Moats, Nikki B <nikki.b.moats@wv.gov>

R30-09500074-2025 for your review and a few questions

9 messages

Moats, Nikki B <nikki.b.moats@wv.gov> Mon, Jul 28, 2025 at 3:08 PM
To: mknop@anteroresources.com
Cc: meszaros@pinyon-env.com

Hello,

Attached you will find the Permit and Fact Sheet for this renewal. If you have any questions, please reach out to me via email or the phone number below.

Also, after looking through the application and the numbers from the 2020 Fact Sheet I have a few questions on the fact sheet about PTEs and the HAP numbers being reported to SLEIS.

This would be easiest to discuss over a quick meeting or phone call. I'm available pretty much all of this week Tuesday through Thursday, or we can schedule something for next week if needbe.

P.S. Reaching me through my extension is difficult currently, sometimes when they transfer a person to my extension from the office the phone line will just go dead. If my extension doesn't work, please just use my direct dial number that is also below.

Sincerely,
Nikki B. Moats (he/him/his)
West Virginia Department of Environmental Protection
Division of Air Quality
Title V Permit Writer
304-414-1282 or 304-926-0499 extension 41282

2 attachments

DPFactSheet R30-09500074-2025.doc
122K

DPPermit R30-09500074-2025.docx
341K

Kaitlin Meszaros <meszaros@pinyon-env.com> Thu, Jul 31, 2025 at 6:21 PM
To: "Moats, Nikki B" <nikki.b.moats@wv.gov>, "mknop@anteroresources.com" <mknop@anteroresources.com>

Hi Nikki,

Do you have availability to discuss mid-next week?

Thank you!

Kaitlin

Kaitlin Meszaros
Air Quality & Noise Specialist
Pinyon Environmental, Inc.
3222 S Vance St Suite 200
Lakewood, CO 80227
P: 303.980.5200 | **D:** 720.614.5598
E: meszaros@pinyon-env.com
asdfrewq

From: Moats, Nikki B <nikki.b.moats@wv.gov>
Sent: Monday, July 28, 2025 1:08 PM
To: mknop@anteroresources.com
Cc: Kaitlin Meszaros <meszaros@pinyon-env.com>
Subject: [EXTERNAL] R30-09500074-2025 for your review and a few questions

You don't often get email from nikki.b.moats@wv.gov. Learn why this is important

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Moats, Nikki B <nikki.b.moats@wv.gov> Mon, Aug 4, 2025 at 7:02 AM
To: Kaitlin Meszaros <meszaros@pinyon-env.com>
Cc: mknop@anteroresources.com

Hi Kaitlin,

I've got an open schedule this week, so just let me know what day and time would work best for you.

Thanks,
Nikki
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Kaitlin Meszaros <meszaros@pinyon-env.com> Mon, Aug 4, 2025 at 11:27 AM
To: "Moats, Nikki B" <nikki.b.moats@wv.gov>
Cc: "mknop@anteroresources.com" <mknop@anteroresources.com>

How about Wednesday at 10:30 AM EST? If that works, I'll send out a Teams invite.

Thanks!

Kaitlin Meszaros

Air Quality & Noise Specialist

Pinyon Environmental, Inc.

D: 720.614.5598

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Moats, Nikki B <nikki.b.moats@wv.gov> Mon, Aug 4, 2025 at 11:28 AM
To: Kaitlin Meszaros <meszaros@pinyon-env.com>
Cc: "mknop@anteroresources.com" <mknop@anteroresources.com>

That works well for me.

Thanks,
Nikki
[Quoted text hidden]

Kaitlin Meszaros <meszaros@pinyon-env.com> Fri, Aug 8, 2025 at 1:21 PM
To: "Moats, Nikki B" <nikki.b.moats@wv.gov>, "mknop@anteroresources.com" <mknop@anteroresources.com>

Hi Nikki,

Thanks again for your time earlier this week to discuss this draft permit. Following our call yesterday, attached is the revised PTE to better reflect the current inlet gas composition. Note the site remains an area source of HAPs since the sources covered under MACT ZZZZ and MACT HH have a potential to emit of less than 25 TPY total HAPs (24.4).

The draft permit and fact sheet look good to us otherwise. Let us know if you have any questions or need anything else.

Thanks,

Kaitlin Meszaros

Air Quality & Noise Specialist

Pinyon Environmental, Inc.

D: 720.614.5598

From: Moats, Nikki B <nikki.b.moats@wv.gov>
Sent: Monday, July 28, 2025 1:08 PM
To: mknop@anteroresources.com
Cc: Kaitlin Meszaros <meszaros@pinyon-env.com>
Subject: [EXTERNAL] R30-09500074-2025 for your review and a few questions

Hello,
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Revise PTE EI_Middlebourne III CS.pdf
94K

Moats, Nikki B <nikki.b.moats@wv.gov> Mon, Aug 11, 2025 at 11:25 AM
To: Carrie McCumbers <carrie.mccumbers@wv.gov>

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Revise PTE EI_Middlebourne III CS.pdf
94K

Moats, Nikki B <nikki.b.moats@wv.gov> Mon, Aug 11, 2025 at 11:51 AM
To: Kaitlin Meszaros <meszaros@pinyon-env.com>
Cc: "mknop@anteroresources.com" <mknop@anteroresources.com>

Hello Kaitlin,

I'm out of the office on Fridays, so I was putting these values into my fact sheet and double checking everything against the R13 permit with my supervisor and there's a few issues we noticed:

1) The Actual Emissions of Xylenes for 2024 is higher than the potentials in the revised values.

2) Under R13-3347E Permit condition 4.1.2, the facility is supposed to have a PTE of HAPs less than 25 TPY to continue to be a minor source of HAPs.

If you'd like to talk about this further, I have a meeting tomorrow at 1-2 PM Eastern Time, but my schedule is open for meetings the rest of the week.
[Quoted text hidden]

Kaitlin Meszaros <meszaros@pinyon-env.com> Mon, Aug 11, 2025 at 6:39 PM
To: "Moats, Nikki B" <nikki.b.moats@wv.gov>
Cc: "mknop@anteroresources.com" <mknop@anteroresources.com>

Hi Nikki,

We investigated further and realized the PTE calculations for the compressor engines were not reflected properly. The attached should address your concerns and more adequately represent the PTE of this facility based on the current gas analysis. Let us know if you have any questions or need anything else.

Thanks,

Kaitlin Meszaros

Air Quality & Noise Specialist

Pinyon Environmental, Inc.

D: 720.614.5598

From: Moats, Nikki B <nikki.b.moats@wv.gov>
Sent: Monday, August 11, 2025 9:52 AM
To: Kaitlin Meszaros <meszaros@pinyon-env.com>
Cc: mknop@anteroresources.com

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Revise PTE EI_Middlebourne III CS.pdf
94K

Emissions Summary Total

UNCONTROLLED POTENTIAL EMISSION SUMMARY

Source	NOx		CO		VOC		SO_2		$PM_{10}/PM_{2.5}$		HAPs		Formaldehyde		CO_2e
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	ton/yr
Engines															
Compressor Engine 1	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 2	3.03	13.27	16.73	73.26	3.70	16.19	0.011	0.048	0.19	0.81	1.09	4.77	0.73	3.19	12,581
Compressor Engine 3	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 4	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 5	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 6	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 7	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 8	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 9	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 10	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 11	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 12	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Fuel Conditioning Heater	0.049	0.21	0.041	0.18	0.0027	0.012	0.00029	0.0013	0.0037	0.016	0.0009	0.0040	0.000037	0.00016	257
Turbines															
Microturbine Generator	0.32	1.40	0.88	3.85	0.08	0.35	0.028	0.12	0.054	0.24	0.0085	0.037	0.0059	0.026	4,665
Dehydrator															
TEG Dehydrator 1	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
TEG Dehydrator 2	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
TEG Dehydrator 3	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
Reboiler 1	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 2	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 3	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Combustors															
Flare and Pilot	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hydrocarbon Loading															
Truck Loadout	---	---	---	---	72.93	15.24	---	---	---	---	2.02	0.42	---	---	62
Venting Emissions															
Compressor Blowdown Emissions	---	---	---	---	---	10.56	---	---	---	---	---	0.21	---	---	834
Startup and Shutdown Emissions	---	---	---	---	---	6.11	---	---	---	---	---	0.12	---	---	482
Pigging Emissions	---	---	---	---	---	9.10	---	---	---	---	---	0.18	---	---	719
Vessel/Cleaning Emisissions	---	---	---	---	---	0.20	---	---	---	---	---	0.0041	---	---	16
Fugitive Emissions															
Component Leak Emissions	---	---	---	---	2.35	10.31	---	---	---	---	0.052	0.23	---	---	177
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	0.14	0.61	---	---	---	---	---
Storage Tanks															
Storage Tank Battery - 7 tanks	---	---	---	---	322.1	1,411	---	---	---	---	8.96	39.24	---	---	5,586
Total Facility PTE =	**36.28**	**158.9**	**188.0**	**823.3**	**657.6**	**2,602**	**0.16**	**0.70**	**2.43**	**10.65**	**44.04**	**185.0**	**11.11**	**48.67**	**216,142**

Emissions Summary Total

CONTROLLED POTENTIAL EMISSION SUMMARY

Source	NOx		CO		VOC		SO_2		$PM_{10}/PM_{2.5}$		HAPs		Formaldehyde		CO_2e
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	ton/yr
Engines															
Compressor Engine 1	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 2	3.03	13.27	1.02	4.47	1.75	7.67	0.011	0.048	0.19	0.81	0.30	1.30	0.12	0.53	12,581
Compressor Engine 3	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 4	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 5	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 6	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 7	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 8	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 9	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 10	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 11	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 12	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Fuel Conditioning Heater	0.049	0.21	0.041	0.18	0.0027	0.012	0.00029	0.0013	0.0037	0.016	0.00092	0.0040	0.000037	0.00016	257
Turbines															
Microturbine Generator	0.32	1.40	0.88	3.85	0.080	0.35	0.028	0.12	0.054	0.24	0.0085	0.037	0.0059	0.026	4,665
Dehydrator															
TEG Dehydrator 1	---	---	---	---	1.46	6.41	---	---	---	---	0.12	1.75	---	---	300
TEG Dehydrator 2	---	---	---	---	1.46	6.41	---	---	---	---	0.12	1.75	---	---	300
TEG Dehydrator 3	---	---	---	---	1.46	6.41	---	---	---	---	0.12	1.75	---	---	300
Reboiler 1	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 2	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 3	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Combustors															
Flare and Pilot	0.33	1.44	1.78	7.79	0.00011	0.00048	0.000012	0.000052	0.00015	0.00066	0.000038	0.00016	---	---	2,478
Hydrocarbon Loading															
Truck Loadout	---	---	---	---	72.93	15.24	---	---	---	---	2.02	0.42	---	---	62
Venting Emissions															
Compressor Blowdown Emissions	---	---	---	---	---	10.56	---	---	---	---	---	0.21	---	---	834
Startup and Shutdown Emissions	---	---	---	---	---	6.11	---	---	---	---	---	0.12	---	---	482
Pigging Emissions	---	---	---	---	---	9.10	---	---	---	---	---	0.18	---	---	719
Vessel/Cleaning Emisissions	---	---	---	---	---	0.20	---	---	---	---	---	0.0041	---	---	16
Fugitive Emissions															
Component Leak Emissions	---	---	---	---	2.35	10.31	---	---	---	---	0.052	0.23	---	---	177
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	0.14	0.61	---	---	---	---	---
Storage Tanks															
Storage Tank Battery - 7 tanks	---	---	---	---	6.44	28.22	---	---	---	---	0.18	0.78	---	---	114
Total Facility PTE =	**36.60**	**160.3**	**14.47**	**63.38**	**105.5**	**183.8**	**0.16**	**0.70**	**2.43**	**10.65**	**6.82**	**25.66**	**1.42**	**6.24**	**170,495**

HAP Emissions Summary Total

CONTROLLED POTENTIAL EMISSION SUMMARY

Source	Benzene		Toluene		Ethylbenzene		Xylenes		n-Hexane		Acetaldehyde		Acrolein		Methanol	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Engines																
Compressor Engine 1	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 2	0.0039	0.017	0.0036	0.016	0.00035	0.0015	0.0016	0.0071	0.010	0.043	0.074	0.32	0.045	0.20	0.022	0.10
Compressor Engine 3	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 4	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 5	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 6	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 7	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 8	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 9	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 10	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 11	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 12	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Fuel Conditioning Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Turbines																
Microturbine Generator	0.000099	0.00043	0.0011	0.0047	0.00026	0.0012	0.00053	0.0023	---	---	0.00033	0.0014	0.000053	0.00023	---	---
Dehydrator																
TEG Dehydrator 1	0.017	0.074	0.051	0.087	0.0032	0.0077	0.013	0.59	0.033	0.99	---	---	---	---	---	---
TEG Dehydrator 2	0.017	0.074	0.051	0.087	0.0032	0.0077	0.013	0.59	0.033	0.99	---	---	---	---	---	---
TEG Dehydrator 3	0.017	0.074	0.051	0.087	0.0032	0.0077	0.013	0.59	0.033	0.99	---	---	---	---	---	---
Reboiler 1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reboiler 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reboiler 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Combustors																
Flare and Pilot	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hydrocarbon Loading																
Truck Loadout	0.031	0.0064	0.062	0.013	0.018	0.0037	0.04	0.008	1.87	0.39	---	---	---	---	---	---
Venting Emissions																
Compressor Blowdown Emissions	---	0.0040	---	0.010	---	0.00057	---	0.0017	---	0.20	---	---	---	---	---	---
Startup and Shutdown Emissions	---	0.0023	---	0.0057	---	0.00033	---	0.0010	---	0.11	---	---	---	---	---	---
Pigging Emissions	---	0.0034	---	0.0086	---	0.00049	---	0.0015	---	0.17	---	---	---	---	---	---
Vessel/Cleaning Emisissions	---	0.000077	---	0.00019	---	0.000011	---	0.000033	---	0.0038	---	---	---	---	---	---
Fugitive Emissions																
Component Leak Emissions	0.00092	0.0040	0.0021	0.0094	0.00026	0.0011	0.00064	0.0028	0.048	0.21	---	---	---	---	---	---
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Storage Tanks																
Storage Tank Battery - 7 tanks	2.70E-03	1.18E-02	5.41E-03	2.37E-02	1.58E-03	6.90E-03	3.54E-03	1.55E-02	1.66E-01	7.27E-01	---	---	---	---	---	---
Total Facility PTE =	**0.15**	**0.53**	**0.28**	**0.59**	**0.035**	**0.062**	**0.11**	**1.91**	**2.34**	**5.48**	**1.19**	**5.20**	**0.73**	**3.19**	**0.35**	**1.55**

Emissions Summary Total

UNCONTROLLED POTENTIAL EMISSION SUMMARY

Source	NOx		CO		VOC		SO_2		$PM_{10}/PM_{2.5}$		HAPs		Formaldehyde		CO_2e
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	ton/yr
Engines															
Compressor Engine 1	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 2	3.03	13.27	16.73	73.26	3.70	16.19	0.011	0.048	0.19	0.81	1.09	4.77	0.73	3.19	12,581
Compressor Engine 3	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 4	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 5	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 6	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 7	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 8	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 9	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 10	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 11	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 12	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Fuel Conditioning Heater	0.049	0.21	0.041	0.18	0.0027	0.012	0.00029	0.0013	0.0037	0.016	0.0009	0.0040	0.000037	0.00016	257
Turbines															
Microturbine Generator	0.32	1.40	0.88	3.85	0.08	0.35	0.028	0.12	0.054	0.24	0.0085	0.037	0.0059	0.026	4,665
Dehydrator															
TEG Dehydrator 1	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
TEG Dehydrator 2	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
TEG Dehydrator 3	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
Reboiler 1	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 2	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 3	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Combustors															
Flare and Pilot	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hydrocarbon Loading															
Truck Loadout	---	---	---	---	72.93	15.24	---	---	---	---	2.02	0.42	---	---	62
Venting Emissions															
Compressor Blowdown Emissions	---	---	---	---	---	10.56	---	---	---	---	---	0.21	---	---	834
Startup and Shutdown Emissions	---	---	---	---	---	6.11	---	---	---	---	---	0.12	---	---	482
Pigging Emissions	---	---	---	---	---	9.10	---	---	---	---	---	0.18	---	---	719
Vessel/Cleaning Emisissions	---	---	---	---	---	0.20	---	---	---	---	---	0.0041	---	---	16
Fugitive Emissions															
Component Leak Emissions	---	---	---	---	2.35	10.31	---	---	---	---	0.052	0.23	---	---	177
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	0.14	0.61	---	---	---	---	---
Storage Tanks															
Storage Tank Battery - 7 tanks	---	---	---	---	322.1	1,411	---	---	---	---	8.96	39.24	---	---	5,586
Total Facility PTE =	**36.28**	**158.9**	**188.0**	**823.3**	**657.6**	**2,602**	**0.16**	**0.70**	**2.43**	**10.65**	**44.04**	**185.0**	**11.11**	**48.67**	**216,142**

Emissions Summary Total

CONTROLLED POTENTIAL EMISSION SUMMARY

Source	NOx		CO		VOC		SO_2		$PM_{10}/PM_{2.5}$		HAPs		Formaldehyde		CO_2e
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	ton/yr
Engines															
Compressor Engine 1	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 2	3.03	13.27	1.02	4.47	1.75	7.67	0.011	0.048	0.19	0.81	0.30	1.30	0.12	0.53	12,581
Compressor Engine 3	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 4	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 5	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 6	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 7	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 8	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 9	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 10	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 11	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Compressor Engine 12	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.34	1.48	0.12	0.52	13,172
Fuel Conditioning Heater	0.049	0.21	0.041	0.18	0.0027	0.012	0.00029	0.0013	0.0037	0.016	0.00092	0.0040	0.000037	0.00016	257
Turbines															
Microturbine Generator	0.32	1.40	0.88	3.85	0.080	0.35	0.028	0.12	0.054	0.24	0.0085	0.037	0.0059	0.026	4,665
Dehydrator															
TEG Dehydrator 1	---	---	---	---	1.46	6.41	---	---	---	---	0.40	1.77	---	---	300
TEG Dehydrator 2	---	---	---	---	1.46	6.41	---	---	---	---	0.40	1.77	---	---	300
TEG Dehydrator 3	---	---	---	---	1.46	6.41	---	---	---	---	0.40	1.77	---	---	300
Reboiler 1	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 2	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 3	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Combustors															
Flare and Pilot	0.33	1.44	1.78	7.79	0.00011	0.00048	0.000012	0.000052	0.00015	0.00066	0.000038	0.00016	---	---	2,478
Hydrocarbon Loading															
Truck Loadout	---	---	---	---	72.93	15.24	---	---	---	---	2.02	0.42	---	---	62
Venting Emissions															
Compressor Blowdown Emissions	---	---	---	---	---	10.56	---	---	---	---	---	0.21	---	---	834
Startup and Shutdown Emissions	---	---	---	---	---	6.11	---	---	---	---	---	0.12	---	---	482
Pigging Emissions	---	---	---	---	---	9.10	---	---	---	---	---	0.18	---	---	719
Vessel/Cleaning Emisissions	---	---	---	---	---	0.20	---	---	---	---	---	0.0041	---	---	16
Fugitive Emissions															
Component Leak Emissions	---	---	---	---	2.35	10.31	---	---	---	---	0.052	0.23	---	---	177
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	0.14	0.61	---	---	---	---	---
Storage Tanks															
Storage Tank Battery - 7 tanks	---	---	---	---	6.44	28.22	---	---	---	---	0.18	0.78	---	---	114
Total Facility PTE =	**36.60**	**160.3**	**14.47**	**63.38**	**105.5**	**183.8**	**0.16**	**0.70**	**2.43**	**10.65**	**7.49**	**24.87**	**1.42**	**6.24**	**170,495**

