

AIR QUALITY PERMIT NOTICE

Notice of Intent to Approve

On August 10, 2015, Williams Ohio Valley Midstream, LLC applied to the WV Department of Environmental Protection, Division of Air Quality (DAQ) for a permit to Construct their Grenadier Dehydrator facility located 24751 Mountaineer Highway, Littleton, Wetzel County, WV at latitude 39.6535 and longitude -80.5361. A preliminary evaluation has determined that all State and Federal air quality requirements will be met by the proposed facility. The DAQ is providing notice to the public of its preliminary determination to issue the permit as R13-3276.

The potential emissions will be authorized by this permit action: Particulate Matter less than 10 microns, 0.11 tons per year (TPY); Particulate Matter, 0.11 TPY; Sulfur Dioxide, <0.01 TPY; Oxides of Nitrogen, 1.50 TPY; Carbon Monoxide, 1.26 TPY; Volatile Organic Compounds, 95.21 TPY.

Written comments or requests for a public meeting must be received by the DAQ before 5:00 p.m. on **KEYBOARD**(Day of Week, Month, Day, Year). A public meeting may be held if the Director of the DAQ determines that significant public interest has been expressed, in writing, or when the Director deems it appropriate.

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

Caraline Griffith
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304
Telephone: 304/926-0499, ext. 1258
FAX: 304/926-0478

Additional information, including copies of the draft permit, application and all other supporting materials relevant to the permit decision may be obtained by contacting the engineer listed above. The draft permit and engineering evaluation can be downloaded at:

www.dep.wv.gov/daq/Pages/NSRPermitsforReview.aspx

Griffith, Caraline F

From: Griffith, Caraline F
Sent: Monday, December 07, 2015 11:37 AM
To: don.wicburg@williams.com
Cc: McKeone, Beverly D; 'Zawaski, Danell'
Subject: WV DAQ NSR Permit Application Complete for Williams Ohio Valley Midstream, LLC - Grenadier Station

**RE: Application Status: Complete
Williams Ohio Valley Midstream, LLC – Grenadier Station
Permit Application R13-3276
Plant ID No. 103-00075**

Mr. Wicburg:

Your application for a Construction permit for a dehydration station was received by this Division on October 15, 2015 and assigned to the writer for review. Upon review of said application, it has been determined that the application is complete and, therefore, the statutory review period commenced on December 7, 2015.

In the case of this application, the agency believes it will take approximately 90 days to make a final permit determination.

This determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit determination.

Should you have any questions, please contact [Caraline Griffith](#) at (304) 926-0499 ext. 1258 or reply to this email.

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

Griffith, Caraline F

From: Griffith, Caraline F
Sent: Monday, December 07, 2015 12:18 PM
To: 'Zawaski, Danell'
Cc: 'Baldauff, Erika'
Subject: RE: Williams Ohio Valley Midstream, LLC - Grenadier Stations - Draft Permit

Hi Danell,

I wanted to formally address your comments so that all bases are covered, to be as transparent as possible, and to let you know the updates made.

Comment 1: Change "a contractor/absorber tower" to "two contractors/absorber towers."

Response: This correction was made seeing that there are in fact two contractors/absorber towers being installed.

Comment 2: Add an addendum to the Emission Units table authorizing the installation and construction of only two dehydration units at a time.

Response: Seeing that this would be most beneficial to the permit for clarity and for this site to remain a minor source site, this addendum was added.

Comment 3: In sections 5.1.2., 5.1.4., and 5.1.6. the phrase "from each from the" was requested to be changed to "from the."

Response: This was a typographical error in each sentence, and thus this change was made.

Comment 4: In the table in section 5.1.2. the TPY of VOC was requested to be changed from 29.27 to 6.78.

Response: This was a typographical error that was made, and thus this was corrected.

Comment 5: In section 5.1.11., "All vapors from the still vents (DSV-01, DSV-02, DSV-02alt) shall be sent to a respective condenser and operated to achieve minimum 95% control efficiency" was requested to be changed to "All vapors from the still vent (DSV-02) shall be sent to a respective condenser and operated to achieve minimum 95% control efficiency."

Response: Seeing that DSV-02 is the only unit with a BTEX Eliminator, this change was made.

Comment 6: A Section 5.1.13. was added stating: "Only two dehydration units shall be constructed and operated at the facility in order to maintain minor source status."

Response: Seeing that this will be beneficial to the permit and facility, this statement was added.

Comment 7: Section 5.2.1. was suggested to be reworded from "The permittee shall monitor the throughput of dry natural gas fed to the dehydration system on a monthly basis for each glycol dehydration unit (DSV-01, DSV-02, DSV-02alt)." to "The permittee shall monitor the throughput of dry natural gas fed to each dehydration system (DSV-01, DSV-02, DSV-02alt) on a monthly basis."

Response: Seeing that this sentence structure does not change the meaning of the permit requirement and in the opinion of the writer flows a bit more naturally, this change was made.

Comment 8: In section 6.1.2. the word "unit" was suggested to be inserted in the phrase "dehydration reboilers" to read "dehydration unit reboilers."

Response: This change does not affect the overall meaning of the permit requirement, but emphasizes that this requirement is for each unit, not the collection of reboilers altogether. This change was implemented.

Comment 9: In the tables in sections 6.1.3., 6.1.5., 6.1.7. the words "Nitrous Oxide" was recommended to be changed to "Nitrogen Oxides."

Response: Seeing that this is the correct phrasing to be used, this change was made.

Comment: In section 6.1.6. and 6.1.8. the phrases "To demonstrate compliance with Section 6.1.5., the quantity of natural gas that shall be consumed in each of the 2.00 MMBTU/hr Reboilers (RBV-02) shall not exceed 2,174 cubic feet per hour and 19.04×10^6 cubic feet per year." and "To demonstrate compliance with Section 6.1.7., the quantity of natural gas that shall be consumed in each of the 1.00 MMBTU/hr Reboilers (RBV-02alt) shall not exceed 1,087 cubic feet per hour and 9.52×10^6 cubic feet per year." were suggested to be changed to "To demonstrate compliance with Section 6.1.5., the quantity of natural gas that shall be consumed in the 2.00 MMBTU/hr Reboiler (RBV-02) shall not exceed 2,174 cubic feet per hour and 19.04×10^6 cubic feet per year." and "To demonstrate compliance with Section 6.1.7., the quantity of natural gas that shall be consumed in the 1.00 MMBTU/hr Reboiler (RBV-02alt) shall not exceed 1,087 cubic feet per hour and 9.52×10^6 cubic feet per year."

Response: Seeing that this was a small typographical error, this changes were made.

Thank you for taking the time to look over it!

Best regards,
Caraline

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

From: Griffith, Caraline F
Sent: Wednesday, November 25, 2015 1:33 PM
To: 'Zawaski, Danell'
Cc: Baldauff, Erika
Subject: RE: Williams Ohio Valley Midstream, LLC - Grenadier Stations - Draft Permit

Wonderful! That will be perfect. Thank you!

Caraline

From: Zawaski, Danell [<mailto:Danell.Zawaski@williams.com>]
Sent: Wednesday, November 25, 2015 1:29 PM
To: Griffith, Caraline F
Cc: Baldauff, Erika
Subject: RE: Williams Ohio Valley Midstream, LLC - Grenadier Stations - Draft Permit

Sorry about that. See attached.

I just talked to the newspaper and they did not send the legal to me until today because they ran it for 2 weeks. I have no idea why they did that. But I should have it by early next week. Sorry for the delay.

Regards,
Danell

R. Danell Zawaski, PE

Environmental Specialist
NEGP Environmental Services
304-843-3133 Moundsville
412/787-4259 Pittsburgh
505/787-7926 cell
412/787-6002 fax
Danell.zawaski@williams.com

From: Griffith, Caraline F [<mailto:Caraline.F.Griffith@wv.gov>]
Sent: Wednesday, November 25, 2015 1:26 PM
To: Zawaski, Danell <Danell.Zawaski@williams.com>
Cc: Baldauff, Erika <Erika.Baldauff@williams.com>
Subject: RE: Williams Ohio Valley Midstream, LLC - Grenadier Stations - Draft Permit

Hi Danell,

Thank you so much. I believe you may have not attached them. Do you care to resend it? Also, I hope you have a wonderful Thanksgiving this week!

Thank you again,
Caraline

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

From: Zawaski, Danell [<mailto:Danell.Zawaski@williams.com>]
Sent: Wednesday, November 25, 2015 1:21 PM
To: Griffith, Caraline F
Cc: Baldauff, Erika
Subject: RE: Williams Ohio Valley Midstream, LLC - Grenadier Stations - Draft Permit

Hi Caraline,
Here are my comments on the pre-draft for Grenadier. I am keeping my eye out for the legal but I have not seen it.

Regards,

Danell

R. Danell Zawaski, PE

Environmental Specialist
NEGP Environmental Services
304-843-3133 Moundsville
412/787-4259 Pittsburgh
505/787-7926 cell
412/787-6002 fax
Danell.zawaski@williams.com

From: Griffith, Caraline F [<mailto:Caraline.F.Griffith@wv.gov>]
Sent: Tuesday, November 10, 2015 2:02 PM
To: Zawaski, Danell <Danell.Zawaski@williams.com>
Subject: Williams Ohio Valley Midestream, LLC - Grenadier Stations - Draft Permit

Hi Danell!

Here is the draft permit and evaluation for the Grenadier Station. Let me know if you need anything changed!

Thank you so much!

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

Griffith, Caraline F

From: Griffith, Caraline F
Sent: Monday, December 07, 2015 11:17 AM
To: Hammell, Douglas N
Cc: Carey, Angela E
Subject: RE: 11-17-15 insp Williams Grenadier, 103-75

Hi Doug,

They won't be aggregated because those two sites don't meet the three pronged method.

From: Hammell, Douglas N
Sent: Monday, December 07, 2015 11:11 AM
To: Griffith, Caraline F
Cc: Carey, Angela E
Subject: 11-17-15 insp Williams Grenadier, 103-75

Hi Caraline, FCE at adjacent Stat Knob Fork 103-45 on 11-17-15. Williams equip on 11-17 matched permitted equip. No need for Angie to ck again for new permit. Can sites still be aggregated at this point?

