisting of 3 cells which began receiving waste in 1997. Since July 2007, only select MSW from the City's water and wastewater treatment plants has been disposed of on-site while all other MSW is taken to the City's transfer station located at 6310 Burnt Poplar Road in Greensboro at the request of the local government. Through October 2012, there is approximately 2.4 million tons in place. The tonnage history is summarized in Attachment A.

B. Landfill Gas Collection and Control System

The landfill gas, hereinafter referred to as LFG, collection system in Phases I and II supplies LFG to a 12-inch diameter LFG Specialties, LLC utility flare with a design capacity of 2,800 standard cubic feet per minute (scfm). Vacuum is provided to the LFG collection system through the use of two centrifugal blowers manufactured by Hoffman. One has a 125-horsepower (hp) motor and the other has a 150-hp motor. Each blower has a maximum flow rating of 1,400 scfm. There are currently 5 vertical extraction wells in Phase I and 95 wells in Phase II.

The collection system in Phase III supplies LFG to a 12-inch diameter LFG+E flare with a design capacity of 1,500 scfm. Vacuum is provided to the LFG collection system through the use of two positive displacement blowers manufactured by Tuthill; each with 150-hp motors. Each blower has a maximum flow rating of 1,500 scfm. There are currently 49 vertical and 7 horizontal extraction wells in Phase III.

The Phase I/II gas collection system was installed in the mid-1980s with significant expansion and modifications completed in 2006. The current Phase III blower/flare system was installed in 2002. Vertical extraction wells were installed in Cells 1 and 2 in 2006 and horizontal wells were installed in Cell 3 in 2010. The gas collection and control system layout is included as Attachment B. The LFG generation curve is included as Attachment C. LFG laboratory analysis is included as Attachment D.

C. Landfill Gas Utilization

Currently, a portion of the LFG is transported via underground piping to an off-site end user, International Textile Group (ITG), for use in their operations. The flare stations are used to combust excess LFG. It is the City's intention to negotiate an agreement with the selected Project Developer that will preserve the City's relationship with ITG and provide a similar volume of energy to their White Oak facility. The historical gas flow data is included as Attachment E.

Additional facilities near the Landfill include the City of Greensboro's TZ Osborne Water Reclamation Facility and North Buffalo Creek Facility. Historical electricity usage for both facilities is summarized in Attachment F. It should be noted that the North Buffalo Creek Facility usage will change from a treatment facility to influent holding and transfer station for the TZ Osborne facility so electricity usage may decrease.

VIII. OTHER INFORMATION

A. Regulatory Requirements

It shall be the Project Developer's responsibility to comply with all codes, rules, regulations, laws, and ordinances applicable to the project and the performance of the proponent's services for the project. All Federal, State, and Local permits required for installation and operation of Project Developer's SOQ shall be the responsibility of the

developer. All work associated with this project shall be completed in a manner so as to NOT interrupt normal landfill operations and the City reserves the right to take any actions necessary for regulatory compliance, including adjustment of well field flows and blower operations.

B. Modification of Proposal Content

Project Developer may not make changes or revisions to their submissions after the submission deadline and is bound by its contents. The City may request additional information or clarification from any or all Project Developer as necessary.

C. Reference Permission

The selected Project Developer shall obtain permission from the City prior to use of City's name as a reference, or in any of its promotional materials. This is not intended to prohibit the use of descriptions and associated project information regarding the services provided under the contract.

D. SOQ Preparation Expense

The City of Greensboro will not be responsible for any costs incurred by any Project Developer in the generation of their submittal.

IX. SELECTION PROCESS

The City shall review all SOQs with respect to the evaluation criteria and determine a short-list of Project Developers. The City may invite those short-listed Project Developers to make a presentation and/or respond to a Request for Proposals in order to select the top ranked Project Developer.

A. Right to Reject SOQs

The City reserves the right to reject any or all of the SOQs or waive any informality if the best interests of the City will be better served and any and all dates are subject to change.

B. Evaluation Criteria

Responses will be evaluated on the basis of the following criteria. The City of Greensboro shall select developers for the short-list based on an objective best value determination considering only the information submitted in the Statement of Qualifications. Evaluation factors shall include, but not be limited to, the following criteria:

1. Completeness of Qualifications.
2. City's ability to maintain air permit compliance.
3. Development plan providing best economic benefit to the City of Greensboro.
4. Previous experience in landfill gas energy utilization projects.

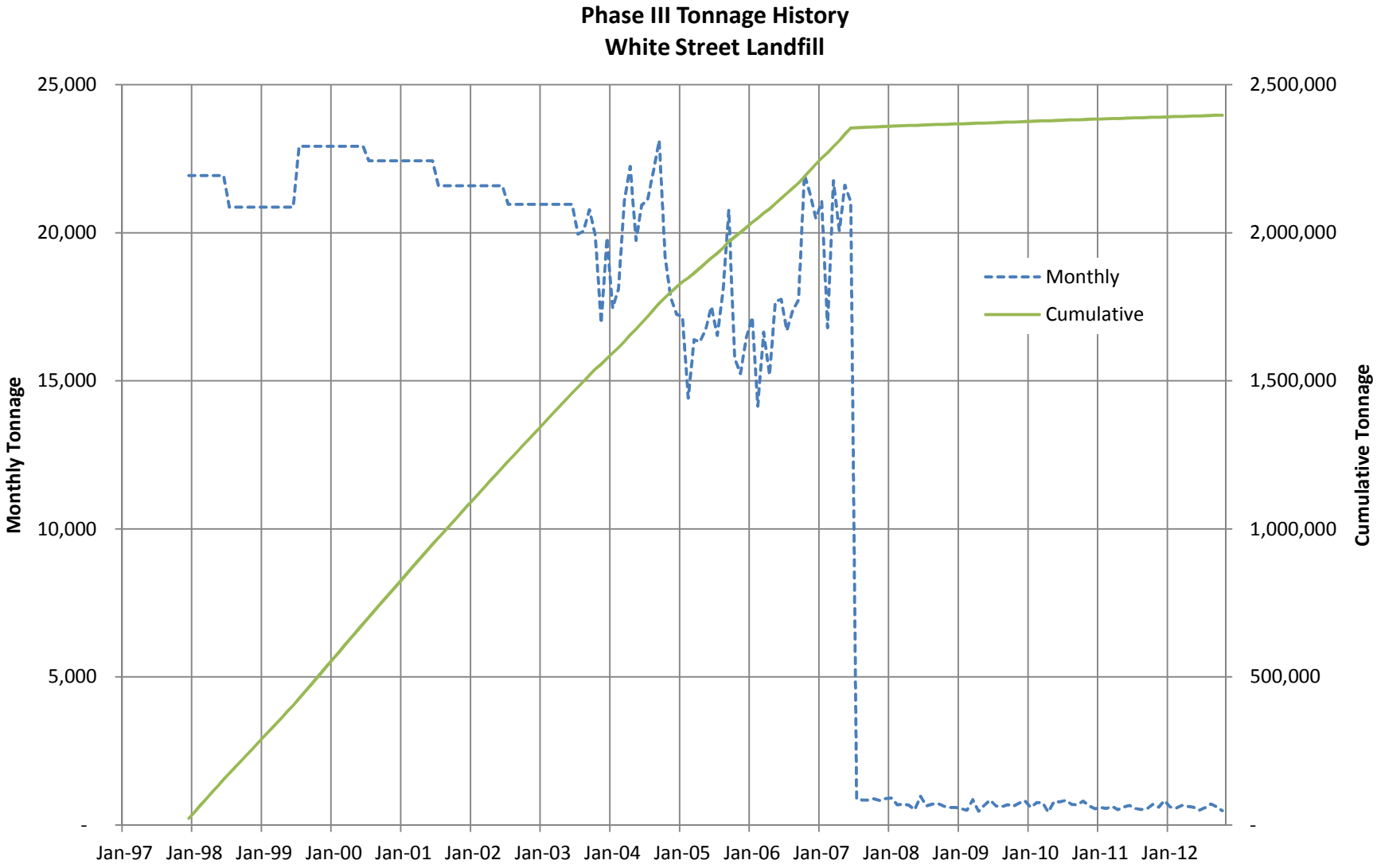
5. Financial capabilities.
6. Technical capabilities.
7. The volume of gas the Project Developer proposes to use during the contract.
8. The ability of the Project Developer to use the gas without further refinement by the City.
9. Demonstration of safe and environmentally beneficial gas usage.
10. City's cost to provide required quantities of gas at specified point of delivery meeting conditions outlined in Qualifications.
11. Length of time purchase of gas is guaranteed.
12. Reputation of the bidder with respect to contract performance.

C. Notification of Firms on the Short-List

Each Project Developer will be notified in writing whether or not it has been selected for the short-list. Notification may be expected no later than **March 19, 2013**. Only prospective companies capable of completing a "turn-key" project in its entirety as described herein will be eligible for the short-list.

