

AIR CP_102610102_CP_20161018_INVESTIGATION_1370033_
Texas Commission on Environmental Quality
Investigation Report

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Customer: Blue Ridge Landfill TX, LP
Customer Number: CN602820599

Regulated Entity Name: BLUE RIDGE LANDFILL

Regulated Entity Number: RN102610102

Investigation # 1370033

Investigator: YAYMA MARTINEZ

Conducted: 10/18/2016 -- 11/10/2016

Program(s): AIR OPERATING PERMITS

Investigation Type: Compliance Investigation

Additional ID(s): FG0536E
1472

Address: 2200 FM 521 RD,
FRESNO, TX , 77545

Incident Numbers

Site Classification MAJOR SOURCE

NAIC Code: 562212

SIC Code: 1521

SIC Code: 4953

Location: LOCATED ON 2200 FM 521

Local Unit: REGION 12 - HOUSTON

Activity Type(s): FIAIRMON - AIR FIAIRMON - FOC
INV GENERAL MONITORING

Principal(s):

Role	Name
RESPONDENT	BLUE RIDGE LANDFILL TX LP

Contact(s):

Role	Title	Name	Phone
REGULATED ENTITY CONTACT	DIVISION MANAGER, REPUBLIC SERVICES	MR CHARLES WALKER	Work (713) 676-7611
REGULATED ENTITY CONTACT	ENVIRONMENTAL MANAGER	MR BURGESS STENGL	Work (713) 676-7669
REGULATED ENTITY MAIL CONTACT	LANDFILL OPERATIONS MANAGER	MR MATT MONTAGNA	Office (281) 668-9739

Other Staff Member(s):

Role	Name
Investigator	ANDREW EVANS
Investigator	PAUL BRANDES
Investigator	BIANCA LOPEZ
Investigator	TOM PINKSTON
Investigator	WILLIAM JORN
Investigator	SAMUEL JIRASEK
Investigator	GARY ACKERMAN
Investigator	NICOLE FOSTER
Investigator	HASANAIN ALAMEEN
Investigator	DANIEL VILLARREAL
Office System Administratic	MICHELLE FLORES
Supervisor	CORBETT BRINLY
Investigator	CAMERON DEWS
Investigator	ALEJANDRA DE LOS SANTOS
Investigator	LEANN KINCAID
Investigator	AZUCENA TORRES
Investigator	ANDREA GUSTAVSON
Investigator	SETH TATE
QA Reviewer	AMY MESSICK

Associated Check List

<u>Checklist Name</u>	<u>Unit Name</u>
AIR GENERIC INVESTIGATION (10 ITEMS)	Phases I, II, & III
AIR FOCUSED INVESTIGATION - GENERAL MONITORING	Phases I, II, & III
AIR INVESTIGATION - EQUIPMENT MONITORING AND SAMPLING revised 06/2013	Phases I, II, & III

Investigation Comments:

INTRODUCTION

Introduction

On October 18, 2016 through November 10, 2016, a Surface Emissions Monitoring (SEM) investigation was conducted at Blue Ridge Landfill (BRL). The first segment of the investigation, which occurred on October 18 and 19, 2016, was unannounced. The second segment of the investigation occurred on November 9 and 10, 2016. Notice of the second monitoring event was provided to BRL on November 8, 2016.

The purpose of the investigation (Investigation Typecode FIAIRMON) was to evaluate compliance with the surface emissions monitoring program for municipal solid waste facilities with landfill gas collection and control systems (GCCS) found in 40 CFR 60, Subpart WWW. Investigators conducted surface scans of the landfill for methane emissions. The results of these scans were used to determine whether the results of quarterly monitoring surveys reported by BRL were repeatable.

Secondarily, this investigation sought to document emissions of landfill gas that periodically cause nuisance odors offsite as documented in TCEQ Investigation No. 1331231. Investigators also measured hydrogen sulfide (H₂S) concentrations and recorded other observations to document emissions causing offsite odors as discussed in the narrative below.

BRL is a municipal solid waste disposal facility located in Fresno, Fort Bend County, Texas. It operates under Federal Operating Permit (FOP) O-1472, a General Operating Permit (GOP) issued on February 2, 1998 and last renewed on March 3, 2016.

The investigation covered Phases I, II, and III of the landfill in two segments. Phase I is a non-active area where municipal solid waste was received, but is temporarily covered and classified as a non-working phase. Phase II receives Class 1 waste, including asbestos containing waste. Phase III is the current working phase of the landfill.

