TERRAquest
ENVIRONMENTAL CONSULTANTS, P.C.

September 3, 2008

Ms. Jaclynne Drummond
Division of Waste Management - Solid Waste Section
401 Oberlin Road, Suite 150
Raleigh, NC 27605

Re: Methane Monitoring Status Report
Lee County Landfill - Sanford, NC
NCDWM-Solid Waste Section Permit # 53-01

Dear Ms. Drummond:

Terraquest Environmental Consultants, P.C. is hereby reporting the status of methane monitoring at the Lee County Landfill. In accordance with the approved methane monitoring plan, wells with vapors exceeding the lower explosive limit are monitored on a bi-monthly basis. This status report details the latest monitoring event. The site location, vicinity, and layout are displayed on the attached Figures 1, 2, and 3, respectively. Figure 4 provides a closer view of the identified LEL violation area. Methane monitoring results are provided on the attached Table 1, and an NCDWM-SW Environmental Monitoring Reporting Form is also attached.

On August 29, 2008, Terraquest personnel utilized a Q-RAE multigas monitor to check the concentration of explosive vapors as methane in monitoring points M8, 27, 28, 29, 36, 37, and 38. As shown on Table 1, LEL violations were noted in M8, 29, 37, and 38. Note that those wells have been previously modified to act as venting points. Also note that the LEL violations are lower in wells M28 and M36 than they were previously when the water table was higher in those wells.

Terraquest recommends the continued bi-monthly monitoring of the LEL violation wells to track the remedial effectiveness of those wells converted to venting points. While the extent of LEL violations to the east of M38 is still undefined, the lack of human presence or buildings/structures capable of allowing the buildup of explosive gases lowers the risk of the LEL violation vapors in that area.

Feel free to call or email me with any questions or comments you may have. Thank you.

Sincerely,

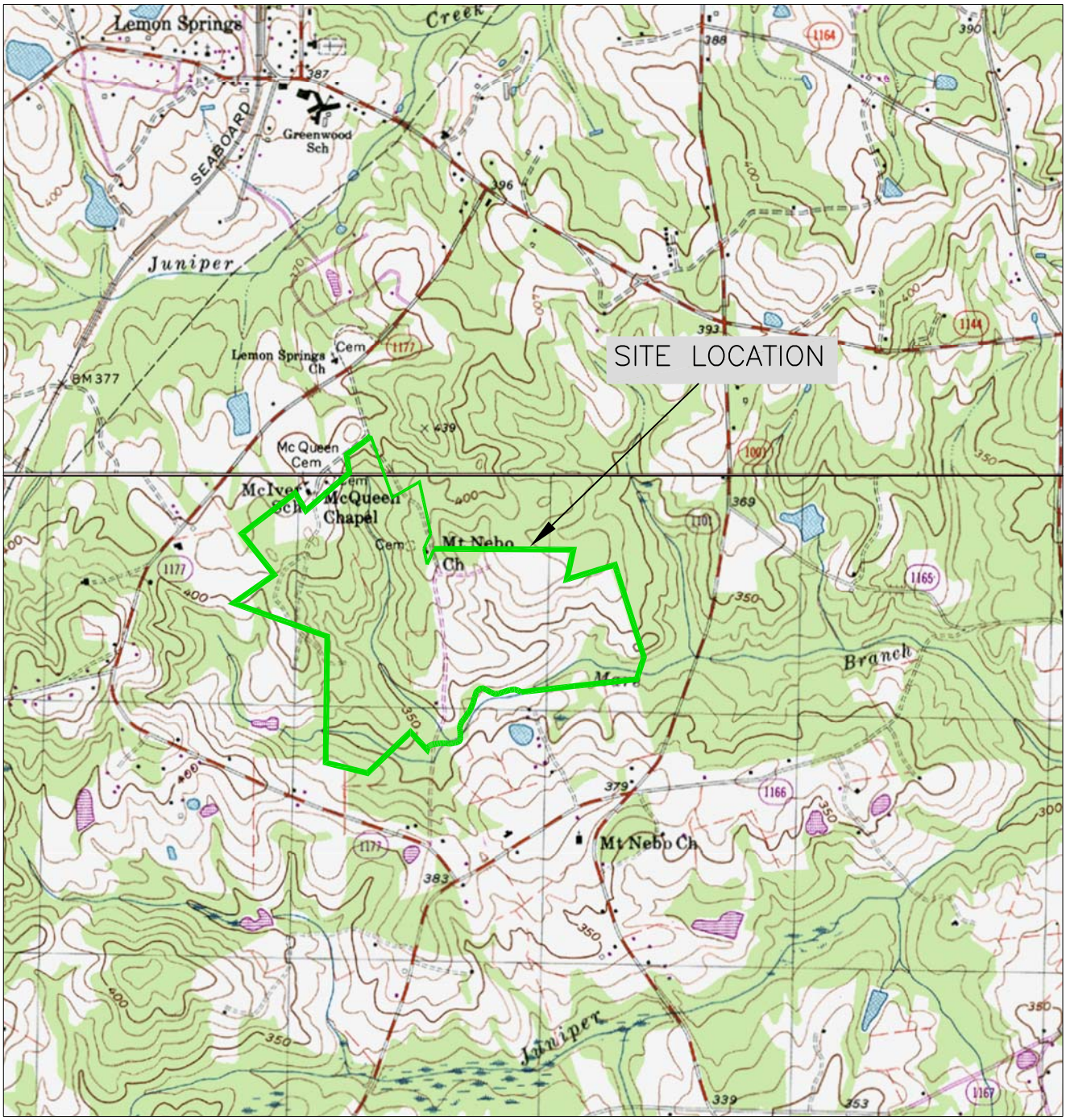
TERRAQUEST ENVIRONMENTAL CONSULTANTS, P.C.