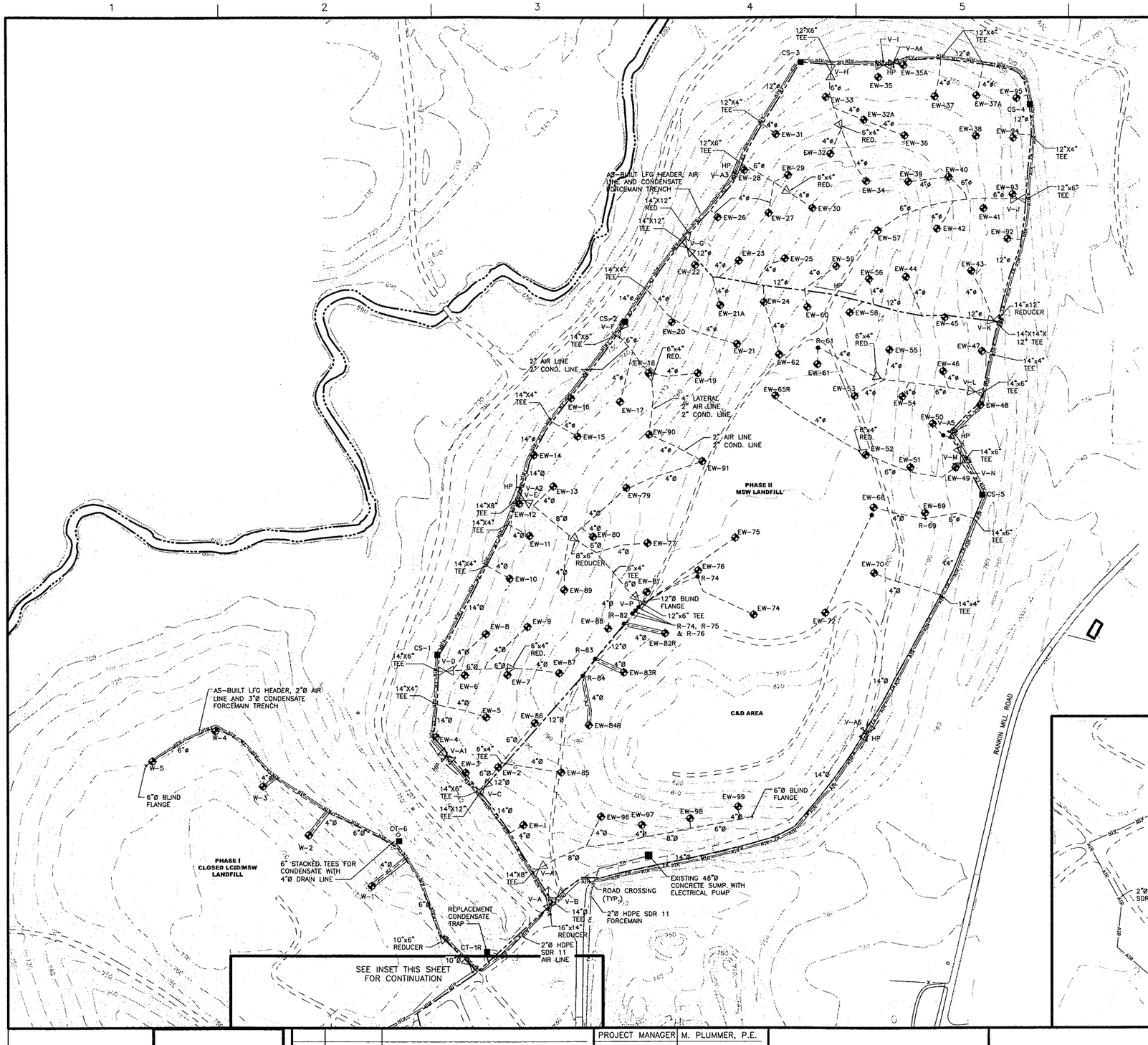
ATTACHMENT A

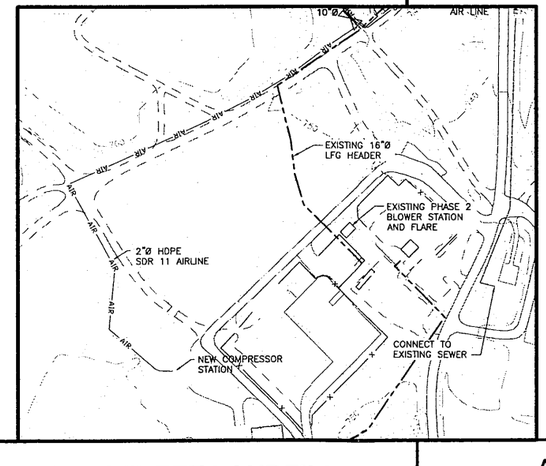
PHASE III TONNAGE HISTORY


Phase III Tonnage History
White Street Landfill
Monthly Tonnage
Cumulative Tonnage
25,000
20,000
15,000
10,000
5,000
-
2,500,000
2,000,000
1,500,000
1,000,000
500,000
-
Monthly
Cumulative
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Jan-06
Jan-07
Jan-08
Jan-09
Jan-10
Jan-11
Jan-12

ATTACHMENT B

LAYOUT OF GAS COLLECTION
AND CONTROL SYSTEM





LEGEND

- EW-12 — EXISTING VERTICAL EXTRACTION WELL
- MS-4 — EXISTING MONITORING STATION
- EXISTING OVERHEAD ELECTRIC POLES
- EXISTING CONDENSATE TRAP
- EXISTING BLIND FLANGE (SIZE VARIES)
- V-E — EXISTING GATE VALVE (SIZE VARIES)
- EXISTING HDPE REDUCER (SIZE VARIES)
- EXISTING REMOTE WELLHEAD (SIZE VARIES)
- EXISTING LEACHATE CLEANOUT
- V-A2 — EXISTING ASBUILT AIR RELEASE VALVE
- EXISTING HDPE SDR 11 LATERAL (SIZE VARIES)
- EXISTING HDPE SDR 17 HEADER PIPE (SIZE VARIES)
- AIR — AIR — EXISTING 2"Ø HDPE SDR 11 AIRLINE
- FM — FM — EXISTING ASBUILT LANDFILL GAS CONDENSATE FORCEMAIN
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- X — EXISTING FENCE LINE
- G — G — G — G — EXISTING GAS PIPE
- L — L — L — L — EXISTING LEACHATE COLLECTION SYSTEM

NOTES:
1. TOPOGRAPHY OBTAINED FROM HDR ENGINEERING, INC. OF THE CAROLINAS, INC (CHARLOTTE, N.C. OFFICE) DATED 2007.
2. EXISTING GAS COLLECTION AND CONTROL SYSTEM DATA OBTAINED FROM WHITE STREET LANDFILL, PHASE III PARTIAL CLOSURE DRAWINGS BY HDR ENGINEERING, INC. OF THE CAROLINAS, INC (CHARLOTTE, N.C. OFFICE) DATED APRIL 2009.
3. WELL LOCATIONS FOR PHASES I & II ARE FROM A SURVEY CONDUCTED BY THE CITY OF GREENSBORO, NC. SURVEY CONDUCTED IN JULY 2006.

N

SCALE IN FEET
200 100 0 200 400

HDR
HDR Engineering, Inc. of the Carolinas
128 S Tryon Street, Suite 1400 | Charlotte, NC 28202

ISSUE	DATE	DESCRIPTION
A	07/09	ASBUILT RECORD DRAWINGS

PROJECT MANAGER	M. PLUMMER, P.E.
DESIGNED BY	L. DAIGLE, E.I.T.
DESIGNED BY	
DRAWN BY	D. SOSA
DRAWN BY	
CHECKED BY	C. LEBRON, P.E.
PROJECT NUMBER	110048

