



west virginia department of environmental protection

Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone 304/926-0475

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

January 14, 2016

CERTIFIED MAIL
91 7199 9991 7035 6692 5885

Barry Schatz
1615 Wynkoop Street
Denver, CO 80202

RE: Approved Registration G70-A
G70-A171
Antero Resources Corporation
Charlene Wellpad
Facility ID No. 085-00036

Dear Mr. Gray,

The Director has determined that the submitted Registration Application and proposed modification and operation of an oil and natural gas production facility demonstrates eligibility and compliance with the requirements, provisions, standards and conditions of General Permit G70-A and hereby grants General Permit registration authorizing the proposed activity.

General Permit G70-A can be accessed electronically at www.dep.wv.gov/daq/permitting/Pages/airgeneralpermit.aspx. Hard copies are available upon request by contacting Danielle Wentz at (304)926-0499 ext. 1193.

Please be aware of the actions required in Monitoring Requirements, Testing Requirements, Recordkeeping Requirements, and the Reporting Requirements.

Should you have any questions, please contact the undersigned engineer at (304)926-0499 ext. 1224 or David.J.Keatley@wv.gov.

Sincerely,



David Keatley
Permit Writer - NSR Permitting

Enclosures: Registration G70-A171

*West Virginia Department of Environmental Protection
Division of Air Quality*

*Earl Ray Tomblin
Governor*

*Randy C. Huffman
Cabinet Secretary*

**Class II General Permit
G70-A Registration Modification**



for the
Prevention and Control of Air Pollution in regard to the
Construction, Modification, Relocation, Administrative Update and
Operation of Oil and Natural Gas Production Facilities
Located at the Well Site

*The permittee identified at the facility listed below is authorized to
construct the stationary sources of air pollutants identified herein in accordance
with all terms and conditions of General Permit G70-A.*

G70-A171

Issued to:

**Antero Resources Corporation
Charlene Wellpad
085-00036**

A handwritten signature in blue ink, appearing to read 'William F. Durham', is written over a horizontal line.

*William F. Durham
Director*

Issued: January 14, 2016

This permitting action supersedes and replaces R13-3188.

Facility Location: near Pennsboro, Ritchie County, West Virginia
Mailing Address: 1615 Wynkoop Street
Denver, CO 80202
Facility Description: Natural Gas/Condensate Production Facility
NAICS Code: 211111
SIC Code: 1311
UTM Coordinates: 503.123 km Easting • 4,350.036 km Northing • Zone 17
Longitude Coordinate: -80.96367
Latitude Coordinate: 39.29978
Directions to Facility: From Clarksburg travel west on US-50 for approximately 36 miles. Turn right on WV-74N/ Pullman Drive and travel north for approximately 0.6 miles. Turn left on E Myles Avenue/Old US 50 E for 0.6 miles. Turn right onto Grey Street and travel for approximately 0.2 miles. Turn sharply on E Penn Avenue and take the second right on 1st Street. Travel approximately 0.1 mile and turn right onto WV-74 N/ Mountain Drive. Travel 0.9 miles and the facility is on the right.
Registration Type: Modification
Description of Change: Installation and operation of: one (1) 1.5-mmBtu/hr gas production unit (GPU) heater, eleven (11) 2.0-mmBtu/hr line heaters, and two (2) 12- mmBtu/hr enclosed combustors.

Subject to 40CFR60, Subpart OOOO? Yes, gas well affected facility.

Subject to 40CFR60, Subpart JJJJ? Yes, engine ENG001 is subject to this regulation and ENG001 is certified.

Subject to 40CFR63, Subpart ZZZZ? Yes, engine ENG001 is subject to this regulation, but all engines will demonstrate compliance through subpart JJJJ requirements.

Subject to 40CFR63, Subpart HH? No.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit or registration issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

The source is not subject to 45CSR30.

Permit Section Applicability for the Registrant

All registered facilities under General Permit G70-A are subject to Sections 1.0, 2.0, 3.0, and 4.0 of General Permit G70-A.

The following additional sections of General Permit G70-A apply to the registrant:

| | | |
|------------|--|-------------------------------------|
| Section 5 | Natural Gas Well Affected Facility | <input checked="" type="checkbox"/> |
| Section 6 | Storage Vessels* | <input checked="" type="checkbox"/> |
| Section 7 | Gas Production Units, In-Line Heaters, Heater Treaters, and Glycol Dehydration Reboilers | <input checked="" type="checkbox"/> |
| Section 8 | Pneumatic Controllers Affected Facility (NSPS, Subpart OOOO) | <input type="checkbox"/> |
| Section 9 | <i>Reserved</i> | <input type="checkbox"/> |
| Section 10 | Natural Gas-Fired Compressor Engine (s) (RICE)** | <input checked="" type="checkbox"/> |
| Section 11 | Tank Truck Loading Facility*** | <input checked="" type="checkbox"/> |
| Section 12 | Standards of Performance for Storage Vessel Affected Facilities (NSPS, Subpart OOOO) | <input type="checkbox"/> |
| Section 13 | Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (NSPS, Subpart JJJJ) | <input checked="" type="checkbox"/> |
| Section 14 | Control Devices not subject to NSPS, Subpart OOOO | <input checked="" type="checkbox"/> |
| Section 15 | National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40CFR63, Subpart ZZZZ) | <input checked="" type="checkbox"/> |
| Section 16 | Glycol Dehydration Units | <input type="checkbox"/> |
| Section 17 | Dehydration Units With Exemption from NESHAP Standard, Subpart HH § 63.764(d) (40CFR63, Subpart HH) | <input type="checkbox"/> |
| Section 18 | Dehydration Units Subject to NESHAP Standard, Subpart HH and Not Located Within an UA/UC (40CFR63, Subpart HH) | <input type="checkbox"/> |
| Section 19 | Dehydration Units Subject to NESHAP Standard, Subpart HH and Located Within an UA/UC (40CFR63, Subpart HH) | <input type="checkbox"/> |

* The registrant may also be subject to the applicable control device requirements of Section 12 if the registrant is subject to the NSPS, Subpart OOOO control requirements or may be subject to the control device requirements of Section 14.

