



REGION 3

PHILADELPHIA, PA 19103

Report Title: Clean Air Act Inspection of Spirit Energy Services – Beech Bottom
Inspection Date(s): 03/27/2024
Regulatory Program(s): To be determined

Company Name: Spirit Energy Services
Facility Name: Spirit Energy Services – Beech Bottom
Facility Location: 173 Industrial Park Lane
Beech Bottom, WV 26030

Latitude: 40.228041 **Longitude:** -80.653918
County/Parish: Brooke County

AFS/ICIS-Air Number: 03000WV00020
Permit Number: N/A
NAICS Code: 324191 **SIC:** 1311
DSB ID #: ECAD-45

Facility Representatives:	Point of Contact
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Alton Brewer, Manager, Spirit Energy Services	☐
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EPA Inspectors:

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Steve Ott, Enforcement Inspector, 3ED21
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State/Local Inspectors:

Eric Blend, Inspector, WVDEP
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EPA Lead Inspector

Signature

Paul Arnold

Date

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Supervisor

Signature

Kristen Hall

Date

Table of Contents

I. Introduction	4
A. Summary of the Facility.....	4
B. Inspection Opening Conference.....	5
II. Site Activity/Process Description	5
III. Observations	6
IV. Records Review	6
V. Closing Conference	7
VI. List of Attachments	8

I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Spirit Energy Services – Beech Bottom (SESBB or Facility) to verify compliance with applicable State and Federal regulations. The West Virginia Department of Environmental Protection (WVDEP) was notified of the inspection on March 11, 2024, via email. On March 22, 2024, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Alec Duncan, prior to the inspection (see Attachment 1). These records are listed in the Records Review section of the report.

The inspection included an evaluation of the Facility’s processes and its compliance with the CAA. All information included in this report is the result of statements by the Facility representatives, materials shown to the inspectors by the Facility representatives, and/or documents provided by the Facility representatives to the inspectors at the time of, or subsequent to, the inspection. In addition, information gathered prior to the inspection from a review of EPA and State records may be included in, Section A. Summary of the Facility.

A. Summary of the Facility

The Facility is located at 173 Industrial Park Lane, Beech Bottom, West Virginia, 26030. SESBB provides wastewater treatment, using gravity separation, for the oil and gas industry. SESBB generally accepts produced water and condensate from natural gas compressor stations.

At the time of the inspection, WVDEP had not issued SESBB an air emission permit. On July 22, 2022, Spirit Energy Services submitted, to WVDEP, a permit determination request. On August 15, 2022, WVDEP notified SESBB that the July 22, 2022, permit determination request was deficient and WVDEP advised SESBB to resubmit the permit determination request with the absent “pertinent information” identified in the WVDEP response. Alec Duncan, Operations Manager of SES, stated that he has recently been in contact with WVDEP regarding an air permit.

Alec Duncan said that both SESBB and WVDEP have agreed to “work on a permit” now that a similar facility, located in Nitro, WV, owned/operated by Spirit Energy Services has been issued a WVDEP air emissions permit. The Spirit Services facility located in Nitro, WV performs a slightly different operation in that it uses a boiler system for separation. The Nitro location was built prior to the Beech Bottom facility. Spirit Services also owns land in Bruceton Mills; however, no processing or manufacturing takes place at that site.

Currently, SESBB is not classified as either a major, or minor, source of criteria or hazardous air pollutants. The Facility is subject to, or is potentially subject, to the following federal regulations:

- 40 CFR Part 63, Subpart OOOOa—Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 20150a

B. Inspection Opening Conference

At 8:12 AM on March 27, 2024, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. SESBB was represented by Alec Duncan, Operations Manager of SESBB, and Alton Brewer, Manager of SESBB. Also, Eric Blend, of WVDP was present. EPA inspectors, Paul Arnold, Bruce Augustine and Steve Ott presented their credentials and explained the purpose of the visit was to conduct a CAA inspection to determine compliance with their permit and any applicable regulations. Additionally, EPA informed the facility representatives of their right to claim any confidential business information (CBI). At that time, SESBB did not claim any photos or documentation as CBI.

