

AIR CP_10261012_CP_20160818_INVESTIGATION_1331231_
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 # 1331231

Incident Numbers

232554

Investigator: JUSTIN MAYWORN

Site Classification MAJOR SOURCE

Conducted: 05/04/2016 -- 08/18/2016

NAIC Code: 562212

SIC Code: 4953

SIC Code: 1521

Program(s): AIR OPERATING PERMITS

Investigation Type: Compliance Investigation

Location: LOCATED ON 2200 FM 521

Additional ID(s): FG0536E
1472

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

Local Unit: REGION 12 - HOUSTON

Activity Type(s): AIR MNSR - MINOR SOURCE NEW
SOURCE REVIEW
AIRCOMPL - AIR CMPL - AIR
COMPLAINT INV

Principal(s):

Role

Name

RESPONDENT

BLUE RIDGE LANDFILL TX LP

Contact(s):

Role

Title

Name

Phone

REGULATED
ENTITY
CONTACT

OPERATIONS
MANAGER

MR MATT
MONTAGNA

Work (713) 676-7664

Other Staff Member(s):

Role

Name

Investigator
Supervisor
QA Reviewer
QA Reviewer
QA Reviewer
QA Reviewer
Investigator
Investigator
Investigator
Investigator
Investigator

WILLIAM JORN
JOSEPH DOBY
ROBERT MCLEOD
CORBETT BRINLY
JOSEPH DOBY
GABRIELLE LAMOREAUX
GARY ACKERMAN
GABRIELLE LAMOREAUX
GREGORY CROOK
ANDREW EVANS
ALEJANDRA DE LOS SANTOS

Associated Check List

<u>Checklist Name</u>	<u>Unit Name</u>
AIR GENERIC INVESTIGATION (10 ITEMS)	Site Wide
AIR INVESTIGATION - EQUIPMENT	Site Wide
MONITORING AND SAMPLING revised 06/2013	

Investigation Comments:

INTRODUCTION

Introduction

Between the dates of May 2 and May 6, 2016 the TCEQ Region 12 office received seventy-six (76) complaints (assigned to incident #232554) regarding a strong odor described as having a chemical, garbage, landfill, seafood, rotten egg, chemical, rot, natural gas, sewage, or sulfurous character. The source of the odor was alleged to emanate from either Akzo Nobel Surface Chemistry or Blue Ridge Landfill by the complainants. The odors were reported to occur between the hours of 2000-1000 several times per week. Several complainants claimed to be suffering from health effects including headaches, difficulty breathing, sleep loss, burning eyes, and nausea due to the odor.

The first complainant was contacted by Justin Mayworn at 1001 on May 3, 2016.

The GPS coordinates referenced in this report (odor log locations) are uncorrected field data that were collected with a recreational GPS receiver for informational purposes only.

Daily Summary

Date of investigations: May 4 and 5, 2016

Name of investigators: Justin Mayworn, Gabrielle Lamoreaux, Jay Evans, Alejandra De Los Santos

Time of arrival: 0536 (May 4), and 0552 (May 5)

Description of the surrounding land use: Residential and light industrial

Description of the terrain: Flat with sporadic forest

Investigation Summary

Meteorological conditions May 2, 2016 (alleged incident date)

Cloud Cover: Partly cloudy

Wind direction: North

Wind Speed: 0-20 mph

Temperature: 68 degrees Fahrenheit

Precipitation: 0.07 in

Source of Meteorological Conditions: Weather Underground (KAXH)

Meteorological conditions May 3, 2016 (alleged incident date)

Cloud Cover: Partly cloudy

Wind direction: Northwest

Wind Speed: 0-12 mph

Temperature: 68 degrees Fahrenheit

Precipitation: 0 in

Source of Meteorological Conditions: Weather Underground (KAXH)

Meteorological conditions May 4, 2016 (alleged incident date and investigation date)

Cloud Cover: Partly cloudy

Wind direction: Northwest

Wind Speed: 0-13 mph

Temperature: 66 degrees Fahrenheit

Precipitation: 0 in

Source of Meteorological Conditions: Weather Underground (KAXH)

Meteorological conditions May 5, 2016 (alleged incident date and investigation date)

Cloud Cover: Partly cloudy

Wind direction: Northwest

BLUE RIDGE LANDFILL - FRESNO

5/4/2016 to 8/18/2016 Inv. # - 1331231

Page 3 of 10

Wind Speed: 0-13 mph
Temperature: 70 degrees Fahrenheit
Precipitation: 0 in
Source of Meteorological Conditions: Weather Underground (KAXH)

Meteorological conditions May 6, 2016 (alleged incident date)
Cloud Cover: Partly cloudy
Wind direction: East
Wind Speed: 0-8 mph
Temperature: 68 degrees Fahrenheit
Precipitation: 0 in
Source of Meteorological Conditions: Weather Underground (KAXH)

Investigation Narrative

On May 4, 2016, Environmental Investigators Justin Mayworn, Gabrielle Lamoreaux, Alejandra De Los Santos, and Jay Evans separated into two teams (Team 1: Justin Mayworn and Jay Evans, Team 2: Gabrielle Lamoreaux and Alejandra De Los Santos) to survey the area for odors.

A map of the source location and odor log locations is included in Attachment 1.

Team 1
May 4, 2016

Justin Mayworn and Jay Evans were equipped with a MultiRAE, five Summa canisters (one trip blank and four sample canisters), and a Kestrel weather meter.

At 0536, Team 1 arrived at a location near a complainant's home located in Green Valley Estates (location 1, general vicinity of 29°35'13.80"N, 95°27'32.55"W), to conduct an odor survey and to assess odor frequency, intensity, duration, and offensiveness (FIDO). A 15 minute odor log was taken (see attachment 2, page 1). No odor was detected. The wind was blowing from the northwest toward the southeast at 5-10 mph.

At 0605, Team 1 arrived at Biscayne Lake Drive (location 2, 29°34'33.01"N, 95°25'48.55"W), to conduct an odor survey and to assess odor FIDO. A landfill gas/honeysuckle odor was detected and a 30 minute odor log was taken (see attachment 2, page 2). The one minute and 10 minute weighted averages were each very light intensity. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. The wind was blowing from the northwest toward the southeast at 5-10 mph.

At 0643, Team 1 arrived at the intersection of Broadway Street and Southlake Boulevard (location 3, 29°33'18.53"N, 95°25'51.49"W), to conduct an odor survey and to assess odor FIDO. A landfill gas/honeysuckle odor was detected and a 34 minute odor log was taken (see attachment 2, page 3). The one minute and 10 minute weighted averages were each strong intensity. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. The wind was blowing from the northwest toward the southeast at 5-10 mph.

At 0716, Team 1 arrived at the intersection of Timber Ridge Drive and Leafwood Lane (location 4, 29°33'30.41"N, 95°26'23.98"W) to conduct an odor survey and to assess odor FIDO. A landfill gas/honeysuckle odor was detected and a 93 minute odor survey was conducted and documented on a 60 minute odor log followed by a 33 minute odor log (see attachment 2, pages 4 and 5). For the 60 minute log, the one minute and 10 minute weighted averages were very strong intensity; the one hour weighted average was strong intensity. During the 33 minute log, the one and 10 minute weighted averages were strong. Two Summa canister samples were collected simultaneously (canister IDs N1061 and N0528). The samples were taken using the orifice flow controller for a duration of 30 minutes. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. During this portion of the odor observation, Mr. Mayworn experienced nausea due to the odor. The wind was blowing from the northwest toward the southeast at 5-10 mph.

At 0948, Team 1 arrived at Blue Ridge Landfill to survey the odors on-site. The investigators met with Mr. Matt Montagna (Landfill Operations Manager) and were taken on a full site tour. During the tour, the investigators experienced the same landfill gas/ honeysuckle odor that had been recorded earlier that morning in multiple odor

BLUE RIDGE LANDFILL - FRESNO

5/4/2016 to 8/18/2016 Inv. # - 1331231

Page 4 of 10

logs. The odor was most intense within approximately 50 meters of the working face. During the odor observations made earlier in the day, it was noted that a honeysuckle odor often accompanied the landfill gas odor experienced by the investigators. The investigators questioned Mr. Montagna about this, who replied that the honeysuckle odor is a deodorizing agent used by the landfill to suppress odors, and that if the honeysuckle odor is detected off-site, it is likely that the landfill is the source. After confirming that the odor generated on-site was consistent with the odor reported by the complainants, the investigators departed the site at 1017.

Team 2

May 4, 2016

Gabrielle Lamoreaux and Alejandra De Los Santos were equipped with five Summa canisters (one trip blank and four sample canisters) to aid in their observations.

At 0536, Team 2 arrived at the intersection of Shadow Creek Parkway and Reflection Bay (location 6, 29°34'39.78"N, 95°24'24.19"W) to conduct an odor survey and to assess odor FIDO. A sewage/sulfur odor was detected and three odor logs were taken: A 60 minute odor log by Ms. De Los Santos and a 22 minute and 11 minute log taken by Ms. Lamoreaux (see attachment 2, pages 7, 8, and 9). For the 60 minute odor log, the one minute weighted average was very light intensity, the 10 minute weighted average was strong intensity, and one hour weighted average was light. For the 22 minute odor log, the one minute weighted average was strong, and the 10 minute weighted average was light. For the 11 minute odor log, the one minute weighted average was strong and the 10 minute weighted average very light. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. Two Summa canister samples were taken simultaneously at this location (canister IDs N0435 and N9113) using an orifice flow controller for a duration of 30 minutes. The winds were 0-10 mph and variable.

At 0623, Ms. Lamoreaux arrived at the sewer lift station located on Biscayne Bay Drive (location 7, 29°34'22.70"N, 95°25'20.57"W) to conduct an odor survey and to assess odor FIDO. A 15 minute odor log was taken (see attachment 2, page 10). No odor was detected.

At 0713, Team 2 arrived at the intersection of Shadow Creek Ranch Parkway and Kirby Drive (location 8, 29°34'41.24"N, 95°23'58.78"W) to conduct an odor survey and to assess odor FIDO. An amine/chemically fishy odor was detected. A 70 minute odor survey was conducted and documented on a 60 minute log followed by a 10 minute log. A 39 minute odor log was simultaneously taken by Ms. De Los Santos. For the 60 minute log, the one minute weighted average was strong, the 10 minute weighted average was light, and the one hour weighted average was very light intensity. For the 10 minute log, the one minute weighted average was very light; there was not sufficient odor detected to make a 10 minute weighted average determination. For the 39 minute log, the one minute and 10 minute weighted averages were each very strong intensity (see attachment 2, pages 11, 12, and 13). The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. Two Summa canister samples were taken simultaneously at this location (canister IDs N1624 and N0560), utilizing the orifice flow controller to take 30 minute samples. The wind was blowing from the northwest toward the southeast at 0-5 mph.

At 0842, Team 2 arrived at West Road (location 9, 29°34'58.44"N, 95°26'25.31"W) to conduct an odor survey and to assess odor FIDO. A garbage and laundry detergent odor was detected. Two odor logs were taken simultaneously, one with a duration of 44 minutes and the other with a duration of 53 minutes. For the 44 minute odor log the one minute weighted average was very light intensity, and the 10 minute weighted average was light (see attachment 2, pages 14 and 15). For the 53 minute log the one minute weighted average was moderate, and the 10 minute weighted average was very light. The investigators characterized the odor as offensive based on experience, training, and the examples on the TCEQ FIDO chart. The wind was blowing from the northwest toward the southeast at 0-5 mph.

At 1000, Team 2 arrived at Antioch Drive (location 10, 29°35'35.58"N, 95°26'45.64"W) to conduct an odor survey and to assess odor FIDO. A garbage odor was detected. Two odor logs were taken simultaneously with a duration of three minutes each. For the first odor log, the one minute weighted average was very light intensity. For the other odor log, the one minute weighted average was very strong. Because of truck traffic, the investigators moved to another location (29°35'53.16"N, 95°26'45.02"W) and took an additional 10 minute odor log. For the 10 minute log, no odor was detected (see attachment 2, pages 16 and 17). The investigators characterized the odor as offensive based on experience, training, and the examples on the TCEQ FIDO chart. The investigators believe that the brief detection of garbage odor was due to passing garbage trucks entering Lone Star Recycling at this

BLUE RIDGE LANDFILL - FRESNO

5/4/2016 to 8/18/2016 Inv. # - 1331231

Page 5 of 10

location. No other odor was detected at this location. The wind was blowing from the northwest toward the southeast at 0-5 mph.

At 1020, Team 2 arrived at Hooper Road (location 11, 29°35'20.43"N, 95°24'16.89"W) to conduct an odor survey and to assess odor FIDO. An amine/glue/chemically fishy odor was detected. Two odor logs were taken simultaneously, one with a duration of 55 minutes, and the second with a duration of 26 minutes. For the 55 minute log, the one and 10 minute weighted averages were each very strong intensity. For the 26 minute log, the one and 10 minute weighted averages were each strong intensity (see attachment 2, pages 18 and 19). The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. Two Summa canister samples were taken simultaneously at this location (canister ID's N0621 and N1068), utilizing the orifice flow controller for a duration of 30 minutes. The wind was blowing from the northwest toward the southeast at 0-5 mph. The investigators visited sites identified as Syntech Chemicals and Brenntag Southwest which were upwind of the location of the detected odors. Details regarding the onsite visits to these facilities are discussed below.

At 1045, all four investigators met to discuss their findings and plan their activities for the remainder of the day. Alejandra De Los Santos and Jay Evans returned to TCEQ Region 12 headquarters, while Justin Mayworn and Gabrielle Lamoreaux continued the investigation.

At 1115, the investigators arrived at South Freeway (location 5, 29°35'36.81"N, 95°23'7.13"W) to conduct an odor survey and to assess odor FIDO. A 15 minute odor log was taken (attachment 2, page 6). No odor was detected. The wind was blowing from the northwest toward the southeast at 0-5 mph.

At 1214, the investigators arrived at a complainant's home to examine the property for any material that could be collected by a tape lift. This complainant alleged that a clear film had accumulated on their property and believed the film was being caused by the same source as the odor. No films or residues were discovered on the property. No tape lift was collected.

At 1246, the investigators arrived at Akzo Nobel Surface Chemistry located at 15200 Almeda Rd, Houston, TX 77053. The investigators met with Mr. Sergio Sepulveda (Sr. Environmental Engineer) and requested records of any maintenance, startup, and shutdown (MSS) activities, upsets, and reportable events for the period of February 1, 2016 to May 4, 2016. These records were provided to Mr. Mayworn on May 9, 2016. The records did not indicate that there were any events that would have produced the odor described by the complainants. While on site, investigators noted a faint laundry detergent/soap odor having a "not unpleasant" character based on the investigators' experience and training.

At 1320, the investigators arrived at Syntech Chemicals Inc. (RN100664994) located at 14822 Hooper Rd, Houston, TX 77047. This site was investigated due to a fishy/chemical/amine odor detected in this vicinity during the odor survey conducted at Hooper Road, approximately 68 meters from the facility's fence line. This location is approximately one to two miles northeast of the location in Shadow Creek Ranch having the most complaints. Upon arriving, the investigators met and asked Mr. Christiaan Stevens (Owner) about what the company manufactures, its process, and its permits. Syntech is a small chemical manufacturing facility that currently produces fuel additive. The investigators reviewed the site's permits and collected copies of the material safety data sheets for the materials used in the production of its fuel additive. Records of upsets, MSS activities, or reportable events were requested for the period of February 1, 2016 to May 4, 2016. No events were reported for the requested period. Afterward, a complete site tour was conducted. During the tour, the investigators noted that the fishy, amine odor appeared to be originating from this site. This odor was not consistent with the descriptions of odors reported by the complainants. The permits by rule (PBRs) claimed by the site were noted and may be viewed in the "Facility Authorization Narrative" section of this report.

At 1405, the investigators arrived at Brenntag Southwest (RN100544675) located at 14826 Hooper Rd, Houston, TX 77047. Brenntag Southwest is a chemical supply and shipping company located directly adjacent to Syntech. This is a distribution site where chemicals are received, repackaged, and shipped. Chemicals are not produced or altered on-site. The investigators met with Mr. Brian Unruh (Operations Manager Houston-Pasadena) upon arrival. The investigators reviewed the site's new source review (NSR) permits and collected records of all chemicals and materials that are handled on-site. Afterward, the investigators conducted a full site tour. The investigators did not detect any odors coming from the site; therefore, no odor log was recorded.

May 5, 2016

BLUE RIDGE LANDFILL - FRESNO

5/4/2016 to 8/18/2016 Inv. # - 1331231

Page 6 of 10

During this day of the investigation, Environmental Investigator Mr. Chris Crook conducted odor surveys upwind of Blue Ridge Landfill, while Justin Mayworn and Jay Evans conducted odor surveys downwind of Blue Ridge Landfill.

At 0550, the investigators arrived at Mountain Sage Drive (location 13, 29°33'51.00"N, 95°26'15.96"W) to conduct an odor survey and to assess odor FIDO. A landfill gas/honeysuckle odor was detected. Two 30 minute odor logs were taken simultaneously by both investigators. For both odor logs the one minute and 10 minute weighted averages were very strong intensity (see attachment 2, pages 20 and 21). The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. At the same time, Chris Crook conducted a 30 minute odor survey upwind at the intersection of West Road and McHard Road (location 12, 29°34'55.66"N, 95°26'26.00"W) north of Blue Ridge landfill. No odor was detected at location 12 (see attachment 2, page 22). The wind was blowing from the northwest toward the southeast at 0-10 mph at both locations. At 0613 Mr. Matt Montagna of Blue Ridge landfill (Landfill Operations Manager) arrived at location 13 while conducting his own odor surveys. Mr. Montagna stopped to chat with the investigators for several minutes. The investigators asked Mr. Montagna if he was able to identify the odor the investigators were experiencing at that site, and where he thought it may be coming from. Mr. Montagna replied that the odor smelled like the odor typically emitted by the landfill, and that cover dirt on the working face of the landfill had recently been overturned or removed to receive garbage for that day.

At 0646, the investigators arrived at Lilac Breeze Lane (location 14, 29°34'12.81"N, 95°25'57.57"W) to conduct an odor survey and to assess odor FIDO. A strong landfill gas/honeysuckle odor was detected. A 32 minute and a 30 minute odor log were taken simultaneously by both investigators (see attachment 2, pages 26 and 27). For both odor logs the one minute and 10 minute weighted averages were strong intensity. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. At the same time, Chris Crook remained at location 12 and conducted a 30 minute odor survey (see attachment 2, page 23). No odor was detected at location 12. The wind was blowing from the northwest toward the southeast at 0-10 mph at both locations.

At 0731, the investigators arrived at Morgan Bay Court (location 15, 29°34'2.07"N, 95°26'7.27"W) to conduct an odor survey and to assess odor FIDO. A landfill gas/honeysuckle odor was detected and a 12 minute odor log was taken (see attachment 2, page 28). The one minute weighted average was very strong and the 10 minute weighted average was moderate. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. At the same time, Chris Crook remained at location 12 and conducted a 30 minute odor survey (see attachment 2 page 24). No odor was detected at location 12. The wind was blowing from the northwest toward the southeast at 0-10 mph at both locations.

At 0748, the investigators arrived at Field Hollow Drive (location 16, 29°33'37.41"N, 95°26'17.22"W) to conduct an odor survey and to assess odor FIDO. A landfill gas/honeysuckle odor was detected and a 19 minute odor log was taken. The one minute and 10 minute weighted averages were very strong intensity (see attachment 2, page 29). The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. At the same time, Chris Crook remained at location 12 and continued the 30 minute odor survey he began at 0733 (see attachment 2 page 24). No odor was detected at location 12. The wind was blowing from the northwest toward the southeast at 0-10 mph at both locations.

At 0810, the investigators arrived at Mountain Sage Drive (location 17, 29°33'56.53"N, 95°26'13.67"W) to conduct an odor survey and to assess odor FIDO. A landfill gas/honeysuckle odor was detected. Two 24 minute odor logs were taken simultaneously by both investigators. For both odor logs, the one minute and 10 minute weighted averages were very strong intensity (see attachment 2, pages 30 and 31). The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. At the same time, Mr. Crook remained at location 12 and conducted a 30 minute odor survey (see attachment 2 page 25). No odor was detected at location 12. The wind was blowing from the northwest toward the southeast at 0-10 mph at both locations.

At 0907, investigators Justin Mayworn, Chris Crook, Austin Jorn, and Gary Ackerman arrived at Blue Ridge Landfill to conduct an optical gas imaging camera (OGIC) survey. The investigators met with Mr. Matt Montagna (Landfill Operations Manager) who escorted the investigators during the OGIC survey. All accessible landfill gas collection well heads, the working face, the gas plant, flares, and inactive areas of the landfill were surveyed by OGIC. No fugitive emissions or volatile organic compounds (VOCs) were detected with the camera.

BLUE RIDGE LANDFILL - FRESNO

5/4/2016 to 8/18/2016 Inv. # - 1331231

Page 7 of 10

In addition to the odors reported in the complaints, other odors were detected during the course of the investigation. In particular, an amine/chemically fishy odor was present in the vicinity of Sytech Chemicals Inc. and Brenntag Southwest. However, these odors were not present in areas where complainants were located, were not detected while the investigators remained within the Shadow Creek Ranch neighborhood, and were not reported by the complainants.

Additionally, during the weeks of May 23 and June 6, 2016, the TCEQ conducted a series of focused odor survey investigations in the area.

Focused odor investigation #1336503 was conducted May 23, 2016. During the investigation, a landfill gas/honeysuckle odor was detected and recorded by odor log at a strong intensity for a period of one hour. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart.

Focused odor investigation #1345016 was conducted May 24, 2016. During the investigation, a landfill gas/honeysuckle odor was detected and recorded by odor log at a strong intensity for a period of one hour. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart.

Focused odor investigation #1349609 was conducted May 25, 2016. During the investigation, a landfill gas/honeysuckle odor was detected and recorded by odor log at a very light intensity for a period of one hour. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart.

Focused odor investigation #1337792 was conducted June 6, 2016. During the investigation, a landfill gas/honeysuckle odor was detected and recorded at a very strong intensity for a period of one hour (see attachment 3). The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart. This constitutes a nuisance violation as a single occurrence event under FIDO.

Complaint investigation # 1342821 was conducted June 23, 2016. During the investigation, a landfill gas/honeysuckle odor was detected and recorded at a moderate intensity for a period of ten minutes. During the investigation, TCEQ Investigator Ms. Karla Hardison experienced nausea due to landfill gas odors observed at a location downwind of the Blue Ridge Landfill. The investigators characterized the odor as highly offensive based on experience, training, and the examples on the TCEQ FIDO chart.

The landfill gas odor identified in this report and in the referenced investigations was most often observed downwind of the Blue Ridge Landfill. This odor was consistently accompanied by the honeysuckle odor characteristic of the deodorizer in use at Blue Ridge Landfill. The observed landfill gas odor was distinctly different from odors encountered at other facilities investigated. Investigators described it as having a putrid garbage odor, but also with strong chemical notes of sulfur, garlic, decaying onions, and honeysuckle.

Until July 2016, Blue Ridge Landfill discharged its leachate into the local municipal sanitary sewer collection system. The leachate had a strong chemical odor with a definite sulfurous character. The investigators determined that the odor of the leachate sample was consistent with the landfill gas odor detected during the odor surveys.

Additionally, a representative of the City of Pearland Public Works Department allowed TCEQ investigators to smell a representative sample of leachate that had been discharged by Blue Ridge Landfill to the city wastewater collection system. This leachate had a strong chemical odor with a definite sulfurous character. The investigators determined that the odor of the leachate sample was consistent with that detected during the odor surveys, albeit with stronger chemical notes.

Based on information gathered through odor observations conducted during this investigation it has been determined that Blue Ridge Landfill is the source of the odor reported by the complainants.

Due to the intensity, duration, and offensiveness of these confirmed odor nuisance condition events, the nuisance violation that will be issued falls within the "single occurrence", "weekly", "monthly", and "quarterly" frequency

BLUE RIDGE LANDFILL - FRESNO

5/4/2016 to 8/18/2016 Inv. # - 1331231

Page 8 of 10

categories as defined by FIDO.