Investigation of Phase I was led by Mr. Seth Tate on October 18 and October 19, 2016. Phases II and III were led by Ms. Yayma Martinez on November 9 and 10, 2016.

On October 18 and October 19, 2016, Mr. Tate, lead investigator, Mr. Paul Brandes, Mr. Hasanain Alameen, Ms. Azucena Torres, Mr. Andrew (Jay) Evans, Ms. Alejandra De Los Santos, Ms. LeAnn Kincaid, Mr. Tom Pinkston, Mr. Samuel Jirasek, Mr. Gary Ackerman, Mr. William (Austin) Jorn, Mr. Daniel Villarreal, and Mr. Cameron Dews conducted the first segment of the investigation which covered Phase I. Mr. Richard Blackney, a TCEQ Municipal Solid Waste (MSW) investigator, was also present on October 18, 2016.

On November 9 and 10, 2016, Ms. Martinez, lead investigator, Ms. LeAnn Kinkaid, Ms. Andrea Gustavson, Mr. William (Austin) Jorn, Ms. Nicole Foster, Mr. Samuel Jirasek, and Ms. Bianca Lopez conducted the second segment of the investigation covering Phases II and III. In addition, Ms. Eresha DeSilva and Mr. Seth Tate were present on November 9 and Mr. Mengistu Lemma and Mr. Sam Cortez were present on November 10.

The surrounding land use is primarily residential. Satellite imagery showing the location of the site is found in Attachment 1. Facility site maps and plot plans are provided in Attachment 2.

Daily Narrative

October 18, 2016

The investigators, Mr. Tate, Mr. Brandes, Mr. Alameen, Ms. Torres, Mr. Evans, Ms. De Los Santos, Ms. Kincaid, and Mr. Pinkston, arrived onsite at 7:45 AM. Facility representatives present during the investigation included: Mr. Matt Montagna, Landfill Operation's (sic) Manager; Mr. Burgess Stengl, Environmental Manager; and Mr. Charles Walker, Division Manager, Houston Post Collection Group. The investigators explained the purpose, scope, and procedures of the investigation after which the compliance status of 40 Code of Federal Regulations (CFR), Part 60, Subpart WWW, relating to SEM was reviewed.

The investigators began calibration of equipment to be used during the comparative SEM investigation. The equipment used to measure methane emissions were TVA 1000B flame ionization detectors (FIDs). See Attachment 3 for calibration logs. The investigators proceeded to the top of Phase I once calibration of equipment was completed. The investigators formed three survey teams: Team 1 – Ms. Kincaid and Mr. Pinkston; Team 2 – Ms. De Los Santos and Mr. Evans; and Team 3 - Ms. Torres and Mr. Alameen. At 9:26 AM, the investigators began marking the first transects to be monitored, each approximately 30 meters (m) apart as required by Subpart WWW. Mr. Tate and Mr. Brandes took the meteorological conditions at 9:30 AM using a portable weather meter. The conditions were as follows: 82.3 degrees Fahrenheit, 84% humidity, 5-8 mile per hour (mph) wind from the south southwest, and partly cloudy skies.

At 9:36 AM, Mr. Blackney arrived. Mr. Tate, Mr. Brandes, and Mr. Blackney, accompanied by Mr. Montagna, conducted a walkthrough of several operations associated with Phase I. The units were observed with the optical gas imaging camera (OGIC) which is capable of detecting volatile organic compound (VOC) emissions that are not visible with the naked eye. The units observed with the OGIC included the following: the emergency flare, main flare, leachate tanks, gas plant, and wells W1-30A, W-14B, W-86, and W30-A. The investigators observed continuous VOC emissions from the top of a leachate tank (Attachment 7, MOV_0381_1). Additionally, well W30-A appeared to have intermittent surface emissions at the base.

At 10:45 AM, Mr. Blackney went to the main office to review records. Mr. Tate and Mr. Brandes rejoined the investigators on Phase I of the landfill. Mr. Tate and Mr. Brandes reevaluated the meteorological conditions. At 10:45 AM, the conditions were as follows: 86 degrees Fahrenheit, 74% humidity, 8-11 mph wind speed, a west southwest wind direction, and partly cloudy skies. At 11:22 AM, the monitoring team stopped for lunch and returned to monitoring at 12:28 PM. Mr. Tate and Mr. Blackney stayed in the office to review additional records. The records reviewed are described below. At 1:00 PM Mr. Blackney left the facility. For more information on the records reviewed by Mr. Blackney, see Investigation No. 1376757.