Ryan D. Kerins
Project Manager

Attachments: Figure 1 – Site Location Map, Figure 2 – Site Vicinity Map, Figure 3 – Site Layout Map, Figure 4 – LEL Violation Area
Table 1 – Methane Monitoring
NCDWM-SW Environmental Monitoring Reporting Form

cc: Joe Cherry – Lee County Public Works Department

100 East Ruffin Street, Mebane, North Carolina 27302
Telephone (919) 563-9091 ·Facsimile (919) 563-9095
www.terraquestpc.com




MAP SOURCE: USGS 7.5 MINUTE TOPOGRAPHICS – SANFORD AND MURCHISONTOWN, NC

GRAPHIC SCALE

0' 2000' 4000'

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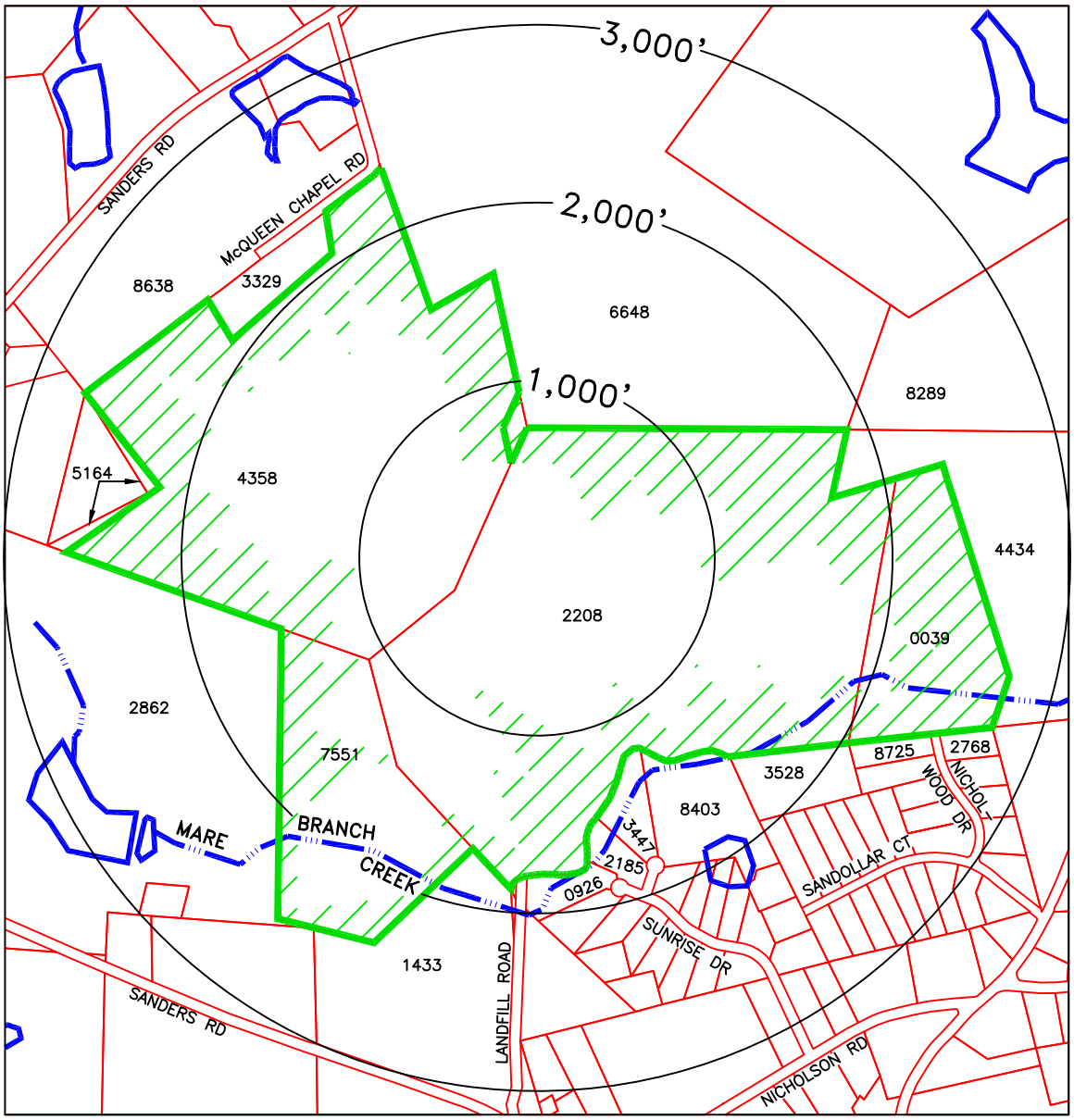
# SITE LOCATION MAP

LEE COUNTY LANDFILL
331 LANDFILL ROAD
LEE COUNTY, NORTH CAROLINA

LEE COUNTY PUBLIC WORKS — SANFORD, NC

| | | | | | |
|---|---|---|---|---|---|
| PROJECT NO. | 02296 | DRAWN BY: | RDK | DATE: | 9/3/08 |
| SCALE: | 1" = 2000' | CHECKED BY: | JRG/MJB | FIGURE NO. | 1 |




## LEGEND

- LANDFILL PROPERTY BOUNDARY
- PARCEL BOUNDARIES
- ### DISTANCE FROM LANDFILL CENTER
- SURFACE WATER BODY
- 2106 TAX PARCEL ID (SEE TABLE 1)

GRAPHIC SCALE (1" = 1,000')

0' 500' 1,000' 2,000'

(NOTE: MAP ADAPTED FROM INFORMATION PROVIDED BY THE LEE COUNTY DEPARTMENT OF STRATEGIC SERVICES)