Toxicology

A total of eight Summa canister samples were taken during the course of the investigation. On June 20, 2016 the investigators received the report of the toxicology evaluation of the sample results (see attachment 4). The canisters were tested for 84 different VOCs. According to the toxicology report, no VOCs were found to be present at a level that would be expected to adversely affect human health.

Facility Authorization Narrative

Blue Ridge Landfill operates under federal operating permit (FOP) # O-01472 (General Operating Permit #517).

Syntech Chemicals Inc. operates under the permits by rule (PBR) 106.262, 106.261, 106.183, 106.371, 106.372, and 106.373.

Brenntag operates under new source review (NSR) permit #3939.

These permits were reviewed to assist in determining what materials and chemicals were authorized to be handled on site.

Exit Interview

On October 21, 2016, the investigator conducted an exit interview with Mr. Matt Montagna. The Exit Interview Form was emailed to Mr. Montagna and is provided in Attachment No. 5.

In addition, the complainant was contacted via telephone with the results of the investigation on October 21, 2016.

GENERAL FACILITY AND PROCESS INFORMATION

Process Description

Blue Ridge Landfill is a Type 1 Municipal Solid Waste landfill. Details of the process description can be found at the Houston Region Central files.

BACKGROUND

Agreed Orders, Court Orders, and Other Compliance Agreements

Based on review of CCEDS and the regional office files during the past five years, there were no agreed orders, court orders, or other compliance agreements for the site.

Prior Enforcement Issues

Based on a review of CCEDS and the regional office files, two violations were issued by the TCEQ to the alleged source during the past five years. There are no repeat violations.

Complaints

Based on a review of CCEDS and Regional Office records, there have been hundreds of odor complaints received from within the survey area and numerous investigations related to odors. Many of these specifically identified Blue Ridge Landfill as the source.

ADDITIONAL INFORMATION

Conclusions, Recommendations, and Current Enforcement Actions

One violation was noted based upon conditions observed, information received, and records reviewed during this investigation. For more information, see the Summary of Investigation Finding below.

BLUE RIDGE LANDFILL - FRESNO

5/4/2016 to 8/18/2016 Inv. # - 1331231

Page 9 of 10

Additional Issues

No additional issues were noted during this investigation.

REPORT ATTACHMENTS

1. Area and Odor Log Location Map
2. Odor Logs
3. Investigation #1337792 Odor Log
4. Toxicology Report
5. Exit Interview Form

NOE Date: 10/21/2016

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

Track Number: 615250

Compliance Due Date: To Be Determined

Violation Start Date: 5/4/2016

30 TAC Chapter 101.4

5C THSC Chapter 382.085(a)

5C THSC Chapter 382.085(b)

Alleged Violation:

Investigation: 1331231

Comment Date: 10/21/2016

Failure to prevent a nuisance condition.

TCEQ Investigators conducted odor surveys at off-site locations and detected a moderate landfill gas/honeysuckle odor that was highly offensive on June 23, 2016; a strong landfill gas/honeysuckle odor that was highly offensive on May 23, 2016 and May 24, 2016; and a very strong landfill gas/honeysuckle odor that was highly offensive on May 4, 2016, May 5, 2016, and June 6, 2016. The investigators determined the source of the odors was from Blue Ridge Landfill. The pattern of odors resulted in the confirmation of a weekly nuisance condition. These nuisance odors from Blue Ridge landfill were determined to be injurious to or adversely affect human health or welfare, and interfered with the normal use and enjoyment of animal life, vegetation, or property.

This constitutes a violation of 30 TAC §101.4, which states, "No person shall discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property."

This further constitutes a violation of the following: Texas Health & Safety Code 382.085(a) and Texas Health & Safety Code 382.085(b).

Recommended Corrective Action: Submit a written description of corrective action taken and the required documentation demonstrating that compliance has been achieved for this outstanding alleged violation.

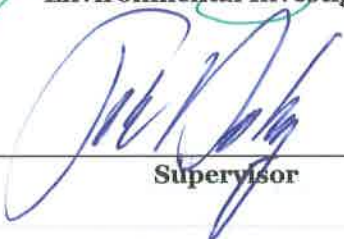
Signed


Environmental Investigator

Date

10/21/16

Signed


Supervisor

Date

10/21/16

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) :

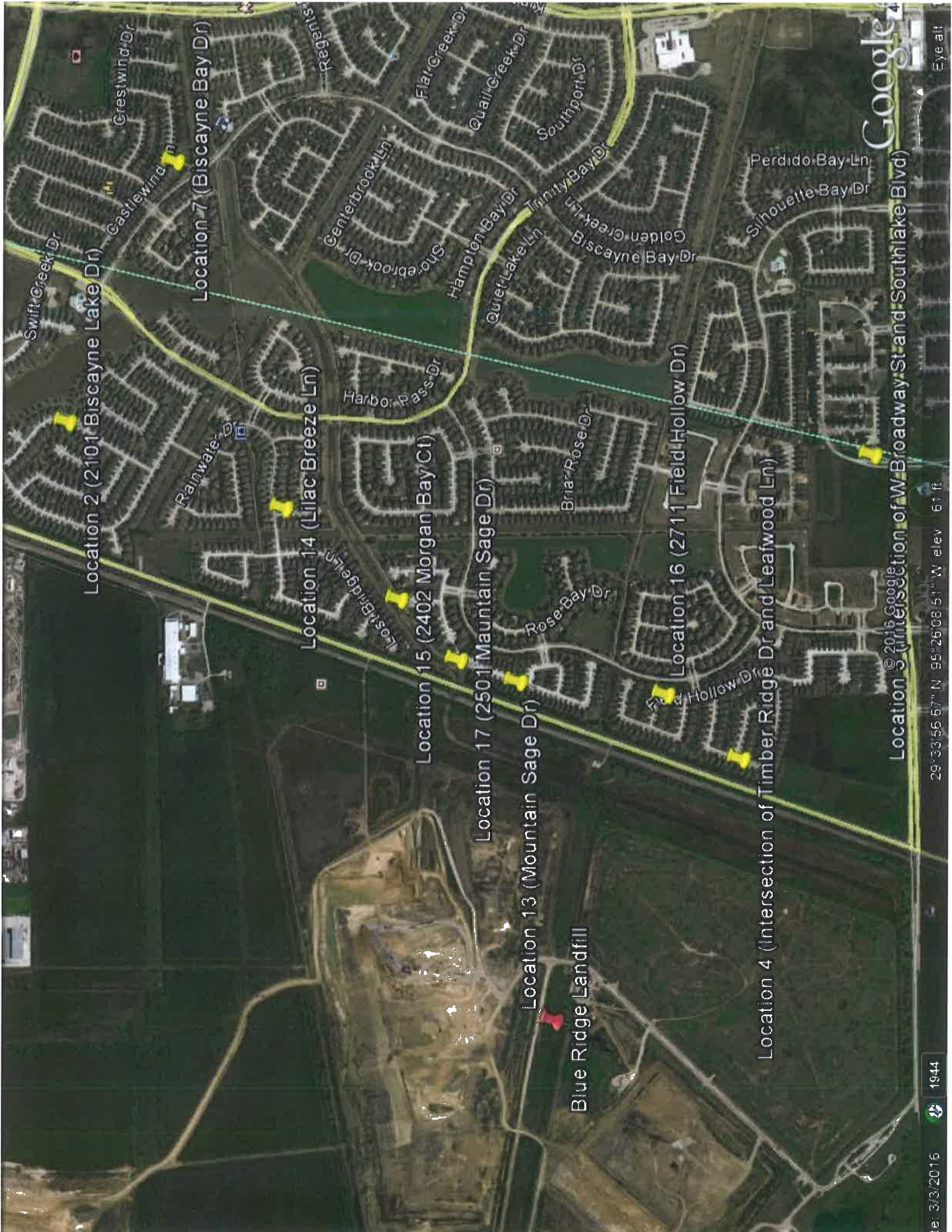
See investigation attachments.

Attachment 1

Area Map and Odor Log Locations

RN 102610102

Blue Ridge Landfill



Location 2 (2101 Biscayne Lake Dr)

Location 7 (Biscayne Bay Dr)

Location 14 (Lilac Breeze Ln)

Location 15 (2402 Morgan Bay Ct)

Location 17 (2501 Mauntain Sage Dr)

Location 13 (Mountain Sage Dr)

Blue Ridge Landfill

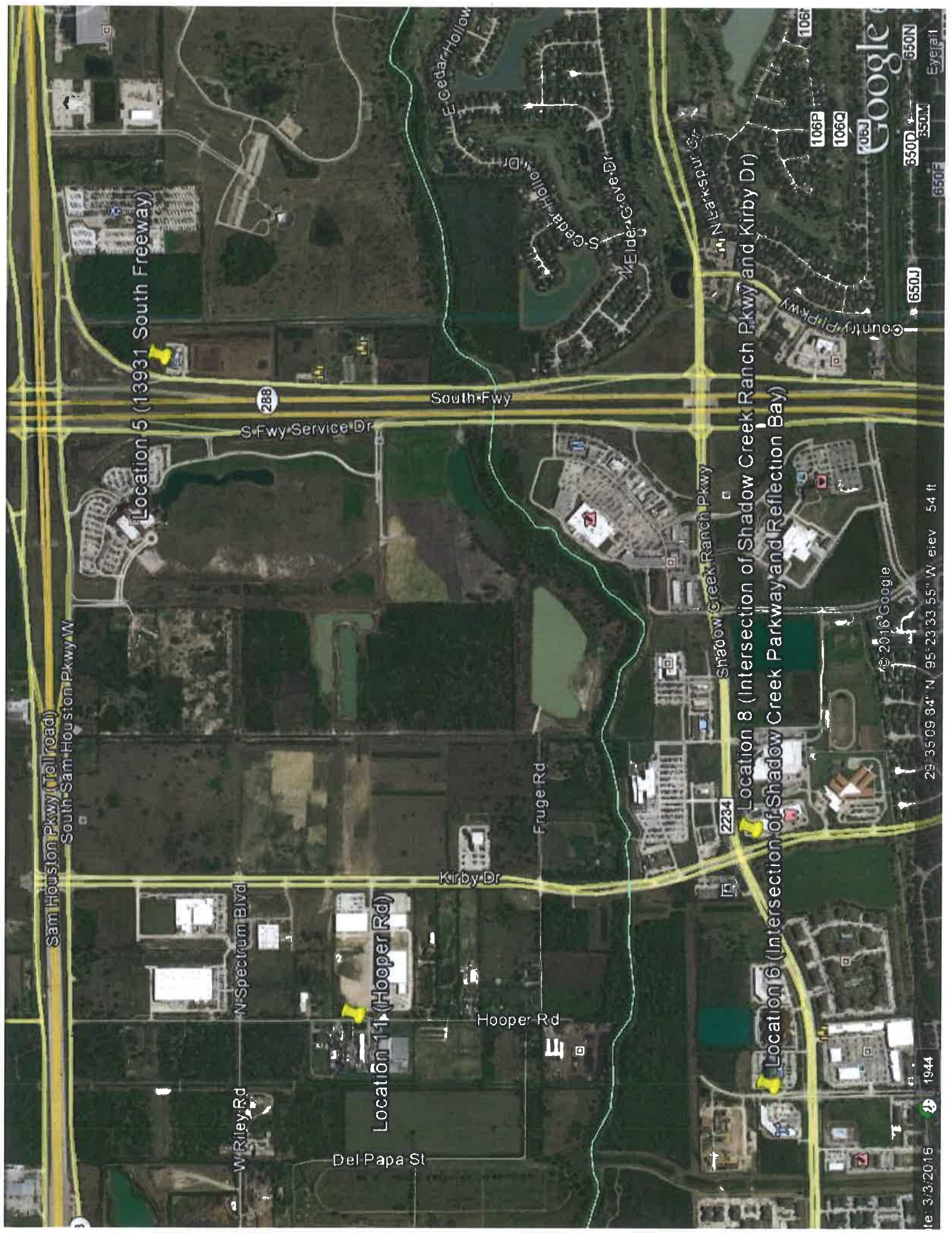
Location 16 (2711 Field Hollow Dr)

Location 4 (Intersection of Timber Ridge Dr and Leafwood Ln)

Location 3 (Intersection of W Broadway St and Southlake Blvd)

Google





Location 5 (13931 South Freeway)

Location 11 (Hooper Rd)

Location 6 (Intersection of Shadow Creek Parkway and Reflection Bay)

Location 8 (Intersection of Shadow Creek Ranch Pkwy and Kirby Dr)

Sam Houston Pkwy (Toll road)
South Sam Houston Pkwy W

W Riley Rd
N Spectrum Blvd

Del Papa St

Kirby Dr

Hooper Rd

Fruge Rd

South Fwy

S Fwy Service Dr

Shadow Creek Ranch Pkwy

E Cedar Hollow

S Cedar Hollow Dr

Elder Grove Dr

N Lakewood Dr

© 2016 Google

29°35'09.84" N 95°23'33.55" W elev 54 ft

te 3/3/2016



1944

Google

650F 650J 650K 650L 650M 650N 650O 650P 650Q 650R 650S 650T 650U 650V 650W 650X 650Y 650Z

Attachment 2

Odor Logs

RN 102610102
Blue Ridge Landfill

Investigator's Odor Intensity Time Log

P 1

Date of Investigation: 5/4/16 Start Time 0830
 Name and Address of Alleged Source: complaint BR Landfill
 Investigator's Name: Print: Mayworn Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	/
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

N 55.28, 12.05
 W 08.31, 38.62



Investigation Type: CMPL
 Air Account NO: 2
 Attachment: of 31
 Page: 1

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	NA					✓
10 Min	NA					✓
1 Hour	NA					✓

Weighted
Average

Wind: S-SE
 Location: complaint's home

Location 1

Investigator's Odor Intensity Time Log

72

Date of Investigation: 5/4/16 Start Time 0605
 Name and Address of Alleged Source: Akro Motel
 Investigator's Name: Print: Manfred Sign: [Signature]

ten minute

0-0
VL-0
L-10
M-0
S-0
VS-0

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	L
3	L
4	L
5	✓
6	L
7	L
8	L
9	L
10	L
11	L
12	VL
13	VL
14	VL
15	VL
16	VL
17	VL
18	VL
19	VL
20	VL
21	VL
22	VL
23	VL
24	VL
25	VL
26	VL
27	VL
28	VL
29	VL
30	VL

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

N "SS. 8h, 52. 50
 N " 10.38, 43. 62

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 2 of 31

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____
 Dominant Odor Intensity For: _____

Weighted Average

	VS	S	M	L	VL	No Odor
1 Min					✓	
10 Min					✓ (2)	
1 Hour	NA					

Address: 2101 Biscayne Lake

Smell: chemical, soap, hint of sulfur, Landfill bag

Location 2

Investigator's Odor Intensity Time Log

P. 3

Date of Investigation: 5/4/16 Start Time 0643
 Name and Address of Alleged Source: Landfill
 Investigator's Name: Print: Mary Ann Sign: [Signature]

0-0
VL-0
L-0
M-2
S-8
VS-0

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	S
3	S
4	S
5	S
6	S
7	S
8	S
9	M
10	M
11	S
12	S
13	M
14	M
15	M
16	M
17	M
18	S
19	S
20	S
21	M
22	M
23	S
24	S
25	S
26	S
27	M
28	M
29	M
30	M

Minutes	Odor Intensity VL, L, M, S, VS
31 min	M
32	M
33	M
34	M
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
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48	
49	
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53	
54	
55	
56	
57	
58	
59	
60	

Location
3

N "64.15 S 2.50
N "51.81 S 2.02

Investigation Type: _____
 Air Account NO: _____
 Attachment: 3
 Page 3 of 3

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____
 Dominant Odor Intensity For: _____

	VS	S	M	L	VL	No Odor
1 Min		✓				
10 Min		✓ (3.8)				
1 Hour	NA					

Weighted Average

Odor: H₂S, the "rot" smell, landfill gas

Wind: S-SW
coming from N

Location: intersection of Broadway & Southlake Blvd
St.

Investigator's Odor Intensity Time Log

P. 4

(4)

Date of Investigation: 5/4/16 Start Time 0720
 Name and Address of Alleged Source: Blue Jay Landfill
 Investigator's Name: Print: Say Evans Sign: [Signature]

Part 1
ten minute

0-0
VL-0
L-0
M-0
S-0
VS-10

Investigation Type:
 Air Account NO:
 Attachment:
 Page: 2 of 31

one hour

0-0
VL-0
L-5
M-9
S-20
VS-26

S=26
VS=26

weighted average

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	VS
4	VS
5	VS
6	VS
7	VS
8	VS
9	VS
10	VS
11	VS
12	VS
13	VS
14	VS
15	VS
16	VS
17	VS
18	VS
19	VS
20	S
21	S
22	S
23	S
24	S
25	M
26	M
27	M
28	L
29	L
30	M

Minutes	Odor Intensity VL, L, M, S, VS
31 min	M
32	L
33	M
34	M
35	L
36	L
37	M
38	M
39	S
40	VS
41	VS
42	VS
43	VS
44	VS
45	VS
46	VS
47	S
48	S
49	S
50	S
51	S
52	S
53	S
54	S
55	S
56	S
57	S
58	S
59	S
60	S

Location
4

N 96°32, 92.56
 W 140°33, 32.62

Offensiveness: Highly ☒ Offensive ☐ Unpleasant ☐ Not Unpleasant ☐

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	☒					
10 Min	☒ (5)					
1 Hour	☒	☒				

4.12

Site part 1

Landfill Gas

PS

④

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 5 of 31

Minutes	Odor Intensity VL, L, M, S, VS
31 min	_____
32	_____
33	_____
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Part 11

Dominant Odor Intensity For:

Weighted
average

Landfill Gas

Investigator's Odor Intensity Time Log

16

Date of Investigation: 5/4/2016 Start Time 11:15
 Name and Address of Alleged Source: unknown
 Investigator's Name: Print: Gabriel Lamoreaux Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	—
2	—
3	—
4	—
5	—
6	—
7	—
8	—
9	—
10	—
11	—
12	—
13	—
14	—
15	—
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

161 day
 Inn
 off of
 Tx
 288
 (East
 side)

11:20

11:25

11:30

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 6 of 31

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____
 Dominant Odor Intensity For: _____

Weighted
 Average

	VS	S	M	L	VL	No Odor
1 Min						
10 Min						
1 Hour						

Investigator's Odor Intensity Time Log

Date of Investigation: 5/9/16

Start Time 5:40 am

Name and Address of Alleged Source: Waste Water Treatment Plant

Investigator's Name: Print: A. De Los Santos

Sign: [Signature]

97 5:15 Clear Skies wind N 2 mph

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VL
2	VL
3	—
4	—
5	VL
6	VL
7	—
8	VL
9	—
10	—
11	—
12	VL → Sewage
13	—
14	—
15	S → Sewage
16	L
17	S
18	S
19	VS
20	VS → Sewage - B minus nose
21	M
22	VS
23	S
24	VL
25	L
26	VL
27	S
28	VL
29	VL
30	—

Sewage odor.

one hour
 O - 16
 VL - 25
 L - 2
 M - 4
 S - 8
 VS - 5

Minutes	Odor Intensity VL, L, M, S, VS
31 min	VL
32	—
33	VL
34	VS
35	VL
36	VL
37	VL
38	VL
39	VL
40	VL
41	M
42	M
43	VL
44	VL
45	—
46	—
47	VL
48	—
49	VL
50	—
51	—
52	VS → Sewage
53	S
54	S
55	—
56	VL
57	VL
58	VS
59	VS
60	VL

6:10 am
 Sama Canister
 Set up at
 reflection bar
 + Shadow
 Creek Per
 6:40 am
 canister say
 closed.

1 of 3
 Location 6

wind 1 mph North

Offensiveness: Highly Offensive Unpleasant Not Unpleasant

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min					X	
10 Min		✓ 3.6				
1 Hour				✓ 1.63		

weighted average

6:30 am WWTTP opened.
 7:07 am → left the site.

✓

Investigator's Odor Intensity Time Log

8

Date of Investigation: 5/4/2016 Start Time 5:42 am
 Name and Address of Alleged Source: Wastewater Treatment Plant
 Investigator's Name: Print: Charmelle Hammond Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VL
2	—
3	—
4	—
5	—
6	—
7	—
8	—
9	VL
10	—
11	—
12	—
13	—
14	—
15	VL
16	VL
17	M
18	M
19	M
20	VS
21	—
22	M
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

At corner of Shadow Creek Pkwy & reflection Bay Drive.

*get whiffs Burning nose

unprocessed

Wind speed: little to none

wind direction: can't tell

Offensiveness: Highly _____ Offensive ✓ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min		✓				
10 Min			✓	2		
1 Hour	N/A					

weighted average

sewage/soil for odor

O-2
VL-2
L-1
M-4
S-1
VS-0

5:45

5:50

5:55

6:00

Investigation type: _____
 Air Account NO: _____
 Attachment: _____
 Page 8 of 31

Investigator's Odor Intensity Time Log

29

Date of Investigation: 5/4/2016 Start Time 6:56am
 Name and Address of Alleged Source: waste water treatment plant
 Investigator's Name: Print: Gabrielle Lamoreaux Sign: [Signature]

02003
 02003
 02003
 02003
 02003
 02003

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L
2	VL
3	M
4	S
5	VL
6	VL
7	—
8	VL
9	—
10	—
11	—
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Hilton
 Parking
 lot

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Clear
 skies

light to
 no wind

8

7:05

7:10

Investigation Type: 9
 Air Account NO: 2
 Attachment: of 31

Sewage/waste water

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min		✓				
10 Min					✓ (1.3)	
1 Hour						

weighted
 average

Investigator's Odor Intensity Time Log

Date of Investigation: 5/4/2014 Start Time 10:24am
 Name and Address of Alleged Source: unknown
 Investigator's Name: Print: Gabrielle Lamoreaux Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	—
2	—
3	—
4	—
5	—
6	—
7	—
8	—
9	—
10	—
11	—
12	—
13	—
14	—
15	—
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Lift
Station
off of
Biscayne
Bay
Pine
3 sec
sewage
smell

wind speed:
no wind

wind
direction:
no wind.

sun is
rising
clear
skies

6:30

6:35

6:39

Investigation Type: 2
 Air Account NO: 10
 Attachment: of 31

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min						✓
10 Min						✓
1 Hour						

Weighted
Average

Investigator's Odor Intensity Time Log

Date of Investigation: 5/4/2016 Start Time 7:16 am
 Name and Address of Alleged Source: Unknown
 Investigator's Name: Print: Gabrielle Lamoreaux Sign: [Signature]

ten minute
 0-0
 VL-1
 L-5
 M-3
 S-1
 VS-0

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	M
3	M
4	L
5	VL
6	VL
7	VL
8	VL
9	S
10	M
11	M
12	L
13	L
14	M
15	L
16	L
17	L
18	VL
19	VL
20	L
21	L
22	L
23	M
24	S
25	L
26	S
27	VL
28	VL
29	VL
30	L

VS
 Kirby
 drive

Shadow
 Creek
 Parkway

Minutes	Odor Intensity VL, L, M, S, VS
31 min	L
32	L
33	VL
34	VL
35	VL
36	VL
37	M
38	M
39	L
40	L
41	L
42	VL
43	—
44	VL
45	VL
46	—
47	—
48	—
49	VL
50	—
51	—
52	—
53	—
54	—
55	—
56	VL
57	—
58	—
59	—
60	—

1 hour
 0-14
 VL-18
 L-16
 M-8
 S-4
 VS-0

took
 samples

Investigation Type:
 Air Account NO:
 Attachment:
 Page 11 of 31

Offensiveness: Highly _____ Offensive _____ Unpleasant ✓ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min		✓				
10 Min				✓ (2.4)		
1 Hour					✓	

weighted
 Avg

fishy amine smell / ~~SK~~ SK only / mulch

Pg 1

Investigator's Odor Intensity Time Log

Date of Investigation: 5/4/16

Start Time 7:16/8:16

P.2

Name and Address of Alleged Source: unknown

Investigator's Name: Print: Gabrielle Lamoreaux

Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	—
2	—
3	—
4	—
5	—
6	—
7	—
8	VL
9	—
10	—
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

off fishy
8:17
2:00
Sweet
Smelly
Grass
trees
8:25
0-9
VL-1
M-0
S-0
VS-0

kirby
Dr.
Shadow
creek
Park
way

very
light
winds
clear
skies
wind
direction
N/NW
3mph

Investigation Type:
Alt Account NO:
Attachment:
Date 12 of 31

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min					✓	
10 Min						
1 Hour						

Weighted
average

fishy smell

Investigator's Odor Intensity Timing

14
R14

Date of Investigation: 5/4/16 Start Time 8:42am
Name and Address of Alleged Source: West Drive (west of Akzo Nobel)
Investigator's Name: Print: A. De los Santos Sign: [Signature]

8:42am
34°58.44"N
26°05.31"W

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VL - soap smell
2	VL
3	L - Garbage smell
4	VL
5	—
6	M - Garbage / soap combination
7	M - soap
8	M - soap
9	VL
10	VL
11	VL - soap
12	VL
13	VL
14	VL
15	L - Garbage smell and soap
16	VL - soap
17	—
18	VL - soap
19	VL
20	—
21	VL
22	VL
23	VL
24	VL
25	L
26	L
27	L
28	VL
29	VL
30	L - soap smell

9:25

Minutes	Odor Intensity VL, L, M, S, VS
31 min	—
32	—
33	—
34	VL - soap
35	—
36	—
37	—
38	—
39	—
40	—
41	—
42	—
43	—
44	—
45	—
46	—
47	—
48	—
49	—
50	—
51	—
52	—
53	—
54	—
55	—
56	—
57	—
58	—
59	—
60	—

Wind
NW 2 mph

#14

9:30

0-0
VL-6
L-1
M-3
S-0
VS-0

ten minute

Attachment: 2 of 31
Page 14
Investigation No: 50
Air Account NO: 00

9:10

2 to 1
Location 9

Offensiveness: Highly _____ Offensive _____ Unpleasant X Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min					X	
10 Min				✓ (1.7)	X	
1 Hour					X	

weighted average

Variation of garbage and soap smell; wind NW
↳ Rude detergent.

