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November 3, 2023 **FedEx No.: 773957604592**

New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite #1
Santa Fe, New Mexico 87505-1816

Re: ***NSR Permit No. 0434-M10R8 Revision Application***
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico
Tempo No.: 199-PRN20210001
AIRs No. 35 0150011

Dear Sir/Madam,

On behalf of DCP Operating Company, LP, Environmental Operational Solutions, LLC "EOSolutions" is submitting the enclosed NSR Permit No. 0434-M10R8 revision application to address the following:

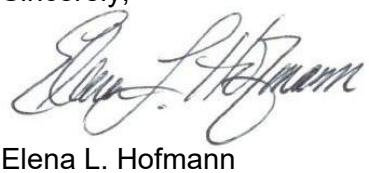
- Revise the site's existing field condensate storage tanks throughput and emissions rates;
- Revise the site's loading throughput and emission rates; and
- Revise existing Haul Road Operations emissions to reflect the increased truck hauling frequencies and emission rates.

There is no physical modification made at the plant, the processing rate of the plant remains the same, and no new equipment nor any new emission sources are being installed.

The enclosed NSR permit revision application (original and a copy) includes all the required New Mexico Environment Department's forms and supporting documents along with the required $500 permit application filing fee. Additionally, the electronic files of the application are provided in required formats in duplicate on two separate CDs.

Thank you in advance for your consideration of this application. We request that EOSolutions be copied on any correspondence regarding this registration, including final action. If you have any questions or comments, please contact me directly at (713) 983-0112 or via email at elena.hofmann@eosolutions.net.

Sincerely,



Elena L. Hofmann
President

Enclosures

Significant Revision (PSD Minor Modification) to NSR Permit 0434-M10R8

DCP Operating Company, LP
Artesia Gas Plant
Artesia, Eddy County, NM
Agency No. 199
AIRS No: 35 0150011

November 2023

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Section 1
General Facility Information

DCP Operating Company, LP (DCP) owns and operates the Artesia Gas Plant (Artesia GP), a natural gas processing plant, located in Eddy County, New Mexico approximately 13 miles southeast of Artesia. The plant is currently operating under NSR Permit 0434-M10R8 and Title V permit P095-R4. Various processing operations and units at this facility are natural gas compression, gas sweetening unit, dehydration unit, and natural gas liquids extraction unit. The acid gas generated is routed to an acid gas injection well.

DCP is submitting this significant revision (PSD minor modification) permit application (pursuant to 20.2.72.219.D.(1)(a) NMAC) to revise its current Air Quality NSR Permit No. 0434-M10R8 for Artesia Gas Plant.

The proposed modification consists of the following:

1. Revise the site's existing field condensate storage tanks throughput and emissions rates;
2. Revise the site's condensate loading throughput and emission rates; and
3. Revise existing Haul Road Operations emissions to reflect the increased truck hauling frequencies and emission rates.

The VOC emissions from the condensate tanks, Unit IDs, TK-48, TK-49, TK-50, TK-51, and GT-1, are routed to a Vapor Recovery Unit (VRU). The condensate tanks' VOC emissions while the VRU is down (5%) are represented as SSM emissions.

The truck loadout VOC emission increases from the condensate tanks' TK-C and TK-50 are represented in Unit ID Load-1. The truck hauling operations' Haul Road emissions increases are represented in Unit ID Haul-1 and Haul-2.

There is no physical change occurring at the plant site, the processing rate of the plant remains the same, and there is no new equipment nor new emissions sources installed in this permit revision.

Table 1-1
Requested Allowable Emissions (NMED Table 2-E)
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

Unit #	Source Description	NO_X		CO		VOC		SO_2		TSP		PM10		PM2.5		H_2S	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
10	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
11	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
12	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
13	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
14	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
15	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
16	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
17	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
19	Gas Furnace	0.30	1.30	0.30	1.10	0.02	0.07	0.002	0.01	0.00	0.10	0.00	0.10	0.00	0.10		
20	Boiler #2	3.53	15.46	2.96	12.99	0.19	0.85	0.02	0.09	0.27	1.17	0.27	1.17	0.27	1.17		
22	Emergency Wet Gas Flare	0.22	0.98	1.20	5.30			0.02	0.10							2.30E-05	1.00E-04
23	Emergency Acid Gas Flare	0.09	0.38	0.47	2.06			0.01	0.04							9.00E-06	3.90E-05
25	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
26	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
27	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
28	Boiler #1	3.60	15.60	3.00	13.10	0.20	0.86	0.02	0.09	0.27	1.20	0.27	1.20	0.27	1.20		
30	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
31	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
32	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
33	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
34	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
38	Fugitives (FUG-1)					9.00	39.60									0.14	0.60
39	Waukesha 7042GSI	8.60	37.70	11.90	52.10	0.40	1.70	0.12	0.53	0.17	0.73	0.17	0.73	0.17	0.73		
40	Reboiler	0.05	0.21	0.04	0.18	0.00	0.01	0.01	0.03	0.00	0.02	0.00	0.02	0.00	0.02		
Dehy	TEG Dehydrator Still Vent and Flash Tank																
Dehy-2	TEG Dehydrator Still Vent and Flash Tank																
GT-1	Gunbarrel Separator																
CT-N	Cooling Tower									0.31	1.40	0.20	0.86	0.001	0.003		
CT-S	Cooling Tower									0.28	1.20	0.18	0.78	0.001	0.003		
TK-C	Condensate Tank w/ blanket Gas																
TK-1	Gasoline Tank																
TK-48	Feed Tank																
TK-49	Feed Tank																
TK-50	Oil Tank																
TK-51	Feed Tank																
Load-1	Truck Loadout & Loading of Condensate					80.24	43.08										
Amine-RS	Amine Regeneration Still Vent & Flash Tank																
Amine-C	Amine Contactor																
Haul-1	Hauling emissions from condensate loading out of facility									1.23	1.32	0.31	0.34	0.03	0.03		
Haul-2	Hauling emissions from condensate loadout into facility									1.23	0.94	0.31	0.24	0.03	0.02		
SSM(22)	Wet gas flare: flaring during routine or predictable SSM	642.90	7.50	3498.30	40.70	2685.10	27.20	4918.40	49.90							52.30	0.53
SSM(23)	Acid gas flare: flaring during routine and predictable SSM	10.40	2.40	56.60	13.20			2001.00	328.20							21.30	3.50
SSM	Venting during routine and predictable SSM					3025.44	25.43									93.39	0.71
M	Venting of gas and combustion of gas flared due to Malfunction (for SSM 22 and/or SSM 23)	642.90	10.00	3498.30	10.00	2685.10	10.00	4918.40	10.00							52.30	9.00
REVISED SITEWIDE EMISSION TOTALS		**757.49**	**476.23**	**3,662.58**	**535.43**	**5,817.77**	**223.10**	**6,919.67**	**389.26**	**4.98**	**13.36**	**2.93**	**10.72**	**1.98**	**8.56**	**167.13**	**14.34**
CURRENT SITEWIDE EMISSION TOTALS		**757.49**	**476.23**	**3,662.58**	**535.43**	**5,678.20**	**206.09**	**6,919.67**	**389.26**	**4.91**	**11.94**	**2.92**	**10.35**	**1.98**	**8.53**	**167.13**	**14.34**
EMISSIONS INCREASES			0.00		0.00		17.01		0.00		1.42		0.36		0.04		0.00
PSD Significance Level			40		100		40		40		NA		15		10		10
Exceeds Thresholds?			**No**		**No**		**No**		**No**				**No**		**No**		**No**

Table 1-2
Site Information
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

Administrative Information		
Organization Name:	DCP Operating Company, LP	
Facility Name:	Artesia Gas Plant	
Agency ID (NMED Facility ID):	199	
Nearest City/Town:	Artesia	
	The facility is 13 miles ESE of Artesia	
County:	Eddy	
Elevation (feet):	3,600	
Location (UTM Zone 13):	574000 UTM E	3624400 UTM N
Location (dec deg):	32.754972°N	-104.210028°W
Permit/NOI/NPR Number:	434-M10R8	

Proposed Facility Input Capacity and Production Rates			
Natural Gas	Hourly:	4.17	MMSCF/h
	Daily:	100	MMSCF/d
	Annually:	36,500	MMSCF/y
Natural Gas Liquids	Hourly:	11.88	bbl/hr
	Daily:	285	bbl/d
	Annually:	104,025	bbl/yr

Mail Application To:		**For Department use only:**
New Mexico Environment Department Air Quality Bureau Permits Section 525 Camino de los Marquez, Suite 1 Santa Fe, New Mexico, 87505 Phone: (505) 476-4300 Fax: (505) 476-4375 www.env.nm.gov/aqb		

Universal Air Quality Permit Application

Use this application for NOI, NSR, or Title V sources.

Use this application for: the initial application, modifications, technical revisions, and renewals. For technical revisions, complete Sections, 1-A, 1-B, 2-E, 3, 9 and any other sections that are relevant to the requested action; coordination with the Air Quality Bureau permit staff prior to submittal is encouraged to clarify submittal requirements and to determine if more or less than these sections of the application are needed. Use this application for streamline permits as well.

This application is submitted as (check all that apply)**:** ☐ Request for a No Permit Required Determination (no fee)
☐ **Updating** an application currently under NMED review. Include this page and all pages that are being updated (no fee required).
Construction Status: ☐ Not Constructed ☒ Existing Permitted (or NOI) Facility ☐ Existing Non-permitted (or NOI) Facility
Minor Source: ☐ NOI 20.2.73 NMAC ☒ 20.2.72 NMAC application or revision ☐ 20.2.72.300 NMAC Streamline application
Title V Source: ☐ Title V (new) ☐ Title V renewal ☐ TV minor mod. ☐ TV significant mod. ☐ TV Acid Rain: ☐ New ☐ Renewal
PSD Major Source: ☐ PSD major source (new) ☒ Minor Modification to a PSD source ☐ a PSD major modification

Acknowledgements:

☒ I acknowledge that a pre-application meeting is available to me upon request. ☐ Title V Operating, Title IV Acid Rain, and NPR applications have no fees.

☒ $500 NSR application Filing Fee enclosed OR ☐ The full permit fee associated with 10 fee points (required w/ streamline applications).

☒ Check No.: 000889 in the amount of $500

☒ I acknowledge the required submittal format for the hard copy application is printed double sided 'head-to-toe', 2-hole punched (except the Sect. 2 landscape tables is printed 'head-to-head'), numbered tab separators. Incl. a copy of the check on a separate page.

☒ I acknowledge there is an annual fee for permits in addition to the permit review fee: www.env.nm.gov/air-quality/permit-fees-2/.

☐ This facility qualifies for the small business fee reduction per 20.2.75.11.C. NMAC. The full $500.00 filing fee is included with this application and I understand the fee reduction will be calculated in the balance due invoice. The Small Business Certification Form has been previously submitted or is included with this application. (Small Business Environmental Assistance Program Information: www.env.nm.gov/air-quality/small-biz-eap-2/.)

Citation: Please provide the **low level citation** under which this application is being submitted: **20.2.72.219.D.(1)(a) NMAC**
(e.g. application for a new minor source would be 20.2.72.200.A NMAC, one example for a Technical Permit Revision is 20.2.72.219.B.1.b NMAC, a Title V acid rain application would be: 20.2.70.200.C NMAC)

Section 1 – Facility Information

Section 1-A: Company Information

		AI # if known: 199	Updating Permit/NOI #: 0434-M10R8
1	Facility Name: Artesia Gas Plant	Plant primary SIC Code (4 digits): 1321	
		Plant NAIC code (6 digits): 211130	
a	Facility Street Address (If no facility street address, provide directions from a prominent landmark): County Road 206, 3 miles South of the junction of County Road 206 and US Highway 82.		
2	Plant Operator Company Name: DCP Operating Company, LP	Phone/Fax: 713-735-3978	

a	Plant Operator Address: 2331 CityWest Blvd., Houston, TX 77042	
b	Plant Operator's New Mexico Corporate ID or Tax ID: 036785	
3	Plant Owner(s) name(s): DCP Operating Company, LP	Phone/Fax: 713-735-3978
a	Plant Owner(s) Mailing Address(s): 2331 CityWest Blvd., Houston, TX 77042	
4	Bill To (Company): DCP Operating Company, LP	Phone/Fax: 713-735-3978
a	Mailing Address: 2331 CityWest Blvd., Houston, TX 77042	E-mail: Nicholas.l.case@p66.com
5	☐ Preparer: ☒ Consultant: Elena Hofmann	Phone/Fax: 713-983-0112/281-971-0521
a	Mailing Address: 13201 NW Freeway, #220, Houston, TX 77040	E-mail: elena.hofmann@eosolutions.net
6	Plant Operator Contact: Mr. Ray Smalts	Phone/Fax: 575-234-6405
a	Address: 5301 Sierra Vista Drive, Carlsbad, NM 88220	E-mail:
7	Air Permit Contact: Mr. Steven R. Torpey	Title: Senior Air Permitting Engineer
a	E-mail: steve.torpey@p66.com	Phone/Fax: 832-765-3444
b	Mailing Address: 2331 CityWest Blvd., HQ-08N-N860-3, Houston, TX 77042	
c	The designated Air permit Contact will receive all official correspondence (i.e. letters, permits) from the Air Quality Bureau.	

Section 1-B: Current Facility Status

1.a	Has this facility already been constructed? ☒ Yes ☐ No	1.b If yes to question 1.a, is it currently operating in New Mexico? ☒ Yes ☐ No
2	If yes to question 1.a, was the existing facility subject to a Notice of Intent (NOI) (20.2.73 NMAC) before submittal of this application? ☐ Yes ☒ No	If yes to question 1.a, was the existing facility subject to a construction permit (20.2.72 NMAC) before submittal of this application? ☒ Yes ☐ No
3	Is the facility currently shut down? ☐ Yes ☒ No	If yes, give month and year of shut down (MM/YY):
4	Was this facility constructed before 8/31/1972 and continuously operated since 1972? ☒ Yes ☐ No	
5	If Yes to question 3, has this facility been modified (see 20.2.72.7.P NMAC) or the capacity increased since 8/31/1972? ☐ Yes ☐ No ☒ N/A	
6	Does this facility have a Title V operating permit (20.2.70 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: P095-R4
7	Has this facility been issued a No Permit Required (NPR)? ☐ Yes ☒ No	If yes, the NPR No. is:
8	Has this facility been issued a Notice of Intent (NOI)? ☐ Yes ☒ No	If yes, the NOI No. is:
9	Does this facility have a construction permit (20.2.72/20.2.74 NMAC)? ☒ Yes ☐ No	If yes, the permit No. is: 434-M10R8
10	Is this facility registered under a General permit (GCP-1, GCP-2, etc.)? ☐ Yes ☒ No	If yes, the register No. is:

Section 1-C: Facility Input Capacity & Production Rate

1	What is the facility's maximum input capacity, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 4.17 MMscf	Daily: 100 MMscf	Annually: 36,500 MMscf
b	Proposed	Hourly: 4.17 MMscf	Daily: 100 MMscf	Annually: 36,500 MMscf
2	What is the facility's maximum production rate, specify units (reference here and list capacities in Section 20, if more room is required)			
a	Current	Hourly: 4.17 MMscf	Daily: 100 MMscf	Annually: 36,500 MMscf
b	Proposed	Hourly: 4.17 MMscf	Daily: 100 MMscf	Annually: 36,500 MMscf

Section 1-D: Facility Location Information

1	Latitude (decimal degrees): 32.754972	Longitude (decimal degrees): -104.210028	County: Eddy	Elevation (ft): 3,600
2	UTM Zone: ☐ 12 or ☒ 13	Datum: ☒ NAD 83 ☐ WGS 84		
a	UTM E (in meters, to nearest 10 meters): 574,000 mE	UTM N (in meters, to nearest 10 meters): 3,624,400 mN		
3	Name and zip code of nearest New Mexico town: Artesia, NM, 88211			
4	Detailed Driving Instructions from nearest NM town (attach a road map if necessary): Drive 12.7 miles east of Artesia on US HWY 82. Then 3 miles south on County Road 206, Illinois Camp Road.			
5	The facility is 13 miles southeast of Artesia.			
6	Land Status of facility (check one): ☒ Private ☐ Indian/Pueblo ☐ Government ☐ BLM ☐ Forest Service ☐ Military			
7	List all municipalities, Indian tribes, and counties within a ten (10) mile radius (20.2.72.203.B.2 NMAC) of the property on which the facility is proposed to be constructed or operated: Eddy County			
8	**20.2.72** NMAC applications **only**: Will the property on which the facility is proposed to be constructed or operated be closer than 50 km (31 miles) to other states, Bernalillo County, or a Class I area (see www.env.nm.gov/air-quality/modeling-publications/)? ☐ Yes ☒ No (20.2.72.206.A.7 NMAC) If yes, list all with corresponding distances in kilometers:			
9	Name nearest Class I area: Carlsbad Caverns National Park			
10	Shortest distance (in km) from facility boundary to the boundary of the nearest Class I area (to the nearest 10 meters): ~ 64 Km			
11	Distance (meters) from the perimeter of the Area of Operations (AO is defined as the plant site inclusive of all disturbed lands, including mining overburden removal areas) to nearest residence, school or occupied structure: 5,000 m			
12	Method(s) used to delineate the Restricted Area: Continuous Fencing "**Restricted Area**" is an area to which public entry is effectively precluded. Effective barriers include continuous fencing, continuous walls, or other continuous barriers approved by the Department, such as rugged physical terrain with steep grade that would require special equipment to traverse. If a large property is completely enclosed by fencing, a restricted area within the property may be identified with signage only. Public roads cannot be part of a Restricted Area.			
13	Does the owner/operator intend to operate this source as a portable stationary source as defined in 20.2.72.7.X NMAC? ☐ Yes ☒ No A portable stationary source is not a mobile source, such as an automobile, but a source that can be installed permanently at one location or that can be re-installed at various locations, such as a hot mix asphalt plant that is moved to different job sites.			
14	Will this facility operate in conjunction with other air regulated parties on the same property? ☒ No ☐ Yes If yes, what is the name and permit number (if known) of the other facility?			

Section 1-E: Proposed Operating Schedule (The 1-E.1 & 1-E.2 operating schedules may become conditions in the permit.)

1	Facility **maximum** operating ($\frac{hours}{day}$): 24	($\frac{days}{week}$): 7	($\frac{weeks}{year}$): 52	($\frac{hours}{year}$): 8,760	
2	Facility's maximum daily operating schedule (if less than 24 $\frac{hours}{day}$)? Start: NA	☐AM ☐PM	End: NA	☐AM ☐PM	
3	Month and year of anticipated start of construction: NA				
4	Month and year of anticipated construction completion: NA				
5	Month and year of anticipated startup of new or modified facility: NA				
6	Will this facility operate at this site for more than one year? ☒ Yes ☐ No				

Section 1-F: Other Facility Information

1	Are there any current Notice of Violations (NOV), compliance orders, or any other compliance or enforcement issues related to this facility? ☒ Yes ☐ No If yes, specify:	
a	If yes, NOV date or description of issue: August 8, 2023	NOV Tracking No: DCP-0199-2101

b	Is this application in response to any issue listed in 1-F, 1 or 1a above? ☒ Yes ☐ No If Yes, provide the 1c & 1d info below:		
c	Document Title: NA	Date: NA	Requirement # (or page # and paragraph #): NA
d	Provide the required text to be inserted in this permit:		
2	Is air quality dispersion modeling or modeling waiver being submitted with this application? ☒ Yes ☐ No		
3	Does this facility require an "Air Toxics" permit under 20.2.72.400 NMAC & 20.2.72.502, Tables A and/or B? ☐ Yes ☒ No		
4	Will this facility be a source of federal Hazardous Air Pollutants (HAP)? ☒ Yes ☐ No		
a	If Yes, what type of source? ☐ **Major** (☐ ≥10 tpy of any single HAP **OR** ☐ ≥25 tpy of any combination of HAPS) **OR** ☒ **Minor** (☒ <10 tpy of any single HAP **AND** ☒ <25 tpy of any combination of HAPS)		
5	Is any unit exempt under 20.2.72.202.B.3 NMAC? ☐ Yes ☒ No		
a	If yes, include the name of company providing commercial electric power to the facility: _____ Commercial power is purchased from a commercial utility company, which specifically does not include power generated on site for the sole purpose of the user.		

Section 1-G: Streamline Application (This section applies to 20.2.72.300 NMAC Streamline applications only)

1	☐ I have filled out Section 18, "Addendum for Streamline Applications."	☒ N/A (This is not a Streamline application.)

Section 1-H: Current Title V Information - Required for all applications from TV Sources

(Title V-source required information for all applications submitted pursuant to 20.2.72 NMAC (Minor Construction Permits), or 20.2.74/20.2.79 NMAC (Major PSD/NNSR applications), and/or 20.2.70 NMAC (Title V))

1	Responsible Official (R.O.) (20.2.70.300.D.2 NMAC): Mr. David Jost	Phone: 720-320-5616
a	R.O. Title: Vice President, Region Ops - Permian	R.O. e-mail: david.m.jost@p66.com
b	R. O. Address: 2331 CityWest Blvd, Houston, Texas 77042	
2	Alternate Responsible Official (20.2.70.300.D.2 NMAC): Mr. Scot Millican	Phone: 575-234-6441
a	A. R.O. Title: Manager, South G&P Region	A. R.O. e-mail: scot.a.millican@p66.com
b	A. R. O. Address: 2331 CityWest Blvd, Houston, Texas 77042	
3	Company's Corporate or Partnership Relationship to any other Air Quality Permittee (List the names of any companies that have operating (20.2.70 NMAC) permits and with whom the applicant for this permit has a corporate or partnership relationship): NA	
4	Name of Parent Company ("Parent Company" means the primary name of the organization that owns the company to be permitted wholly or in part.): Phillips 66	
a	Address of Parent Company: 2331 CityWest Blvd, Houston, Texas 77042	
5	Names of Subsidiary Companies ("Subsidiary Companies" means organizations, branches, divisions or subsidiaries, which are owned, wholly or in part, by the company to be permitted.): NA	
6	Telephone numbers & names of the owners' agents and site contacts familiar with plant operations: NA	
7	Affected Programs to include Other States, local air pollution control programs (i.e. Bernalillo) and Indian tribes: Will the property on which the facility is proposed to be constructed or operated be closer than 80 km (50 miles) from other states, local pollution control programs, and Indian tribes and pueblos (20.2.70.402.A.2 and 20.2.70.7.B)? If yes, state which ones and provide the distances in kilometers: NA	

Section 1-I – Submittal Requirements

Each 20.2.73 NMAC (**NOI**), a 20.2.70 NMAC (**Title V**), a 20.2.72 NMAC (**NSR** minor source), or 20.2.74 NMAC (**PSD**) application package shall consist of the following:

Hard Copy Submittal Requirements:

1) One hard copy **original signed and notarized application package** **printed double sided 'head-to-toe'** **2-hole punched** as we bind the document on top, not on the side; except Section 2 (landscape tables), which should be head-to-head. Please use **numbered tab separators** in the hard copy submittal(s) as this facilitates the review process. For NOI submittals only, hard copies of UA1, Tables 2A, 2D & 2F, Section 3 and the signed Certification Page are required. Please include a copy of the check on a separate page.

2) If the application is for a minor NSR, PSD, NNSR, or Title V application, include one working hard **copy** for Department use. This copy should be printed in book form, 3-hole punched, and **must be double sided**. Note that this is in addition to the head-to-to 2-hole punched copy required in 1) above. Minor NSR Technical Permit revisions (20.2.72.219.B NMAC) only need to fill out Sections 1-A, 1-B, 3, and should fill out those portions of other Section(s) relevant to the technical permit revision. TV Minor Modifications need only fill out Sections 1-A, 1-B, 1-H, 3, and those portions of other Section(s) relevant to the minor modification. NMED may require additional portions of the application to be submitted, as needed.

3) The entire NOI or Permit application package, including the full modeling study, should be submitted electronically. Electronic files for applications for NOIs, any type of General Construction Permit (GCP), or technical revisions to NSRs must be submitted with compact disk (CD) or digital versatile disc (DVD). For these permit application submittals, **two** CD copies are required (in sleeves, not crystal cases, please), with additional CD copies as specified below. NOI applications require only a single CD submittal. Electronic files for other New Source Review (construction) permits/permit modifications or Title V permits/permit modifications can be submitted on CD/DVD or sent through AQB's secure file transfer service.

Electronic files sent by (check one):

☒ CD/DVD attached to paper application

☐ Secure electronic transfer. Air Permit Contact Name_____, Email_____ Phone number _____.

a. If the file transfer service is chosen by the applicant, after receipt of the application, the Bureau will email the applicant with instructions for submitting the electronic files through a secure file transfer service. Submission of the electronic files through the file transfer service needs to be completed within 3 business days after the invitation is received, so the applicant should ensure that the files are ready when sending the hard copy of the application. The applicant will not need a password to complete the transfer. **Do not use the file transfer service for NOIs, any type of GCP, or technical revisions to NSR permits.**

4) Optionally, the applicant may submit the files with the application on compact disk (CD) or digital versatile disc (DVD) following the instructions above and the instructions in 5 for applications subject to PSD review.

5) If **air dispersion modeling** is required by the application type, include the **NMED Modeling Waiver** and/or electronic air dispersion modeling report, input, and output files. The dispersion modeling ***summary report only*** should be submitted as hard copy(ies) unless otherwise indicated by the Bureau.

6) If the applicant submits the electronic files on CD and the application is subject to PSD review under 20.2.74 NMAC (PSD) or NNSR under 20.2.79 NMC include,
   a. one additional CD copy for US EPA,
   b. one additional CD copy for each federal land manager affected (NPS, USFS, FWS, USDI) and,
   c. one additional CD copy for each affected regulatory agency other than the Air Quality Bureau.

   If the application is submitted electronically through the secure file transfer service, these extra CDs do not need to be submitted.

Electronic Submittal Requirements [in addition to the required hard copy(ies)]:

1) All required electronic documents shall be submitted as 2 separate CDs or submitted through the AQB secure file transfer service. Submit a single PDF document of the entire application as submitted and the individual documents comprising the application.

2) The documents should also be submitted in Microsoft Office compatible file format (Word, Excel, etc.) allowing us to access the text and formulas in the documents (copy & paste). Any documents that cannot be submitted in a Microsoft Office compatible format shall be saved as a PDF file from within the electronic document that created the file. If you are unable to provide Microsoft office compatible electronic files or internally generated PDF files of files (items that were not created electronically: i.e. brochures, maps, graphics, etc,), submit these items in hard copy format. We must be able to review the formulas and inputs that calculated the emissions.

3) It is preferred that this application form be submitted as 4 electronic files (3 MSWord docs: Universal Application section 1 [UA1], Universal Application section 3-19 [UA3], and Universal Application 4, the modeling report [UA4]) and 1 Excel file of the tables (Universal Application section 2 [UA2]). Please include as many of the 3-19 Sections as practical in a single MS Word electronic document. Create separate electronic file(s) if a single file becomes too large or if portions must be saved in a file format other than MS Word.

4) The electronic file names shall be a maximum of 25 characters long (including spaces, if any). The format of the electronic Universal Application shall be in the format: "A-3423-FacilityName". The "A" distinguishes the file as an application submittal, as opposed to other documents the Department itself puts into the database. Thus, all electronic application submittals should begin with "A-". Modifications to existing facilities should use the core permit number (i.e. '3423') the Department assigned to the facility as the next 4 digits. Use 'XXXX' for new facility applications. The format of any separate electronic submittals (additional submittals such as non-Word attachments, re-submittals, application updates) and Section document shall be in the format: "A-3423-9-description", where "9" stands for the section # (in this case Section 9-Public Notice). Please refrain, as much as possible, from submitting any scanned documents as this file format is extremely large, which uses up too much storage capacity in our database. Please take the time to fill out the header information throughout all submittals as this will identify any loose pages, including the Application Date (date submitted) & Revision number (0 for original, 1, 2, etc.; which will help keep track of subsequent partial update(s) to the original submittal. Do not use special symbols (#, @, etc.) in file names. The footer information should not be modified by the applicant.

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Environmental Operational Solutions LLC
13201 North West Freeway, Suite 220
Houston, TX 77040

Bank of America
ACH R/T 111000025
35-2/1130 TX 2788

000889

DATE 11/02/2023

PAY TO THE ORDER OF New Mexico Environmental Department, AQB $ **500.00

Five hundred and 00/100********** DOLLARS

New Mexico Environmental Department, AQB
525 Camino de los Marquez
Suite 1
Sante Fe, NM 87505-1816

MEMO: NSR Permit 0434-M10R8 Revision App for DCP

AUTHORIZED SIGNATURE

[redacted]

THIS DOCUMENT CONTAINS HEAT SENSITIVE INK. TOUCH OR PRESS AND RED IMAGE DISAPPEARS WITH HEAT.

Environmental Operational Solutions LLC **000889**

11/02/2023 **New Mexico Environmental Department, AQB**

NSR Permit 0434-M10R8 Revision App for DCP Operating Company, LP - Artesia Gas Plant	500.00

3351 Op Acct	NSR Permit 0434-M10R8 Revision App for DCP Operating Company, LP - Artesia Gas Plant	500.00

Environmental Operational Solutions LLC **000889**

11/02/2023 **New Mexico Environmental Department, AQB**

NSR Permit 0434-M10R8 Revision App for DCP Operating Company, LP - Artesia Gas Plant	500.00

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Section 2
Tables

This section contains universal air quality permit application Tables 2-A through 2-P.

Table 2-A: Regulated Emission Sources

Unit and stack numbering must correspond throughout the application package. If applying for a NOI under 20.2.73 NMAC, equipment exemptions under 2.72.202 NMAC do not apply.