WHITE STREET LANDFILL
RECORD DRAWINGS
PHASES I, II & III

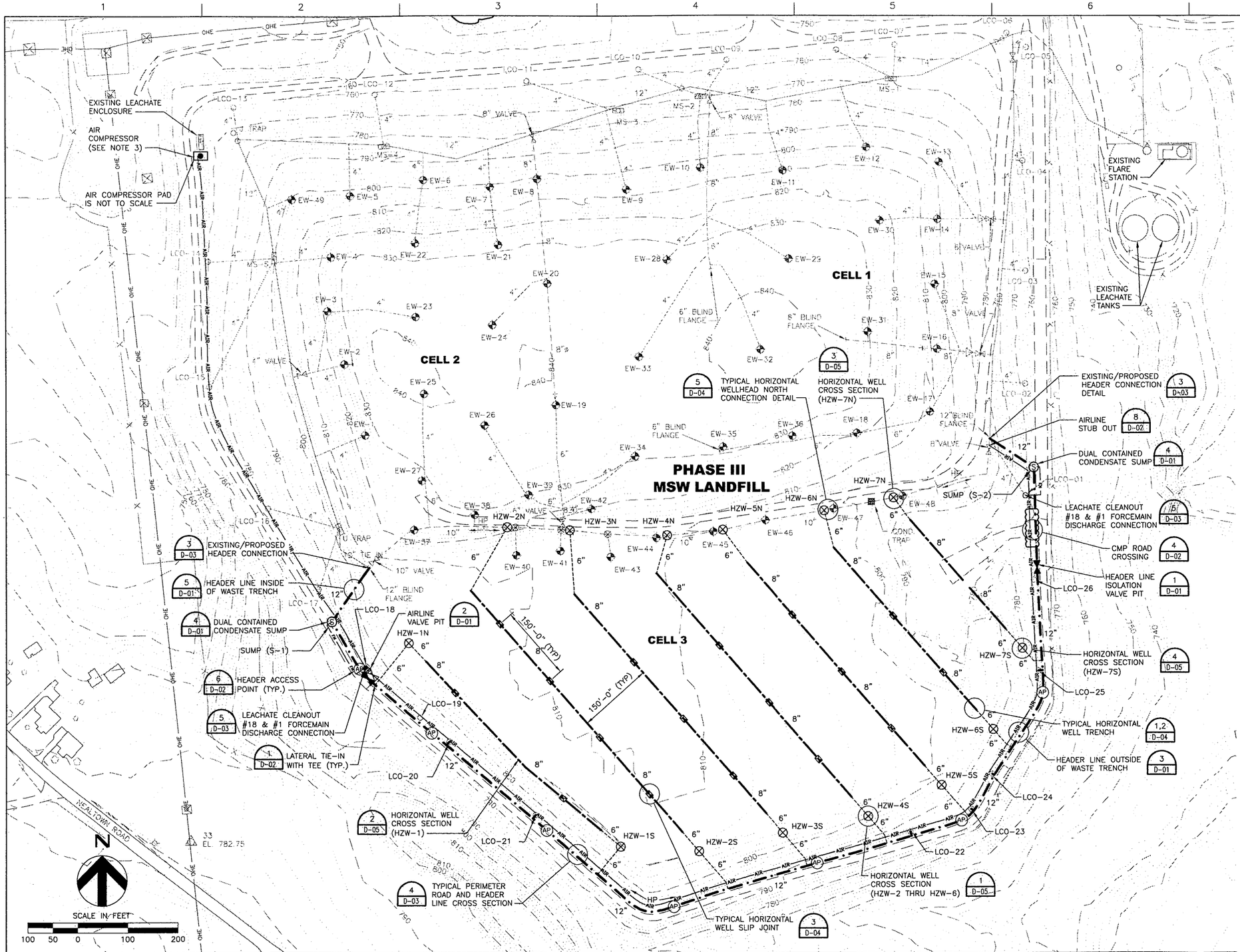
Greensboro North Carolina

ASBUILT RECORD DRAWING
PHASES I & II

0 1" 2"
AT FULL SIZE BAR LENGTH EQUALS TWO INCHES. ADJUST SCALE ACCORDINGLY

FILENAME	00C-01.dwg
SCALE	1"=200' (FULL SIZE)

SHEET 00C-01



LEGEND

- EW-14 — EXISTING VERTICAL EXTRACTION WELL
- MS-1 — EXISTING MONITORING STATION
- EXISTING OVERHEAD ELECTRIC POLES
- EXISTING CONDENSATE TRAP
- EXISTING BLIND FLANGE (SIZE VARIES)
- EXISTING VALVE (SIZE VARIES)
- EXISTING HDPE REDUCER (SIZE VARIES)
- EXISTING REMOTE WELLHEAD (SIZE VARIES)
- EXISTING LEACHATE CLEANOUT
- PROPOSED 2"Ø AIRLINE VALVE
- PROPOSED 12"Ø BUTTERFLY VALVE
- PROPOSED HEADER ACCESS POINT
- PROPOSED WELLHEAD
- PROPOSED SLIP JOINT
- PROPOSED CONDENSATE SUMP
- PROPOSED AIR COMPRESSOR
- PROPOSED CMP CULVERT
- PROPOSED 8"Ø HDPE SDR 11 HORIZONTAL WELL
- PROPOSED 12"Ø HDPE SDR 17 HEADER
- FM FM — PROPOSED 4"X8"Ø HDPE DUAL-CONTAINED CONDENSATE FORCEMAIN (SEE NOTE 8)
- AIR AIR — PROPOSED 2"Ø HDPE SDR 9 AIRLINE
- PROPOSED 6"Ø HDPE SDR 11 LATERAL
- EXISTING 4"-6"Ø HDPE SDR 11 LATERAL (SIZE VARIES)
- EXISTING 8"-10"Ø HDPE SDR 11 LATERAL (SIZE VARIES)
- EXISTING HDPE SDR 17 HEADER PIPE (SIZE VARIES)
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- X — EXISTING FENCE LINE
- 780 — EXISTING MAJOR/MINOR CONTOURS
- EXISTING UNPAVED ROAD
- EXISTING PAVED ROAD

NOTES:
1. TOPOGRAPHY OBTAINED FROM THE CITY OF GREENSBORO ON AUGUST 26, 2009.
2. EXISTING WELL LOCATIONS ARE FROM A SURVEY CONDUCTED BY THE CITY OF GREENSBORO, N.C. DATED JULY 2006.
3. AIR COMPRESSOR TO BE INGERSOLL RAND MODEL UP6-25-125 DESIGNED FOR OUTDOOR USE. AIR COMPRESSOR MUST HAVE HEAT TRACE AND INSULATION INSTALLED AS PER MANUFACTURER SPECIFICATIONS. AIR COMPRESSOR ELECTRICAL CONNECTION INFORMATION INCLUDED ON SHEETS E-01 AND E-02. STRUCTURAL INFORMATION FOR FOR AIR COMPRESSOR PAD SHOWN ON SHEET D-06.
4. SLIP JOINTS TO BE EVENLY SPACED 150' APART AND CONSTRUCTED ACCORDING TO DETAIL 3/D-04.
5. PROPOSED AIRLINE AND FORCEMAIN SHOWN OFFSET FOR CLARITY. BOTH LINES TO BE IN SAME TRENCH AS HEADER.
6. ALL LEACHATE CLEANOUTS TO BE CONNECTED TO ACTIVE COLLECTION SYSTEM IN CELL 3 AREA.
7. ALL LEACHATE CLEANOUT CONNECTIONS WILL BE 4"ø HDPE SDR 11 WITH 2"ø LANDTEC WELLHEAD.
8. DUAL-CONTAINED FORCEMAIN TO HAVE 4"ø SDR 11 CARRIER PIPE WITH 8"ø SDR 17 CONTAINMENT PIPE.
9. HORIZONTAL WELL HZW-7 TO BE SEPARATED UNLESS SITE TOPOGRAPHY ALLOWS FEASIBLE CONNECTION AT TIME OF CONSTRUCTION AT ENGINEER'S APPROVAL.
10. CONTRACTOR TO TAKE CARE DURING EXCAVATION NEAR EXISTING PIPES. ANY DAMAGE TO EXISTING PIPING CAUSED BY THE CONTRACTOR IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. INSTALLATION OF THE CONDENSATE SUMPS MAY BE IN CLOSE PROXIMITY TO THE ANCHOR TRENCH. CONTRACTOR IS TO TAKE CARE NOT TO UNDERMINE THE STABILITY OF THE SOILS IN THIS AREA. TRENCH SAFETY PRECAUTIONS MAY BE REQUIRED (i.e. TRENCH BOX) TO PREVENT EXCESSIVE SOIL EXCAVATIONS.
12. ADDITIONAL FITTINGS MAY BE NEEDED TO INSTALL HEADER PIPING ABOVE THE ANCHOR TRENCH.

HDR Engineering, Inc. of the Carolinas
N.C.B.E.L.S. License Number: F-0116
440 S Church Street, Suite 1000 | Charlotte, NC 28202

ISSUE	DATE	DESCRIPTION
0	04/10	ISSUED FOR CONSTRUCTION

PROJECT MANAGER	M. PLUMMER, P.E.
DESIGNED BY	L. DAIGLE, E.I.T.
DESIGNED BY	C. KOENIG
DRAWN BY	D. SOSA
DRAWN BY	M. AUSTIN
CHECKED BY	C. LEBRON, P.E.
PROJECT NUMBER	136211

WHITE STREET LANDFILL
PHASE III CELL 3

Greensboro North Carolina

PROPOSED GAS COLLECTION SYSTEM

0 1" 2" — AT FULL SIZE BAR LENGTH EQUALS TWO INCHES. ADJUST SCALE ACCORDINGLY

FILENAME	00C-02.dwg
SCALE	1"=100' (FULL SIZE)