Investigator's Odor Intensity Time Log

Garbage: Blue Ridge or Lonestar

Date of Investigation: 5/4/2016 Start Time 8:44
 Name and Address of Alleged Source: Alzo Nobel (217 Soap Snell)
 Investigator's Name: Print: Gabrielle Lamoreaux Sign: [Signature]

7/5

Minutes	Odor Intensity VL, L, M, S, VS			
1 min	L	—	—	—
2	VL	—	—	—
3	VL	G-L	—	—
4	M	—	—	—
5	M	—	—	—
6	L	VL	—	—
7	M	—	—	—
8	L	—	—	—
9	L	—	—	—
10	L	—	—	—
11	VL	—	—	—
12	L	—	—	—
13	M	—	—	—
14	L	—	—	—
15	M	—	—	—
16	VL	—	—	—
17	VL	—	—	—
18	VL	M	—	—
19	VL	VL	—	—
20	—	—	—	—
21	—	L	—	—
22	—	L	—	—
23	—	VL	—	—
24	VL	—	—	—
25	VL	—	—	—
26	—	—	—	—
27	—	—	—	—
28	—	—	—	—
29	—	—	—	—
30	—	—	—	—

G = Garbage
 West Drive
 (west of 20
 Alzo Nobel)
 Garbage
 Smell
 Possibly from 30
 Lonestar
 not eet!

Minutes	Odor Intensity VL, L, M, S, VS			
31 min	—	VL	—	—
32	VL	—	—	—
33	—	—	—	—
34	—	—	—	—
35	—	—	—	—
36	VL	VL	—	—
37	—	—	—	—
38	—	—	—	—
39	—	—	—	—
40	—	—	—	—
41	—	—	—	—
42	—	—	—	—
43	—	—	—	—
44	—	VL	—	—
45	—	—	—	—
46	—	—	—	—
47	—	—	—	—
48	—	—	—	—
49	—	—	—	—
50	—	—	—	—
51	—	VL	—	—
52	—	VL	—	—
53	—	VL	—	—
54	—	—	—	—
55	—	—	—	—
56	—	—	—	—
57	—	—	—	—
58	—	—	—	—
59	—	—	—	—
60	—	—	—	—

Wind speed & direction
 2 mph
 North west

left.
 9:42

Garbage
 Investigation Type: ISO
 Air Account NO: 2
 Attachment: 2
 Page 15 of 31

Soap ten minute
 0-0
 VL-1
 L-5
 M-4
 S-0
 VS-0
 Garbage 9:10 ten minute
 0-5
 VL-2
 L-2
 M-1
 S-0
 VS-0
 9:14

Offensiveness: Highly Offensive Garbage Unpleasant Not Unpleasant Soap
 Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min			✓ → both			
10 Min				✓ → Soap	Garbage (19)	
1 Hour	NA					

Soap smell / sweet laundry detergent
 also Garbage Smell

weighted average

Investigator's Odor Intensity Time Log

7/16

Date of Investigation: 5/4/16 Start Time 10:00 am

Name and Address of Alleged Source: Care Star Recycling

Investigator's Name: Print: A. De las Santos Sign: [Signature]

9°35'35.58"N
5°26'45.64"W

10:01

hoped →
ation to
orth of
me Star.
i 35'53.14"N
26'45.12"W

#16

Investigation Type: _____
Air Account NO: _____
Attachment: 2 of 31
Page 16

Minutes	Odor Intensity VL, L, M, S, VS
1 min	L - Garbage smell coming from trucks
2	VL
3	VS
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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56	
57	
58	
59	
60	

Wind
NW 3 mph

2 of 2

Location 10

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	✓					
10 Min						
1 Hour						

No odors detected North of Lone Star Recycling facility. Investigators stopped the odor survey since the odors were coming from trucks.

Investigator's Odor Intensity Time Log

Date of Investigation: 5/4/2016 Start Time: 10:01 am
 Name and Address of Alleged Source: Lonestar?
 Investigator's Name: Print: Cabrielle Lamoreaux Sign: [Signature]

Minutes	Soap Odor Intensity VL, L, M, S, VS	Garbage Odor Intensity VL, L, M, S, VS
1 min	L	—
2	—	—
3	—	VL
4	—	—
5	—	—
6	—	—
7	—	—
8	—	—
9	—	—
10	—	—
11	—	—
12	—	—
13	—	—
14	—	—
15	—	—
16	—	—
17	—	—
18	—	—
19	—	—
20	—	—
21	—	—
22	—	—
23	—	—
24	—	—
25	—	—
26	—	—
27	—	—
28	—	—
29	—	—
30	—	—

Minutes	Odor Intensity VL, L, M, S, VS
31 min	—
32	—
33	—
34	—
35	—
36	—
37	—
38	—
39	—
40	—
41	—
42	—
43	—
44	—
45	—
46	—
47	—
48	—
49	—
50	—
51	—
52	—
53	—
54	—
55	—
56	—
57	—
58	—
59	—
60	—

At lone star disposal facility @ Entrance

Start 10:01 am
 10:07
 On other side of
 10:10
 Wind direction: NW
 10:15
 3mph
 on other side of Beltway
 North of Lone Star.

Offensiveness: Highly Offensive Unpleasant Not Unpleasant
 Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min					✓ (1)	
10 Min						
1 Hour						

soap / garbage odors

Investigation Type:
 Air Account NO:
 Attachment: 2
 Page 17 of 31

Investigator's Odor Intensity Time Log

Date of Investigation: 5/4/16

Start Time 10:25 am

Name and Address of Alleged Source: Hopper Rd (Brentag and Jyntek)

Investigator's Name: Print: A. De las Santos

Sign:

10:25 am

#18

10:36 am

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VL
3	VS
4	VL
5	VL
6	VL
7	—
8	—
9	—
10	VS
11	VS
12	S
13	VS
14	S
15	VS
16	S
17	VS → Glue smell
18	VS → Changed smell like
19	S → Glue again fish
20	VS
21	VS
22	VS
23	VS
24	S
25	S
26	S
27	S
28	S
29	S
30	S

11:03

Brentag

11:13

Next to Brentag
Forcing
NW

11:26

11:30

Minutes	Odor Intensity VL, L, M, S, VS
31 min	S
32	S - Glue like smell
33	VS
34	VS
35	VS
36	VS
37	VS - Glue
38	VS
39	VS
40	S
41	M
42	VS
43	L
44	L
45	L
46	M
47	VS
48	S
49	S
50	S
51	S
52	VS
53	M
54	L
55	L
56	
57	
58	
59	
60	

Winds
NW through
ethylene
glycol
ten minutes

O - 0
VL - 0
L - 0
M - 0
S - 3
VS - 7



Change on
wind speed

Offensiveness: Highly _____ Offensive ☒ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	X					
10 Min	X 4.7					
1 Hour		X				

weighted
average

3rd Canister Calibration 10:54 am

Canister N 0621 and N 1068

Start time 11:02 End time 11:32

29°35'10.15"N
92°26'21.42"W
Air Account NO:
Attachment:
Investigation Type:
Page 15 of 31

Investigator's Odor Intensity Time Log

Date of Investigation: 5/4/2016 Start Time 10:26am
 Name and Address of Alleged Source: Syntech
 Investigator's Name: Print: Gabriel Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	M
3	L
4	VL
5	—
6	VL
7	—
8	—
9	—
10	—
11	VL
12	M
13	M
14	M
15	M
16	S
17	S
18	M
19	M
20	S
21	S
22	S
23	S
24	M
25	S
26	S
27	
28	
29	
30	

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
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51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Hopper Road

— detect other weird chemical
 — smell
 — gives smell
 — Glue

ten minute
 O - 0
 VL - 0
 L - 0
 M - 3
 S - 7
 VS - 0

variable winds
 North
~~North~~
 North west
 clear skies

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min		✓				
10 Min		✓	(3.7)			
1 Hour	N/A					

Fishy / rotten amine.
 sweeter

Investigation Type: 1030
 Air Account NO: 2
 Attachment: 2
 Page 1a of 31

moving North

10:45

10:50

10:55

weighted average

Investigator's Odor Intensity Time Log

Date of Investigation: 5/5/16 Start Time 0552
 Name and Address of Alleged Source: _____
 Investigator's Name: Print: Mayworm Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	VS
4	VS
5	VS
6	VS
7	VS
8	VS
9	VS
10	VS
11	S
12	S
13	M
14	S
15	M
16	M
17	M
18	M
19	M
20	M
21	S
22	M
23	M
24	S
25	M
26	M
27	M
28	S
29	M
30	M

ten minute
 0-0
 L-0
 M-0
 S-0
 VS-10

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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54	
55	
56	
57	
58	
59	
60	

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	✓					
10 Min	✓ (S)					
1 Hour	NA					

weighted average

location

103

Landfill Gas

20

Investigator's Odor Intensity Time Log

21

Date of Investigation: 5/5/16 Start Time 0552
 Name and Address of Alleged Source: BR Landfill
 Investigator's Name: Print: Jay Evans Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	VS
4	VS
5	VS
6	VS
7	VS
8	VS
9	VS
10	VS
11	S
12	S
13	M
14	S
15	M
16	M
17	M
18	M
19	S
20	M
21	M
22	M
23	M
24	M
25	M
26	M
27	M
28	M
29	M
30	M

ten minutes

0-0
 VL-0
 L-0
 M-0
 S-0
 VS-10

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
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57	
58	
59	
60	

Investigation Type:
 Air Account NO:
 Attachment:
 Page 21 of 31

Offensiveness: Highly ☒ Offensive ☐ Unpleasant ☐ Not Unpleasant ☐
 Dominant Odor Intensity For:

weighted average

	VS	S	M	L	VL	No Odor
1 Min	✓					-
10 Min	✓ (5)					-
1 Hour	NA					-

mountain sage

Landfill 60

Location 13

Investigator's Odor Intensity Time Log

Date of Investigation: 5/5/16 Start Time 5:52
 Name and Address of Alleged Source: West Drive + South Drive
 Investigator's Name: Print: Chris Crook Sign: Chris Crook

22

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	No odor
17	No odor
18	No odor
19	No odor
20	No odor
21	No odor
22	No odor
23	No odor
24	No odor
25	No odor
26	No odor
27	No odor
28	No odor
29	No odor
30	No odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
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55	
56	
57	
58	
59	
60	

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min						1
10 Min						2
1 Hour						

Investigation Type: _____
 Air Account NO: _____
 Attachment: _____
 Page 22 of 31

Location 12

Investigator's Odor Intensity Time Log

723

Date of Investigation: 5/5/16 Start Time 6:46
 Name and Address of Alleged Source: West Drive and South Dr
 Investigator's Name: Print: Chris Crook Sign: Chris Crook

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	No odor
17	No odor
18	No odor
19	No odor
20	No odor
21	No odor
22	No odor
23	No odor
24	No odor
25	No odor
26	No odor
27	No odor
28	No odor
29	No odor
30	No odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
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55	
56	
57	
58	
59	
60	

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min						—
10 Min						—
1 Hour						

Investigation Type: _____
 Air Account NO: _____
 Attachment: _____
 Page 23 of 31

Investigator's Odor Intensity Time Log

24

Date of Investigation: 5/5/16 Start Time 7:30
 Name and Address of Alleged Source: West Drive + South Drive
 Investigator's Name: Print: Chris Crook Sign: Chris Crook

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	No odor
17	No odor
18	No odor
19	No odor
20	No odor
21	No odor
22	No odor
23	No odor
24	No odor
25	No odor
26	No odor
27	No odor
28	No odor
29	No odor
30	No odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
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55	
56	
57	
58	
59	
60	

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 24 of 31

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min						()
10 Min						()
1 Hour						()

Loc. 12

Investigator's Odor Intensity Time Log

28

Date of Investigation: 5/5/16 Start Time 8:14
 Name and Address of Alleged Source: West Drive & South Drive
 Investigator's Name: Print: Chris Crook Sign: Chris Crook

Minutes	Odor Intensity VL, L, M, S, VS
1 min	No odor
2	No odor
3	No odor
4	No odor
5	No odor
6	No odor
7	No odor
8	No odor
9	No odor
10	No odor
11	No odor
12	No odor
13	No odor
14	No odor
15	No odor
16	No odor
17	No odor
18	No odor
19	No odor
20	No odor
21	No odor
22	No odor
23	No odor
24	No odor
25	No odor
26	No odor
27	No odor
28	No odor
29	No odor
30	No odor

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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57	
58	
59	
60	

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 25 of 31

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min						—
10 Min						—
1 Hour						—

Loc. 12

Investigator's Odor Intensity Time Log

Date of Investigation: 5/5/16 Start Time 0646
 Name and Address of Alleged Source: BR Landfill
 Investigator's Name: Print: Jay Evans Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	S
3	S
4	M
5	S
6	S
7	S
8	S
9	M
10	M
11	S
12	S
13	S
14	S
15	S
16	S
17	M
18	M
19	M
20	M
21	M
22	M
23	M
24	M
25	M
26	M
27	M
28	M
29	M
30	M

ten minutes

0-0
 VL-0
 L-0
 M-3
 S-7
 VS-0

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
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51	
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53	
54	
55	
56	
57	
58	
59	
60	

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____
 Dominant Odor Intensity For: _____

	VS	S	M	L	VL	No Odor
1 Min		✓				
10 Min		✓	(3.7)			
1 Hour	NA					

Weighted average

Loc 14

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 24 of 31

None result
 Landfill

None result

26

Investigator's Odor Intensity Time Log

P 27

iii

Date of Investigation: 8/5/16 Start Time 0646
 Name and Address of Alleged Source: Blue Ridge
 Investigator's Name: Print: Mayborn Sign: [Signature]

Handfill
 Honey suckle
 Honey suckle
 Investigation Type: Handfill
 Air Account NO: 2
 Attachment: 27 of 31
 Honey suckle

Minutes	Odor Intensity VL, L, M, S, VS
1 min	S
2	S
3	S
4	M
5	S
6	S
7	S
8	S
9	M
10	M
11	S
12	S
13	S
14	S
15	S
16	S
17	M
18	M
19	M
20	M
21	M
22	M
23	M
24	M
25	M
26	M
27	M
28	M
29	M
30	M

ten minutes
 0-0
 VL-0
 L-0
 M-3
 S-7
 VS-0

Minutes	Odor Intensity VL, L, M, S, VS
31 min	S
32	S
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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53	
54	
55	
56	
57	
58	
59	
60	

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____
 Dominant Odor Intensity For: _____

weighted average

	VS	S	M	L	VL	No Odor
1 Min		✓				
10 Min		✓ (S17)				
1 Hour	NA					

~~Blue Ridge~~ Lilac Breeze is Location
 Loc 14
 Handfill Gas

Investigator's Odor Intensity Time Log

28

Date of Investigation: 5/5/16 Start Time 0732
 Name and Address of Alleged Source: Blue Ridge
 Investigator's Name: Print: Morgan Sign: [Signature]

10

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	VS
4	VS
5	VS
6	S
7	M
8	1
9	1
10	1
11	1
12	1
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

ten minutes

0-3
 VL-0
 L-0
 M-1
 S-1
 VS-5

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
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46	
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57	
58	
59	
60	

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 28 of 33

Offensiveness: Highly _____ Offensive _____ Unpleasant _____ Not Unpleasant _____
 Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	✓					
10 Min	VS		✓ (3.2)			
1 Hour	NA					

Weighted Average

2102 Morgan Bay Ct.

Landfill 685

Loc 105

Investigator's Odor Intensity Time Log

29

Date of Investigation: 5/5/14 Start Time 0748
 Name and Address of Alleged Source: BR Landfill
 Investigator's Name: Print: Mayworm Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	VS
4	VS
5	VS
6	VS
7	S
8	S
9	S
10	M
11	S
12	—
13	—
14	—
15	—
16	—
17	—
18	—
19	—
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	

ten minutes
 0-0
 VL-0
 L-0
 M-1
 S-3
 VS-6

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
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47	
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51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Offensiveness: Highly ☒ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	✓					
10 Min	✓ (4.5)					
1 Hour	NA					

weighted average

27th Field Hollow Dr.
 Loc 16

Landfill gas

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 29 of 31

Investigator's Odor Intensity Time Log

p 30

Date of Investigation: 5/16/16 Start Time 08100
 Name and Address of Alleged Source: BR Landfill
 Investigator's Name: Print: Mayworn Sign: [Signature]

(Vi)

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	VS
4	VS
5	VS
6	VS
7	VS
8	VS
9	VS
10	VS
11	VS
12	VS
13	S
14	S
15	S
16	M
17	S
18	S
19	S
20	VS
21	S
22	M
23	M
24	—
25	
26	
27	
28	
29	
30	

ten minutes
 O-O
 VL-O
 L-O
 M-O
 S-O
 VS-O

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Investigation Type: _____
 Air Account NO: _____
 Attachment: 2
 Page 30 of 31

Offensiveness: Highly X Offensive _____ Unpleasant _____ Not Unpleasant _____
 Dominant Odor Intensity For: _____

	VS	S	M	L	VL	No Odor
1 Min	✓					
10 Min	✓ (S)	VS				
1 Hour	NA	NA				

weighted average

2501 Mountain Sage Landfill Gas

Loc 17

Investigator's Odor Intensity Time Log

31

Date of Investigation: 5/5/16 Start Time 8:10
 Name and Address of Alleged Source: BR Landfill
 Investigator's Name: Print: Jay Evans Sign: [Signature]

Minutes	Odor Intensity VL, L, M, S, VS
1 min	VS
2	VS
3	VS
4	VS
5	VS
6	VS
7	VS
8	VS
9	VS
10	VS
11	VS
12	VS
13	VS
14	VS
15	VS
16	VS
17	S
18	S
19	S
20	S
21	VS
22	S
23	M
24	M
25	
26	
27	
28	
29	
30	

ten minutes
 0-0
 VL-0
 L-0
 M-0
 S-0
 VS-10

Minutes	Odor Intensity VL, L, M, S, VS
31 min	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
54	
55	
56	
57	
58	
59	
60	

Investigation type: 2
 Air Account NO: 31
 Attachment: 31
 Page 31 of 31

Offensiveness: Highly ☒ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	☒					
10 Min	☒ (S)					
1 Hour	NA					

weighted average

600 17

mountain sage

landfill 6x5

Attachment 3

Investigation #1337792 Odor Log

RN 102610102

Blue Ridge Landfill

Investigator's Odor Intensity Time Log

Date of Investigation: 6/7/2016 Start Time 2:20
 Name and Address of Alleged Source: 100 yards south of Fms 21 + McHard
 Investigator's Name: Print: Chris Crook Sign: Chris Crook

Minutes	Odor Intensity VL, L, M, S, VS
1 min	US
2	US
3	US
4	US
5	US
6	US
7	US
8	US
9	US
10	US
11	US
12	US
13	US
14	US
15	US
16	US
17	US
18	US
19	US
20	US
21	US
22	US
23	US
24	US
25	US
26	US
27	US
28	US
29	US
30	US

-TVA 200
 200 ppm
 105 ppm
 200
 160
 150
 150
 145
 135
 135
 140
 145
 141
 163
 161
 160
 165

Minutes	Odor Intensity VL, L, M, S, VS
31 min	US
32	US
33	US
34	US
35	US
36	US
37	US
38	US
39	US
40	US
41	US
42	US
43	US
44	US
45	US
46	US
47	US
48	US
49	US
50	US
51	US
52	US
53	US
54	US
55	US
56	US
57	US
58	US
59	US
60	US

165
 171
 • Suma 178
 187
 190
 197
 192
 194
 194
 200
 201
 203
 210
 205
 204
 202
 201
 192
 192
 190
 185
 140
 130
 135
 130
 117
 117
 102
 98
 98

Offensiveness: Highly ☒ Offensive _____ Unpleasant _____ Not Unpleasant _____

Dominant Odor Intensity For:

	VS	S	M	L	VL	No Odor
1 Min	☒					
10 Min	☒					
1 Hour	5 ☒					

Weighted
 Average

Investigation Type: CMP
 Air Account NO: _____
 Attachment: 3
 Page 1 of 1

Investigation Type: FIAIR ODR
 Air Account NO: FG053E
 Attachment: ODOR LOGS
 Page: 14 of 14

Attachment 4

Toxicology Report

RN 102610102

Blue Ridge Landfill

TCEQ Interoffice Memorandum

To: Ashley Wadick
Director, TCEQ Region 12, Houston

Daniel O'Brien
Assistant Regional Director, TCEQ Region 12, Houston

Nicole Bealle
Special Assistant to the Regional Director, TCEQ Region 12, Houston

From: Tracie Phillips, Ph.D. *TOP*
Toxicology Division, Office of the Executive Director

Date: June 20, 2016

Subject: Toxicological Evaluation of Results from an Ambient Air Sample for Volatile Organic Compounds Collected at Various Locations (Latitude and Longitude listed below) in Fresno, Fort Bend County, Houston, Harris County, and Pearland, Brazoria County, Texas

Samples Collected on May 4, 2016, Request Numbers: 1605005 (Lab Sample 1605005-001 and 1605005-001FD), 1605006 (Lab Sample 1605006-001 and 1605006-001FD), 1605007 (Lab Sample 1605007-001 and 1605007-001FD), and 1605008 (Lab Sample 1605008-001 and 1605008-001FD)

Key Points

- Reported concentrations of target volatile organic compounds (VOCs) were either not detected or were detected below levels of short-term health and/or welfare concern.
- Although reported VOC concentrations were below levels of short-term health and/or welfare concern, the TCEQ Region 12 investigators experienced a landfill gas odor of very strong to strong intensity, and rotten fish/fishy odors of strong to very light intensity while collecting the samples. The investigator collecting the sample associated with the strong to very strong landfill gas odor also experienced health effects (nausea) after prolonged exposure to the odor. The odors and health effects experienced by the investigators are consistent with citizen reports of odors and health effects in the area.
- It is important to note that sulfides, often the offending odorous compounds in landfill gas, cannot be analytically measured with a canister sampler. If the goal is to measure reduced sulfur compounds or other components of landfill gas, more specialized sampling equipment may be needed.

