west virginia department of environmental protection

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ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-3713
Plant ID No.:	093-00034
Applicant:	Fundamental Data LLC
Facility Name:	Ridgeline Facility
Location	Thomas, Tucker County
NAICS Code:	221112 – Fossil Fuel Electric Power Generation
Application Type:	Construction
Received Date:	March 18, 2025
Engineer Assigned:	Jerry Williams
Fee Amount:	$2,000 ($1,000 45 CSR 13 Application Fee, $1,000 NSPS Fee)
Date Received:	March 31, 2025
Complete Date:	April 9, 2025
Hold Date Start/Stop:	April 25, 2025/May 7, 2025 (Request for additional information)
Due Date:	July 20, 2025
Applicant Ad Date:	March 26, 2025
Newspaper	*The Parsons Advocate*
UTM's:	Easting: 632.512 km Northing: 4,334.946 km Zone: 17
Latitude/Longitude:	39.15364 / -79.46641
Description:	Construction and operation of a turbine power facility.

CONFIDENTIAL BUSINESS INFORMATION OVERVIEW

Fundamental Data LLC (Fundamental) submitted an air permit application for a turbine power facility to be located near Thomas and Davis in Tucker County. This permit application included confidential business information (CBI) submitted under 45 CSR 31, entitled "Confidential Information". Therefore, both a CBI and redacted version of the application were submitted. Fundamental provided all CBI under the requirements of 45 CSR 31, which is the Division of Air Quality (DAQ) regulation that establishes the requirements for claiming information submitted to the DAQ as confidential and the procedures for determinations of confidentiality in accordance with the provisions of W. Va. Code §22-5-10.

The reason for the CBI submittal according to Fundamental is that the application contains information regarding the configuration of the proposed facility as well as confidential technical information related to the combustion turbines and control device manufacturer. For each submission of information any portion of which is claimed to be confidential, a complete set of the information, including the document justifying the claim of confidentiality shall be submitted simultaneously on uncolored paper with the information claimed to be confidential blacked out, and with the words "redacted copy – claim of confidentiality" marked clearly on each such page, so that such a set of information is suitable for public disclosure and provides notice to the public that a claim of confidentiality has been made. The DAQ allows for electronic submittals (via email) of redacted permit applications. However, all CBI applications must be submitted via mail or hand delivered. During the Notice of Application period, the DAQ received hundreds of public comments concerning the proposed project, many of which specifically requested the release of information that has been redacted.

As stated in 45 CSR 31, Section 4, during the course of the DAQ's review of whether the information claimed to be confidential is a trade secret in accordance with this rule, the DAQ considered the following:

- The claim of confidentiality has not expired by its terms, nor been waived or withdrawn;
- The person asserting the claim of confidentiality has satisfactorily shown that it has taken reasonable measures to protect the confidentiality of the information, and that it intends to continue to take such measures;
- The information claimed confidential is not, and has not been, reasonably obtainable without the person's consent by other persons (other than governmental bodies) by use of legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding);
- No statute specifically requires disclosure of the information; and
- Either the person has satisfactorily shown that disclosure of the information is likely to cause substantial harm to the business's competitive position or the information is voluntarily submitted information, and its disclosure would likely to impair the State's ability to obtain necessary information in the future.

Additionally, 45 CSR 31, Section 6, states that no person shall claim as confidential, information concerning the types and amounts of pollutants discharged. "Types and amounts of air pollutants discharged" is defined in 45 CSR 31 Section 2.4. Furthermore, 45 CSR 31B entitled "Confidential Business Information and Emission Data" is an interpretive rule that provides guidance and clarification concerning the term "types and amounts of air pollutants discharged" defined under 45CSR§31-2.4, the

DAQ's legislative rule entitled "Confidential Information," and thus what information may not be claimed confidential in accordance with 45CSR§31-6.

The public comments received during the Notice of Application comment period triggered a review of the CBI claims by the DEP's Office of the General Counsel (OGC). A letter dated April 28, 2025, from the OGC was issued to Fundamental that stated that the information claimed as CBI ***may*** not qualify for such designation as it falls under the definition of "Types and Amounts of Pollutants Discharged" as excluded under §45-31-6 as defined under §45-31-2.4 (and further defined under 45 CSR 31B). This letter was made available to the public on the WVDEP Application Xtender (AX) website at that time. There was also concern that the claimed CBI ***may*** not meet the eligibility requirements under §45-31-4.1(b) and 4.1(c). The letter requested further justification that the information claimed as CBI is not defined as "Types and Amounts of Pollutants Discharged" and also does not conflict with the eligibility requirements of §45-31-4.1(b) and 4.1(c). The letter requested a written response within 15 days.

Fundamental provided a response to this request on May 7, 2025. This response was made available to the public on the AX website at that time. As part of this response, Fundamental states that the redacted materials do meet the statutory definition of 'trade secrets', under §45-31-2.3. Additionally, Fundamental's response referenced §45-31B-4.1, which states:

Information or data that is indispensable or essential to determining emissions or location in accordance with subsection 2.3 will be considered emission data and thus nonconfidential, unless there is a readily available non-confidential alternative for determining emissions or location. Where there is no readily available non-confidential alternative, the Secretary may approve non-confidential alternatives through the use of aggregation, categorization, surrogate parameters, emissions monitoring or sampling, or parametric monitoring; provided that such use is consistent with applicable rules and standards and results in a practically enforceable method of determining emissions.

This section specifically states that information that is indispensable or essential for determining emissions or location will be considered emission data and thus non-confidential, ***unless*** there is a readily available non-confidential alternative to make this determination. §45-31B-4.1 allows the WVDEP to approve non-confidential alternatives. These alternatives include aggregation, categorization, surrogate parameters, emissions monitoring or sampling, or parametric monitoring that result in a practically enforceable method of determining emissions from the proposed facility. These aforementioned terms are specifically defined in 45 CSR 31B, section 2.

> *"Aggregation" means the combining of individual elements, such as equipment, units, throughputs or capacities, into one total.*
>
> *"Categorization" means the combining of individual elements, such as materials or chemicals, into one category.*
>
> *"Emissions monitoring and sampling" means real-time monitoring, such as continuous emissions monitors, or statistically valid periodic sampling and monitoring that provides reliable and accurate data on emissions.*

"Parametric monitoring" means combining the use of surrogate parameters and monitoring or sampling.

"Surrogate parameter" means a value that stands in place of throughput, production or some other variable claimed confidential. The term may include an alternative measure of production or throughput or some other production unit that correlates with production or throughput and with emissions. A surrogate parameter must have a simple direct relationship to the value it replaces.

The WVDEP reviewed the response provided by Fundamental and determined that there are non-confidential alternatives. These alternatives include the use of aggregate hours of operation tracking, aggregated heat input limitations, aggregate emission limits, aggregate fuel throughputs, and categorized fuels for the combustion turbines. The permit will establish emissions monitoring and sampling, parametric monitoring, and surrogate parameters that ensure that all applicable rules and standards will be met and will result in practical enforceability in determining emissions.

It was also determined that pursuant to §45-31-4.1(b) and (c), there are not reasonable means to obtain the information claimed CBI by using the publicly available aggregated data. Therefore, WVDEP made the determination that the information that was claimed CBI by Fundamental satisfied the necessary requirements to be deemed CBI and will be maintained as such. A response letter was sent from WVDEP to Fundamental on May 12, 2025, and was made available to the public on the AX website at that time.

The specifically approved non-confidential alternatives can be found in the associated draft permit in the following permit conditions:

Table 1.0	Combustion Turbines (Aggregate Heat Input Limitations (§45-31B-2.1).
4.1.2, 4.2.1, 4.4.2	Combustion Turbines (Aggregate Heat Input Limitations (§45-31B-2.1). Monitoring of operation type, startup/shutdown events, and hours of operation on a daily basis is required.
4.1.3, 4.2.1	Aggregate and categorized (fuel type) hourly combustion turbines emission limitations (§45-31B-2.1, 2.2, 2.4, 2.5). Monitoring of operation type, startup/shutdown events, and hours of operation on a daily basis is required.
4.1.5, 4.2.1, 4.4.1	Aggregate and categorized (fuel type) annual combustion turbines emission limitations (§45-31B-2.1, 2.2, 2.4, 2.5). Monitoring of operation type, startup/shutdown events, and hours of operation on a daily basis is required.
4.1.8, 4.2.2, 4.4.1	Aggregate and categorized (fuel type) operating parameters (§45-31B-2.1, 2.2, 2.4, 2.5). Monitoring of maximum natural gas hourly fuel consumption, diesel fuel hourly consumption, and diesel fuel sulfur content on a daily basis is required.
4.1.9, 4.2.1, 4.4.1	Emissions monitoring of the combustion turbines to validate emissions data (§45-31B-2.1, 2.2, 2.4).

