SCS ENGINEERS

December 2010 Landfill Fire Mitigation Summary Report Trail Ridge Landfill

Submitted to:

Florida Department of Environmental Protection
Northeast District Office
7825 Baymeadows Way
Suite B-200
Jacksonville, Florida 32256-7590

Submitted by:

Waste Management Inc. of Florida
Trail Ridge Landfill
5110 U.S. Highway 301 South
Baldwin, Florida 32234

Prepared by:

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Florida Board of Professional Engineers
Certification No. 00004892

December 22, 2010
File No. 09209058.02

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12/22/10

Lindsey Kennelly, P.E.
Florida Registration No. 64771

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INTRODUCTION

On November 29, 2010, a subsurface fire was discovered on the south-western portion of the Trail Ridge Landfill, located in Baldwin, Florida. The fire was situated in an inactive area on the first terrace, above the liner anchor trench. The fire did not originate from a hot load. Refer to Attachment 1 for a figure of the facility that delineates the area of the fire. The fire was extinguished and notification was submitted to the Florida Department of Environmental Protection (FDEP) on November 30, 2010 in accordance with specific condition number 32 of the solid waste permit (0013493-017-SO).

On December 6, 2010, a report with the proposed fire mitigation plan was submitted to FDEP. A revision to the plan updating the status of the investigation was submitted to FDEP on December 8, 2010.

The purpose of this report is to provide FDEP with documentation of actions taken to effectively respond to the landfill fire, summarize the investigations performed to identify the source of the fire, and to address the condition of the bottom liner system in the area of the fire.

SITE FEATURES

The structural features at Trail Ridge Landfill are as follows:

- Intermediate cover system: Two foot thick soil composed of clayey soil.
- Bottom liner system: Double liner composed of 60-mil high density polyethylene (HDPE) geomembrane with a two-foot thick sand layer.
- Gas collection and control system: Includes vertical extraction wells, header conveyance system, and condensate management.

INITIAL RESPONSE

In accordance with the facilities operations plan, dated February 27, 2009, once the fire was discovered, the following actions were taken on November 29, 2010:

- The landfill gas collection system was immediately shutdown.
- All unnecessary equipment and personnel was removed from the immediate area.
- The affected area was observed to have visible subsidence and smoke. Approximately 32,000 total gallons of water was administered to the area via a tanker truck.
- Clayey cover soil was placed and compacted with track equipment to bury the fire and block air intrusion into the waste that could stoke the subsurface fire. Areas included those with subsidence and open cracks/fissures. Approximately 180 cubic yards (CY) of soil was added and compacted to the area to reduce oxygen infiltration.

- Additional details of the initial remedial actions implemented are included in Attachment 2.

CONFIRMATION OF FIRE CONTAINMENT

Following the initial response, confirmation of fire containment was conducted. The fire was considered contained based on the following conditions:

- No evidence of smoke, open flame, or new subsidence and/or surface fissures for 72 hours.

- Collected measurements from the wellheads of the adjacent, closed extraction wells, and checked the following:

  - Static pressure
  - Temperature
  - Methane (CH_4)
  - Carbon monoxide (CO)
  - Oxygen (O_2)
  - Carbon dioxide (CO_2)

  Measurements where compared to readings taken in a "normal" period prior to the fire to determine if the subsurface fire had been extinguished. Refer to Attachment 3 for the wellhead data.

- Isolated portions of the gas collection and control system adjacent to the affected area and restarted the system. Wellhead measurements (i.e., static pressure, temperature, CH_4, CO, O_2, CO_2) have been taken periodically to verify conditions.

The investigation of the fire source did not proceed until all visible smoke, fire and subsidence had abated.

INVESTIGATION OF SOURCE

Preparation

The investigation of the fire source was designed and executed on the basis of the operator's assessment of the key factors explained in the following. Landfill fires typically occur as a result of one of two possible causes:

- Receipt of a "hot" load that causes ignition of the waste mixed in with it. Hot loads are typically smoldering ashes or material(s) experiencing a chemical reaction. The fire was located in an inactive area of the landfill; therefore a hot load was determined not to be the cause of the fire.

- High-temperature biological decomposition combined with the intrusion of air into the waste mass results in the waste heating faster than it can shed the heat and combusting.

The following factors were considered in the design of the investigation to determine the fire source:

- Prior construction in the affected area, either with the gas system or the waste and cover system that could have resulted in substandard construction or latent damage.
- Location within the landfill.
- The estimated depth of the fire and relation to the known depth to the bottom liner system.
- Wellhead readings taken prior to and after the fire was detected. Wellhead readings can be found in Attachment 3.
- Location of smoke, fire, and subsidence.

Identified Source

The source of the fire has been determined to be a compromised lateral gas collection pipe. The damaged lateral provided a short-circuit path for air to be drawn through the cover soil and into the waste mass. The short-circuiting air resulted in the waste over-heating and combusting.

On December 8, 2010, the following steps were taken to identify the source of the fire:

- The lateral coupling was excavated to determine if the connection had sheared. The coupling was intact and not found to be compromised.
- A sampling port was then installed on the lateral line in order to sample the landfill gas within the lateral.
- Vacuum was slowly applied to the lateral and landfill gas was monitored at timed intervals to determine if air infiltration was occurring with increased vacuum. Table 1 demonstrates the change in the landfill gas composition at the timed intervals.

Table 1. Lateral Troubleshooting Data

Time	CH4 % by Vol.	CO2 % by Vol.	O2 % by Vol.	Balance Gas % by Vol.	Pressure inch w.c.	CO ppm	Temperature °F
14:30	55	36	2.7	6.3	0.3	5	50
14:45	24.8	18	11.9	45.3	-10.4	5	60
14:55	3.1	5.2	19.8	71.9	-29.3	--	60

As vacuum was applied to the lateral, the presence of oxygen increased. Furthermore, the increased vacuum resulted in an increase in the ratio of balance gas to oxygen; a ratio of 4:1 indicates the presence of ambient air.

- The lateral was then identified as compromised and was therefore cut and abandoned with a butt cap fused to lateral segment that will remain active.

Once the source of the fire was identified, the gas collection system was restarted and the well control valves were slowly opened to allow the system to stabilize. Wellhead data and carbon monoxide readings are included in Attachment 3.

BOTTOM LINER INTEGRITY ASSESSMENT

Site Details

Based on record drawings covering the affected area, specific details relevant to the bottom liner integrity assessment include:

- The affected area is close to a bench in the slope and thus accessible to vehicles.
- The top of the protective sand layer over the liner is approximately 10 to 12 feet below land surface.

Method

Due to the shallow waste depth in the affected area, mass excavation of the waste was proposed. Workers and an excavator removed the charred waste in order to inspect the liner system.

Excavation of the affected area was performed on Thursday, December 9, 2010 under the observation of FDEP personnel. All excavation activities were monitored and directed by the operator having a full-time inspector at the excavation site. The plan of action was as follows:

- Flagging was deemed not necessary as no conduits exist in the immediate area, including gas collection and discharge pipes, gas condensate discharge lines, and leachate collection pipes, and cleanouts.

- LFG collection was halted in the immediate vicinity of the excavation. Gas composition readings were taken at collection points in the vicinity of the affected area. Attachment 3 contains the readings at the potentially affected locations.

- For documentation purposes and regulatory inspection, representative samples of waste were laid out and the depth at which the sample came from noted on a tarpaulin near the work area.

- The initial excavation was constructed through the waste in the approximate center of the affected area, down into the first 6 inches of the protective sand layer.