Attachment Type: *EMPL*
Air Account NO: _____

Attachment: *4*

Page *1*

of *54*

Background

On May 4, 2016, several Texas Commission on Environmental Quality (TCEQ) Region 12 air investigators collected 30-minute canister samples and field duplicates near: Blue Ridge Landfill (Lab Sample 1605005-001 and 1605005-001FD) in Fresno, Fort Bend County, Texas; Syntech Chemicals, Inc. (Lab Sample 1605006-001 and 1605006-001FD) in Houston, Harris County, Texas; and Reflection Bay Wastewater Treatment Plant (Lab Sample 1605007-001 and 1605007-001FD) and near Shadow Creek Parkway (Lab Sample 1605008-001 and 1605008-001FD) in Pearland, Brazoria County, Texas. See Table 1 below for sample locations.

Table 1. Sample Locations

REQUEST NUMBER	LATITUDE	LONGITUDE	FACILITY(IES) SAMPLED
1605005	29.558442	-95.440012	Blue Ridge Landfill
1605005 (duplicate)	29.558438	-95.440013	Blue Ridge Landfill
1605006	29.589233	-95.404686	Syntech Chemicals, Inc.
1605006 (duplicate)	29.589233	-95.404686	Syntech Chemicals, Inc.
1605007	29.577808	-95.406725	Reflection Bay Wastewater Treatment Plant
1605007 (duplicate)	29.577808	-95.406725	Reflection Bay Wastewater Treatment Plant
1605008	29.578025	-95.399631	Unknown
1605008 (duplicate)	29.578025	-95.399631	Unknown

The samples were collected in response to numerous citizen complaints in the area. These samples are part of a complaint investigation, attempting to identify the odor(s) reported by the complainants. Duplicates were collected to increase the chance of quality sample collection. TCEQ Region 12 has received numerous complaints (over 1,000) of an odor in the area variously described as having a landfill gas, rotten egg, sulfur, natural gas, rotten seafood, chemical, or garbage odor. Some complainants have alleged health effects, such as asthma irritation, burning eyes/throat, and nausea. Table 2 lists the odors/health effects experienced by the investigators. Meteorological conditions measured at the site or nearest stationary ambient air monitoring site are indicated in Table 3. The sampling site distance to possible emission sources and where the public could have access are indicated in Table 4.

June 20, 2016

Figure 1. Sample locations and identified industry boundaries for Request Report Number 1605005, 1605006, 1605007, and 1605008.

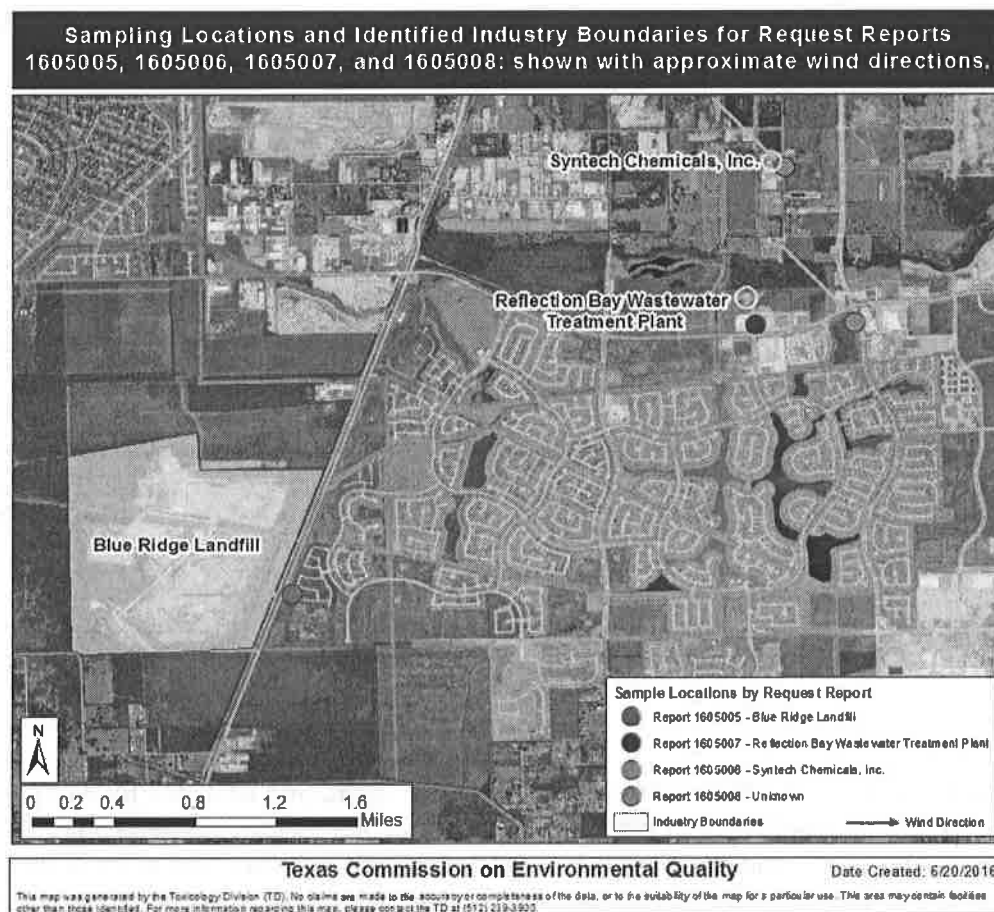


Table 2. Investigator-Experienced Odors and/or Health Effects

REQUEST NUMBER	ODORS EXPERIENCED	INTENSITY	ODOR TYPE	HEALTH EFFECTS
1605005	Yes: recorded several hours' worth of odor logs associated with the landfill	Strong or very strong	Landfill gas, with hints of honeysuckle deodorizing spray – also described as very offensive	Yes: nausea after prolonged exposure to odor
1605006	Yes	Very light to strong	Rotten fish (possibly amine) odor and other chemical odors such as glue	No
1605007	Yes	Very light to moderate	Sewage odor	No
1605008	Yes	Light to very light	Fishy (possibly amine) odor	No

Table 3. Meteorological Conditions

REQUEST NUMBER	AMBIENT TEMPERATURE	RELATIVE HUMIDITY	WIND DIRECTION (FROM)	WIND SPEED
1605005	62°F	63%	West	0-10 mph
1605006	73°F	44%	Northwest	4 mph
1605007	53°F	94%	Calm	0 mph
1605008	60°F	80%	North/northwest	3 mph

Table 4. Sample Distance

REQUEST NUMBER	DISTANCE TO POSSIBLE EMISSION SOURCE(S)	DISTANCE TO NEAREST RESIDENTIAL OR PUBLIC PROPERTY	POSSIBLE EMISSION SOURCE(S)
1605005	970 ft. West	Residential Property	Blue Ridge Landfill
1605006	150 ft. Northwest	650 ft. South/southeast	Syntech Chemicals, Inc.
1605007	630 ft. Northwest	160 ft. Northeast	Reflection Bay Wastewater Treatment Plant
1605008	Unknown	240 ft. East	Unknown

The samples were sent to the TCEQ laboratory in Austin, Texas, and analyzed for a range of VOCs. The list of the target analytes that were evaluated in this review is provided in Attachment A. The VOC concentrations were reported in parts per billion by volume (ppbv) (Attachment B and Tables 5-12). Please note that the available canister technology and analysis method cannot capture and/or analyze for all chemicals.

Results and Evaluation

Reported VOC concentrations were compared to TCEQ's short-term health- and/or welfare-based air monitoring comparison values (AMCVs) (Tables 5-12). Short-term AMCVs are guidelines used to evaluate ambient concentrations of a chemical in air and to determine its potential to result in adverse health effects, adverse vegetative effects, or odors. Health AMCVs are set to provide a margin of safety and are set well below levels at which adverse health effects are reported in the scientific literature. If a chemical concentration in ambient air is less than its comparison value, no adverse health effects are expected to occur. If a chemical concentration exceeds its comparison value it does not necessarily mean that adverse effects will occur, but rather that further evaluation is warranted.

All of the 84 VOCs for each sample were either not detected or were detected below their respective short-term AMCVs. Exposure to levels of VOCs measured in this sample would not be expected to cause short-term adverse health effects, adverse vegetation effects, or odors. However, it is important to note that this evaluation only applies to the 84 VOCs that are analytically measured in a canister sample.

The odors of concern in this area have been characterized as that of landfill gas, rotten egg, sulfur, natural gas, rotten seafood, chemical, or garbage odors. Odors of this nature have been reported by complainants, as well as TCEQ Region 12 Investigators, and have been described as having a strong intensity. Given the amount and type of odor complaints in the area, a special section on odors associated with landfills is warranted.

Odors associated with landfills are common, due to the microbial breakdown of materials. Landfill gas is a mixture of hundreds of different gases. By volume, landfill gas typically contains from 45 to 60 percent methane and from 40 to 60 percent carbon dioxide. Landfill gas also includes small amounts of nitrogen, oxygen, ammonia, sulfides, hydrogen, carbon monoxide, and non-methane organic compounds. The sulfides are the compounds that typically give landfill gas its characteristic rotten-egg odor.

These gases (hydrogen sulfide, dimethyl sulfide, and mercaptans) produce a very strong rotten-egg smell, even at very low concentrations, or may smell like natural gas. Of these three chemicals, hydrogen sulfide is emitted from landfills at the highest rates and concentrations. Hydrogen sulfide and other sulfur-based chemicals can be smelled at much lower concentrations than concentrations at which adverse health effects may occur. Odorous levels are not necessarily harmful levels.

Landfills typically produce concentrations that would not be expected to cause direct adverse health effects, such as respiratory irritation. However, depending on the strength and character of the odor, exposure to concentrations from these types of facilities could be odorous to some people, creating the potential for odor-related health effects, such as headache and nausea.

The following webpage provides general questions and answers about landfills and their associated gases and odors: <http://www.tceq.texas.gov/toxicology/q-a/landfills>.

It is important to note that sulfides cannot be analytically measured with a canister sampler. More specialized sampling equipment is needed to measure reduced sulfur compounds or other components of landfill gas.

Please call me at (512) 239-2269 if you have any questions regarding this evaluation.

Attachment A**List of Target Analytes for Canister Samples**

ethane	4-methyl-1-pentene	t-1,3-dichloropropylene
ethylene	1,1-dichloroethane	1,1,2-trichloroethane
acetylene	cyclopentane	2,3,4-trimethylpentane
propane	2,3-dimethylbutane	toluene
propylene	2-methylpentane	2-methylheptane
dichlorodifluoromethane	3-methylpentane	3-methylheptane
methyl chloride	2-methyl-1-pentene + 1-hexene	1,2-dibromoethane
isobutane	n-hexane	n-octane
vinyl chloride	chloroform	tetrachloroethylene
1-butene	t-2-hexene	chlorobenzene
1,3-butadiene	c-2-hexene	ethylbenzene
n-butane	1,2-dichloroethane	m & p-xylene
t-2-butene	methylcyclopentane	styrene
bromomethane	2,4-dimethylpentane	1,1,2,2-tetrachloroethane
c-2-butene	1,1,1-trichloroethane	o-xylene
3-methyl-1-butene	benzene	n-nonane
isopentane	carbon tetrachloride	isopropylbenzene
trichlorofluoromethane	cyclohexane	n-propylbenzene
1-pentene	2-methylhexane	m-ethyltoluene
n-pentane	2,3-dimethylpentane	p-ethyltoluene
isoprene	3-methylhexane	1,3,5-trimethylbenzene
t-2-pentene	1,2-dichloropropane	o-ethyltoluene
1,1-dichloroethylene	trichloroethylene	1,2,4-trimethylbenzene
c-2-pentene	2,2,4-trimethylpentane	n-decane
methylene chloride	2-chloropentane	1,2,3-trimethylbenzene
2-methyl-2-butene	n-heptane	m-diethylbenzene
2,2-dimethylbutane	c-1,3-dichloropropylene	p-diethylbenzene
cyclopentene	methylcyclohexane	n-undecane

5/20/2016

Texas Commission on Environmental Quality

Laboratory and Quality Assurance Section
P.O. Box 13087, MC-165
Austin, Texas 78711-3087
(512) 239-1716

Laboratory Analysis Results

Request Number: 1605005

Request Lead: Frank Martinez

Region: T12

Date Received: 5/10/2016

Project(s): NA

Facility(ies) Sampled	City	County	Facility Type
Blue Ridge Landfill	Fresno	Fort Bend	Waste Disposal

Samples Received

Field ID Number: N0528-05042016 Laboratory Sample Number: 1605005-001 Sampled by: Justin Mayworn
Sampling Site: Intersection of Timber Ridge and Leaf Wood Date & Time Sampled: 05/04/16 07:25:00 Valid Sample: Yes
Comments: Canister N0528 was used to collect a 30-minute sample using OPC-243.

Field ID Number: N1061-05042016 Laboratory Sample Number: 1605005-001PD Sampled by: Justin Mayworn
Sampling Site: Intersection of Timber Ridge and Leaf Wood Date & Time Sampled: 05/04/16 07:30:00 Valid Sample: Yes
Comments: Canister N1061 was used to collect a 30-minute sample using OPC-005.

Requested Laboratory Procedure(s):

Analysis: AP001VOC

Determination of VOCs in Canisters by GC/MS Using Modified Method TO-15

Please note that this analytical technique is not capable of measuring all compounds which might have adverse health effects. For questions on this analytical procedures please contact the laboratory manager at (512) 239-1716. For an update on the health effects evaluation of these data, please contact the Toxicology Division at (512) 239-1795.

Analyst:

Huhua Li

Date:

5/26/16

Laboratory Manager:

Frank Martinez

Date:

5/26/16

Laboratory Analysis Results
Request Number: 1605005
Analysis Code: AP001VOC

Note: Results are reported in units of ppb

Lab ID	1605005-001					1605005-001 PD				
Field ID	NR521-0542016					N1061-05142016				
Container ID	n0528					a1661				
Compound	Conc.	SDL	SQL	Analysis Date	Flags**	Conc.	SDL	SQL	Analysis Date	Flags**
ethane	12	1.0	2.4	5/18/2016	T,DI	11	1.0	2.4	5/18/2016	T,DI
ethyne	3.1	1.0	2.4	5/18/2016	T,DI	3.0	1.0	2.4	5/18/2016	T,DI
acetylene	1.2	1.0	2.4	5/18/2016	L,T,DI	1.2	1.0	2.4	5/18/2016	L,T,DI
propane	4.7	1.0	2.4	5/18/2016	T,DI	7.7	1.0	2.4	5/18/2016	T,DI
propylene	2.2	1.0	2.4	5/18/2016	L,T,DI	1.8	1.0	2.4	5/18/2016	L,T,DI
dichlorodifluoromethane	0.54	0.40	1.2	5/18/2016	L,DI	0.50	0.40	1.2	5/18/2016	L,DI
methyl chloride	0.63	0.40	1.2	5/18/2016	L,DI	0.65	0.40	1.2	5/18/2016	L,DI
isobutane	7.4	0.46	2.4	5/18/2016	DI	5.4	0.46	2.4	5/18/2016	DI
vinyl chloride	0.11	0.34	1.2	5/18/2016	DI	0.48	0.34	1.2	5/18/2016	DI
1-butene	0.64	0.40	1.2	5/18/2016	L,DI	0.47	0.40	1.2	5/18/2016	L,DI
1,3-butadiene	0.14	0.54	1.2	5/18/2016	DI	0.12	0.54	1.2	5/18/2016	DI
n-butane	6.6	0.46	2.4	5/18/2016	DI	5.2	0.46	2.4	5/18/2016	DI
isobutane	ND	0.54	1.2	5/18/2016	DI	ND	0.54	1.2	5/18/2016	DI
isobutylene	ND	0.54	1.2	5/18/2016	DI	ND	0.54	1.2	5/18/2016	DI
2-butene	0.66	0.54	1.2	5/18/2016	DI	0.85	0.54	1.2	5/18/2016	DI
1-methyl-1-butene	ND	0.46	1.2	5/18/2016	DI	ND	0.46	1.2	5/18/2016	DI
isopentane	7.7	0.54	4.8	5/18/2016	DI	6.0	0.54	4.8	5/18/2016	DI
isobutylfluoromethane	0.30	0.54	1.2	5/18/2016	DI	0.28	0.54	1.2	5/18/2016	DI
1-pentane	ND	0.54	1.2	5/18/2016	DI	ND	0.54	1.2	5/18/2016	DI
n-pentane	2.4	0.54	4.8	5/18/2016	L,DI	1.0	0.54	4.8	5/18/2016	L,DI
isopentane	0.12	0.54	1.2	5/18/2016	DI	0.09	0.54	1.2	5/18/2016	DI
2,2-pentene	ND	0.54	2.4	5/18/2016	DI	0.08	0.54	2.4	5/18/2016	DI
1,1-dichloroethane	ND	0.34	1.2	5/18/2016	DI	ND	0.34	1.2	5/18/2016	DI
2,2-pentene	ND	0.54	2.4	5/18/2016	DI	0.04	0.54	2.4	5/18/2016	DI
methylene chloride	0.49	0.28	1.2	5/18/2016	L,DI	0.41	0.28	1.2	5/18/2016	L,DI
1-methyl-2-butene	0.14	0.46	1.2	5/18/2016	DI	0.08	0.46	1.2	5/18/2016	DI
2,2-dimethylbutane	0.14	0.42	1.2	5/18/2016	DI	0.01	0.42	1.2	5/18/2016	DI
cyclopentane	0.02	0.40	1.2	5/18/2016	DI	ND	0.40	1.2	5/18/2016	DI
1-methyl-1-pentene	ND	0.44	2.4	5/18/2016	DI	ND	0.44	2.4	5/18/2016	DI
1,1-dichloroethane	0.01	0.30	1.2	5/18/2016	DI	ND	0.30	1.2	5/18/2016	DI
cyclopentane	0.20	0.54	1.2	5/18/2016	DI	0.17	0.54	1.2	5/18/2016	DI
1,3-dimethylbutane	0.21	0.56	2.4	5/18/2016	DI	0.18	0.56	2.4	5/18/2016	DI
1-methylpentane	0.61	0.54	1.2	5/18/2016	L,DI	0.52	0.54	1.2	5/18/2016	L,DI
2-methylpentane	0.40	0.46	1.2	5/18/2016	DI	0.54	0.46	1.2	5/18/2016	DI
2-methyl-1-pentene + 1-hexene	ND	0.40	4.8	5/18/2016	DI	ND	0.40	4.8	5/18/2016	DI
n-hexane	0.49	0.40	2.4	5/18/2016	L,DI	0.42	0.40	2.4	5/18/2016	L,DI
chloroform	0.01	0.42	1.2	5/18/2016	DI	0.08	0.42	1.2	5/18/2016	DI
1,2-hexene	ND	0.54	2.4	5/18/2016	DI	ND	0.54	2.4	5/18/2016	DI
n-2-hexene	ND	0.54	2.4	5/18/2016	DI	ND	0.54	2.4	5/18/2016	DI
1,2-dichloroethane	0.05	0.54	1.2	5/18/2016	DI	0.03	0.54	1.2	5/18/2016	DI
methylcyclopentane	0.28	0.54	2.4	5/18/2016	DI	0.23	0.54	2.4	5/18/2016	DI
2,4-dimethylpentane	0.10	0.54	2.4	5/18/2016	DI	0.06	0.54	2.4	5/18/2016	DI
1,1,1-trichloroethane	0.02	0.52	1.2	5/18/2016	DI	0.02	0.52	1.2	5/18/2016	DI
benzene	0.50	0.34	1.2	5/18/2016	DI	0.47	0.34	1.2	5/18/2016	DI
carbon tetrachloride	0.08	0.54	1.2	5/18/2016	DI	0.08	0.54	1.2	5/18/2016	DI
cyclohexane	ND	0.48	1.2	5/18/2016	DI	ND	0.48	1.2	5/18/2016	DI
2-methylhexane	0.38	0.54	1.2	5/18/2016	DI	0.20	0.54	1.2	5/18/2016	DI
2,3-dimethylpentane	0.16	0.52	1.2	5/18/2016	DI	0.10	0.52	1.2	5/18/2016	DI

Laboratory Analysis Results
Request Number: 1605005
Analysis Code: AP001VOC

Note: Results are reported in units of µg/lv

Lab ID	1605005-001					1605005-001 (1)				
	Conc.	SDL	SQL	Analysis Date	Flags**	Conc.	SDL	SQL	Analysis Date	Flags**
o-methylbenzox	9.44	0.40	1.2	5/18/2016	L,D1	9.34	0.40	1.2	5/18/2016	J,D1
1,2-dichloropropane	ND	0.34	1.2	5/18/2016	D1	ND	0.34	1.2	5/18/2016	D1
trichloroethylene	0.04	0.38	1.2	5/18/2016	J,D1	0.03	0.38	1.2	5/18/2016	J,D1
1,2,4-trimethylbenzine	0.48	0.48	1.2	5/18/2016	L,D1	0.42	0.48	1.2	5/18/2016	J,D1
1-chloropropane	ND	0.34	1.2	5/18/2016	D1	ND	0.34	1.2	5/18/2016	D1
n-heptane	ND	0.50	2.4	5/18/2016	D1	ND	0.50	2.4	5/18/2016	D1
1,1,1-trichloropropane	ND	0.40	1.2	5/18/2016	D1	ND	0.40	1.2	5/18/2016	D1
methylcyclohexane	ND	0.52	2.4	5/18/2016	D1	ND	0.52	2.4	5/18/2016	D1
1,1,2-trichloropropane	ND	0.40	1.2	5/18/2016	D1	ND	0.40	1.2	5/18/2016	D1
1,1,2-trichloroethane	ND	0.42	1.2	5/18/2016	D1	ND	0.42	1.2	5/18/2016	D1
1,1,4-trimethylbenzene	0.16	0.48	2.4	5/18/2016	J,D1	0.14	0.48	2.4	5/18/2016	J,D1
toluene	2.1	0.54	1.2	5/18/2016	D1	1.7	0.54	1.2	5/18/2016	D1
2-methylhexane	0.09	0.40	2.4	5/18/2016	J,D1	0.08	0.40	2.4	5/18/2016	J,D1
2-methylheptane	ND	0.46	2.4	5/18/2016	D1	0.08	0.46	2.4	5/18/2016	J,D1
1,1-dimethoxyethane	ND	0.40	1.2	5/18/2016	D1	ND	0.40	1.2	5/18/2016	D1
n-octane	0.23	0.58	2.4	5/18/2016	J,D1	0.17	0.58	2.4	5/18/2016	J,D1
1,1,1-trichloroethylene	0.08	0.48	1.2	5/18/2016	J,D1	0.07	0.48	1.2	5/18/2016	J,D1
chlorobenzene	0.01	0.34	1.2	5/18/2016	J,D1	0.01	0.34	1.2	5/18/2016	J,D1
ethylbenzene	ND	0.54	2.4	5/18/2016	D1	ND	0.54	2.4	5/18/2016	D1
m & p-xylene	1.2	0.54	4.8	5/18/2016	L,D1	0.92	0.54	4.8	5/18/2016	L,D1
styrene	0.57	0.54	2.4	5/18/2016	L,D1	0.56	0.54	2.4	5/18/2016	L,D1
1,1,2,2-tetrachloroethane	ND	0.40	1.2	5/18/2016	D1	ND	0.40	1.2	5/18/2016	D1
n-pentane	0.39	0.54	2.4	5/18/2016	J,D1	0.31	0.54	2.4	5/18/2016	J,D1
n-hexane	0.24	0.44	1.2	5/18/2016	J,D1	0.19	0.44	1.2	5/18/2016	J,D1
isopropylbenzene	0.03	0.48	1.2	5/18/2016	J,D1	0.03	0.48	1.2	5/18/2016	J,D1
n-propylbenzene	0.07	0.54	1.2	5/18/2016	J,D1	0.05	0.54	1.2	5/18/2016	J,D1
o-ethyltoluene	ND	0.22	1.2	5/18/2016	D1	ND	0.22	1.2	5/18/2016	D1
p-ethyltoluene	0.12	0.32	2.4	5/18/2016	J,D1	0.15	0.32	2.4	5/18/2016	J,D1
1,3,5-trimethylbenzene	0.08	0.30	2.4	5/18/2016	J,D1	0.05	0.30	2.4	5/18/2016	J,D1
o-ethyltoluene	ND	0.26	2.4	5/18/2016	D1	ND	0.26	2.4	5/18/2016	D1
1,2,4-trimethylbenzene	0.23	0.54	1.2	5/18/2016	J,D1	ND	0.54	1.2	5/18/2016	D1
n-decane	0.28	0.54	2.4	5/18/2016	J,D1	0.22	0.54	2.4	5/18/2016	J,D1
1,2,3-trimethylbenzene	ND	0.24	1.2	5/18/2016	D1	ND	0.24	1.2	5/18/2016	D1
m-dimethylbenzene	ND	0.24	2.4	5/18/2016	D1	0.01	0.24	2.4	5/18/2016	J,D1
p-dimethylbenzene	0.06	0.54	1.2	5/18/2016	J,D1	0.04	0.54	1.2	5/18/2016	J,D1
n-dodecane	ND	0.34	2.4	5/18/2016	D1	0.13	0.34	2.4	5/18/2016	J,D1

Laboratory Analysis Results

Request Number: 1605005

Analysis Code: AP001VOC

Qualifier Notes:

ND - not detected
NQ - concentration can not be quantified due to possible interferences or correlations.
SDL - Sample Detection Limit (Limit of Detection adjusted for dilution)
SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution)
INV - Invalid
J - Reported concentration is below SDL
L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.
H - Reported concentration exceeds the upper limit of instrument calibration.
M - Results modified from previous result.
T - Data was not confirmed by a confirmatory analysis. Compound index results is tentatively identified.
P - Established acceptance criteria was not met due to factors outside the laboratory's control.
H - Not all associated hold time specifications were met. Data may be biased.
C - Sample received with a missing or broken custody seal.
R - Sample received with a missing or incomplete chain of custody.
I - Sample received without a legible unique identifier.
G - Sample received in an improper container.
U - Sample received with insufficient sample volume.
W - Sample received with insufficient preservation.