HAP Emissions Summary Total

CONTROLLED POTENTIAL EMISSION SUMMARY

Source	Benzene		Toluene		Ethylbenzene		Xylenes		n-Hexane		Acetaldehyde		Acrolein		Methanol	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Engines																
Compressor Engine 1	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 2	0.0039	0.017	0.0036	0.016	0.00035	0.0015	0.0016	0.0071	0.010	0.043	0.074	0.32	0.045	0.20	0.022	0.10
Compressor Engine 3	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	305.507	0.12
Compressor Engine 4	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 5	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 6	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 7	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 8	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 9	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 10	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 11	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Compressor Engine 12	0.0049	0.022	0.0046	0.020	0.00044	0.0019	0.0021	0.0090	0.012	0.054	0.09	0.41	0.057	0.25	0.028	0.12
Fuel Conditioning Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Turbines																
Microturbine Generator	0.000099	0.00043	0.0011	0.0047	0.00026	0.0012	0.00053	0.0023	---	---	0.00033	0.0014	0.000053	0.00023	---	---
Dehydrator																
TEG Dehydrator 1	0.017	0.074	0.051	0.088	0.0032	0.0078	0.013	0.60	0.033	1.00	---	---	---	---	---	---
TEG Dehydrator 2	0.017	0.074	0.051	0.088	0.0032	0.0078	0.013	0.60	0.033	1.00	---	---	---	---	---	---
TEG Dehydrator 3	0.017	0.074	0.051	0.088	0.0032	0.0078	0.013	0.60	0.033	1.00	---	---	---	---	---	---
Reboiler 1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reboiler 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reboiler 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Combustors																
Flare and Pilot	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hydrocarbon Loading																
Truck Loadout	0.031	0.0064	0.062	0.013	0.018	0.0037	0.040	0.0084	1.87	0.39	---	---	---	---	---	---
Venting Emissions																
Compressor Blowdown Emissions	---	0.0040	---	0.010	---	0.00057	---	0.0017	---	0.20	---	---	---	---	---	---
Startup and Shutdown Emissions	---	0.0023	---	0.0057	---	0.00033	---	0.0010	---	0.11	---	---	---	---	---	---
Pigging Emissions	---	0.0034	---	0.0086	---	0.00049	---	0.0015	---	0.17	---	---	---	---	---	---
Vessel/Cleaning Emisissions	---	0.000077	---	0.00019	---	0.000011	---	0.000033	---	0.0038	---	---	---	---	---	---
Fugitive Emissions																
Component Leak Emissions	0.00092	0.0040	0.0021	0.0094	0.00026	0.0011	0.00064	0.0028	0.048	0.21	---	---	---	---	---	---
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Storage Tanks																
Storage Tank Battery - 7 tanks	2.70E-03	1.18E-02	5.41E-03	2.37E-02	1.58E-03	6.90E-03	3.54E-03	1.55E-02	1.66E-01	7.27E-01	---	---	---	---	---	---
Total Facility PTE =	**0.14**	**0.51**	**0.28**	**0.58**	**0.035**	**0.061**	**0.11**	**1.94**	**2.33**	**5.46**	**1.10**	**4.82**	**0.68**	**2.97**	**305.81**	**1.44**

Received
November 26, 2024
WV DEP/Div of Air Quality

Division of Air Quality Permit Application Submittal

Please find attached a permit application for : Antero Midstream; Middlebourne III Compressor Station Tyler County, WV
[Company Name; Facility Location]

- DAQ Facility ID (for existing facilities only): 095-00074
- Current 45CSR13 and 45CSR30 (Title V) permits associated with this process (for existing facilities only): R30-09500074-2020 (MM02)

- Type of NSR Application (check all that apply):
  - ☐ Construction
  - ☐ Modification
  - ☐ Class I Administrative Update
  - ☐ Class II Administrative Update
  - ☐ Relocation
  - ☐ Temporary
  - ☐ Permit Determination

- Type of 45CSR30 (TITLE V) Application:
  - ☐ Title V Initial
  - ☑ Title V Renewal
  - ☐ Administrative Amendment**
  - ☐ Minor Modification**
  - ☐ Significant Modification**
  - ☐ Off Permit Change

****If the box above is checked, include the Title V revision information as ATTACHMENT S to the combined NSR/Title V application.**

- Payment Type:
  - ☐ Credit Card (Instructions to pay by credit card will be sent in the Application Status email.)
  - ☐ Check (Make checks payable to: WVDEP – Division of Air Quality)
    Mail checks to:
    WVDEP – DAQ – Permitting
    Attn: NSR Permitting Secretary
    601 57th Street, SE
    Charleston, WV 25304

Please wait until DAQ emails you the Facility ID Number and Permit Application Number. Please add these identifiers to your check or cover letter with your check.

- If the permit writer has any questions, please contact (all that apply):
  - ☐ Responsible Official/Authorized Representative
    - Name:
    - Email:
    - Phone Number:
  - ☑ Company Contact
    - Name: Max Knop
    - Email: mknop@anteroresources.com
    - Phone Number: 303-357-6483
  - ☑ Consultant
    - Name: Kaitlin Meszaros
    - Email: meszaros@pinyon-env.com
    - Phone Number: 631-245-0308

Antero Midstream
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

November 26, 2024

submitted via email

WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304

SUBJECT: **Antero Midstream – Middlebourne III Compressor Station**
West Virginia Department of Environmental Protection, Division of Air Quality, Renewal Operating Permit Application R30-09500074-2020 (MM02)

Antero Midstream is submitting a Renewal Operating Permit Application for the Middlebourne III Compressor Station. The Renewal Operating Permit Application is being submitted by November 27, 2024.

If you have any questions or require further assistance, please contact Kaitlin Meszaros at 631-245-0308 or by email at meszaros@pinyon-env.com .

Sincerely,

Max Knop

Environmental and Regulatory Compliance Manager

Pinyon Environmental, Inc.

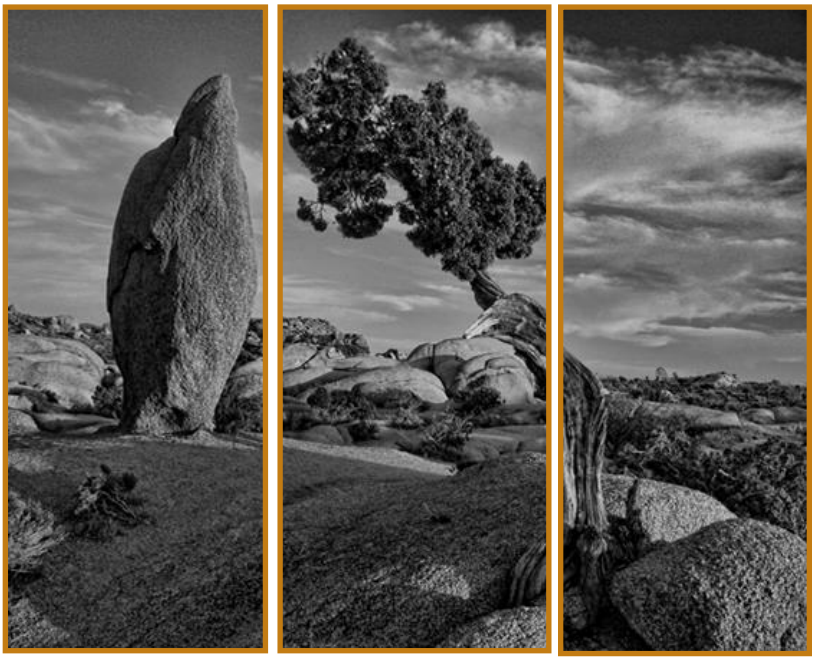
Corporate Headquarters
3222 South Vance Street, Suite 200, Lakewood, CO 80227
T: 303.980.5200 F: 303.980.0089
www.pinyon-env.com

November 26, 2024

Renewal Operating Permit Application

Antero Midstream
Middlebourne III Compressor Station
Tyler County, West Virginia

Pinyon Project No.:
1/19/1337-01



Pinyon Environmental, Inc.

Corporate Headquarters
3222 South Vance Street, Suite 200, Lakewood, CO 80227
T: 303.980.5200 F: 303.980.0089
www.pinyon-env.com

November 26, 2024

Renewal Operating Permit Application

Antero Midstream
Middlebourne III Compressor Station
Tyler County, West Virginia

Pinyon Project No.:
1/19/1337-01

Prepared by:

Peter Wolberg

Peter Wolberg

Reviewed by:

Kaitlin Meszaros

Kaitlin Meszaros

Table of Contents

Title V Permit Application Checklist for Administrative Completeness

TITLE V PERMIT APPLICATION CHECKLIST
FOR ADMINISTRATIVE COMPLETENESS

A complete application is demonstrated when all the information required below is properly prepared, completed and attached. The items listed below are required information which must be submitted with a Title V permit application. Any submittal will be considered incomplete if the required information is not included.	
☒	Application signed by a Responsible Official as defined in 45CSR§30-2.38 ("*Section 6: Certification of Information*" page signed and dated)
☒	Table of Contents (should be included, but not required for administrative completeness)
☒	Facility information
☒	Description of process and products, including NAICS and SIC codes, and including alternative operating scenarios
☒	Area map showing plant location
☒	Plot plan showing buildings and process areas
☒	Process flow diagram(s), showing all emission units, control equipment, emission points, and their relationships
☒	Identification of all applicable requirements with a description of the compliance status, the methods used for demonstrating compliance, and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the source is not in compliance
☒	Listing of all active permits and consent orders (if applicable)
☒	Facility-wide emissions summary
☒	Identification of Insignificant Activities
☒	ATTACHMENT D - Title V Equipment Table completed for all emission units at the facility except those designated as insignificant activities
☒	ATTACHMENT E - Emission Unit Form completed for each emission unit listed in the Title V Equipment Table (ATTACHMENT D) and a Schedule of Compliance Form (ATTACHMENT F) for all requirements for which the emission unit is not in compliance
☒	ATTACHMENT G - Air Pollution Control Device Form completed for each control device listed in the Title V Equipment Table (ATTACHMENT D)
☒	ATTACHMENT H – Compliance Assurance Monitoring (CAM) Plan Form completed for each control device for which the "Is the device subject to CAM?" question is answered "Yes" on the Air Pollution Control Device Form (ATTACHMENT G)
☐	Confidential Information submitted in accordance with 45CSR31

General Application Form

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF AIR QUALITY
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0475
www.dep.wv.gov/daq

INITIAL/RENEWAL TITLE V PERMIT APPLICATION - GENERAL FORMS

Section 1: General Information

1. **Name of Applicant (As registered with the WV Secretary of State's Office):**
Antero Midstream

2. Facility Name or Location:
Middlebourne III Compressor Station

3. DAQ Plant ID No.:
095-00074

4. Federal Employer ID No. (FEIN):
46-5517375

5. **Permit Application Type:**

☐ Initial Permit — When did operations commence?
☑ Permit Renewal — What is the expiration date of the existing permit? 5/27/2025
☐ Update to Initial/Renewal Permit Application

6. Type of Business Entity:

☐ Corporation ☐ Governmental Agency ☑ LLC
☐ Partnership ☐ Limited Partnership

7. Is the Applicant the:

☐ Owner ☐ Operator ☑ Both

If the Applicant is not both the owner and operator, please provide the name and address of the other party.

8. Number of onsite employees:
0

9. Governmental Code:

☑ Privately owned and operated; 0
☐ Federally owned and operated; 1
☐ State government owned and operated; 2
☐ County government owned and operated; 3
☐ Municipality government owned and operated; 4
☐ District government owned and operated; 5

10. Business Confidentiality Claims

Does this application include confidential information (per 45CSR31)? ☐ Yes ☑ No

If yes, identify each segment of information on each page that is submitted as confidential, and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's *"PRECAUTIONARY NOTICE-CLAIMS OF CONFIDENTIALITY"* guidance.

11. Mailing Address		
Street or P.O. Box: 1615 Wynkoop Street		
City: Denver	**State:** CO	**Zip:** 80202
Telephone Number: 303-357-7310	**Fax Number:** N/A	

12. Facility Location (Physical Address)		
Street: Wick Road	**City:** Wick	**County:** Tyler
UTM Easting: 503.135 km	**UTM Northing:** 4363.005 km	**Zone:** ☑ 17 or ☐ 18
Directions: From Wick, West Virginia, at the intersection of Hog Run Road and Wick Road, head east on Wick Road for 0.85 miles and turn left into the facility entrance.		
Portable Source? ☐ Yes ☑ No		
Is facility located within a nonattainment area? ☐ Yes ☑ No		**If yes, for what air pollutants?**
Is facility located within 50 miles of another state? ☑ Yes ☐ No		**If yes, name the affected state(s).** Ohio and Pennsylvania
Is facility located within 100 km of a Class I Area[1]? ☐ Yes ☑ No **If no, do emissions impact a Class I Area[1]?** ☐ Yes ☑ No		**If yes, name the area(s).**

[1] *Class I areas include Dolly Sods and Otter Creek Wilderness Areas in West Virginia, and Shenandoah National Park and James River Face Wilderness Area in Virginia.*

13. Contact Information		
Responsible Official: Jeremy Jones		**Title:** Vice President, Operations
Street or P.O. Box: 1615 Wynkoop Street		
City: Denver	**State:** CO	**Zip:** 80202
Telephone Number: 304-842-4701	**Cell Number:** N/A	
E-mail address: jejones@anteroresources.com		
Environmental Contact: Max Knop		**Title:** Environmental & Regulatory Manager
Street or P.O. Box: 1615 Wynkoop Street		
City: Denver	**State:** CO	**Zip:** 80202
Telephone Number: 303-357-6483	**Cell Number:** N/A	
E-mail address: mknop@anteroresources.com		
Application Preparer: Kaitlin Meszaros		**Title:** Air Quality Specialist
Company: Pinyon Environmental, Inc.		
Street or P.O. Box: 3222 South Vance Street, Suite 200		
City: Lakewood	**State:** CO	**Zip:** 80227
Telephone Number: 631-245-0308	**Cell Number:** N/A	
E-mail address: meszaros@pinyon-env.com		

14. Facility Description

List all processes, products, NAICS and SIC codes for normal operation, in order of priority. Also list any process, products, NAICS and SIC codes associated with any alternative operating scenarios if different from those listed for normal operation.

Process	Products	NAICS	SIC
Natural Gas Transmission	Pipeline Transportation of Natural Gas	486210	4922

Provide a general description of operations.

The Middlebourne III Compressor Station separates, compresses, and dries gas off the inlet pipeline stream. The station includes twelve (12) compressor engines each with an oxidation catalyst, one (1) generator, three (3) dehydration units each with a flash tank and reboiler, three (3) condensate tanks, three (3) produced water tanks, one (1) settling tank, one (1) fuel conditioning heater, one (1) flare for dehydrator emissions control, two (2) vapor recovery units for storage tank emissions control, liquid loadout operations, fugitive component emissions, and auxiliary tanks.

15. Provide an **Area Map** showing plant location as **ATTACHMENT A**.

16. Provide a **Plot Plan(s)**, e.g. scaled map(s) and/or sketch(es) showing the location of the property on which the stationary source(s) is located as **ATTACHMENT B**. For instructions, refer to "Plot Plan - Guidelines."

17. Provide a detailed **Process Flow Diagram(s)** showing each process or emissions unit as **ATTACHMENT C**. Process Flow Diagrams should show all emission units, control equipment, emission points, and their relationships.

Section 2: Applicable Requirements

18. Applicable Requirements Summary	
Instructions: Mark all applicable requirements.	
☑ SIP	☐ FIP
☑ Minor source NSR (45CSR13)	☐ PSD (45CSR14)
☑ NESHAP (45CSR34)	☐ Nonattainment NSR (45CSR19)
☑ Section 111 NSPS	☐ Section 112(d) MACT standards
☐ Section 112(g) Case-by-case MACT	☐ 112(r) RMP
☐ Section 112(i) Early reduction of HAP	☐ Consumer/commercial prod. reqts., section 183(e)
☐ Section 129 Standards/Reqts.	☐ Stratospheric ozone (Title VI)
☐ Tank vessel reqt., section 183(f)	☐ Emissions cap 45CSR§30-2.6.1
☐ NAAQS, increments or visibility (temp. sources)	☐ 45CSR27 State enforceable only rule
☐ 45CSR4 State enforceable only rule	☐ Acid Rain (Title IV, 45CSR33)
☐ Emissions Trading and Banking (45CSR28)	☐ **C**ompliance **A**ssurance **M**onitoring (40CFR64)
☐ Cross-State Air Pollution Rule (45CSR43)	

19. Non Applicability Determinations
List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.
See Regulatory Discussion for details on rules that are not applicable to the Facility
☑ Permit Shield

19. Non Applicability Determinations *(Continued)* *- Attach additional pages as necessary.*

List all requirements which the source has determined not applicable and for which a permit shield is requested. The listing shall also include the rule citation and the reason why the shield applies.

In R13-3347E

2.12 Emergency – reserved

3.1.1 Open burning [45CSR§6-3.l.] – open burning of refuse is prohibited expect as noted in 45 CSR §6-3.1

3.1.3 Asbestos [40 CFR §61.145(b) and 45 CSR §34]– search and removal requirements

3.1.4 Odor [45CSR§4-3.l.] - no permissible objectionable order emissions at public locations

3.4.2 Odors - retain records of odor complaints

☑ Permit Shield

20. Facility-Wide Applicable Requirements

List all facility-wide applicable requirements. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*).

In R13-3347E
Condition 2.6 Duty to Provide Information
Condition 2.7 Duty to Supplement and Correct Information
Condition 2.11 Inspection and Entry
Condition 2.14 Suspension of Activities
Condition 2.18 Startup notification
Condition 3.1.2 Open burning exemptions
Condition 3.1.3 Asbestos
Condition 3.1.5 Permanent Shutdown
Condition 3.1.6 Standby plan for reducing emissions
Condition 3.3 Stack testing requirements
Condition 3.5.4.1 Fees
Condition 3.5.5 Emission Inventory
Condition 4.1.1 Record of Monitoring
Condition 4.1.2 & 7.4.6 Minor Source of Hazardous Air Pollutants (HAP)
Condition 4.1.3 Operation and Maintenance of Air Pollution Control Equipment
Condition 4.1.4 Record of Malfunctions of Air Pollution of Control Equipment
Condition 4.1.5 Limitation and Standards

☑ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing / recordkeeping / reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

In R13-3347E

Condition 2.6 Duty to Provide Information: will provide documentation upon request. No requests have been made to date

Condition 2.7 Duty to Supplement and Correct Information: will provide documentation upon request. No requests have been made to date

Condition 2.11 Inspection and Entry: any requests from WVDEP to enter the facility are granted provided notice.

Condition 2.14 Suspension of Activities: notification of suspended activities will be submitted within two calendar weeks of passing the 60th day of the suspension

Condition 2.18 Startup notification - submit as required

Condition 3.1.2 Open burning exemptions: notification requirements will be kept for exemptions in 45CSR6-3.1

Condition 3.1.3 Asbestos: notifications will be submitted ten working days prior to commencement of asbestos removal with copies sent to appropriate agencies

Condition 3.1.5 - submit information to contradict permanent shutdown status

Condition 3.1.6 Standby plan for reducing emissions: will prepare standby plans for reducing emissions upon request

Condition 3.3 Stack testing requirements: will perform stack tests as required including submittal of test protocols at least 30 days prior to testing, notifications at least 15 days prior to testing and submit test results within 60 days of completion

Condition 3.5.4.1 Fees: pay CTO fees

Condition 3.5.5 Emission Inventory: submit annual emissions inventories by March 31

Condition 4.1.1 Record of Monitoring: maintain monitoring records

Condition 4.1.2 & 7.4.6 Minor Source of HAP: conduct HAP source determination annually

Condition 4.1.3 Operation and Maintenance of Air Pollution Equipment: install and operate pollution control equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions.

Condition 4.1.4 Record of Malfunctions: maintain records of occurrence and duration of malfunction/operational shutdown when excess emissions occurred.

Condition 4.1.5 Limitations and Standards - units and sources are in Table 1.0 of permit or deminimis sources in Table 45-13B

Are you in compliance with all facility-wide applicable requirements? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

20. Facility-Wide Applicable Requirements *(Continued)* - *Attach additional pages as necessary.*

List all facility-wide applicable requirements. For each applicable requirement, include the rule citation and/or permit with the condition number.