- Visual inspection of the excavated materials yielded approximately 7 feet of clayey soils with charred materials ranging from 8 to 10 feet below ground surface. The subsequent 6 inches of unburned solid waste, and finally the top of the 2 feet of protective sand layer displayed no signs of charring, melting, or other signs of exposure to high temperatures associated with a subsurface fire. Therefore, it was determined that the liner below was unlikely damaged by the fire.

Table 2. Waste Depth Characterization Log

Time	Approximate Depth (ft)	Temperature (°F)	Description
9:18	0	28	Dirt/Clay
9:20	1	48	Dirt/Clay
9:25	2	76	Dirt/Clay
9:28	4	80	Dirt/Clay/Sod
9:30	5	86	Dirt/Clay
9:38	6-7	110	Dirt/Clay
9:45	8-9	120	Dirt/Charred Material
9:50	9-10	120	Dirt/Charred Material
10:00	10-12	114	Protective Sand Layer

- This determination was approved by onsite FDEP personnel and further excavation to the bottom liner was deemed unnecessary. Attachment 4 contains correspondence from FDEP confirming the absence of damage to the protective sand layer and bottom liner. The FDEP correspondence also included approval of the cessation of excavation activities in the affected area.

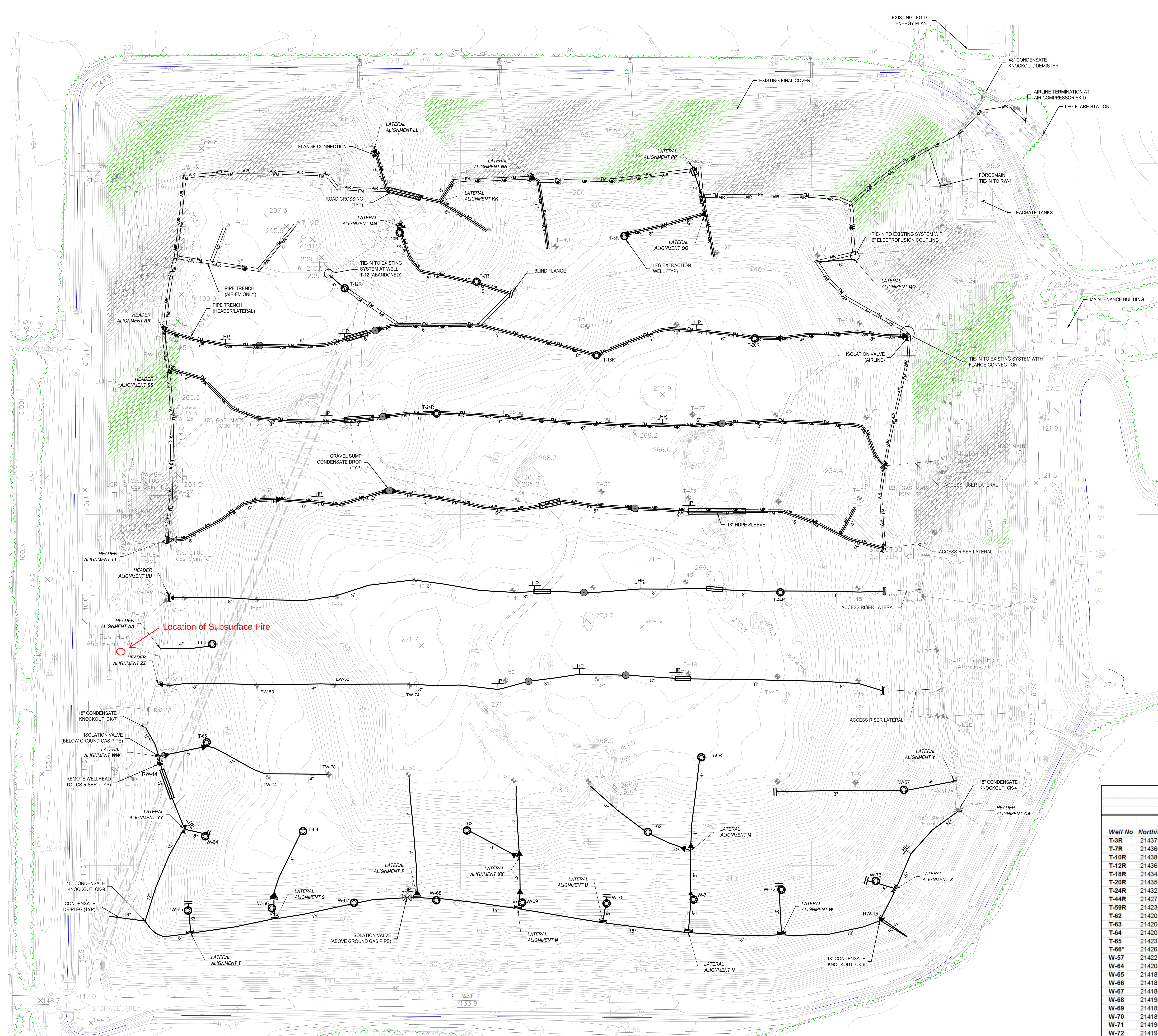
- Photographs were taken to document the condition of the excavated materials and the sand layer. The photographic log of the excavation is included as Attachment 5.

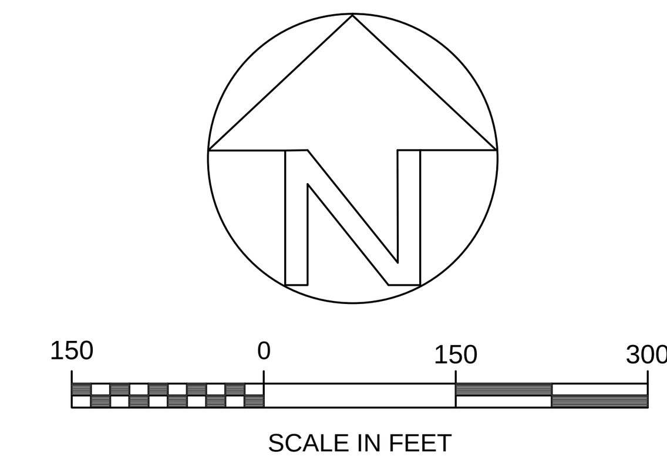
- The excavation was then backfilled and compacted and the LFG collection system in the area was brought back online.

A daily log of field activities associated with the mitigation, investigation and damage assessment of the subsurface fire at Trail Ridge Landfill was kept and is included with this report as Attachment 6.

ATTACHMENT 1

FACILITY FIGURE





GENERAL NOTES:

1. EXISTING GROUND SURFACE TOPOGRAPHIC CONTOURS ARE FROM AN AERIAL SURVEY BY SOUTHERN RESOURCES MAPPING CORPORATION, DATED FEBRUARY 16, 2010.
2. EXISTING GAS SYSTEM PRIOR CONSTRUCTION AS-BUILT INFORMATION FROM DIGITAL FILES BY HAROLD G. EVERETT JR., DATED SEPTEMBER 2001 AND APRIL 2006.
3. ACCESS RISER LATERAL AS-BUILT SURVEY DATA WERE NOT AVAILABLE AT THE TIME OF PLAN PRODUCTION. ALIGNMENTS SHOWN ARE APPROXIMATED BASED ON THE SURVEYED ENDPOINTS OF THE LATERAL ALIGNMENTS AND KNOWN LOCATIONS OF EXISTING VALVES.