At 3:10 PM, the investigators ceased monitoring for the day to avoid heat exhaustion.

October 19, 2016

The investigators, Mr. Tate, Mr. Brandes, Mr. Jirasek, Mr. Evans, Mr. Villarreal, Mr. Pinkston, Mr. Jorn, Mr. Dews, and Mr. Ackerman, arrived onsite at 7:27 AM. Facility representatives present during the investigation included: Mr. Montagna, Mr. Walker, and Mr. Stengl. The investigators began calibration of the TVA 1000B

FIDs. See Attachment 3 for calibration logs. At 8:44 AM, the investigators proceeded to the top of Phase I, once calibration of equipment was completed. The investigators formed three survey teams: Team 1 – Mr. Jirasek and Mr. Evans; Team 2 – Mr. Villarreal and Mr. Pinkston; and Team 3 – Mr. Jorn and Mr. Ackerman.

At 8:51 AM, Mr. Tate, Mr. Brandes, and Mr. Dews, accompanied by Mr. Montagna, conducted a walkthrough of operations associated with Phase I. In addition, the following units were observed with the OGIC: the emergency flare; main flare; leachate tanks; gas plant; wells W-76, W-23, W-22A, W-21A, W-81A, W-6B, and W-14B; and Leachate Collection Pump 5 (LCR5) & Riser Valve south of LCR5. At LCR5, the investigators noted a landfill gas odor and observed intermittent emissions with the OGIC. See Attachment 7, MOV_0396_1, MOV_0397_1, and MOV_0398_1 for OGIC recordings of the area around LCR5.

Mr. Tate and Mr. Brandes evaluated the meteorological conditions at 10:20 AM. They were as follows: 86 degrees Fahrenheit, 75% humidity, a wind speed of 6-10 mph, and wind direction was west southwest.

The Phase I SEM was completed at 12:03 PM.

During the SEM of Phase I, six (6) locations were observed to have emissions in excess of 500 parts per million (ppm). These locations are described further below in the section titled "Description of Surface Emissions Detected."

On October 20, 2016, Mr. Tate requested the following records from BRL: the name of the database used by the surface monitoring contractor, data from each monitoring event for the previous four (4) quarters including raw data from each monitoring event, calibration gas certificates of the gas used to calibrate their monitoring equipment, monitoring paths used by the technicians, a copy of the facility's monitoring plan, and quarterly calibrations of the monitoring equipment. On October 25, 2016, Mr. Stengl sent Mr. Tate an email requesting clarification as to what monitoring plan Mr. Tate was referring to in the records requested. On October 27, 2016, Mr. Stengl provided the following records: quarterly SEM reports for the previous six quarters, the NSPS Design, and the Surface Emissions Monitoring Plan. The investigator reviewed the quarterly SEM reports, dated March 31, 2015; June 8, 2015; September 10, 2015; December 10, 2015; February 19, 2016; and June 14, 2016. In every report, BRL stated that there were no exceedances detected at the facility during the monitoring. The records show that on the date of each monitoring, one FID instrument was used, and a calibration precision test was performed as well as an instrument response time test. Apart from the calibration information in the quarterly SEM reports, none of the documentation provided by BRL contained any records of actual field measurements with the FID instrument. See Attachment 4 for copies of BRL's quarterly SEM reports.

BRL stated that the contractor, with only one staff/person, typically completed surface emissions monitoring of the entire landfill in one day, and this was documented in five of the six quarterly SEM reports provided by BRL. There was one instance out of the six quarters reviewed when the monitoring took two days. The reports BRL submitted stated that calibration typically occurred around 9:30 AM. EPA Test Method 21 requires measurements to be taken for two times the instrument response time. Since the average response time of the instrument used by BRL's contractor was 7.333 seconds, it would take 14.666 seconds of holding the probe in the location of the highest reading for BRL's contractor to obtain one measurement. Using transects 30 m apart as required by 40 CFR 60, Subpart WWW, TCEQ investigators monitored 1,414 individual points. The quarterly monitoring reports did not include the number of data points monitored by the contractor. Multiplying two times the instrument response time by the 1,414 monitoring points from Mr. Tate's and Ms. Martinez's segments, measurements at the monitoring points alone would take 5.76 hours. This does not include the time required to calibrate the equipment, establish a monitoring route, relocate equipment to other parts of the landfill, or to identify optimal probe placement at each point.