II. Site Activity/Process Description

SESBB began operations in late 2019, accepting produced water and condensate from natural gas compressor stations. SESBB is located on about 4.5 acres of leased property and is a privately held company. SESBB employs about 24 people, 18 of which are truck drivers. SESBB is open from 5AM to 4PM, Monday – Friday.

Most of the material that SESBB accepts, in the form of condensate and produced water, originates from natural gas compressor stations owned by midstream oil and gas companies. SESBB has twelve settling tanks. Eleven of the settling tanks are designated for produced fluids, with the twelfth tank designated for used oil – which SEBB receives sparingly. The material arrives, via truck, and is pumped into one of the of eleven settling tanks. SESBB has a maximum daily capacity of about 1.2 million gallons per day but usually doesn't operate above 500,000 gallons per day. Mr. Duncan indicated that, companywide, Spirit Services processed 20,000,000 gallons of liquids in a year with approximately 30% of that being condensate. He further indicated that 70% of those liquids were processed at the Beech Bottom, WV location. SESBB sold 4.5-5 million gallons of condensate in 2023. Mr. Duncan stated that their trucks conduct a color cut test to determine if there is any oil in the liquids when they pick up a load. If the load is water only, it goes directly to the underground injection well in Ohio.

All settling tanks are located under a covered structure. Each settling tank has a capacity of 400 barrels and uses gravity separation to separate water from the natural gas liquids (aka condensate). The tanks are equipped with a weighted hatch and a Jayco thief hatch rated at 160si. The gravity separation process time can vary from 20 minutes to a full week. Once gravity separation is complete, the produced water is trucked offsite to underground injection wells, and the condensate is sent to a refinery for processing. The tank building is equipped with LEL and H₂S monitors as a safety measure. All twelve tanks have air emissions that are piped to a common header which is then conveyed to pair of 15,000-pound carbon beds which operate in series. The carbon beds were installed at the same time the facility began operation and are serviced by United Rentals. SESBB utilizes a FLIR camera to observe the carbon beds for breakthrough. Mr. Duncan stated they were conducting daily observations of the

carbon beds until the FLIR camera broke about a month ago. He also indicated that the carbon beds are changed approximately 2-3 times/year.

SESBB also has a glycol heater, but Mr. Duncan said that the glycol heater has never been used and he intends to have it removed from the facility. SESBB has no boilers, no emergency generators or no other internal combustion sources.

The opening conference concluded at 9:15 AM.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 9:15 AM by Alec Duncan of SESBB. Eric Blend, WVDEP, also present for the walkthrough. EPA inspectors noted photos, and video, would be taken during the Facility walkthrough (Attachment 2).

During EPA's walkthrough, no trucks were observed either loading, or unloading. The twelve settling tanks (Photos 2 & 3) were observed inside a covered structure next the maintenance/office building. Six of the tanks are located on one side of the building while the other six tanks are located on the other side with a drive thru in the middle for trucks. The tanks are connected six and six using a common header to collect vapors. EPA observed the tanks from the ground with a FLIR GF320 infrared camera and no emissions were observed from the tanks at that time. There was not a manway for the tank battery so EPA could not observe the top of the tanks. EPA observed the common vapor collection header from the tanks piped into two (2) carbon filters (Photo 5) that were located outside of the tanks building. When observed with the FLIR Camera, EPA observed emissions from a bypass valve on CV11639195 (FLIR Video 1). EPA also observed emissions from the exhaust on CV44103 (FLIR Video 2). EPA showed the emissions to SESBB, and they closed the bypass valve on CV11639195. EPA observed this valve again and no further emissions were observed using the FLIR camera. Emissions were still present at CV44103. SESBB indicated they would contact United Rentals to perform maintenance on the units and remove the bypass valve.

EPA also observed a diesel fired glycol heater outside of the settling tanks building (Photo 1). Mr. Duncan said that glycol heater has never been used and he intends to have it removed from site.