LEGEND:

- 210 — EXISTING GROUND SURFACE CONTOUR
- EXTRACTION WELL (PRIOR CONSTRUCTION)
- HEADER / LATERAL (PRIOR CONSTRUCTION)
- EXTRACTION WELL (PHASE 4 CONSTRUCTION)
- HEADER / LATERAL (PHASE 4 CONSTRUCTION)
- REMOTE WELLHEAD
- HP — HIGH POINT IN HEADER PIPE
- GRAVEL SUMP CONDENSATE DROP
- ISOLATION VALVE
- FLANGE CONNECTION
- BLIND FLANGE
- REDUCER

TRAIL RIDGE LANDFILL
PHASE 4 EXPANSION AND REMEDIATION
GAS EXTRACTION WELL SCHEDULE

Well No	Northing	Easting	Surface Elev (ft)	Sta Grid North	Sta Grid East	Base Grade Elev (ft)	Well Depth (ft)	Depth off Base (ft buffer)	Casing Stickup (ft)	Below Grade Slotted Pipe (ft)	Below Grade Solid Pipe (ft)
T-3R	2143793.55	326467.08	227.1	9560.75	11526.93	142	70	10	4	25	45
T-7R	2143663.15	326045.60	200.8	9426.84	11114.44	143	48	10	4	15	33
T-10R	2143802.75	325826.38	177.8	9564.60	10886.17	147	26	5	4	15	11
T-12R	2143644.48	325669.48	210.3	9404.96	10730.62	146	54	10	4	25	29
T-18R	2143453.45	326387.30	252.0	9220.00	11450.00	144	92	10	4	23	69
T-20R	2143501.65	326838.42	258.4	9271.96	11900.69	144	100	14	4	30	70
T-24R	2143287.71	325931.61	244.8	9050.38	10995.69	146	89	10	4	30	59
T-44R	2142777.98	326911.39	259.2	8548.93	11979.72	136	100	23	4	25	75
T-59R	2142307.94	326686.04	266.5	8077.03	11758.30	138	100	29	4	25	75
T-62	2142095.16	326533.83	237.7	7862.96	11607.76	139	89	10	4	25	64
T-63	2142099.52	326018.09	241.8	7863.02	11092.11	144	86	10	4	25	61
T-64	2142097.28	325550.81	228.4	7856.88	10624.87	148	70	10	4	25	45
T-65	2142350.74	325276.30	201.9	8107.95	10348.41	152	40	10	4	25	15
T-66*	2142630.58	325292.29	204.7	8388.10	10361.83	153	42	10	9	20	17
W-57	2142215.35	327263.34	195.6	7989.26	12336.35	132	54	10	6	25	29
W-64	2142082.87	325272.14	208.0	7838.71	10302.52	150	48	10	6	25	23
W-65	2141871.39	325222.80	199.2	7628.00	10298.34	148	41	10	6	20	21
W-66	2141878.45	325461.73	201.5	7637.32	10537.64	147	45	10	6	20	25
W-67	2141893.53	325696.32	203.6	7654.33	10771.82	144	50	10	6	22	28
W-68	2141900.66	325930.80	202.5	7663.59	11006.23	143	50	10	6	22	28
W-69	2141894.02	326175.74	199.8	7658.86	11251.48	142	48	10	6	22	26
W-70	2141891.52	326416.05	199.1	7658.37	11491.80	139	50	10	6	22	28
W-71	2141902.50	326664.25	201.1	7671.41	11739.90	137	54	10	6	25	29
W-72	2141930.85	326914.40	198.2	7701.55	11989.73	134	54	10	6	25	29
W-73	2141955.76	327183.22	181.6	7729.16	12258.06	132	40	10	6	20	20
						Total	1540				

** Extraction well T-66 was drilled to a depth 42 feet. Due to the amount of liquid encountered during drilling the pipe casing was offset five feet from the bottom of the boring to prevent the well from silting in.*

Figure 1. Site Plan, Trail Ridge Landfill, Baldwin, Florida

PREPARED BY:
aquaterra engineering
A Terracon COMPANY
Aquaterra Engineering, LLC
240 Heritage Walk • Woodstock, GA 30188
Phone: 770.924.9799 • Fax: 770.924.7866

PREPARED FOR:
WASTE MANAGEMENT
WASTE MANAGEMENT INC, OF FLORIDA
6303 DALISA ROAD
MILTON, FL 32583
(850) 623-4302

REVISIONS:

#	BY	DATE	DESCRIPTION
0	RCI	07/26/10	FINAL DRAFT

DRAFTED BY: RCI / RLL / EJW
APPROVED BY: JAG

LANDFILL GAS COLLECTION SYSTEM

AS-BUILT RECORD DRAWINGS
GAS COLLECTION & CONTROL SYSTEM EXPANSION - PHASE 4
TRAIL RIDGE LANDFILL - BALDWIN, FLORIDA

PROJECT NUMBER EJ097464
SHEET NUMBER 1

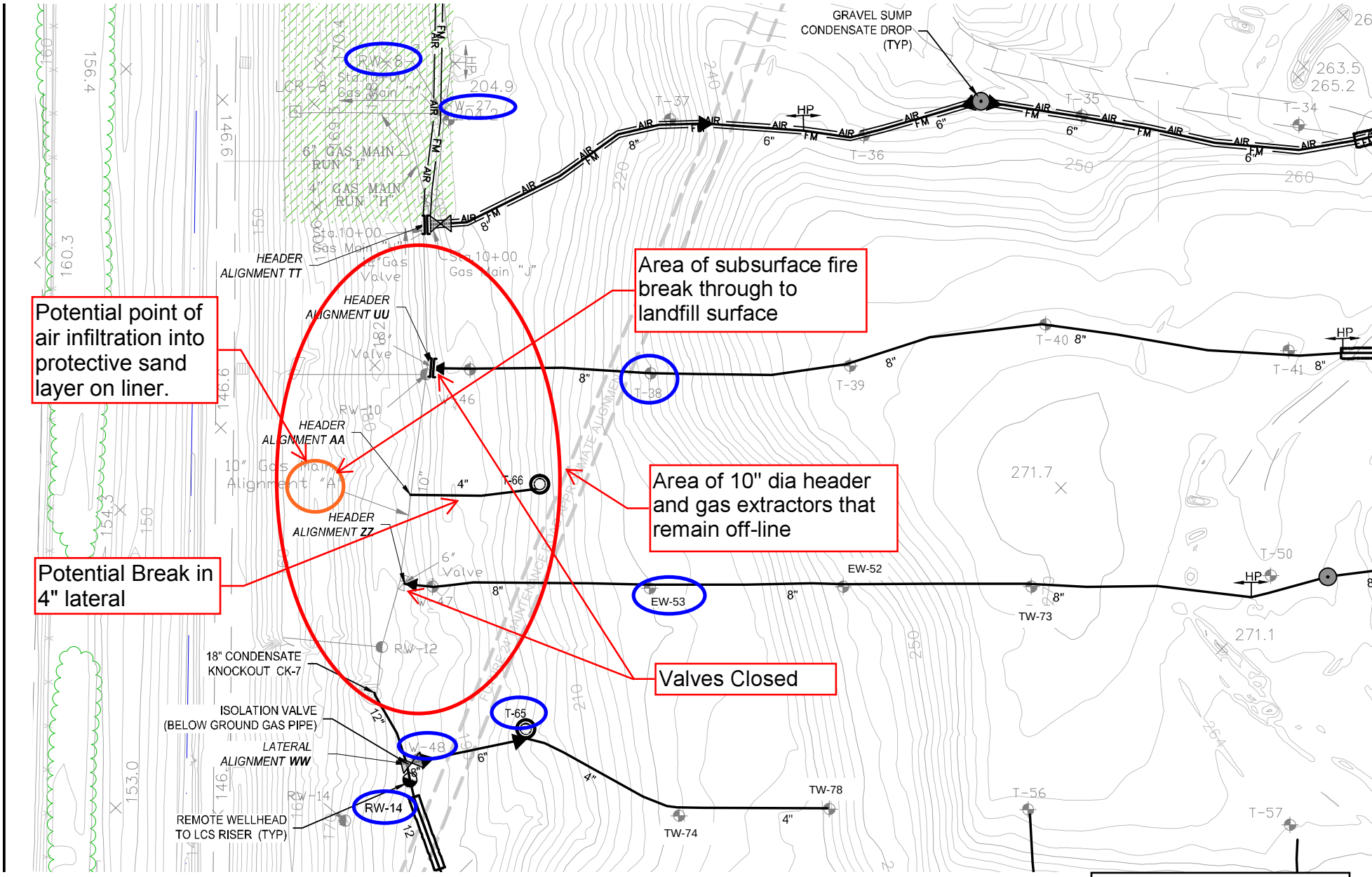


Figure 2. Subsurface Fire Mitigation, Trail Ridge Landfill, Baldwin, Florida

SCS ENGINEERS
4041 Park Oaks Blvd., Suite 100
Tampa, Florida 33610
(813) 621-0080 Phone
(813) 623-6757 Fax

ATTACHMENT 2

FDEP Notification Summary

TRAIL RIDGE LANDFILL, INC.
5110 U.S. Highway 301 South
Baldwin, Florida 32234-3608
(904) 289-9100
(904) 289-9013 Fax

December 3, 2010

Emerson Raulerson, P.E.
Solid Waste Section Supervisor
Florida Department of Environmental Protection
7825 Baymeadows Way, Suite 200B
Jacksonville, FL 32256-7598

Re: Trail Ridge Landfill Sub-Surface Fire

Dear Mr. Raulerson,

As you are aware, Trail Ridge Landfill experienced a minor sub-surface fire on November 29, 2010. The area has been contained and is being continuously monitored. We are diligently working to ascertain the cause of the fire. A recap, current update and proposed plan going forward are discussed below, as well as replies to your questions sent via email of November 30, 2010. We understand and appreciate FDEP's concerns regarding timely notifications and fires. At approximately 6:00 p.m. on November 29th a subsurface fire was detected on the western side of the landfill. The fire was located about two-thirds of the way, traveling north to south, down the western side of the landfill and was centered on the terrace located directly above the anchor berm. The actual visible area affected was approximately 15' x 15'. The soil cover in the area remained intact but visible subsidence had occurred.

Upon immediate inspection of the area, the gas collection system was shut down and approximately 16,000 gallons of water was applied to the area. The gas collection system was shut down to eliminate the vacuum to the area and prevent the possible introduction of oxygen. There were no visible flames; however, the water was applied to reduce the heat in the area and assist in extinguishing of the fire. Within approximately one hour, the area ceased to emanate heat and there was no visible smoke. We continued to apply water to the area. At this point, we determined the fire was under control, did not require any outside resources, and did not constitute an emergency or a significant threat to human health or the environment.

The following morning the area was inspected for indicators that may be associated with a flare up such as smoke, heat, cracking, air intrusions, stressed vegetation and depressions. There were no flare up indicators; however, an additional 16,000 gallons of water was added to the area as an extra precaution. In addition to the 16,000 gallons of water, the area was covered with a 50' x 20' area of clay to help smother the fire by removing any oxygen intrusion. A third party consultant, SCS Engineers, was retained to assist in investigating any possible causes or contributing factors that may have lead to the fire. With the goal of further assessing the cause and impacts, as well as providing a thorough assessment of the situation to FDEP, we collected carbon monoxide samples from nearby wells throughout the day. These samples showed no indication of combustion in any surrounding wells, verifying the fire was limited in scope and not affecting other areas of the gas collection system.

TRAIL RIDGE LANDFILL, INC.
5110 U.S. Highway 301 South
Baldwin, Florida 32234-3608
(904) 289-9100
(904) 289-9013 Fax

At approximately 5:00 PM on November 30th, we notified the FDEP via email. While we acknowledge we could have notified FDEP earlier in the day, our assessment was that the fire was minor in scope, was controlled shortly after discovery, required no outside resources to address, was not an emergency and overall presented no threat to human health or the environment. Our intent was to provide a thorough notification that accurately described the situation in a reasonably timely manner, not to delay. Because of our efforts throughout the day to continue to address the issue, review gas collection system drawings, collect additional data, coordinate amongst our team and draft the notification, the notification ended up being late in the day, but still within the 24 hour limit set forth by Specific Condition 32 of our permit. Again, if conditions suggested that the fire may spread, was large in size or may have presented a threat to human health or the environmental, we would have notified FDEP sooner, as well as contacting the local Fire Department. We share your concern in ensuring fires are promptly and thoroughly addressed so they do not spread, do not cause damage to the landfill infrastructure and most importantly do not put anyone in harms way.

As previously stated, the site is continuously monitoring the area for any signs of a flare up. The gas collection system was slowly brought back on-line, taking steps to isolate this section of the landfill from vacuum. Inspections are currently being conducted at a minimum of prior to the site opening, prior to the scheduled 8:00 a.m. update, mid-day, prior to the scheduled 4:00 p.m. update and again after the site closes. The inspections are looking for any of the indicators that may suggest a flare up, for example smoke, heat, cracking, air intrusions, stressed vegetation and depressions. Since the containment and covering of the area, none of these indicators have been observed. The bi-daily updates, to your attention, will continue to be provided the Florida Department of Environmental Protection Northeast District via email. However, given the situation is under control, we would like some clarity on when these updates may be reduced or eliminated, as we do not expect any changes in the situation. We are committed to notifying you as we discover new information or changes occur.

On December 1st, Brian Durden visited the site for his routine site inspection, as well as to inspect the area were the fire had occurred. When Mr. Durden inspected the area, it had already been covered with clay and there were no visible signs of a flare up. Mr. Durden indicated that it was his belief that the situation had been handled properly and that the area appeared contained. In addition, there were discussions on what he believed should be included in the formal report that was being prepared, as well as a tentative timeline on the submittal of the report.

The third party consultant, SCS Engineers, is currently working with site team to develop a formal report that will be forwarded to the Florida Department of Environmental Protection. A field team with monitoring equipment is currently onsite assisting in determining possible causes of the fire. Their findings will be included within the formal report, as well as the proposed remediation plan. The target date for the report submittal is December 6, 2010. Upon receipt, the report will be submitted to your office. If conditions or investigation difficulties change the proposed submittal date we will promptly contact your office.

TRAIL RIDGE LANDFILL, INC.
5110 U.S. Highway 301 South
Baldwin, Florida 32234-3608
(904) 289-9100
(904) 289-9013 Fax

We appreciate your consideration and please contact me with any further questions or concerns at (904) 289-9100.

