

AIR CO/WN0217K/RN100212539/RP/08/12/2013/Investigation Report
Texas Commission on Environmental Quality
Investigation Report
Devon Gas Services, L.P.
CN601320484

EAST RHOME COMPRESSOR STATION

RN100212539

RECEIVED

Investigation # 1105570

Incident #

Investigator: ASHOK DEVKOTA

Site Classification

DEC 02 2013

MAJOR SOURCE

Conducted: 07/31/2013 – 08/12/2013

NAIC Code: 211111

**TCEQ
CENTRAL FILE ROOM**

SIC Code: 1311

Program(s): AIR OPERATING PERMITS
AIR NEW SOURCE
PERMITS

Investigation Type : Compliance Invest File Review

Location : FROM THE INTERSECTION
OF HWY 114 AND HWY 506 IN RHOME
TRAVEL EAST ON HWY 114
APPROXIMATELY 3.9 MILES FACILITY
IS NORTH OF HWY 114

Additional ID(s) : 2406
83910
WN0217K

Address: 6867 E HWY 114; RHOME,
TX 76078

Activity Type : REGION 04 - DFW METROPLEX
RPFT - AIR RPFT - REVIEW OF
PERFORMANCE TEST OR MONITOR

Principal(s) :

Role	Name
RESPONDENT	DEVON GAS SERVICES LP

Contact(s) :

Role	Title	Name	Phone
Regulated Entity Contact	EHS SPECIALIST	MR WARREN HINKLEY	(940) 394-2548

Other Staff Member(s) :

Role	Name
Supervisor	NEAL PENNEY
QA Reviewer	NEAL PENNEY

Associated Check List

Checklist Name

AIR STACK TEST REPORT
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AIR STACK TEST REPORT

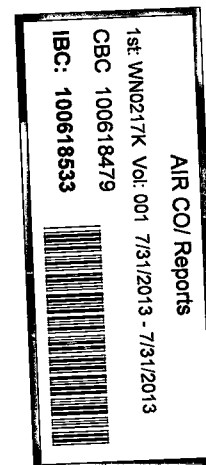
Unit Name

E-16 Unit DV071013LB JJJJ
E-18 Unit DV081005 JJJJ
E-16 Unit DV071013RB JJJJ

Investigation Comments :

I. INTRODUCTION

This report summarizes the findings of an in-house Review of Performance Test (RPFT) investigation associated with stack tests conducted on two engines-identified by emission point



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numbers (EPNs) E-16 and E-18 located at the East Rhome Compressor Station (ERCS or the facility). ERCS is operated by Devon Gas Services, LP. and is located at 6867 E Hwy 114 Rhome, Wise County, TX. The facility is a major source of Hazardous Air Pollutants (HAPs) and is authorized to operate under Federal Operating Permit number (FOP#) O-02406 renewed 07/15/2011. The emission sources E-16 and E-18 are also authorized under Standard Permit Registration number (SP#) 83910 issued 03/14/2008 and updated 09/19/2012. ERCS is an oil and gas handling and production facility subject to the Title 40 of Texas Administrative Code Chapter 116 (30 TAC 116), the Title 40 of Code of Federal Regulations Part 60 (40 CFR 60) Subpart JJJJ, and 40 CFR 63 Subpart ZZZZ.

Both of the engines, E-16 and E-18, are four-stroke lean-burn (4SLB), natural-gas-fired, Spark-Ignited Reciprocating Internal Combustion engines that are rated at 3,550 brake horse power (bhp) at the engine speed of 1,000 rotations per minute (rpm). E-16 was manufactured on 08/20/2008, and E-18 was manufactured on 01/24/2008. Engine E-16 has two exhaust stacks identified by unit numbers DV071013RB and DV071013LB.