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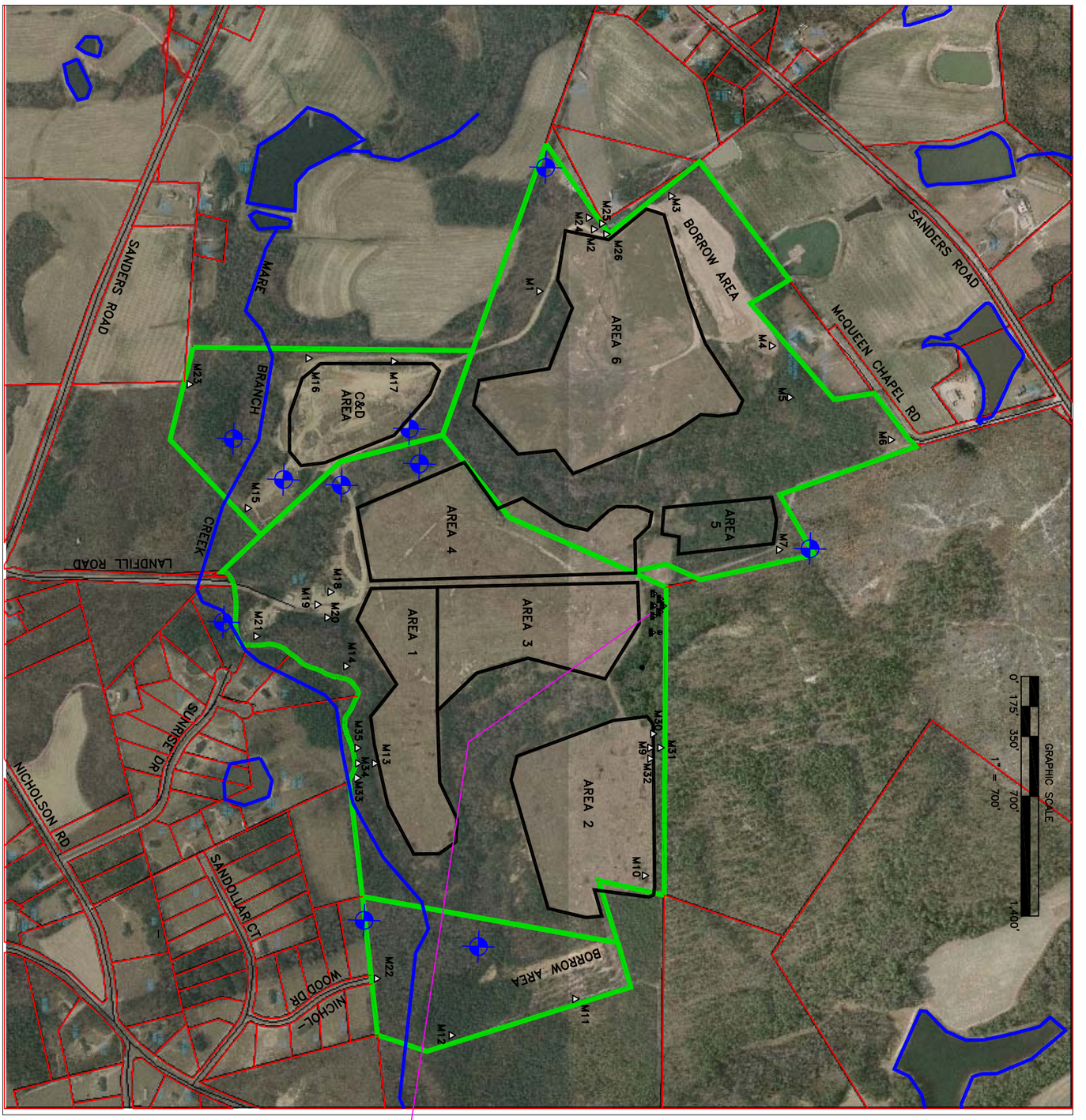
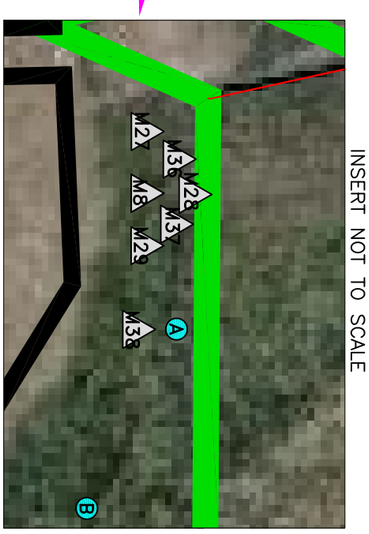
# SITE VICINITY MAP