Sincerely,

Edward Schmalfeld II, P.E.
District Manager

CC: Brian Durden, FDEP
Fred Forbes, City of Jacksonville
Jeff Foster, City of Jacksonville
David McConnell, Waste Management
Gregory Mathes, Waste Management
Jim Christiansen, Waste Management
Eric Parker, Waste Management

ATTACHMENT 3

WELLHEAD DATA

Trail Ridge LFG Montoring Data

Fire Mitigation Plan - Supporting Documentation

Device ID	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	CO (Carbon Monoxide) (ppm)	Well Static Pressure ("H2O)	Wellhead Temperature (Deg F)
Red Ring Wells								
TRLRW010	10/6/10 15:50	54.9	31.1	1.6	12.4		-18.5	96
TRLRW010	11/3/10 14:43	50.0	37.3	0.7	12.0		-21.0	93
TRLRW010	11/30/10 12:26	56.0	43.9	0.0	0.1	10	13.8	82
TRLRW010	12/4/10 17:40	58.0	41.9	0.0	0.1	10	11.0	80
TRLRW010	12/5/10 11:13	56.8	43.1	0.0	0.1	0	10.6	80
TRLRW010	12/6/10 17:28	56.6	43.3	0.0	0.1	10	7.7	81
TRLRW010	12/7/10 17:28	57.8	42.1	0.0	0.1	0	6.2	80
TRLRW010	12/8/10 10:08	58.1	40.9	0.9	0.1	2	4.1	85
TRLRW010	12/8/10 11:13	57.5	42.1	0.2	0.2	5	1.6	90
TRLRW010	12/8/10 13:49	58.0	41.6	0.3	0.1	10	-4.3	84
TRLRW010	12/8/10 16:08	57.5	40.9	0.1	1.5	10	-4.7	90
TRLRW010	12/9/10 8:04	57.3	41.7	0.8	0.2		7.4	90
TRLRW010	12/13/10 15:36	50.4	42.9	0	6.7		-0.4	82
TRLEW046	10/6/10 15:46	54.5	35.8	1.5	8.2		-34.0	80
TRLEW046	10/22/10 14:32	52.8	38.9	0.9	7.4		-27.7	90
TRLEW046	11/3/10 14:40	52.8	38.3	1.4	7.5		-34.1	81
TRLEW046	11/30/10 12:17	56.2	43.7	0.0	0.1	20	13.3	84
TRLEW046	12/4/10 17:38	58.2	41.3	0.3	0.2	10	-8.7	60
TRLEW046	12/5/10 11:10	57.4	42.2	0.3	0.1	0	-8.3	60
TRLEW046	12/6/10 17:30	56.5	43.4	0.0	0.1	0	39.3	52
TRLEW046	12/7/10 17:32	56.1	43.8	0.0	0.1	0	-0.1	60
TRLEW046	12/8/10 10:20	27.4	22.0	10.2	40.4	2	7.5	62
TRLEW046	12/8/10 10:23	39.1	29.7	6.1	25.1	10	-27.2	60
TRLEW046	12/8/10 11:01	54.9	39.1	1.6	4.4	5	-17.8	65
TRLEW046	12/8/10 13:53	46.4	36.7	3.8	13.1	10	-21.0	60
TRLEW046	12/8/10 16:06	57.4	38.7	2.1	1.8	10	-25.9	65
TRLEW046	12/9/10 7:57	48.4	35.5	3.7	12.4		-33.3	38
TRLEW046	12/13/10 15:42	53.6	43.7	0.1	2.6		-11.9	42
TRLTW066	10/11/10 8:15	58.3	41.6	0.0	0.1		3.2	70
TRLTW066	10/15/10 10:46	48.5	33.5	3.2	14.8		-28.9	80
TRLTW066	10/22/10 13:39	52.9	34.0	2.1	11.0		-24.9	90
TRLTW066	11/5/10 14:34	49.1	32.7	1.8	16.4		-28.9	85
TRLTW066	11/30/10 12:07	57.0	42.9	0.0	0.1	20	17.8	84
TRLTW066	12/5/10 11:01	35.2	27.1	6.9	30.8	20	11.3	60
TRLTW066	12/6/10 17:10	58.3	41.6	0.0	0.1	10	-0.3	50
TRLTW066	12/7/10 17:10	57.9	41.8	0.1	0.2	10	5.3	62
TRLTW066	12/8/10 14:32	36.4	27.0	7.2	29.4	10	-16.1	72
TRLTW066	12/8/10 16:03	58.8	39.5	0.9	0.8	10	-15.8	58
TRLTW066	12/9/10 7:51	57.4	39.8	1.4	1.4		-29.6	48
TRLRW012	10/5/10 14:26	55.0	36.1	0.2	8.7		-15.8	96
TRLRW012	11/2/10 15:12	53.0	39.8	0.2	7.0		-14.7	94
TRLRW012	11/30/10 11:25	57.4	42.5	0.0	0.1	30	14.0	94
TRLRW012	12/4/10 17:29	57.4	42.5	0.0	0.1	10	1.5	92
TRLRW012	12/5/10 11:33	59.2	40.7	0.0	0.1	10	0.5	92
TRLRW012	12/6/10 17:24	57.8	42.1	0.0	0.1	10	4.4	50

Trail Ridge LFG Montoring Data

Fire Mitigation Plan - Supporting Documentation

Device ID	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	CO (Carbon Monoxide) (ppm)	Well Static Pressure ("H2O)	Wellhead Temperature (Deg F)
TRLRW012	12/7/10 17:21	57.9	42.0	0.0	0.1	0	2.3	90
TRLRW012	12/8/10 13:45	58.1	41.2	0.6	0.1	5	-6.3	96
TRLRW012	12/8/10 14:47	57.6	40.6	0.6	1.2	5	-9.1	95
TRLRW012	12/8/10 15:55	57.9	41.3	0.6	0.2	5	-8.2	95
TRLRW012	12/9/10 7:38	56.4	38.2	1.9	3.5		-11.4	92
TRLRW012	12/13/10 15:18	51.1	42.4	0.1	6.4		-0.4	90
TRLEW047	10/5/10 14:31	46.0	36.8	3.0	14.2		-35.4	80
TRLEW047	10/22/10 14:44	54.5	33.7	2.2	9.6		-15.7	90
TRLEW047	11/2/10 15:16	54.4	38.6	1.9	5.1		-33.6	82
TRLEW047	11/30/10 11:40	58.0	41.9	0.0	0.1	30	12.6	88
TRLEW047	12/4/10 17:35	58.8	41.1	0.0	0.1	20	33.4	50
TRLEW047	12/5/10 11:30	50.7	34.9	2.7	11.7	10	14.9	50
TRLEW047	12/6/10 17:22	59.9	40.0	0.0	0.1	10	34.6	51
TRLEW047	12/7/10 17:24	58.6	41.3	0.0	0.1	20	31.4	50
TRLEW047	12/8/10 14:44	59.4	39.1	0.5	1.0	5	-9.3	81
TRLEW047	12/8/10 16:00	55.3	37.7	1.4	5.6	10	-22.7	66
TRLEW047	12/9/10 7:45	54.1	36.5	2.3	7.1		-29.5	50
TRLEW047	12/13/10 15:28	44.4	38.2	0.7	16.7		-12.3	56
Blue Ring Wells								
TRLRW008	10/6/10 15:34	53.4	41.9	0.4	4.3		-6.4	98
TRLRW008	11/3/10 14:34	51.9	40.7	0.4	7.0		-7.4	92
TRLRW008	12/4/10 17:49	58.0	41.9	0.0	0.1	20	-10.6	84
TRLRW008	12/5/10 11:20	57.3	42.6	0.0	0.1	20	-11.7	88
TRLRW008	12/6/10 17:35	56.9	42.9	0.0	0.2	10	-7.1	88
TRLRW008	12/7/10 17:35	57.2	42.4	0.2	0.2	10	-9.9	90
TRLRW008	12/8/10 10:44	57.3	41.8	0.7	0.2	10	-9.4	96
TRLEW027	10/6/10 15:31	54.9	40.7	0.0	4.4		-36.0	98
TRLEW027	11/3/10 14:31	54.4	41.6	0.3	3.7		-33.4	98
TRLEW027	12/4/10 17:47	56.7	43.2	0.0	0.1	0	-31.8	92
TRLEW027	12/5/10 11:18	56.7	43.2	0.0	0.1	10	-36.8	92
TRLEW027	12/6/10 17:33	56.0	43.9	0.0	0.1	10	-25.6	84
TRLEW027	12/7/10 17:33	56.7	43.2	0.0	0.1	20	-23.7	92
TRLEW027	12/8/10 10:35	58.3	40.7	0.5	0.5	10	-16.2	100
TRLEW027	12/13/10 15:48	54.6	43.1	0	2.3		-9.5	98
TRLTW038	10/8/10 7:47	54.8	37.4	0.9	6.9		13.7	102
TRLTW038	10/15/10 10:38	54.4	32.8	2.6	10.2		-17.4	100
TRLTW038	11/2/10 15:04	54.5	39.2	0.3	6.0		-19.4	102
TRLTW038	12/5/10 10:49	60.1	39.4	0.3	0.2	0	-2.9	98
TRLTW038	12/6/10 17:19	60.4	39.4	0.1	0.1	0	1.6	51
TRLTW038	12/7/10 17:17	51.8	35.3	1.2	11.7	0	0.4	88
TRLTW038	12/8/10 10:55	60.0	39.0	0.5	0.5	5	-10.6	102
TRLTW038	12/10/10 15:16	56.7	43.2	0	0.1		-16.7	110
TRLTW038	12/13/10 15:58	49.4	39.5	0.1	11		-4.3	98