** The registrant may also be subject to the applicable RICE requirements of Section 13 and/or Section 15.

*** The registrant may also be subject to the applicable control device requirements of Section 14.

1.0 Emission Units Table

| Emission Unit ID | Emission Point ID | Emission Unit Description (Mfg., Model, Serial No., Engine type 2SLB, 4SLB, 4SRB, etc.) | Control Device ID | Year Installed / Modified | Max. Design Capacity | Design Capacity Unit of Measure | G70-A Applicable Sections |
|--|---------------------------|---|---------------------------|---------------------------|--|---------------------------------|---------------------------|
| EU-H001 Through EU-H011 | EP-H001 Through EP-H011 | GPU Heaters | N/A | 2014 H011, 2016 | 1.5 (each) | MMBtu/hr | 7 |
| EU-LH001 Through EU-LH011 | EP-LH001 Through EP-LH011 | Line Heaters | N/A | 2016 | 2.0 (each) | MMBtu/hr | 7 |
| ENG001 | EP-ENG001 | Compressor Engine Kubota DG972-E2 | None | 2014 | 24 | bhp | 10, 13, 15 |
| TANKCOND 001-010 | EC001 | Ten (10) Condensate Tanks | EC001 Or EC002 | 2016 | 400 (each) | BBL | 6 |
| TANKPW 001-002 | EC001 | Two (2) Produced Water Tanks | EC001 Or EC002 | 2016 | 400 (each) | BBL | 6 |
| EU-L001 and EU-L002 | EP-L001 And EP-L002 | Condensate and Produced Water Truck Loading | None | 2016 | 18,396,000 and 36,792,000 respectively | gallons/year | 11, 14 |
| Control Devices | | | | | | | |
| Control Device ID | Control Efficiency % | Control Device Description (Mfg, Model) | Year Installed / Modified | Max. Design Capacity | Design Capacity Unit of Measure | G-70A Applicable Sections | |
| EC001 | 98% | Cimarron 48" High Volume ECD Combustor (Controlling TANKCOND and TANKPW) | 2015 | 12 | MMBtu/hr | 12, 14 | |
| EC002 | 98% | Cimarron 48" High Volume ECD Combustor (Controlling TANKCOND and TANKPW) | 2016 | 12 | MMBtu/hr | 12, 14 | |
| Emission Reduction Systems | | | | | | Yes or No | G-70A Applicable Sections |
| Was a vapor recovery system (VRU) used to determine emission limits? | | | | | | No | - |
| Was a low pressure tower(s) used to determine emission limits? | | | | | | No | - |

2.0 Oil and Natural Gas Wells Table

| API number | API number | API number |
|------------------|------------------|------------------|
| 047-085-10146-00 | 047-085-10080-00 | 047-085-10185-00 |
| 047-085-10157-00 | 047-085-10165-00 | 047-085-10221-00 |
| 047-085-10060-00 | 047-085-10213-00 | |

3.0 Emission Limitations

| Emission Unit ID | Emission Point ID | Emission Unit Description | Regulated Pollutant | Maximum Potential Emissions | |
|-------------------------------------|---|---|----------------------------|-----------------------------|--------------|
| | | | | Hourly (lb/hr) | Annual (tpy) |
| ENG001 | EP-ENG001 | Kubota DG972-E2 Compressor Engine | Nitrogen Oxides | 0.32 | 1.39 |
| | | | Carbon Monoxide | 5.65 | 24.73 |
| | | | Volatile Organic Compounds | 0.01 | 0.03 |
| TANKCOND 001-006 and TANKPW 001-002 | EC001 And EC002 (Emissions per each) | Cimarron 48" High Volume ECD Combustor (Controlling Condensate Tanks and Produced Water Tanks) | Nitrogen Oxides | 0.44 | 1.94 |
| | | | Carbon Dioxide | 0.31 | 1.37 |
| | | | Volatile Organic Compounds | 7.45 | 32.65 |
| EU-H001 Through EU-H0011 | EP-H001 Through EP-H011 | GPU Heaters (emission limits per each) | Nitrogen Oxides | 0.12 | 0.53 |
| | | | Carbon Monoxide | 0.10 | 0.44 |
| EU-H001 Through EU-H0011 | EP-H001 Through EP-H011 | Line Heaters (emission limits per each) | Nitrogen Oxides | 0.16 | 0.70 |
| | | | Carbon Monoxide | 0.13 | 0.59 |

4.0 Throughput Limitations

Throughput limits are on a 12-month rolling total basis.

| Emission Unit ID | Emission Point ID | Emission Unit Description | Annual Throughput Limit |
|------------------|-------------------|------------------------------|-------------------------|
| EU-L001 | EP-L001 | Condensate Truck Loading | 18,396,000 gallons/year |
| EU-L002 | EP-L002 | Produced Water Truck Loading | 36,792,000 gallons/year |

5.0 Reciprocating Internal Combustion Engines (R.I.C.E.) Information

| Emission Unit ID | Engine Manufacturing Date | Subject to 40CFR60, Subpart JJJJ? | Subject to 40CFR63, Subpart ZZZZ? | Subject to Sections 10.1.4 / 10.2.1 (Catalytic Reduction Device) |
|------------------|---------------------------|-----------------------------------|-----------------------------------|--|
| ENG001 | 2013 | Yes | Yes | No |