It is important to note that 45 CSR 31B applies to all information submitted to the WVDEP, regardless of the regulatory context, and includes, but is not limited to, information submitted in the permitting, enforcement, and emission inventory contexts.

This engineering evaluation/fact sheet (EE/FS) contains only the information that was provided in the redacted version of the permit application. Furthermore, the information contained herein is more than adequate to make the appropriate permitting determinations and can be used to determine compliance with all applicable rules and regulations. This includes all necessary monitoring, recordkeeping, reporting, and testing that will be required as part of the proposed draft permit.

DESCRIPTION OF PROCESS

The proposed station will be powered via combustion turbines equipped with heat recovery steam generators (HRSG) which generate steam by using the heat present in the turbine exhaust gas. The HRSG units are designed where the turbine exhaust will pass through, and no additional firing emissions occur as a result of the HRSG units. This process has been designed to ensure that no duct burners are required as part of the HRSGs. The permit states that there shall be zero duct burner firing emissions. The turbines will be equipped with selective catalytic reduction (SCR) and carbon monoxide (CO) catalyst systems. SCR and oxidation catalysts are emission control technologies that reduce nitrogen oxides (NOx) and CO emissions.

SCR systems function by injecting ammonia into the combustion turbine exhaust stream. This injection reacts with NOx to convert into nitrogen (N_2), water (H_2O) and carbon dioxide (CO_2). An oxidation catalyst functions by facilitating chemical reactions. The oxidation process occurs as exhaust gases flow through the catalyst which converts CO and hydrocarbons into CO_2 and H_2O. In addition to the aforementioned emissions reductions, oxidation catalysts improve fuel efficiency which results in a reduction of particulates.

The turbines will primarily use natural gas as fuel. However, the turbines will also be permitted to use diesel as a backup fuel source when necessary, such as during a natural gas pipeline failure. It is the intention of Fundamental to operate the turbines solely on natural gas. To avoid designation as a Prevention of Significant Deterioration (PSD) and/or Title V facility, the proposed facility will restrict turbine operations as discussed below.

Fundamental is proposing to be permitted as a synthetic minor facility. Fundamental may operate using any combination of natural gas and diesel such that they restrict the total hours of operation as needed to remain under the permitted minor source thresholds. Fundamental will keep records of the total hours of operation for each turbine, including the total amount of hours each turbine uses natural gas as a fuel and the total amount of hours each turbine uses diesel as a fuel. Fundamental will keep rolling 12-month emission calculations to ensure their emissions remain below any major source thresholds. Pages 57 and 58 of Attachment N of the permit application are provided for illustrative purposes to represent the potential emissions from the proposed facility while combusting natural gas and/or diesel under operational limitations to remain below PSD and Title V permitting thresholds. The hourly values are represented for each fuel source and indicate the worst case operating hours when combusting either fuel on a continuous twelve month basis and does not take into account that the proposed facility intends to utilize diesel as a backup fuel source.

Additional emission sources at the proposed facility will include a paved roadway, three (3) - 10,000,000-gallon diesel storage tanks, and associated truck loading of the diesel fuel. The proposed facility will also have storage tanks for well water. The well water tanks are not expected to emit any regulated air pollutants and are therefore not included as sources in this application due to being de minimis sources under 45CSR13, Table 45-13 B, Item 50.

This proposed facility shall consist of only the pollutant-emitting equipment and processes identified under Section 1.0 of the associated permit. In accordance with the information filed under Permit Application R13-3713, the equipment shall be installed, maintained and operated so as to minimize any fugitive escape of pollutants and the equipment/processes shall use the specified air pollution control devices. Additionally, the permit will require Fundamental to install, maintain, and operate all above-ground piping, valves, pumps, etc. that service lines in the transport of potential sources of regulated air pollutants to minimize any fugitive escape of regulated air pollutants (leak). Any above-ground piping, valves, pumps, etc. that shows signs of excess wear that have a reasonable potential for fugitive emissions of regulated air pollutants shall be repaired or replaced.

ADDITIONAL BACKGROUND INFORMATION

Data Center

Due to potential misinformation that has been circulated, it should be stated that Permit Application R13-3713 ***did not*** include a data center and was not definitive on the ultimate end user of the power that will be generated from the proposed site. The non-disclosure of the final end use of the power generated is not a cause for denial of the permit. How the power is used will have an impact on the need for Fundamental to potentially be required to obtain an Acid Rain Permit (45 CSR 33) and a Title V Permit (45 CSR 30). However, the process of applying for and receiving an Acid Rain or Title V Permit is independent of the 45 CSR 13 permitting process. These potential requirements are outlined in permit condition 4.1.19 and the regulatory applicability is discussed in the REGULATORY APPLICABILITY section of this document.

House Bill 2014 (HB 2014)

It is important to note that HB 2014 does not impact the 45 CSR 13 permitting process. HB 2014 known as the “Power Generation and Consumption Act of 2025” established the Certified Microgrid Program under the Division of Economic Development to encourage the continued development, construction, operation, maintenance, and expansion in West Virginia of high impact industrial plants and facilities, in certain circumstances where the availability of electricity generated from renewable sources is demonstrated to be necessary. HB 2014 also allows for the certification of high impact data centers, prohibits certain tax arrangements, and provides special valuation for these properties. HB 2014 also states the standards for certifying microgrid districts while highlighting the significance of data centers for economic growth and national security. HB 2014 also creates the Electric Grid Stabilization and Security Fund to establish regulations for certified microgrid districts and high impact data centers. As stated above, Permit Application R13-3713 did not include a data center and was not definitive on the ultimate end user of the power that will be generated from the proposed site. To restate, HB 2014 does not impact the 45 CSR 13 permitting process.

