west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone (304) 926-0475 • FAX: (304) 926-0479

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

ENGINEERING EVALUATION / FACT SHEET

BACKGROUND INFORMATION

Application No.:	R13-2916
Plant ID No.:	069-00107
Applicant:	Appalachia Midstream Services, LLC (AMS)
Facility Name:	Battle Run Compressor Station
Location:	Dallas, Ohio County
NAICS Code:	211111
Application Type:	Construction
Received Date:	May 7, 2012
Engineer Assigned:	Jerry Williams, P.E.
Fee Amount:	$2,000.00
Date Received:	January 17, 2012
Complete Date:	May 18, 2012
Due Date:	August 16, 2012
Applicant Ad Date:	May 7, 2012
Newspaper:	*Wheeling Intelligencer*
UTM's:	Easting: 536.450 km Northing: 4436.001 km Zone: 17
Description:	The proposed Battle Run Compressor Station will consist of twelve (12) 1,380 hp Caterpillar G3516B ultra lean burn compressor engines equipped with oxidation catalysts, one (1) 805 hp Capstone C600 microturbine generator, three (3) 55.0 mmscfd triethylene glycol (TEG) dehydration units equipped with condenser controls, three (3) 1.0 MMBTU/hr TEG reboilers, two (2) 0.5 MMBTU/hr heater treater burners, eight (8) 400 bbl condensate storage tanks, two (2) 400 bbl produced water storage tanks, condensate and produced water truck loading, compressor blowdowns, fugitive emissions, and carbon canisters to control condensate and produced water truck loading vapors.

DESCRIPTION OF PROCESS

The following process description was taken from Permit Application R13-2916:

The natural gas inlet stream from surrounding area wells enters the facility at low pressure through a two phase low pressure inlet separator that will gravity separate the inlet stream into two streams: gas and hydrocarbon/water liquids. Low pressure inlet gas will be compressed via three stage reciprocating compressors with interstage cooling. Discharge from the compressors will pass through filter/coalescer separators to remove any condensed or entrained liquids present. After the inlet gas passes through the compressors, it goes through the dehydration process before exiting the facility via a sales pipeline. A portion of the discharge gas will be removed prior to outlet metering for use as fuel gas.

TEG dehydration units are used to remove water from the gas. The units are comprised of both a glycol contactor skid and glycol regeneration skid. In the dehydration process, gas passes through a contactor vessel where water is absorbed by the glycol. The "rich" glycol contacting water goes to the glycol reboiler where heat is used to remove the water and regenerate the glycol. The heat is supplied by a natural gas fired reboiler that exhausts to the atmosphere. Overhead still column emissions from the glycol regeneration skid will be controlled by an air cooled condenser. The non-condensables from the still column overheads will be routed to the reboiler and burned with 98% destruction efficiency. Flash tank off-gases from the glycol regeneration skid will also be routed to the reboiler to be burned as fuel with 98% destruction efficiency. The TEG reboilers are equipped with a burner management system to ensure a constant flame for combustion of the vapors. Any excess vapors not burned as fuel will be recycled/recompressed for 100% control efficiency.

After dehydration, fuel gas is pulled from the discharge side of the process. A fuel gas skid reduces the pressure of a portion of the discharge gas to a pressure suitable for use by fuel burning equipment. Pertaining to the fuel gas skid, there is no hydrocarbon liquid recovery by design.

Inlet liquids will flow from the two phase low pressure inlet separator to a heater treater feed drum, a three phase low pressure separator. Heater Treaters are used to treat emulsions, which are stable mixtures of condensate, solids, and water. These units use thermal, gravitational, mechanical, and sometimes chemical methods to break the emulsions and separate the condensate from water. Elevating the emulsion temperature is particularly effective in lowering condensate viscosity and promoting phase separation. Heavy liquids (water) will be transported off site via truck. Liquid hydrocarbon (condensates) will flow from the feed drum to the heater treater. Any vapors evolved from the liquid to the feed drum will be routed to the electric driven flash gas compressor and recycled to the two phase low pressure inlet separator. After stabilization, condensate will be sent to atmospheric condensate storage tanks. Produced condensate will be transported off site via truck. Vapors evolved from truck loading (both produced water and condensate) will be captured and routed to an activated carbon canister with at least 95% destruction efficiency.

The facility will contain several liquid recycle streams to reduce emissions. All high pressure liquids will be cascaded to lower pressure separators to capture gases evolved as a result of pressure reduction. All liquids formed by gas cooling in the inter-stage coolers of the three stage reciprocating compressors will be cascaded to lower pressure scrubbers on the compressor skid.