-----Original Message-----

From: Griffith, Caraline F
Sent: Monday, December 07, 2015 10:07 AM
To: Hammell, Douglas N
Cc: Carey, Angela E
Subject: Site Inspection Williams Grenadier, 103-75, R13-3276

Hi Doug! I was looking at the site inspection record and had previously spoken to Angie Carey about a month ago about a site inspection at the Grenadier Station. It looks like you were just up there though and was wondering if everything looked alright (no leaks, one Dehy/Still Vent/Flash Tank one site, etc.). I saw you put no odors detected so that's a plus! They're wanting to install a new Dehydrator unit/Still vent/flash tank. I've copied Angie on this email so she's in the loop, too. If you think a full onsite needs to be done for it, let me know that way I can still wait on Angie's inspection. If not, I'll go ahead with the permit using this inspection information. I thank you both for everything you do!

Caraline Griffith
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Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

Griffith, Caraline F

From: Griffith, Caraline F
Sent: Monday, November 30, 2015 1:17 PM
To: 'Zawaski, Danell'
Cc: Duke, Dave; Baldauff, Erika
Subject: RE: Message from "PITT2FL-PRINTRM-C3502"

Hi Danell,

Wonderful! I'll let you know when I receive it and I will continue on with your permit application and get it out as soon as possible.

Best regards,
Caraline

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

-----Original Message-----

From: Zawaski, Danell [<mailto:Danell.Zawaski@williams.com>]
Sent: Monday, November 30, 2015 1:00 PM
To: Griffith, Caraline F
Cc: Duke, Dave; Baldauff, Erika
Subject: FW: Message from "PITT2FL-PRINTRM-C3502"

Hi Caraline,
Attached is the legal notice for Grenadier. It is on its way to you.

Regards,
Danell

R. Danell Zawaski, PE
Environmental Specialist
NEGP Environmental Services
304-843-3133 Moundsville
412/787-4259 Pittsburgh
505/787-7926 cell
412/787-6002 fax
Danell.zawaski@williams.com

-----Original Message-----

From: [PITT2FL PRINTRM C3502@williams.com](mailto:PITT2FL_PRINTRM_C3502@williams.com) [[mailto:PITT2FL PRINTRM C3502@williams.com](mailto:PITT2FL_PRINTRM_C3502@williams.com)]

Sent: Monday, November 30, 2015 1:53 PM

To: Zawaski, Danell <Danell.Zawaski@williams.com>

Subject: Message from "PITT2FL-PRINTRM-C3502"

This E-mail was sent from "PITT2FL-PRINTRM-C3502" (Aficio MP C3502).

Scan Date: 11.30.2015 12:53:03 (-0600)

Queries to: [PITT2FL PRINTRM C3502@williams.com](mailto:PITT2FL_PRINTRM_C3502@williams.com)

Griffith, Caraline F

From: Griffith, Caraline F
Sent: Tuesday, November 17, 2015 8:22 AM
To: don.wicburg@williams.com
Cc: McKeone, Beverly D; 'Zawaski, Danell'
Subject: WV DAQ Permit Application Incomplete for Williams Ohio Valley Midstream, LLC - Grenadier Station

**RE: Application Status: Incomplete
Williams Ohio Valley Midstream, LLC – Grenadier Station
Permit Application No. R13-3276
Plant ID No. 103-00075**

Mr. Wicburg:

Your application for a Construction permit for a dehydrator station was received by this Division on October 15, 2015 and assigned to the writer for review. Upon initial review of said application, it has been determined that the application as submitted is incomplete based on the following items:

1. No Legal Affidavit Submitted

Please address the above deficiencies in writing within fifteen (15) days of the receipt of this email. Application review will not commence until the application has been deemed to be technically complete. Failure to respond to this request in a timely manner may result in the denial of the application.

Should you have any questions, please contact Caraline Griffith at (304) 926-0499 ext.1258 or reply to this email.

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

Griffith, Caraline F

From: Zawaski, Danell <Danell.Zawaski@williams.com>
Sent: Tuesday, November 10, 2015 3:40 PM
To: Griffith, Caraline F
Subject: RE: Williams Ohio Valley Midestream, LLC - Grenadier Stations - Draft Permit

Thank you

R. Danell Zawaski, PE

Environmental Specialist
NEGP Environmental Services
304-843-3133 Moundsville
412/787-4259 Pittsburgh
505/787-7926 cell
412/787-6002 fax
Danell.zawaski@williams.com

From: Griffith, Caraline F [<mailto:Caraline.F.Griffith@wv.gov>]
Sent: Tuesday, November 10, 2015 3:40 PM
To: Zawaski, Danell <Danell.Zawaski@williams.com>
Subject: RE: Williams Ohio Valley Midestream; LLC - Grenadier Stations - Draft Permit

There you go! Sorry about that. I didn't even realize.

Thanks!

Caraline

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

From: Zawaski, Danell [<mailto:Danell.Zawaski@williams.com>]
Sent: Tuesday, November 10, 2015 2:27 PM
To: Griffith, Caraline F
Subject: RE: Williams Ohio Valley Midestream, LLC - Grenadier Stations - Draft Permit

Can I get the engineering eval in pdf or word? Sorry, we don't have a way to convert.

Regards,

Danell

R. Danell Zawaski, PE

Environmental Specialist
NEGP Environmental Services
304-843-3133 Moundsville
412/787-4259 Pittsburgh
505/787-7926 cell
412/787-6002 fax
Danell.zawaski@williams.com

From: Griffith, Caraline F [<mailto:Caraline.F.Griffith@wv.gov>]
Sent: Tuesday, November 10, 2015 2:02 PM
To: Zawaski, Danell <Danell.Zawaski@williams.com>
Subject: Williams Ohio Valley Midstream, LLC - Grenadier Stations - Draft Permit

Hi Danell!

Here is the draft permit and evaluation for the Grenadier Station. Let me know if you need anything changed!

Thank you so much!

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

Correspondence Log

Date / Time	Description		
November 10, 2015 1:30 pm	<input checked="" type="checkbox"/> telephone <input type="checkbox"/> fax <input type="checkbox"/> letter <input type="checkbox"/> visit	From: Danell Zawaski To: Caraline Griffith	Company: Williams Ohio Valley Midstream, LLC Telephone: 712-787-4259 Fax:
<p>This conversation was answering some questions regarding the status of the Grenadier Permit Application. I notified her at this time that the application would be deemed incomplete due to not receiving the affidavit. I also informed her that the way I wrote this permit was very similar to the way I had previously written the McClain dehydrator station, also owned by Williams. She asked, in the interest of saving time later, if she could review the pre-draft to see if there was anything that might need to be changed when it goes to notice from the DAQ. I agreed, and sent her a copy of the permit and evaluation that would go to notice.</p> <p>*Email correspondence was exchanged and the changes she suggested were all clerical/typographical in nature, but they were addressed formally and are submitted with the email correspondence.</p>			

Griffith, Caraline F

From: Griffith, Caraline F
Sent: Wednesday, November 04, 2015 3:55 PM
To: Carey, Angela E
Subject: RE: Site Inspection - Williams Ohio Valley Midstream, LLC - Grenadier Station - Wetzel County

Hi Angie,

That would be fabulous! I really appreciate that. I haven't deemed in the application complete yet or anything, so we have a little bit, but thank you so much!

Best,
Caraline

From: Carey, Angela E
Sent: Wednesday, November 04, 2015 3:53 PM
To: Griffith, Caraline F
Subject: RE: Site Inspection - Williams Ohio Valley Midstream, LLC - Grenadier Station - Wetzel County

Hi Caraline,

I actually have not done an inspection at the Grenadier Station, yet. I just checked Airtrax, and I think Robert Keatley added it to my list yesterday, with a target date of Dec. 21, 2014. I can let you know when I do perform an inspection and what I find, if that helps!

Thanks,
Angie

From: Griffith, Caraline F
Sent: Wednesday, November 04, 2015 3:38 PM
To: Carey, Angela E
Subject: Site Inspection - Williams Ohio Valley Midstream, LLC - Grenadier Station - Wetzel County

Hi Angela,

I hope you are doing well! I know you are at the Northern Panhandle Regional Office and are close to this station and it looks like you did an inspection there on December 21, 2014. It is for a Dehydration Station located near Littleton, WV in Wetzel County, ID# 103-00075, R13-3276. Could you tell me if everything looked good, or do you have a little write up saying they will be in compliance and the site looks like a good site for operations?

I really appreciate it and hope you have a wonderful evening!

Best regards,

Caraline Griffith

Dept. of Environmental Protection
Division of Air Quality

601 57th Street SE
Charleston, WV 25304
Engineer Trainee
Caraline.F.Griffith@wv.gov
304-926-0499 x1258

Adkins, Sandra K

From: Adkins, Sandra K
Sent: Thursday, October 15, 2015 2:21 PM
To: 'don.wicburg@williams.com'; 'danell.zawaski@williams.com'
Cc: McKeone, Beverly D; Griffith, Caraline F
Subject: WV DAQ Permit Application Status for Williams Ohio Valley Midstream, LLC; Grenadier Station

**RE: Application Status
Williams Ohio Valley Midstream, LLC
Grenadier Station
Plant ID No. 103-00075
Application No. R13-3276**

Mr. Wicburg,

Your application for a construction permit for the Grenadier Station was received by this Division on October 15, 2015, and was assigned to Caraline Griffith. The following item was not included in the initial application submittal:

Original affidavit for Class I legal advertisement not submitted.

This item is necessary for the assigned permit writer to continue the 30-day completeness review.

Within 30 days, you should receive a letter from Caraline stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

Should you have any questions, please contact the assigned engineer, Caraline Griffith, at 304-926-0499, extension 1258.