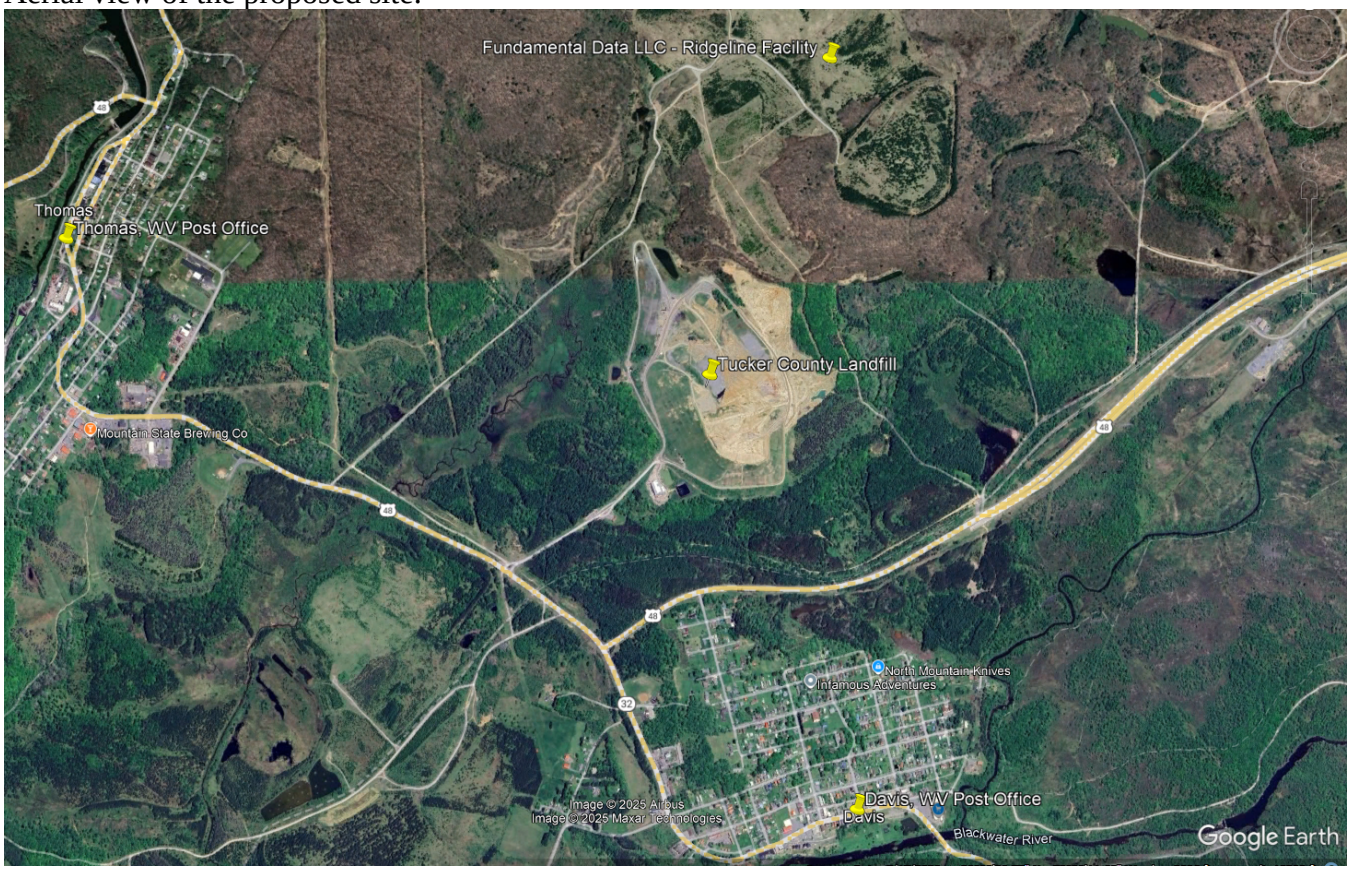
SITE INSPECTION

A site inspection of the proposed location was conducted on April 8, 2025, by the writer and Joe Kessler (NSR Program Manager) of the DAQ. We met with representatives of Fundamental Data and Western Pocahontas Land Company. This is a greenfield site, and no construction or equipment installation was visible at the time of the site inspection. The proposed site is in a remote location approximately 1.5 miles from US-48 that is only accessible by use of a private gate. The site will be located about 0.75 miles north of the Tucker County Landfill and will be situated on a reclaimed coal mine. For reference purposes, the proposed facility is located approximately 1.7 air miles from both the Thomas and Davis United States Post Offices. The closest residence is approximately 1.1 air miles from the proposed facility.

Directions to the site:

From Thomas, head north on Spruce Street toward 3rd Street. Take a sharp left onto US-48. An access road to the proposed facility will be located off of US-48, approximately 0.5 miles east of Thomas. The access road will be on the left. The site is located approximately 1.5 miles after passing through the private gate.

Aerial view of the proposed site:



The map above includes markers for the proposed Fundamental site, the Tucker County Landfill, and the Thomas and Davis United States Post Offices.

The proposed site will be located behind an elevated mound and situated approximately close to the arrow in the photo found below. This permit application review only includes the air quality elements afforded to the DAQ under West Virginia State Code. However, upon viewing the proposed remote location, it is not anticipated that any noise and/or viewshed issues would be encountered.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this proposed facility consist of the equipment listed in the following table and fugitive emissions.

Emission Unit ID#	Process Equipment	Calculation Methodology
Combustion Turbines	Combustion Turbines NG - 5,650 MMBtu/hr (aggregate) Diesel – 4,503.4 MMBtu/hr (aggregate)	Manufacturer Data (criteria pollutants) EPA AP-42 Emission Factors Chapter 3.1 (HAPs)
TK1 – TK3	3 – Diesel Storage Tanks (10 MM gal each)	EPA TANKS Emissions Estimation Software, Version 5.1
1R	Paved Roadways	EPA AP-42 Emission Factors, Chapter 13.2.1
UNLOAD	Diesel Truck Unloading	EPA AP-42 Emission Factors, Chapter 5.2

The potential emissions from the combustion turbines were estimated using the ability to fire the combustion turbines with natural gas or diesel. The combustion turbines at the proposed facility are capable of firing either fuel. Fundamental has requested that this proposed facility have enforceable emission limits that maintain the source as minor for New Source Review (NSR) and Title V. In order for the proposed facility to be a minor source, the potential emissions for any regulated air pollutant must be less than 100 tons per year. The supporting regulatory discussion can be found in the REGULATORY APPLICABILITY section under 45 CSR 14. Taking this limitation would establish the proposed facility as a synthetic minor for the purposes of PSD and Title V.

It is the intent of Fundamental to operate the combustion turbines solely using natural gas. However, diesel fuel is also being permitted as a backup fuel source if natural gas is not available.

If a combination of natural gas and diesel fuel are utilized to fire the combustion turbines, the total hours of operation will be restricted as needed to remain under the synthetic minor permitting thresholds. The operating hours of each turbine and the throughput of each type of fuel will be continuously monitored and recorded. Fundamental will be required to keep records of the total amount of hours each turbine uses natural gas as a fuel and the total amount of hours each turbine uses diesel as a fuel. The 12-month rolling sum of emissions will be calculated monthly.

The following tables represent the operating conditions associated with the combustion turbines firing the different fuels:

Natural Gas

Operating Condition	Parameter
Hourly Fuel Consumption	5.35 MMscfh (all units)
Maximum Design Heat Input	5,649.6 MMBtu/hr

Diesel

Operating Condition	Parameter
Hourly Fuel Consumption	32,872 gal/hr (all units)
Maximum Design Heat Input	4,503.4 MMBtu/hr
Sulfur Content	15 ppm (ULSD)

The tables on the following page represent the potential aggregate hourly emissions when the combustion turbines are operated in controlled steady state operations firing the different fuels if burning only that fuel source:

Natural Gas

Pollutant	Hourly Emissions (lb/hr)
Nitrogen Oxides	30.80
Carbon Monoxide	6.30
Volatile Organic Compounds	14.30
Particulate Matter-10/2.5	23.30
Sulfur Dioxide	19.21
Total Hazardous Air Pollutants	3.04
Formaldehyde (HAP)	1.26

Diesel

Pollutant	Hourly Emissions (lb/hr)
Nitrogen Oxides	74.50
Carbon Monoxide	5.40
Volatile Organic Compounds	30.90
Particulate Matter-10/2.5	22.10
Sulfur Dioxide	6.82
Total Hazardous Air Pollutants	5.64
Formaldehyde (HAP)	1.26
Manganese (HAP)	3.56

These combustion turbines experience different NOx and CO emissions during startup and shutdown episodes. The following tables represent the potential annual emissions for the combustion turbines during startups and shutdown periods for each fuel type:

Natural Gas

Pollutant	Annual Emissions (tons/year)
Nitrogen Oxides	4.54
Carbon Monoxide	37.05

Diesel

Pollutant	Annual Emissions (tons/year)
Nitrogen Oxides	6.22
Carbon Monoxide	46.10

The following table represents the permitted emission limit for the combustion turbines. This will represent a worst-case scenario for each pollutant when combusting either fuel at its potential hourly emission limitation. Fundamental will be required to continuously monitor and record the hours of operation, fuel throughput, and operation mode for each turbine to show compliance with the annual permitted limits.

Pollutant	**Fuel Type**	**Annual Emissions (tons/year)**
Nitrogen Oxides	Diesel	99.35
Carbon Monoxide	Natural Gas	56.36
Volatile Organic Compounds	Natural Gas	43.84
Particulate Matter-10/2.5	Natural Gas	71.44
Sulfur Dioxide	Natural Gas	58.89
Total Hazardous Air Pollutants	Natural Gas	9.33
Formaldehyde (HAP)	Natural Gas	3.86
Manganese (HAP)	Diesel	4.45

The potential emissions for the 3 – 10-million-gallon diesel storage tanks include the losses from working, standing, rim seal, and deck fittings. It has been assumed that the tank rim vents will be open and weighted mechanical actuation, gasketed rim vents will be utilized. The hourly emissions have been averaged over 8,760 hours per year. Due to the very low vapor pressure of diesel fuel (0.005 psia), the emissions associated with the diesel fuel tanks are low. The applicant conservatively estimated that all diesel fuel tank emissions are being counted as HAPs. EPA TANKS 5.1 allows users to enter specific information about a storage tank (dimensions, construction, paint condition, etc.), the liquid contents (chemical components and liquid temperature), and the meteorological conditions and location of the tank (nearest city, ambient temperature, etc.) to generate an air emissions report. Report features include estimates of monthly, annual, or partial year emissions for each chemical or mixture of chemicals stored in the tank. The closest meteorological location available in EPA TANKS 5.1 that was used was Elkins. As stated above, due to the very low vapor pressure of diesel fuel, the emissions associated with the diesel fuel tanks are low. The results of the EPA TANKS 5.1 analysis resulted in the following diesel storage tank emissions:

Pollutant	**Hourly Emissions (lb/hr)**	**Annual Emissions (tons/year)**
Volatile Organic Compounds	0.20	0.10
Total Hazardous Air Pollutants	0.20	0.10

EPA TANKS 5.1 does allow customization of the meteorological data location. DAQ entered the atmospheric pressure, average minimum and maximum monthly temperatures, and average monthly wind speeds for Thomas, WV into the EPA TANKS 5.1 emission estimation software model to recalculate the emissions based on that location. Upon doing this, the resultant emissions of VOCs and HAPs were estimated to have a value of 0.08366 tons per year. Therefore, utilizing the meteorological data from Thomas in place of Elkins would result in a decrease of VOC and HAP emissions. Additionally, DAQ also estimated the diesel storage tank emissions using Bryan Research & Engineering, LLC ProMax 5.0 (ProMax). ProMax is a versatile process simulation software package that is used to simulate and optimize various processes in the oil and gas, refining, chemical, and sustainable energy sectors. Based upon storage tank data, diesel throughput values, and Thomas, WV weather data, the predicted total VOC emissions for the 3 diesel storage tanks were 0.01233 tons per

year, which is less than the values predicted by EPA TANKS 5.1 using Elkins or Thomas meteorological data. Therefore, the storage tank emission estimates used by Fundamental in permit application R13-3713 were deemed appropriate.