The facility will also contain several gas recycle streams. All atmospheric tank emissions will be controlled by vapor recovery compression. The vapor recovery compressors will discharge in the flash gas compressor. The flash gas compressor will compress these gases and discharge into the two phase low pressure inlet separator. Overhead gases from the heater treater feed drum and heater treater will also be routed to the flash gas compressor and recycled to the two phase low pressure inlet separator.

The generator provides electric power to the vapor recovery and flash gas compressors, electric glycol pumps, and other electrical equipment. Fugitive emissions from component leaks also occur.

The compressor station will have two primary suction pressure operating points, 125 psig and 50 psig. The expected discharge pressure range is 900-1,200 psig. The facility will initially operate at 125 psig suction pressure and will continue to do so until such time that field production volumes decline. At that time, the suction pressure will be lowered to 50 psig, resulting in diminished facility capacity.

SITE INSPECTION

A site inspection was conducted by Al Carducci of the DAQ NPRO Enforcement Section on March 29, 2012. He did not see any problems with locating this facility at the proposed site.

Directions as given in the permit application are as follows:

From Charleston, go 138 miles on I-77N into Ohio and take exit 44A to merge onto I-70E toward Wheeling. Go approximately 40 miles entering back into West Virginia and take slight right on I-470E. Go approximately 11 miles and merge onto I-70E. Go approximately 6 miles and take exit 11 for Dallas Pike. Keep left at the fork to continue toward Dallas Pike. Go 300 feet west and turn right onto County Highway 41/3. Go 100 feet north and then left onto the entrance road to the facility. Go 1200' to the site.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Emissions associated with this application consist of the combustion emissions from the twelve (12) 1,380 hp Caterpillar G3516B ultra lean burn compressor engines equipped with oxidation catalysts (EUCE-1 – EUCE-12), one (1) 805 hp Capstone C600 microturbine generator (EUGEN-1), three (3) 55.0 mmscfd triethylene glycol (TEG) dehydration units equipped with condenser controls (EUDHY-1 – EUDHY-3), three (3) 1.0 MMBTU/hr TEG reboilers (EUDHY-1 – EUDHY-3), two (2) 0.5 MMBTU/hr heater treater burners (EUHT-1, EUHT-2), eight (8) 400 bbl condensate storage tanks (EUTK-1 – EUTK8), two (2) 400 bbl produced water storage tanks (EUWTK-9, EUWTK10), condensate and produced water truck loading (EULOAD-1, EULOAD-2), compressor blowdowns (EU-BD), and fugitive emissions (EU-FUG).

The following table indicates which methodology was used in the emissions determination:

Emission Unit ID#	Process Equipment	Calculation Methodology
EUCE-1 – EUCE12	1,380 hp Caterpillar G3516B Compressor Engine with Oxidation Catalyst	Manufacturer's Data / EPA AP-42 Emission Factors
EUGEN-1	805 hp Capstone C600 Microturbine Generator	Manufacturer's Data / EPA AP-42 Emission Factors
EUDHY-1 – EUDHY-3	55.0 mmscfd TEG Dehydration Unit	GRI-GlyCalc 4.0 Emission Estimation Software
EUDHY-1 – EUDHY-3	1.0 MMBTU/hr TEG Reboiler	EPA AP-42 Emission Factors
EUHT-1 – EUHT-2	0.5 MMBTU/hr Heater Treater	EPA AP-42 Emission Factors
EUTK-1 – EUTK-8	Eight (8) 400 bbl Condensate Storage Tanks	EPA Tanks 4.09 Emission Estimation Software, Promax Process Simulation
EUWTK-9 – EUWTK-10	Two (2) 400 bbl Produced Water Storage Tanks	EPA Tanks 4.09 Emission Estimation Software, Promax Process Simulation
EULOAD-1 – EULOAD-2	Condensate and Produced Water Truck Loading	EPA AP-42 Emission Factors

Fugitive emissions (EU-FUG) and compressor blowdown (EU-BD) emissions for the facility are based on calculation methodologies presented in the 2009 American Petroleum Institute Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry. The factors presented in the API Compendium are for methane emissions. Therefore, the fugitive VOC and HAP emissions were calculated using a representative gas analysis and the weight percent of each respective pollutant.

Maximum controlled point source emissions were calculated by AMS and checked for accuracy by the writer and are summarized in the table below.