This report was prepared by Mr. Ashok Devkota, an Emission Evaluator with the Texas Commission on Environmental Quality (TCEQ), Dallas Fort Worth (DFW) Region, Air Section. The purpose of this review is to determine compliance with applicable TCEQ and Environmental Protection Agency (EPA) guidelines regarding the stack test.

Daily Narrative:

ERCS contracted Mechanical Equipment Inc., (MEI) to accomplish the testing. MEI performed sampling of nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOCs) on the emission sources E-16 and E-18 on 05/01/2013 and on 06/17/2013, respectively. The testing was conducted in accordance with the following test methods:

1. Reference Test Methods (RMs) 3A, and 19 promulgated on 40 CFR 60 Appendix A:
RM 3A: Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure) (IAP)

RM 19: Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates

2. American Society for Testing and Materials (ASTM) method D 6348 published by ASTM:
Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy.

The tester conducted calibration error and bias checks on each analyzer employed during the testing as per the test methods. Each test consisted of three one-hour runs. The writer was not present during the performance tests. The writer reviewed the tests on 07/31/2013.

Exit Interview:

No exit interview was conducted for this investigation.

II. GENERAL FACILITY AND PROCESS INFORMATION

Process Description:

ERCS is an Oil and Gas Production facility. In the facility, inlet gas enters the compressor station via pipeline and is sent to an inlet separator to remove any entrained liquids. Separated liquids are sent to one of the atmospheric 210-bbl or 300-bbl produced water tanks and eventually trucked off site. The gas is very dry, as can be seen from the analysis and liquids are not anticipated to occur in any substantial amount. The gas continues to be compressed and dehydrated prior to leaving the site by pipeline.

Source Tested: Two natural-gas-fired, Reciprocating Internal Combusting Engines
EPNs: E-16, and E-18

Serial Numbers:

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E-16: BKE00461
E-18: BKE00419

Unit Numbers:

E-16: Two stacks of E-16 are identified by unit numbers DV071013RB and DV071013LB
E-18: DV081005

Location: 6867 E HWY 114, Rhome, Wise County, TX

Test Requirements and Regulatory Drivers:

Permits: SP# 83910, and FOP# 2406

New Source Performance Standard (NSPS): 40 CFR 63 Subpart JJJJ

Name of Testing Organization (s): Mechanical Equipment Inc., (MEI). Mr. Namon Jennings of MEI coordinated the emission testing, while Mr. Bruce Freeby of Devon Gas Services coordinated the facility corporation during the testing.

Notification Dates: A notification regarding the testing was received by the TCEQ DFW Region on 04/01/2013. The notification date provided sufficient time to comply with the requirement of 40 CFR 60.8(d).

Average Operating Rate of Source during Tests:

EPN: E-16

Unit DV071013RB: 1470 Brake horse power (bhp) at the average engine speed of 1000 rotations per minute (rpm).

Unit DV071013LB: 1487 bhp at the average engine speed of 1000 rpm.

EPN: E-18 was operating with 3222 bhp at the average engine speed of 1000 rpm.

Maximum Operating Rate: Both engines are rated 3550 bhp at the engine speed of 1000 rpm. E-16 and E-18 were operating, respectively, with 83.3% and 90.8% loads during the tests.

III. BACKGROUND

County: Wise

Region: DFW Region 4

Test Dates: E-16 was tested on 05/01/2013, and E-18 was tested on 06/17/2013

Date report received: TCEQ-DFW received the test reports regarding the tests on E-16 and E-18 respectively on 06/10/2013 and 07/05/2013.

Compliance History

RE Name: East Rhome Compressor Station RN: RN100212539

Classification: High **Rating:** 0.00 **Publication Date:** 11/15/2012

Customer Name: Devon Gas Services L.P. **CN:** CN601320484

Classification: Satisfactory **Rating:** 2.64 **Publication Date:** 08/13/2013

Current Enforcement Actions:

There is no current enforcement actions associated with this investigation.