The walkthrough concluded at 10:00 AM.

IV. Records Review

EPA inspectors requested records in the March 22, 2024, email to Alec Duncan (see Attachment 1).

Alec Duncan stated that he did not have any records available, for EPA to review, during the site visit. Mr. Duncan stated that SESBB's consultant, KU Resources, would need to provide any requested records. KU Resources was not available at the time of EPA's onsite visit.

V. Closing Conference

After the records review, EPA inspectors, Eric Blend, Alec Duncan and Alton Brewer had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final report do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. EPA also noted that they would issue an inspection report within in 60 days, with a copy to the State. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 10:15 AM.

The following have been identified as potential issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by Spirit Energy Services.

- SESBB receives millions of gallons per year of natural gas condensate from local midstream companies. Condensate contains VOC and hazardous air pollutants such as benzene, toluene, and xylene in varying concentrations. At the time of the inspection, SESBB does not have either an R13 or R30 permit from the WVDEP. SESBB has been in contact with WVDEP Air Quality regarding a possible permit, however, the facility continues to operate without a formal permit determination being completed.
- It was not clear what sampling is being conducted of incoming liquids to determine the VOC content and the gas to oil ratio. Without proper sampling, SESBB cannot determine the properties of the material being received and cannot determine, within a reasonable amount, the actual emissions of VOC and HAP from the facility. Additional sampling SOP's may be needed.
- Both carbon canister filters were observed, via the FLIR Camera. One of the carbon canisters was leaking from a valve that was left open and was completely bypassing the control device. Another leak was observed from the exhaust on the second carbon canister. While the carbon system is not expected to be 100% effective when controlling emissions, it is anticipated that no emissions would be observed when trucks are not loading. The only emissions from the tanks, at that time, would be breathing losses. In addition, SESBB indicated that their FLIR camera was not operating so they could not conduct observations of the carbon canisters. SESBB may need to institute additional measures to ensure the system is working properly to control tank emissions and change the carbon beds more frequently.
- SESBB representatives had no operation, no emissions and no carbon control device records available for review.

VI. List of Attachments

- Attachment 1: Email correspondence to Alec Duncan of records requested to review during inspection
- Attachment 2: Photos and Videos
- Attachment 3: Sign-in sheet

Arnold, Paul

From: Arnold, Paul
Sent: Friday, March 22, 2024 9:50 AM
To: aduncan@spiritservices.com
Subject: FW: CAA Inspection on March 27, 2024
Attachments: CAA Records Request Spirit Services.docx

Typo with my first send out

Paul Arnold
Environmental Engineer
US EPA, Region III
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Philadelphia, PA 19103
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215-814-2194

From: Arnold, Paul
Sent: Friday, March 22, 2024 9:34 AM
To: aduncan@spiritservices.com
Cc: Augustine, Bruce <augustine.bruce@epa.gov>; Ott, Steven <Ott.Steven@epa.gov>
Subject: CAA Inspection on March 27, 2024

Alec,

Thank you for returning my call this morning. As we discussed this morning, EPA will be conducting a CAA Inspection at the Spirit Services Facility at 8 AM on Wednesday, March 27, 2024. Myself, Bruce Augustine, and Steve Ott from EPA Region III will be present. A representative from WVDEP may also be in attendance. To help facilitate the inspection, I have attached is a list of questions that we have prepared. If you, or your representative, can provide answers to those questions upon our arrival, that would facilitate the inspection. Please acknowledge receipt of this message.

We appreciate the efforts that you are making to be present and we will do everything necessary to expedite the inspection.