Over the four sampling days monitoring the entire landfill, the total distance walked by the three teams of TCEQ investigators was approximately 25.2 miles. The actual monitoring rate was 1.14 miles per hour (mph) (0.51 m/sec). Using three teams in parallel to cover the same distance yields an effective monitoring speed of 3.42 mph (1.53 m/sec). For a single person to cover this distance in eight-hours without stopping requires a constant walking speed of 3.15 miles per hour (mph) (1.4 m/sec). Subtracting the time required to perform monitoring (5.76 hrs) from an 8-hour workday leaves 2.24 hrs to cover the 25.2 miles, requiring a monitoring speed of 11.2 mph (5.0 m/sec). An individual walking and monitoring at the rate a single TCEQ team did (1.14 mph) (0.51 m/sec) would require 22.1 hours to properly monitor the entire landfill. This disparity indicates that it is improbable that one individual could properly complete monitoring as required by 40 CFR 60, Subpart WWW in one working day.

In response to the request for a copy of the database used by the contractor, BRL stated that "The surface scans are performed by a third party consultant...There is no database that tracks surface scans." BRL was unable to provide raw data to demonstrate that monitoring was performed. When inquiring about the calibration gases (or "cal gas") used for the instruments, BRL stated, "The third party consultant rents the meters from a third party vendor. The third party vendor provides the calibration gas for the meters. Calibration gas accuracy/purity certificates are not provided..." Additionally, on November 18, 2016, BRL stated that, "[Blue Ridge Landfill] has been working with the third-party contractor who performs the surface scans at the Blue Ridge Landfill to obtain the calibration gas certificates... The third-party contractor rents the equipment from a company called Pine Environmental (Pine), and Pine obtains the calibration gas from a company called Gasco. The third-party contractor has been in constant contact with Pine to obtain the certificate of analysis ("COA") documents from Gasco on the cal gas for the FID units. After a time-consuming search through their records, Pine provided the attached statement of quality from Gasco, which outlines their processes and accuracy margins. Our understanding is that Gasco has been unable to locate the COAs, however. This is because Gasco's COAs are tied to individual cylinders and corresponding invoice numbers rather than their lot number, but Pine records the lot number for gasses used during calibration." A copy of the electronic correspondence is included in Attachment 9, found in the confidential files. See Attachment 11 for calibration gas information obtained from BRL.

Therefore, BRL did not maintain records to demonstrate that the facility was using methane diluted to a nominal concentration of 500 ppm to calibrate the FID as specified in 40 CFR 60, Subpart WWW, specifically 40 CFR 60.755(d)(2). Additionally, since BRL did not maintain the certificates of analysis, there was no method to verify that the cylinders used had not expired prior to use.

The investigator reviewed BRL's Surface Emissions Monitoring Plan. The plan stated that "the detector probe will be positioned within 2 to 4 inches (5 to 10 centimeters) from the ground surface or top of the vegetation during surface scans." See Attachment 8, pp 3-5 for a copy of the facility's SEM plan. Investigators observed vegetation higher than 10 cm above ground surface at multiple locations (see photograph ST-105-0378.jpg, on page 44 of Attachment 6 for an example). 40 CFR 60.755(c)(3) does not provide an exception for monitoring on top of vegetation. It states, "(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions." Therefore, BRL's plan indicated they have not been performing the monitoring consistently at the correct distance above the ground. In addition, evidently upon realizing that the monitoring teams were finding significant surface emissions in many locations, a BRL representative commented that emissions will always be found if the probe is held so close to the ground. It should be noted that the TCEQ monitoring teams measured surface emissions at about 6-8 centimeters above ground level.

November 9, 2016

The investigators, Ms. Martinez, Mr. Tate, Ms. DeSilva, Ms. Kincaid, Ms. Gustavson, Mr. Jorn, Ms. Foster, Mr. Jirasek, and Ms. Lopez, arrived onsite at 7:00 AM. Facility representatives present during the investigation included: Mr. Montagna, Mr. Walker, and Mr. Stengl. The investigators began calibration of the TVA 1000B FIDs to be used during the comparative SEM at 7:13 AM. See Attachment 3 for calibration logs. The investigators proceeded to Phase II once calibration of equipment was completed. The investigators formed three survey teams: Team 1 – Ms. Kincaid and Ms. Gustavson; Team 2 – Mr. Jorn and Ms. Foster; and Team 3 – Mr. Jirasek and Ms. Lopez. Ms. DeSilva was on-site with the Jerome 631X H₂S Analyzer. Mr. Tate was operating the OGIC. In addition to the H₂S analyzer, investigators wore a personal H₂S monitor clipped on to the collars of their shirts. Prior to commencing the SEM monitoring, Ms. Martinez and Mr. Tate, accompanied by Mr. Montagna, evaluated the meteorological conditions and obtained upwind and downwind methane concentration readings (Attachment 1, page 3). At 08:41 AM, the weather conditions were as follows: 68 degrees Fahrenheit, 73% humidity, and north wind at 7-10 miles per hour. The teams began monitoring on the southeast corner of Phase II.