Unit Number[1]	Source Description	Manufacturer	Model #	Serial #	Maximum or Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture or Reconstruction[2] / Date of Installation /Construction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)4	Replacing Unit No.
10	Natural Gas Fueled Compressor Engine	White Superior	8G825	20297	800 hp	800 hp	1965 > 12/9/10	N/A 10	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
11	Natural Gas Fueled Compressor Engine	White Superior	8G825	20221	800 hp	800 hp	1976 1976	N/A 11	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
12	Natural Gas Fueled Compressor Engine	White Superior	8G825	264699	800 hp	800 hp	1976 1976	N/A 12	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
13	Natural Gas Fueled Compressor Engine	White Superior	8G825	269359	800 hp	800 hp	1976 1976	N/A 13	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
14	Natural Gas Fueled Compressor Engine	White Superior	8G825	274899	800 hp	800 hp	1976 1976	N/A 14	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
15	Natural Gas Fueled Compressor Engine	White Superior	8G825	269339	800 hp	800 hp	1976 1976	N/A 15	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
16	Natural Gas Fueled Compressor Engine	White Superior	8G825	265029	800 hp	800 hp	1976 1976	N/A 16	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
17	Natural Gas Fueled Compressor Engine	White Superior	8G825	19097	800 hp	800 hp	3/29/1967 3/29/1967	N/A 17	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
19	Gas Furnace	Regen	Optimized	J761577	3 MMBtu/hr	3 MMBtu/hr	Pre 1995 Unknown	N/A 19	30600102	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
20	Boiler #2	Wickes	N/A	61870-3	36 MMBtu/hr	36 MMBtu/hr	1953 Unknown	N/A 20	30600102	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
22 (pilot & purge & blanket gas only)	Emergency Wet Gas Flare	NA	N/A	NA	1.64 MMBtu/hr	1.64 MMBtu/hr	Pre 1995 Unknown	N/A 22	30600903	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
23 (pilot & purge gas only)	Emergency Acid Gas Flare	NA	N/A	NA	1.64 MMBtu/hr	1.64 MMBtu/hr	Pre 1995 Unknown	N/A 23	30600903	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

Unit Number[1]	Source Description	Manufacturer	Model #	Serial #	Maximum or Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture or Reconstruction[2] / Date of Installation /Construction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)4	Replacing Unit No.
25	Natural Gas Fueled Compressor Engine	White Superior	8G825	301999	800 hp	800 hp	1984 1984	N/A 25	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
26	Natural Gas Fueled Compressor Engine	White Superior	8G825	285599	800 hp	800 hp	2005 2005	N/A 26	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
27	Natural Gas Fueled Compressor Engine	White Superior	8G825	279289	800 hp	800 hp	1991 1991	N/A 27	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
28	Boiler #1	Wickes	N/A	61787-1	36 MMBtu/hr	36 MMBtu/hr	1952 Unknown	N/A 28	30600102	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
30	Natural Gas Fueled Compressor Engine	Caterpillar	G3516LE	4EK03683	1340 hp	1340 hp	2001 2001	N/A 30	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
31	Natural Gas Fueled Compressor Engine	Caterpillar	G3516LE	WPW02174	1340 hp	1340 hp	2011 >2/27/12	N/A 31	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
32	Natural Gas Fueled Compressor Engine	Caterpillar	G3516LE	WPW02129	1340 hp	1340 hp	2008 2008	N/A 32	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
33	Natural Gas Fueled Compressor Engine	Caterpillar	G3516LE	4EK04320	1340 hp	1340 hp	2001 2001	N/A 33	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
34	Natural Gas Fueled Compressor Engine	Caterpillar	G3516LE	4EK03900	1340 hp	1340 hp	2001 2001	N/A 34	20200254	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
38 (FUG-1)	Facility-Wide Fugitives	N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A N/A	31088811	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
39	Natural Gas Fueled Compressor Engine	Waukesha	7042GSI	146400	1,200 hp	1,200 hp	Unknown 2009	N/A 39	20200253	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	4SLB	N/A
40	Reboiler	TBD	TBD	TBD	0.5 MMBtu/hr	0.5 MMBtu/hr	TBD TBD	N/A 40	30600102	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

Unit Number[1]	Source Description	Manufacturer	Model #	Serial #	Maximum or Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture or Reconstruction[2] / Date of Installation /Construction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)4	Replacing Unit No.
Dehy	TEG Dehydrator	Sivalis	ABFO	5303	7.5 gal/min	7.5 gal/min	Unknown Unknown	N/A N/A	31000301	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
Dehy-2	TEG Dehydrator	TBD	TBD	TBD	5 MMSCFD	5 MMSCFD	TBD TBD	N/A N/A	31000301	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
GT-1	Gunbarrel Separator	N/A	N/A	N/A	400 bbl	400 bbl	2008 2008	VRU VRU	40301105	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
TK-C	Condensate Tank with Blanket Gas	Permian	N/A	28579	714 bbl	714 bbl	1998 1998	N/A 22	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
TK-48	Feed Tank	N/A	N/A	N/A	500 bbl	500 bbl	2005 2005	VRU VRU	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
TK-49	Feed Tank	N/A	N/A	N/A	500 bbl	500 bbl	2005 2005	VRU VRU	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
TK-50	Oil Tank	N/A	N/A	N/A	500 bbl	500 bbl	2005 2005	VRU VRU	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
TK-51	Feed Tank	N/A	N/A	N/A	200 bbl	200 bbl	2005 2005	VRU VRU	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
Load-1	Truck Loadout & Loading of Condensate	N/A	N/A	N/A	400,000 bbl/yr	400,000 bbl/yr	N/A N/A	N/A N/A	40400311	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
Haul-1	Haul-1	N/A	N/A	N/A	7 trucks/day	7 trucks/day	N/A N/A	N/A N/A	31088811	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
Haul-2	Haul-2	N/A	N/A	N/A	5 trucks/day	5 trucks/day	N/A N/A	N/A N/A	31088811	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced	N/A	N/A
TK-1	Gasoline Tank	N/A	N/A	N/A	500 gal	500 gal	1994 Unknown	N/A N/A	40301007	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

Unit Number[1]	Source Description	Manufacturer	Model #	Serial #	Maximum or Rated Capacity[3] (Specify Units)	Requested Permitted Capacity[3] (Specify Units)	Date of Manufacture or Reconstruction[2] / Date of Installation /Construction[2]	Controlled by Unit # / Emissions vented to Stack #	Source Classification Code (SCC)	For Each Piece of Equipment, Check One	RICE Ignition Type (CI, SI, 4SLB, 4SRB, 2SLB)4	Replacing Unit No.
Amine-RS	Amine Regeneration Still Vent & Flash Tank	Randall Corporation	N/A	12762	590 gpm	590 gpm	>1980 Unknown	N/A N/A	31000201	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
Amine-C	Amine Contactor	Gemstar	N/A	2550	100 MMscf/d	100 MMscf/d	>1980 Unknown	N/A N/A	31000201	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
CT-N	Cooling Tower	Unknown	Unknown	Unknown	3470 gpm	3470 gpm	2001 2001	N/A N/A	30600701	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A
CT-S	Cooling Tower	Unknown	Unknown	Unknown	3470 gpm	3470 gpm	2001 2001	N/A N/A	30600701	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced	N/A	N/A

[1] Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.

[2] Specify dates required to determine regulatory applicability.

[3] To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator set.

[4] "4SLB" means four stroke lean burn engine, "4SRB" means four stroke rich burn engine, "2SLB" means two stroke lean burn engine, "CI" means compression ignition, and "SI" means spark ignition

Table 2-B: Insignificant Activities[1] (20.2.70 NMAC) OR Exempted Equipment (20.2.72 NMAC)

All 20.2.70 NMAC (Title V) applications must list all Insignificant Activities in this table. All 20.2.72 NMAC applications must list Exempted Equipment in this table. If equipment listed on this table is exempt under 20.2.72.202.B.5, include emissions calculations and emissions totals for 202.B.5 "similar functions" units, operations, and activities in Section 6, Calculations. Equipment and activities exempted under 20.2.72.202 NMAC may not necessarily be Insignificant under 20.2.70 NMAC (and vice versa). Unit & stack numbering must be consistent throughout the application package. Per Exemptions Policy 02-012.00 (see http://www.env.nm.gov/aqb/permit/aqb_pol.html), 20.2.72.202.B NMAC Exemptions do not apply, but 20.2.72.202.A NMAC exemptions do apply to NOI facilities under 20.2.73 NMAC. List 20.2.72.301.D.4 NMAC Auxiliary Equipment for Streamline applications in Table 2-A. The List of Insignificant Activities (for TV) can be found online at http://www.env.nm.gov/aqb/forms/InsignificantListTitleV.pdf . TV sources may elect to enter both TV Insignificant Activities and Part 72 Exemptions on this form.

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
T-04	Overflow Tank	N/A	N/A	90	Not source of pollutants	2008	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	bbl	Trivial	2008	
36	Heater Treater	Natco	N/A	0.75	2.72.202.B.5	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	MMBtu/hr	Insignificant Activity Item #1.a.	Unknown	
TK-2	Diesel Fuel Tank	Unknown	N/A	500	2.72.202.B.5	1994	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #1.a.	Unknown	
TK-5	Methanol tank	Unknown	N/A	16,300	2.72.202.B.5.	1976	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #1.a.	Unknown	
TK-6	Antifreeze tank	Unknown	N/A	16,300	2.72.202.B.2	1976	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-9	Lube Oil tank	Unknown	N/A	500	2.72.202.B.2	1976	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-10	100% Triethylene Glycol	Unknown	N/A	500	2.72.202.B.2	1988	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-11	100% Triethylene Glycol	Unknown	N/A	500	2.72.202.B.2	1988	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-12	Amine tank	Unknown	N/A	100	2.72.202.B.2	1956	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	bbl	Insignificant Activity Item #5	Unknown	
TK-13	Slimicide tank	Unknown	N/A	400	2.72.202.B.2	1993	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-13A	BD 1501 Soap tank	Unknown	N/A	420	2.72.202.B.2	2001	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-14	Corrosion Inhibitor tank	Unknown	N/A	560	2.72.202.B.2	1993	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-15	Lube Oil Tank	Unknown	Permian Tk	210	2.72.202.B.2	1993	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			35315	bbl	Insignificant Activity Item #5	Unknown	

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TK-16	Slop Oil (50% water/ 50% oil)	Unknown	Unknown 27021	300 bbl	2.72.202.B.2 Insignificant Activity Item #5	Aug-94 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-18	Methanol tank	Unknown	N/A N/A	470 gal	2.72.202.B.2. Insignificant Activity Item #5	1991 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-19	Boiler Treatment	Unknown	N/A N/A	2,000 gal	2.72.202.B.2 Insignificant Activity Item #5	1991 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-20	Boiler Treatment	Unknown	N/A N/A	400 gal	2.72.202.B.2 Insignificant Activity Item #5	1993 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-21	Solvent tank	Unknown	N/A N/A	500 gal	2.72.202.B.2 Insignificant Activity Item #5	1985 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-22	Used Oil Tank	Unknown	N/A N/A	8,800 gal	2.72.202.B.2 Insignificant Activity Item #5	1985 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-23	Lube Oil tank	Unknown	N/A N/A	500 gal	2.72.202.B.2 Insignificant Activity Item #5	1960 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-24	30% ethylene glycol; 70% water	Unknown	N/A N/A	10,000 gal	2.72.202.B.2 Insignificant Activity Item #5	1960 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-25	Methanol tank	Unknown	N/A N/A	500 gal	2.72.202.B.5 Insignificant Activity Item #1.a.	1991 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-26	Slimicide tank	Unknown	Betz N/A	500 gal	2.72.202.B.5 Insignificant Activity Item #1.a.	1993 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-26A	Sulfuric Acid	Unknown	N/A N/A	500 gal	2.72.202.B.5 Insignificant Activity Item #1.a.	2001 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-28	Detergent/soap	Unknown	N/A N/A	220 gal	2.72.202.B.2 Insignificant Activity Item #5	1991 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-29	Water/oil from drain syst	Unknown	N/A N/A	210,000 gal	2.72.202.B.2 Insignificant Activity Item #5	1959 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
SV 18.42	Water/oil from Drain Syatem	Unknown	N/A N/A	8400 gal	2.72.202.B.2 Insignificant Activity Item #5	1991 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
SV 18.43	Water/oil from Drain Syatem	Unknown	N/A N/A	8400 gal	2.72.202.B.2 Insignificant Activity Item #5	1991 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
SV 18.44	Water/oil from Drain Syatem	Unknown	N/A N/A	8400 gal	2.72.202.B.2 Insignificant Activity Item #5	1991 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-30	Treated Water tank	Unknown	N/A N/A	500 gal	2.72.202.B.2 Insignificant Activity Item #5	1985 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-31	Product (cold NGL)	Unknown	N/A N/A	773 bbl	2.72.202.B.5 Insignificant Activity Item #5	1976 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-32	Product (cold NGL)	Unknown	N/A N/A	773 bbl	2.72.202.B.5 Insignificant Activity Item #5	1976 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-33	Product (cold NGL)	Unknown	N/A N/A	773 bbl	2.72.202.B.5 Insignificant Activity Item #5	1976 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-34	Product (cold NGL)	Unknown	N/A N/A	773 bbl	2.72.202.B.5 Insignificant Activity Item #1.a.	1976 Unknown	☐ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☑ To Be Modified ☐ To be Replaced
TK-35	Propane tank	Unknown	N/A N/A	3,888 gal	2.72.202.B.5 Insignificant Activity Item #1.a.	1976 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-36	Propane tank	Unknown	N/A N/A	8,943 gal	2.72.202.B.5 Insignificant Activity Item #1.a.	1976 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-37	Treated Water tank	Unknown	N/A N/A	1000 bbl	2.72.202.B.2 Insignificant Activity Item #5	1982 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-38	Treated Water tank	Unknown	N/A N/A	1,000 bbl	2.72.202.B.2 Insignificant Activity Item #5	1982 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
TK-39	Brine tank	Unknown	N/A N/A	210 bbl	2.72.202.B.2 Insignificant Activity Item #5	1960 Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced

Unit Number	Source Description	Manufacturer	Model No. / Serial No.	Max Capacity / Capacity Units	List Specific 20.2.72.202 NMAC Exemption (e.g. 20.2.72.202.B.5) / Insignificant Activity citation (e.g. IA List Item #1.a)	Date of Manufacture /Reconstruction[2] / Date of Installation /Construction[2]	For Each Piece of Equipment, Check Onc
TK-41	Sulfuric Acid	Unknown	N/A	500	2.72.202.B.2	2001	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-42	Lube Oil tank	Unknown	N/A	500	2.72.202.B.2	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-43	Lube Oil tank	Unknown	N/A	500	2.72.202.B.2	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #5	Unknown	
TK-44	Slimicide tank	Unknown	N/A	400	2.72.202.B.5	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #1.a.	Unknown	
TK-45	Amine Surge Tank	Unknown	N/A	2,100	2.72.202.B.5	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #1.a.	Unknown	
TK-46	Treated Water for water injection	Scaletrol	N/A	400	2.72.202.B.5	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	gal	Insignificant Activity Item #1.a.	Unknown	
TK-47	Treated Water Overflow tank	Unknown	N/A	500	2.72.202.B.5	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			AT-2569	bbl	Insignificant Activity Item #1.a.	Unknown	
TK-48	Treated Water Overflow tank	Unknown	N/A	500	2.72.202.B.5	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			N/A	bbl	Insignificant Activity Item #1.a.	Unknown	
comfort heater	comfort heater	Unknown	Unknown	< 5	2.72.202.B.1	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			Unknown	MMbtu/hr	Insignificant Activity Item #3	Unknown	
AC-1	Air Compressor	Ingersol Rand	Unknown	48	2.72.202.A.2	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			Unknown	hp	Insignificant Activity Item #6	Unknown	
Pump1	Waer Utility Pump	Chevrolet	Unknown	35	2.72.202.A.2	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			Unknown	hp	Insignificant Activity Item #6	Unknown	
Pump2	Waer Utility Pump	Unknown	Unknown	35	2.72.202.A.2	Unknown	☑ Existing (unchanged) ☐ To be Removed ☐ New/Additional ☐ Replacement Unit ☐ To Be Modified ☐ To be Replaced
			Unknown	hp	Insignificant Activity Item #6	Unknown	

[1] Insignificant activities exempted due to size or production rate are defined in 20.2.70.300.D.6, 20.2.70.7.Q NMAC, and the NMED/AQB List of Insignificant Activities, dated September 15, 2008. Emissions from these insignificant activities do not need to be reported, unless specifically requested.

[2] Specify date(s) required to determine regulatory applicability.

Table 2-C: Emissions Control Equipment

Unit and stack numbering must correspond throughout the application package. Only list control equipment for TAPs if the TAP's maximum uncontrolled emissions rate is over its respective threshold as listed in 20.2.72 NMAC, Subpart V, Tables A and B. In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions.

Control Equipment Unit No.	Control Equipment Description	Date Installed	Controlled Pollutant(s)	Controlling Emissions for Unit Number(s)[1]	Efficiency (% Control by Weight)	Method used to Estimate Efficiency
VRU	Vapor Recovery Unit	2008	VOCs	GT-1, TK-48, TK-49, TK-50, and TK-51	95% annual; 100% short-term	Engineering Estimate
10	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	10	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
11	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	11	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
12	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	12	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
13	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	13	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
14	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	14	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
15	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	15	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
16	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	16	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
17	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	17	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
25	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	25	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
26	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	26	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
27	AFR & NSCR Catalytic Converter	Unknown	NO_x, CO, VOC, HAPs	27	~80% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
30	Oxidation catalyst	Unknown	CO, VOC, HAPs	30	~80% NO_x and CO; 64% VOC & HAPs	Nominal for Catalyst
31	Oxidation catalyst	Unknown	CO, VOC, HAPs	31	95.49% CO; 64% 74.25% VOC & 89.56% HCHO	Nominal for Catalyst
32	Oxidation catalyst	Unknown	CO, VOC, HAPs	32	95.49% CO; 64% 74.25% VOC & 89.56% HCHO	Nominal for Catalyst
33	Oxidation catalyst	Unknown	CO, VOC, HAPs	33	95.49% CO; 64% 74.25% VOC & 89.56% HCHO	Nominal for Catalyst
34	Oxidation catalyst	Unknown	CO, VOC, HAPs	34	95.49% CO; 64% 74.25% VOC & 89.56% HCHO	Nominal for Catalyst
39	AFR & NSCR Catalytic Converter	2009	NO_x, CO, VOC, HAPs	39	~85% NO_x & CO; 75% VOC & HAPs	Nominal for Catalyst
AGI	Acid Gas Injection System	Unknown	H_2S	AMINE-RS and AMINE-C	100%	Engineering Estimate

[1] List each control device on a separate line. For each control device, list all emission units controlled by the control device.

Table 2-D: Maximum Emissions (under normal operating conditions)

☐ **This Table was intentionally left blank because it would be identical to Table 2-E.**

Maximum Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		TSP[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	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	lb/hr	ton/yr
10	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
11	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
12	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
13	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
14	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
15	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
16	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
17	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
19	0.30	1.30	0.25	1.10	0.02	0.07	0.0018	0.0078	0.023	0.10	0.023	0.10	0.023	0.10	-	-	-	-
20	3.53	15.46	2.96	12.99	0.19	0.85	0.021	0.093	0.27	1.17	0.27	1.17	0.27	1.17	-	-	-	-
22 (pilot & purge & blanket gas)	0.22	0.98	1.21	5.32	-	-	0.023	0.10	-	-	-	-	-	-	2.3E-05	1.0E-04	-	-
23 (pilot & purge gas)	0.086	0.38	0.47	2.06	-	-	0.01	0.04	-	-	-	-	-	-	9.0E-06	3.9E-05	-	-
25	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
26	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
27	26.47	115.94	26.47	115.94	3.51	15.37	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
28	3.53	15.46	2.96	12.99	0.19	0.85	0.021	0.093	0.27	1.2	0.27	1.2	0.27	1.2	-	-	-	-
30	29.60	129.40	29.60	129.40	4.10	18.10	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
31	29.60	129.40	29.60	129.40	4.10	18.10	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
32	29.60	129.40	29.60	129.40	4.10	18.10	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
33	29.60	129.40	29.60	129.40	4.10	18.10	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
34	29.60	129.40	29.60	129.40	4.10	18.10	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
38 (FUG-1)	-	-	-	-	9.0	39.6	-	-	-	-	-	-	-	-	0.14	0.60	-	-
39	58.20	254.92	84.66	370.79	2.65	11.59	0.12	0.53	0.17	0.73	0.17	0.73	0.17	0.73	-	-	-	-
40	0.049	0.21	0.041	0.18	0.0027	0.012	0.0071	0.031	0.0037	0.016	0.0037	0.016	0.0037	0.016	-	-	-	-
Dehy[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-2[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GT-1[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-C[4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-48[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-49[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-50[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-51[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2-D: Maximum Emissions (under normal operating conditions)

☐ **This Table was intentionally left blank because it would be identical to Table 2-E.**

Maximum Emissions are the emissions at maximum capacity and prior to (in the absence of) pollution control, emission-reducing process equipment, or any other emission reduction. Calculate the hourly emissions using the worst case hourly emissions for each pollutant. For each pollutant, calculate the annual emissions as if the facility were operating at maximum plant capacity without pollution controls for 8760 hours per year, unless otherwise approved by the Department. List Hazardous Air Pollutants (HAP) & Toxic Air Pollutants (TAPs) in Table 2-I. Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		TSP[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	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	lb/hr	ton/yr
Load-1	-	-	-	-	80.2	43.1	-	-	-	-	-	-	-	-	-	-	-	-
Haul-1	-	-	-	-	-	-	-	-	5.5	5.9	1.4	1.50	1.40	1.07	-	-	-	-
Haul-2	-	-	-	-	-	-	-	-	5.5	4.20	1.4	1.07	0.14	0.11	-	-	-	-
Amine-RS[5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amine-C[5]																		
CT-N	-	-	-	-	-	-	-	-	0.31	1.4	0.20	0.86	0.001	0.0030	-	-	-	-
CT-S	-	-	-	-	-	-	-	-	0.28	1.2	0.18	0.78	0.001	0.0027	-	-	-	-
Totals	505.1	2211.0	531.7	2327.7	151.4	355.7	0.28	1.2	13.6	21.2	5.1	12.7	3.5	9.7	0.14	0.60	-	-

[1] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but PM is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

[2] Units Dehy and Dehy-2 are completely closed systems with any flash and recirculation gas routed to the VRU and reinjected into inlet gas for recycling. There are no emissions from these units.

[3] Units GT-1, TK-48, TK-49, TK-50, and TK-51 are controlled by a VRU with 100% control efficiency. To allow for downtime for maintenance and repair, the effective control efficiency for the VRU is 95%. The emissions associated with VRU downtime are accounted for under Startup, Shutdown, and Maintenance emissions.

[4] Unit TK-C always has blanket gas which prevents working and breathing emissions. There are no flashing emissions as the liquids being handled are at atmospheric pressure. Emissions from blanket gas are routed to flare Unit 22.

[5] Units Amine-RS and Amine-C vents are routed to Acid Gas Well. There are no emissions from these units.

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E $^{-4}$).

Unit No.	NOx		CO		VOC		SOx		TSP[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	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	lb/hr	ton/yr
10	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
11	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
12	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
13	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
14	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
15	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
16	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
17	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
19	0.30	1.30	0.25	1.10	0.02	0.07	0.0018	0.0078	0.023	0.10	0.023	0.10	0.023	0.10	-	-	-	-
20	3.53	15.46	2.96	12.99	0.19	0.85	0.021	0.09	0.27	1.17	0.27	1.17	0.27	1.17	-	-	-	-
22 (pilot & purge & blanket	0.22	0.98	1.2	5.3	-	-	0.023	0.10	-	-	-	-	-	-	2.3E-05	1.0E-04	-	-
23 (pilot & purge gas)	0.086	0.38	0.47	2.06	-	-	0.0090	0.040	-	-	-	-	-	-	9.0E-06	3.9E-05	-	-
25	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
26	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
27	5.29	23.19	5.29	23.19	0.90	3.90	0.0038	0.016	0.064	0.28	0.064	0.28	0.064	0.28	-	-	-	-
28	3.57	15.64	3.00	13.14	0.20	0.86	0.021	0.094	0.27	1.2	0.27	1.2	0.27	1.2	-	-	-	-
30	5.91	25.88	5.91	25.88	1.50	6.50	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
31	5.91	25.88	5.91	25.88	1.50	6.50	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
32	5.91	25.88	5.91	25.88	1.50	6.50	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
33	5.91	25.88	5.91	25.88	1.50	6.50	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
34	5.91	25.88	5.91	25.88	1.50	6.50	0.0059	0.026	0.10	0.44	0.10	0.44	0.10	0.44	-	-	-	-
38 (FUG-1)	-	-	-	-	9.0	39.6	-	-	-	-	-	-	-	-	0.14	0.6	-	-
39	8.60	37.66	11.90	52.14	0.40	1.74	0.12	0.53	0.17	0.73	0.17	0.73	0.17	0.73	-	-	-	-
40	0.049	0.21	0.041	0.18	0.0027	0.012	0.0071	0.031	0.0037	0.016	0.0037	0.016	0.0037	0.016	-	-	-	-
Dehy[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DEHY-2[2]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GT-1[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 2-E: Requested Allowable Emissions

Unit & stack numbering must be consistent throughout the application package. Fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E $^{-4}$).

Unit No.	NOx		CO		VOC		SOx		TSP[1]		PM10[1]		PM2.5[1]		H_2S		Lead	
	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	lb/hr	ton/yr
TK-C[4]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-48[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-49[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-50[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TK-51[3]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Load-1	-	-	-	-	80.2	43.1	-	-	-	-	-	-	-	-	-	-	-	-
Haul-1	-	-	-	-	-	-	-	-	1.2	1.32	0.31	0.34	0.03	0.03	-	-	-	-
Haul-2	-	-	-	-	-	-	-	-	1.2	0.94	0.31	0.24	0.03	0.02	-	-	-	-
Amine-RS [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amine-C [5]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CT-N	-	-	-	-	-	-	-	-	0.31	1.36	0.20	0.86	0.00068	0.0030	-	-	-	-
CT-S	-	-	-	-	-	-	-	-	0.28	1.24	0.18	0.78	0.00062	0.0027	-	-	-	-
Totals	104.1	456.1	107.6	471.4	107.5	161.6	0.28	1.2	5.0	13.4	2.9	10.7	2.0	8.6	0.14003	0.6	-	-

[1] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

[2] Units Dehy and Dehy-2 are completely closed systems with any flash and recirculation gas routed to the VRU and reinjected into inlet gas for recycling. There are no emissions from these units.

[3] Units GT-1, TK-48, TK-49, TK-50, and TK-51 are controlled by a VRU with 100% control efficiency. To allow for downtime for maintenance and repair, the effective control efficiency for the VRU is 95%. The emissions associated with VRU downtime are accounted for under Startup, Shutdown, and Maintenance emissions.

[4] Unit TK-C always has blanket gas which prevents working and breathing emissions. There are no flashing emissions as the liquids being handled are at atmospheric pressure. Emissions from blanket gas are routed to flare Unit 22.

[5] Units Amine-RS and Amine-C vents are routed to Acid Gas Wells. There are no emissions from these units.

Table 2-F: Additional Emissions during Startup, Shutdown, and Routine Maintenance (SSM)

This table is intentionally left blank since all emissions at this facility due to routine or predictable startup, shutdown, or scehduled maintenance are no higher than those listed in Table 2-E and a malfunction emission limit is not already permitted or requested. If you are required to report GHG emissions as described in Section 6a, include any GHG emissions during Startup, Shutdown, and/or Scheduled Maintenance (SSM) in Table 2-P. Provide an explanations of SSM emissions in Section 6 and 6a.

All applications for facilities that have emissions during routine our predictable startup, shutdown or scheduled maintenance (SSM)1, including NOI applications, must include in this table the Maximum Emissions during routine or predictable startup, shutdown and scheduled maintenance (20.2.7 NMAC, 20.2.72.203.A.3 NMAC, 20.2.73.200.D.2 NMAC). In Section 6 and 6a, provide emissions calculations for all SSM emissions reported in this table. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (https://www.env.nm.gov/aqb/permit/aqb_pol.html) for more detailed instructions. Numbers shall be expressed to at least 2 decimal points (e.g. 0.41, 1.41, or 1.41E-4).

Unit No.	NOx		CO		VOC		SOx		TSP[2]		PM10[2]		PM2.5[2]		H_2S		Lead	
	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	lb/hr	ton/yr
22[3]	642.9	7.5	3,498.3	40.7	2,685.1	27.2	4,918.4	49.9	-	-	-	-	-	-	52.3	0.53	-	-
23[3]	10.4	2.4	56.6	13.2	0.0050	0.00082	2,001.0	328.2	-	-	-	-	-	-	21.3	3.5	-	-
SSM	-	-	-	-	3025.4	34.6	-	-	-	-	-	-	-	-	93.4	1.32	-	-
Malfunction[4]	642.9	4.2	3,498.3	10.0	2,685.1	0.8	4,918.4	10.0	-	-	-	-	-	-	52.3	0.1	-	-
Totals	653.3	14.1	3,555.0	63.9	5,710.6	62.6	6,919.4	388.1	-	-	-	-	-	-	166.9	5.4		

[1] **For instance**, if the short term steady-state Table 2-E emissions are 5 lb/hr and the SSM rate is 12 lb/hr, enter 7 lb/hr in the table below. If the annual steady-state Table 2-E emissions are 21.9 TPY, and the number of scheduled SSM events result in annual emissions of 31.9 TPY, enter 10.0 TPY in the table below.

[2] **Condensable Particulate Matter:** Include condensable particulate matter emissions for PM10 and PM2.5 if the source is a combustion source. Do not include condensable particulate matter for PM unless PM is set equal to PM10 and PM2.5. Particulate matter (PM) is not subject to an ambient air quality standard, but it is a regulated air pollutant under PSD (20.2.74 NMAC) and Title V (20.2.70 NMAC).

[3] Units 22 and 23 are considered part of SSM however they have been given their own individual line on this table for clarity.

[4] lb/hr emission rates are equal to the maximum lb/hr of SSM emissions

Table 2-G: Stack Exit and Fugitive Emission Rates for Special Stacks

☑ I have elected to leave this table blank because this facility does not have any stacks/vents that split emissions from a single source or combine emissions from more than one source listed in table 2-A. Additionally, the emission rates of all stacks match the Requested allowable emission rates stated in Table 2-E.

Use this table to list stack emissions (requested allowable) from split and combined stacks. List Toxic Air Pollutants (TAPs) and Hazardous Air Pollutants (HAPs) in Table 2-I. List all fugitives that are associated with the normal, routine, and non-emergency operation of the facility. Unit and stack numbering must correspond throughout the application package. Refer to Table 2-E for instructions on use of the "-" symbol and on significant figures.