There will also be potential emissions associated with the truck loading of the 3 – 10-million-gallon diesel storage tanks. The estimated aggregate annual total throughput to the diesel tanks is 15 million gallons per year. AP-42, *Compilation of Air Pollutant Emissions Factors from Stationary Sources*, has been published since 1972 and is the primary compilation of EPA's emissions factor information. It contains emissions factors and process information for more than 200 air pollution source categories. A source category is a specific industry sector or group of similar emitting sources. The emissions factors have been developed and compiled from source test data, material balance studies, and engineering estimates. Chapter 5.2 for Transportation and Marketing of Petroleum Liquids is a standard that is commonly utilized to estimate the potential evaporation loss associated with tank truck unloading. The formula that is utilized to calculate the loading loss emission factor utilizes the type of loading performed, otherwise known as the saturation factor, the true vapor pressure of the liquid loaded (psia), the molecular weight (lb-lb/mol) and the temperature (^oR). Due to the very low vapor pressure, the emissions associated with the diesel fuel tanks will only contain very small amounts of HAPs.

$L_L = 12.46 * S * P * M / T$

Where:

- L_L Loading Loss (pounds per 1,000 gallons of liquid loaded)
- S Saturation Factor (Loading Type)
- P True Vapor Pressure of Liquid Loaded (psia)
- M Molecular Weight of Vapors (lb/lb-mole)
- T Temperature of Bulk Liquid Loaded (^{o} R)

Utilizing this formula results in the following diesel storage tank loading emissions.

Pollutant	**Annual Emissions (tons/year)**
Volatile Organic Compounds	0.17
Total Hazardous Air Pollutants	0.17

There are paved haul road activities associated with this facility. The following table indicates the assumptions made in estimating the emissions:

Operating Condition	**Parameter**
Potential Operating Days	365
Estimated Roundtrip Distance per Vehicle	2.99 miles/vehicle
Diesel Trucks per Year	2,308
Vehicle Miles Traveled per Year (Diesel Trucks)	6,909 miles/year
Employee Vehicles per Day	50
Vehicle Miles Traveled per Year (Employee Vehicles)	54,632 miles/year

Using these operating conditions, the potential emissions associated with these haul road operations result in the following:

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tons/year)
Particulate Matter	0.48	2.11
Particulate Matter-10	0.10	0.42
Particulate Matter-2.5	0.02	0.10

At the time of application submittal, the fugitive equipment leaks (VOC/HAP) associated with fugitive components (valves, pressure relief valves, connections, flanges, etc.) were estimated to be negligible based upon the potential product leaking being natural gas/diesel and due to the final design of all piping not being finalized. In order to be conservative, it has been assumed that the fugitive equipment leaks (VOC/HAP) associated with this proposed facility would be less than 0.10 tons per year. This is based on industry-wide estimated component counts and utilization of Table 2-8 of EPA's Protocol for Equipment Leak Emission Estimates. The permit does require minimization of fugitive emissions and further requires any above-ground piping, valves, pumps, etc. that shows signs of excess wear that have a reasonable potential for fugitive emissions of regulated air pollutants to be repaired or replaced.
The following table represents the emissions associated with this permit application:

Emission Source	Annual Emissions (tons/year)					
	NO_x	**CO**	**VOC**	**SO_2**	**PM_{10}**	**Total HAPs**
Combustion Turbines	99.35	56.36	43.84	58.89	71.44	9.33
Diesel Storage Tanks	-	-	0.10	-	-	0.10
Diesel Truck Unloading	-	-	0.17	-	-	0.17
Paved Haul roads	-	-	-	-	0.42	-
Fugitive Leaks	-	-	0.10	-	-	0.10
Proposed Facility PTE	**99.35**	**56.36**	**44.21**	**58.89**	**71.86**	**9.70**

REGULATORY APPLICABILITY

The following potential rules may apply to this permit application:

State

45 CSR 2 - Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers ***(not applicable)***

This rule establishes emission limitations for smoke and particulate matter which are discharged from fuel burning units. 45 CSR 2 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions).

The combustion turbines are equipped with HRSG units which generate steam by using the heat present in the turbine exhaust gas. The HRSG units are designed where the turbine exhaust will pass through, and no additional firing emissions occur as a result of the HRSG units. This process has been designed to ensure that no duct burners are required as part of the HRSGs. Therefore, these units would not be considered as fuel burning units and not subject to this rule. To ensure this, the permit states that there shall be zero duct burner firing emissions. The combustion turbines do not meet the definition of a fuel burning unit because they do not produce power through indirect heat transfer.

45 CSR 4 - To Prevent and Control the Discharge of Air Pollutants into the Open Air Which Causes or Contributes to an Objectionable Odor or Odors

The purpose of this rule is to prevent and control the discharge of pollutants into the open air which causes or contributes to an objectionable odor or odors. This proposed facility would generally be subject to this rule, however, this type of proposed facility normally does not have issues with odors. However, the DAQ will, using the authority under this rule to respond to complaints involving objectionable odors if confirmed while the facility is operating, and may require mitigation at that time to reduce the odor potential of the source. An objectionable odor must be determined by the DAQ in the course of an inspection or investigation of an actual odor, and is possible to prove quantitatively, pursuant to this rule, that an objectionable odor will be present before a facility is in operation.

45 CSR 10 -To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides ***(not applicable)***

This rule establishes emission limitations for sulfur dioxide which are discharged from fuel burning units. 45 CSR 10 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting).

The combustion turbines are equipped with HRSG units which generate steam by using the heat present in the turbine exhaust gas. The HRSG units are designed where the turbine exhaust will pass through, and no additional firing emissions occur as a result of the HRSG units. This process has been designed to ensure that no duct burners are required as part of the HRSGs. Therefore, these units would not be considered as fuel burning units and not subject to this rule. To ensure this, the permit states that there shall be zero duct burner firing emissions. The combustion turbines do not meet the definition of a fuel burning unit because they do not produce power through indirect heat transfer.

45 CSR 13 - Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation

Pursuant to §45-13-5.1, “[n]o person shall cause, suffer, allow or permit the construction, modification, relocation and operation of any stationary source to be commenced without . . . obtaining a permit to construct.” Based upon the potential emissions for the facility, Fundamental is required to obtain a permit under 45CSR13 for this facility.

As required under §45-13-8.3 ("Notice Level A"), Fundamental placed a Class I legal advertisement in *The Parsons Advocate* on March 26, 2025. Additionally, Fundamental paid the appropriate application fee of $2,000 ($1,000 45 CSR 13 permit application fee, $1,000 NSPS fee).

Because this permitting action will limit the physical and operational capacity of the proposed facility below major stationary source thresholds (45 CSR 14, 45 CSR 30), Fundamental is subject to Notice Level C in section 8.5 and will be required to place a commercial display advertisement in *The Parsons Advocate* as required in section 8.4.a within one week prior to the placement of the DAQ's Class I legal advertisement of the agency's intent to issue or within three working days of the placement of the advertisement. The commercial display advertisement shall be at least 3 inches by 5 inches and contain at a minimum, the name of the applicant, the type and location of the source, the type and amount of air pollutants that will be discharged, the nature of the permit being sought, the proposed start-up date for the source and a contact telephone number for more information.

Additionally, Fundamental is required to post a visible and accessible sign as required in section 8.5.a, at a minimum of 2 feet square, at the entrance to the proposed site. The sign must be clearly marked indicating that an air quality permit has been applied for and include the West Virginia Division of Air Quality permitting section telephone number for additional information. The applicant must post the sign for the duration of the public notice period.