Quality control areas for AP001VOC samples.

D1-Sample concentration was determined using a dilution factor of 4.01.

TCEQ laboratory customer support may be reached at Frank.Martinez@tceq.texas.gov

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5/26/2016

Texas Commission on Environmental Quality
Laboratory and Quality Assurance Section
P.O. Box 13087, MC-165
Austin, Texas 78711-3087
(512) 239-1716

Laboratory Analysis Results
Request Number: 1605006

Request Lead: Frank Martinez

Region: T12

Date Received: 5/6/2016

Project(s): NA

Facility(ies) Sampled	City	County	Facility Type
Syntech Chemicals, Inc.	Houston	Harris	

Sample(s) Received

Field ID Number: N0621-05042016 Laboratory Sample Number: 1605006-001 Sampled by: Gabrielle Lamoreaux
Sampling Site: Across street from potential source (approx 150' Date & Time Sampled: 05/04/16 11:02:00 Valid Sample: Yes
Comments: Canister N0621 was used to collect a 30-minute sample using OPC-196.

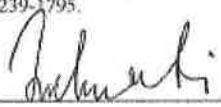
Field ID Number: N1068-05042016 Laboratory Sample Number: 1605006-001FD Sampled by: Gabrielle Lamoreaux
Sampling Site: Across street from potential source (approx 150' Date & Time Sampled: 05/04/16 11:02:00 Valid Sample: Yes
Comments: Canister N1068 was used to collect a 30-minute sample using OPC-149.

Requested Laboratory Procedure(s):

Analysis: AP001VOC

Determination of VOCs in Canisters by GC/MS Using Modified Method TD-15

Please note that this analytical technique is not capable of measuring all compounds which might have adverse health effects. For questions on the analytical procedures please contact the laboratory manager at (512) 239-1716. For an update on the health effects evaluation of these data, please contact the Toxicology Division at (512) 239-1795.

Analyst: 

Jinling Li

Date: 5/26/16

Laboratory Manager: 

Frank Martinez

Date: 5/26/16

Laboratory Analysis Results

Request Number: 1605006

Analysis Code: AP001VOC

Note: Results are reported in units of ppbv

Lab ID	1605004-001						1605004-001 PD					
Field ID	NM621-45042016						N1068-45042016					
Cluster ID	N0621						N1068					
Compound	Comp.	SDL	SQL	Analysis Date	Flags**		Comp.	SDL	SQL	Analysis Date	Flags**	
ethane	4.8	1.0	2.4	5/18/2016	T,D1		4.8	1.0	2.4	5/18/2016	T,D1	
ethylene	1.2	1.0	2.4	5/18/2016	L,T,D1		1.6	1.0	2.4	5/18/2016	L,T,D1	
acetylene	1.8	1.0	2.4	5/18/2016	L,T,D1		1.9	1.0	2.4	5/18/2016	L,T,D1	
propane	2.5	1.0	2.4	5/18/2016	L,T,D1		2.5	1.0	2.4	5/18/2016	T,D1	
propylene	ND	1.0	2.4	5/18/2016	T,D1		ND	1.0	2.4	5/18/2016	T,D1	
dimethylfluoromethane	0.47	0.40	1.2	5/18/2016	L,D1		0.48	0.40	1.2	5/18/2016	L,D1	
methyl chloride	0.38	0.40	1.2	5/18/2016	L,D1		0.50	0.40	1.2	5/18/2016	L,D1	
acetaldehyde	0.33	0.40	2.4	5/18/2016	J,D1		0.32	0.40	2.4	5/18/2016	J,D1	
methyl chloride	ND	0.34	1.2	5/18/2016	D1		ND	0.34	1.2	5/18/2016	D1	
1-butene	ND	0.40	1.2	5/18/2016	D1		0.14	0.40	1.2	5/18/2016	J,D1	
1,3-butadiene	ND	0.34	1.2	5/18/2016	D1		ND	0.34	1.2	5/18/2016	D1	
isobutene	0.88	0.40	2.4	5/18/2016	L,D1		0.87	0.40	2.4	5/18/2016	L,D1	
2,3-butadiene	ND	0.36	1.2	5/18/2016	D1		ND	0.36	1.2	5/18/2016	D1	
dimethylmethane	ND	0.34	1.2	5/18/2016	D1		ND	0.34	1.2	5/18/2016	D1	
2-butene	ND	0.34	1.2	5/18/2016	D1		ND	0.34	1.2	5/18/2016	D1	
3-methyl-1-butene	ND	0.46	1.2	5/18/2016	D1		ND	0.46	1.2	5/18/2016	D1	
isopentane	0.63	0.34	4.8	5/18/2016	L,D1		0.63	0.34	4.8	5/18/2016	L,D1	
trimethylmethylmethane	0.23	0.38	1.2	5/18/2016	J,D1		0.23	0.38	1.2	5/18/2016	J,D1	
1-pentane	ND	0.34	1.2	5/18/2016	D1		ND	0.34	1.2	5/18/2016	D1	
2-pentane	ND	0.34	4.8	5/18/2016	D1		0.44	0.34	4.8	5/18/2016	J,D1	
isopentane	0.22	0.34	1.2	5/18/2016	J,D1		0.19	0.34	1.2	5/18/2016	J,D1	
1,1-pentadiene	ND	0.34	2.4	5/18/2016	D1		ND	0.34	2.4	5/18/2016	D1	
1,1-dichloroethylene	ND	0.36	1.2	5/18/2016	D1		ND	0.36	1.2	5/18/2016	D1	
2-pentene	0.01	0.30	2.4	5/18/2016	J,D1		ND	0.30	2.4	5/18/2016	D1	
methyl vinyl chloride	0.12	0.28	1.2	5/18/2016	J,D1		0.12	0.28	1.2	5/18/2016	J,D1	
1-methyl-2-butene	ND	0.46	1.2	5/18/2016	D1		ND	0.46	1.2	5/18/2016	D1	
2,3-dimethylbutene	0.02	0.43	1.2	5/18/2016	J,D1		0.02	0.43	1.2	5/18/2016	J,D1	
cyclopentadiene	ND	0.40	1.2	5/18/2016	D1		ND	0.40	1.2	5/18/2016	D1	
1-methyl-1-pentene	ND	0.44	2.4	5/18/2016	D1		ND	0.44	2.4	5/18/2016	D1	
1,1-dimethylcyclobutane	ND	0.38	1.2	5/18/2016	D1		ND	0.38	1.2	5/18/2016	D1	
cyclopentane	0.02	0.34	1.2	5/18/2016	J,D1		0.02	0.34	1.2	5/18/2016	J,D1	
2,3-dimethylbutane	0.94	0.36	2.4	5/18/2016	J,D1		0.95	0.36	2.4	5/18/2016	J,D1	
2-methylpentane	0.14	0.34	1.2	5/18/2016	J,D1		0.15	0.34	1.2	5/18/2016	J,D1	
3-methylpentane	0.09	0.46	1.2	5/18/2016	J,D1		0.10	0.46	1.2	5/18/2016	J,D1	
2-methyl-1-pentene + 1-hexene	ND	0.40	4.8	5/18/2016	D1		ND	0.40	4.8	5/18/2016	D1	
1-hexene	0.13	0.40	2.4	5/18/2016	J,D1		0.13	0.40	2.4	5/18/2016	J,D1	
chloroform	0.03	0.42	1.2	5/18/2016	J,D1		0.03	0.42	1.2	5/18/2016	J,D1	
1,2-dioxane	ND	0.54	2.4	5/18/2016	D1		ND	0.54	2.4	5/18/2016	D1	
1,2-dioxane	ND	0.54	2.4	5/18/2016	D1		ND	0.54	2.4	5/18/2016	D1	
1,2-dichloroethane	ND	0.54	1.2	5/18/2016	D1		ND	0.54	1.2	5/18/2016	D1	
methylcyclopentane	0.07	0.54	2.4	5/18/2016	J,D1		0.08	0.54	2.4	5/18/2016	J,D1	
2,4-dimethylpentane	0.09	0.54	2.4	5/18/2016	J,D1		0.09	0.54	2.4	5/18/2016	J,D1	
1,1,3-trichloroethane	ND	0.52	1.2	5/18/2016	D1		ND	0.52	1.2	5/18/2016	D1	
benzene	0.26	0.54	1.2	5/18/2016	J,D1		0.30	0.54	1.2	5/18/2016	J,D1	
carbon tetrachloride	0.08	0.54	1.2	5/18/2016	J,D1		0.08	0.54	1.2	5/18/2016	J,D1	
cyclohexane	0.43	0.48	1.2	5/18/2016	J,D1		0.42	0.48	1.2	5/18/2016	J,D1	
2-methylhexane	0.5	0.54	1.2	5/18/2016	D1		0.5	0.54	1.2	5/18/2016	D1	
1,1-dimethylpentane	0.09	0.52	1.2	5/18/2016	J,D1		0.08	0.52	1.2	5/18/2016	J,D1	

Laboratory Analysis Results
Request Number: 1605006
Analysis Code: AP001VOC

Note: Results are reported in units of ppbv

Lab ID	1605006-001					1605006-001 MD				
	Compd	Conc	SDL	SQL	Analysis Date	Flags**	Compd	Conc	SDL	SQL
	benzothiofuran	4.4	0.40	1.2	5/18/2016	DI		4.4	0.40	1.2
	1,2-dichloropropane	ND	0.34	1.2	5/18/2016	DI		0.35	0.34	1.2
	trichloroethylene	0.66	0.58	1.2	5/18/2016	LDI		0.66	0.58	1.2
	2,2,4-trimethylpentane	0.13	0.48	1.2	5/18/2016	LDI		0.15	0.48	1.2
	2-chloropropane	ND	0.54	1.2	5/18/2016	DI		ND	0.54	1.2
	isobutane	4.6	0.55	2.4	5/18/2016	DI		4.6	0.56	2.4
	1,1-dichloropropylene	ND	0.42	1.2	5/18/2016	DI		ND	0.40	1.2
	methyldichloroethane	3.0	0.52	2.4	5/18/2016	DI		2.9	0.52	2.4
	1,1,3-trichloropropylene	ND	0.42	1.2	5/18/2016	DI		ND	0.40	1.2
	1,1,2-trichloroethane	ND	0.42	1.2	5/18/2016	DI		ND	0.42	1.2
	1,1,4-trimethylpentane	0.04	0.44	2.4	5/18/2016	LDI		0.04	0.48	2.4
	toluene	0.26	0.54	1.2	5/18/2016	LDI		0.26	0.54	1.2
	2-methylpropane	0.04	0.40	2.4	5/18/2016	LDI		0.04	0.40	2.4
	1-methylpropane	ND	0.46	2.4	5/18/2016	DI		ND	0.46	2.4
	1,2-dibromochloroethane	ND	0.40	1.2	5/18/2016	DI		ND	0.40	1.2
	acetone	0.03	0.38	2.4	5/18/2016	LDI		0.03	0.38	2.4
	nitrodimethyl ether	ND	0.48	1.2	5/18/2016	DI		ND	0.48	1.2
	dichlorobenzene	ND	0.56	1.2	5/18/2016	DI		ND	0.56	1.2
	ethylbenzene	ND	0.54	2.4	5/18/2016	DI		ND	0.54	2.4
	m & p-xylene	0.17	0.54	4.8	5/18/2016	LDI		0.17	0.54	4.8
	styrene	0.01	0.54	2.4	5/18/2016	LDI		0.01	0.54	2.4
	1,1,2,2-tetrachloroethane	ND	0.40	1.2	5/18/2016	DI		ND	0.40	1.2
	o-xylene	0.06	0.54	2.4	5/18/2016	LDI		0.06	0.54	2.4
	n-octane	ND	0.44	1.2	5/18/2016	DI		ND	0.44	1.2
	propenylbenzene	ND	0.48	1.2	5/18/2016	DI		ND	0.48	1.2
	n-propylbenzene	ND	0.54	1.2	5/18/2016	DI		ND	0.54	1.2
	n-butylbenzene	ND	0.22	1.2	5/18/2016	DI		0.02	0.22	1.2
	cellulofuran	0.09	0.32	2.4	5/18/2016	LDI		0.09	0.32	2.4
	1,3,5-trimethylbenzene	ND	0.50	2.4	5/18/2016	DI		0.01	0.50	2.4
	o-ethyltoluene	ND	0.26	2.4	5/18/2016	DI		ND	0.26	2.4
	1,2,4-trimethylbenzene	ND	0.54	1.2	5/18/2016	DI		ND	0.54	1.2
	n-decane	0.01	0.54	2.4	5/18/2016	LDI		0.02	0.54	2.4
	1,2,4-trimethylbenzene	ND	0.54	1.2	5/18/2016	DI		0.03	0.54	1.2
	m-dimethylbenzene	ND	0.54	2.4	5/18/2016	DI		ND	0.54	2.4
	p-dimethylbenzene	0.08	0.54	1.2	5/18/2016	LDI		0.08	0.54	1.2
	n-dodecane	0.02	0.54	2.4	5/18/2016	LDI		0.02	0.54	2.4

Laboratory Analysis Results

Request Number: 1605006

Analysis Code: AP001VOC

Qualifier Notes:

ND - not detected
NQ - concentration can not be quantified due to possible interferences or resolutions.
SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).
SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).
INV - Invalid.
J - Reported concentration is below SDL.
L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.
E - Reported concentration exceeds the upper limit of instrument calibration.
M - Result modified from previous result.
T - Data was not confirmed by a confirmational analysis. Compound and/or results is tentatively identified.
P - Established acceptance criteria was not met due to factors outside the laboratory's control.
H - Not all associated hold time specifications were met. Data may be biased.
C - Sample received with a missing or broken custody seal.
R - Sample received with a missing or incomplete chain of custody.
I - Sample received without a legible unique identifier.
O - Sample received in an improper container.
U - Sample received with insufficient sample volume.
W - Sample received with insufficient preservation.

Quality control notes for AP001VOC samples.

D1-Sample concentration was calculated using a dilution factor of 4.01.

TCEQ laboratory customer support may be reached at Frank.Martinez@tceq.texas.gov

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6/2/2016

Texas Commission on Environmental Quality
Laboratory and Quality Assurance Section
P.O. Box 13087, MC-165
Austin, Texas 78711-3087
(512) 239-1716

Laboratory Analysis Results
Request Number: 1605007

Request Lead: Frank Martinez
Project(s): NA

Region: T12

Date Received: 5/6/2016

Facility(ies) Sampled	City	County	Facility Type
Reflection Bay Wastewater Treatment Plant	Pearland	Harris	

Sample(s) Received

Field ID Number: N0435-05042016 Laboratory Sample Number: 1605007-001 Sampled by: Gabrielle Lamoreaux
Sampling Site: Northeast side of reflection bay drive Date & Time Sampled: 05/04/16 06:10:00 Valid Sample: Yes
Comments: Canister N0435 was used to collect a 30-minute sample using OFC-025.

Field ID Number: N9113-05042016 Laboratory Sample Number: 1605007-001FD Sampled by: Gabrielle Lamoreaux
Sampling Site: Northeast side of reflection bay drive Date & Time Sampled: 05/04/16 06:10:00 Valid Sample: Yes
Comments: Canister N9113 was used to collect a 30-minute sample using OFC-006.

Requested Laboratory Procedure(s):

Analysis: AP001VOC

Determination of VOCs in Canisters by GC/MS Using Modified Method TO-15

Please note that this analytical technique is not capable of measuring all compounds which might have adverse health effects. For questions on the analytical procedures please contact the laboratory manager at (512) 239-1716. For an update on the health effects evaluation of these data, please contact the Toxicology Division at (512) 239-1795.

Analyst:

Zhihua Li

Date:

6/2/16

Laboratory Manager:

Frank Martinez

Date:

6/2/16

Laboratory Analysis Results
Request Number: 1605007
Analysis Code: AP001VOC

Note: Results are reported in units of ppbv

Lab ID	1605007-001					1605007-001 FD				
Field ID	N0435-05042016					N0113-05042016				
Container ID	N0435					N0113				
Compound	Conc.	SDL	SQL	Analysis Date	Flags**	Conc.	SDL	SQL	Analysis Date	Flags**
toluene	9.7	1.0	2.4	5/18/2016	T,D1	11	1.0	2.4	5/23/2016	T,D1
ethylbenzene	1.9	1.0	2.4	5/18/2016	L,T,D1	2.2	1.0	2.4	5/23/2016	L,T,D1
propylene	ND	1.0	2.4	5/18/2016	T,D1	ND	1.0	2.4	5/23/2016	T,D1
propene	5.5	1.0	2.4	5/18/2016	T,D1	4.8	1.0	2.4	5/23/2016	T,D1
propylene	ND	1.0	2.4	5/18/2016	T,D1	0.54	1.0	2.4	5/23/2016	T,D1
dimethylhydrazine	0.46	0.40	1.2	5/18/2016	L,D1	0.50	0.40	1.2	5/23/2016	L,D1
methyl chloride	0.51	0.40	1.2	5/18/2016	L,D1	0.76	0.40	1.2	5/23/2016	L,D1
isobutane	1.5	0.40	2.4	5/18/2016	L,D1	0.94	0.40	2.4	5/23/2016	L,D1
vinyl chloride	ND	0.34	1.2	5/18/2016	D1	ND	0.34	1.2	5/23/2016	D1
1-butene	0.32	0.40	1.2	5/18/2016	L,D1	0.43	0.40	1.2	5/23/2016	L,D1
1,3-butadiene	ND	0.54	1.2	5/18/2016	D1	0.05	0.54	1.2	5/23/2016	L,D1
n-butane	1.9	0.40	2.4	5/18/2016	L,D1	1.9	0.40	2.4	5/23/2016	L,D1
2,3-butene	0.05	0.36	1.2	5/18/2016	L,D1	0.08	0.36	1.2	5/23/2016	L,D1
isobutene	ND	0.54	1.2	5/18/2016	D1	0.01	0.54	1.2	5/23/2016	L,D1
2,3-butene	0.05	0.54	1.2	5/18/2016	L,D1	0.07	0.54	1.2	5/23/2016	L,D1
1-methyl-1-butene	ND	0.46	1.2	5/18/2016	D1	ND	0.46	1.2	5/23/2016	D1
isopentane	1.3	0.54	1.2	5/18/2016	L,D1	1.2	0.54	1.2	5/23/2016	L,D1
dimethylhydrazine	0.23	0.50	1.2	5/18/2016	L,D1	0.22	0.50	1.2	5/23/2016	L,D1
1-pentene	ND	0.54	1.2	5/18/2016	D1	ND	0.54	1.2	5/23/2016	D1
n-pentane	0.44	0.54	1.2	5/18/2016	L,D1	0.62	0.54	1.2	5/23/2016	L,D1
isopentane	0.06	0.54	1.2	5/18/2016	L,D1	0.06	0.54	1.2	5/23/2016	L,D1
2,3-pentene	ND	0.54	1.2	5/18/2016	D1	0.03	0.54	1.2	5/23/2016	L,D1
1,1-dichloroethane	ND	0.35	1.2	5/18/2016	D1	ND	0.36	1.2	5/23/2016	D1
2,2-pentene	0.01	0.50	1.2	5/18/2016	L,D1	0.02	0.50	1.2	5/23/2016	L,D1
methylene chloride	0.13	0.28	1.2	5/18/2016	L,D1	0.14	0.28	1.2	5/23/2016	L,D1
2-methyl-2-butene	ND	0.45	1.2	5/18/2016	D1	0.03	0.46	1.2	5/23/2016	L,D1
2,2-dimethylbutane	0.05	0.42	1.2	5/18/2016	L,D1	ND	0.42	1.2	5/23/2016	D1
cyclopentene	ND	0.43	1.2	5/18/2016	D1	ND	0.40	1.2	5/23/2016	D1
1-methyl-1-pentene	ND	0.44	1.2	5/18/2016	D1	ND	0.44	1.2	5/23/2016	D1
1,1-dichloroethane	ND	0.34	1.2	5/18/2016	D1	ND	0.38	1.2	5/23/2016	D1
cyclopentane	0.06	0.54	1.2	5/18/2016	L,D1	ND	0.54	1.2	5/23/2016	D1
2,3-dimethylbutane	0.06	0.55	1.2	5/18/2016	L,D1	0.09	0.56	1.2	5/23/2016	L,D1
2-methylpentane	0.20	0.54	1.2	5/18/2016	L,D1	0.27	0.54	1.2	5/23/2016	L,D1
3-methylpentane	0.13	0.46	1.2	5/18/2016	L,D1	0.16	0.46	1.2	5/23/2016	L,D1
2-methyl-1-pentene + 3-hexene	ND	0.43	1.2	5/18/2016	D1	ND	0.40	1.2	5/23/2016	D1
n-hexane	0.17	0.43	1.2	5/18/2016	L,D1	0.23	0.40	1.2	5/23/2016	L,D1
chloroform	0.07	0.42	1.2	5/18/2016	L,D1	0.06	0.42	1.2	5/23/2016	L,D1
2-hexene	ND	0.54	1.2	5/18/2016	D1	ND	0.54	1.2	5/23/2016	D1
2-hexene	ND	0.54	1.2	5/18/2016	D1	ND	0.54	1.2	5/23/2016	D1
1,2-dichloroethane	0.02	0.54	1.2	5/18/2016	L,D1	ND	0.54	1.2	5/23/2016	D1
methylcyclopentane	0.13	0.51	1.2	5/18/2016	L,D1	0.13	0.54	1.2	5/23/2016	L,D1
2,4-dimethylpentane	0.03	0.54	1.2	5/18/2016	L,D1	0.05	0.54	1.2	5/23/2016	L,D1
1,1,1-trichloroethane	0.01	0.52	1.2	5/18/2016	L,D1	ND	0.52	1.2	5/23/2016	D1
benzene	0.10	0.54	1.2	5/18/2016	L,D1	0.10	0.54	1.2	5/23/2016	L,D1
carbon tetrachloride	0.06	0.54	1.2	5/18/2016	L,D1	0.07	0.54	1.2	5/23/2016	L,D1
cyclohexane	0.24	0.48	1.2	5/18/2016	L,D1	ND	0.48	1.2	5/23/2016	D1
2-methylhexane	0.17	0.54	1.2	5/18/2016	L,D1	0.16	0.54	1.2	5/23/2016	L,D1
2,3-dimethylpentane	0.06	0.52	1.2	5/18/2016	L,D1	0.07	0.52	1.2	5/23/2016	L,D1