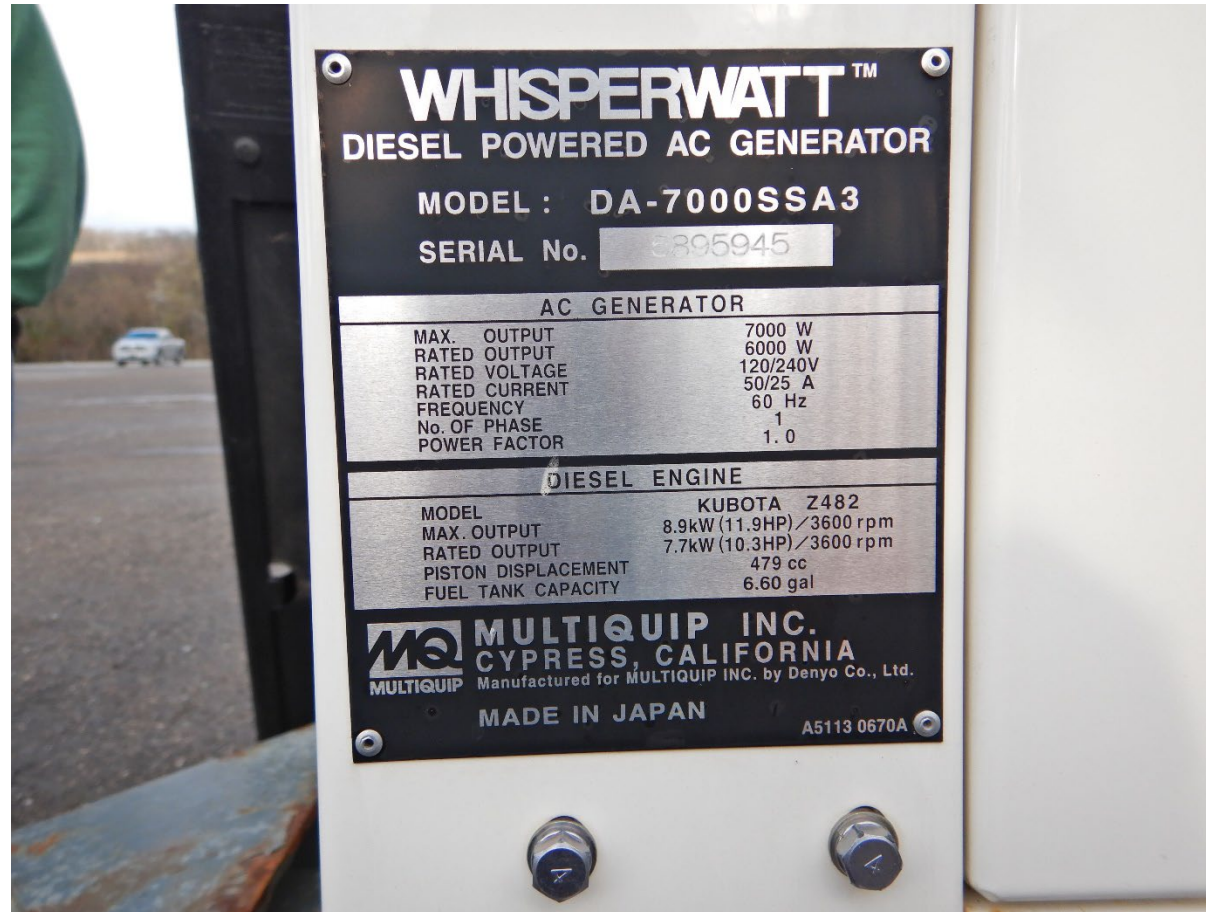
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Facility: 301100000

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Spirit Energy Services – Beech Bottom



Spirit Energy Services – Beech Bottom



3/27/2024

Photo 2 – Right Bank of Tanks

Spirit Energy Services – Beech Bottom



3/27/2024

Photo 3 – Left Bank of Tanks

Spirit Energy Services – Beech Bottom



3/27/2024

Photo 4 – Tank #4

Spirit Energy Services – Beech Bottom



3/27/2024

Photo 5 – Two Carbon Filters

Spirit Energy Services – Beech Bottom



3/27/2024

FLIR Video 1 – Carbon Filter 1

Spirit Energy Services – Beech Bottom



3/27/2024

FLIR Video 2 – Carbon Filter 2