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.: R13-3276
Plant ID No.: 103-00075
Applicant: Williams Ohio Valley Midstream
Facility Name: Grenadier Station
Location: Littleton, Wetzel County, WV
SIC Code: 1389 (Oil and Gas Field Services, N.E.C.)
NAICS Code: 213112 (Support Activities for Oil and Gas Operations)
Application Type: Construction
Received Date: October 15, 2015
Engineer Assigned: Caraline Griffith
Fee Amount: \$3,500
Date Received: October 15, 2015
Complete Date: December 7, 2015
Due Date: March 7, 2016
Applicant Ad Date: November 10, 2015
Newspaper: Wetzel Chronicle
UTM's: Easting: 539.80 km Northing: 4,389.40 km Zone: 17S
Description: Construction permit for a new dehydrator station. The equipment at the site will be one (1) 65.0 MMscfd Tri-Ethylene Glycol (TEG) Dehydrator comprised of one TEG Dehydrator Flash Tank (DFT-01)(1E) and one TEG Dehydrator Regenerator/Still Vent (DSV-01)(2E), and one 1.50 MMBtu/hr natural gas fired Reboiler (RBV-01)(3E); one (1) 100.0 MMscfd Tri-Ethylene Glycol (TEG) Dehydrator comprised of one TEG Dehydrator Flash Tank (DFT-02)(4E) and one TEG Dehydrator Regenerator/Still Vent (DSV-02)(5E), and one 2.00 MMBtu/hr natural gas fired Reboiler (RBV-02)(6E). There is also an option to install, instead of Dehydrator 02, a 50 mmscfd Dehydrator 03.

DESCRIPTION OF PROCESS

Project Overview:

Williams Ohio Valley Midstream, LLC (OVM) has submitted an application for a 45CSR13 New Source Review (NSR) Construction Permit for the proposed Grenadier Dehydration

Station, located approximately 3.3 miles south-southwest of Littleton, in Wetzel County, West Virginia. The facility receives natural gas from local production wells then dehydrates the gas for delivery to a gathering pipeline.

The application requests authorization for continued operation of the facility, as follows:

- One (1) Modified 65.0 Mmscfd TEG Dehydrator 01 comprised of:
 - One (1) Flash Tank with greater than or equal to 50% Off-Gas Recycle (DFT-01/1E)
 - One (1) Regenerator/Still Vent (DSV-01/2E)
 - One (1) 1.50 MMBtu/hr Natural Gas Fired Reboiler (RBV-01/3E)

- One (1) New 100.0 Mmscfd TEG Dehydrator 02 comprised of:
 - One (1) Flash Tank with greater than or equal to 50% Off-Gas Recycle (DFT-02/4E)
 - One (1) Regenerator/Still Vent with 95% BTEX Skid (BTWEX-01) (DSV-02/5E)
 - One (1) 2.00 MMBtu/hr Natural Gas Fired Reboiler (RBV-02/6E)

OR

- One (1) New 50.0 Mmscfd TEG Dehydrator 02 ALTERNATIVE comprised of:
 - One (1) Flash Tank with greater than or equal to 50% Off-Gas Recycle (DFT-03/7E)
 - One (1) Regenerator/Still Vent (DSV-03/8E)
 - One (1) 1.00 MMBtu/hr Natural Gas Fired Reboiler (RBV-03/9E)

- Piping Activities
- Piping and Equipment Fugitives - Gas

The applicant is undecided on which piece of equipment (DSV-02 OR DSV-03) will be installed on site at the time of the application. The permit is written for either one or the other to be installed, but not both. The applicant will inform the DAQ of their decision once construction has begun.

Dehydrators:

Two (2) Tri-Ethylene Glycol (TEG) Dehydrators will be utilized at the facility. Each dehydrator is comprised of a Contactor/Absorber Tower (no vented emissions), Flash Tank, and Regenerator/Still Vent.

The TEG dehydrators are used to remove water vapor from the inlet wet gas stream to meet pipeline specifications. In the dehydration process, the wet inlet gas stream flows through a contactor tower where the gas is contacted with lean glycol. The lean glycol absorbs the water in the gas stream and becomes rich glycol laden with water and trace amounts of hydrocarbons.

The rich glycol is then routed to a flash tank where the glycol pressure is reduced to liberate the lighter end hydrocarbons (primarily methane, but also significant quantities of VOCs). A minimum of 50% of the flash tank off-gas is recycled as fuel in the reboilers.

Following the flash tank, the rich glycol is then routed to the regenerator/still where it is boiled to drive off the water vapor and any remaining hydrocarbons. Once boiled, the glycol is returned to a lean state and used again in the process.

The off-gases from the 100 Mmscfd regenerator/still (DSV-02/5E) pass through a BTWEX skid/condenser (BTEX-01) to remove the VOC/HAP prior to discharge to the atmosphere. The manufacturer of the BTEX skid guarantees a minimum of 95% VOC removal efficiency.

Reboilers:

Reboilers are utilized to supply heat for the regenerator/stills. The reboilers are fueled by primarily the flash tank off-gas, with supplemental natural gas as requisite.

Maintenance Emissions:

Pigging is routinely conducted to clear pipelines. Associated with pigging events is a small amount of natural gas released to the atmosphere when the pig traps are opened to the atmosphere. Pneumatic pumps used to inject methanol and other chemicals into flow lines are powered by pressurized natural gas. As part of the normal operation, these devices vent the natural gas to the atmosphere.

Piping and Equipment Fugitive Emissions:

Piping and process equipment generate leaks from different component types (connectors, valves, pumps, etc.) in gas-vapor service.

Emission Units Table:

Emission Unit ID	Emission Point ID	Description	Installed	Capacity	Type of Change	Control
DFT-01	1E	65.0 Mmscfd Dehydrator - Flash Tank	2016	5.0 MMscfd	New	NA
DSV-01	2E	65.0 Mmscfd Dehydrator - Regenerator/Still Vent	2016	5.0 MMscfd	New	NA
RBV-01	3E	1.50 MMBtu/hr Reboiler Vent	2016	0.22 MMBtu/hr	New	NA
DFT-02	4E	100.0 Mmscfd Dehydrator - Flash Tank	2016	5.0 MMscfd	New	NA

DSV-02	5E	100.0 Mmscfd Dehydrator - Regenerator/Still Vent	2016	5.0 MMscfd	New	NA
RBV-02	6E	2.00 MMBtu/hr Reboiler Vent	2016	0.22 MMBtu/hr	New	NA
DFT-03	7E	50.0 Mmscfd Dehydrator - Flash Tank	TBD	5.0 MMscfd	New/Alternative	NA
DSV-03	8E	50.0 Mmscfd Dehydrator - Regenerator/Still Vent	TBD	5.0 MMscfd	New/Alternative	NA
RBV-03	9E	1.00 MMBtu/hr Reboiler Vent	TBD	0.22 MMBtu/hr	New/Alternative	NA

SITE INSPECTION

On November 17, 2015 Douglas Hammell of the DAQ's Compliance and Enforcement Section inspected the site. There was one dehydrator working on site. The site received a rating of 30 for the visit. No odors or leaks were detected.

Directions from Littleton, WV:

Head Northwest on US-250 (Hornet HWY) for approximately 1.1 miles. Turn left onto Sugar Run Road for about 4.5 miles. Turn right onto WV-07 for about 1.0 mile. The entrance to the site is on the right.

ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

New potential emission calculations were reviewed and verified by the writer. Emissions were calculated with the method provided in the emissions summary table. As needed, additional explanation follows. The TEG dehydration potential emissions include a 20% contingency that has been added to the GRI-GLYCalc model results [DFT-01, DSV-01] to account for potential future changes in gas quality. The Reboiler (RBV-01) emissions estimates were calculated using AP-42, Chapter 1.4-3. The emissions were calculated similarly for Dehy 2 and Dehy 3. Only Dehy 2 OR Dehy 3 will be installed.

Emissions Summary Table: Dehydrator 01

Emission Unit ID	Emission Point ID	Control Device	Regulated Pollutant	Controlled Potential Emissions		Calculation Method
				lb/hr	tpy	
DFT-01	1E	None	VOC	6.68	29.27	GlyCalc
			n-Hexane	0.04	0.17	GlyCalc
			Benzene	0.01	0.06	GlyCalc
			Toluene	0.02	0.09	GlyCalc
			Ethylbenzene	<0.01	0.01	GlyCalc
			Xylenes	<0.01	0.01	GlyCalc
			Total HAP	0.08	0.35	GlyCalc
			CO ₂ e	1,903	8,334	40CFR98
DSV-01	2E	None	VOC	1.55	6.78	GlyCalc
			n-Hexane	0.02	0.07	GlyCalc
			Benzene	0.13	0.59	GlyCalc
			Toluene	0.31	1.35	GlyCalc
			Ethylbenzene	0.05	0.24	GlyCalc
			Xylenes	0.08	0.34	GlyCalc
			Total HAP	0.59	2.58	GlyCalc
			CO ₂ e	25	109	40CFR98
RBV-01	3E	None	NO _x	0.15	0.64	AP-42
			CO	0.12	0.54	AP-42
			VOC	0.01	0.04	AP-42
			SO ₂	<0.01	<0.01	AP-42
			PM ₁₀ /PM _{2.5}	0.01	0.05	AP-42
			Formaldehyde	<0.01	<0.01	AP-42
			n-Hexane	<0.01	0.01	AP-42
			Benzene	<0.01	<0.01	AP-42
			Toluene	<0.01	<0.01	AP-42
			Total HAP	<0.01	0.01	AP-42
			CO ₂ e	178	778	40CFR98