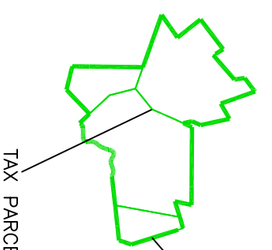
LEE COUNTY LANDFILL
331 LANDFILL ROAD
SANFORD, LEE COUNTY, NC 27332

| | | | | | |
|---|---|---|---|---|---|
| LKEE COUNTY PUBLIC WORKS | | | | | SANFORD, NC |
| PROJECT NO. | 02296 | DRAWN BY: | RDK | DATE: | 9/3/08 |
| SCALE: | 1" = 1,000' | CHECKED BY: | MJB | FIGURE NO. | 2 |




INSERT NOT TO SCALE




## LEGEND

- △ APPROVED METHANE MONITORING WELL
- Ⓐ 7/16/08 INVESTIGATIVE BORING
- AREAS 1 – 6 CLOSED MSW
- C&D AREA STILL ACTIVE

(NOTE: MAP ADAPTED FROM INFORMATION PROVIDED BY THE LEE COUNTY DEPARTMENT OF STRATEGIC SERVICES)

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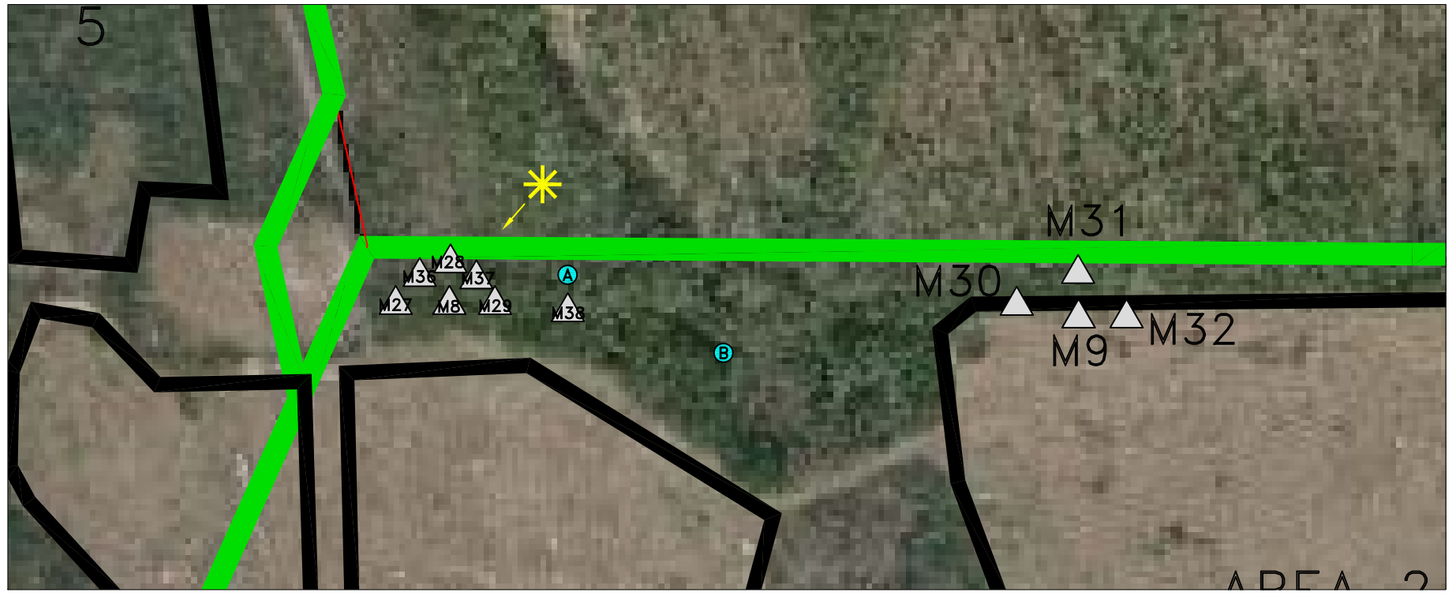
# SITE LAYOUT MAP – AERIAL VIEW