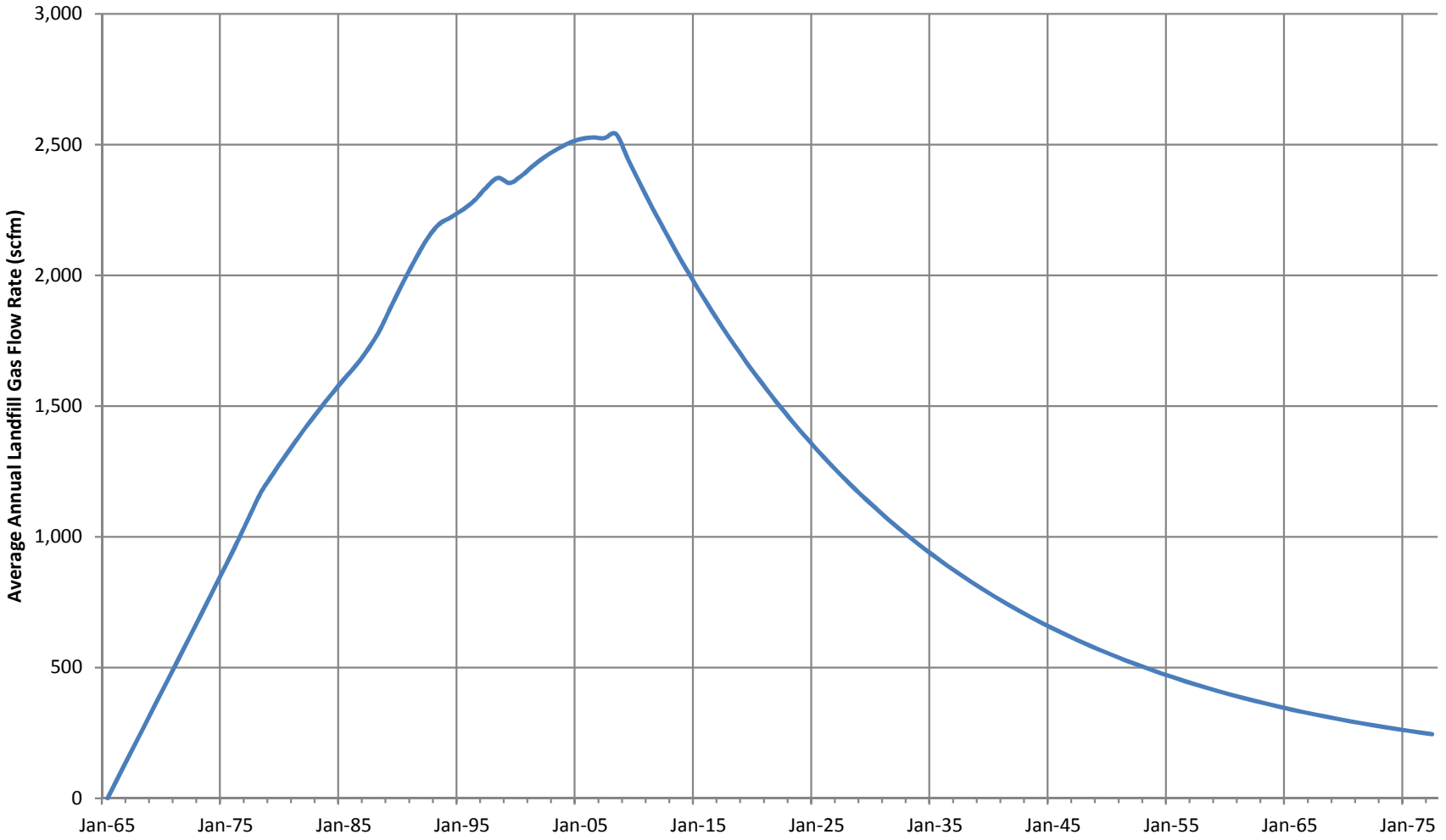
SHEET 00C-02

c:\pw\tpald\6100C\g, Plo\2010 1\AM,

ATTACHMENT C

LANDFILL GAS GENERATION CURVE

Estimated Landfill Gas Production
White Street Landfill



Source: LandGEM Version 3.02

ATTACHMENT D

LANDFILL GAS LABORATORY ANALYSIS

CEC

CARLSON ENVIRONMENTAL CONSULTANTS, PC

LANDFILL GAS, AIR PERMITTING, AND REGULATORY COMPLIANCE SERVICES

March 15, 2012

Mr. Mike Plummer, PE
Sr. Project Engineer
HDR Engineering
440 South Church Street, Suite 1000
Charlotte, NC 28202-1919

Subject: Landfill Gas Sampling and Analytical Services – February 2012
White Street Landfill – Greensboro, NC

Dear Mike:

On behalf of HDR Engineering (HDR), Carlson Environmental Consultants, PC (CEC) conducted landfill gas sampling at the White Street Landfill (Landfill) located in Greensboro, North Carolina on February 16, 2012. The monitoring was performed as specified in CEC's discussions with HDR and City of Greensboro personnel.

CEC performed the sampling in accordance with EPA 3C and 25C procedures for sampling from active landfill gas collection system piping. CEC obtained four (4) gas samples from the blower outlets of the Phase 2 LFG collection system and three (3) gas samples from the blower outlets of the Phase 3 LFG collection system. The samples were taken consecutively and each sample was taken over an approximate 30 minute period. Samples were obtained in individual 6-liter stainless steel SUMMA cans and in 3-liter Tedlar bags and shipped to Air Technology Laboratory, Inc. (ATL) for analysis.

In addition to analysis for EPA Method 25C/3C, the City also requested additional analyses be performed:

- EPA Method 15/16 – Sulfurs
- EPA Method TO-15 – Volatile Organic Compounds
- EPA Method TO-15 – Siloxanes
- ASTM D1945 – Natural Gases w/BTU Analysis

CEC's field data form and the ATL laboratory reports are attached for your review.

CEC appreciates this opportunity to provide gas sampling services to HDR and the City of Greensboro. Please feel free to give me a call at 704-283-9765 if you have any questions or require further information.

Sincerely,

Kristofer L. Carlson, P.E.
Principal
Carlson Environmental Consultants, PC

Attachments

305 SOUTH MAIN STREET
MONROE, NC 28112
704.283.9765 OFFICE
704.283.9755 FAX

12715 KEY LIME BLVD
WEST PALM BEACH, FL 33412
OFFICE 863.634.7185

LFG SAMPLING FIELD LOG

Project	White Street Landfill - Phase 2
Location	Greensboro, North Carolina
Date	2/16/2012
Weather	50 ° F
CEC Personnel	Kristofer Carlson
Subcontractors	None

Sample Tank I.D.	5436	3150	5438	3597	TD.1
Sample Number	1	2	3	4	5
Total Tank Vacuum (in. Hg)	-21.03	-20.87	-20.83	-21.05	Tedlar Bag
Tank Volume (L)	6	6	6	6	3
Tank Vacuum/Volume (in. Hg/L)	-5.0	-5.0	-5.0	-5.0	Tedlar Bag
Probe Depth	Gas Header	Gas Header	Gas Header	Gas Header	Gas Header
Ambient Tempature (F)	50	50	50	50	50
Barometric Pressure (in.)	30.08	30.08	30.08	30.08	30.08
Time: Begin Probe Purge	9:40 AM	10:16 AM	10:52 AM	11:35 AM	12:15 PM
Purge Rate (ml/min)	1000	1000	1000	1000	1000
Time: End Probe Purge	9:45 AM	10:19 AM	10:58 AM	11:39 AM	12:17 PM
Purge Volume (L)	5.0	3.0	6.0	4.0	2.0
Field Gas Reading: % Methane	51.5	52.3	52.1	52.2	52.2
% CO2	40.7	41.1	41.0	41.0	41.1
% O2	0.0	0.0	0.0	0.0	0.0
% Nitrogen (Balance)	7.7	6.6	7.0	6.8	6.8
Leak Test:					
	PASS	PASS	PASS	PASS	PASS
Tank Vacuum: Initial (in. Hg)	-21.03	-21.87	-20.83	-21.05	Tedlar Bag
Tank Vacuum: Final (in. Hg)	-3.03	-3.87	-3.83	-3.05	Tedlar Bag
Time: Begin Fill	9:45 AM	10:20 AM	11:00 AM	11:40 AM	12:18 PM
Sample Fill Rate (ml/min)	120	120	120	120	500
Time: End Fill	10:15 AM	10:50 AM	11:30 AM	12:10 PM	12:23 PM
Sample Volume (L)	3.6	3.6	3.6	3.6	2.5

LFG SAMPLING FIELD LOG

Project	White Street Landfill - Phase 3
Location	Greensboro, North Carolina
Date	2/16/2012
Weather	50 ° F
CEC Personnel	Kristofer Carlson
Subcontractors	None

Sample Tank I.D.	1355	1453	TD.2		
Sample Number	1	2	3		
Total Tank Vacuum (in. Hg)	-20.70	-20.75	Tedlar Bag		
Tank Volume (L)	6	6	3		
Tank Vacuum/Volume (in. Hg/L)	-5.0	-5.0	Tedlar Bag		
Probe Depth	Gas Header	Gas Header	Gas Header		
Ambient Tempature (F)	50	50	50		
Barometric Pressure (in.)	30.08	30.08	30.08		
Time: Begin Probe Purge	12:40 PM	1:17 PM	1:55 PM		
Purge Rate (ml/min)	1000	1000	1000		
Time: End Probe Purge	12:44 PM	1:19 PM	1:59 PM		
Purge Volume (L)	4.0	2.0	4.0		
Field Gas Reading: % Methane	48.9	48.9	48.9		
% CO2	37.2	37.2	37.2		
% O2	2.3	2.5	2.3		
% Nitrogen (Balance)	11.8	11.5	11.7		
Leak Test:					
	PASS	PASS	PASS		
Tank Vacuum: Initial (in. Hg)	-20.70	-20.75	Tedlar Bag		
Tank Vacuum: Final (in. Hg)	-3.70	-3.75	Tedlar Bag		
Time: Begin Fill	12:45 PM	1:20 PM	2:00 PM		
Sample Fill Rate (ml/min)	120	120	500		
Time: End Fill	1:15 PM	1:50 PM	2:05 PM		
Sample Volume (L)	3.6	3.6	2.5		

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	☒	48 hours	☐	EDD	☐	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:				Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	WHITE STREET LFG
Report To:	KRIS CARLSON
Company:	CARLSON ENVIRONMENTAL
Street:	305 S. MAIN ST.
City/State/Zip:	MONROE, NC 28112
Phone& Fax:	704-283-9765 / 704-283-9755
e-mail:	KCARLSON@CECENV.COM