Emissions Summary Table: Dehydrator 02

Emission Unit ID	Emission Point ID	Control Device	Regulated Pollutant	Controlled Potential Emissions		Calculation Method
				lb/hr	tpy	
DFT-02	4E	None	VOC	13.33	58.39	GlyCalc
			n-Hexane	0.08	0.35	GlyCalc
			Benzene	0.03	0.12	GlyCalc
			Toluene	0.04	0.18	GlyCalc
			Ethylbenzene	<0.01	0.02	GlyCalc
			Xylenes	<0.01	0.02	GlyCalc
			Total HAP	0.16	0.69	GlyCalc
			CO ₂ e	3,789	16,598	40CFR98
DSV-02	5E	None	VOC	0.16	0.68	GlyCalc
			n-Hexane	<0.01	0.01	GlyCalc
			Benzene	0.01	0.06	GlyCalc
			Toluene	0.03	0.13	GlyCalc
			Ethylbenzene	0.01	0.02	GlyCalc
			Xylenes	0.01	0.03	GlyCalc
			Total HAP	0.06	0.25	GlyCalc
			CO ₂ e	3	11	40CFR98
RBV-02	6E	None	NO _x	0.20	0.86	AP-42
			CO	0.16	0.72	AP-42
			VOC	0.01	0.05	AP-42
			SO ₂	<0.01	0.01	AP-42
			PM ₁₀ /PM _{2.5}	0.01	0.07	AP-42
			Formaldehyde	<0.01	<0.01	AP-42
			n-Hexane	<0.01	0.02	AP-42
			Benzene	<0.01	<0.01	AP-42
			Toluene	<0.01	<0.01	AP-42
			Total HAP	<0.01	0.02	AP-42
			CO ₂ e	237	1,037	40CFR98

Emissions Summary Table: Dehydrator 03

Emission Unit ID	Emission Point ID	Control Device	Regulated Pollutant	Controlled Potential Emissions		Calculation Method
				lb/hr	tpy	
DFT-03	7E	None	VOC	6.67	29.20	GlyCalc
			n-Hexane	0.04	0.17	GlyCalc
			Benzene	0.01	0.06	GlyCalc
			Toluene	0.02	0.09	GlyCalc
			Ethylbenzene	<0.01	0.01	GlyCalc
			Xylenes	<0.01	0.01	GlyCalc
			Total HAP	0.08	0.34	GlyCalc
			CO ₂ e	1,895	8,299	40CFR98
DSV-03	8E	None	VOC	1.56	6.81	GlyCalc
			n-Hexane	0.02	0.07	GlyCalc
			Benzene	0.13	0.59	GlyCalc
			Toluene	0.30	1.33	GlyCalc
			Ethylbenzene	0.05	0.24	GlyCalc
			Xylenes	0.07	0.33	GlyCalc
			Total HAP	0.58	2.55	GlyCalc
			CO ₂ e	25	108	40CFR98
RBV-03	9E	None	NO _x	0.10	0.43	AP-42
			CO	0.08	0.36	AP-42
			VOC	0.01	0.02	AP-42
			SO ₂	<0.01	<0.01	AP-42
			PM ₁₀ /PM _{2.5}	0.01	0.03	AP-42
			Formaldehyde	<0.01	<0.01	AP-42
			n-Hexane	<0.01	0.01	AP-42
			Benzene	<0.01	<0.01	AP-42
			Toluene	<0.01	<0.01	AP-42
			Total HAP	<0.01	0.01	AP-42
			CO ₂ e	118	518	40CFR98

Pigging/Pneumatic Pumps Emissions Table:

Emission Source	Emission Point ID	Regulated Pollutant	Maximum Potential Emissions
			TPY
SSM	10E	VOC	0.72
		n-Hexane	<0.01
		Benzene	<0.01
		Toluene	<0.01
		Ethylbenzene	<0.01
		Xylenes	<0.01
		Total HAP	0.01
		CO ₂ e	269

Fugitive Emissions

Emission Source	Emission Point ID	Regulated Pollutant	Maximum Potential Emissions
			TPY
FUG	1F	VOC	0.73
		n-Hexane	<0.01
		Benzene	<0.01
		Toluene	<0.01
		Ethylbenzene	<0.01
		Xylenes	<0.01
		Total HAP	<0.01
		CO ₂ e	285

Total Facility PTE for Dehydrator 01 and Dehydrator 02:

Regulated Pollutant	Maximum Annual Facility Wide Emissions (TPY)
NO _x	1.50
CO	1.26
VOC	95.21
SO ₂	0.01

PM ₁₀ /PM _{2.5}	0.12
Formaldehyde	<0.01
n-Hexane	0.63
Benzene	0.83
Toluene	1.75
Ethylbenzene	0.29
Xylenes	0.40
Total HAP	3.90
CO ₂ e	26,867

Total Facility PTE for Dehydrator 01 and Dehydrator 03:

Regulated Pollutant	Maximum Annual Facility Wide Emissions (TPY)
NO _x	1.07
CO	0.90
VOC	72.12
SO ₂	<0.01
PM ₁₀ /PM _{2.5}	0.08
Formaldehyde	<0.01
n-Hexane	0.50
Benzene	1.30
Toluene	2.86
Ethylbenzene	0.50
Xylenes	0.69
Total HAP	5.84
CO ₂ e	18,146

AGGREGATION DISCUSSION

To determine major source status, a three-part analysis is used to determine whether emissions from two or more facilities should be aggregated and treated as a single source. The three prongs include: belonging to the same major industrial grouping; and are located on one or more contiguous or adjacent properties; and are under common control.

Same Industrial Grouping:

The subject facility shares the same two-digit major SIC code of 13 as the upstream gas production wells.

Contiguous or Adjacent:

The determination of whether two or more facilities are “contiguous” or “adjacent” is made on a case-by-case basis. The term contiguous is defined in the dictionary as being in actual contact; touching along a boundary or at a point. The term adjacent is defined in the dictionary as not distant, nearby, having a common endpoint or border.

The closest Williams-owned facility to the subject facility is the Victory Dehydration Station, located approximately 7.8 miles to the northwest. The Victory Dehydration Station does not meet the common sense notion of being “contiguous” with or “adjacent” to the subject facility.

The location of the subject facility was chosen because of suitable characteristics for construction and operation, such as the availability of a reasonably flat grade and accessibility for large trucks and equipment. Williams’ business model is to construct scalable capacity that contemplates additional production from multiple operators and the initial configuration is merely a foundation for additional opportunities in the area. Although the location of the subject facility is in close proximity to one or more nearby upstream production sources, the subject facility does not need to be located in the immediate vicinity of the nearby wells in order to operate properly and was selected for reasons unrelated to the location of the production wells.

Common Control:

Williams OVM operates under its parent company The Williams Companies, Inc. (Williams) and is the sole operator of the subject facility. The closest Williams operated facility to the subject facility is the Victory Dehydration Station, which is located approximately 7.8 miles to the northwest. The production wells that send natural gas to the subject facility are owned and operated by other companies, which are unaffiliated with Williams. Williams has no ownership stake in the production wells that may send natural gas to the subject facility.

Furthermore, neither Williams OVM, nor Williams, exercise operational control over any equipment owned or operated by a natural gas producer upstream of the subject facility. All employees at the subject facility are under the exclusive direction of Williams and are not under the control of any other entity. Similarly, Williams has no authority over employees of the production wells. These companies operate wholly independent of one another. No employees are expected to shuttle back and forth between the subject facility and any production well.

At this time, contracts are in place for the subject facility to process natural gas produced from multiple upstream production wells located throughout the region. As future commercial opportunities are identified, the subject facility will potentially receive gas from other producers. Williams will not have ownership or control of any future wellhead facilities. The producers are, and will be responsible for, any decisions to

produce or shut-in wellhead facilities and have no control over the equipment installed, owned, and operated by Williams. Similarly, Williams cannot control the installation or operation of any equipment located at a well site that may be considered an air contamination source.

Conclusion:

The three-prong test has not been met. There is no common control with any of the upstream wells. Additionally, the subject facility and the upstream production wells, considered together, do not meet the common sense notion of a plant because the subject facility is expected to service multiple production wells and because the facility was selected for reasons unrelated to the location of the production wells. Therefore, the facilities should not be aggregated to determine major source status. Williams OVM, Grenadier Dehydration Station should continue to be treated as a single source.

REGULATORY APPLICABILITY

Applicable State Regulations. The following regulations apply to the modified facility. If the modification did not impact existing applicability, it is not addressed.

45CSR2 TO PREVENT AND CONTROL PARTICULATE AIR POLLUTION FROM COMBUSTION OF FUEL IN INDIRECT HEAT EXCHANGERS

The applicant is not subject to the weight emission standard for particulate matter set forth in 45 CSR2-4.1 because the Reboilers [RBV-01, RBV-02, and RBV-03] are less than 10 MMBtu/hr; however, they are subject to the 10% opacity based on a six minute block average. Compliance will be demonstrated by complying with permit requirements. The applicant is using natural gas as fuel; therefore, meeting the 10% opacity requirements should not be a problem.

45CSR4 TO PREVENT AND CONTROL THE DISCHARGE OF AIR POLLUTANTS INTO THE OPEN AIR WHICH CAUSES OR CONTRIBUTES TO AN OBJECTIONABLE ODOR

The applicant is subject to this rule. It states that 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. The applicant does not foresee any objectionable odors being present at this site now or in the future.

45CSR10 TO PREVENT AND CONTROL AIR POLLUTION FROM THE EMISSION OF SULFUR OXIDES

The Reboilers [RBV-01, RBV-02, and RBV-03] have a maximum design heat input of less than 10 MMBtu/hr and are therefore exempt from sections 3, 6, and 8.

45CSR13 PERMITS FOR CONSTRUCTION, MODIFICATION, RELOCATION AND OPERATION OF STATIONARY SOURCES OF AIR POLLUTANTS, NOTIFICATION REQUIREMENTS, ADMINISTRATIVE UPDATES, TEMPORARY PERMITS, GENERAL PERMITS, PERMISSION TO COMMENCE CONSTRUCTION, AND PROCEDURES FOR EVALUATION

Williams has demonstrated compliance with 45CSR13 by submitting a complete construction permit application, placing a legal advertisement in the *Wetzel Chronicle* on November 10, 2015, and paying the applicable fees.

45CSR22 AIR QUALITY MANAGEMENT FEE PROGRAM

The applicant has paid the \$1,000 application fee and the \$2,500 NESHAP fee as required by section 3.4.b of this rule because they are subject to NESHAP requirements as described in this regulatory review section.

Additionally, the source is required to maintain their certificate to operate.