Agreed Orders, Court Orders, and Other Compliance Agreements:

There have been no agreed orders, court orders, or other compliance agreements in the past five years for this facility regarding air quality.

Prior Enforcement Issues:

There has been one prior Notice of Violations issued to this regulated entity in the five years prior to this investigation. There was a violation of 40 CFR 63.6645(g) and 40 CFR 63.7(b) (1). This was a resolved category C3 violation and was resolved with the receipt of testing notification received July 22, 2011. There was also a violation of 30 TAC 116.115(b)(2)(F). This was a resolved category B19.g.1 violation and was resolved with the issuance of a modification to permit 83910 effective December 22, 2010. See investigation 1002006 for further details.

Complaints:

There have been two complaints in the past five years regarding air quality at this facility.

1. On 12/29/2010 TCEQ-DFW office received a complaint (Incident number: 148928) about "a natural gas type odor" coming from the site that caused respiratory problem on the complainant. An investigation (investigation number: 886754) was initiated on 12/29/2010 pertaining to the complaint. No violations were noted during the investigation.

2. 12/14/2010 TCEQ-DFW office received a complaint (Incident number: 148555) about a hose from the facility running into a pond that was discharging a black-green odorless slime. An investigation (Investigation number: 891036) was conducted on 12/14/2010 pertaining to the complaint. No violation was discovered during the investigation.

IV. ADDITIONAL INFORMATION

RESULTS SUMMARY

EPN: E-16

Unit DV071013LB

Pollutant: NOx

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 30.5, 30.7, 30.9

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 19.4, 19.6, 19.7

Pollutant Mass Rate (PMR): 0.813 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.250 gram per bhp-hour (g/bhp-hr)

Permit Allowable: 5.47 lb/hr

NSPS Allowable: 160 ppm (corrected to 15% O₂)

NSPS Allowable: 2.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

EPN: E-16

Unit DV071013LB

Pollutant: CO

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 22.8, 22.7, 22.6

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 14.5, 14.5, 14.4

Pollutant Mass Rate (PMR): 0.366 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): gram per bhp-hour (g/bhp-hr)

Permit Allowable: 1.56 lb/hr

NSPS Allowable: 540 ppm (corrected to 15% O₂)

NSPS Allowable: 4.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

EPN: E-16

Unit DV071013LB

Pollutant: VOCs

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 12.1, 12.1, 12.0

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 7.70, 7.70, 7.65

Pollutant Mass Rate (PMR): 0.306 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.094 gram per bhp-hour (g/bhp-hr)

Permit Allowable: 2.85 lb/hr

NSPS Allowable: 86 ppm (corrected to 15% O₂)

NSPS Allowable: 1.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

COMPLIANCE DETERMINATION:

Report Deficiency Letter (RDL) Sent: No

Verbal Notice of Violation (NOV) given in Regards to RDL: No

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Test Report Acceptable: Yes.

EPN: E-16

Unit DV071013RB

Pollutant: NOx

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 35, 35, 36

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 22, 22, 23

Pollutant Mass Rate (PMR): 0.92 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.28gram per bhp-hour (g/bhp-hr)

Permit Allowable: 5.47 lb/hr

NSPS Allowable: 160 ppm (corrected to 15% O2)

NSPS Allowable: 2.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

EPN: E-16

Unit DV071013RB

Pollutant: CO

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 22, 22, 22

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 14, 14, 14

Pollutant Mass Rate (PMR): 0.35 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.11 gram per bhp-hour (g/bhp-hr)

Permit Allowable: 1.56 lb/hr

NSPS Allowable: 540 ppm (corrected to 15% O2)

NSPS Allowable: 4.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

EPN: E-16

Unit DV071013RB

Pollutant: VOCs

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 15, 15, 14

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 9.5, 9.5, 8.9

Pollutant Mass Rate (PMR): 0.36 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.11 gram per bhp-hour (g/bhp-hr)

Permit Allowable: 2.85 lb/hr

NSPS Allowable: 86 ppm (corrected to 15% O2)

NSPS Allowable: 1.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

COMPLIANCE DETERMINATION:

Report Deficiency Letter (RDL) Sent: No

Verbal NOV given in Regards to RDL: No

Test Report Acceptable: Yes.