BILLING

P.O. No.:
Bill to: CEC

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	EPA 25C/3C	EPA 15/16	EPA TO-15	SILOXANES	ASTM D1945
D021701-01	WHITESTREET. TD2	2/16/12	2:00		LFG	B	X	X			
-02	WHITESTREET. 1355	2/16/12	12:45		LFG	C	X		X	X	X
-03	WHITESTREET. 1453	2/16/12	1:20		LFG	C	X				

	COMPANY	DATE/TIME
AUTHORIZATION TO PERFORM WORK	CEC	2/16/12 5:00 PM
SAMPLED BY	CEC	2/16/12 5:00 PM
RELINQUISHED BY	DATE/TIME	RECEIVED BY / DATE/TIME
	2/16/12 5:00 PM	FEDEX 2/16/12 1700
RELINQUISHED BY FEDEX	2/17/12 1445	RECEIVED BY 2/17/12 1448
RELINQUISHED BY	DATE/TIME	RECEIVED BY / DATE/TIME

METHOD OF TRANSPORT (circle one): Walk-In (FedEx) UPS Courier ATLI Other_____

COMMENTS

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other

Rev. 03 - 5/7/09

Client: Carlson Environmental
Attn: Kris Carlson

Project Name: WHITE STREET LFG
Project Number: NA
Date Received: 2/17/2012
Matrix: Vapor

TNMOC by EPA METHOD 25C
Fixed Gases by EPA METHOD 3C

Lab Number:			D021701-01		D021701-02		D021701-03					
Client Sample ID:			WHITESTREET. TD2		WHITESTREET. 1355		WHITESTREET. 1453					
Date Collected:			2/16/2012		2/16/2012		2/16/2012					
Date Analyzed:			2/17/2012		2/23/2012		2/23/2012					
Analyst Initials:			MJ		MJ		MJ					
QC Batch:			120217GC8A1		120223GC8A1		120223GC8A1					
Dilution Factor:			1.0		2.8		2.8					
ANALYTE	Units	PQL	Result	RL	Result	RL	Result	RL				
TNMOC	ppmv C	10	970	10	2,000	28	2,100	28				
TNMOC uncorr*	ppmv C	10	740	10	1,500	28	1,600	28				
Nitrogen	% v/v	1.0	16	1.0	15	2.8	17	2.8				
Oxygen	% v/v	0.50	3.2	0.5	2.9	1.4	3.3	1.4				

ND = Not detected at or above reporting limit.
PQL = Practical Quantitation Limit.
TNMOC = Total Non-Methane Organic Carbon.
TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.
NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____ Date: 2-26-12
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Client: Carlson Environmental
Attn: Kris Carlson
Project Name: WHITE STREET LFG
Project No.: NA
Date Received: 02/17/12
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	**D021701-01**							
Client Sample I.D.:	**WHITESTREET .TD2**							
Date Sampled:	**02/16/12**							
Date Analyzed:	**02/17/12**							
QC Batch No.:	**120217GC3A1**							
Analyst Initials:	**VM**							
Dilution Factor:	**1.0**							
ANALYTE	**Result ppmv**	**RL ppmv**						
Hydrogen Sulfide	**11**	0.80						
Carbonyl Sulfide	**ND**	0.20						
Methyl Mercaptan	**0.96**	0.20						
Ethyl Mercaptan	**ND**	0.20						
Dimethyl Sulfide	**1.2**	0.20						
Carbon Disulfide	**ND**	0.20						
Dimethyl Disulfide	**ND**	0.20						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 120217GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	02/17/12		02/17/12		02/17/12			
Analyst Initials:	VM		VM		VM			
Datafile:	17feb004		17feb002		17feb003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	86	70-130%	86	70-130%	0.3	<30
Carbonyl Sulfide	ND	0.20	88	70-130%	96	70-130%	8.3	<30
Methyl Mercaptan	ND	0.20	87	70-130%	85	70-130%	1.4	<30
Ethyl Mercaptan	ND	0.20	84	70-130%	87	70-130%	3.8	<30
Dimethyl Sulfide	ND	0.20	105	70-130%	102	70-130%	2.0	<30
Carbon Disulfide	ND	0.20	96	70-130%	92	70-130%	4.5	<30
Dimethyl Disulfide	ND	0.20	105	70-130%	96	70-130%	8.8	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 2-26-12
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Client:	**Carlson Environmental**
Attn:	**Kris Carlson**
Project Name:	**WHITE STREET LFG**
Project No.:	**NA**
Date Received:	**02/17/12**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	**D021701-02**							
Client Sample I.D.:	**WHITESTREET. 1355**							
Date Sampled:	**02/16/12**							
Date Analyzed:	**02/22/12**							
QC Batch No.:	**120221MS2A2**							
Analyst Initials:	**DT**							
Dilution Factor:	**84**							
ANALYTE	**Result ppbv**	**RL ppbv**						
Dichlorodifluoromethane (12)	**340**	84						
Chloromethane	ND	170						
1,2-Cl-1,1,2,2-F ethane (114)	ND	84						
Vinyl Chloride	**500**	84						
Bromomethane	ND	84						
Chloroethane	ND	84						
Trichlorofluoromethane (11)	ND	84						
1,1-Dichloroethene	ND	84						
Carbon Disulfide	ND	420						
1,1,2-Cl 1,2,2-F ethane (113)	ND	84						
Acetone	**10,000**	420						
Methylene Chloride	**320**	84						
t-1,2-Dichloroethene	ND	84						
1,1-Dichloroethane	ND	84						
Vinyl Acetate	ND	420						
c-1,2-Dichloroethene	**420**	84						
2-Butanone	**9,200**	84						
t-Butyl Methyl Ether (MTBE)	ND	84						
Chloroform	ND	84						
1,1,1-Trichloroethane	ND	84						
Carbon Tetrachloride	ND	84						
Benzene	**490**	84						
1,2-Dichloroethane	ND	84						
Trichloroethene	**200**	84						
1,2-Dichloropropane	ND	84						
Bromodichloromethane	ND	84						
c-1,3-Dichloropropene	ND	84						
4-Methyl-2-Pentanone	**1,100**	84						
Toluene	**12,000**	84						
t-1,3-Dichloropropene	ND	84						
1,1,2-Trichloroethane	ND	84						

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Carlson Environmental**
Attn:	**Kris Carlson**
Project Name:	**WHITE STREET LFG**
Project No.:	**NA**
Date Received:	**02/17/12**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	D021701-02							
Client Sample I.D.:	WHITESTREET. 1355							
Date Sampled:	02/16/12							
Date Analyzed:	02/22/12							
QC Batch No.:	120221MS2A2							
Analyst Initials:	DT							
Dilution Factor:	84							

ANALYTE	Result ppbv	RL ppbv						
Tetrachloroethene	430	84						
2-Hexanone	120	84						
Dibromochloromethane	ND	84						
1,2-Dibromoethane	ND	84						
Chlorobenzene	ND	84						
Ethylbenzene	3,400	84						
p,&m-Xylene	6,800	84						
o-Xylene	2,000	84						
Styrene	330	84						
Bromoform	ND	84						
1,1,2,2-Tetrachloroethane	ND	170						
Benzyl Chloride	ND	84						
4-Ethyl Toluene	730	84						
1,3,5-Trimethylbenzene	290	170						
1,2,4-Trimethylbenzene	480	170						
1,3-Dichlorobenzene	ND	84						
1,4-Dichlorobenzene	ND	84						
1,2-Dichlorobenzene	ND	84						
1,2,4-Trichlorobenzene	ND	170						
Hexachlorobutadiene	ND	84						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Carlson Environmental
Attn: Kris Carlson
Project Name: WHITE STREET LFG
Project No.: NA
Date Received: 02/17/12
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	D021701-02							
Client Sample I.D.:	WHITESTREET. 1355							
Date Sampled:	02/16/12							
Date Analyzed:	02/22/12							
QC Batch No.:	120221MS2A2							
Analyst Initials:	DT							
Dilution Factor:	84							
ANALYTE	**Result ppbv**	**RL ppbv**						
Hexamethyldisiloxane (L2, MM)	ND	840						
Hexamethylcyclotrisiloxane (D3)	1,500	840						
Octamethyltrisiloxane (L3, MDM)	ND	840						
Octamethylcyclotetrasiloxane (D4)	ND	840						
Decamethyltetrasiloxane (L4, MD2M)	ND	840						
Decamethylcyclopentasiloxane (D5)	5,300	4,200						
Dodecamethylpentasiloxane (L5, MD3M)	ND	17,000						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 120221MS2A2

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	02/21/12		02/21/12		02/21/12						
Data File ID:	21FEB014.D		21FEB011.D		21FEB012.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	7.9	79	7.7	77	2.1	70	130	30	Pass
Methylene Chloride	0.0	10.0	8.7	87	8.5	85	2.3	70	130	30	Pass
Trichloroethene	0.0	10.0	8.4	84	8.4	84	0.1	70	130	30	Pass
Toluene	0.0	10.0	7.9	79	7.8	78	1.2	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	7.3	73	7.4	74	1.3	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Carlson Environmental
Attn: Kris Carlson

Client's Project: WHITE STREET LFG
Date Received: 2/17/2012
Matrix: Air
Units: % v/v

Natural Gas Analysis by ASTM-D1945

Lab No.:	D021701-02
Client Sample I.D.:	WHITESTREET. 1355
Date Sampled:	2/16/2012
Fixed Gas Date Analyzed:	2/23/2012
Hydrocarbon Date Analyzed:	2/26/2012
Analyst Initials:	MJ
QC Batch #:	120226GC11A1
Dilution Factor:	2.8

ANALYTE	PQL	Results	RL
Methane	0.0010	47	0.0028
Ethane	0.010	ND	0.028
Propane	0.010	ND	0.028
Isobutane	0.010	ND	0.028
n-Butane	0.010	ND	0.028
Neopentane	0.010	ND	0.028
Isopentane	0.010	ND	0.028
n-Pentane	0.010	ND	0.028
Hexanes	0.010	ND	0.028
Heptanes	0.010	ND	0.028
Octanes or Higher M.W	0.010	ND	0.028
Oxygen/Argon	0.50	2.9	1.4
Nitrogen	1.0	15	2.8
Carbon Dioxide	0.010	35	0.028
Net Heat of combustion (BTU/FT3)	1.0	430	2.808

PQL = Practical Quantitation Limit

ND = Not Detected (Below RL).