In R13-3347E

Condition 3.4.1 Recordkeeping
Condition 3.5.1 Responsible official

☑ Permit Shield

For all facility-wide applicable requirements listed above, provide monitoring/testing/recordkeeping/ reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number and/or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Condition 3.4.1 Recordkeeping: records including monitoring data, support information, reports, and notifications shall be kept for 5 years.
Condition 3.5.1 Responsible official: certification by the responsible official will be submitted for any application form, report, or compliance certification

Are you in compliance with all facility-wide applicable requirements? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

21. Active Permits/Consent Orders		
Permit or Consent Order Number	Date of Issuance MM/DD/YYYY	List any Permit Determinations that Affect the Permit *(if any)*
R13-3347E	12/18/2023	N/A

22. Inactive Permits/Obsolete Permit Conditions		
Permit Number	Date of Issuance MM/DD/YYYY	Permit Condition Number
R13-3347	03/20/2017	
R13-3347A	01/02/2020	
R13-3347B	03/31/2020	
R13-3347C	06/22/2021	
R13-3347D	07/29/2021	

Section 3: Facility-Wide Emissions

23. Facility-Wide Emissions Summary [Tons per Year]	
Criteria Pollutants	Potential Emissions
Carbon Monoxide (CO)	63.38
Nitrogen Oxides (NO_X)	160.3
Lead (Pb)	0
Particulate Matter ($PM_{2.5}$)[1]	10.65
Particulate Matter (PM_{10})[1]	10.65
Total Particulate Matter (TSP)	10.65
Sulfur Dioxide (SO_2)	0.70
Volatile Organic Compounds (VOC)	183.8
Hazardous Air Pollutants[2]	Potential Emissions
Formaldehyde	6.24
Acetaldehyde	5.20
Toluene	0.99
Acrolein	3.19
Methanol	1.55
Regulated Pollutants other than Criteria and HAP	Potential Emissions
Carbon Dioxide Equivalent	170495

[1]$PM_{2.5}$ and PM_{10} are components of TSP.
[2]For HAPs that are also considered PM or VOCs, emissions should be included in both the HAPs section and the Criteria Pollutants section.

Section 4: Insignificant Activities

24. Insignificant Activities (Check all that apply)		
☑	1.	Air compressors and pneumatically operated equipment, including hand tools.
☑	2.	Air contaminant detectors or recorders, combustion controllers or shutoffs.
☑	3.	Any consumer product used in the same manner as in normal consumer use, provided the use results in a duration and frequency of exposure which are not greater than those experienced by consumer, and which may include, but not be limited to, personal use items; janitorial cleaning supplies, office supplies and supplies to maintain copying equipment.
☐	4.	Bathroom/toilet vent emissions.
☐	5.	Batteries and battery charging stations, except at battery manufacturing plants.
☐	6.	Bench-scale laboratory equipment used for physical or chemical analysis, but not lab fume hoods or vents. Many lab fume hoods or vents might qualify for treatment as insignificant (depending on the applicable SIP) or be grouped together for purposes of description.
☐	7.	Blacksmith forges.
☐	8.	Boiler water treatment operations, not including cooling towers.
☑	9.	Brazing, soldering or welding equipment used as an auxiliary to the principal equipment at the source.
☐	10.	CO_2 lasers, used only on metals and other materials which do not emit HAP in the process.
☑	11.	Combustion emissions from propulsion of mobile sources, except for vessel emissions from Outer Continental Shelf sources.
☐	12.	Combustion units designed and used exclusively for comfort heating that use liquid petroleum gas or natural gas as fuel.
☑	13.	Comfort air conditioning or ventilation systems not used to remove air contaminants generated by or released from specific units of equipment.
☐	14.	Demineralized water tanks and demineralizer vents.
☐	15.	Drop hammers or hydraulic presses for forging or metalworking.
☐	16.	Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam.
☐	17.	Emergency (backup) electrical generators at residential locations.
☐	18.	Emergency road flares.
☑	19.	Emission units which do not have any applicable requirements and which emit criteria pollutants (CO, NO_x, SO_2, VOC and PM) into the atmosphere at a rate of less than 1 pound per hour and less than 10,000 pounds per year aggregate total for each criteria pollutant from all emission units. Please specify all emission units for which this exemption applies along with the quantity of criteria pollutants emitted on an hourly and annual basis: 2,000 gallon Compressor Skid Oily Water Tank 4,000 gallon Used Oil Tank 1,000 gallon TEG Make-Up Tank 2,000 gallon Compressor Coolant Tank 2,000 gallon Engine Lube Oil Tank 2,000 gallon Compressor Lube Oil Tank Total criteria pollutant emissions for the sources above are < 1lb/hr and 0.5 ton/yr.

24. Insignificant Activities (Check all that apply)		
☑	20.	Emission units which do not have any applicable requirements and which emit hazardous air pollutants into the atmosphere at a rate of less than 0.1 pounds per hour and less than 1,000 pounds per year aggregate total for all HAPs from all emission sources. This limitation cannot be used for any source which emits dioxin/furans nor for toxic air pollutants as per 45CSR27. Please specify all emission units for which this exemption applies along with the quantity of hazardous air pollutants emitted on an hourly and annual basis: 2,000 gallon Compressor Skid Oily Water Tank; 4,000 gallon Used Oil Tank 1,000 gallon TEG Make-Up Tank; 2,000 gallon Compressor Coolant Tank 2,000 Engine Lube Oil Tank; 2,000 gallon Compressor Lube Oil Tank Total criteria pollutant emissions for the sources above are < 1lb/hr and 0.5 ton/yr.
☐	21.	Environmental chambers not using hazardous air pollutant (HAP) gases.
☐	22.	Equipment on the premises of industrial and manufacturing operations used solely for the purpose of preparing food for human consumption.
☐	23.	Equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.
☑	24.	Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
☑	25.	Equipment used for surface coating, painting, dipping or spray operations, except those that will emit VOC or HAP.
☑	26.	Fire suppression systems.
☐	27.	Firefighting equipment and the equipment used to train firefighters.
☐	28.	Flares used solely to indicate danger to the public.
☐	29.	Fugitive emission related to movement of passenger vehicle provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.
☐	30.	Hand-held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation.
☑	31.	Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic.
☐	32.	Humidity chambers.
☐	33.	Hydraulic and hydrostatic testing equipment.
☐	34.	Indoor or outdoor kerosene heaters.
☑	35.	Internal combustion engines used for landscaping purposes.
☐	36.	Laser trimmers using dust collection to prevent fugitive emissions.
☐	37.	Laundry activities, except for dry-cleaning and steam boilers.
☐	38.	Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
☐	39.	Oxygen scavenging (de-aeration) of water.
☐	40.	Ozone generators.

24. Insignificant Activities (Check all that apply)		
☑	41.	Plant maintenance and upkeep activities (e.g., grounds-keeping, general repairs, cleaning, painting, welding, plumbing, re-tarring roofs, installing insulation, and paving parking lots) provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and not otherwise triggering a permit modification. (Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise requested.)
☑	42.	Portable electrical generators that can be moved by hand from one location to another. "Moved by Hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
☐	43.	Process water filtration systems and demineralizers.
☑	44.	Repair or maintenance shop activities not related to the source's primary business activity, not including emissions from surface coating or de-greasing (solvent metal cleaning) activities, and not otherwise triggering a permit modification.
☑	45.	Repairs or maintenance where no structural repairs are made and where no new air pollutant emitting facilities are installed or modified.
☐	46.	Routing calibration and maintenance of laboratory equipment or other analytical instruments.
☐	47.	Salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants. Shock chambers.
☐	48.	Shock chambers.
☐	49.	Solar simulators.
☐	50.	Space heaters operating by direct heat transfer.
☐	51.	Steam cleaning operations.
☐	52.	Steam leaks.
☐	53.	Steam sterilizers.
☑	54.	Steam vents and safety relief valves.
☐	55.	Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
☑	56.	Storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP. Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids should be based on size limits such as storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.
☐	57.	Such other sources or activities as the Director may determine.
☑	58.	Tobacco smoking rooms and areas.
☐	59.	Vents from continuous emissions monitors and other analyzers.

Section 5: Emission Units, Control Devices, and Emission Points

25. Equipment Table
Fill out the **Title V Equipment Table** and provide it as **ATTACHMENT D**.
26. Emission Units
For each emission unit listed in the **Title V Equipment Table**, fill out and provide an **Emission Unit Form** as **ATTACHMENT E**.
For each emission unit not in compliance with an applicable requirement, fill out a **Schedule of Compliance Form** as **ATTACHMENT F**.
27. Control Devices
For each control device listed in the **Title V Equipment Table**, fill out and provide an **Air Pollution Control Device Form** as **ATTACHMENT G**.
For any control device that is required on an emission unit in order to meet a standard or limitation for which the potential pre-control device emissions of an applicable regulated air pollutant is greater than or equal to the Title V Major Source Threshold Level, refer to the **Compliance Assurance Monitoring (CAM) Form(s)** for CAM applicability. Fill out and provide these forms, if applicable, for each Pollutant Specific Emission Unit (PSEU) as **ATTACHMENT H**.

Section 6: Certification of Information

28. Certification of Truth, Accuracy and Completeness and Certification of Compliance

Note: This Certification must be signed by a responsible official as defined in 45CSR§30-2.38.

a. Certification of Truth, Accuracy and Completeness

I certify that I am a responsible official (as defined at 45CSR§30-2.38) and am accordingly authorized to make this submission on behalf of the owners or operators of the source described in this document and its attachments. I certify under penalty of law that I have personally examined and am familiar with the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine and/or imprisonment.

b. Compliance Certification

Except for requirements identified in the Title V Application for which compliance is not achieved, I, the undersigned hereby certify that, based on information and belief formed after reasonable inquiry, all air contaminant sources identified in this application are in compliance with all applicable requirements.

Responsible official (type or print)

Name:	Title:
Jeremy Jones	Vice President, Operations

Responsible official's signature:

Signature: _____ Signature Date: 11/21/2024

(Must be signed and dated in blue ink or have a valid electronic signature)

Note: Please check all applicable attachments included with this permit application:

☑	ATTACHMENT A: Area Map
☑	ATTACHMENT B: Plot Plan(s)
☑	ATTACHMENT C: Process Flow Diagram(s)
☑	ATTACHMENT D: Equipment Table
☑	ATTACHMENT E: Emission Unit Form(s)
☐	ATTACHMENT F: Schedule of Compliance Form(s)
☑	ATTACHMENT G: Air Pollution Control Device Form(s)
☑	ATTACHMENT H: Compliance Assurance Monitoring (CAM) Form(s)

All of the required forms and additional information can be found and downloaded from, the DEP website at www.dep.wv.gov/daq, requested by phone (304) 926-0475, and/or obtained through the mail.

Process Description

The Middlebourne III Compressor Station is located in Tyler County, West Virginia. The process description below is based on the full buildout of the facility.

Gas from surrounding pipelines enters the facility through receivers and associated slug catcher. From there, the gas is metered and routed through a scrubber and filter separator. Any produced liquids from the scrubber or separator are sent to the 500 barrel settling tank (T04). Gas from the filter separator is sent to eleven (11) 2,675 horsepower (hp) Caterpillar G3608 lean burn compressor engines (C-100, C-300 through C-1200) and one (1) 2,749 horsepower Caterpillar 3608 A4 lean burn compressor engine (C-200). The twelve (12) compressor engines are controlled with oxidation catalysts (1C through 12C). Fuel gas for the compressor engines will be treated prior to the engines by a fuel conditioning skid with a 0.5 MMBtu/hr heater (FUEL1) to allow more complete combustion. Produced fluids are routed to the settling tank and gas goes to one of the three (3) TEG dehydrators.

Each TEG dehydrator (DEHY1 through DEHY3) contains a flash gas tank and 1.5 MMBtu/hr reboiler. Each dehydrator has a design rate of 150 million standard cubic feet per day (MMscf/day). Within the dehydrator unit, vent gas from the flash gas tank (DFLSH1 through DFLSH3) is routed to the reboiler (DREB1 through DREB3) and used as fuel. In the case where the flash tank gas cannot be used by the reboiler due to excess gas or the reboiler being offline, the gas will be sent to the VRUs (VRU-100 and VRU-200) via the storage tanks (T01 through T07) and thus controlled by 98%. Emissions from each reboiler are routed to the atmosphere. The dehydrator still vents are controlled by a flare with at least 98% control efficiency (FLARE1). Each still vent is also equipped with a BTEX condenser unit. Produced fluids from the dehydrators (DEHY1 through DEHY3) are routed to the settling tank (T04). The dry gas from the dehydration process is either routed to a fuel gas scrubber, metered, and routed to the compressors as fuel gas or metered and sent to plant discharge.

All produced fluids enter one (1) 500 barrel settling tank (T04) where the fluids settle out as either condensate or produced water. The produced water goes to three (3) 400 barrel produced water tanks (T05 through T07), and the condensate goes to three (3) 400 barrel condensate tanks (T01 through T03). Flashing only occurs at the settling tank as the fluids stabilize in the settling tank before going to the other storage tanks. All seven (7) tanks are connected to a vapor recovery unit (VRU-100) where tank vapors are collected and recycled back into the gas system right before the initial filter scrubber. A second vapor recovery unit (VRU-200) is also connected to the tanks as a backup unit. The produced fluids are trucked out via tanker trucks as needed (LDOUT1). The maximum estimated production is 300 barrels per day of condensate and 90 barrels per day of produced water.

One (1) natural gas microturbine generator rated at 800 kWe supplies power to the facility (GEN1). The 800 kWe generator is actually comprised of four smaller units, each rated at 200 kWe.

Fugitive emissions from component leaks and emissions from pigging venting, blowdown events, startup and shutdown events, and vessel cleaning/maintenance (VENT1) also occur.

There are also small storage tanks (1,000 to 4,000 gallons) located at the facility. Their ID number, description, and size are listed in the table below.

Tag Number	Description	Gallons
TK-100	Compressor Skid Oily Water Tank	2,000
TK-101	Used Oil Tank	4,000
TK-102	TEG Make-Up Tank	1,000
TK-103	Compressor Coolant Tank	2,000
TK-104	Engine Lube Oil Tank	2,000
TK-105	Compressor Lube Oil Tank	2,000

Regulatory Discussion

Federal Regulations

40 Code of Federal Regulation (CFR) Part 60 – Standards of Performance for New Stationary Sources

I. *Subpart A – General Provisions*

Applicability: Subpart A applies if a source is subject to at least one regulation under 40 CFR Part 60. Therefore, Middlebourne III Compressor Station is subject to Subpart A as it is applicable to some requirements, as discussed below.

II. *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*

Applicability: Subpart Kb applies to volatile organic liquid storage tanks with a capacity greater than or equal to 75 cubic meters (m^3) (§60.110b(a)). However, Subpart Kb does not apply to storage vessels with a design capacity less than or equal to 1,589.874 m^3 that are used for petroleum or condensate storage prior to custody transfer. The storage tanks at the Middlebourne III Compressor Station are less than 1,589.874 m^3 and are used for storage prior to custody transfer. Therefore, Subpart Kb does not apply to the Middlebourne III Compressor Station.

III. *Subpart GG - Standards of Performance for Stationary Gas Turbines*

Applicability: Subpart GG applies to all stationary gas turbines with a heat input at peak load equal to or greater than 10 MMBtu/hr based on the lower heating value of the fuel (§60.330(a)). Since the microturbine generator at the Middlebourne III Compressor Station has a heat input less than 10 MMBtu/hr, Subpart GG does not apply.

IV. *Subpart KKK - Standards of Performance for Equipment Leaks of VOC from Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011.*

Applicability: Subpart KKK applies to facilities built or modified before August 23, 2011. Subpart KKK does not apply as the Middlebourne III Compressor Station was built after 2011.

V. *Subpart LLL - Standards of Performance for SO_2 Emissions from Onshore Natural Gas Processing for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011.*

Applicability: Subpart LLL applies to facilities built or modified before August 23, 2011. Subpart LLL does apply as the Middlebourne III Compressor Station was built after 2011.

VI. *Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*

Applicability: Subpart JJJJ applies to engines that were ordered after June 12, 2006 and manufactured on or after July 1, 2007 for engines with maximum power greater than or equal to 500 horsepower (hp) (§60.4230(a)(4)(i)). Thus, Subpart JJJJ applies to the Middlebourne III Compressor Station as the compressor engines were ordered after June 12, 2006 and manufactured after July 1, 2007.

VII. *Subpart KKKK - Standards of Performance for Stationary Combustion Turbines*

Applicability: Subpart KKKK applies to all stationary combustion turbines with a heat input at peak load equal to or greater than 10 MMBtu/hr based on the higher heating value of the fuel (§60.4305(a)). Since the microturbine generator at the Middlebourne III Compressor Station has a heat input rating less than 10 MMBtu/hr, Subpart KKKK does not apply.

VIII. *Subpart OOOO - Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution*

Applicability: Subpart OOOO applies to facilities that were constructed, modified, or reconstructed after August 23, 2011, and on or before September 18, 2015 (§60.5365). Therefore, Subpart OOOO does not apply as the Middlebourne III Compressor Station was constructed after September 18, 2015.

IX. *Subpart OOOOa – Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015*

Applicability: Subpart OOOOa applies to reciprocating compressor facilities that were constructed, modified, or reconstructed after September 18, 2015 and on or before December 6, 2022 (§60.5365a(c)). Also, Subpart OOOOa applies to storage vessel affected facilities with individual tank emissions greater than 6 tons per year (§60.5365a(e)). Lastly, the collection of fugitive emissions components at a compressor station is an affected facility under this Subpart (§60.5365a(j)). Since the Middlebourne III Compressor Station was constructed after September 18, 2015 and on or before December 6, 2022 and is a compressor station with reciprocating compressors, Subpart OOOOa does apply. The pneumatic devices are air-actuated or electric and therefore exempt from the requirements of this Subpart. The determination accounting for recovered vapors from the VRUs results in battery VOC emissions less than 6 tons per year per tank and therefore the storage tank affected facility requirements do not apply.

40 CFR Part 61 – National Emission Standards for Hazardous Air Pollutants

I. *Subpart A – General Provisions*

Applicability: Subpart A applies if a source is subject to at least one regulation under 40 CFR Part 61. Therefore, Middlebourne III Compressor Station is not subject to Subpart A as there are no applicable requirements, as discussed below.

II. *Subpart V – National Emission Standard for Equipment Leaks (Fugitive Emission Sources)*

Applicability: Subpart V applies to components such as compressors, valves, and pumps that are intended to operate in volatile hazardous air pollutant (VHAP) service (§61.240(a)). VHAP service means that a component contains or contacts a fluid that is at least 10 percent by weight a VHAP. Subpart V does not apply to the Middlebourne III Compressor Station because none of the components have fluid (natural gas, water, or condensate) that is over 10 percent by weight of any VHAP.

40 CFR Part 63 – National Emission Standards for Hazardous Air Pollutants for Source Categories

I. *Subpart A – General Provisions*

Applicability: Subpart A applies if a source is subject to at least one regulation under 40 CFR Part 63. Therefore, Middlebourne III Compressor Station is subject to Subpart A as it is applicable to some requirements, as discussed below.

II. *Subpart HH – National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities*

Applicability: Subpart HH applies to oil and natural gas production facilities that are a major or area source of hazardous air pollutant (HAP) emissions, and that process, upgrade, or store hydrocarbon liquids or natural gas prior to the transmission and storage source category (§63.760(a)). Subpart HH does apply to the Middlebourne III Compressor Station. Per the definitions in §63.761, the Middlebourne III Compressor Station would be considered a "production field facility" as it is before custody transfer (before a gas processing plant). Therefore, for major source determination for this Subpart, only those HAP emissions from glycol dehydration and storage tanks shall be aggregated. Aggregating these HAPs results in the Middlebourne III Compressor Station being classified as an area source of HAP emissions under this Subpart. Because it is an area source of HAP emissions, the three (3) dehydrators are applicable sources under Subpart HH (§63.760(b)(2)). However, actual benzene emissions from each of the dehydrators at the Middlebourne III Compressor Station are estimated to be less than 1 ton per year, so the dehydrators are exempt from all requirements except recordkeeping (§63.764(e)(1)(ii)).