Stack No.	Serving Unit Number(s) from Table 2-A	NOx		CO		VOC		SOx		TSP		PM10		PM2.5		☐ H_2S or ☐ Lead	
		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
Totals:																	

Table 2-H: Stack Exit Conditions

Unit and stack numbering must correspond throughout the application package. Include the stack exit conditions for each unit that emits from a stack, including blowdown venting parameters and tank emissions. If the facility has multiple operating scenarios, complete a separate Table 2-H for each scenario and, for each, type scenario name here:

Stack Number	Serving Unit Number(s) from Table 2-A	Orientation (H=Horizontal V=Vertical)	Rain Caps (Yes or No)	Height Above Ground (ft)	Temp. (F)	Flow Rate		Moisture by Volume (%)	Velocity (ft/sec)	Inside Diameter or L x W (ft)
						(acfs)	(dscfs)			
10	10	V	No	46	1340	70.0	N/A	N/A	89.2	1.0
11	11	V	No	46	1340	70.0	N/A	N/A	89.2	1.0
12	12	V	No	46	1340	70.0	N/A	N/A	89.2	1.0
13	13	V	No	46	1340	70.0	N/A	N/A	89.2	1.0
14	14	V	No	46	1340	70.0	N/A	N/A	89.2	1.0
15	15	V	No	46	1340	70.0	N/A	N/A	89.2	1.0
16	16	V	No	46.3	1340	70.0	N/A	N/A	89.2	1.0
17	17	V	No	46.3	1340	70.0	N/A	N/A	89.2	1.0
19	19	V	No	33.1	630	211.7	N/A	N/A	20.8	3.6
20	20	V	No	42.3	750	281.7	N/A	N/A	57.4	2.5
22	22	V	No	70.6	1832	131.9	N/A	N/A	65.6	1.6
23	23	V	No	70.6	1832	131.9	N/A	N/A	65.6	1.6
24	24	V	No	98	1000	274.8	N/A	N/A	27	3.6
25	25	V	No	40.3	1340	70.0	N/A	N/A	89.2	1.0
26	26	V	No	40.3	1340	70.0	N/A	N/A	89.2	1.0
27	27	V	No	40.3	1340	70.0	N/A	N/A	89.2	1.0
28	28	V	No	44.7	750	281.7	N/A	N/A	57.4	2.5
30	30	V	No	42.0	876	127.8	N/A	N/A	163	1.0
31	31	V	No	42	876	127.8	N/A	N/A	162.7	1.0
32	32	V	No	42	876	127.8	N/A	N/A	162.7	1.0
33	33	V	No	42	876	127.8	N/A	N/A	162.7	1.0
34	34	V	No	42	876	127.8	N/A	N/A	162.7	1.0
39	39	V	No	46	1125	116.1	N/A	N/A	147.9	1.0
40	40	V	No	15	600	3.43	N/A	N/A	9.8	0.70

Table 2-I: Stack Exit and Fugitive Emission Rates for HAPs and TAPs

In the table below, report the Potential to Emit for each HAP from each regulated emission unit listed in Table 2-A, only if the entire facility emits the HAP at a rate greater than or equal to one (1) ton per year For each such emission unit, HAPs shall be reported to the nearest 0.1 tpy. Each facility-wide Individual HAP total and the facility-wide Total HAPs shall be the sum of all HAP sources calculated to the nearest 0.1 ton per year. Per 20.2.72.403.A.1 NMAC, facilities not exempt [see 20.2.72.402.C NMAC] from TAP permitting shall report each TAP that has an uncontrolled emission rate in excess of its pounds per hour screening level specified in 20.2.72.502 NMAC. TAPs shall be reported using one more significant figure than the number of significant figures shown in the pound per hour threshold corresponding to the substance. Use the HAP nomenclature as it appears in Section 112 (b) of the 1990 CAAA and the TAP nomenclature as it listed in 20.2.72.502 NMAC. Include tank-flashing emissions estimates of HAPs in this table. For each HAP or TAP listed, fill all cells in this table with the emission numbers or a "-" symbol. A "-" symbol indicates that emissions of this pollutant are not expected or the pollutant is emitted in a quantity less than the threshold amounts described above.

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde ☑HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP	
		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	lb/hr	ton/yr
10	10	0.065	0.29	0.044	0.19														
11	11	0.065	0.29	0.044	0.19														
12	12	0.065	0.29	0.044	0.19														
13	13	0.065	0.29	0.044	0.19														
14	14	0.065	0.29	0.044	0.19														
15	15	0.065	0.29	0.044	0.19														
16	16	0.065	0.29	0.044	0.19														
17	17	0.065	0.29	0.044	0.19														
19	19	0.043	0.19	0.0025	0.011														
20	20	0.094	0.41	0.0026	0.012														
22 (pilot & purge & blanket gas)	22 (pilot & purge & blanket gas)	-	-	-	-														
23 (pilot & purge gas)	23 (pilot & purge gas)	-	-	-	-														
25	25	0.065	0.29	0.044	0.19														
26	26	0.065	0.29	0.044	0.19														
27	27	0.065	0.29	0.044	0.19														
28	28	0.094	0.41	0.0026	0.012														
30	30	0.25	1.1	0.19	0.81														
31	31	0.25	1.1	0.19	0.81														
32	32	0.25	1.1	0.19	0.81														
33	33	0.25	1.1	0.19	0.81														
34	34	0.25	1.1	0.19	0.81														
N/A	38 (FUG-1)	0.23	1.0	-	-														
39	39	0.098	0.43	0.066	0.29														

Stack No.	Unit No.(s)	Total HAPs		Formaldehyde ☑HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP		Provide Pollutant Name Here ☐HAP or☐ TAP	
		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	lb/hr	ton/yr
40	40	0.0013	0.0057	4.6E-05	0.00020														
N/A	Dehy[1]	-	-	-	-														
N/A	DEHY-2[1]	-	-	-	-														
N/A	GT-1[2]	-	-	-	-														
N/A	TK-C[3]	-	-	-	-														
N/A	TK-48[2]	-	-	-	-														
N/A	TK-49[2]	-	-	-	-														
N/A	TK-50[2]	-	-	-	-														
N/A	Load-1	7.35	3.95	-	-														
N/A	Haul-1	-	-	-	-														
N/A	Haul-2	-	-	-	-														
N/A	CT-N	-	-	-	-														
N/A	CT-S	-	-	-	-														
Totals:		9.9	15.1	1.5	6.5														

[1] Units Dehy and Dehy-2 are completely closed systems with any flash and recirculation gas routed to the VRU and reinjected into inlet gas for recycling. There are no emissions from these units.

[2] Units GT-1, TK-48, TK-49, and TK-50 are controlled by a VRU with 100% control efficiency. To allow for downtime for maintenance and repair, the effective control efficiency for the VRU is 95%. The emissions associated with VRU downtime are accounted for under Startup, Shutdown, and Maintenance emissions.

[3] Unit TK-C always has blanket gas which prevents working and breathing emissions. There are no flashing emissions as the liquids being handled are at atmospheric pressure. Emissions from blanket gas are routed to flare Unit 22.

Table 2-J: Fuel

Specify fuel characteristics and usage. Unit and stack numbering must correspond throughout the application package.

Unit No.	Fuel Type (No. 2 Diesel, Natural Gas, Coal, …)	Fuel Source: purchased commercial, pipeline quality natural gas, residue gas, raw/field natural gas, process gas (e.g. SRU tail gas) or other	Specify Units				
			Lower Heating Value	Hourly Usage	Annual Usage	% Sulfur	% Ash
10	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
11	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
12	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
13	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
14	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
15	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
16	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
17	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
19	Sweet Natural Gas	Residue Gas	1,008	3.0 Mscf	26.1 MMscf	5 gr S/ 100 scf	Negligible
20	Sweet Natural Gas	Residue Gas	1,008	30.0 Mscf	260.7 MMscf	5 gr S/ 100 scf	Negligible
22 (pilot)	Sweet Natural Gas	Residue Gas	1,008	1.6 Mscf	14.3 MMscf	5 gr S/ 100 scf	Negligible
23 (pilot)	Sweet Natural Gas	Residue Gas	1,008	1.6 Mscf	14.3 MMscf	5 gr S/ 100 scf	Negligible
25	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
26	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
27	Sweet Natural Gas	Residue Gas	1,008	6.3 Mscf	55.6 MMscf	5 gr S/ 100 scf	Negligible
28	Sweet Natural Gas	Residue Gas	1,008	30.0 Mscf	260.7 MMscf	5 gr S/ 100 scf	Negligible
30	Sweet Natural Gas	Residue Gas	1,008	10.0 Mscf	87.9 MMscf	5 gr S/ 100 scf	Negligible
31	Sweet Natural Gas	Residue Gas	1,008	10.0 Mscf	87.9 MMscf	5 gr S/ 100 scf	Negligible
32	Sweet Natural Gas	Residue Gas	1,008	10.0 Mscf	87.9 MMscf	5 gr S/ 100 scf	Negligible
33	Sweet Natural Gas	Residue Gas	1,008	10.0 Mscf	87.9 MMscf	5 gr S/ 100 scf	Negligible
34	Sweet Natural Gas	Residue Gas	1,008	10.0 Mscf	87.9 MMscf	5 gr S/ 100 scf	Negligible
39	Sweet Natural Gas	Residue Gas	1,008	8.5 Mscf	74.6 MMscf	5 gr S/ 100 scf	Negligible
40	Sweet Natural Gas	Residue Gas	1,008	0.50 Mscf	4.3 MMscf	5 gr S/ 100 scf	Negligible

Table 2-K: Liquid Data for Tanks Listed in Table 2-L

For each tank, list the liquid(s) to be stored in each tank. If it is expected that a tank may store a variety of hydrocarbon liquids, enter "mixed hydrocarbons" in the Composition column for that tank and enter the corresponding data of the most volatile liquid to be stored in the tank. If tank is to be used for storage of different materials, list all the materials in the "All Calculations" attachment, run the newest version of TANKS on each, and use the material with the highest emission rate to determine maximum uncontrolled and requested allowable emissions rate. The permit will specify the most volatile category of liquids that may be stored in each tank. Include appropriate tank-flashing modeling input data. Use additional sheets if necessary. Unit and stack numbering must correspond throughout the application package.

Tank No.	SCC Code	Material Name	Composition	Liquid Density (lb/gal)	Vapor Molecular Weight (lb/lb*mol)	Average Storage Conditions		Max Storage Conditions	
						Temperature (°F)	True Vapor Pressure (psia)	Temperature (°F)	True Vapor Pressure (psia)
TK-48	40400311	Oil Water Mix	~50% oil; 50% water	7.36	18	61.55	0.25	75.43	0.40
TK-49	40400311	Oil Water Mix	~50% oil; 50% water	7.36	18	61.55	0.25	75.43	0.40
TK-50	40400311	Crude Oil	Crude Oil (RVP 5)	7.1	50	61.55	3.90	75.43	5.25
TK-51	40400311	Oil Water Mix	~50% oil; 50% water	7.36	18	61.55	0.25	75.43	0.40
TK-C	40400311	Condensate with blanket gas	Condensate (RVP 10)	5.6	66	69.79	6.24	82	7.81
GT-1	40400311	Oil Water Mix	~50% oil; 50% water	7.36	18	61.55	0.25	75.43	0.40

Table 2-L: Tank Data

Include appropriate tank-flashing modeling input data. Use an addendum to this table for unlisted data categories. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary. See reference Table 2-L2. Note: 1.00 bbl = 10.159 M3 = 42.0 gal

Tank No.	Date Installed	Materials Stored	Seal Type (refer to Table 2-LR below)	Roof Type (refer to Table 2-LR below)	Capacity		Diameter (M)	Vapor Space (M)	Color (from Table VI-C)		Paint Condition (from Table VI-C)	Annual Throughput (gal/yr)	Turn-overs (per year)
					(bbl)	(M^3)			Roof	Shell			
TK-48	2005	Oil Water Mix	NA	FX	500	80	4.88	6	OT (Red)	OT (Red)	Good	12,600,000	600.00
TK-49	2005	Oil Water Mix	NA	FX	500	80	4.88	6	OT (Red)	OT (Red)	Good	12,600,000	600.00
TK-50	2005	Crude Oil	NA	FX	500	80	4.88	6	OT (Red)	OT (Red)	Good	12,600,000	600.00
TK-51	2005	Oil Water Mix	NA	FX	210	33	3.05	-	OT (Red)	OT (Red)	Good	12,600,000	1429.00
TK-C	1998	Condensate with blanket gas	NA	FX	714	114	3.96	Horizonal	LG	LG	Good	6,300,000	210.10
GT-1	2005	Oil Water Mix	NA	FX	400	64	4.27	-	OT (Red)	OT (Red)	Good	12,600,000	750.00

Table 2-L2: Liquid Storage Tank Data Codes Reference Table

Roof Type	Seal Type, Welded Tank Seal Type		Seal Type, Riveted Tank Seal Type		Roof, Shell Color	Paint Condition
FX: Fixed Roof	**Mechanical Shoe Seal**	**Liquid-mounted resilient seal**	**Vapor-mounted resilient seal**	**Seal Type**	**WH**: White	Good
IF: Internal Floating Roof	**A**: Primary only	**A**: Primary only	**A**: Primary only	**A**: Mechanical shoe, primary only	**AS**: Aluminum (specular)	Poor
EF: External Floating Roof	**B**: Shoe-mounted secondary	**B**: Weather shield	**B**: Weather shield	**B**: Shoe-mounted secondary	**AD**: Aluminum (diffuse)	
P: Pressure	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**C**: Rim-mounted secondary	**LG**: Light Gray	
					MG: Medium Gray	
					BL: Black	
					OT: Other (specify)	

Note: 1.00 bbl = 0.159 M^3 = 42.0 gal

Table 2-M: Materials Processed and Produced (Use additional sheets as necessary.)

Material Processed				Material Produced			
Description	**Chemical Composition**	**Phase (Gas, Liquid, or Solid)**	**Quantity (specify units)**	**Description**	**Chemical Composition**	**Phase**	**Quantity (specify units)**
Field Natural Gas	Methane; low concentration VOCs	Gas	100 MMscfd	Dry gas	Methane; low concentration VOCs	Gas	100 MMscfd
				Natural gas liquids	Mixed hydrocarbons	Liquid	285 bbl/day

Table 2-N: CEM Equipment

Enter Continuous Emissions Measurement (CEM) Data in this table. If CEM data will be used as part of a federally enforceable permit condition, or used to satisfy the requirements of a state or federal regulation, include a copy of the CEM's manufacturer specification sheet in the Information Used to Determine Emissions attachment. Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Stack No.	Pollutant(s)	Manufacturer	Model No.	Serial No.	Sample Frequency	Averaging Time	Range	Sensitivity	Accuracy
N/A - There is no CEM equipment used at this facility.									

Table 2-O: Parametric Emissions Measurement Equipment

Unit and stack numbering must correspond throughout the application package. Use additional sheets if necessary.

Unit No.	Parameter/Pollutant Measured	Location of Measurement	Unit of Measure	Acceptable Range	Frequency of Maintenance	Nature of Maintenance	Method of Recording	Averaging Time
N/A - There is no PEM equipment used at this facility.								

Table 2-P: Green House Gas Emissions

Applications submitted under 20.2.70, 20.2.72, & 20.2.74 NMAC are required to complete this Table. Power plants, Title V major sources, and PSD major sources must report and calculate all GHG emissions for each unit. Applicants must report potential emission rates in short tons per year (see Section 6.a for assistance). Include GHG emissions during Startup, Shutdown, and Scheduled Maintenance in this table. For minor source facilities that are not power plants, are not Title V, or are not PSD, there are three options for reporting GHGs 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHG as a second separate unit; OR 3) check the following box.

☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									Total GHG Mass Basis ton/yr[4]	Total CO_2e ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
10	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
11	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
12	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
13	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
14	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
15	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
16	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
17	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
19	**mass GHG**	1568.1	2.96E-03	0.030											1568.1	
	CO_2e	1568.1	0.9	0.7												1569.7
20	**mass GHG**	18799.3	3.5E-02	0.35											18799.7	
	CO_2e	18799.3	10.6	8.9												18818.8
25	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
26	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
27	**mass GHG**	3340.5	6.3E-03	0.063											3340.6	
	CO_2e	3340.5	1.9	1.6												3344.0
28	**mass GHG**	18799.3	3.5E-02	0.35											18799.7	
	CO_2e	18799.3	10.6	8.9												18818.8
30	**mass GHG**	5281.1	9.96E-03	0.10											5281.2	
	CO2e	5281.1	3.0	2.5												5286.6
31	**mass GHG**	5281.1	9.96E-03	0.10											5281.2	
	CO_2e	5281.1	3.0	2.5												5286.6
32	**mass GHG**	5281.1	9.96E-03	0.10											5281.2	
	CO2e	5281.1	3.0	2.5												5286.6

		CO_2 ton/yr	N_2O ton/yr	CH_4 ton/yr	SF_6 ton/yr	PFC/HFC ton/yr[2]									Total GHG Mass Basis ton/yr[4]	Total CO_2e ton/yr[5]
Unit No.	**GWPs [1]**	**1**	**298**	**25**	**22,800**	**footnote 3**										
33	**mass GHG**	5281.1	9.96E-03	0.10											5281.2	
	CO_2e	5281.1	3.0	2.5												5286.6
34	**mass GHG**	5281.1	9.96E-03	0.10											5281.2	
	CO2e	5281.1	3.0	2.5												5286.6
39	**mass GHG**	4482.0	8.45E-03	0.085											4482.1	
	CO_2e	4482.0	2.5	2.1												4486.7
40	**mass GHG**	256.0	4.83E-04	0.0048											256.0	
	CO2e	256.0	0.14	0.12												256.3
Total	**mass GHG**														107,058.2	
	CO_2e															107,166.6

[1] **GWP** (Global Warming Potential): Applicants must use the most current GWPs codified in Table A-1 of 40 CFR part 98. GWPs are subject to change, therefore, applicants need to check 40 CFR 98 to confirm GWP values.

[2] For **HFCs** or **PFCs** describe the specific HFC or PFC compound and use a separate column for each individual compound.

[3] For each new compound, enter the appropriate GWP for each HFC or PFC compound from Table A-1 in 40 CFR 98.

[4] Green house gas emissions on a **mass basis** is the ton per year green house gas emission before adjustment with its GWP.

[5] **CO_2e** means Carbon Dioxide Equivalent and is calculated by multiplying the TPY mass emissions of the green house gas by its GWP.

Section 3

Application Summary

The **Application Summary** shall include a brief description of the facility and its process, the type of permit application, the applicable regulation (i.e. 20.2.72.200.A.X, or 20.2.73 NMAC) under which the application is being submitted, and any air quality permit numbers associated with this site. If this facility is to be collocated with another facility, provide details of the other facility including permit number(s). In case of a revision or modification to a facility, provide the lowest level regulatory citation (i.e. 20.2.72.219.B.1.d NMAC) under which the revision or modification is being requested. Also describe the proposed changes from the original permit, how the proposed modification will affect the facility's operations and emissions, de-bottlenecking impacts, and changes to the facility's major/minor status (both PSD & Title V).

The **Process Summary** shall include a brief description of the facility and its processes.

Startup, Shutdown, and Maintenance (SSM) routine or predictable emissions: Provide an overview of how SSM emissions are accounted for in this application. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions.

DCP Operating Company, LP (DCP) is submitting this NSR permit revision application and associated attachments for a Significant Permit Revision (PSD minor modification) pursuant to 20.2.72.219.D.(1)(a) NMAC) to its current Air Quality NSR Permit No. 434-M10R8 for Artesia Gas Plant.

The Artesia Gas Plant is a natural gas processing plant, located in Eddy County, New Mexico approximately 13 miles southeast of Artesia. The plant is currently operating under NSR Permit 0434-M10R8 and Title V permit P095-R4. Various processing operations and units at this facility are natural gas compression, gas sweetening unit, dehydration unit, and natural gas liquids extraction unit. The acid gas generated is routed to an acid gas injection well, or flare during upset conditions.

The proposed modification consists of the following:

1) Revise the site's existing field condensate storage tanks throughput and emissions rates;
2) Revise the site's loading throughput and emission rates; and
3) Revise existing Haul Road Operations emissions to reflect the increased truck hauling frequencies and emission rates.

The VOC emissions from the condensate tanks, Unit IDs, TK-48, TK-49, TK-50, TK-51, and GT-1, are routed to a Vapor Recovery Unit (VRU). From the VRU the gas stream is returned to the low-pressure plant inlet. The condensate tanks' VOC emissions while the VRU is down (5%) are represented as SSM emissions.

The truck loadout VOC emission increases from the condensate tanks' TK-C and TK-50 are represented in Unit ID Load-1.

The truck hauling operations' Haul Road emissions increases are represented in Unit IDs Haul-1 and Haul-2.

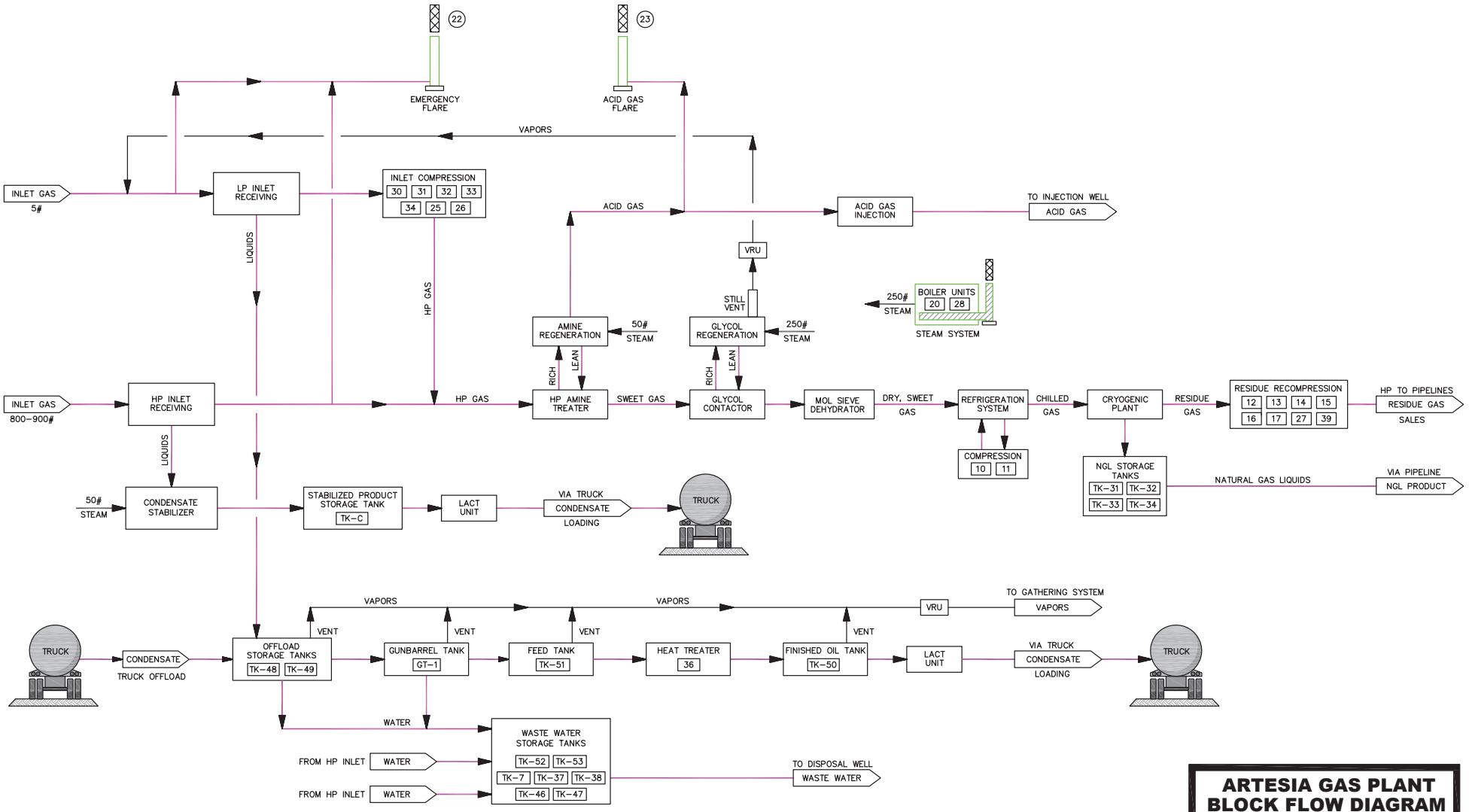
There is no physical change occurring at the plant site, the processing rate of the plant remains the same, and there is no new equipment nor new emissions sources installed in this permit revision.

Section 4

Process Flow Sheet

A **process flow sheet** and/or block diagram indicating the individual equipment, all emission points and types of control applied to those points. The unit numbering system should be consistent throughout this application.

The Process Flow Sheet is attached.



ARTESIA GAS PLANT BLOCK FLOW DIAGRAM

SIMPLIFIED PROCESS FLOW DIAGRAM

REV	DATE	REVISION	BY	CHK'D	ENGR.	ENGR. MGR.
0	1-19-05	DRAWN FROM DEFS PLANT SKETCH (NO DATE)	J.R.E.	L.K.M.		
1	5-1-07	REVISIONS PER: J.R. FIELD SKETCH	J.R.E.	J.R.		
2	4-17-09	REVISIONS PER: J.D.B. FIELD SKETCH	J.R.E.	J.D.B.		
3	1-26-11	REVISIONS PER: J.D.B. FIELD SKETCH	J.R.E.	J.D.B.		
4	5-2-14	CHANGED OFFLOAD CONDESATE FROM PIPELINE TO TRUCK	J.R.E.	J.C.		

REV	DATE	REVISION	BY	CHK'D	ENGR.	ENGR. MGR.

dcp Midstream

ARTESIA GAS PLANT
ARTESIA GATHERING SYSTEM
Eddy County
NEW MEXICO

DWG. NO. \data\EhsDrawings\Mapping\NewMexico\Artesia\Artesia_Flow

Section 5

Plot Plan Drawn to Scale

A **plot plan drawn to scale** showing emissions points, roads, structures, tanks, and fences of property owned, leased, or under direct control of the applicant. This plot plan must clearly designate the restricted area as defined in UA1, Section 1-D.12. The unit numbering system should be consistent throughout this application.

The Plot Plan is attached.

E. 300'–0" E. 400'–0" E. 500'–0" E. 600'–0" E. 700'–0" E. 800'–0" E. 900'–0" E. 1000'–0" E. 1100'–0" E. 1200'–0" E. 1300'–0" E. 1400'–0" E. 1500'–0" E. 1600'–0" E. 1700'–0"

N. 1300'–0" N. 1200'–0" N. 1100'–0" N. 1000'–0" N. 900'–0" N. 800'–0" N. 700'–0" N. 600'–0" N. 500'–0" N. 400'–0" N. 300'–0" N. 200'–0" N. 100'–0" N. 0'–0"

PIT
AGI WELL
CM–11.250
CM–11.260
6" GAS INJECTION TO APCO
AGI PARTS CONNEX
CHEVRON PIPELINE TIE–IN
4" LPG TO CHEVRON
3" PROD. TO LEE
EPNG
CHEVRON
TRANSWESTERN PIPELINE METERING FACILITIES
LPG ESD
LPG SALES METER
NORTHERN
6" RESIDUE
GAS WELL*
PROPANE STORAGE TANKS
PROD. SURGE
WEST
EAST
SV–16.07
SV–16.08
SV–16.09
SV–16.10
STABIL. LIQUIDS
25
METHANOL PUMPS
DISPOSABLE OVERFLOW
DISPOSABLE DELIVERY
FEED
OIL SKIMMER
WATER PUMPS
NEW SKIMMER TANKS
ILLINOIS CAMP FUEL LINE
CM–11.65
METHANOL
ETHYLENE GLYCOL
REGEN GAS HEATER
SUBCOOLER
API SKIMMER BASIN
ABSORBER
REFRIG. SKID #5
HE–15.32 RESIDUE GAS COOLER
FC–21.53 RESIDUE FILTER/COALES.
6" RESIDUE TO TRANSWESTERN
ROAD
PANEL
ACID GAS FLARE
PLANT FLARE
PIPE SLEEPERS
ABSORBER BTMS. PUMPS
SUCTION ECONOMIZER SCRUBBER
PV–16.455 FLARE KO
WHITE PORTABLES
#9 #8 #7 #6 #5 #4 #3 #2 #1
#3 THRU #8 RESIDUE/RECOMPRESSORS #1 & #2 REFRIGERATION
EXPANDER LUBE OIL STORAGE
DEMETH. BTMS. PUMPS
EXPANDER SKID #10
DEMETH.
DEHY. SKID #7
PROD. GAS EXCHANGER
DEHYDRATOR
DEHY. PANEL FILTER/COALES.
H.P. INLET SEPARATOR
DEHY. INLET SCRUBBER
H.P. GLYCOL CONTACTOR
FC–21.105 GLYCOL FILTER
HE–15.26 GLYCOL EXCH.
FC–21.21 GLYCOL PRE–FILTER
UTILITY HOUSE "D"
SUCTION SCRUBBER 2nd STAGE 4th STAGE
PIPE RACK
COOLER
COOLING TOWER
AMINE DRAIN
AMINE REGEN SKID #4
STILL
AMINE–EXCHANGER SKID #3
TREATER OUTLET SCRUBBER (3rd. STG. SUCT.)
L.P. AMINE CONTACTOR 3RD STG.
AMINE FLASH TANK
H.P. GLYCOL SKID
H.P. AMINE CONTACTOR
REGEN AMINE CIRC. PUMPS
OVHD. PIPE RACK
CONTROL BLDG.
LAB
BATTERY ROOM
H.P. AMINE SCRUBBERS INLET/OUTLET STABILIZER
INST. AIR SKID
AMINE CONTACTOR INLET COALESCER
COMB. AIR BLOWER SKID #2
SULFUR BURNER SKID #6
BOILER #2 PANEL
BOILER #1 PANEL
WASTE HEAT BOILER PNL.
OVHD.
CONV. SKID #1
CONV. SKID #2
CONV. SKID #3
SULFUR PIT
R.O. BLDG.
BOILER HOUSE
BLR. PNLS.
#2 BLR.
#1 BLR.
INCIN. PANEL
R.O. TANKS
SULFUR PLANT ONLY
TEE–SUPPORT FOR CONDUIT
SULFUR LOADING RACK
UTILITY HOUSE "B"
WATER STORAGE
OVERHEAD "T" SUPPORTS
(OLD) OFFICE BLDG.
PARTS CONNEX
FUEL TANK
UTILITY PUMP BLDG. "A"
NEW SWITCH GEAR
P/L BOOSTER PUMPS
STARTER RACK #6 PRODUCT BOOSTER PMP. PRODUCT P/L PMPS.
NEW PRODUCT PUMPS
3 MI. N–NE TO HWY. 83 1/2 MI. EAST OF ARTESIA
4" PROD. TO LUSK
16" L.P. FIELD GAS
SWRACK. HEATER TREATER
SLOP OIL TREATING
6" H.P. ILLINOIS CAMP
OUT OF SERVICE
SLOP OIL TANKS
PV–16.195 COND. TANK
INLET SLUG CATCHER
DISCHARGE SCRUBBER
EXCHANGER
LUBE OIL
OUT OF SERVICE
CLARKS
WAREHOUSE
MIDDLE INLET COMPRESSORS #3 #2 #1
INLET SCRUBBER
ROAD
PIPE SLEEPERS
20" L.P. GAS
4" HP LIQ
6" H.P. GAS
16" L.P. FIELD GAS
USED OIL TANK
FC–21.T06A/B
PV–16.302A
PV–16.302B
PV–16.196 FLASH TK.
RESIDUE GAS TO NGPL AND FUEL TO WINCHESTER
16" L.P. FIELD GAS
WASTE WATER STORAGE
PORTABLE BOOSTER NO.4
PORTABLE BOOSTER NO.3
#6 #5 #4 #3 #2 #1
SOUTH INLET COMPRESSORS CLARKS
COOPERS
OUT OF SERVICE
PUMPS
SUMPS
BLOWCASE
LUBE OIL TANK
BARREL DIKE
STARTING AIR PACKAGE
SHOP
CM–11.55
CM–11.54
CM–11.53
CM–11.52
CM–11.51
CM–11.56 (FUTURE)
SCAFFOLD HOUSE
PARTS CONNEX
WELDING SHOP
PARTS CONNEX
DESIGNATED HOT WORK AREA
NO HOT WORK
PERMIT REQUIRED
4" DIA.(PVC)
TO EXISTING SEPTIC SYSTEM
CONTROL ROOM
OFFICE
FUEL TANK AREA
TRAILER
100' N.T.S.
100' N.T.S.
CHAIN LINK FENCE
BARBED WIRE FENCE

NOTE: INITIAL WALKDOWN – MANAGEMENT OF CHANGE –

NO.	DATE	BY	DESCRIPTION	APP'D
25	10/13/22	wrt	REV. PER FIELD REVIEW MARKS	JGS
24	8/11/18	wrt	ADDED NEW FLARE KO VESS.	
23	4/13/15	wrt	ADDED NEW SKIMMER TANKS	
22	10/8/13	MTWC	REVISED FOR CM–11.260 ADDITION (IFC)	
21	10/29/13	wrt	REVISED PER LIQUID HANDLING PROJECT	
20	9/24/13	MTWC	REVISED FOR CM–11.260 ADDITION (IFA)	
19	3/21/11	wrt	ILLINOIS CAMP FUEL LINE ADDED	
18	1/25/11	HPF	ADDED LPG TO SALES, HPF #101.39 (IFC)	
17	1/21/11	HPF	ADDED LPG TO SALES, HPF #101.39 (IFA)	
16	6/29/10	wrt	ADDED EQUIP. PER EXPANSION	
15	2/20/06	wrt	UPDATED PLOT PLAN	

ISSUE

dcp Midstream.