45CSR34 EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The facility is subject to 45CSR34 by reference of 40 CFR 63, Subparts HH.

Applicable Federal Regulations. The following regulations apply to the construction of the facility.

40 CFR63, SUBPART HH NATIONAL EMISSIONS STANDARDS FOR HAZARDOUS AIR POLLUTANTS FROM OIL AND NATURAL GAS PRODUCTION FACILITIES

Subpart HH establishes national emission limitations and operating limitations of HAPs emitted from oil and natural gas production facilities located at major and area sources of HAP emissions. For area source applicability, the affected source includes each triethylene glycol (TEG) dehydration unit located at a facility that meets the criteria specified in §63.760(a).

The glycol dehydration units [DFT-01 and DSV-01, DFT-02 and DSV-02, and DFT-03 and DSV-03] are TEG dehydration units located at an area source of HAPs and thus are subject to this subpart. Because the potential controlled benzene emissions per dehy unit are less than 1 tpy, the units are only subject to the recordkeeping requirements that demonstrate exemption from the control requirements of this rule. Still vent DSV-02 is fitted with a BTEX Eliminator with a 95% control efficiency for Benzene. Uncontrolled Benzene emissions from the DSV-02 Still Vent are greater than 1 TPY (1.17 TPY). With the BTEX Eliminator the controlled emissions are 0.06 TPY.

Based on the PTE emissions, the applicant will be in compliance with the benzene exception from § 63.764(d) and further compliance will be demonstrated by demonstrating compliance with the recordkeeping requirements provided in the permit.

Non-applicability determinations. It has been determined that the applicant is not subject to the following rules.

45CSR6 TO PREVENT AND CONTROL AIR POLLUTION FROM THE COMBUSTION OF REFUSE

The applicant has no combustors on site and will not have the combustion of any refuse.

45CSR14 PERMITS FOR CONSTRUCTION AND MAJOR MODIFICATION OF MAJOR STATIONARY SOURCES OF AIR POLLUTION FOR THE PREVENTION OF SIGNIFICANT DETERIORATION

The Grenadier Dehydration Facility is not a major source as defined in § 2.3b because it does not emit or have the potential to emit 250 tpy or more of any regulated NSR pollutant. The facility also does not meet the definition of a major modification as defined in § 2.40 because it is not a major source.

45CSR16 STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES PURSUANT TO 40 CFR PART 60

The Grenadier facility is not subject to this rule because the facility is not subject to an NSPS 40CFR60 rules.

45CSR30 REQUIREMENTS FOR OPERATING PERMITS

The Grenadier Dehydration Facility is a single stationary source for determining Title V applicability as discussed in the aggregation discussion of this evaluation. The Grenadier Dehydration Facility does not meet the definition of a major source defined in 45CSR30 § 2.26.a because the facility PTE does not include any individual HAP that emits 10 tpy or more nor a combination of HAPs that emit 25 tpy or more.

The Grenadier Dehydration Facility does not meet the definition of a major source defined in 45CSR30 § 2.26.b because there is not any air pollutant subject to regulation that has a PTE of 100 tpy or more. The fugitive emissions of a stationary source shall not be considered in determining whether it is a major stationary source unless it belongs to one of the source categories of listed in 2.26.b.

A natural gas processing plant (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both. The Grenadier Dehydration Facility is not considered a natural gas processing facility (2.26.b.38) and therefore, fugitive emissions are not considered when determining major source status. The VOC PTE without considering fugitive emissions is 37.71 tpy and is less than the 100 tpy threshold.

NSPS, Subpart GG STANDARDS OF PERFORMANCE FOR STATIONARY GAS TURBINES

This subpart does not apply because there are no stationary turbines at this site.

40CFR60, SUBPART Kb STANDARDS OF PERFORMANCE FOR VOLATILE ORGANIC LIQUID STORAGE VESSELS (INCLUDING PETROLEUM LIQUID STORAGE VESSELS) FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER JULY 23, 1984

Subpart Kb establishes control requirements, testing requirements, monitoring requirements, and recordkeeping and reporting requirements.

Subpart Kb applies to any storage vessel with a capacity greater than 19,313 gallons that is used to store volatile organic liquids except that it does not apply to storage vessels with a capacity greater than 39,890 gallons storing a liquid with a maximum true vapor pressure less than 3.5 kPa or with a capacity greater than 19,813 gallons but less than 39,890 gallons storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

This subpart does not apply to vessels with a design capacity less than or equal to 419,204 gallons used for petroleum or condensate stored, processed, or treated prior to custody transfer.

40CFR60, SUBPART KKK LEAKS FROM NATURAL GAS PROCESSING PLANTS

The facility is not affected by this rule because the Grenadier facility is not a natural gas processing plant.

40CFR60, SUBPART LLL ONSHORE NATURAL GAS PROCESSING: SO₂ EMISSIONS

The facility is not affected by this rule because not only is this facility not a natural gas processing plant, but there is no gas sweetening operation at this facility.

40CFR60, SUBPART OOOO CRUDE OIL AND NATURAL GAS PRODUCTION

This rule does not apply to the pneumatic controllers at this facility because they are located between the wellhead and the point of custody transfer, are not located at a natural gas processing plant, and their bleed rate is less than, or equal to, 6 scfh.

40CFR63, SUBPART HHH NATURAL GAS TRANSMISSION AND STORAGE FACILITIES

The facility is not a natural gas transmission or storage facility transporting or storing natural gas prior to local distribution, therefore this facility is not subject to this rule.

40CFR63, SUBPART JJJJJJ INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL BOILERS AND PROCESS HEATERS - AREA SOURCES

This facility is not subject to this rule because gas-fired boilers are not subject to the requirements of this rule. Specifically, "boiler" is defined as an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANT

TEG is used by the oil and gas industry to dehydrate natural gas. It may also be used to dehydrate other gases, including CO₂, H₂S, and other oxygenated gases. It is necessary to dry natural gas to a certain point, as humidity in natural gas can cause pipelines to freeze, and create other problems for end users of the natural gas. Triethylene glycol is placed into contact with natural gas, and strips the water out of the gas. Triethylene glycol is heated to a high temperature and put through a condensing system, which removes the water as waste and reclaims the TEG for continuous reuse within the system. The waste TEG produced by this process has been found to contain enough benzene to be classified as hazardous waste (benzene concentration greater than 0.5 mg/L). This substance/agent has not undergone a complete evaluation and determination under US EPA's IRIS program for evidence of human carcinogenic potential.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required for this source due to the fact that the facility is not considered a "major source" according to 45CSR 14 or 45CSR19.

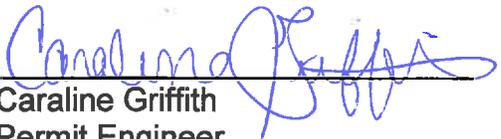
MONITORING OF OPERATIONS

The following monitoring requirements are included in the permit :

1. Records to demonstrate facility wide minor source status on an annual basis
2. Opacity requirements for RBV-01, RBV-02, and RBV-03
3. Throughput and other monitoring of the dehydration unit
4. Monitoring requirements in Subpart HH for the TEG dehydration unit
5. Only Dehy 2 or 3 will be installed. Applicant must notify DAQ within 30 days of construction as to which dehydrator is installed.

RECOMMENDATION TO DIRECTOR

It is recommended that permit R13-3264 be granted to Williams Ohio Valley Midstream LLC; Grenadier Dehydration Facility located in Moundsville, Marshall County. Based on the information provided in the application, including all supplemental information received, the applicant should be in compliance with all applicable state and federal air regulations.



Caraline Griffith
Permit Engineer



Date

West Virginia Department of Environmental Protection
Earl Ray Tomblin
Governor

Division of Air Quality

Randy C. Huffman
Cabinet Secretary

Permit to Construct



R13- 3276

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§22-5-1 et seq.) and 45 C.S.R. 13 – Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the above-referenced facility is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

**Williams Ohio Valley Midstream LLC
Grenadier Station
103-00075**

*William F. Durham
Director*

Issued: DRAFT

Facility Location: Littleton, Wetzel County, West Virginia
Mailing Address: Park Place Corporate Center 2, 2000 Commerce Drive, Pittsburgh, PA 15275
Facility Description: Dehydration station
NAICS Codes: 213112
UTM Coordinates: 539.80 km Easting • 4389.40 km Northing • Zone 17S
Permit Type: Construction
Description of Change: Construction of a natural gas dehydration station consisting of two contactor/absorber towers (no vented emissions), two Flash Tanks (DFT-01, DFT-02), two regenerator/still vents (DSV-01, DSV-02), two reboilers (RBV-01, RBV-02), and one alternative dehydration unit consisting of one Flash Tank (DFT-03), one regenerator/still vent (DSV-03), and one reboiler (RBV-03). There is also one Methanol storage tank (225 gallons) and one Glycol storage tank (330 gallons).

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 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.

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1.0 Emission Units, **

Emission Unit ID	Emission Point ID	Emission Unit Description	Year Installed	Design Capacity	Control Device
DFT-01	1E	TEG Dehydrator Flash Tank	2016	65 MMscfd	None
DSV-01	2E	TEG Dehydrator Still Vent	2016	65 MMscfd	None
RBV-01	3E	TEG Dehydrator Reboiler	2016	1.50 MMBtu/hr	None
DFT-02	4E	TEG Dehydrator Flash Tank	2016	100 MMscfd	None
DSV-02	5E	TEG Dehydrator Still Vent	2016	100 MMscfd	BTEX-01
RBV-02	6E	TEG Dehydrator Reboiler	2016	2.00 MMBtu/hr	None
DFT-03	7E	TEG Dehydrator Flash Tank	2016	50 MMscfd	None
DSV-03	8E	TEG Dehydrator Still Vent	2016	50 MMscfd	None
RBV-03	9E	TEG Dehydrator Reboiler	2016	1.00 MMBtu/hr	None
SSM	10E	Pigging and Pneumatic Pump Fugitives	2016	NA	None
FUG	1F	Piping and Equipment Leaks	2016	NA	None
T01	T01	Methanol Tank	2016	225 Gallons	None
T02	T02	Glycol Tank	2016	330 Gallons	None
Control Devices					
BTEX-01	BTEX-01	BTEX Eliminator	2016	NA	None

** Only two dehydration units are authorized for construction and operation at the facility in order to maintain minor source status. Dehydrator 01 will be operated onsite along with either Dehydrator 02 OR Dehydrator 03. Dehydrator 02 OR Dehydrator 03 will be constructed and allowed to operate under this permit.