Emission	Emission Source	NO_x		CO		VOC		SO_2		PM_{10}		Total HAPs		CO_2e	
Point ID #		lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
EPCE-1	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-2	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-3	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-4	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-5	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-6	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-7	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-8	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-9	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-10	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-11	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPCE-12	1,380 hp Caterpillar G3516B Compressor Engine	1.52	6.66	0.19	0.83	0.69	3.04	0.01	0.03	0.12	0.54	0.29	1.25	1619.93	7095.31
EPGEN-1	805 hp Capstone C600 Microturbine Generator	0.25	1.09	0.62	2.70	0.02	0.07	0.03	0.11	0.05	0.22	0.01	0.03	880.35	3855.91
EPSTL-1	55.0 mmscf TEG Dehydration Unit Still Vent	0.00	0.00	0.00	0.00	0.32	1.39	0.00	0.00	0.00	0.00	0.01	0.05	0.74	3.25
EPSTL-2	55.0 mmscf TEG Dehydration Unit Still Vent	0.00	0.00	0.00	0.00	0.32	1.39	0.00	0.00	0.00	0.00	0.01	0.05	0.74	3.25
EPSTL-3	55.0 mmscf TEG Dehydration Unit Still Vent	0.00	0.00	0.00	0.00	0.32	1.39	0.00	0.00	0.00	0.00	0.01	0.05	0.74	3.25
EPRBL-1	1.0 MMBTU/hr TEG Reboiler	0.07	0.33	0.06	0.28	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.01	117.00	512.48
EPRBL-2	1.0 MMBTU/hr TEG Reboiler	0.07	0.33	0.06	0.28	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.01	117.00	512.48
EPRBL-3	1.0 MMBTU/hr TEG Reboiler	0.07	0.33	0.06	0.28	0.01	0.02	0.01	0.01	0.01	0.02	0.01	0.01	117.00	512.48
EPHT-1	0.5 MMBTU/hr Heater Treater Burner	0.04	0.16	0.03	0.14	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	58.50	256.24
EPHT-1	0.5 MMBTU/hr Heater Treater Burner	0.04	0.16	0.03	0.14	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	58.50	256.24
EPTK-1 - EPT	8-400 bbl Condensate Storage Tanks	0.00	0.00	0.00	0.00	2.80	12.25	0.00	0.00	0.00	0.00	0.14	0.61	106.08	464.65
EPWTK-1 - E	2-400 bbl Produced Water Storage Tanks	0.00	0.00	0.00	0.00	0.41	1.81	0.00	0.00	0.00	0.00	0.02	0.09	16.32	71.48
EPLOAD-1	Condensate Truck Loading	0.00	0.00	0.00	0.00	NA	8.15	0.00	0.00	0.00	0.00	0.00	0.41	NA	53.41
EPLOAD-2	Produced Water Truck Loading	0.00	0.00	0.00	0.00	NA	0.01	0.00	0.00	0.00	0.00	0.00	0.01	NA	0.08
EP-FUG	Fugitive Emissions	0.00	0.00	0.00	0.00	NA	9.79	0.00	0.00	0.00	0.00	0.00	0.22	NA	583.61
EP-BD	Compressor Blowdowns	0.00	0.00	0.00	0.00	NA	9.14	0.00	0.00	0.00	0.00	0.00	0.16	NA	604.91

The following table represents the total facility emissions:

Pollutant	Maximum Annual Facility Wide Emissions (tons/year)
Nitrogen Oxides	82.35
Carbon Monoxide	13.74
Volatile Organic Compounds	81.93
Particulate Matter	6.78
Sulfur Dioxide	0.50
Acetaldehyde	5.43
Acrolein	3.34
Benzene	0.33
Ethylbenzene	0.08
Formaldehyde	3.22
Methanol	1.62
n-Hexane	1.94
Toluene	0.37
Xylenes	0.35
Total HAPs	16.69
Carbon Dioxide Equivalent	92,837.47

The following table indicates the control device efficiencies that are required for this facility:

Emission Unit	Pollutant	Control Device	Control Efficiency
EUCE-1 – EUCE12 Compressor Engines	Carbon Monoxide	Oxidation Catalyst	98.00 %
	Volatile Organic Compounds		80.00 %
	Formaldehyde		95.00 %
EUDHY-1 – EUDHY-3 TEG Dehydration Units	Volatile Organic Compounds	Condensers, Recycled to Flame Zone of Reboilers	98.00 %
	Hazardous Air Pollutants		98.00 %
EUTK-1 – EUTK8, EUWTK-9, EUWTK-10 Storage Tanks	Volatile Organic Compounds	Vapor Recovery Unit	98.00 %
	Hazardous Air Pollutants		98.00 %
EULOAD-1, EULOAD-2 Loadout Racks	Volatile Organic Compounds	Carbon Canister	95.00 %

REGULATORY APPLICABILITY

Unless otherwise stated WVDEP DAQ did not determine whether the permittee is subject to an area source air toxics standard requiring Generally Achievable Control Technology (GACT) promulgated after January 1, 2007 pursuant to 40 CFR 63, including the area source air toxics provisions of 40 CFR 63, Subpart HH and 40 CFR 63, Subpart ZZZZ.

The following rules apply to the facility:

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

The purpose of 45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers) is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units.

45CSR2 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). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The heat input of all of the proposed fuel burning units (EPRBL-1 – EPRBL-3, EPHT-1, EPHT-2) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2. However, AMS would be subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

45CSR4 (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable. No odors have been deemed objectionable.

45CSR10 (To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides)

45CSR10 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). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The heat input of all of the proposed fuel burning units (EPRBL-1 – EPRBL-3, EPHT-1, EPHT-2) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR10.

45CSR13 (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)

45CSR13 applies to this source due to the fact that AMS exceeds the regulatory emission threshold for criteria pollutants of 6 lb/hr and 10 ton/year, and they are also subject to a substantive requirement of an emission control rule promulgated by the Secretary (40CFR60 Subpart JJJJ).

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this source by reference of 40CFR60, Subpart JJJJ. AMS is subject to the recordkeeping, monitoring, and testing required by 40CFR60 Subpart JJJJ.

45CSR22 (Air Quality Management Fee Program)

This facility is a minor source and not subject to 45CSR30. AMS is required to keep their Certificate to Operate current.

40CFR60 Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

AMS's compressor engines are subject to 40CFR60 Subpart JJJJ, which sets forth emission limits, fuel requirements, installation requirements, and monitoring requirements based on the year of installation of the subject internal combustion engine. 40CFR60 Subpart JJJJ is applicable to owners and operators of new stationary spark ignition internal combustion engines manufactured after July 1, 2007, for engines with a maximum rated power capacity greater than 500 hp.

The twelve (12) new proposed 1,380 hp engines (EPCE-1 – EPCE-12) will be subject to this rule. The emission limits for these lean burn engines that were manufactured after July 1, 2010 are the following: NO_x – 1.0 g/hp-hr (3.04 lb/hr); CO – 2.0 g/hp-hr (6.08 lb/hr); and VOC – 0.7 g/hp-hr (2.13 lb/hr). Based on the manufacturer's specifications for these engines, the emission standards will be met.

Because these engines will not be certified by the manufacturer, AMS will be required to perform an initial performance test within 180 days from startup, and subsequent testing every 8,760 hours or 3 years, whichever comes first.

The following rules do not apply to the facility:

40CFR60 Subpart Kb (Standards of Performance for VOC Liquid Storage Vessels)

40CFR60 Subpart Kb does not apply to storage vessels with a capacity less than 75 cubic meters. The tanks that AMS has proposed to install are 63.60 cubic meters each. Therefore, AMS would not be subject to this rule.

40CFR60 Subpart KKK (Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants)

40CFR60 Subpart KKK applies to onshore natural gas processing plants that commenced construction after January 20, 1984. The Battle Run Compressor Station is not a natural gas processing plant, therefore, AMS would not be subject to this rule.

40CFR60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)

This subpart establishes standards for the control of emissions from stationary combustion turbines with a heat input at peak load equal to greater than 10.7 gigajoules (10 MMBTU) per hour, based on the higher heating value of the fuel that commenced construction, modification, or reconstruction after February 18, 2005. The 805 hp Capstone C600 Microturbine (EUGEN-1) has a heat input of 7.5 MMBTU/hr, therefore, AMS is not subject to this rule.

45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants)

45CSR19 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment)

As shown in the table below, AMS is not subject to 45CSR14 or 45CSR19 review.