ARTESIA GAS PLANT
EDDY COUNTY
ARTESIA, NEW MEXICO
SITE PLAN

DRAFTED BY: DSS | CHECKED BY:
DATE: 8/22/03 | SCALE: 1"=60'
APPROVAL BY: | DATE:

DWG NO. GWD–764 MP–7 | ISSUE 25

PLOT: APR 13, 2015 TIME: 7:29 AM
PLOT DATE: 8/22/03 ACAD FILENAME: 764MP7.DWG

Section 6

All Calculations

Show all calculations used to determine both the hourly and annual controlled and uncontrolled emission rates. All calculations shall be performed keeping a minimum of three significant figures. Document the source of each emission factor used (if an emission rate is carried forward and not revised, then a statement to that effect is required). If identical units are being permitted and will be subject to the same operating conditions, submit calculations for only one unit and a note specifying what other units to which the calculations apply. All formulas and calculations used to calculate emissions must be submitted. The "Calculations" tab in the UA2 has been provided to allow calculations to be linked to the emissions tables. Add additional "Calc" tabs as needed. If the UA2 or other spread sheets are used, all calculation spread sheet(s) shall be submitted electronically in Microsoft Excel compatible format so that formulas and input values can be checked. Format all spread sheets and calculations such that the reviewer can follow the logic and verify the input values. Define all variables. If calculation spread sheets are not used, provide the original formulas with defined variables. Additionally, provide subsequent formulas showing the input values for each variable in the formula. All calculations, including those calculations are imbedded in the Calc tab of the UA2 portion of the application, the printed Calc tab(s), should be submitted under this section.

Tank Flashing Calculations: The information provided to the AQB shall include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., NOI, permit, or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis. If Hysis is used, all relevant input parameters shall be reported, including separator pressure, gas throughput, and all other relevant parameters necessary for flashing calculation.

SSM Calculations: It is the applicant's responsibility to provide an estimate of SSM emissions or to provide justification for not doing so. In this Section, provide emissions calculations for Startup, Shutdown, and Routine Maintenance (SSM) emissions listed in the Section 2 SSM and/or Section 22 GHG Tables and the rational for why the others are reported as zero (or left blank in the SSM/GHG Tables). Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on calculating SSM emissions. If SSM emissions are greater than those reported in the Section 2, Requested Allowables Table, modeling may be required to ensure compliance with the standards whether the application is NSR or Title V. Refer to the Modeling Section of this application for more guidance on modeling requirements.

Glycol Dehydrator Calculations: The information provided to the AQB shall include the manufacturer's maximum design recirculation rate for the glycol pump. If GRI-Glycalc is used, the full input summary report shall be included as well as a copy of the gas analysis that was used.

Road Calculations: Calculate fugitive particulate emissions and enter haul road fugitives in Tables 2-A, 2-D and 2-E for:

1. If you transport raw material, process material and/or product into or out of or within the facility and have PER emissions greater than 0.5 tpy.
2. If you transport raw material, process material and/or product into or out of the facility more frequently than one round trip per day.

Significant Figures:

A. All emissions standards are deemed to have at least two significant figures, but not more than three significant figures.

B. At least 5 significant figures shall be retained in all intermediate calculations.

C. In calculating emissions to determine compliance with an emission standard, the following rounding off procedures shall be used:

(1) If the first digit to be discarded is less than the number 5, the last digit retained shall not be changed;

(2) If the first digit discarded is greater than the number 5, or if it is the number 5 followed by at least one digit other than the number zero, the last figure retained shall be increased by one unit; **and**

(3) If the first digit discarded is exactly the number 5, followed only by zeros, the last digit retained shall be rounded upward if it is an odd number, but no adjustment shall be made if it is an even number.

(4) The final result of the calculation shall be expressed in the units of the standard.

Control Devices: In accordance with 20.2.72.203.A(3) and (8) NMAC, 20.2.70.300.D(5)(b) and (e) NMAC, and 20.2.73.200.B(7) NMAC, the permittee shall report all control devices and list each pollutant controlled by the control device regardless if the applicant takes credit for the reduction in emissions. The applicant can indicate in this section of the application if they chose to not take credit for the reduction in emission rates. For notices of intent submitted under 20.2.73 NMAC, only uncontrolled emission rates can be considered to determine applicability unless the state or federal Acts require the control. This information is necessary to determine if federally enforceable conditions are necessary for the control device, and/or if the control device produces its own regulated pollutants or increases emission rates of other pollutants.

Greenhouse Gas Emissions
Greenhouse gas emissions for the engines, boilers, furnace, and SSM events are not affected by this application.

STEADY-STATE EMISSIONS – UNCHANGED

The following units are not affected by the proposed changes in this application. The emissions for existing, unchanged emissions are summarized on Table 6-2 attached. Detailed emission calculations for these sources are not included with this application.

White Superior 8G825 Engines - Units 10-17, 25-27
Emission factors for NOx, CO, and VOC are as permitted in Permit 0434-M7-R2. Controlled emission rates are based on 80% reduction of NOx and CO and 75% reduction of VOC and HAPs as permitted in Permit 0434-M7-R2. Emissions of SO2 and particulates are calculated based on AP-42 emission factors from Table 3.2-3. Hazardous air pollutant emissions were calculated using GRI-HAPCalc 3.01. As a conservative measure, it was assumed that TSP= PM10 = PM2.5. Greenhouse gas emissions were estimated using methodology from 40 CFR Part 98 and emission factors from Tables C-1 and C-2 of Part 98.

3 MMBtu/hr Heater – Unit 19
Emissions of NOx, CO, VOC, SO2, and particulates from Unit 19 were calculated using emission factors from Tables 1.4-1 and 1.4-2 of AP-42. As a conservative measure, it was assumed that TSP = PM10 = PM2.5. Hazardous air pollutant emissions were calculated using GRI-HAPCalc 3.01. Greenhouse gas emissions were estimated using methodology from 40 CFR Part 98 and emission factors from Tables C-1 and C-2 of Part 98.

Wickes Boilers – Units 20 and 28
NOx, CO, VOC, PM, and SO2 emissions were calculated using AP-42 factors for external natural gas combustion sources in Tables 1.4-1 and 1.4-2. As a conservative measure, it was assumed that TSP = PM10 = PM2.5. Hazardous air pollutant emissions were calculated using GRI-HAPCalc 3.01. Greenhouse gas emissions were estimated using methodology from 40 CFR Part 98 and emission factors from Tables C-1 and C-2 of Part 98.

Emergency Wet Gas Flare (Unit 22) and Acid Gas Flare (Unit 23) Steady-State Emissions
The emergency wet gas flare will flare pilot, purge, and blanket gas from TK-C during steady-state operation. Unit TK-C is a condensate storage tank with blanket gas. Residue gas is used as blanket gas within the tank because it creates an anaerobic environment within the system while at the same time not allowing for the formation of working and breathing emissions. The blanket gas is then combusted by the wet flare, unit 22. Unit TK-C will always use blanket gas and will not be a source of working, breathing, or flashing emissions. Emission rates for NOx and CO are based on emission factors from AP-42 Table 13.5-1 (9/91) (Reformatted 1/95). It is assumed that there is no VOC content in the pilot and purge gas as the purchased fuel is methane. Emissions of H2S and SO2 from the pilot and purge gas are based respectively on the specification of sweet natural gas fuel, 0.25 gr H2S/100scf and 5 gr S/100scf.

Caterpillar G3516LE Engines – Units 30-34
Uncontrolled emissions of NOx, CO, and VOC are as permitted in Permit 0434-M7-R2. Controlled emissions of NOx, CO, and VOC were calculated using manufacturer's data. Emissions of SO2 and particulates were calculated using emission factors from AP-42 Table 3.2-2. As a conservative measure, it was assumed that TSP = PM10 = PM2.5. Hazardous air pollutant emissions were calculated using GRI-HAPCalc 3.01. A 64% control was applied to HAP emissions due to catalyst reduction. Greenhouse gas emissions were estimated using methodology from 40 CFR Part 98 and emission factors from Tables C-1 and C-2 of Part 98.

Waukesha L7042GSI – Unit 39

Uncontrolled emissions of NOx, CO, and VOC were estimated using manufacturer's data. Controlled emission rates are based on 85% reduction of NOx and CO and 75% reduction of VOC and HAPs as permitted in Permit 0434-M9-R3. Emissions of SO2 were estimated based on a pipeline fuel sulfur content of 50 grains of total sulfur per Mscf. Particulate emissions were calculated using AP-42 emission factors from Table 3.2-3. As a conservative measure, it was assumed that TSP = PM10 = PM2.5. Hazardous air pollutant emissions were calculated using GRI-HAPCalc 3.01. Greenhouse gas emissions were estimated using methodology from 40 CFR Part 98 and emission factors from Tables C-1 and C-2 of Part 98.

5 MMscf/day Glycol Dehydrator with 0.5 MMBtu/hr Reboiler – Units Dehy-2 and 40

The glycol dehydrator is a closed system and will have a reboiler and condenser associated with the unit. Since the dehydrator is a closed system, there are no emissions associated with this unit. The only emission will be from the reboiler. The reboiler emission rates for NOx, CO, VOC, and PM were calculated using AP-42 factors for external natural gas combustion sources, Table 1.4-1 and 1.4-2. PM10 and PM2.5 emissions are set equal to PM emissions as a conservative measure. SO2 emissions were calculated based on the units' fuel consumption and a maximum sulfur content of five grains of total sulfur per 100 standard cubic feet (5 gr/100 scf). GHG emissions were calculated using 40 CFR 98 Subpart C Tier 1.

Glycol Dehydrator – Unit Dehy

The glycol dehydrator is a closed system and will have a reboiler and condenser associated with the unit. Since the dehydrator is a closed system, there are no emissions associated with this unit.

Cooling Towers - Units CT-N and CT-S

The particulate emissions were calculated using the procedure described in AP-42 Section 13.4 – Wet Cooling Towers. A Frisbee table was created to determine the particle distribution and subsequently PM10, PM2.5, and TSP emissions.

Facility-Wide Fugitive Emissions – Unit 38 (FUG)

Fugitive emissions were estimated using emission factors from Table 2-4 of EPA Protocol for Equipment Leak Emission Estimates, November 1995, EPA-453/R-95-017. Component counts were estimated as previously permitted. The percent VOC and HAPs are from the inlet gas analysis dated 8/22/2012. The percent VOC in liquids conservatively assumed to be 100%. The percent H2S in liquids is zero. The percentage HAPs in the liquids is estimated based on the ratio of VOC and HAP in the previous gas analysis. Total HAPs is the sum of n-Hexane, Benzene, Toluene, Ethylbenzene, and Xylene.

STEADY-STATE EMISSIONS – REVISED UNITS

The following emission sources have been modified.

Condensate Loadout – Unit Load-1

Emissions from loading of condensate out of the facility by truck were estimated using Equation 1 in AP-42 Section 5.2-4. The requested loading of condensate out of the facility is 18,900,000 gallons per year. This includes 12,600,000 gallons per year of condensate from TK-50 and 6,300,000 gallons per year from TK-C.

Hauling of Condensate out of Facility – Unit Haul-1

Emissions from truck hauling of condensate out of the facility on unpaved roads were estimated based on calculation methodology in AP-42 Section 5.2. Controlled emissions are based on a combination of base course treatment (gravel) and a speed limit of 25 mph. Control efficiencies for these are from NMED guidance and the WRAP Fugitive Dust Handbook, September 7, 2006 (Page 8). The 60% control and 44% control are combined resulting in a total control of 77.6%.

Hauling of Condensate into Facility – Unit Haul-2

Emissions from truck hauling of condensate into the facility on unpaved roads were estimated based on calculation methodology in AP-42 Section 5.2. Controlled emissions are based on a combination of base course treatment (gravel) and a speed limit of 25 mph. Control efficiencies for these are from NMED guidance and the WRAP Fugitive Dust Handbook, September 7, 2006 (Page 8). The 60% control and 44% control are combined resulting in a total control of 77.6%.

SSM EMISSIONS - UNCHANGED

Facility SSM emissions include plant turnaround, plant startup (post turnaround), condensate tank degassing during VRU downtime, gas piping degassing, pig launcher degassing, vacuum trucks, engine startup, compressor blowdown, emergency wet gas flare and acid gas flare SSM emissions. The following activities are not affected by the proposed changes in this application. Detailed emission calculations for these activities are not included with this application.

Plant Turnaround

Multiple steps comprise a plant turnaround. Step 1 - For the natural gas system, emissions to the atmosphere after opening pipelines are calculated using the Ideal Gas Law and are based on the entire pipe volume venting to the atmosphere at pipeline pressure. Step 2 - For systems in liquid service clingage emissions degassing emissions occur after the system is de-inventoried. Degassing emissions are calculated using the Ideal Gas Law. Step 3 - After systems are degassed and opened, residual materials (clingage) may be emitted to the atmosphere. Clingage emissions are estimated using system volumes and an assumed clingage amount. Total lb/hr emissions from each liquid system turnaround step (degassing, clingage) assume that any liquid system may undergo turnaround at any time. Maximum lb/hr emissions from all turnaround steps are calculated as the maximum lb/hr emission rate from any step.

Plant Startup (Post-Turnaround)

For the natural gas system, emissions to the atmosphere occur from a three-step pressure test and purge prior to plant startup. These emissions are calculated using the Ideal Gas Law and are based on the entire pipe volume venting to the atmosphere at each purge step pressure.

Gas Piping Degassing & Pig Launcher Degassing

Emissions to the atmosphere after opening pipelines are calculated using the Ideal Gas Law and are based on the entire pipe volume venting to the atmosphere at pipeline pressure.

Vacuum Trucks

Emissions from vacuum trucks are estimated using the loading loss method of AP-42, Chapter 5.2: Transportation and Marketing of Petroleum Liquids, 1995. Calculations are performed based on the concentrations of the individual organic species since the wastes contain significant non-volatile content (i.e. solids). A truck can be loaded in one hour; therefore, the emissions per loading activity reflect the lb/hr emission rate.

Emergency Wet Gas Flare (Unit 22) and Acid Gas Flare (Unit 23) SSM Emissions

Emission rates for NOx and CO are based on emission factors from AP-42 Table 13.5-1 (9/91) (Reformatted 1/95). Emissions of VOC from SSM flaring are calculated using the gas analysis found in Section 7 and the assumption of 98% destruction of VOCs. Emissions of H2S and SO2 from SSM flaring are calculated using the gas analysis found in Section 7 and an assumed 98% combustion of H2S. Conversion of H2S to SO2 was assumed as 100%. Greenhouse gas emissions were estimated using methodology from the Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry (August 2009).

The details of the SSM emissions calculation tables are attached to this Section 6.

SSM and MALFUNCTION EMISSIONS – REVISED

Condensate Tank Degassing During VRU Downtime
Tank working and breathing losses for tanks TK-48, TK-49, TK-50, TK-51, and GT-1 were calculated using the methodology outlined in AP-42, Chapter 7 for fixed roof storage tanks and the condensate composition and Reid Vapor Pressure. There are no flash emissions associated with these tanks as the liquids being handled are at atmospheric pressure. DCP assumes 100% control efficiency for VRUs; however, DCP also allows for 5% downtime for maintenance and repair, thus the effective control efficiency is 95%. These periods of estimated VRU downtime account for the total condensate degassing emissions.

Engine Startup & Compressor Blowdown
Emissions are calculated based on an estimated volume of gas released from each unit for engine startup and compressor blowdown multiplied by the number of activities throughout the year. This volume is then multiplied by the gas analysis mol% divided by 379 scf/mol then multiplied by Molecular Weight to arrive at a lb/event. The number of activities is revised to 860 from 340 to estimate the revised VOC and H2S venting emissions.

Upset/Malfunction
DCP has estimated the malfunction emissions based on the current gas analyses and flared gas flow rates from the Emergency Wet Gas Flare (Unit 22) and the Acid Gas Flare (Unit 23). The details of the malfunction emissions calculation tables are attached to this Section 6. The requested upset/malfunction emissions are in addition to the calculated flaring and venting SSM emissions.

Table 6-1
Requested Allowable Emissions (NMED Table 2-E)
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

Unit #	Source Description	NO_X		CO		VOC		SO_2		TSP		PM10		PM2.5		H_2S	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
10	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
11	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
12	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
13	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
14	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
15	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
16	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
17	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
19	Gas Furnace	0.30	1.30	0.30	1.10	0.02	0.07	0.002	0.01	0.00	0.10	0.00	0.10	0.00	0.10		
20	Boiler #2	3.53	15.46	2.96	12.99	0.19	0.85	0.02	0.09	0.27	1.17	0.27	1.17	0.27	1.17		
22	Emergency Wet Gas Flare	0.22	0.98	1.20	5.30			0.02	0.10							2.30E-05	1.00E-04
23	Emergency Acid Gas Flare	0.09	0.38	0.47	2.06			0.01	0.04							9.00E-06	3.90E-05
25	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
26	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
27	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
28	Boiler #1	3.60	15.60	3.00	13.10	0.20	0.86	0.02	0.09	0.27	1.20	0.27	1.20	0.27	1.20		
30	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
31	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
32	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
33	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
34	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
38	Fugitives (FUG-1)					9.00	39.60									0.14	0.60
39	Waukesha 7042GSI	8.60	37.70	11.90	52.10	0.40	1.70	0.12	0.53	0.17	0.73	0.17	0.73	0.17	0.73		
40	Reboiler	0.05	0.21	0.04	0.18	0.00	0.01	0.01	0.03	0.00	0.02	0.00	0.02	0.00	0.02		
Dehy	TEG Dehydrator Still Vent and Flash Tank																
Dehy-2	TEG Dehydrator Still Vent and Flash Tank																
GT-1	Gunbarrel Separator																
CT-N	Cooling Tower									0.31	1.40	0.20	0.86	0.001	0.003		
CT-S	Cooling Tower									0.28	1.20	0.18	0.78	0.001	0.003		
TK-C	Condensate Tank w/ blanket Gas																
TK-1	Gasoline Tank																
TK-48	Feed Tank																
TK-49	Feed Tank																
TK-50	Oil Tank																
TK-51	Feed Tank																
Load-1	Truck Loadout & Loading of Condensate					80.24	43.08										
Amine-RS	Amine Regeneration Still Vent & Flash Tank																
Amine-C	Amine Contactor																
Haul-1	Hauling emissions from condensate loading out of facility									1.23	1.32	0.31	0.34	0.03	0.03		
Haul-2	Hauling emissions from condensate loadout into facility									1.23	0.94	0.31	0.24	0.03	0.02		
SSM(22)	Wet gas flare: flaring during routine or predictable SSM	642.90	7.50	3498.30	40.70	2685.10	27.20	4918.40	49.90							52.30	0.53
SSM(23)	Acid gas flare: flaring during routine and predictable SSM	10.40	2.40	56.60	13.20			2001.00	328.20							21.30	3.50
SSM	Venting during routine and predictable SSM					3025.44	34.73									93.39	1.32
M	Venting of gas and combustion of gas flared due to Malfunction (for SSM 22 and/or SSM 23)	642.90	4.20	3498.30	10.00	2685.10	0.80	4918.40	10.00							52.30	0.10
REVISED SITEWIDE EMISSION TOTALS		**757.49**	**470.43**	**3,662.58**	**535.43**	**5,817.77**	**223.20**	**6,919.67**	**389.26**	**4.98**	**13.36**	**2.93**	**10.72**	**1.98**	**8.56**	**167.13**	**6.05**
CURRENT SITEWIDE EMISSION TOTALS		**757.49**	**470.43**	**3,662.58**	**535.43**	**5,678.20**	**196.89**	**6,919.67**	**389.26**	**4.91**	**11.94**	**2.92**	**10.35**	**1.98**	**8.53**	**167.13**	**5.44**
EMISSIONS INCREASES			0.00		0.00		26.31		0.00		1.42		0.36		0.04		0.61
PSD Significance Level			40		100		40		40		NA		15		10		10
Exceeds Thresholds?			**No**		**No**		**No**		**No**				**No**		**No**		**No**

Table 6-2
Emissions from Existing (Unchanged) Sources
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

Unit #	Source Description	NO_x		CO		VOC		SO_2		TSP		PM10		PM2.5		H_2S	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
10	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
11	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
12	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
13	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
14	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
15	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
16	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
17	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
19	Gas Furnace	0.30	1.30	0.30	1.10	0.02	0.07	0.002	0.01	0.00	0.10	0.00	0.10	0.00	0.10		
20	Boiler #2	3.53	15.46	2.96	12.99	0.19	0.85	0.02	0.09	0.27	1.17	0.27	1.17	0.27	1.17		
22	Emergency Wet Gas Flare	0.22	0.98	1.20	5.30			0.02	0.10							2.30E-05	1.00E-04
23	Emergency Acid Gas Flare	0.09	0.38	0.47	2.06			0.01	0.04							9.00E-06	3.90E-05
25	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
26	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
27	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
28	Boiler #1	3.60	15.60	3.00	13.10	0.20	0.86	0.02	0.09	0.27	1.20	0.27	1.20	0.27	1.20		
30	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
31	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
32	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
33	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
34	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
38	Fugitives (FUG-1)					9.00	39.60									0.14	0.60
39	Waukesha 7042GSI	8.60	37.70	11.90	52.10	0.40	1.70	0.12	0.53	0.17	0.73	0.17	0.73	0.17	0.73		
40	Reboiler	0.05	0.21	0.04	0.18	0.00	0.01	0.01	0.03	0.00	0.02	0.00	0.02	0.00	0.02		
Dehy	Tank																
Dehy-2	Tank																
CT-N	Cooling Tower									0.31	1.40	0.20	0.86	0.001	0.003		
CT-S	Cooling Tower									0.28	1.20	0.18	0.78	0.001	0.003		
TK-C	Condensate Tank w/ blanket Gas																
TK-1	Gasoline Tank																
Amine-RS	Tank																
Amine-C	Amine Contactor																
SSM(22)	Wet gas flare: flaring during routine or predictable SSM	642.90	7.50	3498.30	40.70	2685.10	27.20	4918.40	49.90							52.30	0.53
SSM(23)	Acid gas flare: flaring during routine and predictable SSM	10.40	2.40	56.60	13.20			2001.00	328.20							21.30	3.50

*Emissions from these sources are existing and unchanged. Detailed emission calculations for these sources have not been included with this revision.

Table 6-3
Tank Truck Loading Emissions
DCP Operating Company LP
Artesia Gas Plant
Eddy County, New Mexico

	Unit # >>	Load-1 (from TK-C)		Load-1 (from TK-50)	
	Emission Source Name >>	**Truck Loadout & Loading of Condensate from TK-C**		**Truck Loadout & Loading of Condensate from TK-50**	
Loading Parameters	Product	Condensate		Condensate	
	Loading Operation	Submerged loading (normal)		Submerged loading (normal)	
	Saturation Factor, S (1)	0.6		0.6	
	Vapor MW (2)	56.74	lb/lb-mol	56.74	lb/lb-mol
	Maximum Vapor Pressure	6.25	psia	8.41	psia
	Average Vapor Pressure	6.25	psia	5.77	psia
	Max Temperature	93.90	°F	93.90	°F
	Average Temperature	61.70	°F	61.70	°F
	Short-Term Loading Loss Factor (4)(5)	4.7889	lb/1000 gal	6.4439	lb/1000 gal
	Annual Loading Loss Factor (4)(6)	5.0846	lb/1000 gal	4.6941	lb/1000 gal
	Hourly Throughput	7,560	gal/hr	7,560	gal/hr
	Annual Throughput	6,300,000	gal/yr	12,600,000	gal/yr
	Controlled to VRU?	No		No	
	Controlled By Unit Number:				
	Water Content Reduction (%) (7)	0%		0%	
	VOC content (vapor wt%)	94.49%		94.49%	
	HAPs content (vapor wt%)	9.16%		9.16%	

Loading Losses	**lb/hr**	**tpy**	**lb/hr**	**tpy**
Calculated Loading Losses	36.20	16.02	48.72	29.57
Loading Losses (minus water)	36.20	16.02	48.72	29.57
Fugitive Losses	36.20	16.02	48.72	29.57
Uncontrolled VOC Emissions	34.21	15.13	46.03	27.94

EMISSIONS TO ATMOSPHERE

Unit #>>	**Load-1 (from TK-C)**		**Load-1 (from TK-50)**		**Load-1 (Total)**	
Pollutant	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC	34.21	15.13	46.03	27.94	80.24	43.08
HAPs	3.13	1.39	4.22	2.56	7.35	3.95

Notes:

1. Saturation factor is from EPA's AP-42, 5th Edition, Section 5.2, Table 5.2-1; for type of loading operation.
2. Molecular weight of vapors was taken from Condensate Liquid Analysis converted to Vapor MW.
3. Vapor pressure was determined using AP-42, Figure 7.1-13b. If RVP is reported below 2.0, the lower limit of 2.0 is used in the calculations.
4. Losses are based on the loading losses equation from EPA's AP-42, Section 2, 5th Edition, June, 2008, Equation 1:

$$L = \frac{12.46 * S * P * M}{T}$$

where:

L = Loading Losses, lb/1000 gallons
S = Saturation Factor, see Table 5.2-1 in AP-42, Section 5.2.
P = True vapor pressure, psia
M = Molecular weight of vapors, lb/lb-mol
T = Temperature of bulk liquid loaded, R (F + 460)

5. Short-term loading loss factor is calculated based on the worst-case (highest) temperature and vapor pressure.
6. Annual loading loss factor is calculated based on the average temperature and vapor pressure.
7. If the volume of liquids loaded includes a percentage of water, the percentage of water is removed from the overall emissions.

Table 6-4
Haul Road Emissions
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

	Unit # >>	Haul-1		Haul-2	
	Emission Source Name >>	Hauling emissions from condensate loadout out of facility		Hauling emissions from condensate loadout into facility	
Parameters	Empty vehicle weight (1)	16	tons	16	tons
	Load weight (2)	21.2	tons	21.2	tons
	Loaded vehicle (3)	37.20	tons	37.20	tons
	Mean vehicle weight (4)	26.60	tons	26.60	tons
	Requested Loadout into Facility	18,900,000	gallons	12,600,000	gallons
	Vehicle Frequency	2500	Trucks/yr	1667	Trucks/yr
	Vehicle Frequency	7	Trucks/day	5	Trucks/day
	Vehicle Frequency	1	trips/hr	1	trips/hr
	Round-trip distance	0.8	miles/trip	0.8	miles/trip
	Operating Hours	2500	hours/yr	1667	hours/yr
	Surface silt content (5)	4.8%		4.8%	
	Annual wet days (6)	60	days/yr	60	days/yr
	Vehicle miles traveled (7)	0.8	miles/hr	0.8	miles/hr
	Emission control factor	77.6%	combined control	77.6%	combined control
	Control for base course treatment and watering	60.0%	Based on NMED guidance (email from Mary Gerhart, 1/17/2014)	60.0%	Based on NMED guidance (email from Mary Gerhart, 1/17/2014)
	Control for speed limit of 25 mph	44.0%	Based on WRAP Fugitive Dust Handbook (9/7/2006, page 8)	44.0%	Based on WRAP Fugitive Dust Handbook (9/7/2006, page 8)
		Hourly lb/VMT (8)	Annual lb/VMT (9)	Hourly lb/VMT (8)	Annual lb/VMT (9)
Emission Factors	TSP	6.89	5.76	6.89	5.76
	PM_{10}	1.76	1.47	1.76	1.47
	$PM_{2.5}$	0.18	0.15	0.18	0.15

UNCONTROLLED EMISSIONS	lb/hr	tpy	lb/hr	tpy
TSP	5.51	5.88	5.51	4.20
PM_{10}	1.40	1.50	1.40	1.07
$PM_{2.5}$	0.14	0.15	0.14	0.11

CONTROLLED EMISSIONS (10)	lb/hr	tpy	lb/hr	tpy
TSP	1.23	1.32	1.23	0.94
PM_{10}	0.31	0.34	0.31	0.24
$PM_{2.5}$	0.03	0.03	0.03	0.02

Notes:

1 Empty vehicle weight includes driver, occupants, and full fuel load.
2 Cargo, transported materials, etc.
3 Loaded vehicle weight = Empy + Load weight
4 Mean vehicle weight = (Loaded weight + empty weight)/2
5 AP-42 Table 13.2.2-1, Taconite mining and processing mean silt content
6 AP-42 Figure 13.2.2-1
7 VMT/hr = Trips/hr * segment length
8 AP-42 13.2.2, Equation 1a, using constants from Table 13.2.2-2 for Industrial Roads
9 AP-42 13.2.2, Equation 2
10 lb/hr = Hourly EF (lb/VMT) * VMT (mi/hr) * (1-combined control)
tpy = Annual EF (lb/VMT) * Trucks/day * mile/truck * 365 day/yr * 1 ton/2000 lbs * (1-combined control)

Table 6-5
SSM Emissions
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

SSM Activity	VOC		H2S	
	lb/hr	tpy	lb/hr	tpy
Condensate Tank Degassing (VRU Downtime)	66.34	4.12	*0.03*	*0.13*
Plant Turnaround	*1769.2*	*12.7*	*14.6*	*0.0073*
Plant Startup (post turnaround)	*684.3*	*2.4*	*45.3*	*0.16*
Gas Piping Degassing (meter proving and line isolation)	*6.1*	*0.11*	*0.4*	*0.0073*
Pig Launcher Degassing	*3.6*	*0.094*	*0.24*	*0.0062*
Vacuum Trucks (Condensate Tank Cleanout)	*6.3*	*0.01*	*0.42*	*0.00063*
Engine Startup	*56.2*	*4.3*	*3.7*	*0.28*
Compressor Engine Blowdown	*433.4*	*11*	*28.7*	*0.73*

	VOC		H2S	
	lb/hr	tpy	lb/hr	tpy
SSM Total	3025.44	34.73	93.39	1.32

Notes:
1. Condensate Tank Degassing is the only activity that is changing.
All other activities remain as previously authorized.
2. H2S emission representations remain unchanged from previous representations.