45 CSR 14 - Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants ***(not applicable)***
45 CSR 19 - Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment ***(not applicable)***

45CSR14 establishes and adopts a preconstruction permit program for the construction and major modification of major stationary sources in areas of attainment with the National Ambient Air Quality Standards (NAAQS). Tucker County is currently classified as in attainment/unclassifiable with the NAAQS and, therefore, a proposed new "major stationary source" in Tucker County would be subject to the provisions of 45CSR14. The proposed facility is defined as a source listed under §45-14-2.43(a) - "Fossil Fuel-fired Steam Electric Plants of More than 250 Million Btu/hr Heat Input" - and, therefore, pursuant to 2.4(b), would be defined as a "major stationary source" if any regulated pollutant has a PTE in excess of 100 TPY. The proposed facility, however, does not have PTE of any regulated pollutant in excess of 100 TPY as shown in the table below, therefore, not defined as a major stationary source and is not subject to the provisions of 45 CSR 14. 45 CSR 19 applies to sources that are located in areas that are classified as non-attainment with the NAAQS. Tucker County is an attainment/unclassified area, therefore, 45 CSR 19 would not apply.

Pollutant	**PSD (45CSR14) Threshold (tpy)**	**NANSR (45CSR19) Threshold (tpy)**	**Ridgeline Facility PTE (tpy)**	**45CSR14 or 45CSR19 Review Required?**
Carbon Monoxide	100	NA	56.36	No
Nitrogen Oxides	100	NA	99.35	No
Sulfur Dioxide	100	NA	58.89	No
Particulate Matter 2.5	100	NA	71.54	No
Ozone (VOC)	100	NA	44.21	No

45 CSR 16 - Standards of Performance for New Stationary Sources

This rule incorporates the federal Clean Air Act (CAA) standards of performance for new stationary sources (NSPS) set forth in 40 CFR Part 60 by reference. 45 CSR 16 applies to this source by reference of 40 CFR 60 Subpart KKKK. See detailed discussion in Federal Regulatory section under 40 CFR 60 Subpart KKKK.

45 CSR 17 - To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter

The purpose of this rule is to prevent and control particulate matter air pollution from materials handling, preparation, storage and other sources of fugitive particulate matter. Fundamental will ensure appropriate precautions are taken to prevent the escape of fugitive particulate matter beyond the boundary lines of the property.

45 CSR 21 - Control of Air Pollution from the Emission of Volatile Organic Compounds ***(not applicable)***

This rule establishes reasonably available control technology to control emissions of volatile organic compounds from sources that manufacture, mix, store, use, or apply materials containing volatile organic compounds that are located in Cabell, Kanawha, Putnam, Wayne and Wood Counties. This proposed facility is located in Tucker County, and therefore, not applicable to this rule.

45 CSR 22 - Air Quality Management Fee Program

The proposed facility is a minor source and not subject to 45CSR30. Fundamental is required to pay the appropriate annual fees and keep their Certificate to Operate current. The fee class would be 1B (Electric Utility greater than 300 MW).

45 CSR 27 - To Prevent and Control the Emissions of Toxic Air Pollutants ***(not applicable)***

The purpose of this rule is to prevent and control the discharge of toxic air pollutants requiring the application of best available technology (BAT) for chemical processing units. Section 2.4 defines a chemical processing unit as an assembly of reactors, tanks, distillation columns, heat exchangers, vaporizers, compressors, dryers, decanters, and/or other equipment used to treat, store, manufacture, or use toxic air pollutants. For the purpose of this rule, the term chemical processing unit includes surface coating equipment or similar equipment utilizing a toxic air pollutant as a solvent or for other purposes but does not include equipment used in the production and distribution of petroleum products providing that such equipment does not produce or contact materials containing more than 5% benzene by weight. Potential emissions of toxic air pollutants from the proposed facility result from the combustion of natural gas or diesel in the combustion turbines. Regulation of emissions of toxic air pollutants from these unit types are not included in this rule, and therefore, not applicable.

45 CSR 31 - Confidential Information

The purpose of this rule is to establish the requirements for claiming information submitted to the Director as confidential and the procedures for determinations of confidentiality in accordance with the provisions of W. Va. Code §22-5-10. The reason for the CBI submittal is that the application contains trade secrets regarding the configuration of the proposed facility as well as confidential technical information related to the combustion turbines. This was previously discussed in detail in the CONFIDENTIAL BUSINESS INFORMATION section.

45 CSR31B – Confidential Business Information and Emission Data

The purpose of this rule is to provide guidance and clarification concerning the term "types and amounts of pollutants discharged" defined under 45 CSR §31-2.4, the DAQ's legislative rule (45 CSR 31) and thus what information may not be claimed confidential in accordance with 45 CSR §31-6. An in-depth discussion regarding this was previously discussed in detail in the CONFIDENTIAL BUSINESS INFORMATION section.

45 CSR 33 - Acid Rain Provisions and Permits

This rule establishes and adopts general provisions and the operating permit program requirements for affected sources and affected units under the Acid Rain Program promulgated by the United States Environmental Protection Agency under Title IV of the Clean Air Act, as amended (CAA). The rule and associated reference methods, performance specifications and other test methods which are appended to these standards are adopted by reference. At this time, it has not been determined that Fundamental is subject to this rule pending Fundamental's selection of final power end user. If it is determined that Fundamental is subject, permit condition 4.1.19 requires Fundamental to comply with all applicable provisions of this rule. Additionally, Fundamental would be required to apply for an Acid Rain permit and comply with all applicable requirements of that permit.

As required in §72.30, the designated representative of any source with an affected unit under §72.9 shall submit a complete Acid Rain permit application by the applicable deadline in paragraphs (b) and (c) of this section, and the owners and operators of such source and any affected unit at the source shall not operate the source or unit without a permit that states its Acid Rain program requirements.

For any source with a new unit under §72.6(a)(3)(i), the designated representative shall submit a complete Acid Rain permit application governing such unit to the permitting authority at least 24 months before the later of January 1, 2000, or the date on which the unit commences operation.

Giving notice by publication in the Federal Register and in a newspaper of general circulation in the area where the source covered by the Acid Rain permit application is located or in a State publication designed to give general public notice is required. Notwithstanding the prior sentence, if a draft permit requires the affected units at a source to comply with §72.9(c)(1) and to meet any applicable emission limitation for NOx under §§76.5, 76.6, 76.7, 76.8, or 76.11 of this chapter and does not include for any unit a compliance option under §72.44, part 74 of this chapter, or §76.10 of this chapter, the Administrator may, in his or her discretion, provide notice of the draft permit by Federal Register publication and may omit notice by newspaper or State publication.

45 CSR 34 - Emission Standards for Hazardous Air Pollutants ***(not applicable)***

This rule incorporates the federal Clean Air Act (CAA) national emission standards for hazardous air pollutants (NESHAPs) set forth in 40 CFR Parts 61 and 63 by reference. There are no regulations in 40 CFR Parts 61 or 63 that apply to the Ridgeline Facility. Therefore, 45 CSR 34 does not apply.

45 CSR 40 (Control of Ozone Season Nitrogen Oxide Emissions)

The purpose of this rule is to establish ozone season NOx emission limitation, monitoring, recordkeeping, reporting, excess emissions, and NOx budget demonstration requirements for large industrial boilers and combustion turbines that have a maximum design heat input greater than 250 MMBTU/hr, in accordance with 40 CFR §51.121. Ozone season is defined as May 1 through September 30 in the same calendar year. The combustion turbines will be subject to an ozone season NOx limitation, and will have monitoring, recordkeeping, and reporting requirements to demonstrate compliance.

§45-40-6 requires the owner or operator subject to this rule to comply with the provisions of 40 CFR part 75, subpart H, or shall install a CEMS or a certified PEMS as necessary to attribute ozone season mass emissions of NOx to each unit. NOx mass emissions recorded and reported shall be used to determine a unit's compliance with the ozone season NOx emission limitation. Section 6.6 of this rule allows an owner or operator to elect an alternative monitoring scenario. Fundamental has met the requirement of this section by requesting an alternative in this permit application. Fundamental has proposed the following parameters to identify how NOx emissions will be determined:

- Conduct initial performance testing as required by 40 CFR 60 Subpart KKKK., as prescribed in permit condition 4.3.2.
- Continuously monitor the parameters of the SCR systems to verify proper operation as required in permit conditions 4.2.4 and 4.4.3.
- Continuously monitor and record the amount of each type of fuel to determine the heat input of each combustion turbine. The total monthly heat input will be determined using the monitored fuel data.
- Calculate the total monthly NOx emissions for each month during the ozone season. The total NOx mass emissions will be calculated for the ozone season each year. Ozone season is defined as May 1 through September 30 in the same calendar year.

Federal

40 CFR 51.166 - Prevention of Significant Deterioration of Air Quality ***(not applicable)***

Federal construction permitting programs regulate new and modified sources of attainment pollutants under Prevention of Significant Deterioration (PSD) and new and modified sources of non-attainment pollutants under Non-Attainment New Source Review (NANSR). The provisions of this section are captured in the West Virginia state rules discussed above known as 45 CSR 14 (PSD) and 45 CSR 19 (NANSR). Both of these rules are part of West Virginia's State Implementation Plan (SIP).