RL = PQL X Dilution Factor

Reviewed/Approved By: _____ **Date:** 2-26-12
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch # 120226GC11A1
Matrix: Air
Units: % v/v

QC for Natural Gas Analysis by ASTM-D1945

Lab No.:	Blank		LCS		LCSD			
Fixed Gas Date Analyzed:	2/23/2012		2/23/2012		2/23/2012			
Hydrocarbon Date Analyzed:	2/26/2012		2/26/2012		2/26/2012			
Analyst Initials:	MJ		MJ		MJ			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Methane	ND	0.0010	94	80-120	91	80-120	2.4	<20
Ethane	ND	0.010	115	80-120	119	80-120	3.0	<20
Propane	ND	0.010	113	80-120	116	80-120	3.2	<20
Isobutane	ND	0.010	117	80-120	121	80-120	3.4	<20
n-Butane	ND	0.010	117	80-120	121	80-120	3.4	<20
Neopentane	ND	0.010	122	80-120	125	80-120	2.7	<20
Isopentane	ND	0.010	120	80-120	125	80-120	3.3	<20
n-Pentane	ND	0.010	115	80-120	119	80-120	3.2	<20
n-Hexane	ND	0.010	113	80-120	117	80-120	3.2	<20
n-Heptane	ND	0.010	102	80-120	104	80-120	2.6	<20
Octanes or Higher M.W	ND	0.010	NA	NA	NA	NA	NA	NA
Oxygen/Argon	ND	0.50	98	80-120	99	80-120	0.9	<20
Nitrogen	ND	1.0	98	80-120	100	80-120	1.3	<20
Carbon dioxide	ND	0.010	101	80-120	102	80-120	1.2	<20

ND = Not Detected (Below RL)
RL = PQL X Dilution Factor

Reviewed/Approved By: Mark Johnson
Operations Manager

Date: 2-26-12

The cover letter is an integral part of this analytical report.

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME				DELIVERABLES		PAGE: 1 OF 1
Standard	X	48 hours	☐	EDD	☐	Condition upon receipt:
Same Day	☐	72 hours	☐	EDF	☐	Sealed Yes ☐ No ☐
24 hours	☐	96 hours	☐	Level 3	☐	Intact Yes ☐ No ☐
Other:				Level 4	☐	Chilled _____ deg C

Project No.:	
Project Name:	WHITE ST LFG
Report To:	KRIS CARLSON
Company:	CARLSON ENVIRONMENTAL
Street:	305 S. MAIN ST.
City/State/Zip:	MONROE, NC 28112
Phone& Fax:	704-283-9765 / 704-283-9755
e-mail:	KCARLSON@CECENV.COM

BILLING

P.O. No.:

Bill to: CEC

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	CONTAINER QTY/TYPE	MATRIX	PRESERVATION	EPA 25C/3C	EPA TO-15	SILOXANES	ASTM D1945	EPA 15/16	
D021702-01	WHITESTREET.3150	2/16/12	10:20		LFG	C	X	X	X	X		
-02	WHITESTREET.5436	2/16/12	9:45		LFG	C	X					
-03	WHITESTREET.5438	2/16/12	11:00		LFG	C	X					
-04	WHITESTREET.3597	2/16/12	11:40		LFG	C	HOLD AS BACKUP					
-05	WHITESTREET.TD1	2/16/12	12:10		LFG	B					X	

	COMPANY	DATE/TIME
AUTHORIZATION TO PERFORM WORK	CEC	2/16/12 5:00 PM
SAMPLED BY: KRIS CARLSON	CEC	2/16/12 5:00 PM

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
	2/16/12 5:00PM	FEDEX	2/16/12 1700
FEDEX	2/17/12 1448		2/17/12 1448

METHOD OF TRANSPORT (circle one): Walk-In (FedEx) UPS Courier ATL! Other_____

COMMENTS

HOLD CAN 3597
AS BACKUP.

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: H=HCl N=None / Container: B=Bag C=Can V=VOA O=Other

Client: Carlson Environmental
Attn: Kris Carlson

Project Name: WHITE ST LFG
Project Number: NA
Date Received: 2/17/2012
Matrix: Vapor

TNMOC by EPA METHOD 25C
Fixed Gases by EPA METHOD 3C

Lab Number:			D021702-01		D021702-02		D021702-03					
Client Sample ID:			WHITESTREET. 3150		WHITESTREET. 5436		WHITESTREET. 5438					
Date Collected:			2/16/2012		2/16/2012		2/16/2012					
Date Analyzed:			2/23/2012		2/23/2012		2/23/2012					
Analyst Initials:			MJ		MJ		MJ					
QC Batch:			120223GC8A1		120223GC8A1		120223GC8A1					
Dilution Factor:			2.8		2.8		2.8					
ANALYTE	Units	PQL	Result	RL	Result	RL	Result	RL				
TNMOC	ppmv C	10	1,500	28	1,400	28	1,200	28				
TNMOC uncorr*	ppmv C	10	1,300	28	1,200	28	940	28				
Nitrogen	% v/v	1.0	12	2.8	12	2.8	12	2.8				
Oxygen	% v/v	0.50	ND	1.4	ND	1.4	ND	1.4				

ND = Not detected at or above reporting limit.
PQL = Practical Quantitation Limit.
TNMOC = Total Non-Methane Organic Carbon.
TNMOC uncorr* = TNMOC concentration in sample without nitrogen/moisture correction.
NA = Nitrogen/moisture correction causes division by zero.

Reviewed/Approved By: _____ Date: 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

Client: Carlson Environmental
Attn: Kris Carlson
Project Name: WHITE ST LFG
Project No.: NA
Date Received: 02/17/12
Matrix: Air
Reporting Units: ppbv

EPA Method TO15

Lab No.:	D021702-01							
Client Sample I.D.:	WHITESTREET. 3150							
Date Sampled:	02/16/12							
Date Analyzed:	02/22/12							
QC Batch No.:	120221MS2A2							
Analyst Initials:	DT							
Dilution Factor:	56							
ANALYTE	**Result ppbv**	**RL ppbv**						
Dichlorodifluoromethane (12)	470	56						
Chloromethane	ND	110						
1,2-Cl-1,1,2,2-F ethane (114)	ND	56						
Vinyl Chloride	780	56						
Bromomethane	ND	56						
Chloroethane	94	56						
Trichlorofluoromethane (11)	ND	56						
1,1-Dichloroethene	ND	56						
Carbon Disulfide	ND	280						
1,1,2-Cl 1,2,2-F ethane (113)	ND	56						
Acetone	2,700	280						
Methylene Chloride	170	56						
t-1,2-Dichloroethene	ND	56						
1,1-Dichloroethane	65	56						
Vinyl Acetate	ND	280						
c-1,2-Dichloroethene	440	56						
2-Butanone	3,900	56						
t-Butyl Methyl Ether (MTBE)	ND	56						
Chloroform	ND	56						
1,1,1-Trichloroethane	ND	56						
Carbon Tetrachloride	ND	56						
Benzene	360	56						
1,2-Dichloroethane	ND	56						
Trichloroethene	140	56						
1,2-Dichloropropane	ND	56						
Bromodichloromethane	ND	56						
c-1,3-Dichloropropene	ND	56						
4-Methyl-2-Pentanone	840	56						
Toluene	9,000	56						
t-1,3-Dichloropropene	ND	56						
1,1,2-Trichloroethane	ND	56						