Laboratory Analysis Results
Request Number: 1605007
Analysis Code: AP001VOC

Note: Results are reported in units of $\mu\text{g}/\text{L}$

Lab ID	1605007-001					1605007-001 PD				
	Comp	SQL	SQL	Analysis Date	Flags**	Comp	SQL	SQL	Analysis Date	Flags**
1-methylcyclohexane	0.21	0.40	1.2	5/18/2016	1,DI	0.17	0.40	1.2	5/23/2016	1,DI
1,2-dichloropropane	ND	0.34	1.2	5/18/2016	DI	ND	0.34	1.2	5/23/2016	DI
1,2-dichloroethane	0.01	0.54	1.2	5/18/2016	1,DI	ND	0.54	1.2	5/23/2016	DI
1,2,4-trichlorobenzene	0.16	0.44	1.2	5/18/2016	1,DI	0.16	0.44	1.2	5/23/2016	1,DI
1-chloropropane	ND	0.34	1.2	5/18/2016	DI	ND	0.34	1.2	5/23/2016	DI
n-butane	0.14	0.50	2.4	5/18/2016	1,DI	0.16	0.50	2.4	5/23/2016	1,DI
n-2,3-dichloropropylene	ND	0.40	1.2	5/18/2016	DI	ND	0.40	1.2	5/23/2016	DI
1-methylcyclohexane	ND	0.34	2.4	5/18/2016	DI	0.13	0.32	2.4	5/23/2016	1,DI
1,3-dichloropropylene	ND	0.40	1.2	5/18/2016	DI	ND	0.40	1.2	5/23/2016	DI
1,1,1-trichloroethane	ND	0.42	1.2	5/18/2016	DI	ND	0.42	1.2	5/23/2016	DI
2,3,4-trimethylpentane	0.04	0.48	2.4	5/18/2016	1,DI	0.06	0.48	2.4	5/23/2016	1,DI
toluene	4.53	0.34	1.2	5/18/2016	1,DI	0.37	0.34	1.2	5/23/2016	1,DI
2-methylpropane	ND	0.40	2.4	5/18/2016	DI	ND	0.40	2.4	5/23/2016	DI
1-methylcyclohexane	0.03	0.46	2.4	5/18/2016	1,DI	0.43	0.46	2.4	5/23/2016	1,DI
1,2-dichloroethane	ND	0.40	1.2	5/18/2016	DI	ND	0.40	1.2	5/23/2016	DI
1-octene	ND	0.38	2.4	5/18/2016	DI	0.03	0.38	2.4	5/23/2016	1,DI
1-methylcyclohexane	ND	0.44	1.2	5/18/2016	DI	0.03	0.44	1.2	5/23/2016	1,DI
1-methylcyclohexane	0.01	0.54	1.2	5/18/2016	1,DI	ND	0.54	1.2	5/23/2016	DI
1-methylcyclohexane	ND	0.54	2.4	5/18/2016	DI	0.11	0.54	2.4	5/23/2016	1,DI
n & p-xylene	0.29	0.34	4.8	5/18/2016	1,DI	0.38	0.34	4.8	5/23/2016	1,DI
styrene	0.02	0.54	2.4	5/18/2016	1,DI	0.02	0.54	2.4	5/23/2016	1,DI
1,2,2-trichloroethane	ND	0.40	1.2	5/18/2016	DI	ND	0.40	1.2	5/23/2016	DI
o-xylene	0.09	0.34	2.4	5/18/2016	1,DI	0.12	0.34	2.4	5/23/2016	1,DI
n-nonane	ND	0.44	1.2	5/18/2016	DI	ND	0.44	1.2	5/23/2016	DI
1-methylcyclohexane	ND	0.44	1.2	5/18/2016	DI	ND	0.44	1.2	5/23/2016	DI
n-propylbenzene	0.01	0.54	1.2	5/18/2016	1,DI	0.03	0.54	1.2	5/23/2016	1,DI
methylcyclohexane	0.04	0.22	1.2	5/18/2016	1,DI	0.04	0.22	1.2	5/23/2016	1,DI
p-methylcyclohexane	0.09	0.32	2.4	5/18/2016	1,DI	0.02	0.32	2.4	5/23/2016	1,DI
1,3,5-trimethylbenzene	0.02	0.50	2.4	5/18/2016	1,DI	0.02	0.50	2.4	5/23/2016	1,DI
o-methylcyclohexane	ND	0.26	2.4	5/18/2016	DI	0.02	0.26	2.4	5/23/2016	1,DI
1,2,4-trimethylbenzene	ND	0.54	1.2	5/18/2016	DI	0.06	0.54	1.2	5/23/2016	1,DI
1-octene	0.04	0.54	2.4	5/18/2016	1,DI	ND	0.54	2.4	5/23/2016	DI
1,2,3-trimethylbenzene	ND	0.54	1.2	5/18/2016	DI	ND	0.54	1.2	5/23/2016	DI
n-dimethylbenzene	ND	0.54	2.4	5/18/2016	DI	ND	0.54	2.4	5/23/2016	DI
p-dimethylbenzene	0.01	0.54	1.2	5/18/2016	1,DI	0.02	0.54	1.2	5/23/2016	1,DI
n-octane	0.10	0.54	2.4	5/18/2016	1,DI	ND	0.54	2.4	5/23/2016	DI

Laboratory Analysis Results

Request Number: 1605007

Analysis Code: AP001VOC

Qualifier Notes:

ND - not detected

NO - concentration can not be quantified due to possible interference or inhibition.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

SNV - Invalid.

L - Reported concentration is below SDL.

E - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Compound number results is tentatively identified.

P - Established acceptance criteria was not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

CI - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

Quality control notes for AP001 VOC samples.

DI-Sample concentration was calculated using a dilution factor of 4.01.

TCEQ laboratory customer support may be reached at Frank.Martinez@tceq.texas.gov

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5/26/2016

Texas Commission on Environmental Quality

Laboratory and Quality Assurance Section
P.O. Box 13087, MC-163
Austin, Texas 78711-3087
(512) 239-1716

Laboratory Analysis Results

Request Number: 1605008

Request Lead: Frank Martinez

Region: T12

Date Received: 5/6/2016

Project(s): NA

Facility(ies) Sampled	City	County	Facility Type
Unknown	Pearland	Brazoria	Unknown

Sample(s) Received

Field ID Number: N1624-05042016 Laboratory Sample Number: 1605008-001 Sampled by: Gabrielle Lamoreaux
Sampling Site: Near Intersection of Shadow Creek Parkway and Date & Time Sampled: 05/04/16 07:37:00 Valid Sample: Yes
Comments: Canister N1624 was used to collect a 30-minute sample using OPC-153.

Field ID Number: N0560-05042016 Laboratory Sample Number: 1605008-001FD Sampled by: Gabrielle Lamoreaux
Sampling Site: Near Intersection of Shadow Creek Parkway and Date & Time Sampled: 05/04/16 07:37:00 Valid Sample: Yes
Comments: Canister N0560 was used to collect a 30-minute sample using OPC-187.
Requested Laboratory Procedure(s):

Analysis: APO01VOC

Determination of VOCs in Canisters by GC/MS Using Modified Method TO-15

Please note that this analytical technique is not capable of measuring all compounds which might have adverse health effects. For questions on the analytical procedures please contact the laboratory manager at (512) 239-1716. For an update on the health effects evaluation of these data, please contact the Toxicology Division at (512) 239-1795.

Analyst:

Hishia L.

Date:

5/26/16

Laboratory Manager:

Frank Martinez

Date:

5/26/16

Laboratory Analysis Results
Request Number: 1605008
Analysis Code: AP001VOC

Note: Results are reported in units of ppbv

Lab ID	1605008-001					1605008-001PT3				
Field ID	N1624-05142016					N0540-45042016				
Container ID	N1624					N0540				
Compound	Conc.	SDL	SQL	Analysis Date	Flags**	Conc.	SDL	SQL	Analysis Date	Flags**
ethane	9.4	1.0	2.4	5/18/2016	T,DI	9.9	1.0	2.4	5/18/2016	T,DI
ethylene	1.7	1.0	2.4	5/18/2016	T,DI	2.8	1.0	2.4	5/18/2016	T,DI
acetylene	1.6	1.0	2.4	5/18/2016	L,T,DI	1.5	1.0	2.4	5/18/2016	L,T,DI
propane	0.2	1.0	2.4	5/18/2016	T,DI	0.3	1.0	2.4	5/18/2016	T,DI
propylene	1.0	1.0	2.4	5/18/2016	L,T,DI	0.43	1.0	2.4	5/18/2016	L,T,DI
dichlorodifluoromethane	0.47	0.00	1.2	5/18/2016	L,DI	0.47	0.00	1.2	5/18/2016	L,DI
trichlorofluoromethane	0.65	0.40	1.2	5/18/2016	L,DI	0.40	0.40	1.2	5/18/2016	L,DI
isobutane	0.98	0.40	2.4	5/18/2016	L,DI	0.97	0.40	2.4	5/18/2016	L,DI
isobutylene	ND	0.34	1.2	5/18/2016	DI	ND	0.34	1.2	5/18/2016	DI
1-butene	1.38	0.40	1.2	5/18/2016	L,DI	0.50	0.40	1.2	5/18/2016	L,DI
1,2-butadiene	1.10	0.54	1.2	5/18/2016	L,DI	0.11	0.54	1.2	5/18/2016	L,DI
1-butene	2.1	0.40	2.4	5/18/2016	L,DI	2.1	0.40	2.4	5/18/2016	L,DI
2-butene	0.05	0.36	1.2	5/18/2016	L,DI	ND	0.36	1.2	5/18/2016	DI
trans-2-butene	0.02	0.54	1.2	5/18/2016	L,DI	ND	0.54	1.2	5/18/2016	DI
2,3-dimethyl-2-butene	0.04	0.54	1.2	5/18/2016	L,DI	ND	0.54	1.2	5/18/2016	DI
3-methyl-1-butene	ND	0.46	1.2	5/18/2016	DI	ND	0.46	1.2	5/18/2016	DI
isopentane	1.3	0.54	4.8	5/18/2016	L,DI	1.3	0.54	4.8	5/18/2016	L,DI
trans-2-pentene	0.33	0.38	1.2	5/18/2016	L,DI	0.24	0.38	1.2	5/18/2016	L,DI
2-pentene	ND	0.34	1.2	5/18/2016	DI	ND	0.34	1.2	5/18/2016	DI
3-pentene	0.55	0.54	4.8	5/18/2016	L,DI	0.52	0.54	4.8	5/18/2016	L,DI
isopentane	0.30	0.54	1.2	5/18/2016	L,DI	0.25	0.54	1.2	5/18/2016	L,DI
2-pentene	0.05	0.54	2.4	5/18/2016	L,DI	ND	0.54	2.4	5/18/2016	DI
1,1-dichloroethene	ND	0.36	1.2	5/18/2016	DI	ND	0.36	1.2	5/18/2016	DI
2,3-dimethyl-2-butene	ND	0.50	2.4	5/18/2016	DI	ND	0.50	2.4	5/18/2016	DI
acetylene chloride	0.44	0.28	1.2	5/18/2016	L,DI	0.65	0.28	1.2	5/18/2016	L,DI
2-methyl-2-butene	ND	0.46	1.2	5/18/2016	DI	0.04	0.46	1.2	5/18/2016	L,DI
2,3-dimethyl-2-butene	ND	0.42	1.2	5/18/2016	DI	0.04	0.42	1.2	5/18/2016	L,DI
2-methyl-2-butene	ND	0.40	1.2	5/18/2016	DI	ND	0.40	1.2	5/18/2016	DI
4-methyl-1-pentene	ND	0.44	2.4	5/18/2016	DI	ND	0.44	2.4	5/18/2016	DI
1,1-dichloroethene	ND	0.38	1.2	5/18/2016	DI	ND	0.38	1.2	5/18/2016	DI
2-methyl-2-butene	0.05	0.54	1.2	5/18/2016	L,DI	0.05	0.54	1.2	5/18/2016	L,DI
2,3-dimethyl-2-butene	0.10	0.56	2.4	5/18/2016	L,DI	0.16	0.56	2.4	5/18/2016	L,DI
2-methyl-2-butene	0.10	0.54	1.2	5/18/2016	L,DI	0.30	0.54	1.2	5/18/2016	L,DI
2-methyl-2-butene	0.21	0.46	1.2	5/18/2016	L,DI	0.20	0.46	1.2	5/18/2016	L,DI
2-methyl-2-pentene + 1-hexene	ND	0.40	4.8	5/18/2016	DI	ND	0.40	4.8	5/18/2016	DI
1-hexene	0.33	0.46	2.4	5/18/2016	L,DI	0.32	0.40	2.4	5/18/2016	L,DI
chloroform	0.05	0.42	1.2	5/18/2016	L,DI	0.01	0.42	1.2	5/18/2016	L,DI
2-bromoethane	ND	0.54	2.4	5/18/2016	DI	ND	0.54	2.4	5/18/2016	DI
2-bromoethane	0.01	0.54	2.4	5/18/2016	L,DI	0.01	0.54	2.4	5/18/2016	L,DI
1,2-dichloroethane	ND	0.54	1.2	5/18/2016	DI	ND	0.54	1.2	5/18/2016	DI
methoxychlor	0.23	0.54	2.4	5/18/2016	L,DI	0.23	0.54	2.4	5/18/2016	L,DI
2,4-dimethylpentane	0.36	0.54	2.4	5/18/2016	L,DI	0.36	0.54	2.4	5/18/2016	L,DI
1,1,1-trichloroethane	0.01	0.52	1.2	5/18/2016	L,DI	ND	0.52	1.2	5/18/2016	DI
hexane	0.37	0.54	1.2	5/18/2016	L,DI	0.36	0.54	1.2	5/18/2016	L,DI
carbon tetrachloride	0.08	0.54	1.2	5/18/2016	L,DI	0.08	0.54	1.2	5/18/2016	L,DI
cyclohexane	1.0	0.44	1.2	5/18/2016	DI	1.9	0.40	1.2	5/18/2016	DI
2-methyl-2-pentene	15	0.54	1.2	5/18/2016	DI	15	0.54	1.2	5/18/2016	DI
1,1-dimethyl-2-pentene	1.7	0.52	1.2	5/18/2016	DI	5.7	0.52	1.2	5/18/2016	DI

Laboratory Analysis Results
Request Number: 1605008
Analysis Code: AP001VOC

Note: Results are reported in units of ppbv

Lab ID	1605008-001					1605008-001 PD				
	Conc.	SDL	SQL	Analysis Date	Flags**	Conc.	SDL	SQL	Analysis Date	Flags**
1-methylcyclohexane	19	0.40	1.2	5/18/2016	DI	18	0.40	1.2	5/18/2016	DI
1,2-dichloropropane	ND	0.34	1.2	5/18/2016	DI	ND	0.34	1.2	5/18/2016	DI
trichloroethylene	ND	0.58	1.2	5/18/2016	DI	ND	0.58	1.2	5/18/2016	DI
2,3,4-trimethylpentane	0.37	0.66	1.2	5/18/2016	LDI	0.38	0.66	1.2	5/18/2016	LDI
1-chloropentane	ND	0.51	1.2	5/18/2016	DI	ND	0.51	1.2	5/18/2016	DI
n-heptane	17	0.59	2.4	5/18/2016	DI	17	0.59	2.4	5/18/2016	DI
n-1,3-dichloropropylene	ND	0.49	1.2	5/18/2016	DI	ND	0.49	1.2	5/18/2016	DI
methylcyclohexane	19	0.52	2.4	5/18/2016	DI	19	0.52	2.4	5/18/2016	DI
n-1,3-dichloropropylene	ND	0.49	1.2	5/18/2016	DI	ND	0.49	1.2	5/18/2016	DI
1,1,2-trichloroethane	ND	0.42	1.2	5/18/2016	DI	ND	0.42	1.2	5/18/2016	DI
1,1,4-trimethylpentane	0.09	0.40	2.4	5/18/2016	LDI	0.09	0.40	2.4	5/18/2016	LDI
toluene	0.51	0.54	1.2	5/18/2016	LDI	0.51	0.54	1.2	5/18/2016	LDI
2-methylheptane	0.06	0.48	2.4	5/18/2016	LDI	0.06	0.48	2.4	5/18/2016	LDI
3-methylheptane	ND	0.46	2.4	5/18/2016	DI	ND	0.46	2.4	5/18/2016	DI
1,2-dibromochloroethane	ND	0.46	1.2	5/18/2016	DI	ND	0.46	1.2	5/18/2016	DI
n-octane	ND	0.34	2.4	5/18/2016	DI	ND	0.38	2.4	5/18/2016	DI
tetrachloroethylene	0.04	0.43	1.2	5/18/2016	LDI	0.04	0.43	1.2	5/18/2016	LDI
chlorobenzene	ND	0.54	1.2	5/18/2016	DI	ND	0.54	1.2	5/18/2016	DI
ethylbenzene	ND	0.54	2.4	5/18/2016	DI	ND	0.58	2.4	5/18/2016	DI
m & p-xylene	6.54	0.54	4.8	5/18/2016	LDI	6.51	0.54	4.8	5/18/2016	LDI
styrene	6.04	0.54	2.4	5/18/2016	LDI	6.04	0.54	2.4	5/18/2016	LDI
1,1,2,2-tetrachloroethane	ND	0.40	1.2	5/18/2016	DI	ND	0.46	1.2	5/18/2016	DI
hexylcyclohexane	0.11	0.54	2.4	5/18/2016	LDI	0.12	0.54	2.4	5/18/2016	LDI
n-octene	ND	0.44	1.2	5/18/2016	DI	0.03	0.44	1.2	5/18/2016	LDI
isopropylbenzene	0.02	0.48	1.2	5/18/2016	LDI	ND	0.48	1.2	5/18/2016	DI
n-propylbenzene	0.02	0.54	1.2	5/18/2016	LDI	0.02	0.54	1.2	5/18/2016	LDI
isobutylbenzene	ND	0.23	1.2	5/18/2016	DI	ND	0.23	1.2	5/18/2016	DI
n-butylbenzene	0.03	0.32	2.4	5/18/2016	LDI	0.10	0.32	2.4	5/18/2016	LDI
1,3,5-trimethylbenzene	0.03	0.50	2.4	5/18/2016	LDI	0.02	0.50	2.4	5/18/2016	LDI
o-xylene	0.62	0.26	2.4	5/18/2016	LDI	ND	0.26	2.4	5/18/2016	DI
1,2,4-trimethylbenzene	0.07	0.54	1.2	5/18/2016	LDI	0.07	0.54	1.2	5/18/2016	LDI
n-decane	0.04	0.54	2.4	5/18/2016	LDI	0.04	0.54	2.4	5/18/2016	LDI
1,2,3,4-tetramethylbenzene	ND	0.54	1.2	5/18/2016	DI	ND	0.54	1.2	5/18/2016	DI
m-dimethylbenzene	0.01	0.54	2.4	5/18/2016	LDI	ND	0.54	2.4	5/18/2016	DI
p-dimethylbenzene	0.02	0.54	1.2	5/18/2016	LDI	0.02	0.54	1.2	5/18/2016	LDI
n-undecane	0.03	0.54	2.4	5/18/2016	LDI	0.03	0.54	2.4	5/18/2016	LDI

Laboratory Analysis Results

Request Number: 1605008

Analysis Code: AP001VOC

Qualifier Notes:

ND - not detected

NQ - concentration was not quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilutions).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

BNV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

H - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

Y - Data was not confirmed by a confirmational analysis. Concentration and/or results is tentatively identified.

F - Established acceptance criteria was not met due to factors outside the laboratory's control.

N - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

Quality control notes for AP001VOC samples.

D1-Sample concentration was calculated using a dilution factor of 4.01.

TCEQ laboratory customer support may be reached at Frank.Martinez@tceq.texas.gov

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Table 5. Comparison of Monitored Concentrations in Lab Sample 1605005-001 to TCEQ Short-Term AMCVs

Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
Lab Sample ID	1605005-001					
1,1,1-Trichloroethane	--	1,700	1.2	0.02	J,D1	0.52
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42
1,1-Dichloroethane	--	1,000	1.2	0.01	J,D1	0.38
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene	--	3000	1.2	0.23	J,D1	0.54
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4
1,2-Dichloroethane	--	40	1.2	0.06	J,D1	0.54
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene	--	3000	2.4	0.08	J,D1	0.5
1,3-Butadiene	230	1,700	1.2	0.14	J,D1	0.54
1-Butene	--	27,000	1.2	0.64	L,D1	0.4
1-Pentene	100	4,500	1.2	ND	D1	0.54
2,2,4-Trimethylpentane	--	750	1.2	0.48	L,D1	0.48
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	0.11	J,D1	0.42
2,3,4-Trimethylpentane	--	750	2.4	0.16	J,D1	0.48
2,3-Dimethylbutane	--	990	2.4	0.21	J,D1	0.56
2,3-Dimethylpentane	--	850	1.2	0.16	J,D1	0.52
2,4-Dimethylpentane	--	850	2.4	0.1	J,D1	0.54
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4
2-Methyl-2-Butene	--	4500	1.2	0.14	J,D1	0.46
2-Methylheptane	--	750	2.4	0.09	J,D1	0.4
2-Methylhexane	--	750	1.2	0.38	J,D1	0.54

Lab Sample ID	1605005-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
2-Methylpentane (Isohexane)	--	850	1.2	0.61	L,D1	0.54
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46
3-Methylheptane	--	750	2.4	ND	D1	0.46
3-Methylhexane	--	750	1.2	0.44	L,D1	0.4
3-Methylpentane	--	1,000	1.2	0.4	J,D1	0.46
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44
Acetylene	--	25,000	2.4	1.2	L,T,D1	1
Benzene	--	180	1.2	0.5	J,D1	0.54
Bromomethane (methyl bromide)	--	30	1.2	ND	D1	0.54
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
c-2-Butene	--	15,000	1.2	0.06	J,D1	0.54
c-2-Hexene	--	500	2.4	ND	D1	0.54
c-2-Pentene	--	4,500	2.4	ND	D1	0.5
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54
Chlorobenzene (phenyl chloride)	--	100	1.2	0.01	J,D1	0.54
Chloroform (trichloromethane)	--	20	1.2	0.08	J,D1	0.42
Cyclohexane	--	1,000	1.2	ND	D1	0.48
Cyclopentane	--	1,200	1.2	0.2	J,D1	0.54
Cyclopentene	--	2,900	1.2	0.02	J,D1	0.4
Dichlorodifluoromethane	--	10,000	1.2	0.54	L,D1	0.4
Ethane	--	*Simple Asphyxiant	2.4	12	T,D1	1
Ethylbenzene	--	20,000	2.4	ND	D1	0.54
Ethylene	--	500,000	2.4	3.1	T,D1	1
Isobutane	--	33,000	2.4	7.4	D1	0.46
Isopentane (2-methylbutane)	--	68,000	4.8	7.7	D1	0.54
Isoprene	48	20	1.2	0.12	J,D1	0.54