LEE COUNTY LANDFILL
SANFORD, LEE COUNTY, NC

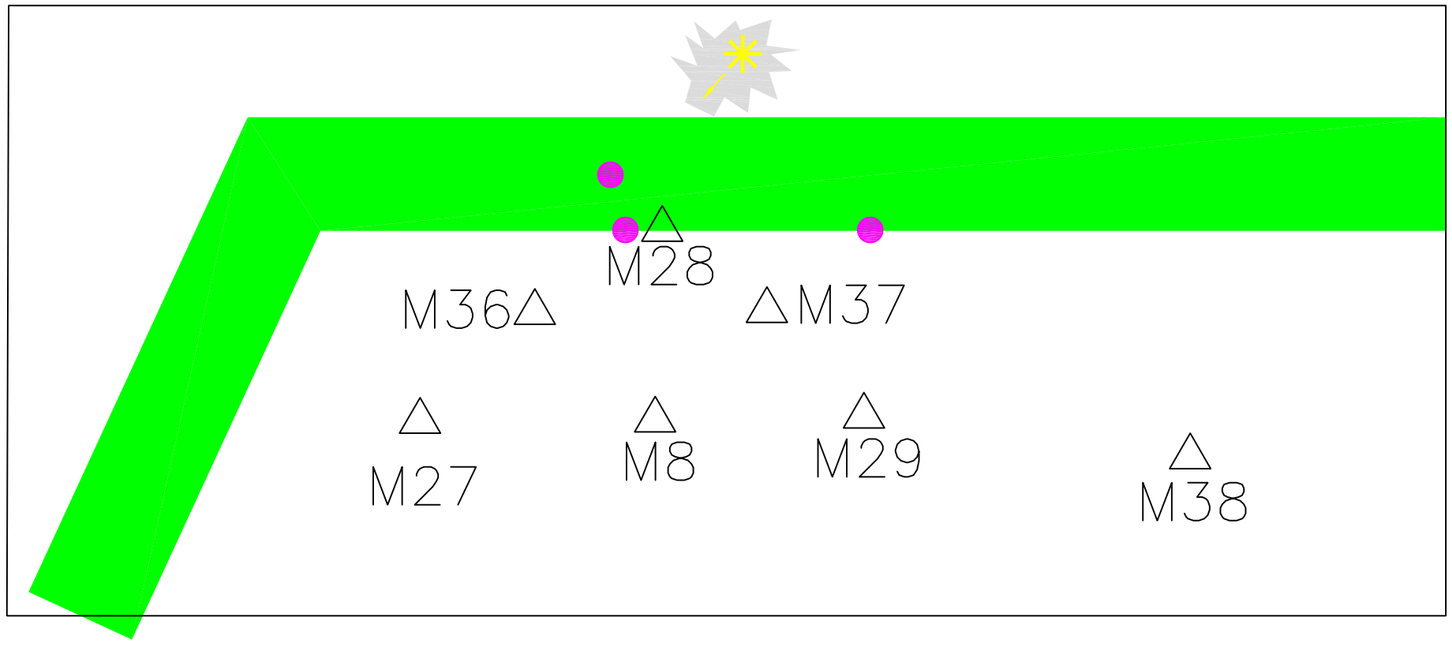
LEE COUNTY PUBLIC WORKS — SANFORD, NC

| | | | | | |
|---|---|---|---|---|---|
| PROJECT NO: | 02296 | CHECKED BY: | MJB | FIGURE NO. | 3 |
| SCALE: | 1" = 700' | DRAWN BY: | RDK | DATE: | 9/3/08 |

SCALE: 1" = 200'

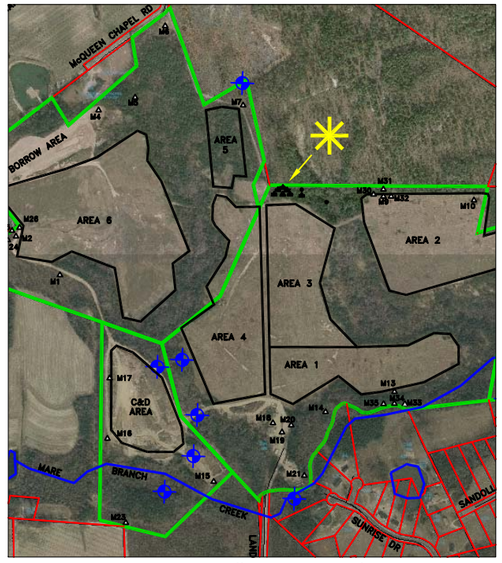



SCALE: 1" = 50'