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Carlson Environmental**
Attn:	**Kris Carlson**
Project Name:	**WHITE ST LFG**
Project No.:	**NA**
Date Received:	**02/17/12**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	**D021702-01**							
Client Sample I.D.:	**WHITESTREET. 3150**							
Date Sampled:	**02/16/12**							
Date Analyzed:	**02/22/12**							
QC Batch No.:	**120221MS2A2**							
Analyst Initials:	**DT**							
Dilution Factor:	**56**							
ANALYTE	**Result ppbv**	**RL ppbv**						
Tetrachloroethene	380	56						
2-Hexanone	60	56						
Dibromochloromethane	ND	56						
1,2-Dibromoethane	ND	56						
Chlorobenzene	96	56						
Ethylbenzene	3,200	56						
p,&m-Xylene	6,500	56						
o-Xylene	1,800	56						
Styrene	190	56						
Bromoform	ND	56						
1,1,2,2-Tetrachloroethane	ND	110						
Benzyl Chloride	ND	56						
4-Ethyl Toluene	770	56						
1,3,5-Trimethylbenzene	300	110						
1,2,4-Trimethylbenzene	440	110						
1,3-Dichlorobenzene	ND	56						
1,4-Dichlorobenzene	ND	56						
1,2-Dichlorobenzene	ND	56						
1,2,4-Trichlorobenzene	ND	110						
Hexachlorobutadiene	ND	56						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc.
18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client:	**Carlson Environmental**
Attn:	**Kris Carlson**
Project Name:	**WHITE ST LFG**
Project No.:	**NA**
Date Received:	**02/17/12**
Matrix:	**Air**
Reporting Units:	**ppbv**

EPA Method TO15

Lab No.:	**D021702-01**							
Client Sample I.D.:	**WHITESTREET. 3150**							
Date Sampled:	**02/16/12**							
Date Analyzed:	**02/22/12**							
QC Batch No.:	**120221MS2A2**							
Analyst Initials:	**DT**							
Dilution Factor:	**56**							
ANALYTE	**Result ppbv**	**RL ppbv**						
Hexamethyldisiloxane (L2, MM)	**ND**	560						
Hexamethylcyclotrisiloxane (D3)	**1,300**	560						
Octamethyltrisiloxane (L3, MDM)	**ND**	560						
Octamethylcyclotetrasiloxane (D4)	**ND**	560						
Decamethyltetrasiloxane (L4, MD2M)	**ND**	560						
Decamethylcyclopentasiloxane (D5)	**5,500**	2,800						
Dodecamethylpentasiloxane (L5, MD3M)	**ND**	11,000						

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ **Date** 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 120221MS2A2

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date Analyzed:	02/21/12		02/21/12		02/21/12						
Data File ID:	21FEB014.D		21FEB011.D		21FEB012.D						
Analyst Initials:	DT		DT		DT						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail
1,1-Dichloroethene	0.0	10.0	7.9	79	7.7	77	2.1	70	130	30	Pass
Methylene Chloride	0.0	10.0	8.7	87	8.5	85	2.3	70	130	30	Pass
Trichloroethene	0.0	10.0	8.4	84	8.4	84	0.1	70	130	30	Pass
Toluene	0.0	10.0	7.9	79	7.8	78	1.2	70	130	30	Pass
1,1,2,2-Tetrachloroethane	0.0	10.0	7.3	73	7.4	74	1.3	70	130	30	Pass

RPD = Relative Percent Difference

Reviewed/Approved By: _____ Date: 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: **Carlson Environmental**
Attn: **Kris Carlson**

Client's Project: WHITE ST LFG
Date Received: 2/17/2012
Matrix: Air
Units: % v/v

Natural Gas Analysis by ASTM-D1945

Lab No.:	D021702-01
Client Sample I.D.:	WHITESTREET. 3150
Date Sampled:	2/16/2012
Fixed Gas Date Analyzed:	2/23/2012
Hydrocarbon Date Analyzed:	2/26/2012
Analyst Initials:	MJ
QC Batch #:	120226GC11A1
Dilution Factor:	2.8

ANALYTE	PQL	Results	RL
Methane	0.0010	50	0.0028
Ethane	0.010	ND	0.028
Propane	0.010	ND	0.028
Isobutane	0.010	ND	0.028
n-Butane	0.010	ND	0.028
Neopentane	0.010	ND	0.028
Isopentane	0.010	ND	0.028
n-Pentane	0.010	ND	0.028
Hexanes	0.010	ND	0.028
Heptanes	0.010	ND	0.028
Octanes or Higher M.W	0.010	0.049	0.028
Oxygen/Argon	0.50	ND	1.4
Nitrogen	1.0	11	2.8
Carbon Dioxide	0.010	38	0.028
Net Heat of combustion (BTU/FT3)	1.0	454	2.8

PQL = Practical Quantitation Limit
ND = Not Detected (Below RL).
RL = PQL X Dilution Factor

Reviewed/Approved By: _____ **Date:** 2-26-12
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch # 120226GC11A1
Matrix: Air
Units: % v/v

QC for Natural Gas Analysis by ASTM-D1945

Lab No.:	Blank		LCS		LCSD			
Fixed Gas Date Analyzed:	2/23/2012		2/23/2012		2/23/2012			
Hydrocarbon Date Analyzed:	2/26/2012		2/26/2012		2/26/2012			
Analyst Initials:	MJ		MJ		MJ			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	%Rec	Criteria	%Rec	Criteria	RPD	Criteria
Methane	ND	0.0010	94	80-120	91	80-120	2.4	<20
Ethane	ND	0.010	115	80-120	119	80-120	3.0	<20
Propane	ND	0.010	113	80-120	116	80-120	3.2	<20
Isobutane	ND	0.010	117	80-120	121	80-120	3.4	<20
n-Butane	ND	0.010	117	80-120	121	80-120	3.4	<20
Neopentane	ND	0.010	122	80-120	125	80-120	2.7	<20
Isopentane	ND	0.010	120	80-120	125	80-120	3.3	<20
n-Pentane	ND	0.010	115	80-120	119	80-120	3.2	<20
n-Hexane	ND	0.010	113	80-120	117	80-120	3.2	<20
n-Heptane	ND	0.010	102	80-120	104	80-120	2.6	<20
Octanes or Higher M.W	ND	0.010	NA	NA	NA	NA	NA	NA
Oxygen/Argon	ND	0.50	98	80-120	99	80-120	0.9	<20
Nitrogen	ND	1.0	98	80-120	100	80-120	1.3	<20
Carbon dioxide	ND	0.010	101	80-120	102	80-120	1.2	<20

ND = Not Detected (Below RL)

RL = PQL X Dilution Factor

Reviewed/Approved By: Mark Johnson
Operations Manager

Date: 2-26-12

The cover letter is an integral part of this analytical report.

Client: Carlson Environmental
Attn: Kris Carlson
Project Name: WHITE ST LFG
Project No.: NA
Date Received: 02/17/12
Matrix: Air
Reporting Units: ppmv

EPA 15/16

Lab No.:	D021702-05
Client Sample I.D.:	WHITESTREET. TD1
Date Sampled:	02/16/12
Date Analyzed:	02/17/12
QC Batch No.:	120217GC3A1
Analyst Initials:	VM
Dilution Factor:	1.0

ANALYTE	Result ppmv	RL ppmv
Hydrogen Sulfide	60	2.0
Carbonyl Sulfide	ND	0.20
Methyl Mercaptan	0.33	0.20
Ethyl Mercaptan	ND	0.20
Dimethyl Sulfide	0.67	0.20
Carbon Disulfide	ND	0.20
Dimethyl Disulfide	ND	0.20

ND = Not Detected (below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date 2-26-12

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

QC Batch No.: 120217GC3A1
Matrix: Air
Units: ppmv

QC for Sulfur Compounds by EPA 15/16

Lab No.:	Method Blank		LCS		LCSD			
Date Analyzed:	02/17/12		02/17/12		02/17/12			
Analyst Initials:	VM		VM		VM			
Datafile:	17feb004		17feb002		17feb003			
Dilution Factor:	1.0		1.0		1.0			
ANALYTE	Results	RL	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Hydrogen Sulfide	ND	0.20	86	70-130%	86	70-130%	0.3	<30
Carbonyl Sulfide	ND	0.20	88	70-130%	96	70-130%	8.3	<30
Methyl Mercaptan	ND	0.20	87	70-130%	85	70-130%	1.4	<30
Ethyl Mercaptan	ND	0.20	84	70-130%	87	70-130%	3.8	<30
Dimethyl Sulfide	ND	0.20	105	70-130%	102	70-130%	2.0	<30
Carbon Disulfide	ND	0.20	96	70-130%	92	70-130%	4.5	<30
Dimethyl Disulfide	ND	0.20	105	70-130%	96	70-130%	8.8	<30

ND = Not Detected (Below RL)
RL = Reporting Limit

Reviewed/Approved By: _____ Date: 2-26-12
Mark J. Johnson
Operations Manager

The cover letter is an integral part of this analytical report.