Lab Sample ID	1605005-001						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
Isopropylbenzene (cumene)	130	500	1.2	0.03	J,D1	0.48	
m & p-Xylene (as mixed isomers)	--	1,700	4.8	1.2	L,D1	0.54	
m-Diethylbenzene	--	460	2.4	ND	D1	0.54	
Methyl Chloride (chloromethane)	--	500	1.2	0.65	L,D1	0.4	
Methylcyclohexane	--	4,000	2.4	ND	D1	0.52	
Methylcyclopentane	--	750	2.4	0.28	J,D1	0.54	
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.49	L,D1	0.28	
m-Ethyltoluene	--	250	1.2	ND	D1	0.22	
n-Butane	--	92,000	2.4	6.6	D1	0.4	
n-Decane	--	1,750	2.4	0.28	J,D1	0.54	
n-Heptane	--	850	2.4	ND	D1	0.5	
n-Hexane	--	1,800	2.4	0.49	L,D1	0.4	
n-Nonane	--	2,000	1.2	0.24	J,D1	0.44	
n-Octane	--	750	2.4	0.23	J,D1	0.38	
n-Pentane	--	68,000	4.8	2.4	L,D1	0.54	
n-Propylbenzene	--	500	1.2	0.07	J,D1	0.54	
n-Undecane	--	550	2.4	ND	D1	0.54	
o-Ethyltoluene	--	250	2.4	ND	D1	0.26	
o-Xylene	--	1,700	2.4	0.39	J,D1	0.54	
p-Diethylbenzene	--	460	1.2	0.06	J,D1	0.54	
p-Ethyltoluene	--	250	2.4	0.17	J,D1	0.32	
Propane	--	*Simple Asphyxiant	2.4	8.7	T,D1	1	
Propylene	--	*Simple Asphyxiant	2.4	2	L,T,D1	1	
Styrene	25	5,100	2.4	0.57	L,D1	0.54	
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
t-2-Butene	--	15,000	1.2	ND	D1	0.36	

Lab Sample ID	1605005-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	ND	D1	0.54
Tetrachloroethylene	--	1,000	1.2	0.08	J,D1	0.48
Toluene	--	4,000	1.2	2.1	D1	0.54
Trichloroethylene	--	100	1.2	0.04	J,D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.3	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	0.11	J,D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

Table 6. Comparison of Monitored Concentrations in Lab Sample 1605005-001FD to TCEQ Short-Term AMCVs

Lab Sample ID	1605005-001FD					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
1,1,1-Trichloroethane	--	1,700	1.2	0.02	J,D1	0.52
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42
1,1-Dichloroethane	--	1,000	1.2	0.01	J,D1	0.38
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene	--	3000	1.2	0.23	J,D1	0.54
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4
1,2-Dichloroethane	--	40	1.2	0.06	J,D1	0.54
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene	--	3000	2.4	0.08	J,D1	0.5
1,3-Butadiene	230	1,700	1.2	0.14	J,D1	0.54
1-Butene	--	27,000	1.2	0.64	L,D1	0.4
1-Pentene	100	4,500	1.2	ND	D1	0.54
2,2,4-Trimethylpentane	--	750	1.2	0.48	L,D1	0.48
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	0.11	J,D1	0.42
2,3,4-Trimethylpentane	--	750	2.4	0.16	J,D1	0.48
2,3-Dimethylbutane	--	990	2.4	0.21	J,D1	0.56
2,3-Dimethylpentane	--	850	1.2	0.16	J,D1	0.52
2,4-Dimethylpentane	--	850	2.4	0.1	J,D1	0.54
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4
2-Methyl-2-Butene	--	4500	1.2	0.14	J,D1	0.46
2-Methylheptane	--	750	2.4	0.09	J,D1	0.4
2-Methylhexane	--	750	1.2	0.38	J,D1	0.54

Lab Sample ID	1605005-001FD						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
2-Methylpentane (Isohexane)	--	850	1.2	0.61	L,D1	0.54	
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46	
3-Methylheptane	--	750	2.4	ND	D1	0.46	
3-Methylhexane	--	750	1.2	0.44	L,D1	0.4	
3-Methylpentane	--	1,000	1.2	0.4	J,D1	0.46	
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44	
Acetylene	--	25,000	2.4	1.2	L,T,D1	1	
Benzene	--	180	1.2	0.5	J,D1	0.54	
Bromomethane (methyl bromide)	--	30	1.2	ND	D1	0.54	
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
c-2-Butene	--	15,000	1.2	0.06	J,D1	0.54	
c-2-Hexene	--	500	2.4	ND	D1	0.54	
c-2-Pentene	--	4,500	2.4	ND	D1	0.5	
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54	
Chlorobenzene (phenyl chloride)	--	100	1.2	0.01	J,D1	0.54	
Chloroform (trichloromethane)	--	20	1.2	0.08	J,D1	0.42	
Cyclohexane	--	1,000	1.2	ND	D1	0.48	
Cyclopentane	--	1,200	1.2	0.2	J,D1	0.54	
Cyclopentene	--	2,900	1.2	0.02	J,D1	0.4	
Dichlorodifluoromethane	--	10,000	1.2	0.54	L,D1	0.4	
Ethane	--	*Simple Asphyxiant	2.4	12	T,D1	1	
Ethylbenzene	--	20,000	2.4	ND	D1	0.54	
Ethylene	--	500,000	2.4	3.1	T,D1	1	
Isobutane	--	33,000	2.4	7.4	D1	0.46	
Isopentane (2-methylbutane)	--	68,000	4.8	7.7	D1	0.54	
Isoprene	48	20	1.2	0.12	J,D1	0.54	

Lab Sample ID	1605005-001FD					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
Isopropylbenzene (cumene)	130	500	1.2	0.03	J,D1	0.48
m & p-Xylene (as mixed isomers)	--	1,700	4.8	1.2	L,D1	0.54
m-Diethylbenzene	--	460	2.4	ND	D1	0.54
Methyl Chloride (chloromethane)	--	500	1.2	0.65	L,D1	0.4
Methylcyclohexane	--	4,000	2.4	ND	D1	0.52
Methylcyclopentane	--	750	2.4	0.28	J,D1	0.54
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.49	L,D1	0.28
m-Ethyltoluene	--	250	1.2	ND	D1	0.22
n-Butane	--	92,000	2.4	6.6	D1	0.4
n-Decane	--	1,750	2.4	0.28	J,D1	0.54
n-Heptane	--	850	2.4	ND	D1	0.5
n-Hexane	--	1,800	2.4	0.49	L,D1	0.4
n-Nonane	--	2,000	1.2	0.24	J,D1	0.44
n-Octane	--	750	2.4	0.23	J,D1	0.38
n-Pentane	--	68,000	4.8	1.9	L,D1	0.54
n-Propylbenzene	--	500	1.2	0.05	J,D1	0.54
n-Undecane	--	550	2.4	0.12	J,D1	0.54
o-Ethyltoluene	--	250	2.4	ND	D1	0.26
o-Xylene	--	1,700	2.4	0.31	J,D1	0.54
p-Diethylbenzene	--	460	1.2	0.04	J,D1	0.54
p-Ethyltoluene	--	250	2.4	0.15	J,D1	0.32
Propane	--	*Simple Asphyxiant	2.4	7.7	T,D1	1
Propylene	--	*Simple Asphyxiant	2.4	1.6	L,T,D1	1
Styrene	25	5,100	2.4	0.56	L,D1	0.54
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
t-2-Butene	--	15,000	1.2	ND	D1	0.36

Lab Sample ID	1605005-001FD					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	0.08	J,D1	0.54
Tetrachloroethylene	--	1,000	1.2	0.07	J,D1	0.48
Toluene	--	4,000	1.2	1.7	D1	0.54
Trichloroethylene	--	100	1.2	0.03	J,D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.28	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	0.08	J,D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

June 20, 2016

Table 7. Comparison of Monitored Concentrations in Lab Sample 1605006-001 to TCEQ Short-Term AMCVs

Lab Sample ID	1605006-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
1,1,1-Trichloroethane	--	1,700	1.2	ND	D1	0.52
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42
1,1-Dichloroethane	--	1,000	1.2	ND	D1	0.38
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4
1,2-Dichloroethane	--	40	1.2	ND	D1	0.54
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene	--	3000	2.4	ND	D1	0.5
1,3-Butadiene	230	1,700	1.2	ND	D1	0.54
1-Butene	--	27,000	1.2	ND	D1	0.4
1-Pentene	100	4,500	1.2	ND	D1	0.54
2,2,4-Trimethylpentane	--	750	1.2	0.13	J,D1	0.48
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	0.02	J,D1	0.42
2,3,4-Trimethylpentane	--	750	2.4	0.04	J,D1	0.48
2,3-Dimethylbutane	--	990	2.4	0.04	J,D1	0.56
2,3-Dimethylpentane	--	850	1.2	0.89	L,D1	0.52
2,4-Dimethylpentane	--	850	2.4	0.09	J,D1	0.54
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4
2-Methyl-2-Butene	--	4500	1.2	ND	D1	0.46
2-Methylheptane	--	750	2.4	0.04	J,D1	0.4
2-Methylhexane	--	750	1.2	3.5	D1	0.54

Lab Sample ID	1605006-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
2-Methylpentane (isohexane)	--	850	1.2	0.14	J,D1	0.54
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46
3-Methylheptane	--	750	2.4	ND	D1	0.46
3-Methylhexane	--	750	1.2	4.4	D1	0.4
3-Methylpentane	--	1,000	1.2	0.09	J,D1	0.46
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44
Acetylene	--	25,000	2.4	1.8	L,T,D1	1
Benzene	--	180	1.2	0.26	J,D1	0.54
Bromomethane (methyl bromide)	--	30	1.2	ND	D1	0.54
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
c-2-Butene	--	15,000	1.2	ND	D1	0.54
c-2-Hexene	--	500	2.4	ND	D1	0.54
c-2-Pentene	--	4,500	2.4	0.01	J,D1	0.5
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54
Chlorobenzene (phenyl chloride)	--	100	1.2	ND	D1	0.54
Chloroform (trichloromethane)	--	20	1.2	0.03	J,D1	0.42
Cyclohexane	--	1,000	1.2	0.43	J,D1	0.48
Cyclopentane	--	1,200	1.2	0.02	J,D1	0.54
Cyclopentene	--	2,900	1.2	ND	D1	0.4
Dichlorodifluoromethane	--	10,000	1.2	0.47	L,D1	0.4
Ethane	--	*Simple Asphyxiant	2.4	4.8	T,D1	1
Ethylbenzene	--	20,000	2.4	ND	D1	0.54
Ethylene	--	500,000	2.4	1.2	L,T,D1	1
Isobutane	--	33,000	2.4	0.33	J,D1	0.46
Isopentane (2-methylbutane)	--	68,000	4.8	0.63	L,D1	0.54
Isoprene	48	20	1.2	0.22	J,D1	0.54

Lab Sample ID	1605006-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
Isopropylbenzene (cumene)	130	500	1.2	ND	D1	0.48
m & p-Xylene (as mixed isomers)	--	1,700	4.8	0.17	J,D1	0.54
m-Diethylbenzene	--	460	2.4	ND	D1	0.54
Methyl Chloride (chloromethane)	--	500	1.2	0.58	L,D1	0.4
Methylcyclohexane	--	4,000	2.4	3	D1	0.52
Methylcyclopentane	--	750	2.4	0.07	J,D1	0.54
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.12	J,D1	0.28
m-Ethyltoluene	--	250	1.2	ND	D1	0.22
n-Butane	--	92,000	2.4	0.88	L,D1	0.4
n-Decane	--	1,750	2.4	0.03	J,D1	0.54
n-Heptane	--	850	2.4	4.6	D1	0.5
n-Hexane	--	1,800	2.4	0.13	J,D1	0.4
n-Nonane	--	2,000	1.2	ND	D1	0.44
n-Octane	--	750	2.4	0.03	J,D1	0.38
n-Pentane	--	68,000	4.8	ND	D1	0.54
n-Propylbenzene	--	500	1.2	ND	D1	0.54
n-Undecane	--	550	2.4	0.02	J,D1	0.54
o-Ethyltoluene	--	250	2.4	ND	D1	0.26
o-Xylene	--	1,700	2.4	0.06	J,D1	0.54
p-Diethylbenzene	--	460	1.2	0.08	J,D1	0.54
p-Ethyltoluene	--	250	2.4	0.09	J,D1	0.32
Propane	--	*Simple Asphyxiant	2.4	2.3	L,T,D1	1
Propylene	--	*Simple Asphyxiant	2.4	ND	T,D1	1
Styrene	25	5,100	2.4	0.01	J,D1	0.54
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
t-2-Butene	--	15,000	1.2	ND	D1	0.36

Lab Sample ID	1605006-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	ND	D1	0.54
Tetrachloroethylene	--	1,000	1.2	ND	D1	0.48
Toluene	--	4,000	1.2	0.26	J,D1	0.54
Trichloroethylene	--	100	1.2	0.06	J,D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.23	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	ND	D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

Table 8. Comparison of Monitored Concentrations in Lab Sample 1605006-001FD to TCEQ Short-Term AMCVs

Lab Sample ID	1605006-001FD					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
1,1,1-Trichloroethane	--	1,700	1.2	ND	D1	0.52
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42
1,1-Dichloroethane	--	1,000	1.2	ND	D1	0.38
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4
1,2-Dichloroethane	--	40	1.2	ND	D1	0.54
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene	--	3000	2.4	ND	D1	0.5
1,3-Butadiene	230	1,700	1.2	ND	D1	0.54
1-Butene	--	27,000	1.2	ND	D1	0.4
1-Pentene	100	4,500	1.2	ND	D1	0.54
2,2,4-Trimethylpentane	--	750	1.2	0.13	J,D1	0.48
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	0.02	J,D1	0.42
2,3,4-Trimethylpentane	--	750	2.4	0.04	J,D1	0.48
2,3-Dimethylbutane	--	990	2.4	0.04	J,D1	0.56
2,3-Dimethylpentane	--	850	1.2	0.89	L,D1	0.52
2,4-Dimethylpentane	--	850	2.4	0.09	J,D1	0.54
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4
2-Methyl-2-Butene	--	4500	1.2	ND	D1	0.46
2-Methylheptane	--	750	2.4	0.04	J,D1	0.4
2-Methylhexane	--	750	1.2	3.5	D1	0.54

Lab Sample ID	1605006-001FD						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
2-Methylpentane (Isohexane)	--	850	1.2	0.14	J,D1	0.54	
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46	
3-Methylheptane	--	750	2.4	ND	D1	0.46	
3-Methylhexane	--	750	1.2	4.4	D1	0.4	
3-Methylpentane	--	1,000	1.2	0.09	J,D1	0.46	
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44	
Acetylene	--	25,000	2.4	1.8	L,T,D1	1	
Benzene	--	180	1.2	0.26	J,D1	0.54	
Bromomethane (methyl bromide)	--	30	1.2	ND	D1	0.54	
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
c-2-Butene	--	15,000	1.2	ND	D1	0.54	
c-2-Hexene	--	500	2.4	ND	D1	0.54	
c-2-Pentene	--	4,500	2.4	0.01	J,D1	0.5	
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54	
Chlorobenzene (phenyl chloride)	--	100	1.2	ND	D1	0.54	
Chloroform (trichloromethane)	--	20	1.2	0.03	J,D1	0.42	
Cyclohexane	--	1,000	1.2	0.43	J,D1	0.48	
Cyclopentane	--	1,200	1.2	0.02	J,D1	0.54	
Cyclopentene	--	2,900	1.2	ND	D1	0.4	
Dichlorodifluoromethane	--	10,000	1.2	0.47	L,D1	0.4	
Ethane	--	*Simple Asphyxiant	2.4	4.8	T,D1	1	
Ethylbenzene	--	20,000	2.4	ND	D1	0.54	
Ethylene	--	500,000	2.4	1.2	L,T,D1	1	
Isobutane	--	33,000	2.4	0.33	J,D1	0.46	
Isopentane (2-methylbutane)	--	68,000	4.8	0.63	L,D1	0.54	
Isoprene	48	20	1.2	0.22	J,D1	0.54	

Lab Sample ID	1605006-001FD					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
Isopropylbenzene (cumene)	130	500	1.2	ND	D1	0.48
m & p-Xylene (as mixed isomers)	--	1,700	4.8	0.17	J,D1	0.54
m-Diethylbenzene	--	460	2.4	ND	D1	0.54
Methyl Chloride (chloromethane)	--	500	1.2	0.58	L,D1	0.4
Methylcyclohexane	--	4,000	2.4	3	D1	0.52
Methylcyclopentane	--	750	2.4	0.07	J,D1	0.54
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.12	J,D1	0.28
m-Ethyltoluene	--	250	1.2	ND	D1	0.22
n-Butane	--	92,000	2.4	0.88	L,D1	0.4
n-Decane	--	1,750	2.4	0.03	J,D1	0.54
n-Heptane	--	850	2.4	4.6	D1	0.5
n-Hexane	--	1,800	2.4	0.13	J,D1	0.4
n-Nonane	--	2,000	1.2	ND	D1	0.44
n-Octane	--	750	2.4	0.03	J,D1	0.38
n-Pentane	--	68,000	4.8	0.44	J,D1	0.54
n-Propylbenzene	--	500	1.2	ND	D1	0.54
n-Undecane	--	550	2.4	0.02	J,D1	0.54
o-Ethyltoluene	--	250	2.4	ND	D1	0.26
o-Xylene	--	1,700	2.4	0.06	J,D1	0.54
p-Diethylbenzene	--	460	1.2	0.08	J,D1	0.54
p-Ethyltoluene	--	250	2.4	0.09	J,D1	0.32
Propane	--	*Simple Asphyxiant	2.4	2.5	T,D1	1
Propylene	--	*Simple Asphyxiant	2.4	ND	T,D1	1
Styrene	25	5,100	2.4	0.01	J,D1	0.54
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
t-2-Butene	--	15,000	1.2	ND	D1	0.36

Lab Sample ID	1605006-001FD					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	ND	D1	0.54
Tetrachloroethylene	--	1,000	1.2	ND	D1	0.48
Toluene	--	4,000	1.2	0.26	J,D1	0.54
Trichloroethylene	--	100	1.2	0.06	J,D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.23	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	ND	D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

Table 9. Comparison of Monitored Concentrations in Lab Sample 1605007-001 to TCEQ Short-Term AMCVs

Lab Sample ID	1605007-001					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
1,1,1-Trichloroethane	--	1,700	1.2	0.01	J,D1	0.52
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42
1,1-Dichloroethane	--	1,000	1.2	ND	D1	0.38
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4
1,2-Dichloroethane	--	40	1.2	0.02	J,D1	0.54
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene	--	3000	2.4	0.02	J,D1	0.5
1,3-Butadiene	230	1,700	1.2	ND	D1	0.54
1-Butene	--	27,000	1.2	0.32	J,D1	0.4
1-Pentene	100	4,500	1.2	ND	D1	0.54
2,2,4-Trimethylpentane	--	750	1.2	0.16	J,D1	0.48
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	0.03	J,D1	0.42
2,3,4-Trimethylpentane	--	750	2.4	0.04	J,D1	0.48
2,3-Dimethylbutane	--	990	2.4	0.06	J,D1	0.56
2,3-Dimethylpentane	--	850	1.2	0.06	J,D1	0.52
2,4-Dimethylpentane	--	850	2.4	0.03	J,D1	0.54
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4
2-Methyl-2-Butene	--	4500	1.2	ND	D1	0.46
2-Methylheptane	--	750	2.4	ND	D1	0.4
2-Methylhexane	--	750	1.2	0.17	J,D1	0.54

Lab Sample ID	1605007-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
2-Methylpentane (Isohexane)	--	850	1.2	0.2	J,D1	0.54
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46
3-Methylheptane	--	750	2.4	0.02	J,D1	0.46
3-Methylhexane	--	750	1.2	0.21	J,D1	0.4
3-Methylpentane	--	1,000	1.2	0.13	J,D1	0.46
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44
Acetylene	--	25,000	2.4	ND	T,D1	1
Benzene	--	180	1.2	0.3	J,D1	0.54
Bromomethane (methyl bromide)	--	30	1.2	ND	D1	0.54
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
c-2-Butene	--	15,000	1.2	0.05	J,D1	0.54
c-2-Hexene	--	500	2.4	ND	D1	0.54
c-2-Pentene	--	4,500	2.4	0.01	J,D1	0.5
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54
Chlorobenzene (phenyl chloride)	--	100	1.2	0.01	J,D1	0.54
Chloroform (trichloromethane)	--	20	1.2	0.07	J,D1	0.42
Cyclohexane	--	1,000	1.2	0.24	J,D1	0.48
Cyclopentane	--	1,200	1.2	0.06	J,D1	0.54
Cyclopentene	--	2,900	1.2	ND	D1	0.4
Dichlorodifluoromethane	--	10,000	1.2	0.46	L,D1	0.4
Ethane	--	*Simple Asphyxiant	2.4	9.7	T,D1	1
Ethylbenzene	--	20,000	2.4	ND	D1	0.54
Ethylene	--	500,000	2.4	1.8	L,T,D1	1
Isobutane	--	33,000	2.4	1.5	L,D1	0.46
Isopentane (2-methylbutane)	--	68,000	4.8	1.3	L,D1	0.54
Isoprene	48	20	1.2	0.06	J,D1	0.54

Lab Sample ID	1605007-001						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
Isopropylbenzene (cumene)	130	500	1.2	ND	D1	0.48	
m & p-Xylene (as mixed isomers)	--	1,700	4.8	0.29	J,D1	0.54	
m-Diethylbenzene	--	460	2.4	ND	D1	0.54	
Methyl Chloride (chloromethane)	--	500	1.2	0.61	L,D1	0.4	
Methylcyclohexane	--	4,000	2.4	ND	D1	0.52	
Methylcyclopentane	--	750	2.4	0.13	J,D1	0.54	
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.13	J,D1	0.28	
m-Ethyltoluene	--	250	1.2	0.04	J,D1	0.22	
n-Butane	--	92,000	2.4	1.9	L,D1	0.4	
n-Decane	--	1,750	2.4	0.08	J,D1	0.54	
n-Heptane	--	850	2.4	0.18	J,D1	0.5	
n-Hexane	--	1,800	2.4	0.17	J,D1	0.4	
n-Nonane	--	2,000	1.2	ND	D1	0.44	
n-Octane	--	750	2.4	ND	D1	0.38	
n-Pentane	--	68,000	4.8	0.64	L,D1	0.54	
n-Propylbenzene	--	500	1.2	0.01	J,D1	0.54	
n-Undecane	--	550	2.4	0.1	J,D1	0.54	
o-Ethyltoluene	--	250	2.4	ND	D1	0.26	
o-Xylene	--	1,700	2.4	0.09	J,D1	0.54	
p-Diethylbenzene	--	460	1.2	0.01	J,D1	0.54	
p-Ethyltoluene	--	250	2.4	0.09	J,D1	0.32	
Propane	--	*Simple Asphyxiant	2.4	5.5	T,D1	1	
Propylene	--	*Simple Asphyxiant	2.4	ND	T,D1	1	
Styrene	25	5,100	2.4	0.02	J,D1	0.54	
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
t-2-Butene	--	15,000	1.2	0.05	J,D1	0.36	

June 20, 2016

Lab Sample ID	1605007-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	ND	D1	0.54
Tetrachloroethylene	--	1,000	1.2	ND	D1	0.48
Toluene	--	4,000	1.2	0.53	J,D1	0.54
Trichloroethylene	--	100	1.2	0.01	J,D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.23	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	ND	D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

Table 10. Comparison of Monitored Concentrations in Lab Sample 1605007-001FD to TCEQ Short-Term AMCVs

Lab Sample ID	1605007-001FD						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
1,1,1-Trichloroethane	--	1,700	1.2	0.01	J,D1	0.52	
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4	
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42	
1,1-Dichloroethane	--	1,000	1.2	ND	D1	0.38	
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36	
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54	
1,2,4-Trimethylbenzene	--	3000	1.2	ND	D1	0.54	
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4	
1,2-Dichloroethane	--	40	1.2	0.02	J,D1	0.54	
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34	
1,3,5-Trimethylbenzene	--	3000	2.4	0.02	J,D1	0.5	
1,3-Butadiene	230	1,700	1.2	ND	D1	0.54	
1-Butene	--	27,000	1.2	0.32	J,D1	0.4	
1-Pentene	100	4,500	1.2	ND	D1	0.54	
2,2,4-Trimethylpentane	--	750	1.2	0.16	J,D1	0.48	
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	0.03	J,D1	0.42	
2,3,4-Trimethylpentane	--	750	2.4	0.04	J,D1	0.48	
2,3-Dimethylbutane	--	990	2.4	0.06	J,D1	0.56	
2,3-Dimethylpentane	--	850	1.2	0.06	J,D1	0.52	
2,4-Dimethylpentane	--	850	2.4	0.03	J,D1	0.54	
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54	
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4	
2-Methyl-2-Butene	--	4500	1.2	ND	D1	0.46	
2-Methylheptane	--	750	2.4	ND	D1	0.4	
2-Methylhexane	--	750	1.2	0.17	J,D1	0.54	