2.0. General Conditions

2.1. Definitions

- 2.1.1. All references to the “West Virginia Air Pollution Control Act” or the “Air Pollution Control Act” mean those provisions contained in W.Va. Code §§ 22-5-1 to 22-5-18.
- 2.1.2. The “Clean Air Act” means those provisions contained in 42 U.S.C. §§ 7401 to 7671q, and regulations promulgated thereunder.
- 2.1.3. “Secretary” means the Secretary of the Department of Environmental Protection or such other person to whom the Secretary has delegated authority or duties pursuant to W.Va. Code §§ 22-1-6 or 22-1-8 (45CSR§30-2.12.). The Director of the Division of Air Quality is the Secretary’s designated representative for the purposes of this permit.

2.2. Acronyms

CAAA	Clean Air Act Amendments	NO_x	Nitrogen Oxides
CBI	Confidential Business Information	NSPS	New Source Performance Standards
CEM	Continuous Emission Monitor	PM	Particulate Matter
CES	Certified Emission Statement	PM_{2.5}	Particulate Matter less than 2.5 μm in diameter
C.F.R. or CFR	Code of Federal Regulations	PM₁₀	Particulate Matter less than 10μm in diameter
CO	Carbon Monoxide	Ppb	Pounds per Batch
C.S.R. or CSR	Codes of State Rules	Pph	Pounds per Hour
DAQ	Division of Air Quality	Ppm	Parts per Million
DEP	Department of Environmental Protection	Ppm_v or ppmv	Parts per Million by Volume
dscm	Dry Standard Cubic Meter	PSD	Prevention of Significant Deterioration
FOIA	Freedom of Information Act	Psi	Pounds per Square Inch
HAP	Hazardous Air Pollutant	SIC	Standard Industrial Classification
HON	Hazardous Organic NESHAP	SIP	State Implementation Plan
HP	Horsepower	SO₂	Sulfur Dioxide
lbs/hr	Pounds per Hour	TAP	Toxic Air Pollutant
LDAR	Leak Detection and Repair	TPY	Tons per Year
M	Thousand	TRS	Total Reduced Sulfur
MACT	Maximum Achievable Control Technology	TSP	Total Suspended Particulate
MDHI	Maximum Design Heat Input	USEPA	United States Environmental Protection Agency
MM	Million	UTM	Universal Transverse Mercator
MMBtu/hr or mmbtu/hr	Million British Thermal Units per Hour	VEE	Visual Emissions Evaluation
MMCF/hr or mmcf/hr	Million Cubic Feet per Hour	VOC	Volatile Organic Compounds
NA	Not Applicable	VOL	Volatile Organic Liquids
NAAQS	National Ambient Air Quality Standards		
NESHAPS	National Emissions Standards for Hazardous Air Pollutants		

2.3. Authority

This permit is issued in accordance with West Virginia air pollution control law W.Va. Code §§ 22-5-1, et seq. and the following Legislative Rules promulgated thereunder:

- 2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation;*

2.4. Term and Renewal

- 2.4.1. This Permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any other applicable legislative rule;

2.5. Duty to Comply

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Application R13-3276 and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to;
[45CSR§§13-5.11 and -10.3.]
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses, and/or approvals from other agencies; i.e., local, state, and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

2.7. Duty to Supplement and Correct Information

Upon becoming aware of a failure to submit any relevant facts or a submittal of incorrect information in any permit application, the permittee shall promptly submit to the Secretary such supplemental facts or corrected information.

2.8. Administrative Update

The permittee may request an administrative update to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-4.]

2.9. Permit Modification

The permittee may request a minor modification to this permit as defined in and according to the procedures specified in 45CSR13.
[45CSR§13-5.4.]

2.10 Major Permit Modification

The permittee may request a major modification as defined in and according to the procedures specified in 45CSR14 or 45CSR19, as appropriate.
[45CSR§13-5.1]

2.11. Inspection and Entry

The permittee shall allow any authorized representative of the Secretary, upon the presentation of credentials and other documents as may be required by law, to perform the following:

- a. At all reasonable times (including all times in which the facility is in operation) enter upon the permittee's premises where a source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times (including all times in which the facility is in operation) any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit;
- d. Sample or monitor at reasonable times substances or parameters to determine compliance with the permit or applicable requirements or ascertain the amounts and types of air pollutants discharged.

2.12. Emergency

- 2.12.1. An "emergency" means any situation arising from sudden and reasonable unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by

improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

- 2.12.2. Effect of any emergency. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of Section 2.12.3 are met.
- 2.12.3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
- a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;
 - b. The permitted facility was at the time being properly operated;
 - c. During the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit; and
 - d. The permittee submitted notice of the emergency to the Secretary within one (1) working day of the time when emission limitations were exceeded due to the emergency and made a request for variance, and as applicable rules provide. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.
- 2.12.4. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency has the burden of proof.
- 2.12.5 The provisions of this section are in addition to any emergency or upset provision contained in any applicable requirement.

2.13. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it should have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in determining penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continued operations.

2.14. Suspension of Activities

In the event the permittee should deem it necessary to suspend, for a period in excess of sixty (60) consecutive calendar days, the operations authorized by this permit, the permittee shall notify the Secretary, in writing, within two (2) calendar weeks of the passing of the sixtieth (60) day of the suspension period.

2.15. Property Rights

This permit does not convey any property rights of any sort or any exclusive privilege.

2.16. Severability

The provisions of this permit are severable and should any provision(s) be declared by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect.

2.17. Transferability

This permit is transferable in accordance with the requirements outlined in Section 10.1 of 45CSR13. [45CSR§13-10.1.]

2.18. Notification Requirements

The permittee shall notify the Secretary, in writing, no later than thirty (30) calendar days after the actual startup of the operations authorized under this permit.

2.19. Credible Evidence

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defense otherwise available to the permittee including, but not limited to, any challenge to the credible evidence rule in the context of any future proceeding.

3.0. Facility-Wide Requirements

3.1. Limitations and Standards

- 3.1.1. **Open burning.** The open burning of refuse by any person, firm, corporation, association or public agency is prohibited except as noted in 45CSR§6-3.1.
[45CSR§6-3.1.]
- 3.1.2. **Open burning exemptions.** The exemptions listed in 45CSR§6-3.1 are subject to the following stipulation: Upon notification by the Secretary, no person shall cause, suffer, allow or permit any form of open burning during existing or predicted periods of atmospheric stagnation. Notification shall be made by such means as the Secretary may deem necessary and feasible.
[45CSR§6-3.2.]
- 3.1.3. **Asbestos.** The permittee is responsible for thoroughly inspecting the facility, or part of the facility, prior to commencement of demolition or renovation for the presence of asbestos and complying with 40 C.F.R. § 61.145, 40 C.F.R. § 61.148, and 40 C.F.R. § 61.150. The permittee, owner, or operator must notify the Secretary at least ten (10) working days prior to the commencement of any asbestos removal on the forms prescribed by the Secretary if the permittee is subject to the notification requirements of 40 C.F.R. § 61.145(b)(3)(i). The USEPA, the Division of Waste Management, and the Bureau for Public Health - Environmental Health require a copy of this notice to be sent to them.
[40CFR§61.145(b) and 45CSR§34]
- 3.1.4. **Odor.** No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor at any location occupied by the public.
[45CSR§4-3.1] *[State Enforceable Only]*
- 3.1.5. **Permanent shutdown.** A source which has not operated at least 500 hours in one 12-month period within the previous five (5) year time period may be considered permanently shutdown, unless such source can provide to the Secretary, with reasonable specificity, information to the contrary. All permits may be modified or revoked and/or reapplication or application for new permits may be required for any source determined to be permanently shutdown.
[45CSR§13-10.5.]
- 3.1.6. **Standby plan for reducing emissions.** When requested by the Secretary, the permittee shall prepare standby plans for reducing the emissions of air pollutants in accordance with the objectives set forth in Tables I, II, and III of 45CSR11.
[45CSR§11-5.2.]

3.2. Monitoring Requirements

[Reserved]

3.3. Testing Requirements

- 3.3.1. **Stack testing.** As per provisions set forth in this permit or as otherwise required by the Secretary, in accordance with the West Virginia Code, underlying regulations, permits and orders, the permittee shall conduct test(s) to determine compliance with the emission limitations set forth in this permit and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling

connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.
- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4. or 45CSR§13-5.4 as applicable.
- d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
 1. The permit or rule evaluated, with the citation number and language;
 2. The result of the test for each permit or rule condition; and,
 3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(14-15) and 45CSR13]

3.4. Recordkeeping Requirements

- 3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports, and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. Said records shall be maintained on site or in a readily accessible off-site location maintained by the permittee. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.

- 3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. *State Enforceable Only.*]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- 3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
- 3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:
Director
WVDEP
Division of Air Quality
601 57th Street
Charleston, WV 25304-2345

If to the US EPA:
Associate Director
Office of Air Enforcement and Compliance
Assistance
(3AP20)
U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

3.5.4. Operating Fee

- 3.5.4.1. In accordance with 45CSR22 – Air Quality Management Fee Program, the permittee shall not operate nor cause to operate the permitted facility or other associated facilities on the same or contiguous sites comprising the plant without first obtaining and having in current effect a Certificate to Operate (CTO). Such Certificate to Operate (CTO) shall be renewed annually, shall be maintained on the premises for which the certificate has been issued, and shall be made immediately available for inspection by the Secretary or his/her duly authorized representative.
- 3.5.5. **Emission inventory.** At such time(s) as the Secretary may designate, the permittee herein shall prepare and submit an emission inventory for the previous year, addressing the emissions from the facility and/or process(es) authorized herein, in accordance with the emission inventory submittal requirements of the Division of Air Quality. After the initial submittal, the Secretary may, based upon the type and quantity of the pollutants emitted, establish a frequency other than on an annual basis.