Pollutant	**PSD (45CSR14) Threshold (tpy)**	**NANSR (45CSR19) Threshold (tpy)**	**Battle Run PTE (tpy)**	**45CSR14 or 45CSR19 Review Required?**
Carbon Monoxide	250	NA	13.74	No
Nitrogen Oxides	250	100	82.35	No
Sulfur Dioxide	250	100	0.50	No
Particulate Matter 2.5	250	100	6.78	No
Ozone (VOC)	250	NA	81.93	No
Greenhouse Gas (CO_2e)	100,000	NA	92,837.47	No

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

There will be small amounts of various non-criteria regulated pollutants emitted from the combustion of natural gas. However, due to the concentrations emitted, detailed toxicological information is not included in this evaluation.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as seen in the table listed 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.

The Battle Run Compressor Station is located in Ohio County and has an estimated production rate of 98.5 million cubic feet of gas per day (mmcfd). Battle Run will be operated by AMS, a midstream gathering company, who is partial owner and operator. Several different entities are involved in the production, gathering, and transmission of gas. The Operators are the parties who drill and operate the wells. The Shippers are the owners of the gas who may or may not be the same entity as the Operator. There are also parties who own and operate the gathering system pipelines and compression station, called Gatherers. In addition, there are parties that own and operate the gas processing plants.

1. The Battle Run Compressor Station will operate under SIC code 1311 (Crude Petroleum and Natural Gas Extraction). There are compressor stations operated by AMS that share the same two-digit major SIC code of 13 for oil and gas exploration and production. Therefore, the Battle Run Compressor Station does share the same SIC code as surrounding compressor stations and gas wells.

2. "Contiguous or Adjacent" determinations are made on a case by case basis. These determinations are proximity based, and it is important to focus on this and whether or not it meets the common sense notion of a plant. The terms "contiguous" or "adjacent" are not defined by USEPA. Contiguous has a dictionary definition of being in actual contact; touching along a boundary or at a point. Adjacent has a dictionary definition of not distant; nearby; having a common endpoint or border.

   The closest well to the Battle Run Compressor Station is over 1 mile away, and the nearest compressor station is approximately 6 miles away. Once operational, the Battle Run Compressor Station will be able to gather gas from wells located approximately 10 miles away. Operations separated by these distances do not meet the common sense notion of a plant. Therefore, the properties in question are not considered to be on contiguous or adjacent property.

3. According to AMS, none of the wells in the area are under common control with the Battle Run Compressor Station. Battle Run is operated by AMS but is owned and controlled by a group of non-affiliated companies. Through proprietary agreements, AMS' operation of the Battle Run Compressor Station is controlled by the system owners. The ownership and control of the wells in the area may be distinct for each well and is not necessarily known by AMS. The owners and operators of the wells each make their own operational decisions about the wells independently and without any control by AMS. Furthermore, no well is dependent on the operation of Battle Run to function, nor is Battle Run dependent on any specific well to operate. While well site operations are affected by the operation of Battle Run, the owners and operators of each well have the ability to pipe the well to other compressor stations. However, since AMS does not own or operate any wells in the area, AMS does not control how a well is operated. AMS does operate and control other compressor stations in the area. From this analysis, AMS is not under common control with other wells in the area.

Because the facilities are not considered to be on contiguous or adjacent properties the emissions from the Battle Run Compressor Station should not be aggregated with other facilities in determining major source or PSD status.

MONITORING OF OPERATIONS

AMS will be required to perform the following monitoring associated with this permit application:

1. Monitor and record quantity of natural gas consumed for all engines, and combustion sources.
2. Monitor the carbon canister media and replace when required.
3. Monitor opacity from all fuel burning units.
4. Monitor the tanks to ensure that all vapors are sent to the vapor recovery unit.
5. Monitor the condensate truck loading to ensure that all vapors are sent to the carbon canisters.
6. Monitor the glycol dehydration units to ensure the emissions are controlled by a condenser and the non-condensables are recycled to the flame zone of the reboiler.
7. Monitor all applicable requirements of 40CFR60 Subpart JJJJ.

AMS will be required to perform the following recordkeeping associated with this modification application:

1. Maintain records of the amount of natural gas consumed in each combustion source.
2. 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
3. Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
4. Maintain records of the visible emission opacity tests conducted per the permit.
5. Maintain a record of all potential to emit (PTE) HAP calculations for the entire facility. These records shall include the natural gas compressor engines and ancillary equipment.
6. The records shall be maintained on site or in a readily available off-site location maintained by AMS for a period of five (5) years.

RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates AMS' Battle Run Compressor Station meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Ohio County location should be granted a 45CSR13 construction permit for their facility.

Jerry Williams, P.E.
Engineer

Date