Table 6-6
Storage Tank Emissions
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

	Unit # >>	TK-48	TK-49	TK-50	TK-51	GT-1
	Source Description >>	Feed Tank	Feed Tank	Oil Tank	Feed Tank	Gunbarrel Separator
Tank Parameters	Tank Contents	Condensate	Condensate	Condensate	Condensate	Condensate
	Tank Type	VRT	VRT	VRT	VRT	VRT
	Tank Capacity (gal)	21,000	21,000	21,000	8,820	16,800
	Annual Throughput (gal/yr)	12,600,000	12,600,000	12,600,000	12,600,000	12,600,000
	Turnovers per year	600	600	600	1,429	750
	Percent Water (%) (1)					
	Flash Emissions Expected?	No	No	No	No	No
	Hours of Flash Emissions (hrs/year)					
	Is Tank Controlled?	Yes	Yes	Yes	Yes	Yes
	Control Method	VRU	VRU	VRU	VRU	VRU
	Capture Efficiency (%)	100%	100%	100%	100%	100%
	VRU Runtime (%)	95%	95%	95%	95%	95%
	VOC content (vapor wt%)	94.49%	94.49%	94.49%	94.49%	94.49%

Working/Breathing Losses (AP-42) (2)	TK-48		TK-49		TK-50		TK-51		GT-1	
Maximum Hourly Losses (lb/hr)	14.84	lb/hr	14.84	lb/hr	11.44	lb/hr	14.23	lb/hr	14.84	lb/hr
Annual Breathing Losses (lb/yr)	11810.64	lb/yr	11810.64	lb/yr	5257.33	lb/yr	3680.35	lb/yr	10151.71	lb/yr
Annual Working Losses (lb/yr)	28839.60	lb/yr	28839.60	lb/yr	21954.48	lb/yr	24224.57	lb/yr	27649.29	lb/yr
Total Annual Losses (tpy)	20.33	tpy	20.33	tpy	13.61	tpy	13.95	tpy	18.90	tpy
Working/Breathing Emissions (3)	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC	14.03	19.21	14.03	19.21	10.81	12.86	13.45	13.18	14.03	17.86
Flash Emissions (ProMax) (4)	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC										
Uncontrolled VOC Emissions	14.03	19.21	14.03	19.21	10.81	12.86	13.45	13.18	14.03	17.86

EMISSIONS TO ATMOSPHERE DURING VRU DOWNTIME (ATTRIBUTED TO SSM)

Unit #>>	TK-48		TK-49		TK-50		TK-51		GT-1	
Pollutant	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC	14.03	0.96	14.03	0.96	10.81	0.64	13.45	0.66	14.03	0.89

EMISSIONS ROUTED TO VAPOR RECOVERY UNIT (VRU)

Unit #>>	TK-48		TK-49		TK-50		TK-51		GT-1	
Pollutant	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**	**lb/hr**	**tpy**
VOC	14.03	18.25	14.03	18.25	10.81	12.21	13.45	12.52	14.03	16.97

Notes:

1. Working and breathing losses from tanks are calculated using equations found in AP-42, Chapter 7. Printouts of detailed emission calculations are included with this submittal. Hourly emission rate calculations based on the AP-42 working loss equation, maximum pump rate, and 95°F or maximum daily average liquid surface temperature, whichever is greater.

Table 6-7
Fixed Roof Storage Tank Emissions (Tank TK-48)
DCP Operating Company LP
Artesia Gas Plant
Eddy County, NM

Parameter	Symbol	Units	Value
FIN			TK-48
Liquid Service			Condensate
Liquid Classification			Petroleum
Tank Type			VRT
Throughput	Q	gal/year	12,600,000
Tank Height	H_S	ft	16.0
Maximum Liquid Height	H_L	ft	15
Diameter	D	ft	15.0
Effective Diameter	De	ft	
Effective Height	He		
Tank Liquid Volume	V_{LX}	ft^3	2,651
Tank Liquid Volume	T_{CG}	gal	19,830
Turnovers	N		635.37
Maximum Fill Rate	Q_{MAX}	gal/hr	1,000
Roof Type			Cone
Roof Height	H_R	ft	
Roof Slope	S_R	ft/ft	0.0625
Tank Color/Shade			Red Primer
Shell Paint Condition			Average
Paint Solar Absorptance	α		0.90
Liquid Molecular Weight	M_L	lb/lbmole	94.30
Vapor Molecular Weight	M_V	lb/lbmole	60.52
Reid Vapor Pressure	RVP	psia	11.20
Slope	Sl	°F/vol %	3.0
Tank Insulation			None
C-C Vapor Pressure Constant A	A	-	11.69
C-C Vapor Pressure Constant B	B	°R	5153.61
Antoine's vp Constant A	A	-	
Antoine's vp Constant B	B	°C	
Antoine's vp Constant C	C	°C	
Roof Outage	H_{RO}	ft	0.16
Vapor Space Outage	H_{VO}	ft	8.16
Turnover Factor	K_N		0.21
Working Loss Product Factor	K_P		1.00
Breather Vent Pressure Setting	P_{BP}	psig	0.03
Breather Vent Vacuum Setting	P_{VP}	psig	-0.03
Breather Vent Pressure Range	ΔP_B	psia	0.06
Vapor Space Volume	V_V	ft^3	1,441

Uncontrolled Tank Emissions Summary

FIN	Max Temp (°F)	Max vp (psia)	Hourly (lb/hr)	Annual Breathing (lb/yr)	Annual Working (lb/yr)	Total Annual (tpy)
TK-48	95.29	11.05	14.84	11,810.64	28,839.60	20.33

Parameter	Symbol	Units	Emission Calculations											
Month			January	February	March	April	May	June	July	August	September	October	November	December
Days per month			31	28	31	30	31	30	31	31	30	31	30	31
Throughput	Q	gal/month	1,070,137	966,575	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137
Daily Total Solar Insolation Factor	I	Btu/ft^2-day	1,013	1,323	1,744	2,125	2,301	2,434	2,302	2,085	1,822	1,452	1,127	939
Atmospheric Pressure	P_A	psia	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88
Daily Max Ambient Temperature	T_{AX}	°F	55.6	61.3	68.4	77.0	86.1	93.7	93.9	91.9	86.0	76.0	64.0	55.3
Daily Min Ambient Temperature	T_{AN}	°F	27.8	32.5	38.5	46.1	56.4	64.5	68.5	67.0	59.5	47.9	35.2	27.7
Daily Ambient Temp. Change	ΔT_A	°R	27.8	28.8	29.9	30.9	29.7	29.2	25.4	24.9	26.5	28.1	28.8	27.6
Daily Ave Ambient Temperature	T_{AA}	°R	501.37	506.57	513.12	521.22	530.92	538.77	540.87	539.12	532.42	521.62	509.27	501.17
Liquid Bulk Temperature	T_b	°R	504.11	510.14	517.83	526.96	537.13	545.34	547.09	544.75	537.34	525.54	512.31	503.71
Daily Ave. Liquid Surface Temp.	T_{LA}	°R	507.57	514.67	523.79	534.23	545.00	553.67	554.96	551.88	543.57	530.51	516.17	506.92
Daily Max Ave Liquid Surface Temp.	T_{LX}	°R	516.99	525.66	536.87	549.20	560.55	569.73	569.76	565.62	556.41	541.96	526.28	515.97
Daily Min Ave Liquid Surface Temp.	T_{LN}	°R	498.15	503.67	510.71	519.26	529.45	537.60	540.15	538.14	530.73	519.05	506.06	497.86
Daily Vapor Temperature Range	ΔT_V	°R	37.69	43.97	52.32	59.88	62.21	64.25	59.22	54.96	51.35	45.81	40.45	36.22
Ave True Vapor Pressure @ T_{LA}	P_{VA}	psia @ T_{LA}	4.645	5.343	6.362	7.709	9.329	10.817	11.054	10.496	9.100	7.205	5.501	4.585
Max True Vapor Pressure @ T_{LX}	P_{VX}	psia @ T_{LX}	5.589	6.588	8.085	10.028	12.128	14.064	14.071	13.169	11.325	8.847	6.664	5.480
Min True Vapor Pressure @ T_{LN}	P_{VN}	psia @ T_{LN}	3.833	4.294	4.945	5.837	7.067	8.191	8.570	8.270	7.235	5.815	4.506	3.811
Daily Vapor Pressure Range	ΔP_V	psia	1.7561	2.2937	3.1404	4.1904	5.0613	5.8725	5.5006	4.8994	4.0897	3.0317	2.1582	1.6696
Vapor Space Expansion Factor	K_E		0.2802	0.3818	0.5725	0.9109	1.5227	2.9340	3.0867	2.1298	1.1605	0.6100	0.3627	0.2655
Vented Vapor Saturation Factor	K_S		0.3325	0.3021	0.2667	0.2308	0.1987	0.1762	0.1731	0.1806	0.2027	0.2430	0.2960	0.3354
Vent Setting Correction Factor	K_B		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vapor Temperature	T_V	°R	510.396	518.358	528.659	540.154	551.422	560.457	561.381	557.697	548.654	534.557	519.312	509.536
Vapor Density	Wv	lb/ft^3	0.0513	0.0581	0.0679	0.0805	0.0954	0.1089	0.1111	0.1061	0.0935	0.0760	0.0597	0.0507
Storage Tank Emission Results														
Standing Losses	L_S	lb/month	213.65	270.65	462.91	731.74	1,289.90	2,432.93	2,650.55	1,824.16	951.38	503.53	277.36	201.87
Working Losses	L_W	lb/month	1,570.29	1,606.43	2,076.31	2,383.13	2,919.24	3,222.81	3,397.60	3,247.41	2,769.49	2,325.65	1,768.76	1,552.50
Subtotal Monthly Losses	L_T	lb/month	1,783.94	1,877.08	2,539.22	3,114.87	4,209.14	5,655.74	6,048.15	5,071.57	3,720.87	2,829.18	2,046.12	1,754.37
Annual Emission Rate		**tpy**	**20.33**											
Max Hourly Vapor Pressure	P_{VXH}	psia	11.054											
Max Vapor Temperature	T_V	°R	561.38											
Max Vapor Density	W_{VX}	lb/ft^3	0.111											
Max. Hourly Emission Rate	L_W	**lb/hr**	**14.84**											

Notes:

1. Annual emission rate calculations based on AP-42, Section 7.
2. Hourly emission rate calculations based on 95°F or maximum daily average liquid surface temperature, whichever is greater per TCEQ guidance.

Table 6-8
Fixed Roof Storage Tank Emissions (Tank TK-49)
DCP Operating Company LP
Artesia Gas Plant
Eddy County, NM

Parameter	Symbol	Units	Value
FIN			TK-49
Liquid Service			Condensate
Liquid Classification			Petroleum
Tank Type			VRT
Throughput	Q	gal/year	12,600,000
Tank Height	H_S	ft	16.0
Maximum Liquid Height	H_L	ft	15.0
Diameter	D	ft	15.0
Effective Diameter	De	ft	
Effective Height	He		
Tank Liquid Volume	V_{LX}	ft^3	2,651
Tank Liquid Volume	T_{CG}	gal	19,830
Turnovers	N		635.37
Maximum Fill Rate	Q_{MAX}	gal/hr	1,000
Roof Type			Cone
Roof Height	H_R	ft	
Roof Slope	S_R	ft/ft	0.0625
Tank Color/Shade			Red Primer
Shell Paint Condition			Average
Paint Solar Absorptance	α		0.90
Liquid Molecular Weight	M_L	lb/lbmole	94.30
Vapor Molecular Weight	M_V	lb/lbmole	60.52
Reid Vapor Pressure	RVP	psia	11.20
Slope	SI	°F/vol %	3.0
Tank Insulation			None
C-C Vapor Pressure Constant A	A	-	11.69
C-C Vapor Pressure Constant B	B	°R	5153.61
Antoine's vp Constant A	A	-	
Antoine's vp Constant B	B	°C	
Antoine's vp Constant C	C	°C	
Roof Outage	H_{RO}	ft	0.16
Vapor Space Outage	H_{VO}	ft	8.16
Turnover Factor	K_N		0.21
Working Loss Product Factor	K_P		1.00
Breather Vent Pressure Setting	P_{BP}	psig	0.03
Breather Vent Vacuum Setting	P_{VP}	psig	-0.03
Breather Vent Pressure Range	ΔP_B	psia	0.06
Vapor Space Volume	V_V	ft^3	1,441

Uncontrolled Tank Emissions Summary

FIN	Max Temp (°F)	Max vp (psia)	Hourly (lb/hr)	Annual Breathing (lb/yr)	Annual Working (lb/yr)	Total Annual (tpy)
TK-49	95.29	11.05	14.84	11,810.64	28,839.60	20.33

Parameter	Symbol	Units	Emission Calculations											
Month			January	February	March	April	May	June	July	August	September	October	November	December
Days per month			31	28	31	30	31	30	31	31	30	31	30	31
Throughput	Q	gal/month	1,070,137	966,575	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137
Daily Total Solar Insolation Factor	I	Btu/ft^2-day	1,013	1,323	1,744	2,125	2,301	2,434	2,302	2,085	1,822	1,452	1,127	939
Atmospheric Pressure	P_A	psia	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88
Daily Max Ambient Temperature	T_{AX}	°F	55.6	61.3	68.4	77.0	86.1	93.7	93.9	91.9	86.0	76.0	64.0	55.3
Daily Min Ambient Temperature	T_{AN}	°F	27.8	32.5	38.5	46.1	56.4	64.5	68.5	67.0	59.5	47.9	35.2	27.7
Daily Ambient Temp. Change	ΔT_A	°R	27.8	28.8	29.9	30.9	29.7	29.2	25.4	24.9	26.5	28.1	28.8	27.6
Daily Ave Ambient Temperature	T_{AA}	°R	501.37	506.57	513.12	521.22	530.92	538.77	540.87	539.12	532.42	521.62	509.27	501.17
Liquid Bulk Temperature	T_b	°R	504.11	510.14	517.83	526.96	537.13	545.34	547.09	544.75	537.34	525.54	512.31	503.71
Daily Ave. Liquid Surface Temp.	T_{LA}	°R	507.57	514.67	523.79	534.23	545.00	553.67	554.96	551.88	543.57	530.51	516.17	506.92
Daily Max Ave Liquid Surface Temp.	T_{LX}	°R	516.99	525.66	536.87	549.20	560.55	569.73	569.76	565.62	556.41	541.96	526.28	515.97
Daily Min Ave Liquid Surface Temp.	T_{LN}	°R	498.15	503.67	510.71	519.26	529.45	537.60	540.15	538.14	530.73	519.05	506.06	497.86
Daily Vapor Temperature Range	ΔT_V	°R	37.69	43.97	52.32	59.88	62.21	64.25	59.22	54.96	51.35	45.81	40.45	36.22
Ave True Vapor Pressure @ T_{LA}	P_{VA}	psia @ T_{LA}	4.645	5.343	6.362	7.709	9.329	10.817	11.054	10.496	9.100	7.205	5.501	4.585
Max True Vapor Pressure @ T_{LX}	P_{VX}	psia @ T_{LX}	5.589	6.588	8.085	10.028	12.128	14.064	14.071	13.169	11.325	8.847	6.664	5.480
Min True Vapor Pressure @ T_{LN}	P_{VN}	psia @ T_{LN}	3.833	4.294	4.945	5.837	7.067	8.191	8.570	8.270	7.235	5.815	4.506	3.811
Daily Vapor Pressure Range	ΔP_V	psia	1.7561	2.2937	3.1404	4.1904	5.0613	5.8725	5.5006	4.8994	4.0897	3.0317	2.1582	1.6696
Vapor Space Expansion Factor	K_E		0.2802	0.3818	0.5725	0.9109	1.5227	2.9340	3.0867	2.1298	1.1605	0.6100	0.3627	0.2655
Vented Vapor Saturation Factor	K_S		0.3325	0.3021	0.2667	0.2308	0.1987	0.1762	0.1731	0.1806	0.2027	0.2430	0.2960	0.3354
Vent Setting Correction Factor	K_B		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vapor Temperature	T_V	°R	510.396	518.358	528.659	540.154	551.422	560.457	561.381	557.697	548.654	534.557	519.312	509.536
Vapor Density	Wv	lb/ft^3	0.0513	0.0581	0.0679	0.0805	0.0954	0.1089	0.1111	0.1061	0.0935	0.0760	0.0597	0.0507
Storage Tank Emission Results														
Standing Losses	L_S	lb/month	213.65	270.65	462.91	731.74	1,289.90	2,432.93	2,650.55	1,824.16	951.38	503.53	277.36	201.87
Working Losses	L_W	lb/month	1,570.29	1,606.43	2,076.31	2,383.13	2,919.24	3,222.81	3,397.60	3,247.41	2,769.49	2,325.65	1,768.76	1,552.50
Subtotal Monthly Losses	L_T	lb/month	1,783.94	1,877.08	2,539.22	3,114.87	4,209.14	5,655.74	6,048.15	5,071.57	3,720.87	2,829.18	2,046.12	1,754.37
Annual Emission Rate		**tpy**	**20.33**											
Max Hourly Vapor Pressure	P_{VXH}	psia	11.054											
Max Vapor Temperature	T_V	°R	561.38											
Max Vapor Density	W_{VX}	lb/ft^3	0.111											
Max. Hourly Emission Rate	L_W	**lb/hr**	**14.84**											

Notes:

1. Annual emission rate calculations based on AP-42, Section 7.
2. Hourly emission rate calculations based on 95°F or maximum daily average liquid surface temperature, whichever is greater.

Table 6-9
Fixed Roof Storage Tank Emissions (Tank TK-50)
DCP Operating Company LP
Artesia Gas Plant
Eddy County, NM

Parameter	Symbol	Units	Value
FIN			TK-50
Liquid Service			Condensate
Liquid Classification			Petroleum
Tank Type			VRT
Throughput	Q	gal/year	12,600,000
Tank Height	H_S	ft	16.0
Maximum Liquid Height	H_L	ft	15.0
Diameter	D	ft	15.0
Effective Diameter	De	ft	
Effective Height	He		
Tank Liquid Volume	V_{LX}	ft^3	2,651
Tank Liquid Volume	T_{CG}	gal	19,830
Turnovers	N		635.37
Maximum Fill Rate	Q_{MAX}	gal/hr	1,000
Roof Type			Cone
Roof Height	H_R	ft	
Roof Slope	S_R	ft/ft	0.0625
Tank Color/Shade			Red Primer
Shell Paint Condition			Average
Paint Solar Absorptance	α		0.90
Liquid Molecular Weight	M_L	lb/lbmole	95.49
Vapor Molecular Weight	M_V	lb/lbmole	61.28
Reid Vapor Pressure	RVP	psia	8.58
Slope	Sl	°F/vol %	3.0
Tank Insulation			None
C-C Vapor Pressure Constant A	A	-	11.77
C-C Vapor Pressure Constant B	B	°R	5350.34
Antoine's vp Constant A	A	-	
Antoine's vp Constant B	B	°C	
Antoine's vp Constant C	C	°C	
Roof Outage	H_{RO}	ft	0.16
Vapor Space Outage	H_{VO}	ft	8.16
Turnover Factor	K_N		0.21
Working Loss Product Factor	K_P		1.00
Breather Vent Pressure Setting	P_{BP}	psig	0.03
Breather Vent Vacuum Setting	P_{VP}	psig	-0.03
Breather Vent Pressure Range	ΔP_B	psia	0.06
Vapor Space Volume	V_V	ft^3	1,441

Uncontrolled Tank Emissions Summary

FIN	Max Temp (°F)	Max vp (psia)	Hourly (lb/hr)	Annual Breathing (lb/yr)	Annual Working (lb/yr)	Total Annual (tpy)
TK-50	95.29	8.41	11.44	5,257.33	21,954.48	13.61

Parameter	Symbol	Units	Emission Calculations											
Month			January	February	March	April	May	June	July	August	September	October	November	December
Days per month			31	28	31	30	31	30	31	31	30	31	30	31
Throughput	Q	gal/month	1,070,137	966,575	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137
Daily Total Solar Insolation Factor	I	Btu/ft^2-day	1,013	1,323	1,744	2,125	2,301	2,434	2,302	2,085	1,822	1,452	1,127	939
Atmospheric Pressure	P_A	psia	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88
Daily Max Ambient Temperature	T_{AX}	°F	55.6	61.3	68.4	77.0	86.1	93.7	93.9	91.9	86.0	76.0	64.0	55.3
Daily Min Ambient Temperature	T_{AN}	°F	27.8	32.5	38.5	46.1	56.4	64.5	68.5	67.0	59.5	47.9	35.2	27.7
Daily Ambient Temp. Change	ΔT_A	°R	27.8	28.8	29.9	30.9	29.7	29.2	25.4	24.9	26.5	28.1	28.8	27.6
Daily Ave Ambient Temperature	T_{AA}	°R	501.37	506.57	513.12	521.22	530.92	538.77	540.87	539.12	532.42	521.62	509.27	501.17
Liquid Bulk Temperature	T_b	°R	504.11	510.14	517.83	526.96	537.13	545.34	547.09	544.75	537.34	525.54	512.31	503.71
Daily Ave. Liquid Surface Temp.	T_{LA}	°R	507.57	514.67	523.79	534.23	545.00	553.67	554.96	551.88	543.57	530.51	516.17	506.92
Daily Max Ave Liquid Surface Temp.	T_{LX}	°R	516.99	525.66	536.87	549.20	560.55	569.73	569.76	565.62	556.41	541.96	526.28	515.97
Daily Min Ave Liquid Surface Temp.	T_{LN}	°R	498.15	503.67	510.71	519.26	529.45	537.60	540.15	538.14	530.73	519.05	506.06	497.86
Daily Vapor Temperature Range	ΔT_V	°R	37.69	43.97	52.32	59.88	62.21	64.25	59.22	54.96	51.35	45.81	40.45	36.22
Ave True Vapor Pressure @ T_{LA}	P_{VA}	psia @ T_{LA}	3.420	3.956	4.741	5.788	7.055	8.227	8.414	7.973	6.875	5.395	4.077	3.374
Max True Vapor Pressure @ T_{LX}	P_{VX}	psia @ T_{LX}	4.145	4.916	6.081	7.604	9.264	10.803	10.809	10.091	8.628	6.677	4.975	4.061
Min True Vapor Pressure @ T_{LN}	P_{VN}	psia @ T_{LN}	2.802	3.153	3.650	4.336	5.288	6.164	6.460	6.225	5.419	4.319	3.314	2.785
Daily Vapor Pressure Range	ΔP_V	psia	1.3429	1.7636	2.4311	3.2682	3.9762	4.6396	4.3489	3.8657	3.2092	2.3577	1.6611	1.2761
Vapor Space Expansion Factor	K_E		0.2099	0.2763	0.3912	0.5644	0.7865	1.1002	1.0670	0.8752	0.6189	0.3933	0.2602	0.1994
Vented Vapor Saturation Factor	K_S		0.4035	0.3690	0.3279	0.2856	0.2469	0.2195	0.2156	0.2249	0.2518	0.3001	0.3620	0.4067
Vent Setting Correction Factor	K_B		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vapor Temperature	T_V	°R	510.396	518.358	528.659	540.154	551.422	560.457	561.381	557.697	548.654	534.557	519.312	509.536
Vapor Density	Wv	lb/ft^3	0.0383	0.0436	0.0512	0.0612	0.0731	0.0838	0.0856	0.0816	0.0716	0.0576	0.0448	0.0378
Storage Tank Emission Results														
Standing Losses	L_S	lb/month	144.80	179.34	293.58	426.46	634.01	875.27	880.02	718.04	482.15	303.99	182.64	137.04
Working Losses	L_W	lb/month	1,170.89	1,204.26	1,566.91	1,811.69	2,235.47	2,481.91	2,618.68	2,497.98	2,118.78	1,763.43	1,327.42	1,157.05
Subtotal Monthly Losses	L_T	lb/month	1,315.70	1,383.60	1,860.48	2,238.15	2,869.48	3,357.18	3,498.70	3,216.02	2,600.93	2,067.43	1,510.06	1,294.09
Annual Emission Rate		**tpy**	**13.61**											
Max Hourly Vapor Pressure	P_{VXH}	psia	8.414											
Max Vapor Temperature	T_V	°R	561.38											
Max Vapor Density	W_{VX}	lb/ft^3	0.086											
Max. Hourly Emission Rate	L_W	**lb/hr**	**11.44**											

Notes:

1. Annual emission rate calculations based on AP-42, Section 7.
2. Hourly emission rate calculations based on 95°F or maximum daily average liquid surface temperature, whichever is greater.

Table 6-10
Fixed Roof Storage Tank Emissions (Tank TK-51)
DCP Operating Company LP
Artesia Gas Plant
Eddy County, NM

Parameter	Symbol	Units	Value
FIN			TK-51
Liquid Service			Condensate
Liquid Classification			Petroleum
Tank Type			VRT
Throughput	Q	gal/year	12,600,000
Tank Height	H_S	ft	15.0
Maximum Liquid Height	H_L	ft	14.0
Diameter	D	ft	10.0
Effective Diameter	De	ft	
Effective Height	He		
Tank Liquid Volume	V_{LX}	ft^3	1,100
Tank Liquid Volume	T_{CG}	gal	8,226
Turnovers	N		1531.71
Maximum Fill Rate	Q_{MAX}	gal/hr	1,000
Roof Type			Cone
Roof Height	H_R	ft	
Roof Slope	S_R	ft/ft	0.0625
Tank Color/Shade			Gray Medium
Shell Paint Condition			Average
Paint Solar Absorptance	α		0.71
Liquid Molecular Weight	M_L	lb/lbmole	94.30
Vapor Molecular Weight	M_V	lb/lbmole	60.52
Reid Vapor Pressure	RVP	psia	11.20
Slope	Sl	°F/vol %	3.0
Tank Insulation			None
C-C Vapor Pressure Constant A	A	-	11.69
C-C Vapor Pressure Constant B	B	°R	5153.61
Antoine's vp Constant A	A	-	
Antoine's vp Constant B	B	°C	
Antoine's vp Constant C	C	°C	
Roof Outage	H_{RO}	ft	0.10
Vapor Space Outage	H_{VO}	ft	7.60
Turnover Factor	K_N		0.19
Working Loss Product Factor	K_P		1.00
Breather Vent Pressure Setting	P_{BP}	psig	0.03
Breather Vent Vacuum Setting	P_{VP}	psig	-0.03
Breather Vent Pressure Range	ΔP_B	psia	0.06
Vapor Space Volume	V_V	ft^3	597

Uncontrolled Tank Emissions Summary

FIN	Max Temp (°F)	Max vp (psia)	Hourly (lb/hr)	Annual Breathing (lb/yr)	Annual Working (lb/yr)	Total Annual (tpy)
TK-51	95.00	11.00	14.23	3,680.35	24,224.57	13.95

Parameter	Symbol	Units	Emission Calculations											
Month			January	February	March	April	May	June	July	August	September	October	November	December
Days per month			31	28	31	30	31	30	31	31	30	31	30	31
Throughput	Q	gal/month	1,070,137	966,575	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137
Daily Total Solar Insolation Factor	I	Btu/ft^2-day	1,013	1,323	1,744	2,125	2,301	2,434	2,302	2,085	1,822	1,452	1,127	939
Atmospheric Pressure	P_A	psia	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88
Daily Max Ambient Temperature	T_{AX}	°F	55.6	61.3	68.4	77.0	86.1	93.7	93.9	91.9	86.0	76.0	64.0	55.3
Daily Min Ambient Temperature	T_{AN}	°F	27.8	32.5	38.5	46.1	56.4	64.5	68.5	67.0	59.5	47.9	35.2	27.7
Daily Ambient Temp. Change	ΔT_A	°R	27.8	28.8	29.9	30.9	29.7	29.2	25.4	24.9	26.5	28.1	28.8	27.6
Daily Ave Ambient Temperature	T_{AA}	°R	501.37	506.57	513.12	521.22	530.92	538.77	540.87	539.12	532.42	521.62	509.27	501.17
Liquid Bulk Temperature	T_b	°R	503.53	509.39	516.83	525.75	535.82	543.95	545.77	543.56	536.30	524.71	511.67	503.17
Daily Ave. Liquid Surface Temp.	T_{LA}	°R	506.26	512.96	521.54	531.48	542.03	550.52	551.98	549.19	541.22	528.63	514.71	505.70
Daily Max Ave Liquid Surface Temp.	T_{LX}	°R	514.72	522.69	532.96	544.43	555.40	564.27	564.60	560.95	552.32	538.70	523.75	513.87
Daily Min Ave Liquid Surface Temp.	T_{LN}	°R	497.80	503.22	510.12	518.53	528.66	536.77	539.37	537.43	530.11	518.56	505.67	497.54
Daily Vapor Temperature Range	ΔT_V	°R	33.84	38.95	45.69	51.81	53.46	55.00	50.47	47.04	44.42	40.29	36.16	32.65
Ave True Vapor Pressure @ T_{LA}	P_{VA}	psia @ T_{LA}	4.525	5.168	6.097	7.334	8.858	10.257	10.515	10.026	8.732	6.961	5.348	4.474
Max True Vapor Pressure @ T_{LX}	P_{VX}	psia @ T_{LX}	5.349	6.231	7.535	9.237	11.135	12.886	12.954	12.206	10.575	8.353	6.357	5.261
Min True Vapor Pressure @ T_{LN}	P_{VN}	psia @ T_{LN}	3.806	4.255	4.887	5.757	6.965	8.070	8.452	8.165	7.153	5.760	4.471	3.785
Daily Vapor Pressure Range	ΔP_V	psia	1.5431	1.9766	2.6486	3.4805	4.1702	4.8154	4.5025	4.0409	3.4220	2.5926	1.8855	1.4752
Vapor Space Expansion Factor	K_E		0.2444	0.3244	0.4692	0.7143	1.1205	1.9130	1.9697	1.4807	0.8927	0.5041	0.3126	0.2329
Vented Vapor Saturation Factor	K_S		0.3542	0.3244	0.2893	0.2528	0.2188	0.1948	0.1909	0.1984	0.2213	0.2628	0.3169	0.3567
Vent Setting Correction Factor	K_B		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vapor Temperature	T_V	°R	508.490	515.869	525.379	536.157	547.094	555.879	557.051	553.775	545.227	531.826	517.192	507.770
Vapor Density	Wv	lb/ft^3	0.0502	0.0565	0.0654	0.0771	0.0913	0.1041	0.1065	0.1021	0.0903	0.0738	0.0583	0.0497
Storage Tank Emission Results														
Standing Losses	L_S	lb/month	80.41	99.43	164.47	249.58	414.53	694.77	741.19	555.31	319.66	181.04	103.52	76.45
Working Losses	L_W	lb/month	1,337.00	1,359.52	1,743.66	1,989.11	2,432.73	2,683.07	2,836.16	2,720.42	2,328.83	1,966.63	1,503.50	1,323.96
Subtotal Monthly Losses	L_T	lb/month	1,417.40	1,458.95	1,908.12	2,238.69	2,847.26	3,377.84	3,577.35	3,275.73	2,648.49	2,147.67	1,607.02	1,400.41
Annual Emission Rate		**tpy**	**13.95**											
Max Hourly Vapor Pressure	P_{VXH}	psia	11.001											
Max Vapor Temperature	T_V	°R	557.05											
Max Vapor Density	W_{VX}	lb/ft^3	0.106											
Max. Hourly Emission Rate	L_W	**lb/hr**	**14.23**											

Notes:

1. Annual emission rate calculations based on AP-42, Section 7.
2. Hourly emission rate calculations based on 95°F or maximum daily average liquid surface temperature, whichever is greater.