## LEGEND

- △ APPROVED METHANE MONITORING WELL
- Ⓐ 7/16/08 LEL INVESTIGATIVE BORING
- ● 7/16/08 WASTE INVESTIGATIVE BORING




SCALE: 1" = 1,250'

(NOTE: MAP ADAPTED FROM INFORMATION PROVIDED BY THE LEE COUNTY DEPARTMENT OF STRATEGIC SERVICES)

# LEL VIOLATION AREA

LEE COUNTY LANDFILL
SANFORD, LEE COUNTY, NC

LEE COUNTY PUBLIC WORKS
SANFORD, NC

| | | | |
|---|---|---|---|
| PROJECT NO: | 02296 | CHECKED BY: | MJB |
| SCALE: | AS SHOWN | DRAWN BY: | RDK |

FIGURE NO. 4
DATE: 9/3/08

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Table 1 METHANE MONITORING

Date: 9/3/08 Facility Name: Lee County Landfill

| FACILITY PERMIT | WELL ID | CAS Number | SWS ID | PARAMETER | RESULT | UNITS | COLLECT DATE |
|---|---|---|---|---|---|---|---|
| 53-01 | SITE | SW325 | 325 | ambient temperature | 23.0 | °C | 10:00 8/29/08 |
| 53-01 | SITE | | | barometric pressure | 29.96 | "Hg | 10:00 8/29/08 |
| 53-01 | SITE | | | barometric pressure | 1,014.4 | hPA | 10:00 8/29/08 |
| 53-01 | M8 | SW329 | 329 | landfill (methane) gas - LEL meter reading | 100 | %LEL | 8/29/2008 |
| 53-01 | M8 | SW338 | 338 | hydrogen sulfide gas - LEL reading | 124 | ppm | 8/29/2008 |
| 53-01 | M8 | SW318 | 318 | depth to water | 12.28 | feet | 8/29/2008 |
| 53-01 | M27 | SW329 | 329 | landfill (methane) gas - LEL meter reading | 0 | %LEL | 8/29/2008 |
| 53-01 | M27 | SW338 | 338 | hydrogen sulfide gas - LEL reading | 0 | ppm | 8/29/2008 |
| 53-01 | M27 | SW318 | 318 | depth to water | well dry | feet | 8/29/2008 |
| 53-01 | M28 | SW329 | 329 | landfill (methane) gas - LEL meter reading | 0 | %LEL | 8/29/2008 |
| 53-01 | M28 | SW338 | 338 | hydrogen sulfide gas - LEL reading | 0 | ppm | 8/29/2008 |
| 53-01 | M28 | SW318 | 318 | depth to water | 10.26 | feet | 8/29/2008 |
| 53-01 | M29 | SW329 | 329 | landfill (methane) gas - LEL meter reading | 100 | %LEL | 8/29/2008 |
| 53-01 | M29 | SW338 | 338 | hydrogen sulfide gas - LEL reading | 21 | ppm | 8/29/2008 |
| 53-01 | M29 | SW318 | 318 | depth to water | 8.31 | feet | 8/29/2008 |
| 53-01 | M36 | SW329 | 329 | landfill (methane) gas - LEL meter reading | 0 | %LEL | 8/29/2008 |
| 53-01 | M36 | SW338 | 338 | hydrogen sulfide gas - LEL reading | 0 | ppm | 8/29/2008 |
| 53-01 | M36 | SW318 | 318 | depth to water | well dry | feet | 8/29/2008 |
| 53-01 | M37 | SW329 | 329 | landfill (methane) gas - LEL meter reading | 100 | %LEL | 8/29/2008 |
| 53-01 | M37 | SW338 | 338 | hydrogen sulfide gas - LEL reading | 0 | ppm | 8/29/2008 |
| 53-01 | M37 | SW318 | 318 | depth to water | well dry | feet | 8/29/2008 |
| 53-01 | M38 | SW329 | 329 | landfill (methane) gas - LEL meter reading | 100 | %LEL | 8/29/2008 |
| 53-01 | M38 | SW338 | 338 | hydrogen sulfide gas - LEL reading | 138 | ppm | 8/29/2008 |
| 53-01 | M38 | SW318 | 318 | depth to water | 9.97 | feet | 8/29/2008 |