III. *Subpart HHH – National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities*

Applicability: Subpart HHH applies to natural gas transmission and storage facilities that are a major source of HAP emissions (§63.1270(a)). Subpart HHH does not apply to the Middlebourne III Compressor Station is prior to the gas transmission and storage phase.

IV. *Subpart EEEE – National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)*

Applicability: Subpart EEEE applies to organic liquids distribution operations that are located at major source of HAP emissions (§63.2334(a)). Subpart EEEE does not apply to the

Middlebourne III Compressor Station as it is defined as an oil and natural gas production facility and exempt from this Subpart (§63.2334(c)(1)).

V. Subpart YYYY – National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines

Applicability: Subpart YYYY applies to stationary combustion turbines located at major sources of HAP emissions (§63.6085(a)). Since the Middlebourne III Compressor Station is not a major source of HAP emissions, Subpart YYYY does not apply.

VI. *Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*

Applicability: Subpart ZZZZ applies to stationary reciprocating internal combustion engines (RICE) at a major or area source of HAP emissions (§63.6585). Subpart ZZZZ applies to the Middlebourne III Compressor Station as the compressor engines are new RICE. The Caterpillar G3608 compressor engines and Caterpillar G3608 A4 compressor engine demonstrate compliance with the requirements under this Subpart for four-stroke lean-burn (4SLB) engines with oxidation catalysts greater than 500 horsepower for an area source of HAPs through 40 CFR Part 60 Subpart JJJJ.

VII. *Subpart DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters*

Applicability: Subpart DDDDD applies to process heaters at a major source of HAP emissions (§63.7485). Per the definitions in §63.7575, the Middlebourne III Compressor Station would be considered a "production field facility" as it is before custody transfer (before a gas processing plant). Therefore, for major source determination for this Subpart, only those HAP emissions from glycol dehydration and storage tanks shall be aggregated. Therefore, this Subpart does not apply as the Middlebourne III Compressor Station is not a major source of HAPs when considering HAPs from the glycol dehydrators and storage tanks.

Prevention of Significant deterioration and Title V Greenhouse Gas Tailoring Rule

Applicability: The Tailoring Rule was published into the Federal Register starting in 2010 in three steps. Step 1 of the Tailoring Rule stated that Title V or Prevention of Significant Deterioration (PSD) requirements would apply to greenhouse gas (GHG) sources only if the sources were subject to Title V or PSD because of other regulated pollutants. Due to court proceedings in 2014, the Middlebourne III Compressor Station is required to follow Step 1 of the Tailoring Rule. The potential CO_2e emissions from the Middlebourne III Compressor Station are greater than 100,000 tons per year. Because the Middlebourne III Compressor Station is also a major source under the Title V program due to nitrogen oxides (NOx) and volatile organic compounds (VOC) emissions, GHG emissions may also be subject to Title V, but not PSD, requirements.

West Virginia State Regulations

Title 45 Code of State Regulations (CSR) – Division of Environmental Protection, Air Quality

I. *45CSR2 – To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers*

45CSR2 is applicable to any fuel burning units in indirect heat exchangers establishing opacity limits with compliance demonstrated with Method 9. 45CSR2-11.1 provides an exemption to fuel burning units less than 10 MMBtu/hr. The Middlebourne III Compressor Station meets this exemption as the fuel conditioning heater and reboilers are less than 10 MMBtu/hr.

II. *45CSR6 – Control of Air Pollution from Combustion of Refuse*

45CSR6 establishes requirements for the open burning of refuse. The Middlebourne III Compressor Station is not applicable to 45CSR6 as the open burning of refuse does not occur.

III. *45CSR10 – Prevention and Control Air Pollution from the Emission of Sulfur Oxides*

45CSR10 establishes requirements for sulfur oxide (SOx) emissions for fuel burning units. 45CSR10 provides an exemption to fuel burning units less than 10 MMBtu/hr. The Middlebourne III Compressor Station meets this exemption as the fuel conditioning heater and reboilers are less than 10 MMBtu/hr.

IV. *45CSR11 – Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23, 1984*

45CSR11 establishes requirements for storage vessels constructed, reconstructed, or modified after July 23, 1984 for the control of volatile organic compounds (VOCs). The Middlebourne III Compressor Station may be required, if requested by the West Virginia Department of Environmental Quality, to prepare standby plans for reducing air pollutants as outlined in the Rule.

V. *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*

The Middlebourne III Compressor Station is applicable to 45CSR13. The Facility obtained a construction permit (R13-3347E) and operates under this permit.

VI. *45CSR14 – Permits for Construction and Major Modification of Major Stationary Sources for the Prevention of Significant Deterioration of Air Quality*

45CSR14 establishes a preconstruction permit program for the Prevention of Significant Deterioration (PSD) Program under the Clean Air Act. According to Section 2.43 of this rule, a Major Stationary Source is defined as any of the 26 named sources listed in 2.43a which emits or has the potential to emit 100 tons per year or more of any regulated pollutant. Although the Middlebourne III Compressor Station will have the potential to emit over 100 tons per year of NOx and VOCs , it is not one of the 26 named stationary sources and thus not defined a Major Stationary Source under the PSD Program by Section 2.43a. Additionally,

Section 2.43b of this rule defines a Major Stationary Source as any stationary source which emits or has the potential to emit, 250 tons per year or more of any regulated pollutant. The Middlebourne III Compressor Station does not have the potential to emit 250 tons per year or more of any regulated pollutant, thus is not a Major Stationary Source under then PSD Program and 45CSR14 does not apply.

VII. *45CSR16 – Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60*

The Facility is applicable to 45CSR16. Discussion on applicable 40 CFR Part 60 rules is included in this Section.

VIII. *45CSR19 – Permits for Construction and Major Modification of Major Stationary Sources of Air Pollution which Cause or Contribute to Nonattainment*

The Facility is not applicable to 45CSR19 as it is not a major source under this rule.

IX. *45CSR20 – Good Engineering Practice as Applicable to Stack Heights*

The Middlebourne III Compressor Station is subject to 45CSR20. At this time, stack heights greater than good engineering practice (GEP) will not be requested should the Facility be required to conduct dispersion modeling.

X. *45CSR21 – Regulation of Volatile Organic Compounds*

45CSR21 does not apply to the Middlebourne III Compressor Station since the facility is not located in Putnam, Kanawha, Cabell, Wayne, or Wood Counties.

XI. *45CSR22 – Air Quality Management Fee Program*

The Middlebourne III Compressor Station is subject to 45CSR22. Applicable fees were paid to West Virginia Department of Environmental Quality for each construction permit application.

XII. *45CSR27 – To Prevent and Control the Emissions of Toxic Air Pollutants*

The Middlebourne III Compressor Station meets the exemption of 45CSR27 as the rule establishes it does not include equipment used in the production and distribution of petroleum products so long as the equipment does not produce or contact materials containing more than 5 percent of benzene by weight.

XIII. *45CSR28 – Air Pollution Emissions Banking and Trading*

The Middlebourne III Compressor Station is not subject to 45CSR28. Antero elects not to participate in the voluntary air pollutant emissions trading program, at this time.

XIV. *45CSR29 – Emission Statements for VOC and NOx*

45CSR29 does not apply to the Middlebourne III Compressor Station since the facility is not located in Putnam, Kanawha, Cabell, Wayne, or Wood Counties.

XV. *45CSR30 – Requirements for Operating Permits*

This rule establishes an air permitting program that is consistent with Title V of the Clean Air Act. According to Section 3.1.a.1, any major source as defined by the rule, shall not operate except in compliance with a permit issued under this rule on or after the effective date of the operating permit program. Section 2.26.b defines a major source as any stationary source that directly emits or has the potential to emit 100 tons per year or more of any pollutant subject to regulation. However, because a compressor station is not one of the 44 named sources under 2.26.b, fugitives do not need to be included when determining the 100 ton per year threshold. Potential emissions of NOx and VOCs from the Middlebourne III Compressor Station will be over 100 tons per year not including fugitive emissions, so the Middlebourne III Compressor Station is a major source as defined by this rule and applicable to 45CSR30. The Middlebourne III Compressor Station applied for its initial Operating Permit within 12 months of the effective date of the operating permit program per Section 4.1.a.1.F of the rule. The renewal Operating Permit application is being submitted at least six (6) months prior to expiration of the existing Title V permit.

XVI. *45CSR34 – Emission Standards for Hazardous Air Pollutants*

This rule establishes that no source will be constructed or modified that would cause violation of the standards set forth in 40 CFR Parts 61 and 63. Further, no source that is a major source of HAPs will be constructed or modified unless it is determined that the maximum achievable control technology limitations set forth under 40 CFR Part 63 are met. The Middlebourne III Compressor Station will not be a major source of HAPs; therefore, it is exempt from all applicable conditions and emission limitations under 40 CFR Part 61 and 63.

XVII. *45CSR38 – Provisions for Determination of Compliance with Air Quality Management Rules*

45CSR38 does not apply to the Middlebourne III Compressor Station as there are no enforceable rules by the Director of West Virginia Department of Environmental Protection that have non-definitive compliance determination procedures nor have such compliance determination procedures been authorized and adopted by the West Virginia Department of Environmental Protection.

Facility-Wide Emissions Summary

Emissions Summary Total

UNCONTROLLED POTENTIAL EMISSION SUMMARY

Source	NOx		CO		VOC		SO_2		$PM_{10}/PM_{2.5}$		HAPs		Formaldehyde		CO_2e
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	ton/yr
Engines															
Compressor Engine 1	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 2	3.03	13.27	16.73	73.26	3.70	16.19	0.011	0.048	0.19	0.81	1.09	4.77	0.73	3.19	12,581
Compressor Engine 3	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 4	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 5	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 6	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 7	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 8	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 9	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 10	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 11	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Compressor Engine 12	2.95	12.92	15.45	67.67	3.36	14.72	0.011	0.047	0.18	0.80	1.30	5.69	0.94	4.13	13,172
Fuel Conditioning Heater	0.049	0.21	0.041	0.18	0.0027	0.012	0.00029	0.0013	0.0037	0.016	0.0009	0.0040	0.000037	0.00016	257
Turbines															
Microturbine Generator	0.32	1.40	0.88	3.85	0.08	0.35	0.028	0.12	0.054	0.24	0.0085	0.037	0.0059	0.026	4,665
Dehydrator															
TEG Dehydrator 1	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
TEG Dehydrator 2	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
TEG Dehydrator 3	---	---	---	---	73.15	320.4	---	---	---	---	5.87	25.71	---	---	14,518
Reboiler 1	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 2	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 3	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Combustors															
Flare and Pilot	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hydrocarbon Loading															
Truck Loadout	---	---	---	---	72.93	15.24	---	---	---	---	2.02	0.42	---	---	62
Venting Emissions															
Compressor Blowdown Emissions	---	---	---	---	---	10.56	---	---	---	---	---	0.21	---	---	834
Startup and Shutdown Emissions	---	---	---	---	---	6.11	---	---	---	---	---	0.12	---	---	482
Pigging Emissions	---	---	---	---	---	9.10	---	---	---	---	---	0.18	---	---	719
Vessel/Cleaning Emisissions	---	---	---	---	---	0.20	---	---	---	---	---	0.0041	---	---	16
Fugitive Emissions															
Component Leak Emissions	---	---	---	---	2.35	10.31	---	---	---	---	0.052	0.23	---	---	177
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	0.14	0.61	---	---	---	---	---
Storage Tanks															
Storage Tank Battery - 7 tanks	---	---	---	---	322.1	1,411	---	---	---	---	8.96	39.24	---	---	5,586
Total Facility PTE =	**36.28**	**158.9**	**188.0**	**823.3**	**657.6**	**2,602**	**0.16**	**0.70**	**2.43**	**10.65**	**44.04**	**185.0**	**11.11**	**48.67**	**216,142**

Emissions Summary Total

CONTROLLED POTENTIAL EMISSION SUMMARY

Source	NOx		CO		VOC		SO_2		$PM_{10}/PM_{2.5}$		HAPs		Formaldehyde		CO_2e
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	ton/yr
Engines															
Compressor Engine 1	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 2	3.03	13.27	1.02	4.47	1.75	7.67	0.011	0.048	0.19	0.81	0.30	1.30	0.12	0.53	12,581
Compressor Engine 3	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 4	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 5	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 6	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 7	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 8	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 9	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 10	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 11	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Compressor Engine 12	2.95	12.92	0.94	4.13	1.59	6.97	0.011	0.047	0.18	0.80	0.35	1.55	0.12	0.52	13,172
Fuel Conditioning Heater	0.049	0.21	0.041	0.18	0.0027	0.012	0.00029	0.0013	0.0037	0.016	0.00092	0.0040	0.000037	0.00016	257
Turbines															
Microturbine Generator	0.32	1.40	0.88	3.85	0.080	0.35	0.028	0.12	0.054	0.24	0.0085	0.037	0.0059	0.026	4,665
Dehydrator															
TEG Dehydrator 1	---	---	---	---	1.46	6.41	---	---	---	---	0.12	1.75	---	---	300
TEG Dehydrator 2	---	---	---	---	1.46	6.41	---	---	---	---	0.12	1.75	---	---	300
TEG Dehydrator 3	---	---	---	---	1.46	6.41	---	---	---	---	0.12	1.75	---	---	300
Reboiler 1	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 2	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Reboiler 3	0.15	0.64	0.12	0.54	0.0081	0.035	0.00088	0.0039	0.011	0.049	0.0028	0.012	0.00011	0.00048	771
Combustors															
Flare and Pilot	0.33	1.44	1.78	7.79	0.00011	0.00048	0.000012	0.000052	0.00015	0.00066	0.000038	0.00016	---	---	2,478
Hydrocarbon Loading															
Truck Loadout	---	---	---	---	72.93	15.24	---	---	---	---	2.02	0.42	---	---	62
Venting Emissions															
Compressor Blowdown Emissions	---	---	---	---	---	10.56	---	---	---	---	---	0.21	---	---	834
Startup and Shutdown Emissions	---	---	---	---	---	6.11	---	---	---	---	---	0.12	---	---	482
Pigging Emissions	---	---	---	---	---	9.10	---	---	---	---	---	0.18	---	---	719
Vessel/Cleaning Emisissions	---	---	---	---	---	0.20	---	---	---	---	---	0.0041	---	---	16
Fugitive Emissions															
Component Leak Emissions	---	---	---	---	2.35	10.31	---	---	---	---	0.052	0.23	---	---	177
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	0.14	0.61	---	---	---	---	---
Storage Tanks															
Storage Tank Battery - 7 tanks	---	---	---	---	6.44	28.22	---	---	---	---	0.18	0.78	---	---	114
Total Facility PTE =	**36.60**	**160.3**	**14.47**	**63.38**	**105.5**	**183.8**	**0.16**	**0.70**	**2.43**	**10.65**	**6.82**	**25.66**	**1.42**	**6.24**	**170,495**

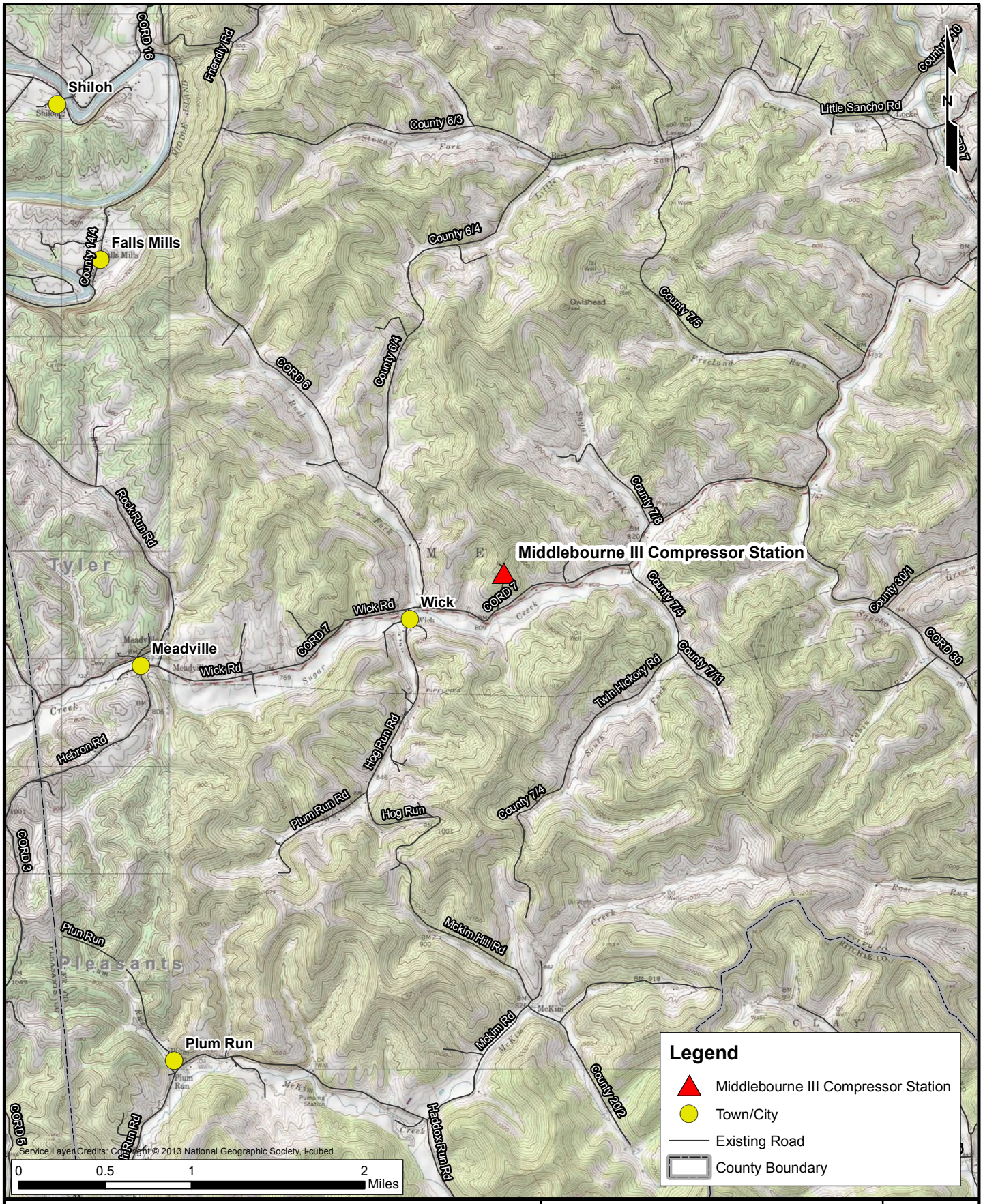
HAP Emissions Summary Total

CONTROLLED POTENTIAL EMISSION SUMMARY

Source	Benzene		Toluene		Ethylbenzene		Xylenes		n-Hexane		Acetaldehyde		Acrolein		Methanol	
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Engines																
Compressor Engine 1	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 2	0.0039	0.017	0.0036	0.016	0.00035	0.0015	0.0016	0.0071	0.010	0.043	0.074	0.32	0.045	0.20	0.022	0.10
Compressor Engine 3	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 4	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 5	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 6	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 7	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 8	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 9	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 10	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 11	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Compressor Engine 12	0.0053	0.023	0.0049	0.022	0.00048	0.0021	0.0022	0.0097	0.013	0.059	0.10	0.44	0.062	0.27	0.030	0.13
Fuel Conditioning Heater	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Turbines																
Microturbine Generator	0.000099	0.00043	0.0011	0.0047	0.00026	0.0012	0.00053	0.0023	---	---	0.00033	0.0014	0.000053	0.00023	---	---
Dehydrator																
TEG Dehydrator 1	0.017	0.074	0.051	0.087	0.0032	0.0077	0.013	0.59	0.033	0.99	---	---	---	---	---	---
TEG Dehydrator 2	0.017	0.074	0.051	0.087	0.0032	0.0077	0.013	0.59	0.033	0.99	---	---	---	---	---	---
TEG Dehydrator 3	0.017	0.074	0.051	0.087	0.0032	0.0077	0.013	0.59	0.033	0.99	---	---	---	---	---	---
Reboiler 1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reboiler 2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Reboiler 3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Combustors																
Flare and Pilot	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Hydrocarbon Loading																
Truck Loadout	0.031	0.0064	0.062	0.013	0.018	0.0037	0.04	0.008	1.87	0.39	---	---	---	---	---	---
Venting Emissions																
Compressor Blowdown Emissions	---	0.0040	---	0.010	---	0.00057	---	0.0017	---	0.20	---	---	---	---	---	---
Startup and Shutdown Emissions	---	0.0023	---	0.0057	---	0.00033	---	0.0010	---	0.11	---	---	---	---	---	---
Pigging Emissions	---	0.0034	---	0.0086	---	0.00049	---	0.0015	---	0.17	---	---	---	---	---	---
Vessel/Cleaning Emisissions	---	0.000077	---	0.00019	---	0.000011	---	0.000033	---	0.0038	---	---	---	---	---	---
Fugitive Emissions																
Component Leak Emissions	0.00092	0.0040	0.0021	0.0094	0.00026	0.0011	0.00064	0.0028	0.048	0.21	---	---	---	---	---	---
Haul Road Dust Emissions	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Storage Tanks																
Storage Tank Battery - 7 tanks	2.70E-03	1.18E-02	5.41E-03	2.37E-02	1.58E-03	6.90E-03	3.54E-03	1.55E-02	1.66E-01	7.27E-01	---	---	---	---	---	---
Total Facility PTE =	**0.15**	**0.53**	**0.28**	**0.59**	**0.035**	**0.062**	**0.11**	**1.91**	**2.34**	**5.48**	**1.19**	**5.20**	**0.73**	**3.19**	**0.35**	**1.55**