Table 6-11
Fixed Roof Storage Tank Emissions (Tank GT-1)
DCP Operating Company LP
Artesia Gas Plant
Eddy County, NM

Parameter	Symbol	Units	Value
FIN			GT-1
Liquid Service			Condensate
Liquid Classification			Petroleum
Tank Type			VRT
Throughput	Q	gal/year	12,600,000
Tank Height	H_S	ft	15.0
Maximum Liquid Height	H_L	ft	14.0
Diameter	D	ft	14.0
Effective Diameter	De	ft	
Effective Height	He		
Tank Liquid Volume	V_{LX}	ft^3	2,155
Tank Liquid Volume	T_{CG}	gal	16,123
Turnovers	N		781.48
Maximum Fill Rate	Q_{MAX}	gal/hr	1,000
Roof Type			Cone
Roof Height	H_R	ft	
Roof Slope	S_R	ft/ft	0.0625
Tank Color/Shade			Red Primer
Shell Paint Condition			Average
Paint Solar Absorptance	α		0.90
Liquid Molecular Weight	M_L	lb/lbmole	94.30
Vapor Molecular Weight	M_V	lb/lbmole	60.52
Reid Vapor Pressure	RVP	psia	11.20
Slope	Sl	°F/vol %	3.0
Tank Insulation			None
C-C Vapor Pressure Constant A	A	-	11.69
C-C Vapor Pressure Constant B	B	°R	5153.61
Antoine's vp Constant A	A	-	
Antoine's vp Constant B	B	°C	
Antoine's vp Constant C	C	°C	
Roof Outage	H_{RO}	ft	0.15
Vapor Space Outage	H_{VO}	ft	7.65
Turnover Factor	K_N		0.21
Working Loss Product Factor	K_P		1.00
Breather Vent Pressure Setting	P_{BP}	psig	0.03
Breather Vent Vacuum Setting	P_{VP}	psig	-0.03
Breather Vent Pressure Range	ΔP_B	psia	0.06
Vapor Space Volume	V_V	ft^3	1,177

Uncontrolled Tank Emissions Summary

FIN	Max Temp (°F)	Max vp (psia)	Hourly (lb/hr)	Annual Breathing (lb/yr)	Annual Working (lb/yr)	Total Annual (tpy)
GT-1	95.29	11.05	14.84	10,151.71	27,649.29	18.90

Parameter	Symbol	Units	Emission Calculations											
Month			January	February	March	April	May	June	July	August	September	October	November	December
Days per month			31	28	31	30	31	30	31	31	30	31	30	31
Throughput	Q	gal/month	1,070,137	966,575	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137	1,070,137	1,035,616	1,070,137	1,035,616	1,070,137
Daily Total Solar Insolation Factor	I	Btu/ft^2-day	1,013	1,323	1,744	2,125	2,301	2,434	2,302	2,085	1,822	1,452	1,127	939
Atmospheric Pressure	P_A	psia	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88	12.88
Daily Max Ambient Temperature	T_{AX}	°F	55.6	61.3	68.4	77.0	86.1	93.7	93.9	91.9	86.0	76.0	64.0	55.3
Daily Min Ambient Temperature	T_{AN}	°F	27.8	32.5	38.5	46.1	56.4	64.5	68.5	67.0	59.5	47.9	35.2	27.7
Daily Ambient Temp. Change	ΔT_A	°R	27.8	28.8	29.9	30.9	29.7	29.2	25.4	24.9	26.5	28.1	28.8	27.6
Daily Ave Ambient Temperature	T_{AA}	°R	501.37	506.57	513.12	521.22	530.92	538.77	540.87	539.12	532.42	521.62	509.27	501.17
Liquid Bulk Temperature	T_b	°R	504.11	510.14	517.83	526.96	537.13	545.34	547.09	544.75	537.34	525.54	512.31	503.71
Daily Ave. Liquid Surface Temp.	T_{LA}	°R	507.57	514.67	523.79	534.23	545.00	553.67	554.96	551.88	543.57	530.51	516.17	506.92
Daily Max Ave Liquid Surface Temp.	T_{LX}	°R	516.99	525.66	536.87	549.20	560.55	569.73	569.76	565.62	556.41	541.96	526.28	515.97
Daily Min Ave Liquid Surface Temp.	T_{LN}	°R	498.15	503.67	510.71	519.26	529.45	537.60	540.15	538.14	530.73	519.05	506.06	497.86
Daily Vapor Temperature Range	ΔT_V	°R	37.69	43.97	52.32	59.88	62.21	64.25	59.22	54.96	51.35	45.81	40.45	36.22
Ave True Vapor Pressure @ T_{LA}	P_{VA}	psia @ T_{LA}	4.645	5.343	6.362	7.709	9.329	10.817	11.054	10.496	9.100	7.205	5.501	4.585
Max True Vapor Pressure @ T_{LX}	P_{VX}	psia @ T_{LX}	5.589	6.588	8.085	10.028	12.128	14.064	14.071	13.169	11.325	8.847	6.664	5.480
Min True Vapor Pressure @ T_{LN}	P_{VN}	psia @ T_{LN}	3.833	4.294	4.945	5.837	7.067	8.191	8.570	8.270	7.235	5.815	4.506	3.811
Daily Vapor Pressure Range	ΔP_V	psia	1.7561	2.2937	3.1404	4.1904	5.0613	5.8725	5.5006	4.8994	4.0897	3.0317	2.1582	1.6696
Vapor Space Expansion Factor	K_E		0.2802	0.3818	0.5725	0.9109	1.5227	2.9340	3.0867	2.1298	1.1605	0.6100	0.3627	0.2655
Vented Vapor Saturation Factor	K_S		0.3469	0.3159	0.2795	0.2425	0.2092	0.1858	0.1825	0.1904	0.2133	0.2551	0.3097	0.3499
Vent Setting Correction Factor	K_B		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vapor Temperature	T_V	°R	510.396	518.358	528.659	540.154	551.422	560.457	561.381	557.697	548.654	534.557	519.312	509.536
Vapor Density	Wv	lb/ft^3	0.0513	0.0581	0.0679	0.0805	0.0954	0.1089	0.1111	0.1061	0.0935	0.0760	0.0597	0.0507
Storage Tank Emission Results														
Standing Losses	L_S	lb/month	182.07	231.11	396.19	627.75	1,108.94	2,094.72	2,282.56	1,570.12	817.70	431.63	236.93	172.00
Working Losses	L_W	lb/month	1,505.48	1,540.13	1,990.61	2,284.77	2,798.75	3,089.79	3,257.37	3,113.38	2,655.18	2,229.66	1,695.75	1,488.42
Subtotal Monthly Losses	L_T	lb/month	1,687.55	1,771.23	2,386.80	2,912.53	3,907.69	5,184.51	5,539.92	4,683.49	3,472.88	2,661.29	1,932.68	1,660.43
Annual Emission Rate		**tpy**	**18.90**											
Max Hourly Vapor Pressure	P_{VXH}	psia	11.054											
Max Vapor Temperature	T_V	°R	561.38											
Max Vapor Density	W_{VX}	lb/ft^3	0.111											
Max. Hourly Emission Rate	L_W	**lb/hr**	**14.84**											

Notes:

1. Annual emission rate calculations based on AP-42, Section 7.
2. Hourly emission rate calculations based on 95°F or maximum daily average liquid surface temperature, whichever is greater.

DCP MIDSTREAM
Artesia Gas Plant
SSM & M ACTIVITY EMISSIONS SUMMARY

Unit	NOx		CO		VOCs		SOx		H_2S		CO2e	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Plant turnaround	-	-	-	-	1,769.2	12.7	-	-	14.6	0.0073	-	9.2
Plant Startup (post turnaround)	-	-	-	-	684.3	2.40	-	-	45.3	0.16	-	198.3
Condensate Tank Degassing (VRU Downtime)	-	-	-	-	0.44	1.9	-	-	0.029	0.13	-	-
Gas Piping Degassing (meter proving and line isolation)	-	-	-	-	6.1	0.11	-	-	0.40	7.3E-03	-	9.1
PIG Launcher Degassing	-	-	-	-	3.6	0.094	-	-	0.24	6.2E-03	-	7.8
Vacuum Trucks (Condensate Tank Cleanout)	-	-	-	-	6.3	0.010	-	-	0.42	6.3E-04	-	0.79
Engine Startup	-	-	-	-	56.2	4.3	-	-	3.7	0.28	-	352.9
Compressor Engine Blowdown	-	-	-	-	433.4	11.0	-	-	28.7	0.73	-	117.6
Emergency Wet Gas Flare	642.9	7.5	3,498.3	40.7	2,685.1	27.2	4,918.4	49.9	52.3	0.53	-	11804.4
Acid Gas Flare	10.4	2.43	56.6	13.2	0.01	0.001	2,001.0	328.2	21.3	3.48	-	381.9
SSM Emission Total	**653.3**	**9.9**	**3,555.0**	**53.9**	**5,644.8**	**59.6**	**6,919.4**	**378.1**	**166.8**	**5.3**	**-**	**12,882.0**
Non-Flaring SSM Total	-	-	-	-	2,959.61	32.4	-	-	93.3	1.31	-	695.7

Unit	NOx		CO		VOCs		SOx		H_2S	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Malfunction - Emergency Wet Gas Flare	642.9	2.9	3,498.3	4.9	2,685.1	0.8	4,918.4	1.0	52.3	0.0
Malfunction - Acid Gas Flare		1.3		5.1		0.0		9.0		0.1
Malfunction Total	642.9	4.2	3,498.3	10.0	2,685.1	0.8	4,918.4	10.0	52.3	0.1

Unit	NOx		CO		VOCs		SOx		H_2S	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
SSM & Malfunction Emisson Totals	**653.3**	**14.1**	**3,555.0**	**63.9**	**5,644.8**	**60.4**	**6,919.4**	**388.1**	**166.8**	**5.4**

DCP MIDSTREAM
Artesia Gas Plant
SAMPLE EMISSIONS CALCULATIONS -TURNAROUND EMISSIONS

Calculation Basis:

Multiple steps comprise a plant turnaround. Step 1 - For the natural gas system, emissions to the atmosphere after opening pipelines are calculated using the Ideal Gas Law and are based on the entire pipe volume venting to the atmosphere at pipeline pressure. Step 2 - For systems in liquid service clingage emissions degassing emissions occur after the system is de-inventoried. Degassing emissions are calculated using the Ideal Gas Law. Step 3 - After systems are degassed and opened, residual materials (clingage) may be emitted to the atmosphere. Clingage emissions are estimated using system volumes and an assumed clingage amount.

Total lb/hr emissions from each liquid system turnaround step (degassing, clingage) assume that any liquid system may undergo turnaround at any time. Maximum lb/hr emissions from all turnaround steps is calculated as the maximum lb/hr emission rate from any step.

Constants and Variables:

	System/Service Name								
	N.G. (gas)	Glycol	Lube oil	Amine	NGL Product	Propane (liq)	Methanol	Condensate	
fluid type (@ atm):	Gas	Liquid	Liquid	Liquid	Gas	Gas	Liquid	Liquid	
Volume:	1,388,000	1,563	86,400	5,534	42,001	2,456	1,880	2,203	scf (for N.G.), gal (for liquids)
Process Temperature :	95.00								° F
Ideal Gas Constant :	10.73								$(ft^3)(psi)/(lbmol)(°R)$
Density:	0.0544	9.28	7.50	8.66	0.23	0.20	6.66	6.00	lb/scf (for gas), lb/gal (for liquid) - from DCP turnaround quantity calculations
Vapor Pressure:	N/A	0.001	0.010	0.002	24.7	24.7	3.868	-9.44	psig
Molecular Weight:	20.63	62.07	170	119.16	51	44	32	50	lb/lbmol from Gas Composition Sheet
VOC Content :	18.73	100	100	100	100	100	100	0.19	Wt. % from Gas Composition Sheet
Benzene Content:	0.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Wt. % from Gas Composition Sheet
H2S Content:	1.2389	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Wt. % from Gas Composition Sheet
CO2 Content:	1.7417	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Wt. % from Gas Composition Sheet
CH4 Content:	61.9703	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Wt. % from Gas Composition Sheet

VOC Emissions, N.G. System Blowdown

Volume of system = 1,388,000 ft^3

Amount HC vented to atmosphere (lb) = (Volume x density)

$$= 1{,}388{,}000\ ft^3 \times \frac{0.054\ lb}{ft^3}$$

=	9,444	lbs N.G. (lb/hr)	8 hours for plant blowdown
=	1,769	lbs VOC (lb/hr)	
Maximum number of turnarounds =	1.00	activity/yr	from site data sheet
=	7.08	tpy VOC	
=	1.09	lb/hr Benzene	
=	5.45E-04	tpy Benzene	
=	14.62	lb/hr H2S	
=	7.31E-03	tpy H2S	
=	20.6	lb/hr CO2	
=	1.03E-02	tpy CO2	
=	731.5	lb/hr CH4	
=	3.66E-01	tpy CH4	
=	9.2	tpy CO2e	

DCP MIDSTREAM
Artesia Gas Plant
SAMPLE EMISSIONS CALCULATIONS -TURNAROUND EMISSIONS

Liquid system opening loss (vapor space, atm liquid systems only)

Amount emitted (lbs) = P*V*MW / (R * T)

Glycol system:

Amount VOC vented to atmosphere (lb) = (Volume x molecular weight x vapor pressure) / (Gas Constant x Temperature [°R]) * MW

=	1,563	gal	1	0.13368	ft3	62.07	lb	0.001	psig	100	% VOC
	10.73	ft^3 * psi / °R * lb-mol	555 ° R	gal		lb-mol					

= 2.87E-03 lbs VOC/hr assume degassing occurs in one hour
= 1.43E-06 tpy VOC

Lube Oil system:

Amount VOC vented to atmosphere (lb) = (Volume x molecular weight x vapor pressure) / (Gas Constant x Temperature [°R]) * MW

=	86,400	gal	1	0.13368	ft3	170.00	lb	0.010	psig	100	% VOC
	10.73	ft^3 * psi / °R * lb-mol	555 ° R	gal		lb-mol					

= 3.30 lbs VOC/hr assume degassing occurs in one hour
= 1.65E-03 tpy VOC

Amine system:

Amount VOC vented to atmosphere (lb) = (Volume x molecular weight x vapor pressure) / (Gas Constant x Temperature [°R]) * MW

=	5,534	gal	1	0.13368	ft3	119.16	lb	0.0025	psig	100	% VOC
	10.73	ft^3 * psi / °R * lb-mol	555 ° R	gal		lb-mol					

= 0.037 lbs VOC/hr assume degassing occurs in one hour
= 1.83E-05 tpy VOC

Methanol system:

Amount VOC vented to atmosphere (lb) = (Volume x molecular weight x vapor pressure) / (Gas Constant x Temperature [°R]) * MW

=	1,880	gal	1	0.13368	ft3	32.00	lb	3.87	psig	100	% VOC
	10.73	ft^3 * psi / °R * lb-mol	555 ° R	gal		lb-mol					

= 5.22 lbs VOC/hr assume degassing occurs in one hour
= 2.61E-03 tpy VOC

Condensate system:

Amount VOC vented to atmosphere (lb) = (Volume x molecular weight x vapor pressure) / (Gas Constant x Temperature [°R]) * MW

=	2,203	gal	1	0.13368	ft3	50.00	lb	-9.44	psig	0.2	% VOC
	10.73	ft^3 * psi / °R * lb-mol	555 ° R	gal		lb-mol					

= -0.04 lbs VOC/hr assume degassing occurs in one hour
= -2.19E-05 tpy VOC

NGL Product system:

Amount VOC vented to atmosphere (lb) = (Volume x molecular weight x vapor pressure) / (Gas Constant x Temperature [°R]) * MW

=	42,001	scf	1	51.00	lb	24.70	psig	100.0	% VOC
	10.73	ft^3 * psi / °R * lb-mol	555 ° R	lb-mol					

= 1110.41 lbs VOC/hr assume degassing occurs in 8 hours
= 4.44 tpy VOC

Propane (liq) system:

Amount VOC vented to atmosphere (lb) = (Volume x molecular weight x vapor pressure) / (Gas Constant x Temperature [°R]) * MW

=	2,456	scf	1	44.00	lb	24.70	psig	100.0	% VOC
	10.73	ft^3 * psi / °R * lb-mol	555 ° R	lb-mol					

= 56.02 lbs VOC/hr assume degassing occurs in 8 hours
= 0.22 tpy VOC

DCP MIDSTREAM
Artesia Gas Plant
SAMPLE EMISSIONS CALCULATIONS -TURNAROUND EMISSIONS

Total degassing (all systems): 1174.9 lbs VOC/hr
4.67 tpy VOC

System clingage loss (vapor space)

Assume: 0.25 % of liquid volume remains as clingage and is emitted to atm.
Assume: 0.05 % of NGL and Propane liquid system volume remains as clingage and is emitted to atm.
Duration of clingage losses: 24 hrs

System:	Glycol	Lube oil	Amine	Methanol	Condensate	
fluid type (@ atm):	Liquid	Liquid	Liquid	Liquid	Liquid	
Clingage volume:	3.91	216	13.84	4.70	5.51	gal
Density:	9.28	7.50	8.66	6.66	6.00	lb/gal - from DCP turnaround quantity calculations
% VOC:	100	100	100	100	0.19	wt %
	36.24	1,619.35	119.86	31.3	0.06	lb/activity
VOC Emissions:	2	67	5	1.31	0.0026	lb/hr assumed that clingage losses occur over a 24 hour period
	0.02	0.81	0.06	0.02	3.1E-05	tpy

Total clingage (all systems): 75.3 lbs VOC/hr
0.90 tpy VOC

Example calculation: Glycol system

Amount VOC vented to atmosphere (lb) = (System volume x % clingage x density x % VOC)

=	1,563 gal	0.25 % clingage	9.28 lb	100 % VOC
55			gal	

Total Turnaround Activity Emissions:

lb/hr VOC: 1,769 Maximum hourly emissions from blowdown, liquid system venting or clingage steps.
tpy VOC: 12.65 Sum of emissions from all turnaround steps.
lb/hr H2S: 14.62
tpy H2S: 7.31E-03
lb/hr benzene: 1.09
tpy benzene: 5.45E-04
tpy CO2e 9.2

DCP MIDSTREAM
Artesia Gas Plant
SAMPLE EMISSIONS CALCULATIONS -STARTUP EMISSIONS, POST TURNAROUND

Calculation Basis:

For the natural gas system, emissions to the atmosphere occur from a three step pressure test and purge prior to plant startup. These emissions are calculated using the Ideal Gas Law and are based on the entire pipe volume venting to the atmosphere at each purge step pressure.

Constants and Variables:

	N.G. (gas) System		
Plant startup duration:	7	hrs	From site data sheet
Annual startup frequency:	1	activity/yr (equivalent to turnaround frequency)	From site data sheet
Gas System Equipment Volume:	35,900	cu. Ft., from DCP turnaround quantity calculations	From site data sheet
Process Temperature :	80.00	° F	
Density:	0.0455	lb/scf (for gas)- from DCP turnaround quantity calculations	
VOC Content :	18.73	Wt. %	From Gas Composition Sheet
Benzene Content:	0.09	Wt. %	From Gas Composition Sheet
H2S Content:	1.2389	Wt. %	From Gas Composition Sheet
CO2 Content:	1.7417	Wt. %	
CH4 Content:	61.9703	Wt. %	

VOC Emissions, N.G. System Blowdown:

Amount of gas vented to atmosphere (scf) = [Equipment volume x (system purge step pressure (psi) + 14.7)] / [540 deg R* 14.7 psi] * 520 deg R

System Purge Step #:	1	2	3	
System pressure prior to Purge:	30	50	100	psi
Amount of gas vented to atm:	112,203	162,406	287,913	cf @ 95 deg F [1]
	112.20	162.41	287.91	mcf @ 95 deg F [1]
Total gas vented to atm (all steps):	562.52			mcf
	25.57			klbs
Hourly gas emission rate:	3652.74			lb/hr
Hourly VOC emission rate:	684.33			lb/hr
Hourly benzene emission rate:	3.37			lb/hr
Hourly H2S emission rate:	45.25			lb/hr
Annual VOC Emission rate:	2.40			tpy
Annual benzene emission rate:	1.18E-02			tpy
Annual H2S emission rate:	1.58E-01			tpy

Note: [1] TCEQ guidance of final temperature for depressurizing to atmosphere, from chemical sector MSS permitting.

GHG Emissions	lb/hr	tpy
CO2	63.6	0.22
CH4	2263.6	7.9
Total CO2e		198.3

DCP Midstream, LP - Artesia Gas Plant

SSM Condensate Storage Tanks

Emission units:	TK-48, TK-49
Number of Tanks:	2
Source Description:	500 bbl Condensate Tanks

General Tank Information

Volume	500	bbl		
Height (shell)	16	ft		
Diameter	15	ft		
Tank Throughput	70,000	bbl/yr	Conservative estimate for total condensate into both tanks TK-48 and TK-49	
Tank Throughput	2,940,000	gal/yr	bbl/yr *42 gal/bbl	
Turnovers	183	turnovers/yr for each tank	Tank throughput / Tank Volume	

VOC Emissions For Each Tank During VRU Downtime

Uncontrolled Emissions

	VOC				
	20,754	lb/yr	TANKS 4.09 d	Working and Breathing	
	10.38	**tpy**	tpy = lb/hr x [(8760hr/yr) / (2000lb/ton)]		
Controlled Emissions	100%		VRU Control Efficiency		
	5%		VRU Downtime per year		
Requested SSM Emissions	**0.52**	**tpy**	TANKS 4.09 d	Working and Breathing	Uncontrolled working & breathing x 5%
Total VOC for TK-48 & TK-49	**1.04**	**tpy**	**Working and Breathing**		

HAP Emissions For Each Tank During VRU Downtime

Uncontrolled Emissions

HAP	lb/yr	Uncontrolled tpy	Controlled[2] tpy
Benzene	133.1	0.067	0.0033
Toluene	154.2	0.077	0.0039
Ethylbenzene	10.7	0.0054	0.00027
Xylene (-m)	44.9	0.022	0.0011
n-Hexane	118.0	0.059	0.0030
TOTAL HAPs	460.84	**0.23**	**0.012**

Total HAPs for TK-48 & TK-49 0.46 tpy

Controlled Emissions	100%		VRU Control Efficiency
	5%		VRU Downtime per year
	0.012	**tpy**	Total HAPs
Total HAPs for TK-48 & TK-49	**0.023**	**tpy**	**Working and Breathing**

H2S Emissions During VRU Downtime

Uncontrolled Emissions

1.24	% H2S	Inlet Gas	Based on Analysis 08/22/2012
18.73	% VOC	Inlet Gas	Based on Analysis 08/22/2012
0.069	tpy H2S	Working and breathing H2S = [Working and breathing VOC]*[(% H2S in inlet) / (% VOC in inlet)]	

Note:

1 HAP Emissions calculated using TANKS 4.09 d with a gas analysis dated 08/22/2012.

2 VRU has a 100% efficiency with 5% downtime per year

3 There are no flashing emissions as the liquids being handled are at atmospheric pressure.

DCP Midstream, LP - Artesia Gas Plant

SSM Condensate Storage Tanks

Emission units:	TK-50
Number of Tanks:	1
Source Description:	500 bbl Condensate Tank

General Tank Information

Volume	500	bbl	
Height (shell)	16	ft	
Diameter	15	ft	
Tank Throughput	60,000	bbl/yr	Conservative estimate for total condensate into TK-50
Tank Throughput	2,520,000	gal/yr	bbl/yr *42 gal/bbl
Turnovers	183	turnovers/yr for each tank	Tank throughput / Tank Volume

VOC Emissions During VRU Downtime

Uncontrolled Emissions

VOC			
19,986	lb/yr	TANKS 4.09 d	Working and Breathing
9.99	**tpy**	tpy = lb/hr x [(8760hr/yr) / (2000lb/ton)])	

Controlled Emissions	100%		VRU Control Efficiency		
	5%		VRU Downtime per year		
Requested SSM Emissions	**0.50**	**tpy**	**TANKS 4.09 d**	**Working and Breathing**	uncontrolled working & breathing x 5%

HAP Emissions During VRU Downtime

Uncontrolled Emissions

HAP	lb/yr	Uncontrolled tpy	Controlled[2] tpy
Benzene	128.2	0.064	0.0032
Toluene	148.5	0.074	0.0037
Ethylbenzene	10.3	0.0052	0.00026
Xylene (-m)	43.2	0.022	0.0011
n-Hexane	113.6	0.057	0.0028
TOTAL HAPs	443.78	**0.22**	**0.011**

Controlled Emissions	100%		VRU Control Efficiency	
	5%		VRU Downtime per year	
Requested SSM Emissions	**0.011**	**tpy**	**TANKS 4.09 d**	**Working and Breathing**

H2S Emissions During VRU Downtime

Uncontrolled Emissions

1.24	% H2S	Inlet Gas	Based on Analysis 08/22/2012
18.73	% VOC	Inlet Gas	Based on Analysis 08/22/2012
0.033	tpy H2S	Working and breathing H2S = [Working and breathing VOC]*[(% H2S in inlet) / (% VOC in inlet)]	

Note:

1 HAP Emissions calculated using TANKS 4.09 d with a gas analysis dated 08/22/2012.
2 VRU has a 100% efficiency with 5% downtime per year
3 There are no flashing emissions as the liquids being handled are at atmospheric pressure.

DCP Midstream, LP - Artesia Gas Plant

SSM Gunbarrel Separator

Emission units:	GT-1
Number of Tanks:	1
Source Description:	400 bbl Gunbarrel condensate/water separator tank

General Tank Information

Volume	400	bbl	
Height (shell)	20	ft	
Diameter	12	ft	
Tank Throughput	192	maximum bbl/day	Engineering estimate
Tank Throughput	70,000	bbl/yr	Maximum daily throughput*365 days/yr
Tank Throughput	2,940,000	gal/yr	bbl/yr *42 gal/bbl
Turnovers	183	turnovers/yr	Tank throughput / Tank Volume

VOC Emissions During VRU Downtime

Uncontrolled Emissions

	VOC			
	14,762	lb/yr	TANKS 4.09 d	Working and Breathing
	7.38	**tpy**	tpy = lb/hr x [(8760hr/yr) / (2000lb/ton)])	
Controlled Emissions	100%		VRU Control Efficiency	
	5%		VRU Downtime per year	
Requested SSM Emissions	**0.37**	**tpy**	**TANKS 4.09 d**	**Working and Breathing** uncontrolled working & breathing x 5%

HAP Emissions During VRU Downtime

Uncontrolled Emissions

HAP	lb/yr	Uncontrolled tpy	Controlled[2] tpy
Benzene	92.0	0.046	0.0023
Toluene	105.4	0.053	0.0026
Ethylbenzene	7.2	0.0036	0.0002
Xylene (-m)	30.3	0.015	0.0008
n-Hexane	82.1	0.041	0.0021
TOTAL HAPs	316.93	**0.16**	**0.0079**

Controlled Emissions	100%		VRU Control Efficiency	
	5%		VRU Downtime per year	
Requested SSM Emissions	**0.0079**	**tpy**	**TANKS 4.09 d**	**Working and Breathing**

H2S Emissions During VRU Downtime

Uncontrolled Emissions

1.24	% H2S	Inlet Gas	Based on Analysis 08/22/2012
18.73	% VOC	Inlet Gas	Based on Analysis 08/22/2012
0.024	tpy H2S	Working and breathing H2S = [Working and breathing VOC]*[(% H2S in inlet) / (% V	

Note:

1 HAP Emissions calculated using TANKS 4.09 d with a gas analysis dated 08/22/2012.

2 VRU has a 100% efficiency with 5% downtime per year

3 There are no flashing emissions associated with the gunbarrel separator as the liquids being handled are at atmospheric pressure.

DCP MIDSTREAM
Artesia Gas Plant
SAMPLE EMISSIONS CALCULATIONS - PIPING OPENED TO ATMOSPHERE

Calculation Basis:

Emissions to the atmosphere after opening pipelines are calculated using the Ideal Gas Law and are based on the entire pipe volume venting to the atmosphere at pipeline pressure.

Constants and Variables:

Venting Pressure :	1200	psia	Default
Piping Volume :	7.85	ft^3	Represents a 10ft. length of 12 in. diameter line
Process Temperature :	95.00	° F	
Ideal Gas Constant :	10.73	$(ft^3)(psi)/(lbmol)(°R)$	
Molecular Weight:	20.63	lb/lb mol	From Gas Composition Sheet
Activities per year :	36	count/year	Monthly meter proving and twice monthly line repair
VOC Content :	18.73	Wt. %	From Gas Composition Sheet
Benzene Content:	0.09	Wt. %	
H2S Content:	0.75	mol %	
CO_2 Concentration:	0.82	mol %	
CH_4 Concentration:	79.90	mol %	

Example Calculation - VOC Emissions

Volume of system = 7.85 ft^3

Amount HC vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= 1200.00 psia | 8 ft^3 | 20.63 lb

10.73 ft^3 * psi / °R * lb-mol | 555 ° R | lb-mol

= 32.63 lbs HC/activity (lb/hr)

= 6.11 lbs VOC/activity (lb/hr)

= 0.11 tpy VOC

= 0.03 lbs Benzene

= 5.43E-04 tpy Benzene

Example Calculation - H2S Emissions

Volume of system = 7.85 ft^3

Amount vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= 1200.00 psia | 8 ft^3 | 0.75 lb-mol H2S | 34.08 lb H2S

10.73 ft^3 * psi / °R * lb-mol | 555 ° R | 100 lb-mol Gas | 1 lb-mol H2S

= 4.04E-01 lbs H2S/activity (lb/hr)

= 7.28E-03 tpy H2S

Example Calculation - CO2 Emissions

Volume of system = 7.85 ft^3

Amount vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= 1200.00 psia | 8 ft^3 | 0.82 lb-mol CO2 | 44.01 lb CO2

10.73 ft^3 * psi / °R * lb-mol | 555 ° R | 100 lb-mol Gas | 1 lb-mol CO2

= 5.68E-01 lbs CO2/activity (lb/hr)

= 1.02E-02 tpy CO2

Example Calculation - CH4 Emissions

Volume of system = 7.85 ft^3

Amount vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= 1200.00 psia | 8 ft^3 | 79.90 lb-mol CH4 | 16.04 lb CH4

10.73 ft^3 * psi / °R * lb-mol | 555 ° R | 100 lb-mol Gas | 1 lb-mol CH4

= 2.03E+01 lbs CH4/activity (lb/hr)

= 0.4 tpy CH4

Total CO_2e 9.1 tpy CO_2e

DCP MIDSTREAM
Artesia Gas Plant
SAMPLE EMISSIONS CALCULATIONS - PIGGING

Calculation Basis:

Emissions to the atmosphere after opening pipelines are calculated using the Ideal Gas Law and are based on the entire pipe volume venting to the atmosphere at pipeline pressure.