At 8:58 AM, Ms. Martinez and Mr. Tate, accompanied by Mr. Montagna, conducted a walkthrough of the main process areas. In addition, the following units were imaged with the OGIC: the emergency flare, main flare, leachate tanks, and gas plant. Mr. Montagna indicated that the gas plant was in operation; therefore, no landfill gas was being sent to the flare. No emissions were observed from any of the units imaged with the OGIC.

The Phase II SEM was completed at 10:55 AM at which time the investigators broke for lunch.

At 12:00 PM, the investigators met to begin preparation for monitoring of Phase III. At 1:15 PM, the teams began

monitoring of Phase III on the southeast corner. The investigators ceased monitoring at 5:20 PM and left the facility at 5:45 PM.

November 10, 2016

At 7:00 AM, Ms. Martinez, Mr. Cortez, Mr. Lemma, Ms. Kinkaid, Ms. Gustavson, Mr. Jorn, Ms. Foster, Mr. Jirasek, and Ms. Lopez arrived at BRL and began calibrating the monitoring equipment. See Attachment 3 for calibration logs. Mr. Lemma was on-site to operate the OGIC. Mr. Cortez was operating the Jerome H₂S analyzer. In addition to the H₂S analyzer, investigators wore a personal H₂S monitor clipped on to the collars of their shirts. Facility representatives present included: Mr. Montagna, Mr. Walker, and Mr. Stengl. A short meeting was held to discuss the day's objectives.

At 8:00 AM, the investigators gathered at the southwest corner of Phase III and prepared to begin monitoring. Meanwhile, Ms. Martinez and Mr. Lemma obtained weather conditions (Attachment 1, page 4). The weather conditions were as follows: 65 degrees Fahrenheit, 59% humidity, and north northeast wind at 6-8 miles per hour.

Ms. Martinez and Mr. Lemma, accompanied by Mr. Montagna, began a walkthrough of the facility at 9:00 AM. The following were imaged with the OGIC: the emergency flare, main flare, leachate tanks, and gas plant. Mr. Montagna indicated that the gas plant was in operation; therefore, no landfill gas was being sent to the flare. No emissions were observed from the units imaged with the OGIC.

The investigators broke for lunch from 12:00 PM to 1:00 PM. After lunch, the investigators continued monitoring until dusk. The investigators left the facility at 6:00 PM.

Description of Surface Emissions Detected:

During the SEM, six (6) total locations were observed to have emissions in excess of 500 ppm on Phase I; one (1) location on Phase II; and 129 locations on Phase III. Satellite images showing the locations of measured exceedances are included on pages 5-7 of Attachment 1

Phase I:

On October 18, 2016, investigators Mr. Alameen & Ms. Torres discovered emissions around the base of well W-30A at 1,162 ppm methane (N29° 33' 43.884" W95° 26' 41.9994"); near cracks in the ground at 529 ppm methane (N29° 33' 41.3274" W95° 26' 48.7674"); and at Well W-45A at 800 ppm methane (N29° 33' 38.52" W95° 26' 43.224"). For more information, see Attachment 5, pg. 1.

On October 19, 2016, Mr. Ackerman & Mr. Jorn found surface emissions at N29° 33' 29.7" W95° 26' 45.8"; the value ranged from 563 to 9,500 ppm methane. An area near Well W-85 (N29° 33' 27.0", W95° 26' 53.3") had readings of 517 ppm methane. Mr. Ackerman & Mr. Jorn also noted that near N29° 33' 26.1", W95° 26' 38.8", the concentration of methane was approximately 10,000 ppm methane. In addition to the 10,000 ppm, a very strong scent of leachate was detected and confirmed by Mr. Brandes and Mr. Tate. On October 19, 2016, Mr. Pinkston and Mr. Villarreal discovered emissions with a concentration of 2,600 ppm methane at N29° 33' 20.8434" W95° 26' 41.5314". For more information, see Attachment 5, pg. 1.