Trail Ridge LFG Montoring Data

Fire Mitigation Plan - Supporting Documentation

Device ID	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	CO (Carbon Monoxide) (ppm)	Well Static Pressure ("H2O)	Wellhead Temperature (Deg F)
TRLEW053	10/7/10 15:45	61.8	38.1	0.0	0.1		-32.8	110
TRLEW053	10/22/10 14:18	50.4	35.0	1.4	13.2		-22.8	112
TRLEW053	11/2/10 14:59	60.3	39.6	0.0	0.1		-25.7	110
TRLEW053	12/5/10 10:40	60.1	39.8	0.0	0.1	0	-8.0	102
TRLEW053	12/6/10 17:15	59.5	40.4	0.0	0.1	10	9.6	51
TRLEW053	12/7/10 17:13	58.7	41.2	0.0	0.1	0	2.1	78
TRLEW053	12/8/10 13:24	61.3	38.4	0.1	0.2	5	12.4	92
TRLEW053	12/21/10 10:04	60	39.9	0	0.1		-32.2	98
TRLTW065	10/5/10 14:17	58.4	38.7	0.8	2.1		-35.6	100
TRLTW065	11/2/10 14:52	54.1	40.0	1.5	4.4		-34.3	96
TRLTW065	12/5/10 10:33	57.8	41.9	0.2	0.1	20	-8.3	70
TRLTW065	12/6/10 17:08	58.0	41.9	0.0	0.1	10	-0.3	50
TRLTW065	12/7/10 17:06	57.3	42.6	0.0	0.1	0	-2.0	60
TRLTW065	12/8/10 13:13	58.8	40.6	0.4	0.2	5	16.6	60
TRLTW065	12/13/10 16:05	51.6	39	0.9	8.5		-8	64
TRLEW048	10/5/10 13:54	48.9	36.3	0.0	14.8		-16.3	102
TRLEW048	11/2/10 15:22	54.1	37.3	0.0	8.6		-18.0	100
TRLEW048	11/30/10 11:19	56.8	43.1	0.0	0.1	10	10.3	88
TRLEW048	12/4/10 17:24	58.0	41.7	0.2	0.1	20	-4.7	80
TRLEW048	12/5/10 10:29	58.1	41.8	0.0	0.1	20	-6.0	84
TRLEW048	12/6/10 17:05	57.0	42.9	0.0	0.1	0	-0.1	52
TRLEW048	12/7/10 17:03	56.0	43.9	0.0	0.1	10	-2.1	80
TRLEW048	12/8/10 13:00	58.0	41.2	0.4	0.4	5	-17.7	97
TRLEW048	12/13/10 15:12	47.8	38.8	0	13.4		-11.5	92
TRLRW014	10/5/10 13:49	54.5	34.8	1.1	9.6		-20.4	98
TRLRW014	10/5/10 13:51	50.4	37.5	0.9	11.2		-20.5	98
TRLRW014	11/2/10 15:25	44.9	37.0	1.5	16.6		-19.0	94
TRLRW014	11/30/10 10:53	58.3	41.6	0.0	0.1	10	11.5	84
TRLRW014	12/4/10 17:26	57.8	42.1	0.0	0.1	20	8.9	70
TRLRW014	12/5/10 10:27	57.7	42.2	0.0	0.1	20	8.0	72
TRLRW014	12/6/10 17:02	58.9	40.7	0.3	0.1	10	9.0	70
TRLRW014	12/7/10 16:58	56.9	43.0	0.0	0.1	0	8.9	70
TRLRW014	12/8/10 12:53	59.1	40.5	0.3	0.1	5	7.5	58
TRLRW014	12/13/10 15:09	53.7	38.7	1.3	6.3		-9	90

Reference Figure 2, located in Attachment 1 for the locations of the Red and Blue Ring Wells.

ATTACHMENT 4

FDEP Approval of Liner Condition Assessment

Hogg, Roger

From: Hogg, Roger
Sent: Tuesday, December 21, 2010 2:32 PM
To: Hogg, Roger
Subject: FW: Trail Ridge Landfill Notification of subsurface fire
Attachments: image003.jpg

From: Durden, Brian [mailto:Brian.Durden@dep.state.fl.us]
Sent: Thursday, December 09, 2010 11:37 AM
To: Schmalfeld II, Edward
Cc: Raulerson, Emerson <Emerson.Raulerson@dep.state.fl.us>; Fitzsimmons, Michael <Michael.Fitzsimmons@dep.state.fl.us>
Subject: RE: Trail Ridge Landfill Notification of subsurface fire

On December 3, 2010 Trail Ridge Landfill reported that a small portion of the southwestern portion of the landfill was on fire. Waste management staff reported that they quickly doused the area with water and then covered with soil in order to extinguish the burning solid waste. On Thursday, December 9, 2010, Waste Management staff excavated the location of the fire in order to verify that the fire had been extinguished and that no damage had occurred to the landfill liner or any other landfill structures. The excavation was installed from the surface, through the waste, and into the first six inches of the protective sand layer.

Burned/charred waste was observed to a depth of about 10 -12 feet, followed by a 6 inch layer of unburned solid waste, and finally the top of the 2 feet of protective sand layer. A determination was made that the fire has been adequately extinguished and that the based on the six inches of on burned waste observed under the burned waste no damage to the lines is likely to have occurred.

No additional status reports are required and DEP looks forward to receiving a final copy of the Fire Report

If you have any question please contact me.