Constants and Variables:

Venting Pressure :	400	psia	Default discharge pressure
Piping Volume :	13.9	ft^3	
Process Temperature :	95	° F	
Ideal Gas Constant :	10.73	$(ft^3)(psi)/(lbmol)(°R)$	
Molecular Weight:	20.63	lb/lb mol	From Gas Composition Sheet
Activities per year :	52	count/year	From MSS Activity Summary Sheet
VOC Content :	18.73	Wt. %	From Gas Composition Sheet
Benzene Content:	0.09	Wt. %	
H2S Content:	0.75	mol %	
CO_2 Concentration:	0.82	mol %	
CH_4 Concentration:	79.90	mol %	

Example Calculation - VOC Emissions

Amount HC vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= (400.00 psia × 14 ft^3 × 20.63 lb) / (10.73 ft^3 * psi / °R * lb-mol × 555 ° R × lb-mol)

= 19.22 lbs HC/activity (lb/hr)

= 3.60 lbs VOC/activity (lb/hr)

= 0.09 tpy VOC

= 1.78E-02 lbs Benzene/activity (lb/hr)

= 4.62E-04 tpy Benzene

Example Calculation - H2S Emissions

Amount vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= (400.00 psia × 14 ft^3 × 0.750 lb-mol H2S × 34.08 lb H2S) / (10.73 ft^3 * psi / °R * lb-mol × 555 ° R × 100 lb-mol Gas × 1 lb-mol H2S)

= 2.38E-01 lbs H2S

= 6.19E-03 tpy H2S

Example Calculation - CO2 Emissions

Amount vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= (400.00 psia × 14 ft^3 × 0.817 lb-mol CO2 × 44.01 lb CO2) / (10.73 ft^3 * psi / °R * lb-mol × 555 ° R × 100 lb-mol Gas × 1 lb-mol CO2)

= 0.33 lbs CO_2

= 8.70E-03 tpy CO_2

Example Calculation - CH4 Emissions

Amount vented to atmosphere (lb) = (Pressure x Volume) / (Gas Constant x Temperature [°R]) * MW

= (400.00 psia × 14 ft^3 × 79.900 lb-mol CH4 × 16.04 lb CH4) / (10.73 ft^3 * psi / °R * lb-mol × 555 ° R × 100 lb-mol Gas × 1 lb-mol CH4)

= 11.9 lbs CH_4

= 0.31 tpy CH_4

Total CO_2e 7.8 tpy CO_2e

DCP MIDSTREAM
Artesia Gas Plant
EMISSION CALCULATIONS - VACUUM TRUCKS (TANK CLEANING)

Calculation Basis:

Emissions from vacuum trucks are estimated using the loading loss method of AP-42, Chapter 5.2: Transportation and Marketing of Petroleum Liquids, 1995. Calculations are performed based on the concentrations of the individual organic species since the wastes contain significant non-volatile content (i.e. solids). A truck can be loaded in one hour, therefore the emissions per loading activity reflect the lb/hr emission rate.

L_L = 12.46 SPM/T *(SF)

where:

L_L = loading loss, pounds VOC per 1000 gallons (lb/10^3 gal) of liquid loaded
S = a saturation factor
P = true vapor pressure of liquid loaded, pounds per square inch absolute (psia)
M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole)
T = temperature of bulk liquid loaded, ºR (ºF+460)
SF = safety factor due to vacuum loading

Material Collected by Vacuum Truck	Organic Constituent	Tank Volume (gal)	Constituent Concentration (% volume)	Liquid Heel (% volume of tank)	Amount Loaded (gal)	S, Saturation Loss Factor	P, Vapor Pressure (psi)	M, Molecular Weight (lb/lb-mole)	T, Bulk Loading Temp (ºF)	VOC Wt. Fraction	SF, Safety Factor	L_L (lb/1000 gal)	Loss (lbs/activity) (lb/hr)
Condensate	Condensate	21000	100	20	4200	0.60	5.69	50.00	68	0.19	2	8.05	6.34

Number of Vacuum Trucks per year:	1	March 5 email from S. Harris
Number of Condensate Tanks:	3	From Site Data Sheet
H2S Concentration (wt frac):	0.0124	From Inlet Gas Analysis Dated 8/22/2012
Benzene Concentration (wt frac):	0.0009	From Inlet Gas Analysis Dated 8/22/2012
CO2 Concentration (wt frac):	0.0174	From Inlet Gas Analysis Dated 8/22/2012
CH4 Concentration (wt frac):	0.6197	From Inlet Gas Analysis Dated 8/22/2012

Example Calculation :

Volume of Constituent Loaded (gal) = 4200 gal

Loading Loss (lb/1000 gal) = L_L = 12.46 SPM/T * (SF) = (12.46) * (0.6) * (5.688) * (50) / (68 + 460) * 2 = 8.0537 lb/1000 gal

VOC Emissions per Condensate Cleanout (lb/hr) = (4200 gal) / (1000) * (8.054 lb/1000 gal) * (0.19 VOC wt. Fracti 6.34 lb/hr

H2S Emissions per Condensate Cleanout (lb/hr) =	0.419
Benzene Emissions per Condensate Cleanout (lb/hr) =	0.031
CO_2 Emissions per Condensate Cleanout (lb/hr) =	0.59
CH_4 Emissions per Condensate Cleanout (lb/hr) =	21.0

Activities per year per tank=	1
Number of Condensate Tanks:	3

Condensate Cleanout VOC Annual Emissions (tpy) =	9.51E-03
Condensate Cleanout H2S Annual Emissions (tpy) =	6.29E-04
Condensate Cleanout Benzene Annual Emissions (tpy) =	4.69E-05
Condensate Cleanout CO_2 Annual Emissions (tpy) =	8.8E-04
Condensate Cleanout CH_4 Annual Emissions (tpy) =	0.031
Condensate Cleanout CO_2e Annual Emissions (tpy) =	0.79

DCP Midstream
Artesia Gas Plant
Engine Startup/Warmup Calculations

Example Calculations:

Per Activity Propane Emissions Calculation:

ER (lb propane/startup) = Gas released (scf/release) x mol % / 379 scf/mol * MW

$$= \frac{324 \text{ scf}}{\text{release}} \left| \right. \frac{4.38 \text{ mol \%}}{100} \left| \right. \frac{44.096 \text{ lb}}{\text{lb mol}} \left| \right. \frac{\text{lb-mol}}{379 \text{ scf}} = 12.75 \text{ lb propane/startup}$$

Annual VOC Emissions Calculation:

Annual ER (tpy) = Gas Released per activity (lb/startup) x No. of activities per year / 2000 lb

$$= \frac{\text{lb}}{\text{activity}} \left| \right. \frac{\text{\# of startups}}{\text{yr}} \left| \right. \frac{\text{ton}}{2000 \text{ lb}}$$

Startup Emissions Calculations:

Calculation of gas released for each unit:

Activity	Gas Released (scf/release)	Gas Released in lb mol/hr
Compressor Blowdown	2500	6.60
Engine Startup	324	0.85

Note: Gas Release based on input from Site Data sheet.

Calculation of gas emissions from compressor blowdown and engine startup events:

Gas Analysis	Molecular		Gas Weight	Gas Weight
Component	Weight	Mole %	per compressor blowdown (lb/hr)	per compressor startup (lb/hr)
Carbon Dioxide	44	0.817	2.3701	0.3072
Hydrogen Sulfide	34	0.750	1.6858	0.2185
Nitrogen	28	1.373	2.5364	0.3287
methane	16	79.900	84.3269	10.9288
ethane	30	9.909	19.6554	2.5473
propane	44	4.384	12.7509	1.6525
i-butane	58	0.564	2.1607	0.2800
N-butane	58	1.207	4.6258	0.5995
i-pentane	72	0.305	1.4497	0.1879
n-pentane	72	0.293	1.3930	0.1805
cyclopentane	70	0.026	0.1221	0.0158
n-hexane	114	0.076	0.5745	0.0745
cyclohexane	84	0.044	0.2437	0.0316
other hexanes	86	0.142	0.8038	0.1042
heptanes	100	0.076	0.5030	0.0652
Methylcyclohexane	98	0.038	0.2461	0.0319
2,2,4-trimethylpentane	114	0.000	0.0000	0.0000
benzene	78	0.024	0.1257	0.0163
toluene	92	0.016	0.0960	0.0124
ethylbenzene	106	0.001	0.0070	0.0009
xylenes	106	0.005	0.0371	0.0048
octanes	114	0.031	0.2351	0.0305
nonanes	128	0.011	0.0948	0.0123
decanes	142	0.001	0.0047	0.0006
C11	156	0.002	0.0196	0.0025
C12+	170	0.000	0.0000	0.0000
Total Gas Released		99.994	136.07	0.0000
Total VOC Released		7.25	**25.49**	**3.30**

Compressor blowdown summary of non-methane, non-ethane VOC, benzene, H2S and combustion byproduct emissions:

DRE (%): 0

Pollutant	Emission Factor (lb/MMBTU)	Convert Factor (lb SO2/lb H2S)	Number of Annual Activities	Emission Rate (lb/activity)	Emission Rate (tpy)
VOC			860	433.39	10.96
Benzene				2.14	0.05
Hydrogen Sulfide				28.66	0.73
Carbon Monoxide	0.550			0.00	0.00
Nitrogen Oxides	0.138			0.00	0.00
Sulfur Dioxide		1.9		0.00	0.00

GHG Pollutant	Hourly ER (lb/activity)	Number of Annual Activities*	Annual ER (tpy)
CO_2	0.3072	340	0.052
CH_4	10.9288		1.86
CO_2e			46.5

Engine startup summary of non-methane, non-ethane VOC and benzene emissions:

Pollutant	Hourly ER (lb/activity)	Number of Annual Activities	ER (lb/hr)	Annual ER (tpy)
VOC	3.30	2,581	56.17	4.26
Benzene	0.016		2.77E-01	0.0210
Hydrogen Sulfide	0.2185		3.71E+00	0.28190

GHG Pollutant	Hourly ER (lb/activity)	Number of Annual Activities*	Annual ER (tpy)
CO_2	0.31	1,020	0.16
CH_4	10.9		5.6
CO_2e			139.5

DCP Midstream, LP - Artesia Gas Plant

Emergency Wet Gas Flare - SSM Emissions

Emission Unit: 22

Estimated Flared Gas Composition Used for Calculations

Component	MW	Flared Gas[1] Mol%	MW * wet vol %	HHV Btu/scf[2]	Btu/scf * wet vol %	Mass Fraction (wet)	Spec. Volume[2] ft³/lb	Spec. Volume VOC ft³/lb
Water	18.02	0.0000%	0.00	0.0	0.0	0.00	21.06	
Hydrogen Sulfide	34.08	0.4144%	0.14	637.02	2.6	0.01	11.136	
Carbon Dioxide	44.01	1.0534%	0.46	0.0	0.0	0.02	8.623	
Nitrogen	28.01	1.7683%	0.50	0.0	0.0	0.02	13.547	
Oxygen	32.00	0.0000%	0.00	0.0	0.0	0.00	13.5	
Methane	16.04	71.6031%	11.49	1009.7	723.0	0.49	23.65	
Ethane	30.07	12.2486%	3.68	1768.7	216.6	0.16	12.62	
Propane	44.10	6.6464%	2.93	2517.2	167.3	0.12	8.606	3.514
i-Butane	58.12	0.9775%	0.57	3252.6	31.8	0.02	6.529	0.517
n-Butane	58.12	2.4062%	1.40	3262	78.5	0.06	6.529	1.272
i-Pentane	72.15	0.7272%	0.52	4007.7	29.1	0.02	4.26	0.311
Pentanes	72.15	0.7169%	0.52	4008.7	28.7	0.02	5.26	0.379
Hexanes+	86.18	1.4380%	1.24	4756.1	68.4	0.05	4.404	0.760
		100%	23.45		1346.1	1.00		6.753
NMNEHC (VOC)		12.9%				30.6%		

[1] *Based on Analysis 07/1/2012, ARTESIA PLT 5# FLARE, unit 22.*
to provide conservative estimates for sulfur dioxide and heat release estimate.
[2] *Component HHVs and specific volumes obtained from Physical Properties of Hydrocarbons, API Research Project 44, Fig. 16-1, Rev. 1981.*

Fuel Data

Flare Pilot	500	scf/hr	Design
	0.0005	MMscf/hr	
	1008.00	Btu/scf	Pipeline Gas, HHV
	0.50	MMBtu/hr	MMscf/hr * Btu/scf
Purge Gas	25.80	Mscf/day	Design
	1.075	Mscf/hr	Mscf/d / 24 hr/day
	0.001075	MMscf/hr	Mscf/hr / 1000
	1000.00	Btu/scf	Pipeline Gas, HHV
	1.08	MMBtu/hr	MMscf/hr * Btu/scf
TK-C Blanket Gas	1.50	Mscf/day	Design
	0.0625	Mscf/hr	Mscf/d / 24 hr/day
	0.0000625	MMscf/hr	Mscf/hr / 1000
	1000.00	Btu/scf	Pipeline Gas, HHV
	0.06	MMBtu/hr	MMscf/hr * Btu/scf
Flared Gas - Short Term	7.0	MMscf/hr	Effective hourly flowrate
	1,346	Btu/scf	Heating value calculated from gas compostion above.
	9,452	MMBtu/hr	Hourly heat rate = Heating value * Effective hourly flow rate.
Flared Gas - Annual	142.1	MMscf/yr	Estimated Maximum annual SSM flow rate. Not a requested limit; for calculation only.
Total	9453.3	MMBtu/hr	**Pilot + Purge gas + TK-C Blanket Gas + Flared gas**

Stack Parameters

	1000	°C	Exhaust temperature	Per NMAQB guidelines
	20	m/sec	Exhaust velocity	Per NMAQB guidelines
	70.6	ft	Flare height	
Pilot + Purge Gas + TK-C Blanket Gas				
	16.04	g/mol	Pilot & Purge gas molecular weight	Mol. wt. of methane, the dominant species
	114,905	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
	92,816		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
	0.3047	m	Effective stack diameter (D)	$D = (10^{-6}q_n)^{1/2}$
Pilot + Purge Gas + TK-C Blanket Gas				
	23.45	g/mol	Flared gas molecular weight	Volume weighted mol. wt. of all components
	6.62E+08	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
	5.08E+08		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
	22.5373	m	Effective stack diameter (D)	$D = (10^{-6}q_n)^{1/2}$

DCP Midstream, LP - Artesia Gas Plant

Emergency Wet Gas Flare - SSM Emissions

Emission Unit: 22

Emission Rates

Pilot + Purge Gas + TK-C Blanket Gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.0680	0.3700				lb/MMBtu	AP-42 Table 13.5-1 (9/91) (Reformatted 1/95)
			4E-04		lb H_2S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H_2S/100scf
			5.85E-04		lb H_2S/hr	H_2S rate * fuel usage
				7E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
				1E-02	lb SO_2/hr*	SO_2 rate * fuel usage
		0.00%			mol%	Assume no VOC content in purchased fuel (methane)
		23.7			ft^3/lb	Specific volume (methane)
		0.00			lb/hr	vol. Gas * mole fraction / specific volume
100%	100%	100%	100%	100%	%	Safety Factor
0.1360	0.7400				lb/MMBtu	Unit emission rate with Safety Factor
0.223	**1.215**				lb/hr	lb/MMBtu * MMBtu/hr
		0.00	**2.3E-05**	**0.023**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
0.98	**5.32**	**0.00**	**1.0E-04**	**0.10**	tpy	8760 hrs/yr

Flared Gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.0680	0.3700				lb/MMBtu	AP-42 Table 13.5-1 (9/91) (Reformatted 1/95)
		12.91%	0.41%		mol%	Flare Gas
		6.753	11.136		ft^3/lb	Specific volume
		134,257.2	2,612.9		lb/hr	vol. Gas * mole fraction / specific volume
642.72	3497.13				lb/hr	lb/MMBtu * MMBtu/hr
642.72	3497.13	134,257.2	2,612.9	4918.3	lb/hr	Uncontrolled emissions
6.50	35.38	1,358.2	26.4	49.8	tpy	at maximum rate

Unit 22 - Emergency Wet Gas Flare	NOx	CO	VOC	H_2S	SO_2	HAPs	Units
Pilot + Purge + TK-C Blanket Gas	**642.9**	**3498.3**	**2685.1**	**52.3**	**4918.4**	**38.6**	lb/hr
+ Flared Gas	**7.5**	**40.7**	**27.2**	**0.53**	**49.9**	**0.39**	tpy

GHG Emissions

	CO_2e Short Tons/yr		
CO_2	11,536.2	Eq 4-15	API Compendium
CH_4	10.7	Eq 4-16	API Compendium
N_2O	0.00023	Eq 4-17	API Compendium
Total CO2e	**11,804**		

DCP Midstream, LP - Artesia Gas Plant

Emergency Acid Gas Flare - SSM Emissions

Emission Unit: 23

Estimated Flared Gas Composition Used for Calculations

Component	MW	Flared Gas[1] Mol%	MW * wet vol %	HHV Btu/scf[2]	Btu/scf * wet vol %	Mass Fraction (wet)	Spec. Volume[2] ft³/lb	Spec. Volume VOC ft³/lb
Water	18.02	0.0000%	0.00	0.0	0.0	0.00	21.06	
Hydrogen Sulfide	34.08	37.0907%	12.64	637.02	236.3	0.31	11.136	
Carbon Dioxide	44.01	62.5070%	27.51	0.0	0.0	0.68	8.623	
Nitrogen	28.01	0.0315%	0.01	0.0	0.0	0.00	13.547	
Oxygen	32.00	0.0000%	0.00	0.0	0.0	0.00	13.5	
Methane	16.04	0.3439%	0.06	1009.7	3.5	0.00	23.65	
Ethane	30.07	0.0227%	0.01	1768.7	0.4	0.00	12.62	
Propane	44.10	0.0006%	0.00	2517.2	0.0	0.00	8.606	0.766
i-Butane	58.12	0.0013%	0.00	3252.6	0.0	0.00	6.529	1.659
n-Butane	58.12	0.0001%	0.00	3262	0.0	0.00	6.529	0.128
i-Pentane	72.15	0.0000%	0.00	4007.7	0.0	0.00	4.26	0.000
Pentanes	72.15	0.0000%	0.00	4008.7	0.0	0.00	5.26	0.000
Hexanes+	86.18	0.0022%	0.00	4756.1	0.1	0.00	4.404	2.807
		100%	40.22		240.3	1.00		5.359
NMNEHC (VOC)		0.004%				0.0%		

[1] *1 Based on Analysis 07/1/2012, ARTESIA ACID GAS FLARE, unit 23.*

[2] *Component HHVs and specific volumes obtained from Physical Properties of Hydrocarbons, API Research Project 44, Fig. 16-1, Rev. 1981.*

Fuel Data

Flare Pilot	500	scf/hr	Design
	0.0005	MMscf/hr	
	1008.00	Btu/scf	Pipeline Gas, HHV
	0.50	MMBtu/hr	
Purge Gas	3.10	Mscf/day	Design
	0.129	Mscf/hr	Mscf/d / 24 hr/day
	1.29E-04	MMscf/hr	Mscf/hr / 1000
	1008.00	Btu/scf	Pipeline Gas, HHV
	0.13	MMBtu/hr	MMscf/hr * Btu/scf
Assist Gas			
	255.2	Btu/scf	Heating value of Pilot + Purge gas + Flared gas
	865.0	Btu/scf	target heat content
	1,000.0	Btu/scf	Assist gas-assumed sweet
	0.14	MMscf/hr	Assist gas volume
	144.1	MMBtu/hr	Assist gas heat input
*Assist gas - Annual**	57.7	MMscf/yr	Estimated Maximum annual SSM flow rate. Not a requested limit; for calculation only.
Note:	Flared gas annual/ ratio of assist gas: flared gas hourly u ex: 10.5 MMscf/yr / (1-.8054)		
Flared Gas - Short Term	0.032	MMscf/hr	Effective hourly flowrate
	240	Btu/scf	Heating value calculated from gas compostion above.
	8	MMBtu/hr	Hourly heat rate = Heating value * Effective hourly flow rate.
Flared Gas - Annual	10.5	MMscf/yr	Estimated Maximum annual SSM flow rate. Not a requested limit; for calculation only.
Total	**152.4**	**MMBtu/hr**	**Pilot + Purge gas + Flared gas + Assist gas**

Stack Parameters

	1000	˚C	Exhaust temperature	Per NMAQB guidelines
	20	m/sec	Exhaust velocity	Per NMAQB guidelines
	70.6	ft	Flare height	
Pilot+ Purge Gas only				
	16.04	g/mol	Pilot & Purge gas molecular weight	Mol. wt. of methane, the dominant species
	44,394	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
	35,860		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
	0.1894	m	Effective stack diameter (D)	$D = (10^{-6} q_n)^{1/2}$
Flared Gas MW				
	40.22	g/mol	MW flare gas	
	16.04	g/mol	MW assist gas, flare gas, purge gas	
	0.03	MMscf/hr	vol flare gas	
	0.14	MMscf/hr	vol assist gas	
	0.00063	MMscf/hr	vol pilot + purge gas	
	7.26	g/mol	vol. weighted % flare gas	
	13.09	g/mol	vol. weighted % assist gas	
	0.06	g/mol	vol. weighted % pilot + purge gas	
Pilot+Flared Gas+ Assist gas	20.41	g/mol	weighted-averaged Flared gas molecular weight	Volume weighted mol. wt. of all components
	1.07E+07	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
	8.35E+06		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
	2.8905	m	Effective stack diameter (D)	$D = (10^{-6} q_n)^{1/2}$

DCP Midstream, LP - Artesia Gas Plant

Emergency Acid Gas Flare - SSM Emissions

Emission Unit: 23

Emission Rates

Pilot+ Purge Gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.0680	0.3700				lb/MMBtu	AP-42 Table 13.5-1 (9/91) (Reformatted 1/95)
			4E-04		lb H_2S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H_2S/100scf
			2.25E-04		lb H_2S/hr	H_2S rate * fuel usage
				7E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
				4E-03	lb SO_2/hr	SO_2 rate * fuel usage
		0.00%			mol%	Assume no VOC content in purchased fuel (methane)
		23.7			ft^3/lb	Specific volume (methane)
		0.00			lb/hr	vol. Gas * mole fraction / specific volume
100%	100%	100%	100%	100%	%	Safety Factor
0.1360	0.7400				lb/MMBtu	Unit emission rate with Safety Factor
0.086	**0.469**				lb/hr	lb/MMBtu * MMBtu/hr
		0.000	**9.0E-06**	**9.0E-03**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
0.38	**2.06**	**0.000**	**3.9E-05**	**4.0E-02**	tpy	8760 hrs/yr

Assist gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.0680	0.3700				lb/MMBtu	AP-42 Table 13.5-1 (9/91) (Reformatted 1/95)
			4E-04		lb H_2S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H_2S/100scf
			5.15E-02		lb H_2S/hr	H_2S rate * fuel usage
				7E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
				1E+00	lb SO_2/hr	SO_2 rate * fuel usage
		0.00%			mol%	Assume no VOC content in purchased fuel (methane)
		23.7			ft^3/lb	Specific volume (methane)
		0.00			lb/hr	vol. Gas * mole fraction / specific volume
9.799	**53.318**				lb/hr	lb/MMBtu * MMBtu/hr
		0.000	**1.0E-03**	**1.0E+00**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
1.96	**10.68**	**0.000**	**2.06E-04**	**0.21**	tpy	

Flared Gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.0680	0.3700				lb/MMBtu	AP-42 Table 13.5-1 (9/91) (Reformatted 1/95)
		0.004%	37.09%		mol%	Flare Gas
55		5.359	11.136		ft^3/lb	Specific volume
		0.3	1,062.5		lb/hr	vol. Gas * mole fraction / specific volume
0.52	2.84				lb/hr	lb/MMBtu * MMBtu/hr
0.52	**2.84**	**0.3**	**21.2**	**2,000.0**	**lb/hr**	98% combustion H_2S; 100% conversion to SO_2
0.09	**0.47**	**0.04**	**3.5**	**328.0**	**tpy**	

Acid Gas Flare	NOx	CO	VOC	H_2S	SO_2	Units
pilot + flared gas+Assist Gas	**10.4**	**56.6**	**0.005**	**21.3**	**2001.0**	lb/hr
	2.4	**13.2**	**0.00082**	**3.5**	**328.2**	tpy

GHG Emissions

	CO_2e Short Tons/yr		
CO_2	382	Eq 4-15	API Compendium
CH_4	3.8E-03	Eq 4-16	API Compendium
N_2O	1.7E-05	Eq 4-17	API Compendium
Total CO2e	**381.9**		

DCP Midstream, LP - Artesia Gas Plant

Emergency Wet Gas Flare - Malfunction Emissions

Emission Unit: 22

Estimated Flared Gas Composition Used for Calculations

Component	MW	Flared Gas[1] Mol%	MW * wet vol %	HHV Btu/scf[2]	Btu/scf * wet vol %	Mass Fraction (wet)	Spec. Volume[2] ft³/lb	Spec. Volume VOC ft³/lb
Water	18.02	0.0000%	0.00	0.0	0.0	0.00	21.06	
Hydrogen Sulfide	34.08	0.2000%	0.07	637.02	1.3	0.00	11.136	
Carbon Dioxide	44.01	0.9990%	0.44	0.0	0.0	0.02	8.623	
Nitrogen	28.01	1.6160%	0.45	0.0	0.0	0.02	13.547	
Oxygen	32.00	0.0000%	0.00	0.0	0.0	0.00	13.5	
Methane	16.04	75.7420%	12.15	1009.7	764.8	0.55	23.65	
Ethane	30.07	10.9950%	3.31	1768.7	194.5	0.15	12.62	
Propane	44.10	5.3240%	2.35	2517.2	134.0	0.11	8.606	3.455
i-Butane	58.12	0.7550%	0.44	3252.6	24.6	0.02	6.529	0.490
n-Butane	58.12	2.0140%	1.17	3262	65.7	0.05	6.529	1.307
i-Pentane	72.15	0.4870%	0.35	4007.7	19.5	0.02	4.26	0.256
Pentanes	72.15	0.5020%	0.36	4008.7	20.1	0.02	5.26	0.326
Hexanes+	86.18	1.3660%	1.18	4756.1	65.0	0.05	4.404	0.887
		100%	22.26		1289.4	1.00		6.720
NMNEHC (VOC)		10.4%				26.3%		

[1] *Based on Analysis 08/3/2023, ARTESIA PLT 5# FLARE, unit 22.*
to provide conservative estimates for sulfur dioxide and heat release estimate.
[2] *Component HHVs and specific volumes obtained from Physical Properties of Hydrocarbons, API Research Project 44, Fig. 16-1, Rev. 1981.*

Fuel Data

Flare Pilot	500	scf/hr	Design
	0.0005	MMscf/hr	
	1008.00	Btu/scf	Pipeline Gas, HHV
	0.50	MMBtu/hr	MMscf/hr * Btu/scf
Purge Gas	25.80	Mscf/day	Design
	1.075	Mscf/hr	Mscf/d / 24 hr/day
	0.001075	MMscf/hr	Mscf/hr / 1000
	1000.00	Btu/scf	Pipeline Gas, HHV
	1.08	MMBtu/hr	MMscf/hr * Btu/scf
TK-C Blanket Gas	1.50	Mscf/day	Design
	0.0625	Mscf/hr	Mscf/d / 24 hr/day
	0.0000625	MMscf/hr	Mscf/hr / 1000
	1000.00	Btu/scf	Pipeline Gas, HHV
	0.06	MMBtu/hr	MMscf/hr * Btu/scf
Flared Gas - Short Term	7.0	MMscf/hr	Effective hourly flowrate
	1,289	Btu/scf	Heating value calculated from gas compostion above.
	9,053	MMBtu/hr	Hourly heat rate = Heating value * Effective hourly flow rate.
Flared Gas - Annual	5.1	MMscf/yr	Estimated Maximum annual SSM flow rate. Not a requested limit; for calculation only.
Total	9055.0	MMBtu/hr	**Pilot + Purge gas + TK-C Blanket Gas + Flared gas**

Stack Parameters

1000	°C	Exhaust temperature	Per NMAQB guidelines
20	m/sec	Exhaust velocity	Per NMAQB guidelines
70.6	ft	Flare height	

ilot + Purge Gas + TK-C Blanket Gas

16.04	g/mol	Pilot & Purge gas molecular weight	Mol. wt. of methane, the dominant species
114,905	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
92,816		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
0.3047	m	Effective stack diameter (D)	$D = (10^{-6}q_n)^{1/2}$

ilot + Purge Gas + TK-C Blanket Gas

22.26	g/mol	Flared gas molecular weight	Volume weighted mol. wt. of all components
6.34E+08	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
4.90E+08		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
22.1426	m	Effective stack diameter (D)	$D = (10^{-6}q_n)^{1/2}$

DCP Midstream, LP - Artesia Gas Plant

Emergency Wet Gas Flare - Malfunction Emissions

Emission Unit: 22

Emission Rates

Pilot + Purge Gas + TK-C Blanket Gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.1380	0.2755				lb/MMBtu	TCEQ "Flares and Vapor Oxidizers", RG-109, October 2000
			4E-04		lb H_2S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H_2S/100scf
			5.85E-04		lb H_2S/hr	H_2S rate * fuel usage
				7E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
				1E-02	lb SO_2/hr*	SO_2 rate * fuel usage
		0.00%			mol%	Assume no VOC content in purchased fuel (methane)
		23.7			ft^3/lb	Specific volume (methane)
		0.00			lb/hr	vol. Gas * mole fraction / specific volume
200%	100%	100%	100%	100%	%	Safety Factor, NOx factor is doubled to account for high BTU gas combustion episodes
0.2760	0.5510				lb/MMBtu	Unit emission rate with Safety Factor
0.453	**0.904**				lb/hr	lb/MMBtu * MMBtu/hr
		0.00	**2.3E-05**	**0.023**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
1.98	**3.96**	**0.00**	**1.0E-04**	**0.10**	tpy	8760 hrs/yr

Flared Gas

NOx	CO	VOC	H_2S	SO_2	Units	
					lb/MMBtu	TCEQ "Flares and Vapor Oxidizers", RG-109, October 2000, NOx factor is doubled to account for high BTU gas combustion episodes
0.2760	0.2755					
		10.45%	0.20%		mol%	Flare Gas
		6.720	11.136		ft^3/lb	Specific volume
0.91	0.90	39.6	0.5	0.9	tpy	Uncontrolled emissions at maximum rate

Unit 22 - Emergency Wet Gas Flare	NOx	CO	VOC	H_2S	SO_2	HAPs	Units
Pilot + Purge + TK-C Blanket Gas + Flared Gas	**2.9**	**4.9**	**0.8**	**0.01**	**1.0**	**0.01**	tpy