Tucker County is designated as attainment/unclassifiable for all criteria pollutants. PSD regulations apply when a new source is constructed in which emissions exceed major source thresholds, an existing minor source undergoes modification in which emission increases exceed PSD major source thresholds, or an existing major source undergoes a modification in which emission increases exceed PSD significant emission rates.

The permit application indicates that this proposed electric generation facility will be powered by combustion turbines equipped with HRSG. This description indicates that this proposed facility would be considered a natural gas combined cycle (NGCC) power plant. NGCC plants with a total heat input of more than 250 mmBtu per hour are identified as one of the 28 listed sources ("fossil fuel-fired steam electric plants" source category) that would be subject to the 100 tpy major source threshold.

The permit will implement physical and operational limitations so that the source is a synthetic minor and below major PSD thresholds and is not subject to PSD application review. These limitations will result in enhanced monitoring and recordkeeping and discussed in more detail in the MRRT OF OPERATIONS section of this document.

40 CFR 60 Subpart Kc - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After October 4, 2023 ***(not applicable)***

Subpart Kc applies to storage vessels of volatile organic liquids with capacities greater than or equal to 20,000 gallons for which construction commenced after October 4, 2023. § 60.110c(b)(8) exempts storage vessels that only store volatile organic liquids with a maximum true vapor pressure less than 0.25 psia (1.7 kPa absolute). Because the diesel fuel vapor pressure is 0.005 psia and is less than 0.25 psia, Subpart Kc is not applicable.

40 CFR 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units ***(not applicable)***

Subpart Db applies to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 MMBtu/hr). As stated in §60.40b(i), affected facilities (i.e., heat recovery steam generators) that are associated with stationary combustion turbines and that meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other affected facilities (i.e. heat recovery steam generators with duct burners) that are capable of combusting more than 29 MW (100 MMBtu/h) heat input of fossil fuel. If the proposed affected facility (i.e. heat recovery steam generator) is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

40 CFR 60 Subpart GG - Standards of Performance for Stationary Gas Turbines ***(not applicable)***

Subpart GG applies to stationary gas turbines with a heat input at peak load of 10 MMBtu/hr or more based on the lower heating value of the fuel fired. As stated in §60.4305(b), stationary combustion

turbines regulated under 40 CFR 60 Subpart KKKK are exempt from the requirements of subpart GG of this part.

40 CFR 60 Subpart KKKK - Standards of Performance for Stationary Gas Turbines

Subpart KKKK applies to stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu per hour, based on the higher heating value of the fuel, which commenced construction, modification, or reconstruction after February 18, 2005. The turbines at the proposed facility rated at greater than 10 MMBtu per hour; therefore, this rule does apply. Subpart KKKK regulates NOx and SO_2.

The NOx emission limit for a new turbine firing natural gas with a heat input between 50 MMBtu per hour and 850 MMBtu per hour is 25 ppm at 15 percent O_2 or 1.2 lb/MWh of useful output. The NOx emissions limit for a new turbine firing fuels other than natural gas with a heat input between 50 MMBtu per hour and 850 MMBtu per hour is 74 ppm at 1 5percent O_2 or 3.6 lb/MWh of useful output.

SO_2 emissions are limited to either 0.90 lb/MWh gross output, or 0.060 lb/MMBtu heat input.

The combustion turbines located at the proposed facility meet the emission standards found in Subpart KKKK. Fundamental will be using selective catalytic reduction (SCR) systems to reduce NOx emissions. Since Fundamental is not using water or steam injection to control NOx emissions, they are required to perform initial and annual performance testing to demonstrate compliance. §60.4340(b) allows an alternative to the annual performance testing requirement by installing, calibrating, maintaining and operating a continuous parameter monitoring system. These requirements are found in permit conditions 4.2.4 and 4.4.4 of the draft permit.

40 CFR 60 Subpart TTTTa - Standards of Performance for Greenhouse Gas Emissions for Modified Coal-Fired Steam Electric Generating Units and New Construction and Reconstruction Stationary Combustion Turbine Electric Generating Units

Subpart TTTTa applies to stationary combustion turbines that commence construction after May 23, 2023, that also serve a generator or generators capable of selling greater than 25 MW of electricity to a utility power distribution system. At this time, a final decision on whether power will be sold has been determined by Fundamental. If it is determined that Fundamental is subject, permit condition 4.1.19 requires Fundamental to comply with all applicable provisions of this rule.

40 CFR 63 Subpart EEEE - National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline) ***(not applicable)***

Subpart EEEE applies to organic liquids storage and distribution at major sources of HAPs. The proposed facility is not a major source of HAPs because its PTE of total HAPs is less than 25 tons per year and its PTE of any single HAP is less than 10 tons per year. Therefore, Subpart EEEE does not apply.

40 CFR 63 Subpart YYYY - National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines ***(not applicable)***

Subpart YYYY applies to stationary combustion turbines at major sources of HAPs. The proposed facility is not a major source of HAPs; therefore, Subpart YYYY does not apply.

40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines ***(not applicable)***

Subpart ZZZZ applies to reciprocating internal combustion engines located at major and area sources of HAP emissions. There are no reciprocating internal combustion engines located at the facility; therefore, Subpart ZZZZ does not apply.

40 CFR 64 - Compliance Assurance Monitoring ***(not applicable)***

Compliance Assurance Monitoring (CAM) applies to pollutant-specific emissions units at a major source under 40 CFR 70. The proposed facility is not a major source under 40 CFR 70; therefore, CAM does not apply.

40 CFR 70 - Title V Operating Permit Program

Part 70 establishes the Title V Operating Permit Program. The Title V Operating Permit Program has also been incorporated in the West Virginia Code of State Regulations (CSR) 45-30. Under the West Virginia Title V Operating Permit Program, the major source thresholds are 10 tons per year of a single HAP, 25 tons per year of any combination of HAPs, and 100 tons per year for all other regulated pollutants. Fundamental will accept operating limitations on the proposed facility to be a synthetic minor source with respect to the Title V Operating Permit Program. Therefore, Part 70 does not apply. At this time, it has not been determined that Fundamental is subject to 45 CSR 33 due to selection of final power end user. If it is determined that Fundamental is subject to 45 CSR 33, this facility will be subject to Part 70 requirements and will be required to submit a Title V permit application.

40 CFR 72 - Permits Regulation

The purpose of this part is to establish certain general provisions and the operating permit program requirements for affected sources and affected units under the Acid Rain Program, pursuant to title IV of the Clean Air Act, 42 U.S.C. 7401, et seq., as amended by Public Law 101-549 (November 15, 1990).

At this time, it has not been determined that Fundamental is subject to this rule pending Fundamental's selection of final power end user. If it is determined that Fundamental is subject, permit condition 4.1.19 requires Fundamental to comply with all applicable provisions of this rule. Additionally, Fundamental would be required to apply for an Acid Rain permit and comply with all applicable requirements of that permit.

As required in §72.30, the designated representative of any source with an affected unit under §72.9 shall submit a complete Acid Rain permit application by the applicable deadline in paragraphs (b) and

(c) of this section, and the owners and operators of such source and any affected unit at the source shall not operate the source or unit without a permit that states its Acid Rain program requirements.
For any source with a new unit under §72.6(a)(3)(i), the designated representative shall submit a complete Acid Rain permit application governing such unit to the permitting authority at least 24 months before the later of January 1, 2000, or the date on which the unit commences operation.

Giving notice by publication in the Federal Register and in a newspaper of general circulation in the area where the source covered by the Acid Rain permit application is located or in a State publication designed to give general public notice is required. Notwithstanding the prior sentence, if a draft permit requires the affected units at a source to comply with §72.9(c)(1) and to meet any applicable emission limitation for NOx under §§76.5, 76.6, 76.7, 76.8, or 76.11 of this chapter and does not include for any unit a compliance option under §72.44, part 74 of this chapter, or §76.10 of this chapter, the Administrator may, in his or her discretion, provide notice of the draft permit by Federal Register publication and may omit notice by newspaper or State publication.

40 CFR 97 Subpart DDDDD - Federal NOx Budget Trading Program, CAIR NOx and SO_2 Trading Programs, CSAPR NOx and SO_2 Trading Programs, and Texas SO_2 Trading Program

This rule sets forth the general, designated representative, allowance, and monitoring provisions for the Cross-State Air Pollution Rule (CSAPR) SO_2 Group 2 Trading Program, under section 110 of the Clean Air Act and §52.39 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

This rule applies to fossil-fuel-fired combustion turbines serving at any time, on or after January 1, 2005, a generator with a nameplate capacity of more than 25 MWe producing electricity for sale. At this time, it has not been determined that Fundamental is subject to this rule pending Fundamental's selection of final power end user. If it is determined that Fundamental is subject, permit condition 4.1.19 requires Fundamental to comply with all applicable provisions of this rule.