DENR USE ONLY: ☐ Paper Report ☐ Electronic Data - Email CD (data loaded: Yes / No ) Doc/Event #:

NC DENR
Division of Waste Management - Solid Waste

# Environmental Monitoring Reporting Form

**Notice:** This form and any information attached to it are "Public Records" as defined in NC General Statute 132-1. As such, these documents are available for inspection and examination by any person upon request (NC General Statute 132-6).

## Instructions:

- **Prepare one form for each individually monitored unit.**
- **Please type or print legibly.**
- Attach a notification table with values that attain or exceed NC 2L groundwater standards or NC 2B surface water standards. The notification must include a preliminary analysis of the cause and significance of each value. (e.g. naturally occurring, off-site source, pre-existing condition, etc.).
- Attach a notification table of any groundwater or surface water values that equal or exceed the reporting limits.
- Attach a notification table of any methane gas values that attain or exceed explosive gas levels. This includes any structures on or nearby the facility (NCAC 13B .1629 (4)(a)(i).
- In accordance with NC General Statutes Chapter 89C and 89E and NC Solid Waste Management Rules 15A NCAC 13B, be sure to affix a seal to the bottom of this page, when applicable.
- Send the original signed and sealed form, any tables, and Electronic Data Deliverable to: Compliance Unit, NCDENR-DWM, Solid Waste Section, 1646 Mail Service Center, Raleigh, NC 27699-1646.

## Solid Waste Monitoring Data Submittal Information

**Name of entity submitting data (laboratory, consultant, facility owner):**

TerraQuest Environmental Consultants, P.C.

**Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:**

Name: Ryan Kerins Phone: (919) 563-9091

E-mail: rdkerins@terraquestpc.com

| Facility name: | Facility Address: | Facility Permit # | NC Landfill Rule: (.0500 or .1600) | Actual sampling dates (e.g., October 20-24, 2006) |
|---|---|---|---|---|
| Lee County Landfill | 331 Landfill Rd, Sanford, NC 27332 | 53-01 | .1600 | August 29, 2008 |

**Environmental Status: (Check all that apply)**

☐ Initial/Background Monitoring ☒ Detection Monitoring ☐ Assessment Monitoring ☐ Corrective Action

**Type of data submitted: (Check all that apply)**

☐ Groundwater monitoring data from monitoring wells
☐ Groundwater monitoring data from private water supply wells
☐ Leachate monitoring data
☐ Surface water monitoring data
☒ Methane gas monitoring data
☐ Corrective action data (specify) _____
☐ Other(specify)

**Notification attached?**

☐ No. No groundwater or surface water standards were exceeded.
☐ Yes, a notification of values exceeding a groundwater or surface water standard is attached. It includes a list of groundwater and surface water monitoring points, dates, analytical values, NC 2L groundwater standard, NC 2B surface water standard or NC Solid Waste GWPS and preliminary analysis of the cause and significance of any concentration.
☒ Yes, a notification of values exceeding an explosive methane gas limit is attached. It includes the methane monitoring points, dates, sample values and explosive methane gas limits.

## Certification

**To the best of my knowledge, the information reported and statements made on this data submittal and attachments are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significance of concentrations exceeding groundwater standards. I am aware that there are significant penalties for making any false statement, representation, or certification including the possibility of a fine and imprisonment.**

| Ryan Kerins | Project Manager | (919) 563-9091 |
|---|---|---|
| Facility Representative Name (Print) | Title | (Area Code) Telephone Number |
| Signature | 9/3/08 Date | Affix NC Licensed/ Professional Geologist/Engineer Seal here: |

Revised 01/2007