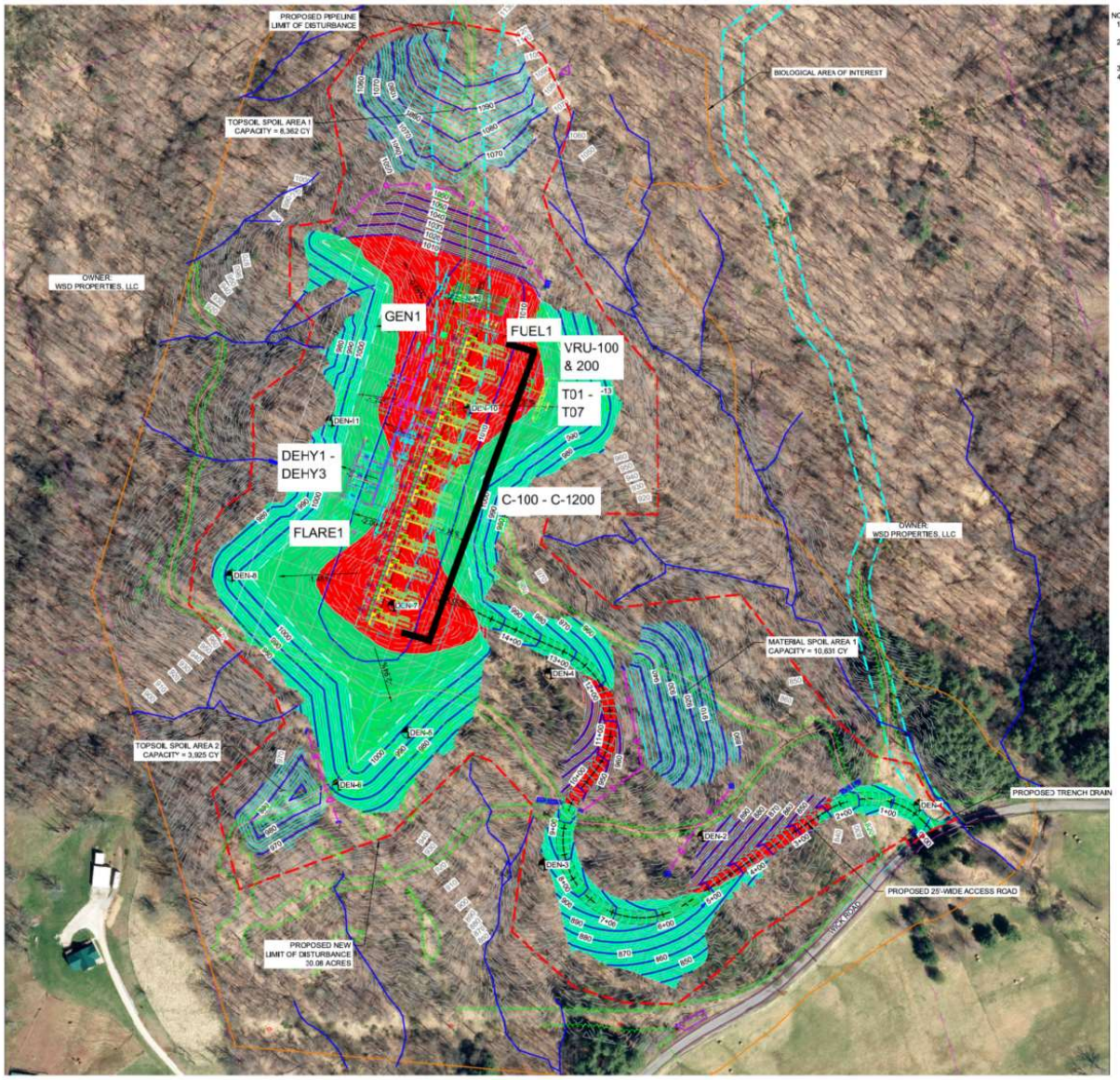
Attachment A Area Map

	Antero Midstream LLC	FIGURE
	Middlebourne III Compressor Station Tyler County, West Virginia	



	Antero Midstream LLC	FIGURE
	Middlebourne III Compressor Station Tyler County, West Virginia	

Attachment B Plot Plan



NOTE:
1. COMPRESSOR PAD CUT SLOPES SHALL BE GRADED AT 2H:1V AND FILL SLOPES SHALL BE 2.5H:1V.
2. ACCESS ROAD CUT SLOPES SHALL BE GRADED AT 2H:1V, AND FILL SLOPES AT 2.25H:1V EXCEPT FOR STATIONS 0 TO 1+00, WHICH HAVE A FILL SLOPE OF 2H:1V.
3. MATERIAL STOCKPILES SHALL BE GRADED AT 2.5H:1V.
4. TOPSOIL STOCKPILES SHALL BE GRADED AT 3H:1V.

LEGEND

- EXISTING MAJOR CONTOUR (10')
- EXISTING MINOR CONTOUR (2')
- EXISTING PROPERTY LINE
- EXISTING TRAIL
- EXISTING TREELINE
- DELINEATED STREAM
- PROPOSED ROAD CENTERLINE
- PROPOSED MAJOR CONTOUR (10')
- PROPOSED MINOR CONTOUR (2')
- PROPOSED PAD EDGE
- PROPOSED DIVERSION DITCH
- PROPOSED CULVERT
- PROPOSED LIMIT OF DISTURBANCE (ORIGINAL)
- PROPOSED LIMIT OF DISTURBANCE (NEW)
- PROPOSED CUT AREA
- PROPOSED FILL AREA
- PROPOSED PIPELINE LIMIT OF DISTURBANCE

REVISIONS

REV	DESCRIPTION	DSN DWN	CHK APP	DATE

PRELIMINARY PLANS

NOT FOR CONSTRUCTION

SCALE VERIFICATION

THIS BAR IS 1 INCH IN LENGTH ON ORIGINAL DRAWING

0 1"

IF IT'S NOT 1 INCH ON THIS SHEET ADJUST YOUR SCALES ACCORDINGLY

0 100 200 300

SCALE: 1"= 100' SCALE IN FEET

ORIGINAL DRAWING SIZE IS 22 x 34

CONCEPTUAL SITE PLAN

MIDDLEBOURNE 3 CS
TYLER COUNTY
WEST VIRGINIA

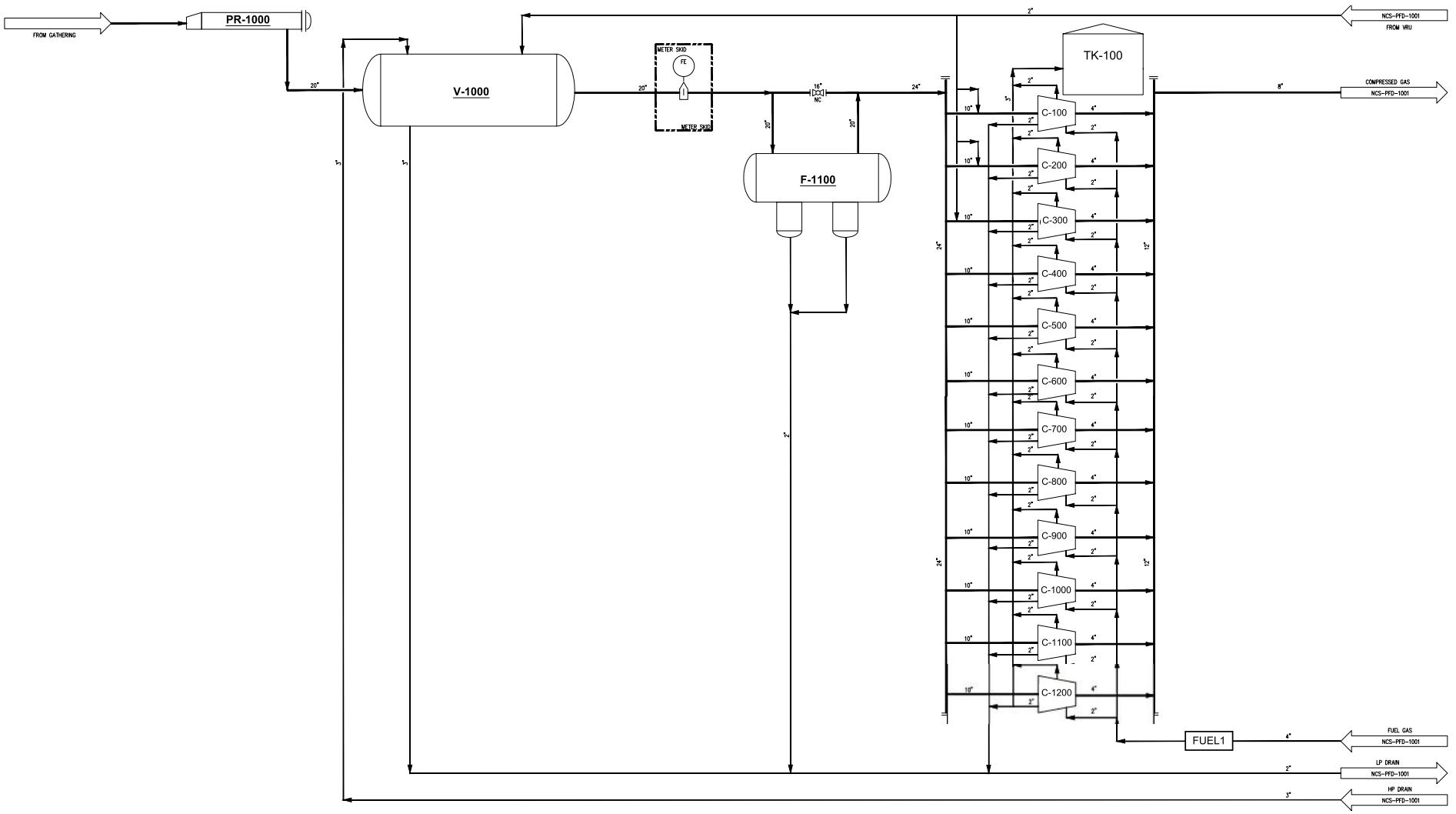
Antero Midstream Partners LP

PROJECT NO.	20163325
ISSUE DATE	09-08-2016
CURRENT REVISION	0
DESIGNED BY	AJD
DRAWN BY	KWS
CHECKED BY	TWW
APPROVED BY	TWW

SHEET 1 of 2

1

Attachment C Process Flow Diagram



NOTES:

REFERENCE DRAWINGS

DWG. NO.	TITLE

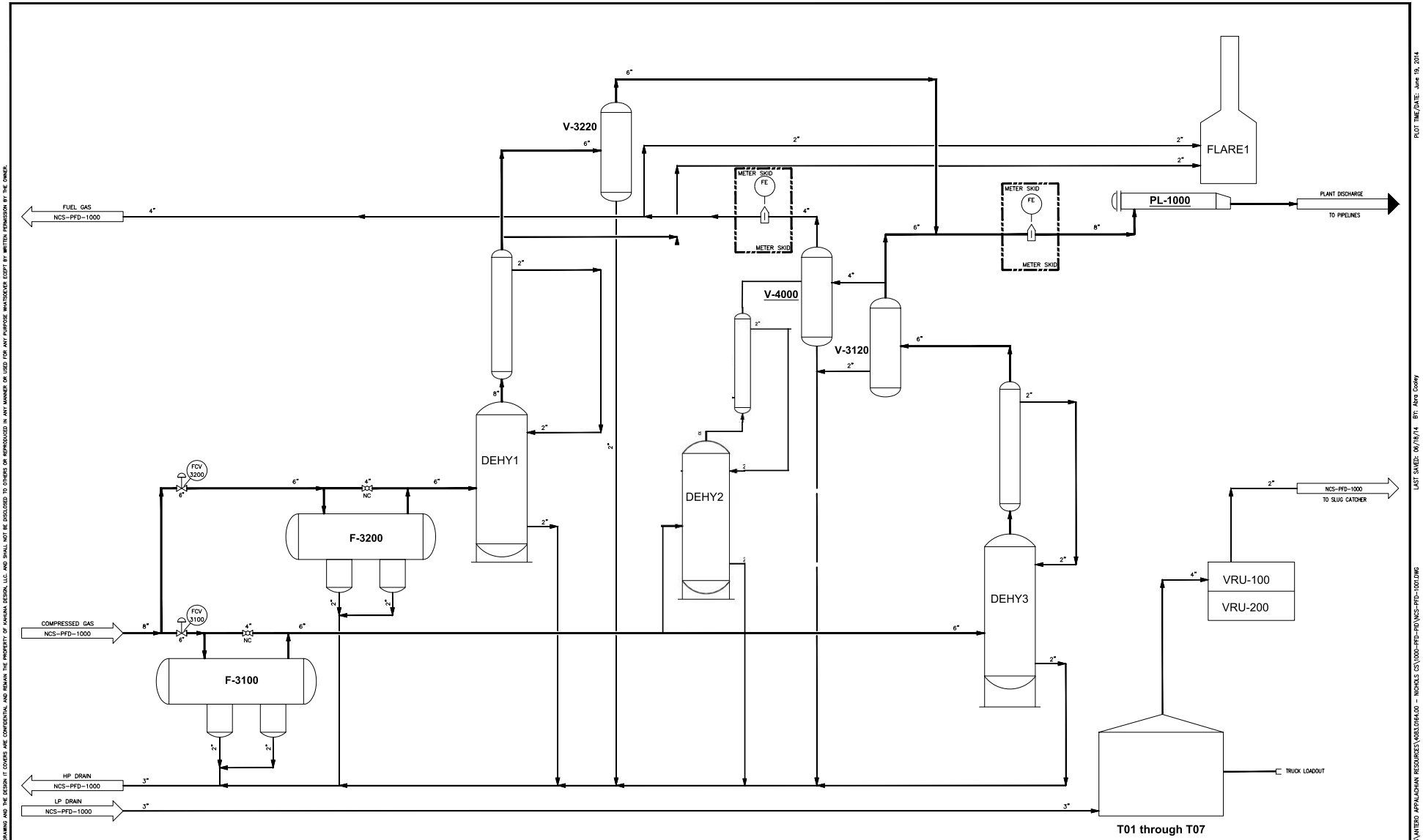
NO.	DESCRIPTION	BY	DATE	CHK.	DATE	APPR.	DATE
B	ISSUED FOR AIR PERMIT	AC	06/19/14	LW	06/19/14	PS	06/19/14
A	ISSUED FOR REVIEW	AC	05/06/14	JW	05/06/14	PS	05/06/14

KAHUNA VENTURES LLC
WESTMINSTER, COLORADO
303-451-7574
BY: KAHUNA DESIGN LLC.

PROCESS FLOW DIAGRAM

DRAWN BY: A. COOLEY	CHECKED: J. WARMAN	APPROVED: P. STOCKEBRAND
CREATION DATE: 05/05/14	CHECK DATE: 05/05/14	APPR. DATE: 05/05/14
Proj. No.: 4083.0164.00	DWG. No.: TCS-PFD-1000	SHEET No.: 1 OF 2
SCALE: NONE		B

FILE LOCATION: N:\PROJECTS\ANTERO APPALACHIAN RESOURCES\4083.0164.00 - NICHOLS CS\100-PFD-PID\NCS-PFD-1000.DWG
LAST SAVED: 06/19/14 BY: Alva Cooley
PLOT TIME/DATE: June 19, 2014



THIS DRAWING AND THE DESIGN IT COVERS ARE CONFIDENTIAL AND REMAIN THE PROPERTY OF KAHUNA DESIGN, LLC. AND SHALL NOT BE DISCLOSED TO OTHERS OR REPRODUCED IN ANY MANNER OR USED FOR ANY PURPOSE WHATSOEVER (EXCEPT BY WRITTEN PERMISSION BY THE OWNER.

PLOT TIME/DATE: June 19, 2014

LAST SAVED: 06/18/14 BY: Alva Cooley

FILE LOCATION: N:\PROJECTS\WATERO APPALACHIAN RESOURCES\4083.0164.00 - NICHOLS CS\100-PFD-PID\NCS-PFD-1001.DWG

NOTES:

REFERENCE DRAWINGS	
DWG. NO.	TITLE

REVISIONS							
NO.	DESCRIPTION	BY	DATE	CHK.	DATE	APPR.	DATE
B	ISSUED FOR AIR PERMIT	AC	06/19/14	LW	06/19/14	PS	06/19/14
A	ISSUED FOR REVIEW	AC	05/06/14	JW	05/06/14	PS	05/06/14

Antero Resources

KAHUNA VENTURES LLC
WESTMINSTER, CO 80021
303-451-7574
BY: KAHUNA DESIGN LLC.