ATTACHMENT E

HISTORICAL LANDFILL GAS FLOW DATA

Historicaly Landfill Gas Data

Date	Phase I/II			Phase III			Total Gas System			
	Flared	End User	Total	Flared	End User	Total	Flared	End User	Total	Utilization
Jan-08	12,116	42,121	54,237	18,484	16,768	35,253	30,600	58,889	89,490	66%
Feb-08	9,428	42,075	51,503	12,117	17,883	30,000	21,545	59,958	81,503	74%
Mar-08	15,460	39,976	55,436	16,494	13,506	30,000	31,954	53,482	85,436	63%
Apr-08	5,694	49,784	55,478	19,734	9,934	29,668	25,428	59,718	85,146	70%
May-08	9,677	38,698	48,375	21,551	8,080	29,631	31,228	46,778	78,006	60%
Jun-08	10,297	37,753	48,050	28,852	2,836	31,688	39,149	40,589	79,738	51%
Jul-08	15,822	36,594	52,416	23,730	5,867	29,597	39,552	42,461	82,013	52%
Aug-08	20,525	29,101	49,626	16,857	11,150	28,007	37,382	40,251	77,633	52%
Sep-08	20,227	28,797	49,024	22,958	11,287	34,245	43,185	40,084	83,269	48%
Oct-08	22,809	34,930	57,739	30,500	7,433	37,933	53,309	42,363	95,672	44%
Nov-08	13,147	35,804	48,951	20,471	9,695	30,166	33,618	45,499	79,117	58%
Dec-08	26,451	37,319	63,770	26,859	8,443	35,302	53,310	45,762	99,072	46%
2008 Total	181,653	452,952	634,605	258,607	122,882	381,490	440,260	575,834	1,016,095	57%
Jan-09	11,145	45,340	56,485	28,380	4,494	32,874	39,525	49,834	89,359	56%
Feb-09	8,027	43,355	51,382	26,874	10,720	37,594	34,901	54,075	88,976	61%
Mar-09	12,387	45,262	57,649	37,433	12,416	49,849	49,820	57,678	107,498	54%
Apr-09	19,767	25,335	45,102	28,580	14,127	42,707	48,347	39,462	87,809	45%
May-09	15,750	30,702	46,452	46,362	9,733	56,095	62,112	40,435	102,547	39%
Jun-09	12,293	29,613	41,906	38,182	8,107	46,289	50,475	37,720	88,195	43%
Jul-09	10,777	28,791	39,568	40,465	4,100	44,565	51,242	32,891	84,133	39%
Aug-09	12,059	23,523	35,582	51,222	468	51,690	63,281	23,991	87,272	27%
Sep-09	15,580	3,720	19,300	54,751	1,186	55,937	70,331	4,906	75,237	7%
Oct-09	13,703	3,651	17,354	56,879	544	57,423	70,582	4,195	74,777	6%
Nov-09	17,014	21,247	38,261	66,271	0	66,271	83,285	21,247	104,532	20%
Dec-09	763	28,202	28,965	59,094	1,383	60,477	59,857	29,585	89,442	33%
2009 Total	149,265	328,741	478,006	534,493	67,278	601,771	683,758	396,019	1,079,777	37%
Jan-10	1,143	35,986	37,129	52,763	1,818	54,581	53,906	37,804	91,710	41%
Feb-10	1,495	31,923	33,418	60,387	0	60,387	61,882	31,923	93,805	34%
Mar-10	140	54,473	54,613	62,054	0	62,054	62,194	54,473	116,667	47%
Apr-10	2,271	41,232	43,503	66,831	0	66,831	69,102	41,232	110,334	37%
May-10	8,452	30,888	39,340	57,337	0	57,337	65,789	30,888	96,677	32%
Jun-10	13,211	42,831	56,042	70,725	0	70,725	83,936	42,831	126,767	34%
Jul-10	5,813	32,589	38,402	70,664	0	70,664	76,477	32,589	109,066	30%
Aug-10	21,386	35,491	56,877	72,800	0	72,800	94,186	35,491	129,677	27%
Sep-10	19,923	36,090	56,013	70,861	0	70,861	90,784	36,090	126,874	28%
Oct-10	21,497	30,546	52,043	69,094	0	69,094	90,591	30,546	121,137	25%
Nov-10	15,921	43,495	59,416	76,122	0	76,122	92,043	43,495	135,538	32%
Dec-10	6,265	51,871	58,136	69,551	0	69,551	75,816	51,871	127,687	41%
2010 Total	117,517	467,415	584,932	799,189	1,818	801,007	916,706	469,233	1,385,939	34%
Jan-11	4,252	67,716	71,968	60,590	0	60,590	64,842	67,716	132,558	51%
Feb-11	81	52,429	52,510	62,252	0	62,252	62,333	52,429	114,762	46%
Mar-11	1,173	53,268	54,441	71,208	0	71,208	72,381	53,268	125,649	42%
Apr-11	592	59,027	59,619	62,440	0	62,440	63,032	59,027	122,059	48%
May-11	4,097	39,680	43,777	64,957	0	64,957	69,054	39,680	108,734	36%
Jun-11	3,990	37,786	41,776	50,509	0	50,509	54,499	37,786	92,285	41%
Jul-11	8,512	34,943	43,455	35,003	0	35,003	43,515	34,943	78,458	45%
Aug-11	2,059	8,152	10,211	17,316	0	17,316	19,375	8,152	27,527	30%
Sep-11	12,408	27,902	40,310	35,418	0	35,418	47,826	27,902	75,728	37%
Oct-11	10,419	33,884	44,303	33,563	0	33,563	43,982	33,884	77,866	44%
Nov-11	14,407	33,898	48,305	42,698	0	42,698	57,105	33,898	91,003	37%
Dec-11	6,820	40,966	47,786	59,677	0	59,677	66,497	40,966	107,463	38%
2011 Total	68,810	489,651	558,461	595,631	0	595,631	664,441	489,651	1,154,092	42%
Jan-12	15,051	46,270	61,321	50,797	0	50,797	65,848	46,270	112,118	41%
Feb-12	1,388	53,010	54,398	45,166	0	45,166	46,554	53,010	99,564	53%
Mar-12	5,277	43,086	48,363	55,694	0	55,694	60,971	43,086	104,057	41%
Apr-12	13,906	34,091	47,997	51,384	0	51,384	65,290	34,091	99,381	34%
May-12	116	39,020	39,136	48,293	0	48,293	48,409	39,020	87,429	45%
Jun-12	1,609	37,974	39,583	47,918	0	47,918	49,527	37,974	87,501	43%
Jul-12	5,772	37,431	43,203	46,300	0	46,300	52,072	37,431	89,503	42%
Aug-12	10,891	35,536	46,427	31,787	0	31,787	42,678	35,536	78,214	45%
Sep-12	1,160	36,650	37,810	38,785	0	38,785	39,945	36,650	76,595	48%
Oct-12	81	43,956	44,037	55,412	0	55,412	55,493	43,956	99,449	44%
Nov-12										
Dec-12										
2012 Total	55,251	407,024	462,275	471,536	0	471,536	526,787	407,024	933,811	44%

Note: LFG volumes are expressed as standard cubic feet per minute (scfm) / 1,000

ATTACHMENT F

HISTORICAL TZ OSBORNE AND NORTH
BUFFALO ELECTRICITY USAGE

Water Resources - Historical Electricity Useage

TZ Osborne

Date	Electricity (kWh)	Demand (kW)
07/09	2,879,000	4,906
08/09	3,038,000	4,711
09/09	3,059,000	4,753
10/09	3,041,000	5,268
11/09	3,092,000	4,879
12/09	2,976,000	5,532
01/10	2,928,000	4,696
02/10	3,076,000	5,055
03/10	2,954,000	5,071
04/10	3,143,000	5,272
05/10	3,265,000	5,388
06/10	3,183,000	5,124
Annual	**36,634,000**	**5,532**

Date	Electricity (kWh)	Demand (kW)
07/10	3,231,000	5,392
08/10	3,128,000	5,695
09/10	3,238,000	5,565
10/10	3,131,000	5,804
11/10	3,112,000	4,903
12/10	3,065,000	5,311
01/11	3,203,000	5,170
02/11	3,274,000	5,276
03/11	2,999,000	5,185
04/11	3,376,000	5,479
05/11	3,121,000	5,144
06/11	3,151,000	5,055
Annual	**38,029,000**	**5,804**

Date	Electricity (kWh)	Demand (kW)
07/11	2,907,000	5,181
08/11	3,193,000	5,434
09/11	3,256,000	5,306
10/11	3,225,000	5,368
11/11	3,278,000	5,599
12/11	3,177,000	5,383
01/12	3,035,000	5,239
02/12	3,229,000	5,295
03/12	3,105,000	5,215
04/12	3,060,000	5,037
05/12	3,011,000	5,041
06/12	2,998,000	4,921
Annual	**37,474,000**	**5,599**

North Buffalo

Date	Electricity (kWh)	Demand (kW)
07/09	722,631	864
08/09	678,631	824
09/09	591,431	792
10/09	685,031	840
11/09	661,831	1,504
12/09	517,831	832
01/10	512,231	936
02/10	412,231	832
03/10	432,956	784
04/10	560,231	856
05/10	441,031	896
06/10	452,231	760
Annual	**6,668,297**	**1,504**

Date	Electricity (kWh)	Demand (kW)
07/10	419,356	760
08/10	431,356	816
09/10	433,756	792
10/10	678,631	1,272
11/10	389,756	784
12/10	743,431	768
01/11	743,431	768
02/11	610,631	784
03/11	601,031	848
04/11	657,831	1,808
05/11	643,431	984
06/11	763,431	840
Annual	**7,116,072**	**1,808**

Date	Electricity (kWh)	Demand (kW)
07/11	707,431	792
08/11	658,631	856
09/11	682,631	848
10/11	1,250,631	1,152
11/11	1,098,631	1,424
12/11	1,209,831	856
01/12	818,631	872
02/12	649,031	824
03/12	713,031	864
04/12	685,831	848
05/12	650,631	856
06/12	616,231	808
Annual	**9,741,172**	**1,424**