Phase II:

On November 9, 2016, Ms. Kincaid and Ms. Gustavson discovered surface emissions at 2,186 ppm methane near an equipment tipping pad (N29° 33' 40.2", W95° 27' 05.5"). For more information, see Attachment 5, pg. 2.

Phase III:

During the Phase III SEM, there were 129 locations with surface emissions in excess of 500 ppm methane. Some noteworthy readings are described in the next few paragraphs. For in-depth information on Phase II & Phase III surface emissions, see Attachment 5, pp 3-8. Images (IMG or DSC) referenced below can be found in Attachment 6. Videos (MOV) referenced below can be found in Attachment 7.

The highest concentration of methane was found at well W3-64 (N29° 33' 55.6", W95° 27' 01.9") where the reading was 16.55% (165,500 ppm methane).

Surface emissions of 1,724 ppm methane were detected at N29° 33' 51.2", W95° 26' 41.0" (IMG_0323, IMG_0324). The initial reading was taken at the base of a pipe in a fissure on the cover. The southern side of the same pipe had a reading of 1.05% methane (10,500 ppm methane). The H₂S analyzer read 0.061 ppm H₂S.

Surface emissions of 1.89% (18,900 ppm methane) were detected at a capped well (N29° 33' 55.7", W95° 26' 44.2"). The reading was taken at the base of the well (IMG_0325, IMG_0326). The H2S analyzer gave a reading of 0.086 ppm H2S at this location.

Surface emissions were detected at the base of a pipe with a pressure valve (N29° 34' 05.4", W95° 26' 58.9"). Monitoring around the crevasse read 2.27% with the FID (22,700 ppm methane) and 0.11 ppm H2S with the Jerome (IMG_0351, IMG_0352).

Surface emissions of 3.03% (30,300 ppm methane) were detected at a header access (N29° 34' 05.8", W95° 26' 52.5"). The reading was taken at the base of the main well (IMG_0370). The H2S reading was 33 ppm. Another reading was taken with the FID at the base of the air pipe in the same location; this reading measured 1.92% (19,200 ppm methane). The H2S concentration at the base of the air pipe was 25 ppm. There was a pungent rotten egg smell in the area that left a metallic taste.

Surface emissions of 2.98% (29,800 ppm methane) were detected at W3-90 (N29° 34' 03.4", W95° 26' 52.2"). The reading was taken from the base of the vacuum leg (IMG_0371). The H2S analyzer read 11.7 ppm.

At W3-92 (N29° 33' 59.6", W95° 26' 51.4"), a reading of 6,400 ppm methane was taken at the base of the air line (IMG_0372, IMG_0373). The H2S analyzer indicated "HL" which means that the concentration of H2S was above 50 ppm. A reading was also taken at the base of the well with the FID. The reading there was 1.44% (14,400 ppm methane). There was a mixture of odors in this area, but most notably a strong, pungent rotten egg smell that left a metallic taste in the mouth and a burning sensation in the nose.

Surface emissions of 8,818 ppm methane were detected at W3-44 (N29° 33' 53.9"; W95° 26' 50.7") at the base of the vacuum leg. The H2S analyzer read "HL" at this location also.

Surface emissions were detected at Well W3-21A (N29° 33' 55.8714", W95° 26' 30.516"). The readings around the well fluctuated between 400 ppm – and 9,000 ppm methane. These emissions were observed and recorded with the OGIC (MOV_0407_1).

Well LCR 3-1 (N29° 33' 50.688", W95° 26' 30.012") had surface emissions at the base. Readings obtained from the base with the FID were 1% (10,000 ppm methane). Readings taken around the connectors were between 200 ppm and 500 ppm methane. Emissions from the base were observed and recorded with the OGIC (MOV_0408_1).

A strong odor, resembling hydrogen sulfide, was noticed at well W3-18A (N29° 33' 54.72", W95° 26' 35.988"). Readings taken in the vicinity of the well with the FID were between 1% (10,000 ppm methane) and 6% (60,000 ppm methane). Emissions were imaged with the OGIC (MOV_0409_1).

At well W3-23 (N29° 33' 52.9194", W95° 26' 35.988"), surface emissions between 1,193 ppm methane and 11,300 ppm methane were detected at the base. Emissions were captured with the OGIC (MOV_0410_1).