PROCESS FLOW DIAGRAM

DRAWN BY: A. COOLEY	CHECKED: J. WARMAN	APPROVED: P. STOCKEBRAND
CREATION DATE: 05/05/14	CHECK DATE: 05/05/14	APPR. DATE: 05/06/14
Proj. No.: 4083.0164.00	DWG. No.: TCS-PFD-1001	SHEET No.: 2 OF 2
SCALE: NONE		B

Attachment D Title V Equipment Table

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
C-100	1E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(1C)
C-200	2E	Caterpillar G3608 A4 upgrade SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,749 bhp	OxCat(2C)
C-300	3E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(3C)
C-400	4E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(4C)
C-500	5E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(5C)
C-600	6E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(6C)
C-700	7E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(7C)
C-800	8E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(8C)
C-900	9E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(9C)
C-1000	10E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(10C)
C-1100	11E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(11C)
C-1200	12E	Caterpillar G3608 SIIC Lean Burn 4 Stroke Compressor Engine	2017	2,675 bhp	OxCat(12C)
GEN1	13E	Capstone C800 800kW Microturbine Generator	2017	800 kWe (1,073 hp)	None
DEHY1	31E	Dehydrator Still Vent #1	2017	150 MMscfd	FLARE1
DFLSH1	16E	Dehydrator Flash Tank #1	2017	150 MMscfd	DREB1
DREB1	16E	Dehydrator Reboiler #1	2017	1.5 MMBtu/hr	None
DEHY2	31E	Dehydrator Still Vent #2	2017	150 MMscfd	FLARE1
DFLSH2	19E	Dehydrator Flash Tank #2	2017	150 MMscfd	DREB2
DREB2	19E	Dehydrator Reboiler #2	2017	1.5 MMBtu/hr	None
DEHY3	31E	Dehydrator Still Vent #3	2017	150 MMscfd	FLARE1
DFLSH3	22E	Dehydrator Flash Tank #3	2017	150 MMscfd	DREB3
DREB3	22E	Dehydrator Reboiler #3	2017	1.5 MMBtu/hr	None
T01	14C & 15C	Condensate Tank #1	2017	400 barrel (16,800 gal)	VRU-100 & VRU- 200 (14C&15C)
T02	14C & 15C	Condensate Tank #2	2017	400 barrel (16,800 gal)	VRU-100 & VRU- 200 (14C&15C)
T03	14C & 15C	Condensate Tank #3	2017	400 barrel (16,800 gal)	VRU-100 & VRU- 200 (14C&15C)

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

ATTACHMENT D - Title V Equipment Table

(includes all emission units at the facility except those designated as insignificant activities in Section 4, Item 24 of the General Forms)

Emission Unit ID[1]	Emission Point ID[1]	Emission Unit Description	Year Installed/ Modified	Design Capacity	Control Device[1]
T04	14C & 15C	Settling Tank	2017	500 barrel (21,000 gal)	VRU-100 & VRU- 200 (14C&15C)
T05	14C & 15C	Produced Water Tank #1	2017	400 barrel (16,800 gal)	VRU-100 & VRU- 200 (14C&15C)
T06	14C & 15C	Produced Water Tank #2	2017	400 barrel (16,800 gal)	VRU-100 & VRU- 200 (14C&15C)
T07	14C & 15C	Produced Water Tank #3	2017	400 barrel (16,800 gal)	VRU-100 & VRU- 200 (14C&15C)
FUEL1	30E	Fuel Conditioning Heater	2017	0.5 MMBtu/hr	None
FLARE1	31E	Flare Combustion Device	2017	4.8 MMBtu/hr	N/A
LDOUT1	32E	Production Liquids Truck Loadout	2017	390 bbl/day	None
VENT1	33E	Compressor Blowdowns/Startups/Plant Shutdowns/Pigging/Vessel Cleaning and Maintenance Operations	2017	N/A	None

[1]For 45CSR13 permitted sources, the numbering system used for the emission points, control devices, and emission units should be consistent with the numbering system used in the 45CSR13 permit. For grandfathered sources, the numbering system should be consistent with registrations or emissions inventory previously submitted to DAQ. For emission points, control devices, and emissions units which have not been previously labeled, use the following 45CSR13 numbering system: 1S, 2S, 3S,... or other appropriate description for emission units; 1C, 2C, 3C,... or other appropriate designation for control devices; 1E, 2E, 3E, ... or other appropriate designation for emission points.

T01-T07: Working, breathing,and flashing losses are routed to Vapor Recovery Units for recirculation back into the process
LDOUT1: Design Capacity is 300 bbl/day Condensate and 90 bbl/day Produced Water

Attachment E Emission Unit Forms

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
C-100 through C-1200 (each)	Compressor Engine #1 through #12 (each)	Oxidation Catalyst (1C through 12C, each)

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Four Stroke, Lean Burn Natural Gas-Fired Compressor Engine with Oxidation Catalyst

Manufacturer:	**Model number:**	**Serial number:**
Caterpillar	G3608 LB, C-100, C-300 through C-1200 G3608 A4 upgrade LB, C-200	N/A

Construction date: MM/DD/YYYY	**Installation date:** MM/DD/YYYY	**Modification date(s):** MM/DD/YYYY
After 7/1/2007	Phase 1* - 3/2017, Phase 2* - 2/2018	06/22/2021 (increase engine hp, R13-3347C)

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

C-100, C-300 through C-1200 = 2,675 hp @ 1,000 rpm
C-200 = 2,749 hp @ 1,000 rpm

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	N/A	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☑ Yes ☐ No	**If yes, is it?** ☐ Indirect Fired ☑ Direct Fired
Maximum design heat input and/or maximum horsepower rating: C-100, C-300 through C-1200 = 2,675 hp @ 1,000 rpm C-200 = 2,749 hp @ 1,000 rpm	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

C-100, C-300 through C-1200 = Raw Natural Gas, 16,500 scf/hr, 144.5 MMscf/yr
C-200 = Raw Natural Gas, 16,140 scf/hr, 141.4 MMscf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	<0.01%	negligible	1,242 Btu/scf

*Phase 1 installation date includes Compressor Engines C-100 through C-800
*Phase 2 installation date includes Compressor Engines C-900 through C-1200

Emissions Data	NOTE: C-200 values are in parenthesis	
Criteria Pollutants	Potential Emissions (per unit)	
	PPH	TPY
Carbon Monoxide (CO)	0.94 (1.02)	4.13 (4.47)
Nitrogen Oxides (NO_X)	2.95 (3.03)	12.92 (13.27)
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	0.18 (0.19)	0.80 (0.81)
Particulate Matter (PM_{10})	0.18 (0.19)	0.80 (0.81)
Total Particulate Matter (TSP)	0.18 (0.19)	0.80 (0.81)
Sulfur Dioxide (SO_2)	0.011 (0.011)	0.047 (0.048)
Volatile Organic Compounds (VOC)	1.59 (1.75)	6.97 (7.67)
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Acetaldehyde	0.10 (0.074)	0.44 (0.32)
Acrolein	0.062 (0.045)	0.27 (0.20)
Formaldehyde	0.12 (0.12)	0.52 (0.53)
Methanol	0.030 (0.022)	0.13 (0.10)
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2	2530 (2661)	11081 (11653)
CH4	19.05 (8.42)	83.43 (36.90)
CO2e	3007 (2872)	13172 (12581)

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1. Values from Manufacturer specification sheet (NOx, CO, VOC, Formaldehyde, CO2, CH4)
2. AP-42, Chapter 3.2, Table 3.2-2 (PM, SO2, Acetaldehyde, Acrolein, Methanol)
3. 40 CFR Part 98, Subpart A, Table A-1, effective January 2014 (CO2e)

Note: additional HAPs are listed on the attached facility-wide emissions summary.

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or <u>construction permit</u> with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

5.1.1 and 5.1.2 Maximum hourly and annual emission limits. Please reference Emissions Data above for exact limits.

5.1.3.a-b The compressor engines shall be equipped with oxidation catalysts and fitted with a closed-loop automatic air/fuel ratio feedback controller to ensure a lean-rich mixture. A warning or indication to the operator and/or be interlocked with the engine ignition system to stop engine operation in case of a masking, poisoning or overrich air/fuel ratio which results in performance degradation or failure of the catalyst element

5.1.3.c No person shall knowingly: remove, bypass, defeat or render inoperative any air pollution control device subject to the requirements of this permit

5.1.3.d A written operation and maintenance ("O&M") plan is required

11.1 The units must meet requirements in NSPS JJJJ

11.2 Maximum emission standards for NSPS JJJJ

11.4.2 Propane fuel can be used in emergency operations up to 100 hours per year

12.1 The units must meet requirements in NSPS Subpart OOOOa for reciprocating compressors

14.1 The units must meet the requirements of MACT ZZZZ by meeting the requirements of NSPS JJJJ

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

5.2.1.a. Inspect, maintain and/or replace catalytic reduction devices and auxiliary air pollution control devices. Maintain proper operation of the automatic air/fuel ratio controller or automatic feedback controller. Follow O&M recommendations of the catalyst element manufacturer.
5.4.1. Maintain records of the hours of operation of each engine for five years
5.4.2. Maintain records of all catalytic reduction device maintenance for five years to demonstrate compliance with 5.1.2
5.5.1. Follow reporting requirements as outlined in Section 3.5, 11.6 and 12.4 of this permit
5.5.2. Submit notification to the Secretary if the A4 upgrade unit is used on a different unit

11.4.1.b.2. Keep a maintenance plan and records of conducted maintenance, conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first
11.4.2 Maintain records of propane fuel use. If > 100 hours per year conduct a performance test to demonstrate compliance
11.4.3 Maintain and operate the AFR controller appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times
11.5.1.a Performance tests must be conducted in accordance with 40 CFR §60.4244(a)
11.6.1.a.Maintain records of: notifications, maintenance, and documentation the engine meets the emission standards
11.6.1.c. Submit initial notification in accordance with 40 CFR §60.4245(c)
11.6.1.d. Submit performance tests within sixty (60) days per 40 CFR §60.4245(d)

12.1.1 Replace rod packing on or before the compressor has operated for 26,000 hours or 36 months
12.1,12.2 & 12.3 Continuously monitor the hours of operation or number of months since last rod packing replacement
12.1,12.2,12.3 & 12.4 Submit Initial and Annual Reports in accordance with 40 CFR §60.5420a(b)(l) and (4)
12.1, 12.2, 12.3, & 12.4 Maintain records of hours of operation or number of months since last rod packing replacement, date and time of rod packing replacement, and any deviations
12.4.1 No requirements according to 40 CFR §60.5420a(a)(1)
12.4.2 Submit performance test reports as specified in paragraph (b)(9) of 40 CFR §60.5420a
12.4.3 Maintain reporting and recordkeeping as required by 40 CFR §60.5420a(c)(3), (6)-(9), and (17), as applicable

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
GEN1	Capstone C800 800kW Microturbine Generator	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Natural Gas-fired Generator Engine

Manufacturer:	**Model number:**	**Serial number:**
Capstone	C800 Standard	N/A

Construction date: MM/DD/YYYY	**Installation date:** MM/DD/YYYY	**Modification date(s):** MM/DD/YYYY
TBD	03//2017	N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

800 kWe

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	N/A	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☑ Yes ☐ No	**If yes, is it?** ☐ Indirect Fired ☑ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 8.24 MMBtu/hr	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Raw Natural Gas, 8.24 MMBtu/hr, 58.13 MMscf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	<0.01%	negligible	1,242 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.88	3.85
Nitrogen Oxides (NO_X)	0.32	1.40
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	0.05	0.24
Particulate Matter (PM_{10})	0.05	0.24
Total Particulate Matter (TSP)	0.05	0.24
Sulfur Dioxide (SO_2)	0.03	0.12
Volatile Organic Compounds (VOC)	0.08	0.35
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Acetaldehyde	< 0.01	< 0.01
Formaldehyde	< 0.01	0.025
Toluene	< 0.01	< 0.01
Xylenes	< 0.01	< 0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2	1064	4660
CH4	0.018	0.080
CO2e	1065	4665

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1. Values from Manufacturer specification sheet (NOx, CO, VOC)
2. AP-42, Chapter 3.2, Table 3.1-2a (PM, SO2)
3. AP-42, Chapter 3.2, Table 3.1-3 (Acetaldehyde, Formaldehyde, Toluene, Xylenes)
4. 40 CFR Part 98, Subpart C, Table C-1 (CO2)
5. 40 CFR Part 98, Subpart C, Table C-2 (CH4)
6. 40 CFR Part 98, Subpart C, Table A-1, effective January 2014 (CO2e)

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

6.1.1 Natural gas is the only fuel source
6.1.2 Maximum hourly and annual emissions limits. Please reference Emissions Data above for exact limits.
6.1.4 Maintenance to be performed in accordance with manufacturer recommendations or with a site specific maintenance plan
6.2.1 Testing to be performed in accordance with Section 3.3
6.3.1 Maintenance records kept for five years to demonstrate compliance with permit condition 6.1.4

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

6.2.1 Follow testing requirements in Section 3.3
6.3.1 Follow recordkeeping requirements in Section 3.4.1 and 6.1.4
6.4.1 Follow reporting requirements in Section 3.5

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
DEHY1, DEHY2, DEHY3 (each)	TEG Dehydrator Still Vents (each)	BTEX Condenser & Flare (13C)

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

For each TEG Dehydrator Unit: The dehydrator still vents are controlled by a flare with at least 98% control efficiency and are equipped with a BTEX condenser unit.

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	N/A

Construction date: MM/DD/YYYY	**Installation date:** MM/DD/YYYY	**Modification date(s):** MM/DD/YYYY
TBD	03//2017	N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

150 MMscfd, each

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/a	54,750 MMscf, each	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions (per unit)	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	N/A	N/A
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	0.34	1.48
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Benzene	0.016	0.068
Ethylbenzene	< 0.01	0.014
Toluene	0.048	0.21
Xylenes	0.013	0.057
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2	0.23	1.02
CH4	0.36	1.58
CO2e	9.24	40.48

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

ProMax Output

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

7.1.1 Dehydrator maximum daily throughput limit. Please reference data above for exact limits.
7.1.2 Flare maximum hourly and annual emission limits
7.1.3 The flare shall be designed and operated in accordance with this section
7.1.4 Conduct a flare design evaluation in accordance with section 7.4.2 of the permit. At the Director's request, conduct a flare compliance assessment for concentration of sample and tip velocity in accordance with section 7.3.2 of the permit.
7.2.1 The pilot light shall be equipped with a thermocouple or equivalent device to detect the presence or absence of the pilot flame

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

7.1.4 Maintain record of the flare design evaluation in accordance with 7.4.2 or comply with section 7.3.2
7.2.1 Continuously monitor the pilot flame, using a thermocouple or equivalent device, to show compliance with section 7.1.3.c
7.2.2 Monitor the throughput of dry natural gas to the dehydration system on a monthly basis for each unit
7.3.1 & 7.4.5 Conduct Method 22 test for at least two hours within one (1) year of initial startup. Maintain records of opacity tests.
7.3.2 At the Director's request, conduct a flare compliance assessment to demonstrate compliance with section 7.1.3
7.3.3 and 7.4.3 Demonstrate compliance with the HAP emission thresholds with annual sampling
7.3.4 - 7.3.7, & 7.4.8 Determine actual average benzene emissions to demonstrate compliance with the one (1) tpy emission limit. Maintain records.
7.3.6 Notify the responsible agency before use of ProMax as an alternative to GLYCalc under Subpart HH.
7.4.1 Maintain records of the times and duration of all periods which the pilot flame was absent to demonstrate compliance with section 7.1.3c and 7.2.1
7.4.2 Maintain record of the flare design evaluation to demonstrate compliance with section 7.1.4 and 7.3.2
7.4.3 Maintain records of testing conducted in accordance with 7.3.3 to demonstrate compliance with section 7.1.3 and 7.3.3
7.4.4 Document and maintain records required by sections 7.2 (monitoring) and 7.3 (testing)
7.4.5 Maintain records of the visible emission opacity tests
7.4.6 Maintain records of PTE HAP calculations for the entire affected facility, including compressor engines and ancillary equipment to demonstrate compliance with section 4.1.2
7.4.7 Maintain records of dry natural gas throughput through the dehydration system to demonstrate compliance with section 7.1.1
7.4.8 Maintain records of the actual average benzene emissions to demonstrate exemption from the requirements of 40 CFR § 63.764 (d) if the actual average emissions of benzene from the glycol dehydration unit is less than 0.90 megagram per year (1 tpy)
7.4.9 Maintain all records required by section 7.4 for a period of five (5) years
7.5.1 If required by the Director to comply with section 7.3.2, submit a testing protocol at least thirty (30) days prior to testing, submit notification of the testing date at least fifteen (15) days prior to testing, submit test results within sixty (60) days of testing, provide all supporting calculations and testing data.
7.5.2 If deviations from the allowable visible emission requirements are discovered during observations using Method 9 or 22, report to the Director within ten (10) calendar days of the occurrence
7.5.3 If deviations from the flare design and operation criteria in section 7.1.3 occur, report to the Director within ten (10) calendar days of such deviation

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
DFLSH1, DFLSH2, DFLSH3 (each)	TEG Dehydrator Flash Tanks (each)	Reboiler (16E, 19E, 22E) or VRU (14C/15C) as backup

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

For each TEG Dehydrator Unit: Vent gas from the flash gas tank is routed to the reboiler and used as fuel. As an alternate, flash gas is routed to the storage tanks via the VRU compressors onsite.

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	N/A

Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY TBD	MM/DD/YYYY 03//2017	MM/DD/YYYY N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

150 MMscfd, each

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	54,750 MMscf, each	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions (per unit)	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	N/A	N/A
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	1.13	4.93
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Benzene	< 0.01	< 0.01
Ethylbenzene	< 0.01	< 0.01
n-Hexane	0.024	0.11
Toluene	< 0.01	0.010
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2	2.02	8.85
CH4	2.29	10.03
CO2e	59.26	259.5

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

ProMax output

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

7.1.1 Dehydrator maximum daily throughput limit
8.1.1 Maximum design heat input of reboilers
8.1.2 No person shall cause, suffer, allow, or permit emission of smoke/PM greater than ten (10) percent opacity passed on a six minute block average [45CSR§2-3.1.]

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

7.1.1 Dehydrator throughput shall be determined using a 12-month rolling total
7.2.2 Monitor the throughput of dry natural gas to the dehydration system on a monthly basis for each unit
7.3.3 and 7.4.3 Demonstrate compliance with the HAP emission thresholds with annual sampling
7.3.4-7.3.7, & 7.4.8 Determine actual average benzene emissions to demonstrate compliance with the one (1) tpy emission limit. Maintain records.
7.4.4 Document and maintain records required by sections 7.2 (monitoring) and 7.3 (testing)
7.4.6 Maintain records of PTE HAP calculations for the entire affected facility, including compressor engines and ancillary equipment to demonstrate compliance with section 4.1.2
7.4.7 Maintain records of dry natural gas throughput through the dehydration system to demonstrate compliance with section 7.1.1
7.4.9 Maintain all records required by section 7.4 for a period of five (5) years
8.2.1 At such reasonable times as the Secretary may designate, conduct Method 9 emission observations
8.3.1 If requested, conduct Method 9 tests or utilize measurements from continuous opacity monitoring systems approved by the director.
8.4.1 All required records shall be kept in accordance with permit condition 3.4.1
8.4.2 Maintain records of all monitoring data required by section 8.2.1
8.5.1 If deviations from the allowable visible emission requirements are discovered during observations using Method 9 or 22, report to the Director within ten (10) calendar days of the occurrence

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
DREB1, DREB2, DREB3 (each)	TEG Dehydrator Reboilers (each)	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

For each Natural Gas-Fired Dehydrator Reboiler: Vent gas from the flash gas tank is routed to the reboiler and used as fuel. As an alternate, flash gas is routed to the storage tanks via the VRU compressors onsite

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	N/A

Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY TBD	MM/DD/YYYY 03//2017	MM/DD/YYYY N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

1.5 MMBtu/hr, each

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	12.9 MMscf/yr	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel?	**If yes, is it?**
☑ Yes ☐ No	☐ Indirect Fired ☑ Direct Fired

Maximum design heat input and/or maximum horsepower rating:	**Type and Btu/hr rating of burners:**
1.5 MMBtu/hr, each	1.5 MMBtu/hr, each

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas, 12.9 MMscf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	<0.01%	negligible	1,020 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions (per unit)	
	PPH	TPY
Carbon Monoxide (CO)	0.12	0.54
Nitrogen Oxides (NO_X)	0.15	0.64
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	0.011	0.049
Particulate Matter (PM_{10})	0.011	0.049
Total Particulate Matter (TSP)	0.011	0.049
Sulfur Dioxide (SO_2)	<0.01	<0.01
Volatile Organic Compounds (VOC)	<0.01	0.035
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	<0.01	<0.01
Total HAPs (including HCHO)	<0.01	0.012
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2	175.9	770.4
CH4	<0.01	0.015
CO2e	176.1	771.2

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

AP-42, Chapter 1.4, Table 1.4-1 (NOx, CO)
AP-42, Chapter 1.4, Table 1.4-2 (PM, SO2, VOC)
AP-42, Chapter 1.4, Table 1.4-3 (HAPs including HCOH)
40 CFR Part 98, Subpart C, Table C-1 (CO2)
40 CFR Part 98, Subpart C, Table C-2 (CH4)
40 CFR Part 98, Subpart A, Table A-1, effective January 2014 (CO2e)

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

8.1.1 Maximum design heat input of reboilers shall not exceed 1.5 MMBtu/hr
8.1.2 No person shall cause, suffer, allow, or permit emission of smoke/PM greater than ten (10) percent opacity passed on a six minute block average

