UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Inspection Date(s):	09/19/2017
Regulatory Program(s):	SIP, NSPS
Company Name:	Blue Ridge Mountain Resources (fka Triad Hunter, LLC.)
Facility Name:	Multiple Sites - Roger Weese, Everett Weese, Spencer Collins, and Stewart Windland
Facility Physical Location:	125 Putnam Street, Marietta, Ohio 45750 Sites: Tyler County, WV
Mailing Address:	Main Office: 125 Putnam Street Marietta, Ohio 45750
County/Parish:	Tyler County
Facility Contact:	Rick Walton rwalton@brmresources.com, 740-760-0569
AFS Number:	Multiple Sites
Permit Number:	Multiple Sites
NAICS:	211111 Crude Petroleum and Natural Gas Extraction
SIC:	1311

Attendees:

Facility Representatives:

Rick Walton, EHS Manager
Kelbee Stifflemire, Production Manager
Derek Higgins, Production Foreman
Will Harlis, Supervisor of Regulatory Operations

EPA Inspectors:

Stephen Rieck, USEPA Region 4, 404-562-9177
Nikki Radford, USEPA Region 4, 404-562-9099

EPA Inspector Signature/Date	**Bruce Augustine**	2/13/18 **Date**
Supervisor Signature/Date	**Zelma Maldonado**	2/14/18 **Date**

I. Introduction

The Environmental Protection Agency (EPA) conducted a series of inspections of natural gas production and storage facilities operating within West Virginia that extract natural gas and natural gas liquids from the Marcellus Shale formation. EPA selected Blue Ridge Mountain Resources, fka Triad Hunter, LLC. ("BRMR") for on-site inspections as a part of the initiative.

On Wednesday, September 13, 2017, Bruce Augustine, USEPA Region 3, and Christopher Williams, USEPA OECA, notified Rick Walton, BRMR's EHS Manager, by phone and email of the Clean Air Act (CAA) inspection. In the email, EPA indicated that inspectors Stephen Rieck and Nikki Radford would be in contact with Mr. Walton to setup a time and place for an opening meeting. A copy of the email notification is included as Attachment 1 to this report. Bruce Augustine notified the West Virginia Department of Environmental Protection ("WVDEP") of the inspections during the week of September 4, 2017.

A. Summary of the Facility-

BRM Resources' multi-well production facilities have storage tanks and other equipment that process the natural gas and liquids, including produced water and hydrocarbons, from multiple wells. The facilities have gas processing units (GPUs) that operate as separators, heater-treaters, and flares or combustors for control. The tanks contain liquid condensates and produced water.

B. Inspection Opening Conference-

On September 19, 2017, Nikki Radford and Stephen Rieck met with Rick Walton, Kelbee Stifflemire, Derek Higgins, and Will Harlis of Blue Ridge Mountain Resources. The inspection team presented credentials and described the purpose of the inspection.

The inspection objective was to perform an emissions survey and compliance evaluation of production facilities owned by BRMR. Through Forward Looking Infrared (FLIR) camera optical gas imaging (OGI) and photoionization detection (PID), the inspection team surveyed the extent of excess Volatile Organic Carbon (VOC) emissions from storage tanks, valves, combustors, gas processing units, and other process equipment.

II. Process Overview

Natural gas and associated liquids extracted from the well and are sent to gas processing units (GPUs). The GPUs separate the material into gas, condensates and water. The separated gas is sent to the sales line and the separated water is sent to produced water tanks. The condensates are further separated in the heater treater and vapor recovery towers. The tanks are controlled with sealed tank hatches and pressure relief devices. Vapor emissions that gather in the headspace of the tanks are sent to a combustor for destruction.

III. Plant Tour/Walkthrough

On September 19, 2017, the EPA inspection team, accompanied by BRMR staff, performed inspections of several facilities owned and operated by BRMR located in Tyler county. In general, the inspection team inspected the GPUs, storage tanks, and enclosed combustor at each well site. Emissions sources at each of the well sites were surveyed using the following equipment:

- OGI infrared (IR) camera manufactured by FLIR, Model GF320 was operated by Nikki Radford.
- Photoionization Detector (PID) manufactured by Ion Science called the "PhoCheck TIGER" was operated by Steve Rieck. NOTE: PIDs measure VOC concentrations and do not measure concentrations of methane or ethane.
- QRAE III personal safety monitors were operated by both Nikki Radford and Steve Rieck.

The following is a summary of information obtained, observations, and the emissions survey results from each inspected facility. OGI video files are included in Attachment 2:

Site Name	Roger Weese
Lat/Long	39.42479 / -80.82488
Date/Time	09/19/17 at 9:30 am
Equipment	4 wells, 4 GPUs, 2 tanks, 1 combustor
OGI Files	MOV_0324 – emissions from GPU box 11-10. MOV_0325 – Video taken at compressor house.
Notes	GPU emissions noted from level control box. Emissions from level control box are common across industry. No emissions noted from combustor. See production data below.