Lab Sample ID	1605007-001FD					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
2-Methylpentane (Isohexane)	--	850	1.2	0.2	J,D1	0.54
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46
3-Methylheptane	--	750	2.4	0.02	J,D1	0.46
3-Methylhexane	--	750	1.2	0.21	J,D1	0.4
3-Methylpentane	--	1,000	1.2	0.13	J,D1	0.46
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44
Acetylene	--	25,000	2.4	ND	T,D1	1
Benzene	--	180	1.2	0.3	J,D1	0.54
Bromomethane (methyl bromide)	--	30	1.2	ND	D1	0.54
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
c-2-Butene	--	15,000	1.2	0.05	J,D1	0.54
c-2-Hexene	--	500	2.4	ND	D1	0.54
c-2-Pentene	--	4,500	2.4	0.01	J,D1	0.5
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54
Chlorobenzene (phenyl chloride)	--	100	1.2	0.01	J,D1	0.54
Chloroform (trichloromethane)	--	20	1.2	0.07	J,D1	0.42
Cyclohexane	--	1,000	1.2	0.24	J,D1	0.48
Cyclopentane	--	1,200	1.2	0.06	J,D1	0.54
Cyclopentene	--	2,900	1.2	ND	D1	0.4
Dichlorodifluoromethane	--	10,000	1.2	0.46	L,D1	0.4
Ethane	--	*Simple Asphyxiant	2.4	9.7	T,D1	1
Ethylbenzene	--	20,000	2.4	ND	D1	0.54
Ethylene	--	500,000	2.4	1.8	L,T,D1	1
Isobutane	--	33,000	2.4	1.5	L,D1	0.46
Isopentane (2-methylbutane)	--	68,000	4.8	1.3	L,D1	0.54
Isoprene	48	20	1.2	0.06	J,D1	0.54

Lab Sample ID	1605007-001FD						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
Isopropylbenzene (cumene)	130	500	1.2	ND	D1	0.48	
m & p-Xylene (as mixed isomers)	--	1,700	4.8	0.29	J,D1	0.54	
m-Diethylbenzene	--	460	2.4	ND	D1	0.54	
Methyl Chloride (chloromethane)	--	500	1.2	0.61	L,D1	0.4	
Methylcyclohexane	--	4,000	2.4	ND	D1	0.52	
Methylcyclopentane	--	750	2.4	0.13	J,D1	0.54	
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.13	J,D1	0.28	
m-Ethyltoluene	--	250	1.2	0.04	J,D1	0.22	
n-Butane	--	92,000	2.4	1.9	L,D1	0.4	
n-Decane	--	1,750	2.4	0.08	J,D1	0.54	
n-Heptane	--	850	2.4	0.18	J,D1	0.5	
n-Hexane	--	1,800	2.4	0.17	J,D1	0.4	
n-Nonane	--	2,000	1.2	ND	D1	0.44	
n-Octane	--	750	2.4	ND	D1	0.38	
n-Pentane	--	68,000	4.8	0.62	L,D1	0.54	
n-Propylbenzene	--	500	1.2	0.01	J,D1	0.54	
n-Undecane	--	550	2.4	ND	D1	0.54	
o-Ethyltoluene	--	250	2.4	0.02	J,D1	0.26	
o-Xylene	--	1,700	2.4	0.12	J,D1	0.54	
p-Diethylbenzene	--	460	1.2	0.02	J,D1	0.54	
p-Ethyltoluene	--	250	2.4	0.02	J,D1	0.32	
Propane	--	*Simple Asphyxiant	2.4	4.8	T,D1	1	
Propylene	--	*Simple Asphyxiant	2.4	0.54	J,T,D1	1	
Styrene	25	5,100	2.4	0.02	J,D1	0.54	
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
t-2-Butene	--	15,000	1.2	0.08	J,D1	0.36	

Lab Sample ID	1605007-001FD					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	0.03	J,D1	0.54
Tetrachloroethylene	--	1,000	1.2	0.03	J,D1	0.48
Toluene	--	4,000	1.2	0.57	L,D1	0.54
Trichloroethylene	--	100	1.2	ND	D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.22	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	ND	D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

Table 11. Comparison of Monitored Concentrations in Lab Sample 1605008-001 to TCEQ Short-Term AMCVs

Lab Sample ID	1605008-001						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
1,1,1-Trichloroethane	--	1,700	1.2	0.01	J,D1	0.52	
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4	
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42	
1,1-Dichloroethane	--	1,000	1.2	ND	D1	0.38	
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36	
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54	
1,2,4-Trimethylbenzene	--	3000	1.2	0.07	J,D1	0.54	
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4	
1,2-Dichloroethane	--	40	1.2	ND	D1	0.54	
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34	
1,3,5-Trimethylbenzene	--	3000	2.4	0.03	J,D1	0.5	
1,3-Butadiene	230	1,700	1.2	0.1	J,D1	0.54	
1-Butene	--	27,000	1.2	0.38	J,D1	0.4	
1-Pentene	100	4,500	1.2	ND	D1	0.54	
2,2,4-Trimethylpentane	--	750	1.2	0.37	J,D1	0.48	
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	ND	D1	0.42	
2,3,4-Trimethylpentane	--	750	2.4	0.09	J,D1	0.48	
2,3-Dimethylbutane	--	990	2.4	0.1	J,D1	0.56	
2,3-Dimethylpentane	--	850	1.2	3.7	D1	0.52	
2,4-Dimethylpentane	--	850	2.4	0.36	J,D1	0.54	
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54	
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4	
2-Methyl-2-Butene	--	4500	1.2	ND	D1	0.46	
2-Methylheptane	--	750	2.4	0.06	J,D1	0.4	
2-Methylhexane	--	750	1.2	15	D1	0.54	

Lab Sample ID	1605008-001						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
2-Methylpentane (Isohexane)	--	850	1.2	0.3	J,D1	0.54	
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46	
3-Methylheptane	--	750	2.4	ND	D1	0.46	
3-Methylhexane	--	750	1.2	19	D1	0.4	
3-Methylpentane	--	1,000	1.2	0.21	J,D1	0.46	
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44	
Acetylene	--	25,000	2.4	1.6	L,T,D1	1	
Benzene	--	180	1.2	0.37	J,D1	0.54	
Bromomethane (methyl bromide)	--	30	1.2	0.02	J,D1	0.54	
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
c-2-Butene	--	15,000	1.2	0.04	J,D1	0.54	
c-2-Hexene	--	500	2.4	0.01	J,D1	0.54	
c-2-Pentene	--	4,500	2.4	ND	D1	0.5	
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54	
Chlorobenzene (phenyl chloride)	--	100	1.2	ND	D1	0.54	
Chloroform (trichloromethane)	--	20	1.2	0.05	J,D1	0.42	
Cyclohexane	--	1,000	1.2	2	D1	0.48	
Cyclopentane	--	1,200	1.2	0.05	J,D1	0.54	
Cyclopentene	--	2,900	1.2	ND	D1	0.4	
Dichlorodifluoromethane	--	10,000	1.2	0.47	L,D1	0.4	
Ethane	--	*Simple Asphyxiant	2.4	9.4	T,D1	1	
Ethylbenzene	--	20,000	2.4	ND	D1	0.54	
Ethylene	--	500,000	2.4	2.7	T,D1	1	
Isobutane	--	33,000	2.4	0.98	L,D1	0.46	
Isopentane (2-methylbutane)	--	68,000	4.8	1.3	L,D1	0.54	
Isoprene	48	20	1.2	0.3	J,D1	0.54	

Lab Sample ID	1605008-001						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
Isopropylbenzene (cumene)	130	500	1.2	0.02	J,D1	0.48	
m & p-Xylene (as mixed isomers)	--	1,700	4.8	0.34	J,D1	0.54	
m-Diethylbenzene	--	460	2.4	0.01	J,D1	0.54	
Methyl Chloride (chloromethane)	--	500	1.2	0.65	L,D1	0.4	
Methylcyclohexane	--	4,000	2.4	10	D1	0.52	
Methylcyclopentane	--	750	2.4	0.23	J,D1	0.54	
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.64	L,D1	0.28	
m-Ethyltoluene	--	250	1.2	ND	D1	0.22	
n-Butane	--	92,000	2.4	2.1	L,D1	0.4	
n-Decane	--	1,750	2.4	0.04	J,D1	0.54	
n-Heptane	--	850	2.4	17	D1	0.5	
n-Hexane	--	1,800	2.4	0.33	J,D1	0.4	
n-Nonane	--	2,000	1.2	ND	D1	0.44	
n-Octane	--	750	2.4	ND	D1	0.38	
n-Pentane	--	68,000	4.8	0.55	L,D1	0.54	
n-Propylbenzene	--	500	1.2	0.02	J,D1	0.54	
n-Undecane	--	550	2.4	0.03	J,D1	0.54	
o-Ethyltoluene	--	250	2.4	0.02	J,D1	0.26	
o-Xylene	--	1,700	2.4	0.11	J,D1	0.54	
p-Diethylbenzene	--	460	1.2	0.02	J,D1	0.54	
p-Ethyltoluene	--	250	2.4	0.1	J,D1	0.32	
Propane	--	*Simple Asphyxiant	2.4	6.2	T,D1	1	
Propylene	--	*Simple Asphyxiant	2.4	1	L,T,D1	1	
Styrene	25	5,100	2.4	0.04	J,D1	0.54	
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
t-2-Butene	--	15,000	1.2	0.05	J,D1	0.36	

Lab Sample ID	1605008-001					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	0.05	J,D1	0.54
Tetrachloroethylene	--	1,000	1.2	0.04	J,D1	0.48
Toluene	--	4,000	1.2	0.52	J,D1	0.54
Trichloroethylene	--	100	1.2	ND	D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.23	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	ND	D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

Table 12. Comparison of Monitored Concentrations in Lab Sample 1605008-001FD to TCEQ Short-Term AMCVs

Lab Sample ID	1605008-001FD					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
1,1,1-Trichloroethane	--	1,700	1.2	0.01	J,D1	0.52
1,1,2,2-Tetrachloroethane	--	10	1.2	ND	D1	0.4
1,1,2-Trichloroethane	--	100	1.2	ND	D1	0.42
1,1-Dichloroethane	--	1,000	1.2	ND	D1	0.38
1,1-Dichloroethylene	--	180	1.2	ND	D1	0.36
1,2,3-Trimethylbenzene	--	3000	1.2	ND	D1	0.54
1,2,4-Trimethylbenzene	--	3000	1.2	0.07	J,D1	0.54
1,2-Dibromoethane	--	0.5	1.2	ND	D1	0.4
1,2-Dichloroethane	--	40	1.2	ND	D1	0.54
1,2-Dichloropropane	--	100	1.2	ND	D1	0.34
1,3,5-Trimethylbenzene	--	3000	2.4	0.03	J,D1	0.5
1,3-Butadiene	230	1,700	1.2	0.1	J,D1	0.54
1-Butene	--	27,000	1.2	0.38	J,D1	0.4
1-Pentene	100	4,500	1.2	ND	D1	0.54
2,2,4-Trimethylpentane	--	750	1.2	0.37	J,D1	0.48
2,2-Dimethylbutane (Neohexane)	--	1,000	1.2	ND	D1	0.42
2,3,4-Trimethylpentane	--	750	2.4	0.09	J,D1	0.48
2,3-Dimethylbutane	--	990	2.4	0.1	J,D1	0.56
2,3-Dimethylpentane	--	850	1.2	3.7	D1	0.52
2,4-Dimethylpentane	--	850	2.4	0.36	J,D1	0.54
2-Chloropentane (as chloroethane)	--	240	1.2	ND	D1	0.54
2-Methyl-1-Pentene +1-Hexene	--	500	4.8	ND	D1	0.4
2-Methyl-2-Butene	--	4500	1.2	ND	D1	0.46
2-Methylheptane	--	750	2.4	0.06	J,D1	0.4
2-Methylhexane	--	750	1.2	15	D1	0.54

Lab Sample ID	1605008-001FD					
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)
2-Methylpentane (isohexane)	--	850	1.2	0.3	J,D1	0.54
3-Methyl-1-Butene	100	8,000	1.2	ND	D1	0.46
3-Methylheptane	--	750	2.4	ND	D1	0.46
3-Methylhexane	--	750	1.2	19	D1	0.4
3-Methylpentane	--	1,000	1.2	0.21	J,D1	0.46
4-Methyl-1-Pentene (as hexene)	--	500	2.4	ND	D1	0.44
Acetylene	--	25,000	2.4	1.6	L,I,D1	1
Benzene	--	180	1.2	0.37	J,D1	0.54
Bromomethane (methyl bromide)	--	30	1.2	0.02	J,D1	0.54
c-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4
c-2-Butene	--	15,000	1.2	0.04	J,D1	0.54
c-2-Hexene	--	500	2.4	0.01	J,D1	0.54
c-2-Pentene	--	4,500	2.4	ND	D1	0.5
Carbon Tetrachloride	--	20	1.2	0.08	J,D1	0.54
Chlorobenzene (phenyl chloride)	--	100	1.2	ND	D1	0.54
Chloroform (trichloromethane)	--	20	1.2	0.05	J,D1	0.42
Cyclohexane	--	1,000	1.2	2	D1	0.48
Cyclopentane	--	1,200	1.2	0.05	J,D1	0.54
Cyclopentene	--	2,900	1.2	ND	D1	0.4
Dichlorodifluoromethane	--	10,000	1.2	0.47	L,D1	0.4
Ethane	--	*Simple Asphyxiant	2.4	9.4	T,D1	1
Ethylbenzene	--	20,000	2.4	ND	D1	0.54
Ethylene	--	500,000	2.4	2.7	T,D1	1
Isobutane	--	33,000	2.4	0.98	L,D1	0.46
Isopentane (2-methylbutane)	--	68,000	4.8	1.3	L,D1	0.54
Isoprene	48	20	1.2	0.3	J,D1	0.54

Lab Sample ID	1605008-001FD						
Compound	Odor AMCV (ppb _v)	Short-Term Health AMCV (ppb _v)	SQL (ppb _v)	Concentrations (ppb _v)	Flags	SDL (ppb _v)	
Isopropylbenzene (cumene)	130	500	1.2	0.02	J,D1	0.48	
m & p-Xylene (as mixed isomers)	--	1,700	4.8	0.34	J,D1	0.54	
m-Diethylbenzene	--	460	2.4	0.01	J,D1	0.54	
Methyl Chloride (chloromethane)	--	500	1.2	0.65	L,D1	0.4	
Methylcyclohexane	--	4,000	2.4	10	D1	0.52	
Methylcyclopentane	--	750	2.4	0.23	J,D1	0.54	
Methylene Chloride (dichloromethane)	--	3,500	1.2	0.64	L,D1	0.28	
m-Ethyltoluene	--	250	1.2	ND	D1	0.22	
n-Butane	--	92,000	2.4	2.1	L,D1	0.4	
n-Decane	--	1,750	2.4	0.04	J,D1	0.54	
n-Heptane	--	850	2.4	17	D1	0.5	
n-Hexane	--	1,800	2.4	0.33	J,D1	0.4	
n-Nonane	--	2,000	1.2	ND	D1	0.44	
n-Octane	--	750	2.4	ND	D1	0.38	
n-Pentane	--	68,000	4.8	0.52	J,D1	0.54	
n-Propylbenzene	--	500	1.2	0.02	J,D1	0.54	
n-Undecane	--	550	2.4	0.03	J,D1	0.54	
o-Ethyltoluene	--	250	2.4	ND	D1	0.26	
o-Xylene	--	1,700	2.4	0.12	J,D1	0.54	
p-Diethylbenzene	--	460	1.2	0.02	J,D1	0.54	
p-Ethyltoluene	--	250	2.4	0.1	J,D1	0.32	
Propane	--	*Simple Asphyxiant	2.4	5.5	T,D1	1	
Propylene	--	*Simple Asphyxiant	2.4	0.43	J,T,D1	1	
Styrene	25	5,100	2.4	0.04	J,D1	0.54	
t-1,3-Dichloropropylene	--	10	1.2	ND	D1	0.4	
t-2-Butene	--	15,000	1.2	ND	D1	0.36	

Lab Sample ID	1605008-001FD					
Compound	Odor AMCV (ppbv)	Short-Term Health AMCV (ppbv)	SQL (ppbv)	Concentrations (ppbv)	Flags	SDL (ppbv)
t-2-Hexene	--	500	2.4	ND	D1	0.54
t-2-Pentene	--	4,500	2.4	ND	D1	0.54
Tetrachloroethylene	--	1,000	1.2	0.04	J,D1	0.48
Toluene	--	4,000	1.2	0.51	J,D1	0.54
Trichloroethylene	--	100	1.2	ND	D1	0.58
Trichlorofluoromethane	--	10,000	1.2	0.24	J,D1	0.58
Vinyl Chloride	--	26,000	1.2	ND	D1	0.34

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

ppbv - Parts per billion by volume.

ND - Not detected.

NQ - Concentration can not be quantified due to possible interferences or coelutions.

SDL - Sample Detection Limit (Limit of Detection adjusted for dilution).

SQL - Sample Quantitation Limit (Limit of Quantitation adjusted for dilution).

INV - Invalid.

J - Reported concentration is below SDL.

L - Reported concentration is at or above the SDL and is below the lower limit of quantitation.

E - Reported concentration exceeds the upper limit of instrument calibration.

M - Result modified from previous result.

T - Data was not confirmed by a confirmational analysis. Data is tentatively identified.

F - Established acceptance criteria were not met due to factors outside the laboratory's control.

H - Not all associated hold time specifications were met. Data may be biased.

C - Sample received with a missing or broken custody seal.

R - Sample received with a missing or incomplete chain of custody.

I - Sample received without a legible unique identifier.

G - Sample received in an improper container.

U - Sample received with insufficient sample volume.

W - Sample received with insufficient preservation.

D1 - Sample concentration was calculated using a dilution factor of 4.01.

June 20, 2016

Table 13. TCEQ Long-Term Air Monitoring Comparison Values (AMCVs)

Please Note: The long-term AMCVs are provided for informational purposes only because it is scientifically inappropriate to compare short-term monitored values to the long-term AMCV.

Compound	Long-Term Health AMCV (ppb _v)	Compound	Long-Term Health AMCV (ppb _v)
1,1,1-Trichloroethane	940	Cyclopentane	120
1,1,2,2-Tetrachloroethane	1	Cyclopentene	290
1,1,2-Trichloroethane	10	Dichlorodifluoromethane	1,000
1,1-Dichloroethane	100	Ethane	*Simple Asphyxiant
1,1-Dichloroethylene	86	Ethylbenzene	450
1,2,3-Trimethylbenzene	37	Ethylene**	5,300
1,2,4-Trimethylbenzene	37	Isobutane	2,400
1,2-Dibromoethane	0.05	Isopentane (2-methylbutane)	8,000
1,2-Dichloroethane	1	Isoprene	2
1,2-Dichloropropane	10	Isopropylbenzene (cumene)	50
1,3,5-Trimethylbenzene	37	m & p-Xylene (as mixed isomers)	140
1,3-Butadiene	9.1	m-Diethylbenzene	46
1-Butene	2300	Methyl Chloride (chloromethane)	50
1-Pentene	210	Methylcyclohexane	400
2,2,4-Trimethylpentane	75	Methylcyclopentane	75
2,2-Dimethylbutane (Neohexane)	100	Methylene Chloride (dichloromethane)	100
2,3,4-Trimethylpentane	75	m-Ethyltoluene	25
2,3-Dimethylbutane	99	n-Butane	2,400
2,3-Dimethylpentane	85	n-Decane	175
2,4-Dimethylpentane	85	n-Heptane	85
2-Chloropentane (as chloroethane)	24	n-Hexane	190
2-Methyl-1-Pentene +1-Hexene	50	n-Nonane	200
2-Methyl-2-Butene	210	n-Octane	75

Compound	Long-Term Health AMCV (ppb _v)	Compound	Long-Term Health AMCV (ppb _v)
2-Methylheptane	75	n-Pentane	8,000
2-Methylhexane	75	n-Propylbenzene	50
2-Methylpentane (Isohexane)	85	n-Undecane	55
3-Methyl-1-Butene	800	o-Ethyltoluene	25
3-Methylheptane	75	o-Xylene	140
3-Methylhexane	75	p-Diethylbenzene	46
3-Methylpentane	100	p-Ethyltoluene	25
4-Methyl-1-Pentene (as hexene)	50	Propane	*Simple Asphyxiant
Acetylene	2,500	Propylene	*Simple Asphyxiant
Benzene	1.4	Styrene	110
Bromomethane (methyl bromide)	3	t-1,3-Dichloropropylene	1
c-1,3-Dichloropropylene	1	t-2-Butene	690
c-2-Butene	690	t-2-Hexene	50
c-2-Hexene	50	t-2-Pentene	210
c-2-Pentene	210	Tetrachloroethylene***	3.8
Carbon Tetrachloride	2	Toluene	1,100
Chlorobenzene (phenyl chloride)	10	Trichloroethylene	10
Chloroform (trichloromethane)	2	Trichlorofluoromethane	1,000
Cyclohexane	100	Vinyl Chloride	0.45

*A simple asphyxiant displaces air, lowering the partial pressure of oxygen and causing hypoxia at sufficiently high concentrations.

**Long-term vegetation AMCV for Ethylene is 30 ppb.

***Long-term vegetation AMCV for Tetrachloroethylene is 12 ppb.

Attachment 5

Exit Interview Form

RN 102610102

Blue Ridge Landfill

EXIT INTERVIEW FORM: Potential Violations and/or Records Requested

Regulated Entity/Site Name	Blue Ridge Landfill TX, LP		TCEQ Add. ID No. RN No (optional)	102610102
Investigation Type	CMPL	Contact Made In-House (Y/N)	Y	Purpose of Investigation
Regulated Entity Contact	Mr. Matt Montagna		Telephone No.	(281) 688-9739
Title	Landfill Operations Manager		E-mail:	
			Date Contacted	10/21/2016
			Date Faxed:	

NOTICE: The information provided in this Note is intended to provide clarity to issues that have arisen to the date of this Note during the investigation process between the agency and the company and *does not represent agency findings related to violations*. Any potential or alleged violations discovered after the date of this Note will be communicated by telephone to the regulated entity representative prior to the issuance of a notice of violation or enforcement. Conclusions drawn from this investigation, including additional violations or potential violations discovered (if any) during the course of this investigation, will be documented in this investigation's final report.

Issue		For Records Request, identify the necessary records, the company contact and date due to the agency. For Alleged and Potential Violation issues, include the rule in question with the clearly described potential problem. Other type of issues: fully describe.	
No.	Type ¹	Rule Citation (if known)	Description of Issue
1	AV	30 TAC 101.4	Failure to prevent a nuisance condition.
			Investigation Type: <u>CML</u>
			Air Account NO: <u>S</u>
			Attachment: <u>1 of 1</u>

Note 1: Issue Type Can Be One or More of: AV (Alleged Violation), PV (Potential Violation), O (Other), or RR (Records Request)

Did the TCEQ document the regulated entity named above operating without proper authorization?	☒ No	☐ Yes
Did the investigator advise the regulated entity representative that continued operation is not authorized?	☒ No	☐ Yes

Document Acknowledgment. Signature on this document establishes only that the regulated entity (company) representative received a copy of this document and associated continuation pages on the date noted. If contact was made by telephone, document will be faxed to regulated entity; therefore, signature not required.

Justin Mayworm		10/21/2016
Investigator Name (Signed & Printed)	Date	
Regulated Entity Representative Name (Signed & Printed)		Date

If you have questions about any information on this form, please contact your local TCEQ Regional Office.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, call 512/239-3282.