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

8.2.1 At such reasonable times as the Secretary may designate, conduct Method 9 emission observations to demonstrate compliance with section 8.1.2
8.3.1 Conduct Method 9 tests or utilize measurements from continuous opacity monitoring systems approved by the director to demonstrate compliance with section 8.1.2 [45CSR§2-3.2.]
8.4.1 All records required under Section 9.3 shall be kept in accordance with permit condition 3.4.1
8.4.2. Maintain records of all monitoring data required by permit condition 8.2.1
8.5.1 If deviations from the allowable visible emission requirements are discovered during observations using Method 9 or 22, report to the Director within ten (10) calendar days of the occurrence

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
T01, T02, T03 (each)	Condensate Tanks (each)	VRU (14C/15C)

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Atmospheric Condensate Storage Tanks that are controlled with a VRU and recycled back into the process

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	N/A

Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY TBD	MM/DD/YYYY 2017	MM/DD/YYYY N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

400 barrels, each

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	4,599,000 gal/yr (combined)	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions (per unit)	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	N/A	N/A
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	0.035	0.15
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Benzene	< 0.01	< 0.01
Toluene	< 0.01	< 0.01
Ethylbenzene	< 0.01	< 0.01
Xylene	< 0.01	< 0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CH4	N/A	< 0.01
CO2e	0.059	0.26

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

ProMax output

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

9.1.1 Route all VOC and HAP emissions from the tanks (Unit IDs: T01-T03) to a VRU System with at least 98% efficiency
9.1.2 Install, maintain, and operate the VRUs and associated monitoring equipment in a manner consistent with safety and good air pollution control practices or more stringent limits [45CSR§13-5.10.]
9.1.3 Maximum annual throughput limits from the tanks (Unit IDs: T01-T03)
9.1.4 Additional VRU Requirements – three (3) of the four (4) options must be utilized: install run status sensing equipment, install an automatic by-pass recycle system, install blanket gas with automatic throttling, and/or a install a compressor with a variable drive
9.1.5 The VRUs shall be designed and operated in accordance with this section [45CSR§13-5.10]
9.1.6 The closed vent system shall be designed and operated in accordance with this section [45CSR§13-5.10]

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

9.2.1 Monitor throughput to the storage vessels (Unit IDs: T01-T03) on a monthly basis
9.2.2 Monitor the VRUs in accordance with the plans and specifications and manufacturer's recommendations to demonstrate compliance with section 9.1.1
9.2.3a Conduct Initial AVO within 180 days of start-up, repair leaks as soon as practicable, grease requirements, delay of repair requirements
9.2.3b&c Conduct Annual AVO inspections (with visual bypass inspection) within 365 calendar days from date of previous inspection, repair leaks as soon as practicable, grease requirements, delay of repair requirements
9.2.3d&e Maintain a written plan for unsafe or difficult to inspect requirements that determines frequency of inspections[45CSR§13-5.10]
9.3.1. Maintain all records required by section 9.3 for five years
9.3.2 Maintain records of VRU equipment inspections and/or preventative maintenance procedures.
9.3.3 Maintain records according to this section of any malfunction or operational shutdown of the VRU during which excess emissions occur
9.3.4 Maintain records of the aggregate throughput for the storage tanks on a monthly and 12-month rolling total for a period of five (5) years to demonstrate compliance with 9.1.3
9.3.5 Maintain a copy of all design records of the process, maintenance records of equipment and any downtime hours associated with the VRUs
9.3.6 Maintain records of the additional monitoring required in section 9.1.4 to demonstrate compliance with the 98% control efficiency in section 9.1.1
9.4.1 At the Director's request, report deviations when the control device was operated outside of the parameters defined in the monitoring plan
9.4.2 Notify the director if VRU downtime in excess of 2% based on the 12-month rolling total within ten (10) calendar days.

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
T04	Condensate/Produced Water Settling Tank	VRU (14C/15C)

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Atmospheric Condensate/Produced Water Storage Tank that is controlled with a VRU and recycled back into the process. Flash emissions occur in this tank and condensate and produced water are separated and routed to their respective storage tanks

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	N/A

Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY TBD	MM/DD/YYYY 2017	MM/DD/YYYY N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

500 barrels

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	5,978,700 gal/yr	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	N/A	N/A
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	6.34	27.52
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Benzene	< 0.01	0.01
Toluene	0.01	0.02
Ethylbenzene	< 0.01	0.01
n-Hexane	0.16	0.71
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2e	25.93	113.7

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

ProMax output

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

9.1.1 Route all VOC and HAP emissions from the tank (Unit IDs: T04) to a VRU System with at least 98% efficiency
9.1.2 Install, maintain, and operate the VRUs and associated monitoring equipment in a manner consistent with safety and good air pollution control practices or more stringent limits [45CSR§13-5.10.]
9.1.3 Maximum annual throughput limits from the tank (Unit IDs: T04)
9.1.4 Additional VRU Requirements – three (3) of the four (4) options must be utilized: install run status sensing equipment, install an automatic by-pass recycle system, install blanket gas with automatic throttling, and/or a install a compressor with a variable drive
9.1.5 The VRUs shall be designed and operated in accordance with this section [45CSR§13-5.10]
9.1.6 The closed vent system shall be designed and operated in accordance with this section [45CSR§13-5.10]

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

9.2.1 Monitor throughput to the storage vessels (Unit IDs: T04) on a monthly basis
9.2.2 Monitor the VRUs in accordance with the plans and specifications and manufacturer's recommendations to demonstrate compliance with section 9.1.1
9.2.3a Conduct Initial AVO within 180 days of start-up, repair leaks as soon as practicable, grease requirements, delay of repair requirements
9.2.3b&c Conduct Annual AVO inspections (with visual bypass inspection) within 365 calendar days from date of previous inspection, repair leaks as soon as practicable, grease requirements, delay of repair requirements 8.2.3d&e Maintain a written plan for unsafe or difficult to inspect requirements that determines frequency of inspections[45CSR§13-5.10]
9.3.1. Maintain all records required by section 9.3 for five (5) years.
9.3.2 Maintain records of VRU equipment inspections and/or preventative maintenance procedures.
9.3.3 Maintain records according to this section of any malfunction or operational shutdown of the VRU during which excess emissions occur.
9.3.4 Maintain records of the aggregate throughput for the storage tanks on a monthly and 12-month rolling total for a period of five (5) years to demonstrate compliance with 9.1.3
9.3.5 Maintain a copy of all design records of the process, maintenance records of equipment and any downtime hours associated with the VRUs.
9.3.6 Maintain records of the additional monitoring required in section 9.1.4 to demonstrate compliance with the 98% control efficiency in section 9.1.1
9.4.1 At the Director's request, report deviations when the control device was operated outside of the parameters defined in the monitoring plan
9.4.2 Notify the director if VRU downtime in excess of 2% based on the 12-month rolling total within ten (10) calendar days.

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
T05, T06, T07 (each)	Produced Water Tanks (each)	VRU (14C/15C)

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Atmospheric Produced Water Storage Tanks that are controlled with a VRU and recycled back into the process

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	N/A

Construction date: MM/DD/YYYY	**Installation date:** MM/DD/YYYY	**Modification date(s):** MM/DD/YYYY
TBD	2017	N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

400 barrels, each

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	1,379,700 gal/yr (combined)	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	N/A	N/A
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	< 0.01	< 0.01
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Benzene	< 0.01	< 0.01
Toluene	< 0.01	< 0.01
Ethylbenzene	< 0.01	< 0.01
Xylene	< 0.01	< 0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CH4	N/A	< 0.01
CO2e	N/A	< 0.01

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

ProMax output

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

9.1.1 Route all VOC and HAP emissions from the tanks (Unit IDs: T05-T07) to a VRU System with at least 98% efficiency
9.1.2 Install, maintain, and operate the VRUs and associated monitoring equipment in a manner consistent with safety and good air pollution control practices or more stringent limits [45CSR§13-5.10.]
9.1.3 Maximum annual throughput limits from the tanks (Unit IDs: T05-T07)
9.1.4 Additional VRU Requirements – three (3) of the four (4) options must be utilized: install run status sensing equipment, install an automatic by-pass recycle system, install blanket gas with automatic throttling, and/or a install a compressor with a variable drive
9.1.5 The VRUs shall be designed and operated in accordance with this section [45CSR§13-5.10]
9.1.6 The closed vent system shall be designed and operated in accordance with this section [45CSR§13-5.10]

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

9.2.1 Monitor throughput to the storage vessels (Unit IDs: T05-T07) on a monthly basis
9.2.2 Monitor the VRUs in accordance with the plans and specifications and manufacturer's recommendations to demonstrate compliance with section 9.1.1
9.2.3a Conduct Initial AVO within 180 days of start-up, repair leaks as soon as practicable, grease requirements, delay of repair requirements
9.2.3b&c Conduct Annual AVO inspections (with visual bypass inspection) within 365 calendar days from date of previous inspection, repair leaks as soon as practicable, grease requirements, delay of repair requirements 8.2.3d&e Maintain a written plan for unsafe or difficult to inspect requirements that determines frequency of inspections[45CSR§13-5.10]
9.3.1. Maintain all records required by section 9.3 for five (5) years.
9.3.2 Maintain records of VRU equipment inspections and/or preventative maintenance procedures.
9.3.3 Maintain records according to this section of any malfunction or operational shutdown of the VRU during which excess emissions occur.
9.3.4 Maintain records of the aggregate throughput for the storage tanks on a monthly and 12-month rolling total for a period of five (5) years to demonstrate compliance with 9.1.3
9.3.5 Maintain a copy of all design records of the process, maintenance records of equipment and any downtime hours associated with the VRUs.
9.3.6 Maintain records of the additional monitoring required in section 9.1.4 to demonstrate compliance with the 98% control efficiency in section 9.1.1
9.4.1 At the Director's request, report deviations when the control device was operated outside of the parameters defined in the monitoring plan
9.4.2 Notify the director if VRU downtime in excess of 2% based on the 12-month rolling total within ten (10) calendar days.

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FUEL1	Fuel Conditioning Heater	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Fuel conditioning skid with a 0.5 MMBtu/hr heater to allow for more complete combustion of fuel at the compressor engines

Manufacturer:	**Model number:**	**Serial number:**
TBD	TBD	N/A

Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY TBD	MM/DD/YYYY 2017	MM/DD/YYYY N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

0.5 MMBtu/hr

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	4.29 MMscf/yr	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☑ Yes ☐ No	**If yes, is it?** ☐ Indirect Fired ☑ Direct Fired
Maximum design heat input and/or maximum horsepower rating: 0.5 MMBtu/hr	**Type and Btu/hr rating of burners:** 0.5 MMBtu/hr

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

Natural Gas, 4.29 MMscf/yr

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
Natural Gas	<0.01%	negligible	1,020 Btu/scf

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	0.041	0.18
Nitrogen Oxides (NO_X)	0.049	0.21
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	< 0.01	0.016
Particulate Matter (PM_{10})	< 0.01	0.016
Total Particulate Matter (TSP)	< 0.01	0.016
Sulfur Dioxide (SO_2)	< 0.01	< 0.01
Volatile Organic Compounds (VOC)	< 0.01	0.012
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Formaldehyde	< 0.01	< 0.01
Total HAPs (including HCHO)	< 0.01	< 0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2	58.63	256.8
CH4	< 0.01	< 0.01
CO2e	58.69	257.1

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

1. AP-42, Chapter 1.4, Table 1.4-1 (NOx, CO)
2. AP-42, Chapter 1.4, Table 1.4-2 (PM, SO2, VOC)
3. AP-42, Chapter 1.4, Table 1.4-3 (Formaldehyde, Total HAPs, including HCHO)
4. 40 CFR Part 98, Subpart C, Table C-1 (CO2)
5. 40 CFR Part 98, Subpart C, Table C-2 (CH4)
6. 40 CFR Part 98, Subpart A, Table A-1, effective January 2014 (CO2e)

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

No requirements for FUEL1 are listed in Permit R13-3347E, but are in Title V permit.

Permit R13-3347 Requirements:
8.1.1 Maximum design heat input
8.1.2 No person shall cause, suffer, allow, or permit emission of smoke/PM greater than ten (10) percent opacity passed on a six-minute block average [45CSR§2-3.1.]

Please Reference WVDEP-DAQ Permit R13-3347 or Title V R30-095-00074-2020 (MM02) Section 7.0.

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For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

No requirements for FUEL1 are listed in Permit R13-3347E.

Permit R13-3347 Requirements:

8.2.1 At such reasonable times as the Secretary may designate, conduct Method 9 emission observations
8.3.1 Conduct Method 9 tests or utilize measurements from continuous opacity monitoring systems approved by the director
8.4.1 Maintain all records required under section 9.3 and shall be kept in accordance with permit condition 3.4.1
8.4.2 Maintain records of all monitoring data required by permit condition 8.2.1.
8.5.1 If deviations from the allowable visible emission requirements are discovered during observations using Method 9 or 22, report to the Director within ten (10) calendar days of the occurrence

Please Reference WVDEP-DAQ Permit R13-3347 or Title V R30-095-00074-2020(MM02) Section 7.0.

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
LDOUT1	Production Liquids Truck Loadout	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Loadout of condensate and produced water from storage tanks

Manufacturer:	**Model number:**	**Serial number:**
N/A	N/A	N/A

Construction date: MM/DD/YYYY	**Installation date:** MM/DD/YYYY	**Modification date(s):** MM/DD/YYYY
TBD	2017	N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

300 bbl/day of condensate and 90 bbl/day of produced water

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
260 bbl/hour	1,380,000 gallons water 4,599,000 gallons condensate	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	N/A	N/A
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	72.94	15.24
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Benzene	0.031	0.01
Toluene	0.062	0.013
Ethylbenzene	0.018	< 0.01
Xylene	0.040	0.01
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2e	295.4	61.74

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

ProMax output

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

10.1.1 The loadout racks shall be designed and operated in accordance with this section
10.1.2 Maximum annual throughput limit for produced water liquid loadout. Please reference data above for exact limits.
10.1.3 Maximum annual throughput limit for condensate liquid loadout. Please reference data above for exact limits
10.1.4 Truck loading shall be operated in accordance with the plans and specifications filed in Permit Application R13-3347

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

10.2.1 Follow monitoring requirements as outlined in Section 3.2 of the permit
10.3.1 Maintain records required by section 10.3 for a period of five (5) years
10.3.2 Maintain records of the aggregate throughput for the loadout rack on a monthly and 12-month rolling total
10.4.1 Follow reporting requirements as outlined in Section 3.5 of the permit

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
VENT1	Compressor Blowdowns / Startups / Plant Shutdowns / Pigging / Vessel Cleaning and Maintenance Operations	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Emissions account for compressor blowdowns, compressor startups, plant shutdowns, high and low pressure pigging events, and vessel cleaning and maintenance operations

Manufacturer:	**Model number:**	**Serial number:**
N/A	N/A	N/A

Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY TBD	MM/DD/YYYY 2017	MM/DD/YYYY N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Compressor Blowdowns – 936 events/year, Compressor Startups – 936 events/year, Plant Shutdown – 2 events/year, Low Pressure Pigging – 593 events/year, High Pressure Pigging – 520 events/year, Vessel Cleaning/Maintenance - 39,300 scf/year

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	N/A	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	N/A	N/A
Particulate Matter (PM_{10})	N/A	N/A
Total Particulate Matter (TSP)	N/A	N/A
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	N/A	25.98
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAPs	N/A	0.52
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2e	N/A	2,051

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Engineering Estimates

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

15.1.1 Annual compressor blowdown event limits. Please reference data above for exact limits.
15.1.2 Annual compressor startup event limits. Please reference data above for exact limits.
15.1.3 Annual low pressure and high pressure pigging event limits limits. Please reference data above for exact limits.
15.1.4 Annual plant shutdown event limits. Please reference data above for exact limits.
15.1.5 Annual vessel cleaning/maintenance event limits. Please reference data above for exact limits.

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

15.2.1 Maintain records required by section 15.2 for a period of five (5) years
15.2.2 Maintain records of compressor blowdowns and estimated volume on a monthly and 12-month rolling total to demonstrate compliance with sections 15.1.1
15.2.3 Maintain records of compressor startups and estimated volume on a monthly and 12-month rolling total to demonstrate compliance with sections 15.1.2
15.2.4 Maintain records of low pressure and high pressure pigging events and estimated volume on a monthly and 12-month rolling total to demonstrate compliance with sections 15.1.3
15.2.5 Maintain records of shutdowns and estimated volume on a monthly and 12-month rolling total to demonstrate compliance with sections 15.1.4
15.2.6 Maintain records of vessel cleaning/maintenance events and estimated volume on a monthly and 12-month rolling total to demonstrate compliance with sections 15.1.5. Keep vessel cleaning/maintenance schedule on site.

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

ATTACHMENT E - Emission Unit Form

Emission Unit Description

Emission unit ID number:	**Emission unit name:**	**List any control devices associated with this emission unit:**
FUG	Fugitives	None

Provide a description of the emission unit (type, method of operation, design parameters, etc.; for engines, please indicate compression or spark ignition, lean or rich, four or two stroke, non-emergency or emergency, certified or not certified, as applicable)

Emissions account for component fugitive leaks and haul roads.

Manufacturer:	**Model number:**	**Serial number:**
N/A	N/A	N/A

Construction date:	**Installation date:**	**Modification date(s):**
MM/DD/YYYY N/A	MM/DD/YYYY 2017	MM/DD/YYYY N/A

Design Capacity (examples: furnaces - tons/hr, tanks – gallons, boilers – MMBtu/hr, engines - hp):

Haul Roads: Condensate Tank Trucks – 730 trips/year, Haul Roads: Produced Water Tank Trucks – 365 trips/year, Haul Roads: Passenger Trucks – 1,460 trips/year

Maximum Hourly Throughput:	**Maximum Annual Throughput:**	**Maximum Operating Schedule:**
N/A	N/A	8,760 hr/yr

Fuel Usage Data **(fill out all applicable fields)**

Does this emission unit combust fuel? ☐ Yes ☑ No	**If yes, is it?** ☐ Indirect Fired ☐ Direct Fired
Maximum design heat input and/or maximum horsepower rating: N/A	**Type and Btu/hr rating of burners:** N/A

List the primary fuel type(s) and if applicable, the secondary fuel type(s). For each fuel type listed, provide the maximum hourly and annual fuel usage for each.

N/A

Describe each fuel expected to be used during the term of the permit.

Fuel Type	Max. Sulfur Content	Max. Ash Content	BTU Value
N/A			

Emissions Data		
Criteria Pollutants	Potential Emissions	
	PPH	TPY
Carbon Monoxide (CO)	N/A	N/A
Nitrogen Oxides (NO_X)	N/A	N/A
Lead (Pb)	N/A	N/A
Particulate Matter ($PM_{2.5}$)	0.014	0.061
Particulate Matter (PM_{10})	0.14	0.61
Total Particulate Matter (TSP)	0.55	2.41
Sulfur Dioxide (SO_2)	N/A	N/A
Volatile Organic Compounds (VOC)	2.35	10.31
Hazardous Air Pollutants	Potential Emissions	
	PPH	TPY
Total HAPs	0.052	0.23
Regulated Pollutants other than Criteria and HAP	Potential Emissions	
	PPH	TPY
CO2e	40.41	177

List the method(s) used to calculate the potential emissions (include dates of any stack tests conducted, versions of software used, source and dates of emission factors, etc.).

Engineering estimates

Applicable Requirements

List all applicable requirements for this emission unit. For each applicable requirement, include the underlying rule/regulation citation and/or construction permit with the condition number. (*Note: Title V permit condition numbers alone are not the underlying applicable requirements*). If an emission limit is calculated based on the type of source and design capacity or if a standard is based on a design parameter, this information should also be included.