ANALYSIS OF NON-CRITERIA REGULATED POLLUTANTS

This section provides information on those regulated pollutants that are not classified as "criteria pollutants". Criteria pollutants are defined as Carbon Monoxide (CO), Lead (Pb), Oxides of Nitrogen (NOx), Ozone, Particulate Matter (PM_{10} and $PM_{2.5}$), and Sulfur Dioxide (SO_2). These pollutants have National Ambient Air Quality Standards (NAAQS) set for each that are designed to protect public health and welfare. Other pollutants of concern, although designated as non-criteria *and without national air quality standards*, are regulated through various state and federal programs designed to limit their emissions and public exposure. These programs include federal source-specific HAP regulations promulgated under 40 CFR 61 and 40 CFR 63 (NESHAPS/MACT), and WV Legislative Rule 45 CSR 27 that regulates certain HAPs as Toxic Air Pollutants (TAPs). Any potential applicability to these programs were addressed in the REGULATORY APPLICABILITY section of this document.

The majority of non-criteria regulated pollutants fall under the definition of HAPs which, with some revision since, were 188 compounds identified under Section 112(b) of the Clean Air Act (CAA) as pollutants or groups of pollutants that EPA knows, or suspects *may* cause cancer or other serious human

health effects. These adverse health effects may be associated with a wide range of ambient concentrations and exposure times and are influenced by source-specific characteristics such as emission rates and local meteorological conditions. Health impacts are also dependent on multiple factors that affect variability in humans such as genetics, age, health status (e.g., the presence of pre-existing disease) and lifestyle. As stated previously, *there are no federal or state ambient air quality standards for these specific chemicals*. It is also important to note that the USEPA does not divide the various HAPs into further classifications based on toxicity or if the compound is a suspected carcinogen. The HAP emissions associated with this application are found in the ESTIMATE OF EMISSIONS section of this document. For a complete discussion of the known health effects of each compound refer to the IRIS database located at *www.epa.gov/iris*.

The HAPs emitted from the proposed facility are created during the combustion of natural gas. The HAP emission values were estimated using EPA AP-42: Compilation of Air Emissions Factors from Stationary Sources. AP-42 contains emission factors and process information for more than 200 air pollution source categories. AP-42 Chapter 3.1 contains emission factors for stationary gas turbines. Available data indicate that emission levels of HAP are lower for gas turbines than for other combustion sources. This is due to the high combustion temperatures reached during normal operation. The emissions data also indicate that formaldehyde is the most significant HAP emitted from combustion turbines. For natural gas fired turbines, formaldehyde accounts for about two-thirds of the total HAP emissions. Polycyclic aromatic hydrocarbons (PAH), benzene, toluene, xylenes, and others account for the remaining one-third of HAP emissions. For diesel-fired turbines, small amount of metallic HAPs are present in the turbine's exhaust in addition to the gaseous HAP identified under natural gas fired turbines. These metallic HAP are carried over from the fuel constituents.

The following table lists each HAP currently identified by Fundamental as potentially being emitted based upon the information available in AP-42 Chapter 3.1 Tables 3.1.3, 3.1.4, and 3.1.5 and manufacturer data. Additionally, the Chemical Abstracts Service (CAS) registry number, the type of HAP, the potential to emit (PTE) of the individual HAP, and any potentially applicable Most Available Control Technology (MACT) is provided.

Pollutant	**CAS #**	**Type**	**PTE (TPY)**	**MACT[1]**
1, 3 Butadiene	106-99-0	VOC	0.09	None
Acetaldehyde	75-07-0	VOC	0.69	None
Acrolein	107-02-8	VOC	0.11	None
Benzene	71-43-2	VOC	0.31	None
Propylene Oxide	75-56-9	VOC	0.50	None
Ethylbenzene	100-41-4	VOC	0.55	None
Formaldehyde	50-00-0	VOC	3.86	None
Naphthalene	91-20-3	VOC	0.20	None
Toluene	108-88-3	VOC	2.25	None
Xylenes	1330-20-7	VOC	1.11	None
Arsenic	7440-38-2	Non-VOC	0.06	None
Cadmium	7440-43-9	Non-VOC	0.03	None
Chromium	18540-29-9	Non-VOC	0.06	None
Manganese	7439-96-5	Non-VOC	4.45	None

Mercury	7439-97-6	Non-VOC	0.01	None
Nickel	12035-72-2	Non-VOC	0.03	None
Selenium	7446-34-6	Non-VOC	0.14	None

[1] Does a MACT apply to this specific HAP for any emission unit at the facility? See REGULATORY APPLICABILITY section for discussion.

AIR QUALITY IMPACT ANALYSIS

Air dispersion modeling is not required of this source because the proposed facility is not subject to 45 CSR 14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as discussed in the Regulatory Discussion Section.

SOURCE AGGREGATION

"Building, structure, facility, or installation" is defined as all the pollutant emitting activities which belong to the same industrial grouping, are located on one or more contiguous and adjacent properties, and are under the control of the same person.

Fundamental does have control of the proposed site. There are no other emission units located on contiguous or adjacent properties with the Ridgeline Facility. Therefore, the emissions from the proposed facility should not be aggregated in determining Title V or PSD status.

MONITORING, RECORDKEEPING, REPORTING, AND TESTING (MRRT) OF OPERATIONS

Fundamental will be required to perform the following MRRT:

- **Synthetic Minor Limitations (40 CFR 51.166 and 40 CFR 70)**
  - Operating limits have been established for the combustion turbines. Fundamental will be required to restrict the total number of operating hours for the turbines.
    - Combination of natural gas and diesel - Restrict the total hours of operation as needed to remain under all major source thresholds. The operating hours of each turbine and the throughput of each type of fuel will be continuously monitored and recorded. Keep records of the total amount of hours each turbine uses natural gas as a fuel and the total amount of hours each turbine uses diesel as a fuel. The permittee shall multiply the hourly steady state operation emissions represented in draft permit condition 4.1.3 by the number of hours of steady state operations and adding the appropriate startup and shutdown emission from draft permit condition 4.1.4. The permittee shall calculate the emissions monthly and on a twelve-month rolling total. A twelve-month rolling total shall mean the sum of emissions at any given time during the previous twelve consecutive calendar months.

- **40 CFR 60 Subpart KKKK MRRT and 45 CSR 13**
  - Install selective catalytic reduction (SCR) systems on each turbine to control NOx emissions. SCR parameters will be continuously monitored to verify proper operation (§60.4340(b)(iii)). Monitor the catalyst bed inlet temperature and pressure differential across the catalyst bed to indicate proper operation.
  - Keep records of the SCR continuous monitoring data, and 4-hour rolling unit operating hour averages of the monitored parameters.
  - An SCR parameter monitoring plan will be developed which explains the procedures used to document proper operation of the SCR units in accordance with §60.4355. The plan must:
    - Include the indicators to be monitored and show there is a significant relationship to emissions and proper operation of the NOx emission controls
    - Pick ranges (or designated conditions) of the indicators, or describe the process by which such range (or designated condition) will be established
    - Explain the process used to make certain that data is obtained that are representative of the emissions or parameters being monitored (such as detector location, installation specification if applicable)
    - Describe quality assurance and control practices that are adequate to ensure the continuing validity of the data
    - Describe the frequency of monitoring and the data collection procedures which you will use, and
    - Submit justification for the proposed elements of the monitoring. If a proposed performance specification differs from manufacturer's recommendation, the reasons for the differences must be explained.
  - In accordance with §60.4365(a), keep records of the fuel characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specifying:
    - The maximum total sulfur content of oil is 0.05 weight percent (500 ppmw) or less
    - The total sulfur content for natural gas is 20 grains of sulfur or less per 100 standard cubic feet
    - Potential sulfur emissions are less than 0.060 pounds SO_2/million Btu heat input
  - Submit notifications of the date construction commences, the actual date of initial startup as required under §60.7.
  - Report excess emissions and monitor downtime semiannually, in accordance with §60.4375(a) and §60.7(c). Excess emissions will be reported for all periods of unit operation, including start-up, shutdown, and malfunction. An excess emission is a 4-hour rolling unit operating hour average in which any monitored parameter does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan. A period of monitor downtime is a unit operating hour in which any of the required parametric data are either not recorded or are invalid.
  - Submit the results of the initial performance test within 60 days following completion of the test.
  - An initial performance test for NOx and SO_2 emissions is required under §60.8 and §60.4400. The initial performance test will be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup. The performance test must be done at any load condition within plus or minus 25 percent of

100 percent of peak load. Separate performance testing is required for natural gas and diesel fuel.