Brian Durden - Evironmental Consultant
Northeast District Solid Waste Section
Florida Department of Environmental Protection
7825 Baymeadows Way, Suite B200 | Jacksonville, FL 32256
Phone: (904) 256-1575 FAX: (904) 448-4362
email- Brian.Durden@dep.state.fl.us

ATTACHMENT 5

PHOTO LOG

11/30/2010
Location of subsurface fire
100_0567.JPG

11/30/2010
Subsidence @ location of subsurface fire
100_0568.JPG

11/30/2010
100_0569.JPG

12/7/2010
Cutting, capping the lateral
DSCN0001.JPG

12/7/2010
Installing the 90' replacement lateral and abandoning the compromised lateral
DSCN0002.JPG

12/9/2010
Excavating to determine the condition of the bottom liner
100_0570.JPG

12/9/2010
100_0571.JPG

12/9/2010
100_0572.JPG

12/9/2010
Excavation to determine the condition of bottom liner being performed
DSCN0004.JPG

12/9/2010
Charred, burnt waste excavated from location of subsurface fire
DSCN0010.JPG

12/9/2010
Charred waste excavated at location of subsurface fire
100_0578.JPG

12/9/2010
Excavated waste placed on tarpaulin for identification
DSCN0011.JPG

12/9/2010
Charred and burnt waste and ash in excavation
100_0579.JPG

12/9/2010
Burnt waste placed on tarpaulin for identification
100_0580.JPG

12/9/2010
Protective sand layer exposed
DSCN0017.JPG

12/9/2010
Exposed sand layer; little sign of being affected by high combusion temps
DSCN0018.JPG

12/9/2010
Unburned waste in the area of the subsurface fire
100_0582.JPG

12/9/2010
Unburned / unaffected waste being excavated
DSCN0023.JPG

12/9/2010
Unburned waste below
DSCN0024.JPG

12/9/2010
Unburned waste removed from excavation
100_0585.JPG

12/9/2010
Protective san layer exposed; no sign of damage apparent.
100_0586.JPG

12/9/2010
Excavation backfilled and compacted
DSCN0034.JPG

12/9/2010
Excavation backfilled and compacted
DSCN0035.JPG

ATTACHMENT 6

DAILY ACTIVITY LOGS

SCS FIELD SERVICES, INC. DAILY LOG

JOB NO. 09209058.02 TASK NO. DATE 12-1-10 PROJECT NAME Trail Ridge

TEMP: 40 °F WEATHER

SCS-FS LABOR (List employee completing form first.)	HOURS		SCS-FS LABOR	HOURS	
Mark Anghilante					

EQUIPMENT	EQUIPMENT
Gem 2000	

INSTRUMENT CALIBRATION (CAL. GAS)		CH4 (%-VOL)	CO2 (%-VOL)	02 (%-VOL)	
MODEL	S/N				

WORK PERFORMED - DESCRIPTION OF ITEM (Example, Routine, SEM, etc)			WORK PERFORMED DESCRIPTION OF ITEM		
Fire Mitigation					

GREASED BLOWER (if applicable)		YES	X	NO	DRAINED/INSPECTED COMPRESSOR (or nitrogen level)		YES	X	NO
PROPANE LEVEL OK		YES		NO	ANY NEEDED REPAIRS TO LFG SYSTEM		YES		NO
ANY UNEXPECTED SITE CONDITIONS		YES		NO					
AREAS OF DISTURBED COVER (required – disturbed areas must be flagged and verbally notify site)		YES		NO	MADE CONTACT W/ SITE PERSONNEL	X	YES		NO

(IN THE CASE OF DISTURBED COVER OR NEEDED REPAIRS - DETAIL BELOW)

SCS FIELD SERVICES, INC. DAILY LOG

Notes

- 7:45 Spoke with Shawn at the plant. Plant is running, but O2 is 5.0% the vac is 45. Shawn said they closed v-4 and the isolation valve near w-68. They closed valves 26 and 27 near rw-9 because they could not close valves near w-46 and w-47. (Per Rob)
- We checked v-4 it was closed. V-4 pressure readings B = -37.9 and A= -41.7 (10" lateral by v-4 is open and reads -41.7)
- We checked 18" valve on southern 18" header, adjacent to w-68. It was closed, but had no ports to read. (We noticed tw-64 had a torn 2" flex hose and steam was visible. Tw-64 temp=138, tw-64 system pressure= +3.4)
- 8:49 - We were able to close valves using a wrench

6" valve near w-47 readings:

Valve Open:	CH4	56.8
	CO2	43.1
	O2	0.0
	Bal	0.1
	Sys. Pressure	+10.6
Valve Closed:	CH4	57.0
	CO2	42.9
	O2	0.0
	Bal	0.1
	Sys. Pressure	+13.1

9:07 6" valve near w-46 readings:

Valve Open:	CH4	57.3
	CO2	42.6
	O2	0.0
	Bal	0.1
	Sys. Pressure	+13.4
Valve Closed:	CH4	55.9
	CO2	44.0
	O2	0.0
	Bal	0.1
	Sys. Pressure	+13.2

- 10:50 - Gas quality at the plant was CH4 55% and O2 3%
- 12:29 - After talking to Lindsey I used the Gem to read ew-46 and ew-47 while the corresponding valves v-26 and v-27 were slowly opened by Chris and Dusty The following readings are all system pressure:

Ew-46----------v-26
Initial reading on ew-46 was +15.5 Opening the valve ¼ pressure stayed the same. Valve open ½ the pressure reading +13.1 Valve open ¾ pressure reading +7.2 Valve closed pressure reading +14.4

Ew-47----------v-27
Initial reading on ew-47 was +12.5 Valve open ½ pressure reading +11.5 Valve open ¾ pressure reading rapidly changed to -5.6 The valve was closed immediately! Valve closed pressure reading +11.5

The following information pertains to the troubleshooting section of the e-mail sent by Lindsey:

Do not pay attention to the times because my gem is 1 hr off

15:00 Header TT Valve Sys. Pre. fluctuating (+1.8 to -2.4)
14:28 Header UU Valve (6" valve near w-46) Sys. Pre. 15.6
13:29 W-46 CH4 57.1/CO2 42.8/O2 0.0/BAL 0.1/Sys. Pre +15.4
13:46 W-47 CH4 59.5/CO2 40.4/O2 0.0/BAL 0.1/Sys. Pre +13.8
14:38 T-66 CH4 57.9/CO2 42.0/O2 0.0/BAL 0.1/ Sys. Pre +21.2
14:50 Header ZZ Valve (6" valve near W-47) Sys. Pre +15.7
14:22 RW-10 CH4 58.1/CO2 41.8/O2 0.0/BAL O.1/Sys. Pre 15.6
14:46 RW-12 CH4 57.5/CO2 42.4/O2 0.0/BAL 0.1/Sys. Pre +16.3

There were no ports on the LCR-10 and LCR-12

SCS FIELD SERVICES, INC. DAILY LOG

JOB NO. 09209058.02 TASK NO. DATE 12-6-10 PROJECT NAME Trail Ridge

TEMP: 40 °F WEATHER Clear

SCS-FS LABOR (List employee completing form first.)	HOURS		SCS-FS LABOR	HOURS	
Greg Hansen	8				

EQUIPMENT	EQUIPMENT
Gem 2000	

INSTRUMENT CALIBRATION (CAL. GAS)		CH4 (%-VOL)	CO2 (%-VOL)	02 (%-VOL)	
MODEL	S/N				
Gem 2000	8579	50.0	35.0	20.9	

WORK PERFORMED - DESCRIPTION OF ITEM (Example, Routine, SEM, etc)			WORK PERFORMED DESCRIPTION OF ITEM		
Fire Mitigation					

GREASED BLOWER (if applicable)		YES	X	NO	DRAINED/INSPECTED COMPRESSOR (or nitrogen level)		YES	X	NO
PROPANE LEVEL OK		YES		NO	ANY NEEDED REPAIRS TO LFG SYSTEM		YES		NO
ANY UNEXPECTED SITE CONDITIONS		YES		NO					
AREAS OF DISTURBED COVER (required – disturbed areas must be flagged and verbally notify site)		YES		NO	MADE CONTACT W/ SITE PERSONNEL	X	YES		NO

(IN THE CASE OF DISTURBED COVER OR NEEDED REPAIRS - DETAIL BELOW)

SCS FIELD SERVICES, INC. DAILY LOG

Notes

Mobilized to Trail Ridge.
Met with Robby Litherland, James Getting, Ed Schmallfeld and discussed situation and plan.
Excavated lateral from header to TW-66. Verified branch saddle was intact. Installed sample port on lateral approximately 24" from header.