Site Name	Everett Weese
Lat/Long	39.425 / -80.809177
Date/Time	09/19/17 at 10:24 am
Equipment	5 wells, 5 GPUs, 6 tanks, 3 combustors (2 in use)
OGI Files	MOV_0326 – emissions from Enardo thief hatch on tank 1-C. MOV_0327 – some emissions noted on combustor.
Notes	Production (Roger Weese and Everett Weese sites combined): 9.5 mmcf gas/day 5 bbls oil/day 100 bbls produced water/day

Site Name	Spencer Collins
Lat/Long	39.50136 / -80.907
Date/Time	09/19/17 at 12:56 pm
Equipment	8 wells (on two separate well pads), 8 GPUs, 10 tanks, 1 combustor, 1 dehydration unit.
OGI Files	MOV_0328 – emissions from Enardo thief hatch on tank Spencer 2. _0329 – emissions from Enardo thief hatch on tank Collins 3. MOV_0330 – tanks from ground. MOV_0331 – tagged leaks on compressor.
Notes	LDAR at this site was conducted a few days before inspection. Recent sealing around thief hatches noted. Emissions from thief hatch on Spencer 2 and Collins 3 read 200 ppm on the PID. NOTE: since the PID cannot measure methane or ethane, and since emissions were visible on FLIR, the actual hydrocarbon concentration maybe closer to 10,000 ppm. Production: 9.0 mmcf gas/day 20 bbls oil/day 70 bbls produced water/day

Site Name	Stewart Windland
Lat/Long	39.46335 / -80.91311
Date/Time	09/19/17 at 2:28 pm
Equipment	4 wells, 4 GPUs, 4 Tanks, 4 Combustors
OGI Files	No video taken
Notes	Production: 7.5 mmcf gas/day 28 bbls oil/day 75 bbls produced water/day

IV. Records Review

No paper records were collected during the on-site inspections or at the closing conference.

V. Closing Conference

After inspecting the Stewart Windland site, the inspection team held a closing conference with the company at approximately 3:05 pm. The inspection team thanked BRM Resources staff for their help. The team then discussed the findings throughout the day, including an overview of all sites visited and emissions noted from the facility. BRM Resources did not make any CBI claims on the material discussed or obtained during the inspection.

VI. Conclusions/Areas of Concern

The inspection team visited a total of 4 well-sites, comprising of 22 tanks, 21 wells, and 21 GPUs. Emissions were noted on 3 tank hatches. Emissions from thief hatch on Spencer 2 and Collins 3 read 200 ppm on the PID. Since the PID cannot measure methane or ethane, and since emissions were visible on FLIR, the actual hydrocarbon concentration would likely be significantly higher than 200 ppm.

The GPUs use gas-actuated level controllers, which created a source of emissions on virtually every GPU. This has been seen at well-sites nationally.

The FLIR camera did not note significant VOC plumes from the well-site combustors.

VII. List of Attachments

1. Email correspondence from EPA notifying BRMR of the inspection
2. OGI Video Files

Attachment 1

augustine, bruce

From: Williams, Christopher
Sent: Wednesday, September 13, 2017 3:50 PM
To: rwalton@brmresources.com
Cc: augustine, bruce; Radford, Nicole; Rieck, Stephen
Subject: Blue Ridge Mountain/Triad Hunter CAA Inspections

Mr. Rick Walton:

I am a Clean Air Act (CAA) inspector with the U.S. EPA headquarters office and Bruce Augustine is an inspector with the R3 office in Philadelphia (Ph#: 215-814-2131). As we discussed on the phone earlier today, two inspectors, Nicole Radford and Stephen Rieck (both cc'd), will be conducting site visits of Blue Ridge Mountain Resources (parent to Triad-Hunter) well production facilities during the week of September 18th. They may possibly be joined by an inspector from the West Virginia Department of Environmental Protection (WVDEP). As requested on the phone call, the team will need a representative from Triad-Hunter who can escort them Tuesday through Friday of that week. The focus will be on well production and storage facilities located in Tyler, Ritchie, Wetzel, and possibly Pleasant counties of West Virginia.

Nikki and Steve will be staying in New Martinsville. The plan is to meet with Triad Hunter the morning of Tuesday the 19th for an entry briefing, participate in any company-specific safety briefings, and begin field work. The inspectors will be using a FLIR GF320 optical gas imaging camera, and a photo-ionization gas detector. They will have "Level D" personal protective equipment, including FRC clothing, hard hats, eye and ear protection, and steel-toed boots.

Please respond with whom from BRM/Triad Hunter that Nikki and Steve should coordinate the visit with, and select a meeting time and place for the morning of Tuesday, September 19th.

Best Regards,

Chris

Christopher Williams, P.E.
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Attachment 2