In the following areas there was gas and liquid bubbling up from holes and fissures on the landfill cover: N29° 34' 02.9', W95° 27' 03.7" (IMG_0345, IMG_0346, MOV_0417_1, MOV_0418_1, MOV_0419_1); N29° 34' 02.2", W95° 26' 54.2" (IMG_0359, IMG_0360, IMG_0362, IMG_0363, MOV_0420_1, MOV_0421_1); and N29° 34' 02.6", W95° 26' 54.1" (IMG_0365, IMG_0367, MOV_0422_1). The FID read 6,317 ppm methane, 4,169 ppm methane and 2,281 ppm methane, at these locations respectively. There was a strong, pungent rotten egg odor in those areas. The concentration of H2S was between 0.039 ppm and 2.0 ppm as read by the Jerome H2S analyzer.

There were areas with narrow openings on the ground and areas where extensive erosion of the soil cover appeared to have caused underground piping associated with well heads, valves, and headers to become unearthed. Although there had not been a significant amount of rain in the days prior to November 10, there were wet areas, though these areas were not bubbling. See IMG_0309, IMG_0313, IMG_0315, IMG_0316, IMG_0321, IMG_0322, IMG_0323, IMG_0326, IMG_0328, IMG_0334, IMG_0336, IMG_0339, IMG_0344, IMG_0351, IMG_0355, IMG_0370, IMG_0372, IMG_0373, IMG_0386, IMG_0390, IMG_0392, IMG_0393, IMG_0397, IMG_0399, IMG_0400, IMG_0401, IMG_0404, IMG_0406, IMG_0407, IMG_0408, DSC00086, and DSC00087.

There were areas of Phase III where the ground looked disturbed, as if it had been dug up. This was very noticeable around the well heads on the flat surface on top of Phase III. Mr. Montagna stated that new wells had been recently installed in the area and that the final walkthrough was completed on November 7, 2016, two days prior to the second segment of the SEM investigation. Some of the new wells appeared to have been knocked over, as if by heavy equipment, as they were leaning almost horizontally. There were also other wells throughout Phase III that were not upright (IMG_0334, IMG_0352, IMG_0354, IMG_0357, IMG_0386).

Throughout the monitoring of Phase III, the investigators experienced the following health effects: burning eyes, watery eyes, irritated throat, intermittent coughing, disorientation, headaches, and numbness of the sinuses. Some of these health effects were most prominent on the top surface of Phase III near W3-92 and on the southern incline near W3-64. Periodically, multiple investigators had to walk away from monitoring activities to recover from the health effects before monitoring operations could continue. At one point, Ms. Martinez observed an odor that caused a metallic taste, nausea, and momentary disorientation. The investigator relocated to an area outside of the odor plume and after a few minutes, the health effects subsided. The methane reading inside the odor plume was 1,200 ppm at breathing level (about 4.5 feet off the ground).

The investigators experienced the following odors throughout the monitoring of Phase III: garbage, decaying/decomposing matter, sour gas, landfill gas, rotten egg, fish, and petroleum.

Exit Interview

An Exit Interview Form was completed by the investigator on January 2, 2017 and emailed to Mr. Montagna. The Exit Interview Form is provided in Attachment 10.

GENERAL FACILITY AND PROCESS INFORMATION

Process Description

Blue Ridge Landfill is a waste disposal facility. The landfill is authorized, via TCEQ Municipal Solid Waste (MSW) Permit No. 1505A, to accept municipal solid waste including household solid waste, commercial solid waste, construction and demolition waste, and yard waste; Class 1, Class 2 and Class 3 non-hazardous industrial waste; and liquid wastes. Class 1 waste is buried in the designated Class 1 cell of the landfill. Liquid wastes are sent to a bulking facility/solidification basin prior to disposal in the landfill. Hazardous waste may not be accepted for disposal. Additional information can be found in the Houston Region Office files.

BACKGROUND

Agreed Orders, Court Orders, & Other Compliance Agreements:

Based on review of CCEDS, regional office files, and enforcement database, there was no Agreed Order (AO) issued to BRL by the TCEQ related to surface emissions monitoring.

Prior Enforcement Issues:

Based on a review of CCEDS, there were Notices of Violations (NOVs) issued by the TCEQ within the past five years to BRL. There are no repeat violations.

Complaints:

Based on review of Regional Office records, CCEDS, and enforcement database, there were 358 complaints filed against BRL between November 1, 2014 and November 30, 2016. There were more than 1,800 odor complaints from the surrounding community during that time, many of which specifically alleged BRL as the source.

ADDITIONAL INFORMATION

Conclusions, and Recommendations, and Current Enforcement Actions

Based on this investigation, an alleged violation was documented. See the "Summary of Investigation Findings" section of this report for details.