4.0. Source-Specific Requirements

4.1. Limitations and Standards

- 4.1.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:
- The date, place as defined in this permit, and time of sampling or measurements;
 - The date(s) analyses were performed;
 - The company or entity that performed the analyses;
 - The analytical techniques or methods used;
 - The results of the analyses; and
 - The operating conditions existing at the time of sampling or measurement.
- 4.1.2. **Minor Source of Hazardous Air Pollutants (HAP).** HAP emissions from the facility shall be less than 10 tons/year of any single HAP or 25 tons/year of any combination of HAPs. Compliance with this Section shall ensure that the facility is a minor HAP source.
- 4.1.3. **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]
- 4.1.4. **Record of Malfunctions of Air Pollution Control Equipment.** For all air pollution control equipment listed in Section 1.0, the permittee shall maintain records of the occurrence and duration of any malfunction or operational shutdown of the air pollution control equipment during which excess emissions occur. For each such case, the following information shall be recorded:
- The equipment involved.
 - Steps taken to minimize emissions during the event.
 - The duration of the event.
 - The estimated increase in emissions during the event.
- For each such case associated with an equipment malfunction, the additional information shall also be recorded:
- The cause of the malfunction.
 - Steps taken to correct the malfunction.
 - Any changes or modifications to equipment or procedures that would help prevent future recurrences of the malfunction.
- 4.1.5. **Minor Source.** The permittee shall maintain records to demonstrate that the facility does not exceed the major source threshold defined in 45CSR30-2.26.b as directly emitting or having the potential to emit 100 tpy or more of any air pollutant subject to regulation.
- Source may construct Dehy 2 or Dehy 3. Permittee will be required to notify the DAQ within 30 days of construction which Dehy was installed.

5.0. Source-Specific Requirements (Dehydration Units: DFT-01, DSV-01; DFT-02, DSV-02; DFT-03, DSV-03)

5.1. Limitations and Standards

5.1.1. **Maximum Throughput Limitation.** The maximum dry natural gas throughput to the glycol dehydration units/still columns (DSV-01) shall not exceed 65.0 MMscf/day, (DSV-02) shall not exceed 100 MMscf/day, and (DSV-03) shall not exceed 50 MMscf/day. Compliance with the maximum throughput limitation shall be determined using a twelve month rolling total. A twelve month total shall mean the sum of the monthly throughput at any given time during the previous twelve calendar months.

5.1.2. **Maximum emissions from the glycol dehydration unit/still column (DSV-01) shall not exceed the following limits:**

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	1.55	6.78
Benzene	0.13	0.59
Toluene	0.31	1.35
Ethylbenzene	0.05	0.24
Xylenes	0.08	0.34

5.1.3. **Maximum emissions from the dehydrator TEG flash tank vent (DFT-01) shall not exceed the following limits:**

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	6.68	29.27

5.1.4. **Maximum emissions from the glycol dehydration unit/still column (DSV-02) shall not exceed the following limits:**

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	0.16	0.68
Benzene	0.01	0.06
Toluene	0.03	0.13
Ethylbenzene	0.01	0.02
Xylenes	0.01	0.03

- 5.1.5. Maximum emissions from the dehydrator TEG flash tank vent (DFT-02) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	13.33	58.39

- 5.1.6. Maximum emissions from the glycol dehydration unit/still column (DSV-03) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	1.56	6.81
Benzene	0.13	0.59
Toluene	0.30	1.33
Ethylbenzene	0.05	0.24
Xylenes	0.07	0.33

- 5.1.7. Maximum emissions from the dehydrator TEG flash tank vent (DFT-03) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Volatile Organic Compounds	6.67	29.20

- 5.1.8. Emission Calculations for DSV-01, DSV-02, and DSV-03.

- a. For purposes of determining potential HAP emissions, the methods specified in 40 CFR 63, Subpart HH (i.e. excluding compressor engines from HAP PTE) shall be used.
- b. For the purposes of determining actual annual average natural gas throughput or actual average benzene emissions, the methods specified in § 63.772(b) of 40 CFR 63, Subpart HH shall be used. This applies to the exemption specified in § 63.764(e).

- 5.1.9. Any source that determines it is not a major source but has actual emissions of 5 tons per year or more of a single HAP, or 12.5 tons per year or more of a combination of HAP (i.e., 50 percent of the major source thresholds), shall update its major source determination within 1 year of the prior determination or October 15, 2012, whichever is later, and each year thereafter, using gas composition data measured during the preceding 12 months.

[40CFR§63.760(c)]

- 5.1.10. The permittee is exempt from the requirements of 40CFR§63.764(d) if the criteria below is met, except that the records of the determination of these criteria must be maintained as required in 40CFR§63.774(d)(1).

- a. The actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 megagram per year (1 ton/yr), as determined by the procedures specified in §63.772(b)(2) of this subpart.
[40CFR§63.764(e)]
- 5.1.11. All vapors from the still vent (DSV-02) shall be sent to a respective condenser (BTEX-01) and operated to achieve minimum 95% control efficiency before being discharged to the atmosphere. Vapors from the Still Vents (DSV-01 and/or DSV-03) will be discharged to the atmosphere.
- 5.1.12. *Condensers/BTEX Eliminators.* The registrant shall comply with the requirements below for any registered condenser/BTEX Eliminator that is listed as a control device/emission reduction device for a glycol dehydration unit in this permit:
 - i. Vapors that are being controlled by the condenser/BTEX Eliminator shall be routed through a closed vent system to the condenser/BTEX Eliminator at all times when there is a potential that vapors (emissions) can be generated from the glycol dehydration still column.
 - ii. The condenser/BTEX Eliminator shall be designed, operated, and maintained according to good engineering practices and manufacturer's specifications so as to achieve, at a minimum, a capture and control efficiency of 50%.
 - a. The registrant may claim a capture and control efficiency greater than 50% if the permit was approved based on manufacturer's specifications and the unit was operated as such.
- 5.1.13. Only two dehydration units ([DSV-01 and DSV-02] OR [DSV-01 and DSV-03]) shall be constructed and operated at the facility in order to maintain minor source status.
- 5.1.14. The permittee shall notify the DAQ within 30 days of start-up of the dehydrators as to which scenario was implemented ([DSV-01 and DSV-02] OR [DSV-01 and DSV-03]).

5.2. Monitoring Requirements

- 5.2.1. In order to demonstrate compliance with 5.1.1., the permittee shall monitor the throughput of dry natural gas fed to each dehydration system ([DSV-01 and DSV-02] OR [DSV-01 and DSV-03]) on a monthly basis.
- 5.2.2. Representative gas sample collection and analysis frequency for dehydration units shall be determined as set forth in the schedule provided in Table 5.2.2 of this section.

Table 5.2.2

Wet Gas Sampling and Analysis Frequency for Dehydration Units Based on Potential HAP Emission Rates	
Each dehydration unit exempt from § 63.764(d) requirements and with federally enforceable controls	Upon request by the Secretary.
Each dehydration unit exempt from § 63.764(d) requirements and without federally enforceable controls	An initial compliance evaluation within 180 days of registration issuance or within 180 days of start-up of the dehydration unit, whichever is later.

- 5.2.3. In order to demonstrate compliance with the area source status, claimed within sections 5.1.2 through 5.1.7, as well as the benzene exemption provided under section 5.1.10, the following

parameters shall be measured at least once quarterly, with the exception of natural gas flowrate annual daily average, natural gas flowrate maximum design capacity, and dry gas composition, in order to define annual average values or, if monitoring is not practical, some parameters may be assigned default values as listed below.

- a. Natural Gas Flowrate
 - i. Operating hours per quarter
 - ii. Quarterly throughput (MMscf/quarter)
 - iii. Annual daily average (MMscf/day), and
 - iv. Maximum design capacity (MMscf/day)
- b. Absorber temperature and pressure
- c. Lean glycol circulation rate
- d. Glycol pump type and maximum design capacity (gpm)
- e. Flash tank temperature and pressure, if applicable
- f. Stripping Gas flow rate, if applicable
- g. Wet gas composition (upstream of the absorber – dehydration column) sampled in accordance with GPA method 2166 and analyzed consistent with GPA extended method 2286 as well as the procedures presented in the GRI-GLYCalc™ Technical Reference User Manual and Handbook V4
- h. Wet gas water content (lbs H₂O/MMscf)
- i. Dry gas water content (lbs H₂O/MMscf) at a point directly after exiting the dehydration column and before any additional separation points

The following operating parameter(s) may be assigned default values when using GRI-GLYCalc:

- a. Dry gas water content can be assumed to be equivalent to pipeline quality at 7 lb H₂O / MMscf
- b. Wet gas water content can be assumed to be saturated at 60 degrees F and 1000 psig
- c. Lean glycol water content if not directly measured may use the default value of 1.5 % water as established by GRI
- d. Lean glycol circulation rate may be estimated using the TEG recirculation ratio of 3 gal TEG / lb H₂O removed.

Note: If you are measuring and using actual wet or dry gas water content, then you should also measure the glycol recirculation rate rather than using the default TEG recirculation ratio. [45CSR§13-5.11, §63.722(b)(2)(i)]

- 5.2.4. *Control Devices.* The registrant shall monitor and maintain quarterly records for each component that was inspected for fugitive escape of regulated air pollutants. Each component shall operate with no detectable emissions, as determined using AVO inspections, USEPA 40CFR60 Method 21, USEPA alternative work practice to detect leaks from equipment using optical gas imaging (OGI) camera (ex. FLIR camera), or some combination thereof. AVO inspections shall include, but not limited to, defects as visible cracks, holes, or gaps in piping; loose connections; liquid leaks; or broken or missing caps or other closure devices. If registrant uses USEPA Method 21, then no detectable emissions is defined as less than 500 ppm in accordance with Method 21. If registrant uses an OGI camera, then no detectable emissions is defined as no visible leaks detected in accordance with USEPA alternative OGI work practices.