Once sample port was installed took a gas composition reading (14:30). The 18" valve was then opened to apply vacuum to the lateral. An additional reading was taken (14:45). The methane dropped significantly while balance gas and oxygen increased. The oxygen and balance gas were at a 4:1 ratio indicating a direct leak nearby. The flare was started to increase vacuum to normal operating level and an additional reading was taken.

Time	CH4	CO2	O2	Bal	S.P.	CO	Deg F
14:30	55.0	36.0	2.7	6.3	+.3"	5ppm	50
14:45	24.8	18.0	11.9	45.4	-10.4"	5ppm	60
14:55	3.1	5.2	19.8	71.9	-29.3		60

This information indicates a break in the 4" lateral to TW-66 is likely.

SCS FIELD SERVICES, INC. DAILY LOG

JOB NO. 09209058.02 TASK NO. DATE 12-7-10 PROJECT NAME Trail Ridge

TEMP: 40 °F WEATHER Clear

SCS-FS LABOR (List employee completing form first.)	HOURS		SCS-FS LABOR	HOURS	
Greg Hansen	6				

EQUIPMENT	EQUIPMENT
200 Excavator	
Generator	
1-4 Machine	

INSTRUMENT CALIBRATION (CAL. GAS)		CH4 (%-VOL)	CO2 (%-VOL)	02 (%-VOL)	
MODEL	S/N				

WORK PERFORMED - DESCRIPTION OF ITEM (Example, Routine, SEM, etc)			WORK PERFORMED DESCRIPTION OF ITEM		
Fire Mitigation					

GREASED BLOWER (if applicable)		YES	X	NO	DRAINED/INSPECTED COMPRESSOR (or nitrogen level)		YES	X	NO
PROPANE LEVEL OK		YES		NO	ANY NEEDED REPAIRS TO LFG SYSTEM		YES		NO
ANY UNEXPECTED SITE CONDITIONS		YES		NO					
AREAS OF DISTURBED COVER (required – disturbed areas must be flagged and verbally notify site)		YES		NO	MADE CONTACT W/ SITE PERSONNEL	X	YES		NO

(IN THE CASE OF DISTURBED COVER OR NEEDED REPAIRS - DETAIL BELOW)

Notes	
	Mobilized to Trail Ridge. Cleaned up excavation around lateral to TW-66 as the excavation collected some water overnight. Cut lateral and capped end leading to TW-66. Installed a 90 degree elbow on 4" line connected to the header. Connected a 10' section of 4" pipe to stub the vacuum source above grade for future use. Backfilled the excavation. Met with Robby and discussed the plan. Will meet at 8 am tomorrow morning and continue fire mitigation.

SCS FIELD SERVICES, INC. DAILY LOG

JOB NO. 09209058.02 TASK NO. DATE 12-8-10 PROJECT NAME Trail Ridge

TEMP: 40 °F WEATHER Partly Cloudy

SCS-FS LABOR (List employee completing form first.)	HOURS		SCS-FS LABOR	HOURS	
Greg Hansen	8				

EQUIPMENT	EQUIPMENT
Gem 2000	

INSTRUMENT CALIBRATION (CAL. GAS)		CH4 (%-VOL)	CO2 (%-VOL)	02 (%-VOL)	
MODEL	S/N				
Gem 2000 9:00 AM	8579	50.0	35.0	20.9	
12:00 PM	8570	50.0	35.0	20.8	

WORK PERFORMED - DESCRIPTION OF ITEM (Example, Routine, SEM, etc)			WORK PERFORMED DESCRIPTION OF ITEM		
Fire Mitigation					

GREASED BLOWER (if applicable)		YES	X	NO	DRAINED/INSPECTED COMPRESSOR (or nitrogen level)		YES	X	NO
PROPANE LEVEL OK		YES		NO	ANY NEEDED REPAIRS TO LFG SYSTEM		YES		NO
ANY UNEXPECTED SITE CONDITIONS		YES		NO					
AREAS OF DISTURBED COVER (required – disturbed areas must be flagged and verbally notify site)		YES		NO	MADE CONTACT W/ SITE PERSONNEL	X	YES		NO

(IN THE CASE OF DISTURBED COVER OR NEEDED REPAIRS - DETAIL BELOW)

Notes	
	Took CO and gas composition readings on wells surrounding fire area. Brought closed wells back online and watched for fire indicators. Never saw any indication of fire in gas collectors. Opened 18" valve and 2 6" valves near RW-10 and RW-12.

SCS FIELD SERVICES, INC. DAILY LOG

JOB NO. 09209058.02 TASK NO. DATE 12-9-10 PROJECT NAME Trail Ridge

TEMP: 35 °F WEATHER Mostly Clear

SCS-FS LABOR (List employee completing form first.)	HOURS		SCS-FS LABOR	HOURS	
Greg Hansen	8				

EQUIPMENT	EQUIPMENT
Gem 2000	
200 Excavator	

INSTRUMENT CALIBRATION (CAL. GAS)		CH4 (%-VOL)	CO2 (%-VOL)	02 (%-VOL)	
MODEL	S/N				
Gem 2000 7:00 AM	8579	50.0	35.0	20.9	

WORK PERFORMED - DESCRIPTION OF ITEM (Example, Routine, SEM, etc)			WORK PERFORMED DESCRIPTION OF ITEM		
Fire Mitigation					

GREASED BLOWER (if applicable)		YES	X	NO	DRAINED/INSPECTED COMPRESSOR (or nitrogen level)		YES	X	NO
PROPANE LEVEL OK		YES		NO	ANY NEEDED REPAIRS TO LFG SYSTEM		YES		NO
ANY UNEXPECTED SITE CONDITIONS		YES		NO					
AREAS OF DISTURBED COVER (required – disturbed areas must be flagged and verbally notify site)		YES		NO	MADE CONTACT W/ SITE PERSONNEL	X	YES		NO

(IN THE CASE OF DISTURBED COVER OR NEEDED REPAIRS - DETAIL BELOW)

SCS FIELD SERVICES, INC. DAILY LOG

Notes

Took gas composition and CO readings on RW-10, RW-12, TW-66, TW-46 and TW-47. Closed the 5 wells to eliminate vacuum influence to fire area.

Excavated location of fire.

Time	Depth	Temp (F)	Description
9:18	0'	28	Dirt/Clay
9:20	1'	48	Dirt/Clay
9:25	2'	76	Dirt/Clay
9:28	4'	80	Dirt/Clay/Sod
9:30	5'	86	Dirt/Clay
9:38	6-7'	110	Dirt/Clay
9:45	8-9'	120	Dirt/Charred Material
9:50	9-10'	120	Dirt/Charred Material
10:00	10-12'	114	Solid Waste/Protective Sand Layer

After observing a charred layer between layers of dirt and undisturbed trash above the protective sand layer it was determined the liner was unaffected.