Permit R13-3347E Requirements:

13.1.1 NSPS OOOOa standards – a leak is any visible emission from a fugitive component observed using an optical gas imaging or an instrument reading of 500 ppm or greater using Method 21

☑ Permit Shield

For all applicable requirements listed above, provide monitoring/testing/recordkeeping/reporting which shall be used to demonstrate compliance. If the method is based on a permit or rule, include the condition number or citation. (Note: Each requirement listed above must have an associated method of demonstrating compliance. If there is not already a required method in place, then a method must be proposed.)

Permit R13-3347E Requirements:

13.1.1 LDAR Requirements
(a) Monitor all fugitive emission components in accordance with paragraphs (b)-(g) of this section. Keep records in accordance with paragraph (i) and report in accordance with paragraph (j)
(b)-(d) Develop written emissions monitoring plan in accordance with paragraph (c) and (d) of this section
(e)-(g) Each monitoring survey shall observe each fugitive component as defined in 40 CFR §60.5430a. The initial survey shall be conducted with sixty (60) days of startup of production then quarterly moving forward. Difficult or unsafe to inspect and winter requirements are also outlined.
(h) Repair timelines – as soon as practicable but no later than 30 calendar days after detection, resurvey of repairs as soon as practicable but no later than 30 calendar days after repair, delay of repair instructions, leak tagging instructions,
(i) Maintain records of surveys shall as specified in 40 CFR §60.5420a(c)(15)
(j) Submit annual reports in accordance with 40 CFR §60.5420a(b)(7)
13.2.1-2 Initial Compliance Demonstration - develop fugitive monitoring plan, conduct initial monitoring, maintain records, repair leaks, and submit initial annual report
13.3.1 Continuous Compliance Demonstration - conduct periodic monitoring, repair leaks, maintain records, and submit annual reports
13.4.1 Notification Requirements – No requirements according to 40 CFR §60. 5420a(a)(1)
13.4.2 Submit annual reports and performance tests as outlined in this section
13.4.3 Maintain records identified in 40 CFR §60.7(f) and as outlined in this section for five (5) years

Are you in compliance with all applicable requirements for this emission unit? ☑ Yes ☐ No

If no, complete the **Schedule of Compliance Form** as **ATTACHMENT F**.

Attachment G Air Pollution Control Device Forms

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:	**List all emission units associated with this control device.**	
Oxidation Catalysts: 1C through 12C	Compressor Engine #1 through #12: C-100 though C-1200 (1E through 12E)	
Manufacturer: TBD	**Model number:** RT-3615-H	**Installation date:** MM/DD/YYYY 03//2017

Type of Air Pollution Control Device:

___Baghouse/Fabric Filter	___Venturi Scrubber	___Multiclone
___Carbon Bed Absorber	___Packed Tower Scrubber	___Single Cyclone
___Carbon Drum(s)	___Other Wet Scrubber	___Cyclone Bank
___Catalytic Incinerator	___Condenser	___Settling Chamber
___Thermal Incinerator	___Flare	_X_Other (describe) Oxidation Catalyst
___Wet Plate Electrostatic Precipitator		___Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
CO	N/A	94%
VOC	N/A	53%
HCOH	N/A	88%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Permit R13-3347E Requirements:

5.1.3.a-b The compressor engines shall be equipped with oxidation catalysts and fitted with a closed-loop automatic air/fuel ratio feedback controller to ensure a lean-rich mixture. A warning or indication to the operator and/or be interlocked with the engine ignition system to stop engine operation in case of a masking, poisoning or overrich air/fuel ratio which results in performance degradation or failure of the catalyst element

5.1.3.c No person shall knowingly: remove, bypass, defeat or render inoperative any air pollution control device subject to the requirements of this permit

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___Yes _X_No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Unit does not meet the definition of a large Pollutant-Specific Emissions Unit (PSEU): a PSEU with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels. Units are subject to a NSPS standard (NSPS JJJJ) that is exempt per checklist.
Therefore, CAM is not applicable per the instructions in Attachment H.

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Permit R13-3347E Requirements:
5.1.3.a-b The compressor engines shall be equipped with oxidation catalysts and fitted with a closed-loop automatic air/fuel ratio feedback controller to ensure a lean-rich mixture. A warning or indication to the operator and/or be interlocked with the engine ignition system to stop engine operation in case of a masking, poisoning or overrich air/fuel ratio which results in performance degradation or failure of the catalyst element
5.1.3.d A written operation and maintenance ("O&M") plan is required
5.2.1.a. Inspect, maintain and/or replace catalytic reduction devices and auxiliary air pollution control devices. Maintain proper operation of the automatic air/fuel ratio controller or automatic feedback controller. Follow O&M recommendations of the catalyst element manufacturer.
5.4.1. Maintain records of the hours of operation of each engine for five years
5.4.2. Maintain records of all catalytic reduction device maintenance for five years to demonstrate compliance with 5.1.2
11.4.3 Maintain and operate the AFR controller appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: Facility Flare: FLARE1 (31E)	**List all emission units associated with this control device.** TEG Dehydrator Still Vents: DEHY1, DEHY2, DEHY3	
Manufacturer: TBD	**Model number:** TBD	**Installation date:** MM/DD/YYYY 2017

Type of Air Pollution Control Device:

___Baghouse/Fabric Filter	___Venturi Scrubber	___Multiclone
___Carbon Bed Absorber	___Packed Tower Scrubber	___Single Cyclone
___Carbon Drum(s)	___Other Wet Scrubber	___Cyclone Bank
___Catalytic Incinerator	___Condenser	___Settling Chamber
___Thermal Incinerator	_X_Flare	___Other (describe) _____
___Wet Plate Electrostatic Precipitator		___Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
VOC	N/A	98%
HAPs	N/A	98%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Permit R13-3347E Requirements:
7.1.2 Flare maximum hourly and annual emission limits
7.1.3 The flare shall be designed and operated in accordance with this section: non-assisted, no visible emissions (except for periods not to exceed 5 minutes during any 2 consecutive hours), flame shall be present at all times whenever emissions may be vented (except during MSS), net heating value and velocity requirements
7.1.4 Conduct a flare design evaluation in accordance with section 7.4.2 of the permit. At the Director's request, conduct a flare compliance assessment for concentration of sample and tip velocity in accordance with section 7.3.2 of the permit
7.2.1. Monitor the presence or absence of a flare pilot flame using a thermocouple or any other equivalent device, except during SSM events

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___Yes _X_No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Unit does not meet the definition of a large Pollutant-Specific Emissions Unit (PSEU): a PSEU with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels. Units are subject to a MACT standard (MACT HH) that limits VOCs by way of benzene. Also, the Title V permit specifies a continuous compliance method of pilot monitoring. Both stipulations are considered exempt from CAM Plan instructions. Therefore, CAM is not applicable per the instructions in Attachment H

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Permit R13-3347E Requirements:
7.1.4 Maintain record of the flare design evaluation in accordance with 7.4.2 or comply with section 7.3.2
7.2.1 Monitor the presence or absence of the pilot flame, using a thermocouple or equivalent device, to show compliance with section 7.1.3.c
7.3.1 & 7.4.5 Conduct Method 22 test for at least two hours within one (1) year of initial startup to demonstrate compliance with section 7.1.3b. Maintain records of opacity tests.
7.3.2 At the Director's request, conduct a flare compliance assessment to demonstrate compliance with section 7.1.3
7.4.1 Maintain records of the times and duration of all periods which the pilot flame was absent to demonstrate compliance with section 7.1.3c and 7.2.1
7.4.2 Maintain record of the flare design evaluation to demonstrate compliance with section 7.1.4 and 7.3.2
7.4.3 Maintain records of testing conducted in accordance with 7.3.3 to demonstrate compliance with section 7.1.3 and 7.3.3
7.4.4 Document and maintain records required by sections 7.2 (monitoring) and 7.3 (testing)
7.4.9 Maintain all records required by section 7.4 in accordance for five years
7.5.1 If required by the Director to comply with section 7.3.2, submit a testing protocol at least thirty (30) days prior to any testing, submit notification at least fifteen (15) days prior to any testing, submit test results within sixty (60) days of completion, including supporting calculations and testing data
7.5.2 If deviations from the allowable visible emission requirements are discovered during observations using Method 9 or 22, report to the Director within ten (10) calendar days of the occurrence
7.5.3 If deviations from the flare design and operation criteria in section 7.1.3 occur, report to the Director within ten (10) calendar days of such deviation

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: TEG Dehydrator Unit Reboilers: DREB1 (16E), DREB2 (19E), DREB3(22E)	**List all emission units associated with this control device.** TEG Dehydrator Flash Tanks: DFLSH1 , DFLSH2, DFLSH3	
Manufacturer: TBD	**Model number:** TBD	**Installation date:** MM/DD/YYYY 2017

Type of Air Pollution Control Device:

___Baghouse/Fabric Filter	___Venturi Scrubber	___Multiclone
___Carbon Bed Absorber	___Packed Tower Scrubber	___Single Cyclone
___Carbon Drum(s)	___Other Wet Scrubber	___Cyclone Bank
___Catalytic Incinerator	___Condenser	___Settling Chamber
___Thermal Incinerator	___Flare	_X_Other (describe) Reboiler w/VRU backup
___Wet Plate Electrostatic Precipitator		___Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
VOC	N/A	98%
HAPs	N/A	98%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Permit R13-3347E Requirements:
8.1.1 Maximum design heat input of reboilers shall not exceed 1.5 MMBtu/hr
8.1.2 No person shall cause, suffer, allow, or permit emission of smoke/PM greater than ten (10) percent opacity passed on a six minute block average [45CSR§2-3.1.]

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___Yes _X_No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Unit does not meet the definition of a large Pollutant-Specific Emissions Unit (PSEU): a PSEU with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels. Units are subject to a MACT standard (MACT HH) that limits VOCs by way of benzene. Also, the VRU backup has continuous compliance requirements by way of design and downtime monitoring. Both stipulations are considered exempt from CAM Plan instructions. Therefore, CAM is not applicable per instructions in Attachment H

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Permit R13-3347E Requirements:
8.2.1 At such reasonable times as the Secretary may designate, conduct Method 9 emission observations to demonstrate compliance with section 8.1.2
8.3.1 Conduct Method 9 tests or utilize measurements from continuous opacity monitoring systems approved by the director to demonstrate compliance with section 8.1.2 [45CSR§2-3.2.]
8.4.1 All records required under Section 9.3 shall be kept in accordance with permit condition 3.4.1
8.4.2. Maintain records of all monitoring data required by permit condition 8.2.1
8.5.1 If deviations from the allowable visible emission requirements are discovered during observations using Method 9 or 22, report to the Director within ten (10) calendar days of the occurrence

See requirements in tanks section on VRUs that will be used as a backup control device for the flash tanks.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number:	**List all emission units associated with this control device.**	
Vapor Recovery Units: VRU-100 (14C), VRU-200 (15C)	Condensate/Produced Water Tanks (T01 through T07)	
Manufacturer:	**Model number:**	**Installation date:** MM/DD/YYYY
TBD	TBD	03//2017

Type of Air Pollution Control Device:

___Baghouse/Fabric Filter	___Venturi Scrubber	___Multiclone
___Carbon Bed Absorber	___Packed Tower Scrubber	___Single Cyclone
___Carbon Drum(s)	___Other Wet Scrubber	___Cyclone Bank
___Catalytic Incinerator	___Condenser	___Settling Chamber
___Thermal Incinerator	___Flare	_X_Other (describe) Vapor Recover Unit (VRU)
___Wet Plate Electrostatic Precipitator		___Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
VOC	N/A	98%
HAPs	N/A	98%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

VRU-100 is the primary VRU to collect storage tank vapors and VRU-200 is the backup VRU in times when the primary VRU is undergoing maintenance or shutdown. In the unlikely event that both VRU-100 and VRU-200 are under maintenance or are shutdown, a bypass system is in place to route tank vapors to the facility inlet. This is a closed loop system; however, to be conservative, only 98% capture efficiency was permitted.

Permit R13-3347E Requirements:
9.1.4 Additional VRU Requirements – three (3) of the four (4) options must be utilized: install run status sensing equipment, install an automatic by-pass recycle system, install blanket gas with automatic throttling, and/or a install a compressor with a variable drive
9.1.5 The VRUs shall be designed and operated in accordance with this section [45CSR§13-5.10]
9.1.6 The closed vent system shall be designed and operated in accordance with this section [45CSR§13-5.10]

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___Yes _X_No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Unit does not meet the definition of a large Pollutant-Specific Emissions Unit (PSEU): a PSEU with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels. The Title V permit contains continuous compliance requirements for VRU downtime and design records of the system. Therefore, CAM is not applicable per the instructions in Attachment H

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Permit R13-3347E Requirements:
9.2.2 Monitor the VRUs in accordance with the plans and specifications and manufacturer's recommendations to demonstrate compliance with section 9.1.1
9.2.3a Conduct Initial AVO within 180 days of start-up, repair leaks as soon as practicable, grease requirements, delay of repair requirements
9.2.3b&c Conduct Annual AVO inspections (with visual bypass inspection) within 365 calendar days from date of previous inspection, repair leaks as soon as practicable, grease requirements, delay of repair requirements
9.2.3d&e Maintain a written plan for unsafe or difficult to inspect requirements that determines frequency of inspections[45CSR§13-5.10]
9.3.1. Maintain all records required by section 9.3 for five years
9.3.2 Maintain records of VRU equipment inspections and/or preventative maintenance procedures.
9.3.3 Maintain records according to this section of any malfunction or operational shutdown of the VRU during which excess emissions occur
9.3.4 Maintain records of the aggregate throughput for the storage tanks on a monthly and 12-month rolling total for a period of five (5) years to demonstrate compliance with 9.1.3
9.3.5 Maintain a copy of all design records of the process, maintenance records of equipment and any downtime hours associated with the VRUs
9.3.6 Maintain records of the additional monitoring required in section 9.1.4 to demonstrate compliance with the 98% control efficiency in section 9.1.1
9.4.1 At the Director's request, report deviations when the control device was operated outside of the parameters defined in the monitoring plan
9.4.2 Notify the director if VRU downtime in excess of 2% based on the 12-month rolling total within ten (10) calendar days.

ATTACHMENT G - Air Pollution Control Device Form

Control device ID number: BTEX Condenser	**List all emission units associated with this control device.** TEG Dehydrator Still Vents (DEHY1-DEHY3)	
Manufacturer: TBD	**Model number:** TBD	**Installation date:** MM/DD/YYYY 03//2017

Type of Air Pollution Control Device:

___Baghouse/Fabric Filter	___Venturi Scrubber	___Multiclone
___Carbon Bed Absorber	___Packed Tower Scrubber	___Single Cyclone
___Carbon Drum(s)	___Other Wet Scrubber	___Cyclone Bank
___Catalytic Incinerator	_X_Condenser	___Settling Chamber
___Thermal Incinerator	___Flare	___Other (describe) _____
___Wet Plate Electrostatic Precipitator		___Dry Plate Electrostatic Precipitator

List the pollutants for which this device is intended to control and the capture and control efficiencies.

Pollutant	Capture Efficiency	Control Efficiency
VOC	N/A	98%
HAPs	N/A	98%

Explain the characteristic design parameters of this control device (flow rates, pressure drops, number of bags, size, temperatures, etc.).

Vapors from the dehydrator's still column are routed to the BTEX condenser prior to the flare for a collective 98% DRE.

Is this device subject to the CAM requirements of 40 C.F.R. 64? ___Yes _X_No

If Yes, **Complete ATTACHMENT H**

If No**, Provide justification.**

Unit does not meet the definition of a large Pollutant-Specific Emissions Unit (PSEU): a PSEU with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels. Units are subject to a MACT standard (MACT HH) that limits VOCs by way of benzene. Also, the Title V permit specifies a continuous compliance method of pilot monitoring. Both stipulations are considered exempt from CAM Plan instructions. Therefore, CAM is not applicable per the instructions in Attachment H

Describe the parameters monitored and/or methods used to indicate performance of this control device.

Permit R13-3347E Requirements:
7.1.4 Maintain record of the flare design evaluation in accordance with 7.4.2 or comply with section 7.3.2
7.2.1 Monitor the presence or absence of the pilot flame, using a thermocouple or equivalent device, to show compliance with section 7.1.3.c
7.3.1 & 7.4.5 Conduct Method 22 test for at least two hours within one (1) year of initial startup to demonstrate compliance with section 7.1.3b. Maintain records of opacity tests.
7.3.2 At the Director's request, conduct a flare compliance assessment to demonstrate compliance with section 7.1.3
7.4.1 Maintain records of the times and duration of all periods which the pilot flame was absent to demonstrate compliance with section 7.1.3c and 7.2.1
7.4.2 Maintain record of the flare design evaluation to demonstrate compliance with section 7.1.4 and 7.3.2
7.4.3 Maintain records of testing conducted in accordance with 7.3.3 to demonstrate compliance with section 7.1.3 and 7.3.3
7.4.4 Document and maintain records required by sections 7.2 (monitoring) and 7.3 (testing)
7.4.9 Maintain all records required by section 7.4 in accordance for five years
7.5.1 If required by the Director to comply with section 7.3.2, submit a testing protocol at least thirty (30) days prior to any testing, submit notification at least fifteen (15) days prior to any testing, submit test results within sixty (60) days of completion, including supporting calculations and testing data
7.5.2 If deviations from the allowable visible emission requirements are discovered during observations using Method 9 or 22, report to the Director within ten (10) calendar days of the occurrence
7.5.3 If deviations from the flare design and operation criteria in section 7.1.3 occur, report to the Director within ten (10) calendar days of such deviation

Attachment H Compliance Assurance Monitoring Plan Form

ATTACHMENT H - Compliance Assurance Monitoring (CAM) Plan Form

For definitions and information about the CAM rule, please refer to 40 CFR Part 64. Additional information (including guidance documents) may also be found at http://www.epa.gov/ttn/emc/cam.html

CAM APPLICABILITY DETERMINATION

1) Does the facility have a PSEU (Pollutant-Specific Emissions Unit considered separately with respect to **EACH** regulated air pollutant) that is subject to CAM (40 CFR Part 64), which must be addressed in this CAM plan submittal? To determine applicability, a PSEU must meet **all** of the following criteria (*If No, then the remainder of this form need not be completed*): ☐ YES ☑ NO

a. The PSEU is located at a major source that is required to obtain a Title V permit;

b. The PSEU is subject to an emission limitation or standard for the applicable regulated air pollutant that is NOT exempt;

LIST OF EXEMPT EMISSION LIMITATIONS OR STANDARDS:

- NSPS (40 CFR Part 60) or NESHAP (40 CFR Parts 61 and 63) proposed after 11/15/1990.
- Stratospheric Ozone Protection Requirements.
- Acid Rain Program Requirements.
- Emission Limitations or Standards for which a WVDEP Division of Air Quality Title V permit specifies a continuous compliance determination method, as defined in 40 CFR §64.1.
- An emission cap that meets the requirements specified in 40 CFR §70.4(b)(12).

c. The PSEU uses an add-on control device (as defined in 40 CFR §64.1) to achieve compliance with an emission limitation or standard;

d. The PSEU has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than the Title V Major Source Threshold Levels; AND

e. The PSEU is NOT an exempt backup utility power emissions unit that is municipally-owned.

BASIS OF CAM SUBMITTAL

2) Mark the appropriate box below as to why this CAM plan is being submitted as part of an application for a Title V permit:

☑ RENEWAL APPLICATION. **ALL** PSEUs for which a CAM plan has NOT yet been approved need to be addressed in this CAM plan submittal.

☐ INITIAL APPLICATION (submitted after 4/20/98). **ONLY** large PSEUs (i. e., PSEUs with potential post-control device emissions of an applicable regulated air pollutant that are equal to or greater than Major Source Threshold Levels) need to be addressed in this CAM plan submittal.

☐ SIGNIFICANT MODIFICATION TO LARGE PSEUs. **ONLY** large PSEUs being modified after 4/20/98 need to be addressed in this cam plan submittal. For large PSEUs with an approved CAM plan, Only address the appropriate monitoring requirements affected by the significant modification.

All potential PSEUs have control devices that are either required by emission limitations or standards in the exempt list (NSPS or MACT) and/or have conditions currently in the Title V permit and underlying construction permit with continuous compliance requirements such as design specifications and pilot monitoring.