If any leak is detected, the registrant shall repair the leak as soon as possible. The first attempt at repair must be made within five (5) days of discovering the leak, and the final repair must be made within fifteen (15) days of discovering the leak. The registrant shall record each leak detected and the associated repair. The leak will not be considered repaired until the same monitoring method that detected the leak determines the leak is repaired.

The registrant shall maintain records of all quarterly monitoring for fugitive escape of regulated air pollutants.

5.3. Testing Requirements

- 5.3.1. The permittee shall determine the composition of the wet natural gas by sampling in accordance with GPA Method 2166 and analyzing according to extended GPA Method 2286 analysis as specified in the GRI-GLYCalc™ V4 Technical Reference User Manual and Handbook. As specified in the handbook, the permittee shall sample the wet gas stream at a location prior to the glycol dehydration contactor column, but after any type of separation device accordance with GPA method 2166. The permittee may utilize other equivalent methods provided they are approved in advance by DAQ as part of a testing protocol. If alternative methods are proposed, a test protocol shall be submitted for approval no later than 60 days before the scheduled test date. The initial compliance test must be conducted within 180 days of permit issuance or within 180 days of startup of the glycol dehydration unit, whichever is later.

Note: The DAQ defines a representative wet gas sample to be one that is characteristic of the average gas composition dehydrated throughout a calendar year. If an isolated sample is not indicative of the annual average composition, the permittee may opt to produce a weighted average based on throughput between multiple sampling events, which can be used to define a more representative average annual gas composition profile.

[45CSR§13-5.11]

- 5.3.2. The following testing and compliance provisions of Part 63 Subpart HH National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities are applicable to the facility:

§ 63.772 Test methods, compliance procedures, and compliance demonstrations.

- (a) Determination of glycol dehydration unit flowrate, benzene emissions, or BTEX emissions. The procedures of this paragraph shall be used by an owner or operator to determine glycol dehydration unit natural gas flowrate, benzene emissions, or BTEX emissions.
- (1) The determination of actual average benzene emissions or BTEX emissions from a glycol dehydration unit shall be made using the procedures of paragraph (b)(2)(i) of this requirement. Emissions shall be determined either uncontrolled, or with federally enforceable controls in place.
- (i) The owner or operator shall determine actual average benzene emissions using the model GRI-GLYCalc™, Version 3.0 or higher, and the procedures presented in the associated GRI-GLYCalc™ Technical Reference Manual. Inputs to the model shall be representative of actual operating conditions of the glycol dehydration unit and may be determined using the procedures documented in Gas Research Institute (GRI) report entitled "Atmospheric Rich/Lean Method for Determining Glycol Dehydrator Emissions" (GRI-95/0368.1).

[§63.772(b)(2)(i)]

5.4. Recordkeeping Requirements

- 5.4.1. The permittee shall maintain a record of the monthly dry natural gas throughput through the glycol dehydration units to demonstrate compliance with section 5.1.1 of this permit. Said records shall be maintained for a period of five (5) years on site or in a readily accessible off-site location maintained by the permittee. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

- 5.4.2. For the purpose of demonstrating compliance with the emission limitations, the permittee shall maintain records of all monitoring data, and GRI-GLYCalc™, Promax, or HYSYS emission estimates. Said records shall be maintained for a period of five (5) years on site or in a readily accessible off-site location maintained by the permittee. Said records shall be readily available to the Director of the Division of Air Quality or his/her duly authorized representative for expeditious inspection and review. Any records submitted to the agency pursuant to a requirement of this permit or upon request by the Director shall be certified by a responsible official.

5.5. Reporting Requirements

- 5.5.1. The registrant shall submit the wet gas analysis report required by section 5.2 of this general permit within 60 days of conducting the sampling of the wet gas stream as required. This report shall include a potential to emit (PTE) estimate using GRI-GlyCalc Version 3.0 or higher, incorporating the specific parameters measured, as well as a copy of the laboratory analysis.
- 5.5.2. If the results of the compliance determination conducted as required in Section 5.2 of this permit predict the emissions to be at or above 0.95 tons per year of benzene, the registrant shall submit such determination and all supporting documentation to the Secretary within 15 days after making such determination.
- 5.5.3. Any time the air pollution control device is not operating when emissions are vented to it, shall be reported in writing to the Director of the DAQ as soon as practicable, but within ten (10) calendar days of the discovery.

6.0. Source-Specific Requirements (Reboilers: RBV-01; RBV-02; RBV-03)

6.1. Limitations and Standards

6.1.1. **Maximum Design Heat Input.** The maximum design heat input for the Reboiler (RBV-01) shall not exceed 1.50 MMBTU/hr. The maximum design heat input for the Reboiler (RBV-02) shall not exceed 2.00 MMBTU/hr. The maximum design heat input for the Reboiler (RBV-03) shall not exceed 1.00 MMBTU/hr.

6.1.2. The glycol dehydration unit reboilers (RBV-01, RBV-02, RBV-03) shall be designed and operated in accordance with the following:

- a. The reboilers shall only be fired with natural gas or flash tank gas and natural gas may be used as a supplemental fuel.
- b. Flash tank off-gases shall be routed, whenever possible, to the reboiler for use as fuel; otherwise the off-gases are vented to the atmosphere.

6.1.3. Maximum emissions from the reboiler (RBV-01) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Carbon Monoxide	0.12	0.54
Nitrogen Oxides	0.15	0.64

6.1.4. To demonstrate compliance with Section 6.1.3., the quantity of natural gas that shall be consumed in the 1.50 MMBTU/hr Reboiler (RBV-01) shall not exceed 1,630.5 cubic feet per hour and 14.28×10^6 cubic feet per year.

6.1.5. Maximum emissions from the reboiler (RBV-02) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Carbon Monoxide	0.16	0.72
Nitrogen Oxides	0.20	0.86

6.1.6. To demonstrate compliance with Section 6.1.5., the quantity of natural gas that shall be consumed in the 2.00 MMBTU/hr Reboiler (RBV-02) shall not exceed 2,174 cubic feet per hour and 19.04×10^6 cubic feet per year.

6.1.7. Maximum emissions from the reboiler (RBV-03) shall not exceed the following limits:

Pollutant	Maximum Hourly Emissions (lb/hr)	Maximum Annual Emissions (ton/year)
Carbon Monoxide	0.08	0.36
Nitrogen Oxides	0.10	0.43

- 6.1.8. To demonstrate compliance with Section 6.1.7., the quantity of natural gas that shall be consumed in the 1.00 MMBTU/hr Reboiler (RBV-03) shall not exceed 1,087 cubic feet per hour and 9.52×10^6 cubic feet per year.
- 6.1.9. No person shall cause, suffer, allow or permit emission of smoke and/or particulate matter into the open air from any fuel burning unit which is greater than ten (10) percent opacity based on a six minute block average.
[45CSR§2-3.1.]
- 6.1.10. Only two dehydration reboiler units ([RBV-01 and RBV-02] OR [RBV-01 and RBV-03]) shall be constructed and operated at the facility.

6.2. Monitoring Requirements

- 6.2.1. At such reasonable times as the Secretary may designate, the permittee shall conduct Method 9 emission observations for the purpose of demonstrating compliance with Section 6.1.2. Method 9 shall be conducted in accordance with 40 CFR 60 Appendix A.

6.3. Testing Requirements

- 6.3.1. Compliance with the visible emission requirements of section 6.1.2 shall be determined in accordance with 40 CFR Part 60, Appendix A, Method 9 or by using measurements from continuous opacity monitoring systems approved by the Director. The Director may require the installation, calibration, maintenance and operation of continuous opacity monitoring systems and may establish policies for the evaluation of continuous opacity monitoring results and the determination of compliance with the visible emission requirements of section 6.1.2. Continuous opacity monitors shall not be required on fuel burning units which employ wet scrubbing systems for emission control.
[45CSR§2-3.2.]

6.4. Recordkeeping Requirements

- 6.4.1. The permittee shall maintain records of all monitoring data required by Section 6.2.1 documenting the date and time of each visible emission check, the emission point or equipment/source identification number, the name or means of identification of the observer, the results of the check(s), whether the visible emissions are normal for the process, and, if applicable, all corrective measures taken or planned. The permittee shall also record the general weather conditions (i.e. sunny, approximately 80°F, 6 - 10 mph NE wind) during the visual emission check(s). Should a visible emission observation be required to be performed per the requirements specified in Method 9, the data records of each observation shall be maintained per the requirements of Method 9.

6.5. Reporting Requirements

- 6.5.1. Any deviation(s) from the allowable visible emission requirement for any emission source discovered during observations using 40CFR Part 60, Appendix A, Method 9 shall be reported in writing to the Director of the Division of Air Quality as soon as practicable, but in any case within ten (10) calendar days of the occurrence and shall include at least the following information: the results of the visible determination of opacity of emissions, the cause or suspected cause of the violation(s), and any corrective measures taken or planned.

CERTIFICATION OF DATA ACCURACY

I, the undersigned, hereby certify that, based on information and belief formed after reasonable inquiry, all information contained in the attached _____, representing the period beginning _____ and ending _____, and any supporting documents appended hereto, is true, accurate, and complete.

Signature¹

(please use blue ink)

Responsible Official or Authorized Representative

Date

Name & Title

(please print or type)

Name

Title

Telephone No. _____

Fax No. _____

¹ This form shall be signed by a "Responsible Official." "Responsible Official" means one of the following:

- a. For a corporation: The president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (i) the facilities employ more than 250 persons or have a gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
 - (ii) the delegation of authority to such representative is approved in advance by the Director;
- b. For a partnership or sole proprietorship: a general partner or the proprietor, respectively;
- c. For a municipality, State, Federal, or other public entity: either a principal executive officer or ranking elected official. For the purposes of this part, a principal executive officer of a Federal agency includes the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., a Regional Administrator of U.S. EPA); or
- d. The designated representative delegated with such authority and approved in advance by the Director.