Throughout the course of walking the surface of the three Phases, the investigators found numerous areas with holes, fissures, and crevasses on the ground where erosion of the cover was evident. There were pipes associated with the gas collection system where the dirt was not packed tight around the pipes. Liquid and gas bubbled out

of the ground in other areas. All of these findings, accompanied by the notable odor and health effects experienced by the investigators, indicate poor maintenance of the soil cover and of the gas collection and control system itself. In addition, the conditions observed and the emissions measured support the allegation in Investigation No. 1331231 that BRL is the source of the nuisance odors detected offsite. Finally, the facility reported there were no emissions exceedances in the six quarterly reports reviewed; however, during the investigation, TCEQ investigators documented 136 locations with surface emissions above 500 ppm as described above. There were also multiple deficiencies in the facility's SEM plan.

Based on records reviewed, information gathered via monitoring, and observations made, it was determined that BRL was not monitoring the facility as required by 40 CFR 60.756(f). See violation 627731 (Category A).

Additional Issues

No additional issues were noted during this investigation.

Attachments

- (1) Maps
- (2) Plot Plan and Flow Chart
- (3) Calibration Checks
- (4) Quarterly SEM Reports
- (5) Monitoring Exceedance Logs
- (6) Pictures
- (7) Videos
- (8) Correspondence
- (9) Confidential
- (10) Exit Interview Form
- (11) Third party calibration gas information

NOE Date: 1/3/2017

**OUTSTANDING ALLEGED VIOLATION(S)
ASSOCIATED TO A NOTICE OF ENFORCEMENT**

Track Number: 627731 **Compliance Due Date:** To Be Determined

Violation Start Date: 3/30/2015

30 TAC Chapter 122.143(4)
40 CFR Chapter 60.756(f)
5C THSC Chapter 382.085(b)

PERMIT 1472, Term and Condition (c)(20)

PERMIT 1472, Term and Condition (c)(20)

PERMIT 1472, Term and Condition (c)(41)

PERMIT 1472, Term and Condition (c)(41)

Alleged Violation:

Investigation: 1370033

Comment Date: 01/02/2017

Failure to monitor according to 40 CFR 60, Subpart WWW.

During an onsite investigation conducted from October 18, 2016 to November 10, 2016, it was determined that Blue Ridge Landfill (BRL) failed to perform surface emissions monitoring (SEM) in accordance with the

requirements of 40 CFR 60.756(f).

Specifically, in the quarterly SEM reports, BRL stated that no exceedances above the threshold of 500 ppm methane were detected at the facility in the previous six (6) quarters of monitoring events from March 30, 2015 through June 9, 2016; however, during the comparative SEM monitoring conducted by the TCEQ Houston Region, one hundred and thirty six (136) surface emissions exceedances were discovered in excess of 500 ppm methane.

The facility was asked to provide calibration gas certificates to verify that the contractor's equipment was calibrated with the proper concentration of gas and to document that the calibration gases used were not expired. BRL stated that the facility did not have copies of calibration gas certificates showing methane concentration and expiration date and as of the date of the report was unable to locate the certificates from the contractors; therefore, BRL failed to demonstrate compliance with the calibration requirements of EPA Test Method 21 pertaining to specified shelf life and accuracy of the gas.

The facility's SEM plan required by 40 CFR 60, Subpart WWW, stated that "the detector probe will be positioned within 2 to 4 inches (5 to 10 centimeters) from the ground surface or top of the vegetation during surface scans." However, 40 CFR 60, Subpart WWW does not provide an exception for monitoring at the top of the vegetation. In addition, BRL did not maintain a record of actual readings to document that there were no exceedances of 500 ppm methane. Therefore, BRL did not maintain documentation to demonstrate that monitoring was performed.

This constitutes a violation of 40 CFR 60.756(f) which states, "Each owner or operator seeking to demonstrate compliance with § 60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in § 60.755(d)...."

This further constitutes a violation of the following: GOP O-1472, Term and Condition (c)(20) and (41), 30 TAC 122.143(4), and Texas Health & Safety Code 382.085(b).

Signed


Environmental Investigator

Date

1/3/17

Signed


Supervisor

Date

1-3-2017

Attachments: (in order of final report submittal)

Enforcement Action Request (EAR)

Letter to Facility (specify type): NOE

Investigation Report

Sample Analysis Results

Manifests

Notice of Registration

Maps, Plans, Sketches

Photographs

Correspondence from the facility

Other (specify):

See Report Attachment List