- An initial performance test for CO emissions to demonstrate compliance with permit condition 4.1.3. The initial performance test will be conducted within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup. The performance test must be done at any load condition within plus or minus 25 percent of 100 percent of peak load. Separate performance testing is required for natural gas and diesel fuel. **[45CSR§13-5.10]**

- **45 CSR 17 Fugitive Sources of Particulate Matter**
  - Sources of fugitive particulate matter at the proposed facility include diesel truck and employee traffic on paved plant roads. Conduct a visual inspection of the paved roads once each operating day to ensure no fugitive emissions are generated. When needed, roads will be swept and/or watered to minimize fugitive dust. Records will be kept of the inspections and any corrective actions.
- **45 CSR 40 – Control of Ozone Season NOx**
  - Fundamental is proposing an alternative monitoring scenario in accordance with Section 6.6 of 45 CSR 40. The alternative monitoring scenario is consistent with the requirements in 40 CFR 60 Subpart KKKK.
  - Conduct initial performance testing to determine the NOx emission rate in pounds per million Btu. Approved SCR parameters will be monitored to demonstrate compliance with the NOx emission limit.
  - To determine the heat input for each turbine, the amount of each type of fuel will be continuously monitored and recorded. The total monthly heat input will be determined using the monitored fuel data. The total monthly NOx emissions will be calculated for each month during ozone season. The total NOx mass emissions will be calculated for the ozone season each year.
  - It should be noted, as stated in permit condition 4.1.14, the combustion turbines/HRSG shall use the air pollution control devices specified in Section 1.0 and permit condition 4.1.6 and identified in Permit Application R13-3713 ***at all times when in operation*** except during periods of startup and shutdown when operating temperatures do not allow for proper use of the air pollution control devices.
- Maintain records of diesel fuel unloading operations in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location.
- Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location.
- Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
- Maintain a record of all PTE HAP calculations for the entire facility.

The records shall be maintained on site or in a readily available off-site location maintained by Fundamental for a period of five (5) years.

STATUTORY AUTHORITY OF THE DAQ

The statutory authority of the DAQ is given under the Air Pollution Control Act (APCA) – West Virginia Code §22-5-1, *et. seq.* – which states, under §22-5-1 ("Declaration of policy and purpose"), that:

> It is hereby declared that public policy of this state and the purpose of this article is to achieve and maintain such levels of air quality ***as will*** (underlining and emphasis added) protect human health and safety, and to the greatest degree practicable, prevent injury to plant and animal life and property, foster the comfort and convenience of the people, promote the economic and social development of this state and facilitate the enjoyment of the natural attractions of this state.

Therefore, while the code states that the intent of the rule includes the criteria outlined in the latter part of the above sentence, it is clear by the underlined and bolded section of the above sentence that the scope of the delegated authority does not extend beyond the *impact of air quality* on these criteria. Based on the language under §22-5-1, *et. seq.*, the DAQ, in making determinations on issuance or denial of permits under WV Legislative Rule 45 CSR 13 (45 CSR 13), does not take into consideration substantive non-air quality issues such as job creation, economic viability of proposed project, strategic energy issues, non-air quality environmental impacts, nuisance issues, etc.

The basis for issuance or denial of an air quality permit is given under 45 CSR 13. Pursuant to §45-13-5.7, the DAQ shall issue a permit unless:

> a determination is made that the proposed construction, modification, registration or relocation will violate applicable emission standards, will interfere with attainment or maintenance of an applicable ambient air quality standard, cause or contribute to a violation of an applicable air quality increment, or be inconsistent with the intent and purpose of this rule or W. Va. Code § 22-5-1, et seq., in which case the Secretary shall issue an order denying such construction, modification, relocation and operation. The Secretary shall, to the extent possible, give priority to the issuance of any such permit so as to avoid undue delay and hardship.

It is clear under 45 CSR 13 that denial of a permit must be based on one of the above explicitly stated criteria or, as noted, is inconsistent with 45 CSR 13 or §22-5-1, *et. seq*. As is stated above, it is the DAQ's position that the intent of both the APCA and 45 CSR 13 is to circumscribe the authority of the DAQ to air quality issues as outlined in the APCA and in West Virginia's State Implementation Plan (SIP).

The air quality issues evaluated relating to Fundamental's proposed construction are outlined in this document. All applicable and potentially applicable rules were evaluated in the REGULATORY DISCUSSION section. The items covered under that section represent the extent of the substantive air quality issues over which the DAQ has authority to evaluate under 45 CSR 13 and the APCA as relating to this permit application.

PUBLIC INVOLVEMENT

From the date of Fundamental's notice of application (March 26, 2025) until the release of this EE/FS and draft permit, the DAQ received comments and requests for a public meeting from various individuals and organizations concerning the proposed facility. All comments/public meeting requests received were provided with an email response acknowledging receipt.

The DAQ provided notice to the public of an open comment period for permit application R13-3713 in *The Parsons Advocate* on June 18, 2025. This notice of open comment period provided information on the facility and proposed emissions.

Additionally, the DAQ will hold an in person public meeting to provide information and answer questions on air quality issues relevant to this permit application. The meeting will be held at the Maple/Balsam/Spruce Rooms at Canaan Valley Resort State Park, 230 Main Lodge Road, Davis, WV 26260 on Monday, June 30, 2025, from 6:00 p.m. until 9:00 p.m. Doors will open at 5:00 p.m. to register attendees. If you plan to attend the in-person public meeting, to save time and ensure all participants in attendance are registered, please fill out the pre-registration form at <https://forms.gle/jEQTGGPUP73xBmRJ7> by 8:00 a.m. on Monday, June 30, 2025. Upon arrival, we request that you sign your name on the pre-registration list. While pre-registration is not required, it is encouraged to save time and ensure all participants in attendance are registered. If you do not have internet access and want to pre-register, please contact Nicole Ernest at 304-926-0475.

The DAQ will also hold a virtual public meeting to accept oral comments that are relevant to this permit application on Thursday, July 17, 2025, from 6:00 p.m. until 8:00 p.m. The purpose of this virtual public meeting is ONLY to accept oral comments, the DAQ will not be responding to questions during this virtual public meeting. Registration is required by 4:00 p.m. on Thursday, July 17, 2025, to participate in the virtual public meeting. To register, please complete the participant registration form at < https://forms.gle/dYSUgFZigRGe8WQp9>. To register to provide an oral comment, please indicate "yes" you want to provide oral comments for the record when you register with the previously provided link. A confirmation e-mail will be sent with your responses when you register. A separate email with information on how to join the public meeting will be sent shortly after registration closes at 4:00 p.m. on Thursday, July 17, 2025. If you do not have internet access and want to register, please contact Nicole Ernest at 304-926-0475. If you have previously provided written comments, you do not need to read your written comment during the virtual public meeting to accept oral comments.

Written comments must be received by the DAQ by 5:00 pm on Friday, July 18, 2025. Written comments may be submitted by:

- Email: Jerry Williams at Jerry.Williams@WV.gov with "Fundamental Data Comments" as the subject line, or
- Mail: WVDEP - Air Quality, Attention: Jerry Williams, 601 57th Street SE, Charleston, WV 25304.

According to information provided by the applicant, the proposed facility could begin operation in 2027. The purpose of the DAQ's permitting process is to make a preliminary determination if the proposed construction will meet all state and federal air quality requirements. The purpose of the public review process is to accept public comments on air quality issues relevant to this determination. Only written

comments received at the email address/physical address noted above within the specified time frame, or comments presented orally at the scheduled public meeting, will be considered prior to final action on the permit. All such comments will become part of the public record.

The draft permit and engineering evaluation can be downloaded at:

https://dep.wv.gov/daq/permitting/Pages/NSR-Permit-Applications.aspx

At the conclusion of the Notice of Open Comment Period which begins on June 18, 2025 and ends on July 18, 2025, the DAQ will prepare a RESPONSE TO PUBLIC COMMENTS document which will include background information, overview of comments received, a response to comments, list of commenters, the actual comments received, and any other pertinent information that is needed as a result of the public comments received.

This document will be made available for review on DEP's AX website (https://documents.dep.wv.gov/AppXtender/) and a copy will be provided via email to all parties that commented during either public comment period.

RECOMMENDATION TO DIRECTOR

The information provided in permit application R13-3713 indicates that compliance with all applicable state and federal air quality regulations will be achieved. Therefore, I recommend to the Director that the DAQ go to public notice with a preliminary determination to issue Permit Number R13-3713 to Fundamental Data for the proposed construction of a turbine power facility located in Thomas, Tucker County, WV.

Jerry Williams

Digitally signed by: Jerry Williams
DN: CN = Jerry Williams email = jerry.williams@wv.gov C = US
Date: 2025.06.17 06:46:15 -04'00'

Jerry Williams, P.E.
Engineer