

Environmental Compression Services, Inc.

WWW.ENVIRCOMP.COM

33 Spruce Lane

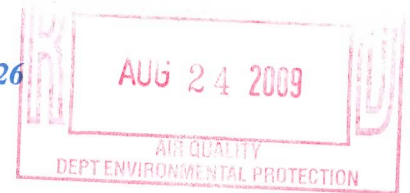
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Environmental Laboratory Registration 63-03526



Date: August 18, 2009

**Customer: Atlas Pipeline PA, LLC (Laurel Mountain Midstream, LLC)
Westpointe Corporate Center One
1550 Coraopolis Heights Road, 2nd Fl
Moon Township, PA 15108**

Facility & Permit No: Springhill Station GP5-26-00587

Test Date: LMM will provide the required Two (2) weeks notice prior to scheduling the test.

Contact: Ms. Katie Maley, Phone No 307-871-2347

Technician: William M. Monroe

Emission Testing Protocol

Test Equipment Information

Manufacturer ECOM America, LTD
Model ECOM A-Plus
Serial Number 9648
Sensor Type Electrochemical Cells
Pollutants Measured NO, NO₂, CO, NMHC(VOC'S)*** & O₂
ECOM Data Acquisition Software (DAS) Program
Factory (O.E.M.) Calibration Performed by ECOM March 2009 [Factory Calibrated every Six (6) Months]
On-Site Pre & Post Test Calibration performed with N.I.S.T. Traceable Certified Gases the day of the Test

Facility and Engine Data Obtained

Area (Springhill Township, Fayette County) and Springhill Station
GP5-26-00587 Issued May 20, 2009 Expires May 31, 2014
Engine Manufacturer: Caterpillar
Model # G3516TALE
Serial # 4EK05095
Aspiration (Four Cycle, Lean Burn)
Unit # 2
Permitted Emission Levels Nox <= 1.50 Grams/bhp-hr CO <= 1.89 grams/bhp-hr VOC <= 0.31 Grams/bhp-hr

Actual Operating Conditions

BHP Load Site Rating: Supplied w/ report BHP (Calculated on-site w/ Ariel OEM 7.6.0.1 Performance Software)
Actual Running Speed (RPM) – Supplied w/ report RPM – 1400 RPM Max rating for Engine on Tachometer
Engine Exhaust Temperature: 854 Deg F (Measured with Analyzer or Reading on Engine Control Panel)
Name Plate Max Rates BHP: 1340 BHP (Stamped on Nameplate with Serial Number)
Intake Manifold Pressure: 69.9 in Hg (abs), Intake Manifold Temperature: 139 Deg F (Engine Control Panel)
Ignition Timing: 33 Degrees Below Top Dead Center (Operator / Mechanic Verified / Engine Control Panel)
Fuel Gas Composition provided by Source Owner (Fuel Sample taken prior to Test Date & provided in Final Report)
Measured Stack Height: Will Measure at Site, Stack Flow: 7651 cfm (OEM Rating)
Specific Fuel Gas Consumption: Measured and Calculated at Site through the Fuel Meter (scf/hr)

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Exhaust Emissions Measured

NO (ppm)
 NO2 (ppm)
 CO (ppm)
 O2 (percentage)

The Test Procedure will be as follows:

- 1.) The PA-DEP Harrisburg, PA Approved Protocol is reviewed with the On-Site DEP Inspector.
- 2.) A document is signed by the testing company and the client that verifies the actual test recordings.
- 3.) All data is inputted into the laptop that corresponds to this particular site and engine.
- 4.) The actual load of the engine is calculated using OEM compressor performance software with site conditions and recorded into DAS Software. The fuel gas analysis and fuel consumption is entered into the DAS software program.
- 5.) Engine will be tested at while running at normal / current operating conditions.
- 6.) The Analyzer and Sensors are allowed to acclimate with Ambient Conditions (15-20 Minutes)
- 7.) **An On-Site Pre-Test Calibration is performed on the Analyzer with Spectra Gases, Inc. (Certified according to EPA Traceability Protocol) calibration gas mixtures manufactured and N.I.S.T. Traceable Certified. Certifications of Each calibration Gas Bottle (NO, NO2 and CO) and the Pre-Test Calibration Performance Specifications will be Included in the Final Test Report. Part of the Calibration test is performed with one of the Nitrogen based Calibration gases (NO or NO2) that will serve as a check for leaks throughout the heated sampling line and analyzer.**
- 8.) The heated sample line with test probe will be inserted into the exhaust stream and the sensor readings are allowed to stabilize (5 – 10 minutes) before recording commences.
- 9.) Readings are taken once every 30 seconds for 20 minutes. (41 Samples are Recorded)
- 10.) The probe is removed from the exhaust stream and the analyzer is purged with fresh air for approximately 15 minutes until the NO, NO2 and CO sensors zero out and O2 returns to 20.9%.
- 11.) The probe is re-inserted into the engine exhaust stream and a second 20-minute test begins. (41 Samples Recorded)
- 12.) The probe is removed and the Analyzer is purged again, probe re-inserted and a third set of readings are taken for 20 minutes. (41 samples) This completes a One (1) hour Test. This test duration was recommended by PA-DEP Harrisburg, PA Source Testing Section. **(A Total of 123 Samples are Recorded during the Test)**
- 13.) **An On-Site Post-Test Calibration of the Analyzer is then performed with the same calibration gases used in the Pre-Test Calibration. The response levels are recorded into the Data Acquisition Software and are used to interpret the final emission results. The Post Test Calibration performance specifications are also provided in the final report.**
- 14.) Analyzer and Calibration will meet General Performance Specifications of ASTM D6522.

Mass Emission Calculations and Equations are presented on Page (3) of this Protocol Submission

The Final Report will be presented to the appropriate PA-DEP region (in Triplicate) in a similar fashion to the Information suggested in the Source Testing Manual November 2000 Revision 3.3 New Millennium Edition.

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MASS EMISSION CALCULATIONS ARE AS FOLLOWS:

$$E \text{ (LB/HR)} = F_d \text{ (dscf/MMBTU)} \times [20.9/(20.9-O_2d\%)] \times F_c \text{ (lb/scf)} \times C_d \text{ (ppm)} \times \text{Fuel Consumption (scf/hr)} \times \text{Heat Value (BTU/scf)} \times 0.0000001 \text{ (MMBTU/BTU)}$$

$$E \text{ (TPY)} = E \text{ (lb/hr)} \times 24 \text{ (hr/day)} \times 365 \text{ (days/yr)} \times 1/2000 \text{ (ton/lb)}$$

$$E \text{ (g/hp-hr)} = F_d \text{ [dscf/MMBTU]} \times [20.9/(20.9-O_2d\%)] \times F_c \text{ [lb/scf]} \times C_d \text{ [ppm]} \times \text{Fuel Consumption [scf/hr]} \times \text{Heat Value [BTU/scf]} \times (1/HP)[1/HP] \times 453.5924 \text{ [g/lb]} \times 0.0000001 \text{ [MMBTU/BTU]}$$

Where:

F_d = dscf/MMBTU (Calculated from entered fuel consumption)

Average Measured $O_2d\%$ = % (Corrected value used if Post-Calibration performed)

F_c (CO) = $7.268e-8$ lb/dscf

F_c (Nox) = $1.194e-7$ lb/dscf

Average Measured CO C_d = ppm (Corrected value used if Post-Calibration performed)

Average Measured Nox C_d = ppm (Corrected value used if Post-Calibration performed)

Fuel Heat Content = BTU/scf (Calculated from fuel composition)

Fuel Flow Rate = scf/hr

HP = HP (HP at time of test)

Conversion factors were calculated at 68 F and 14.696 PSI

Assumptions:

1. Ambient O_2 concentrations 20.9%
2. *** - NMHC or (VOC's) will be determined and submitted as part of the final report through alternate means. Alternate means being defined as a recent fuel analysis, engine and site specifications being provided to the Original Equipment Manufacturer (OEM) and their emission results for this particular pollutant criteria (NMHC) will be displayed as a Vendor guarantee through their in-house engineering software program and will be provided as an Estimated Exhaust Emissions Based on Pipeline Quality Natural Gas and a gas engine technical data sheet and part of the Final Report. This portable analyzer emission test has been performed in identical fashion on similar engines of this make & model and the Regional PA-DEP Pittsburgh Office agreed that VOC/NMHC determination submitted through alternate means (via Vendor Guarantee) is acceptable.

If any questions or concerns arise please contact Environmental Compliance at 724-899-4175.