EPN: E-18

Unit DV081005

Pollutant: NOx

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 38.3, 37.6, 37.5

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 25.0, 24.5, 24.2

Pollutant Mass Rate (PMR): 2.19 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.310 gram per bhp-hour (g/bhp-hr)

Permit Allowable: 5.47 lb/hr

NSPS Allowable: 160 ppm (corrected to 15% O2)

NSPS Allowable: 2.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

EPN: E-18

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Unit DV081005

Pollutant: CO

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 8.1, 8.1, 7.9

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 5.3, 5.3, 5.1

Pollutant Mass Rate (PMR): 0.28 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.40 gram per bhp-hour (g/bhp-hr)

Permit Allowable: 1.56 lb/hr

NSPS Allowable: 540 ppm (corrected to 15% O₂)

NSPS Allowable: 4.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

EPN: E-18

Unit DV081005

Pollutant: VOCs

Pollutant Concentrations (in parts per million (ppm), runs 1, 2 and 3): 7.9, 8.2, 7.9

Pollutant Concentrations (in ppm, corrected to 15% of Oxygen): 5.1, 5.3, 5.1

Pollutant Mass Rate (PMR): 0.44 pounds per hour (lb/hr)

Pollutant Mass Rate (PMR): 0.062 gram per bhp-hour (g/bhp-hr)

Permit Allowable: 2.85 lb/hr

NSPS Allowable: 86 ppm (corrected to 15% O₂)

NSPS Allowable: 1.0 g/bhp-hr

NSPS Regulation: 40 CFR 60.4233

Exceeded: No

COMPLIANCE DETERMINATION:

Report Deficiency Letter (RDL) Sent: No

Verbal NOV given in Regards to RDL: No

Test Report Acceptable: Yes.

Conclusions and Recommendations:

The engine E-16 was tested when it was operating with 83.3 percent (average of the two tests conducted on E-16) load. Based on the TCEQ memorandum titled "Guidance for Determining Maximum Allowable Operating Rates for an Emission Performance Test and Requesting a Retest" and dated 02/21/2005, ERCS is restricted to operate the engine E-16 at or below the demonstrated load. Any operation of the engine E-16 above the demonstrated load may require a retest to verify that the unit complies with the emission limits at the elevated load.

The writer did not find any considerable error, inconsistency, or inadequacy in the reports during this review. The reports appeared to contain all the minimum contents listed in chapter 14 of TCEQ Sampling Procedure Manual. The calculated emission rates were below the regulatory limits, which implied that the facility complied with the applicable and stipulated TCEQ and EPA regulations.

Based on the review of the performance tests, the writer finds the performance test reports are consummate and acceptable. The writer recommends that the RE, East Rhome Compressor Station, be placed in a compliant status with its applicable 40 CFR 60 Subpart JJJJ stack testing requirements pertaining to the RICEs E-16, and E-18.

Additional Issues:


No additional issues were noted during this investigation.

No Violations Associated to this Investigation

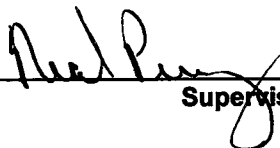
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Signed  _____
Environmental Investigator

Date 10/9/13

Signed  _____
Supervisor

Date 10/9/13

Attachments: (in order of final report submittal)

☐ Enforcement Action Request (EAR)
☐ Letter to Facility (specify type) : _____
Investigation Report
☐ Sample Analysis Results
☐ Manifests
☐ NOR

☐ Maps, Plans, Sketches
☐ Photographs
☐ Correspondence from the facility
☐ Other (specify) : _____