DCP Midstream, LP - Artesia Gas Plant

Emergency Acid Gas Flare - Malfunction Emissions

Emission Unit: 23

Estimated Flared Gas Composition Used for Calculations

Component	MW	Flared Gas[1] Mol%	MW * wet vol %	HHV Btu/scf[2]	Btu/scf * wet vol %	Mass Fraction (wet)	Spec. Volume[2] ft³/lb	Spec. Volume VOC ft³/lb
Water	18.02	0.0000%	0.00	0.0	0.0	0.00	21.06	
Hydrogen Sulfide	34.08	38.0000%	12.95	637.02	242.1	0.32	11.136	
Carbon Dioxide	44.01	60.0540%	26.43	0.0	0.0	0.66	8.623	
Nitrogen	28.01	0.7300%	0.20	0.0	0.0	0.01	13.547	
Oxygen	32.00	0.0000%	0.00	0.0	0.0	0.00	13.5	
Methane	16.04	0.6160%	0.10	1009.7	6.2	0.00	23.65	
Ethane	30.07	0.0600%	0.02	1768.7	1.1	0.00	12.62	
Propane	44.10	0.0220%	0.01	2517.2	0.6	0.00	8.606	0.186
i-Butane	58.12	0.0040%	0.00	3252.6	0.1	0.00	6.529	0.034
n-Butane	58.12	0.0130%	0.01	3262	0.4	0.00	6.529	0.110
i-Pentane	72.15	0.0050%	0.00	4007.7	0.2	0.00	4.26	0.034
Pentanes	72.15	0.0090%	0.01	4008.7	0.4	0.00	5.26	0.076
Hexanes+	86.18	0.4870%	0.42	4756.1	23.2	0.01	4.404	4.113
		100%	40.15		274.2	1.00		4.553
NMNEHC (VOC)		0.540%				1.1%		

[1] *1 Based on Analysis 07/5/2023, ARTESIA ACID GAS FLARE, unit 23.*

[2] *Component HHVs and specific volumes obtained from Physical Properties of Hydrocarbons, API Research Project 44, Fig. 16-1, Rev. 1981.*

Fuel Data

Flare Pilot	500	scf/hr	Design
	0.0005	MMscf/hr	
	1008.00	Btu/scf	Pipeline Gas, HHV
	0.50	MMBtu/hr	
Purge Gas	3.10	Mscf/day	Design
	0.129	Mscf/hr	Mscf/d / 24 hr/day
	1.29E-04	MMscf/hr	Mscf/hr / 1000
	1008.00	Btu/scf	Pipeline Gas, HHV
	0.13	MMBtu/hr	MMscf/hr * Btu/scf
Assist Gas			
	288.4	Btu/scf	Heating value of Pilot + Purge gas + Flared gas
	865.0	Btu/scf	target heat content
	1,000.0	Btu/scf	Assist gas-assumed sweet
	0.14	MMscf/hr	Assist gas volume
	136.3	MMBtu/hr	Assist gas heat input
*Assist gas - Annual**	7.4	MMscf/yr	Estimated Maximum annual SSM flow rate with safety factor. Not a requested limit; for calculation only.
Note:	Flared gas annual/ ratio of assist gas: flared gas hourly u: ex: 10.5 MMscf/yr / (1-.8054)		
Flared Gas - Short Term	0.032	MMscf/hr	Effective hourly flowrate
	274	Btu/scf	Heating value calculated from gas compostion above.
	9	MMBtu/hr	Hourly heat rate = Heating value * Effective hourly flow rate.
Flared Gas - Annual	0.3	MMscf/yr	Estimated Maximum annual SSM flow rate. Not a requested limit; for calculation only.
Total	**145.6**	**MMBtu/hr**	**Pilot + Purge gas + Flared gas + Assist gas**

Stack Parameters

	1000	˚C	Exhaust temperature	Per NMAQB guidelines
	20	m/sec	Exhaust velocity	Per NMAQB guidelines
	70.6	ft	Flare height	
Pilot+ Purge Gas only				
	16.04	g/mol	Pilot & Purge gas molecular weight	Mol. wt. of methane, the dominant species
	44,394	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
	35,860		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
	0.1894	m	Effective stack diameter (D)	$D = (10^{-6}q_n)^{1/2}$
Flared Gas MW				
	40.15	g/mol	MW flare gas	
	16.04	g/mol	MW assist gas, flare gas, purge gas	
	0.03	MMscf/hr	vol flare gas	
	0.14	MMscf/hr	vol assist gas	
	0.00063	MMscf/hr	vol pilot + purge gas	
	7.59	g/mol	vol. weighted % flare gas	
	12.95	g/mol	vol. weighted % assist gas	
	0.06	g/mol	vol. weighted % pilot + purge gas	
Pilot+Flared Gas+ Assist gas	20.60	g/mol	weighted-averaged Flared gas molecular weight	Volume weighted mol. wt. of all components
	1.02E+07	cal/sec	Heat release (q)	MMBtu/hr * 10^6 * 252 cal/Btu ÷ 3600 sec/hr
	7.97E+06		q_n	$q_n = q(1\text{-}0.048(MW)^{1/2})$
	2.8238	m	Effective stack diameter (D)	$D = (10^{-6}q_n)^{1/2}$

DCP Midstream, LP - Artesia Gas Plant

Emergency Acid Gas Flare - Malfunction Emissions

Emission Unit: 23

Emission Rates

Pilot+ Purge Gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.1380	0.5496				lb/MMBtu	AP-42 Table 13.5-1 (9/91) (Reformatted 1/95)
			4E-04		lb H_2S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H_2S/100scf
			2.25E-04		lb H_2S/hr	H_2S rate * fuel usage
				7E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
				4E-03	lb SO_2/hr	SO_2 rate * fuel usage
		0.00%			mol%	Assume no VOC content in purchased fuel (methane)
		23.7			ft^3/lb	Specific volume (methane)
		0.00			lb/hr	vol. Gas * mole fraction / specific volume
100%	100%	100%	100%	100%	%	Safety Factor
0.2760	1.0992				lb/MMBtu	Unit emission rate with Safety Factor
0.175	**0.697**				lb/hr	lb/MMBtu * MMBtu/hr
		0.000	**9.0E-06**	**9.0E-03**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
0.77	**3.05**	**0.000**	**3.9E-05**	**4.0E-02**	tpy	8760 hrs/yr

Assist gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.1380	0.5496				lb/MMBtu	TCEQ "Flares and Vapor Oxidizers", RG-109, October 2000
			4E-04		lb H_2S/Mscf	Purchased sweet natural gas fuel, 0.25 gr H_2S/100scf
			4.87E-02		lb H_2S/hr	H_2S rate * fuel usage
				7E-03	lb S/Mscf	Purchased sweet natural gas fuel, 5 gr S/100scf
				1E+00	lb SO_2/hr	SO_2 rate * fuel usage
		0.00%			mol%	Assume no VOC content in purchased fuel (methane)
		23.7			ft^3/lb	Specific volume (methane)
		0.00			lb/hr	vol. Gas * mole fraction / specific volume
18.803	**74.886**				lb/hr	lb/MMBtu * MMBtu/hr
		0.000	**9.7E-04**	**9.8E-01**	lb/hr	98% combustion H_2S; 100% conversion to SO_2
0.51	**2.03**	**0.000**	**2.63E-05**	**0.03**	tpy	

Flared Gas

NOx	CO	VOC	H_2S	SO_2	Units	
0.1380	0.5496				lb/MMBtu	TCEQ "Flares and Vapor Oxidizers", RG-109, October 2000
		0.540%	38.00%		mol%	Flare Gas
55		4.553	11.136		ft^3/lb	Specific volume
		37.8	1,088.5		lb/hr	vol. Gas * mole fraction / specific volume
0.01	**0.02**	**0.17**	**0.1**	**9.0**	**tpy**	98% combustion H_2S; 100% conversion to SO_3

Acid Gas Flare	NOx	CO	VOC	H_2S	SO_2	Units
pilot + flared gas+Assist Gas	**1.3**	**5.1**	**0.00332**	**0.1**	**9.0**	tpy

Section 6.a

Green House Gas Emissions

(Submitting under 20.2.70, 20.2.72 20.2.74 NMAC)

Title V (20.2.70 NMAC), Minor NSR (20.2.72 NMAC), and PSD (20.2.74 NMAC) applicants must estimate and report greenhouse gas (GHG) emissions to verify the emission rates reported in the public notice, determine applicability to 40 CFR 60 Subparts, and to evaluate Prevention of Significant Deterioration (PSD) applicability. GHG emissions that are subject to air permit regulations consist of the sum of an aggregate group of these six greenhouse gases: carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Calculating GHG Emissions:

1. Calculate the ton per year (tpy) GHG mass emissions and GHG CO_2e emissions from your facility.
2. GHG mass emissions are the sum of the total annual tons of greenhouse gases without adjusting with the global warming potentials (GWPs). GHG CO_2e emissions are the sum of the mass emissions of each individual GHG multiplied by its GWP found in Table A-1 in 40 CFR 98 Mandatory Greenhouse Gas Reporting.
3. Emissions from routine or predictable start up, shut down, and maintenance must be included.
4. Report GHG mass and GHG CO_2e emissions in Table 2-P of this application. Emissions are reported in **short** tons per year and represent each emission unit's Potential to Emit (PTE).
5. All Title V major sources, PSD major sources, and all power plants, whether major or not, must calculate and report GHG mass and CO2e emissions for each unit in Table 2-P.
6. For minor source facilities that are not power plants, are not Title V, and are not PSD there are three options for reporting GHGs in Table 2-P: 1) report GHGs for each individual piece of equipment; 2) report all GHGs from a group of unit types, for example report all combustion source GHGs as a single unit and all venting GHGs as a second separate unit; 3) or check the following ☐ By checking this box, the applicant acknowledges the total CO2e emissions are less than 75,000 tons per year.

Sources for Calculating GHG Emissions:

- Manufacturer's Data
- AP-42 Compilation of Air Pollutant Emission Factors at http://www.epa.gov/ttn/chief/ap42/index.html
- EPA's Internet emission factor database WebFIRE at http://cfpub.epa.gov/webfire/
- 40 CFR 98 Mandatory Green House Gas Reporting except that tons should be reported in short tons rather than in metric tons for the purpose of PSD applicability.
- API Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industry. August 2009 or most recent version.
- Sources listed on EPA's NSR Resources for Estimating GHG Emissions at http://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases:

Global Warming Potentials (GWP):
Applicants must use the Global Warming Potentials codified in Table A-1 of the most recent version of 40 CFR 98 Mandatory Greenhouse Gas Reporting. The GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to that of one unit mass of CO_2 over a specified time period.

"Greenhouse gas" for the purpose of air permit regulations is defined as the aggregate group of the following six gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. **(20.2.70.7 NMAC, 20.2.74.7 NMAC).** You may also find GHGs defined in 40 CFR 86.1818-12(a).

Metric to Short Ton Conversion:
Short tons for GHGs and other regulated pollutants are the standard unit of measure for PSD and title V permitting programs. 40 CFR 98 Mandatory Greenhouse Reporting requires metric tons.
1 metric ton = 1.10231 short tons (per Table A-2 to Subpart A of Part 98 – Units of Measure Conversions)

Green House Gas (GHG) emissions are included in Table 2-P in Form UA2. There are no changes to the existing GHG emissions.

Section 7

Information Used to Determine Emissions

Information Used to Determine Emissions shall include the following:

- ☐ If manufacturer data are used, include specifications for emissions units and control equipment, including control efficiencies specifications and sufficient engineering data for verification of control equipment operation, including design drawings, test reports, and design parameters that affect normal operation.
- ☐ If test data are used, include a copy of the complete test report. If the test data are for an emissions unit other than the one being permitted, the emission units must be identical. Test data may not be used if any difference in operating conditions of the unit being permitted and the unit represented in the test report significantly effect emission rates.
- ☒ If the most current copy of AP-42 is used, reference the section and date located at the bottom of the page. Include a copy of the page containing the emissions factors, and clearly mark the factors used in the calculations.
- ☐ If an older version of AP-42 is used, include a complete copy of the section.
- ☐ If an EPA document or other material is referenced, include a complete copy.
- ☐ Fuel specifications sheet.
- ☐ If computer models are used to estimate emissions, include an input summary (if available) and a detailed report, and a disk containing the input file(s) used to run the model. For tank-flashing emissions, include a discussion of the method used to estimate tank-flashing emissions, relative thresholds (i.e., permit or major source (NSPS, PSD or Title V)), accuracy of the model, the input and output from simulation models and software, all calculations, documentation of any assumptions used, descriptions of sampling methods and conditions, copies of any lab sample analysis.

Information for existing, unchanged emission sources is not included with this revision. For the changed emissions sources, the following information was used to determine emissions:

- Unit Load-1 – Condensate Loading
  - AP-42 Section 5.2
  - Liquid Analysis
- Unit Haul-1 and Haul-2 – Haul Road Emissions
  - AP-42 Section 13.2.2
  - WRAP Fugitive Dust Handbook, September 7, 2006 (Page 8)
- Unit SSM
  - Condensate Tank Degassing (VRU Downtime)
    - AP-42 Section 7.1.3.1
    - Liquid Analysis

Table 7-1
Gas & Liquid Analyses
DCP Operating Company LP
Artesia Gas Plant
Eddy County, New Mexico

Condensate Analysis	
Analysis Identifier/Name	Artesia Plant Trucked In Condensate
Site sample is taken from	Artesia Gas Plant
Is sample site-specific or representative?	Site-specific
Sample temperature and pressure	53 °F, 5 psig
Name of who analyzed the sample	Laboratory Services
Date of sample	12/5/2022

Component	Liquid (wt%)	Liquid VOC Fraction (wt%)	Vapor (wt%)	Vapor VOC Fraction (wt%)
Nitrogen	0.00%		0.00%	
CO_2	0.00%		0.38%	
H_2S	0.00%		0.00%	
Methane	0.01%		0.20%	
Ethane	0.16%		4.93%	
Propane	0.97%	0.98%	29.49%	31.21%
i-Butane	0.54%	0.54%	4.09%	4.32%
n-Butane	2.44%	2.45%	18.49%	19.56%
i-Pentane	2.93%	2.94%	8.72%	9.23%
n-Pentane	4.74%	4.75%	10.71%	11.33%
Benzene	5.08%	5.09%	2.32%	2.46%
n-Hexane	8.00%	8.01%	5.67%	6.00%
Other Hexanes	6.50%	6.51%	5.30%	5.61%
Toluene	6.84%	6.86%	0.99%	1.05%
Other Heptanes	28.38%	28.43%	6.46%	6.84%
Ethylbenzene	1.81%	1.81%	0.09%	0.10%
Xylenes	2.08%	2.09%	0.09%	0.10%
Other Octanes	19.22%	19.26%	1.35%	1.43%
Nonanes	5.94%	5.95%	0.42%	0.44%
Decanes plus (C10+)	4.35%	4.35%	0.30%	0.32%
Total:	100%	100%	100%	100%
VOC content of total sample	99.83%		94.49%	
HAPs content of total sample	23.81%		9.16%	
VOC content of hydrocarbon fraction only	99.83%		94.85%	
HAPs content of hydrocarbon fraction only	23.81%		9.20%	

LABORATORY SERVICES Natural Gas Analysis
www.permianls.com
575.397.3713 2609 W Marland Hobbs NM 88240

Extended Liquid Analysis Report

Sample Point Code	Sample Point Name	Sample Point Location
15431L	Artesia Plant Trucked In Condensate	Artesia Plant Trucked In Condensate

Source Laboratory	Lab File No	Container Identity	Sampler
Laboratory Services	2022060919	0731	D Jett - Spot

District	Area Name	Field Name	Facility Name
USA	USA	USA	New Mexico

Date Sampled	Date Effective	Date Received	Date Reported
Dec 1, 2022 14:00	Dec 1, 2022 14:00	Dec 4, 2022 17:21	Dec 5, 2022

Ambient Temp (°F)	Flow Rate (Mcf)	Analyst	Press PSI @ Temp °F Source Conditions
53.00		BH	5 @

Operator	Lab Source Description
DCP Midstream	Condensate

Component	Mol %	Mass %	Liquid %
Nitrogen (N2)	0.0170	0.0050	0.0040
Carbon Dioxide (CO2)	0.0070	0.0030	0.0030
Methane (C1)	0.0860	0.0150	0.0360
Ethane (C2)	0.6190	0.2030	0.4110
Propane (C3)	2.2200	1.0690	1.5220
Isobutane (IC4)	0.8990	0.5710	0.7320
n-Butane (NC4)	4.0310	2.5590	3.1620
Isopentane (IC5)	3.8490	3.0340	3.5040
n-Pentane (NC5)	6.2140	4.8980	5.6060
2-methylpentane (2MC5)	4.2740	4.0240	4.4160
3-methylpentane (3MC5)	2.8330	2.6670	2.8780
Benzene	6.1180	5.2210	4.2620
Ethylbenzene	1.5990	1.8540	1.5360
M + P Xylenes	1.3150	1.6310	1.4300
O-Xylene	0.5290	0.6140	0.5010
Toluene	6.9830	7.0290	5.8200
Hexanes (C6's)	8.7360	8.1020	8.7280
Heptanes (C7's)	26.6330	27.3130	27.2380
Octanes (C8's)	15.8160	19.1620	18.8210
Nonanes (C9's)	4.3520	5.7690	5.5110
Decanes (C10's)	1.7640	2.5220	2.3210
Undecanes (C11's)	0.8610	1.2930	1.1440
Dodecanes (C12's)	0.2450	0.4420	0.4140
TOTAL	100.0000	100.0000	100.0000

Gross Heating Values @ 14.65 PSI

BTU/ft³	BTU/Gal	BTU/lb
4,886.9	27962.8	20321.8

Calculated Total Sample Properties

GPA2145-16 *Calculated at Contract Conditions

Relative Density	Absolute Density (lb/gal)	API Gravity
0.7219	1.376	64.5
Molecular Weight	**Vapor Volume (ft³/gal)**	**Vapor Pressure (PSI)**
91.5400	5.722	19.1

Ratios

C1 to C2	CO2 to C2
8.05:1	0.72:1

C6+ Group Properties

Assumed Composition

C6 - 19.313%	C7 - 39.912%	C8 - 40.775%

Field H2S
0 PPM

PROTREND STATUS:
Passed By Validator on Dec 6, 2022

DATA SOURCE:
Imported

PASSED BY VALIDATOR REASON:
Close enough to be considered reasonable.

VALIDATOR:
Brooke Rush

VALIDATOR COMMENTS:
OK

GPA Method(s): C6+ Liquid 2177-13, Extended Liquids 2186-14, Calculations 2145-16, 2172-09

5.2 Transportation And Marketing Of Petroleum Liquids[1-3]

5.2.1 General

The transportation and marketing of petroleum liquids involve many distinct operations, each of which represents a potential source of evaporation loss. Crude oil is transported from production operations to a refinery by tankers, barges, rail tank cars, tank trucks, and pipelines. Refined petroleum products are conveyed to fuel marketing terminals and petrochemical industries by these same modes. From the fuel marketing terminals, the fuels are delivered by tank trucks to service stations, commercial accounts, and local bulk storage plants. The final destination for gasoline is usually a motor vehicle gasoline tank. Similar distribution paths exist for fuel oils and other petroleum products. A general depiction of these activities is shown in Figure 5.2-1.

5.2.2 Emissions And Controls

Evaporative emissions from the transportation and marketing of petroleum liquids may be considered, by storage equipment and mode of transportation used, in four categories:

1. Rail tank cars, tank trucks, and marine vessels: loading, transit, and ballasting losses.
2. Service stations: bulk fuel drop losses and underground tank breathing losses.
3. Motor vehicle tanks: refueling losses.
4. Large storage tanks: breathing, working, and standing storage losses. (See Chapter 7, "Liquid Storage Tanks".)

Evaporative and exhaust emissions are also associated with motor vehicle operation, and these topics are discussed in AP-42 *Volume II: Mobile Sources*.

5.2.2.1 Rail Tank Cars, Tank Trucks, And Marine Vessels -

Emissions from these sources are from loading losses, ballasting losses, and transit losses.

5.2.2.1.1 Loading Losses -

Loading losses are the primary source of evaporative emissions from rail tank car, tank truck, and marine vessel operations. Loading losses occur as organic vapors in "empty" cargo tanks are displaced to the atmosphere by the liquid being loaded into the tanks. These vapors are a composite of (1) vapors formed in the empty tank by evaporation of residual product from previous loads, (2) vapors transferred to the tank in vapor balance systems as product is being unloaded, and (3) vapors generated in the tank as the new product is being loaded. The quantity of evaporative losses from loading operations is, therefore, a function of the following parameters:

- Physical and chemical characteristics of the previous cargo;
- Method of unloading the previous cargo;
- Operations to transport the empty carrier to a loading terminal;
- Method of loading the new cargo; and
- Physical and chemical characteristics of the new cargo.

The principal methods of cargo carrier loading are illustrated in Figure 5.2-2, Figure 5.2-3, and Figure 5.2-4. In the splash loading method, the fill pipe dispensing the cargo is lowered only part way into the cargo tank. Significant turbulence and vapor/liquid contact occur during the splash

loading operation, resulting in high levels of vapor generation and loss. If the turbulence is great enough, liquid droplets will be entrained in the vented vapors.

A second method of loading is submerged loading. Two types are the submerged fill pipe method and the bottom loading method. In the submerged fill pipe method, the fill pipe extends almost to the bottom of the cargo tank. In the bottom loading method, a permanent fill pipe is attached to the cargo tank bottom. During most of submerged loading by both methods, the fill pipe opening is below the liquid surface level. Liquid turbulence is controlled significantly during submerged loading, resulting in much lower vapor generation than encountered during splash loading.

The recent loading history of a cargo carrier is just as important a factor in loading losses as the method of loading. If the carrier has carried a nonvolatile liquid such as fuel oil, or has just been cleaned, it will contain vapor-free air. If it has just carried gasoline and has not been vented, the air in the carrier tank will contain volatile organic vapors, which will be expelled during the loading operation along with newly generated vapors.

Cargo carriers are sometimes designated to transport only one product, and in such cases are practicing "dedicated service". Dedicated gasoline cargo tanks return to a loading terminal containing air fully or partially saturated with vapor from the previous load. Cargo tanks may also be "switch loaded" with various products, so that a nonvolatile product being loaded may expel the vapors remaining from a previous load of a volatile product such as gasoline. These circumstances vary with the type of cargo tank and with the ownership of the carrier, the petroleum liquids being transported, geographic location, and season of the year.

One control measure for vapors displaced during liquid loading is called "vapor balance service", in which the cargo tank retrieves the vapors displaced during product unloading at bulk plants or service stations and transports the vapors back to the loading terminal. Figure 5.2-5 shows a tank truck in vapor balance service filling a service station underground tank and taking on displaced gasoline vapors for return to the terminal. A cargo tank returning to a bulk terminal in vapor balance service normally is saturated with organic vapors, and the presence of these vapors at the start of submerged loading of the tanker truck results in greater loading losses than encountered during nonvapor balance, or "normal", service. Vapor balance service is usually not practiced with marine vessels, although some vessels practice emission control by means of vapor transfer within their own cargo tanks during ballasting operations, discussed below.

Emissions from loading petroleum liquid can be estimated (with a probable error of ±30 percent)[4] using the following expression:

$$L_L = 12.46 \frac{SPM}{T} \quad (1)$$

where:

L_L = loading loss, pounds per 1000 gallons (lb/10^3 gal) of liquid loaded

S = a saturation factor (see Table 5.2-1)
P = true vapor pressure of liquid loaded, pounds per square inch absolute (psia) (see Figure 7.1-5, Figure 7.1-6, and Table 7.1-2)
M = molecular weight of vapors, pounds per pound-mole (lb/lb-mole) (see Table 7.1-2)
T = temperature of bulk liquid loaded, °R (°F + 460)

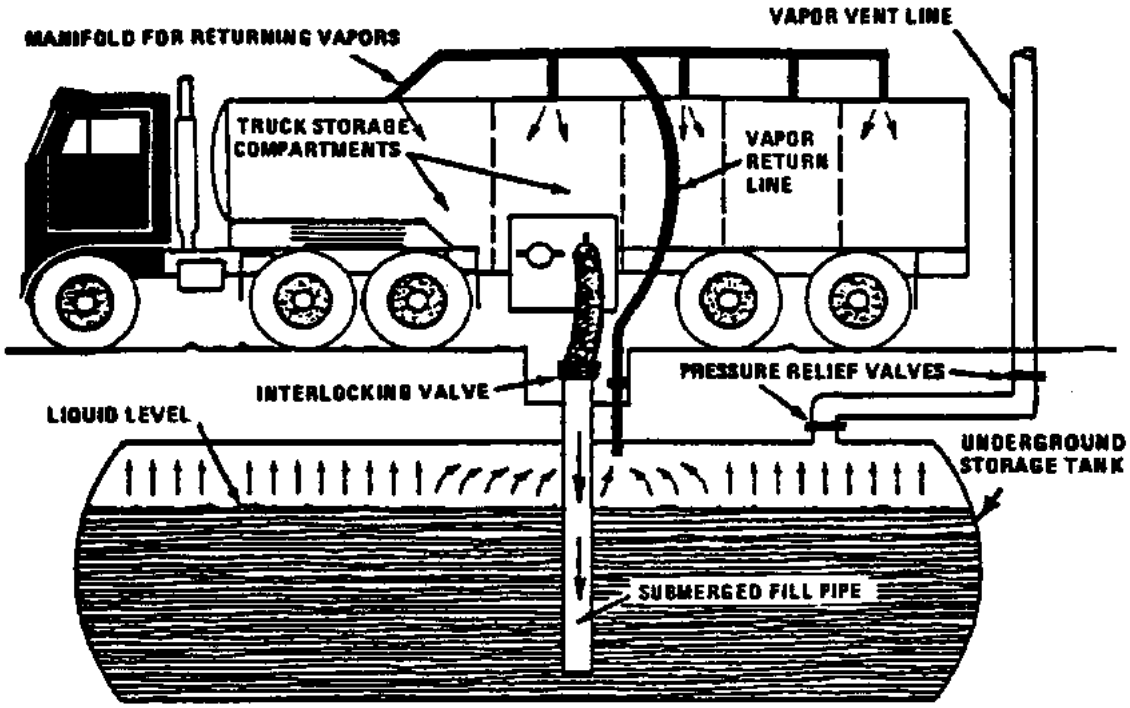


Figure 5.2-5. Tank truck unloading into a service station underground storage tank and practicing "vapor balance" form of emission control.

Table 5.2-1. SATURATION (S) FACTORS FOR CALCULATING PETROLEUM LIQUID LOADING LOSSES

Cargo Carrier	Mode Of Operation	S Factor
Tank trucks and rail tank cars	Submerged loading of a clean cargo tank	0.50
	Submerged loading: dedicated normal service	0.60
	Submerged loading: dedicated vapor balance service	1.00
	Splash loading of a clean cargo tank	1.45
	Splash loading: dedicated normal service	1.45
	Splash loading: dedicated vapor balance service	1.00
Marine vessels[a]	Submerged loading: ships	0.2
	Submerged loading: barges	0.5

[a] For products other than gasoline and crude oil. For marine loading of gasoline, use factors from Table 5.2-2. For marine loading of crude oil, use Equations 2 and 3 and Table 5.2-3.

13.2.2 Unpaved Roads

13.2.2.1 General

When a vehicle travels an unpaved road, the force of the wheels on the road surface causes pulverization of surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle continues to act on the road surface after the vehicle has passed.

The particulate emission factors presented in the previous draft version of this section of AP-42, dated October 2001, implicitly included the emissions from vehicles in the form of exhaust, brake wear, and tire wear as well as resuspended road surface material[25]. EPA included these sources in the emission factor equation for unpaved public roads (equation 1b in this section) since the field testing data used to develop the equation included both the direct emissions from vehicles and emissions from resuspension of road dust.

This version of the unpaved public road emission factor equation only estimates particulate emissions from resuspended road surface material [23, 26]. The particulate emissions from vehicle exhaust, brake wear, and tire wear are now estimated separately using EPA's MOBILE6.2 [24]. This approach eliminates the possibility of double counting emissions. Double counting results when employing the previous version of the emission factor equation in this section and MOBILE6.2 to estimate particulate emissions from vehicle traffic on unpaved public roads. It also incorporates the decrease in exhaust emissions that has occurred since the unpaved public road emission factor equation was developed. The previous version of the unpaved public road emission factor equation includes estimates of emissions from exhaust, brake wear, and tire wear based on emission rates for vehicles in the 1980 calendar year fleet. The amount of PM released from vehicle exhaust has decreased since 1980 due to lower new vehicle emission standards and changes in fuel characteristics.

13.2.2.2 Emissions Calculation And Correction Parameters[1-6]

The quantity of dust emissions from a given segment of unpaved road varies linearly with the volume of traffic. Field investigations also have shown that emissions depend on source parameters that characterize the condition of a particular road and the associated vehicle traffic. Characterization of these source parameters allow for "correction" of emission estimates to specific road and traffic conditions present on public and industrial roadways.

Dust emissions from unpaved roads have been found to vary directly with the fraction of silt (particles smaller than 75 micrometers [μm] in diameter) in the road surface materials.[1] The silt fraction is determined by measuring the proportion of loose dry surface dust that passes a 200-mesh screen, using the ASTM-C-136 method. A summary of this method is contained in Appendix C of AP-42. Table 13.2.2-1 summarizes measured silt values for industrial unpaved roads. Table 13.2.2-2 summarizes measured silt values for public unpaved roads. It should be noted that the ranges of silt content vary over two orders of magnitude. Therefore, the use of data from this table can potentially introduce considerable error. Use of this data is strongly discouraged when it is feasible to obtain locally gathered data.

Since the silt content of a rural dirt road will vary with geographic location, it should be measured for use in projecting emissions. As a conservative approximation, the silt content of the parent soil in the area can be used. Tests, however, show that road silt content is normally lower than in the surrounding parent soil, because the fines are continually removed by the vehicle traffic, leaving a higher percentage of coarse particles.

Other variables are important in addition to the silt content of the road surface material. For example, at industrial sites, where haul trucks and other heavy equipment are common, emissions are highly correlated with vehicle weight. On the other hand, there is far less variability in the weights of cars and pickup trucks that commonly travel publicly accessible unpaved roads throughout the United States. For those roads, the moisture content of the road surface material may be more dominant in determining differences in emission levels between, for example a hot, desert environment and a cool, moist location.

The PM-10 and TSP emission factors presented below are the outcomes from stepwise linear regressions of field emission test results of vehicles traveling over unpaved surfaces. Due to a limited amount of information available for PM-2.5, the expression for that particle size range has been scaled against the result for PM-10. Consequently, the quality rating for the PM-2.5 factor is lower than that for the PM-10 expression.

Table 13.2.2-1. TYPICAL SILT CONTENT VALUES OF SURFACE MATERIAL ON INDUSTRIAL UNPAVED ROADS[a]

Industry	Road Use Or Surface Material	Plant Sites	No. Of Samples	Silt Content (%)	
				Range	Mean
Copper smelting	Plant road	1	3	16 - 19	17
Iron and steel production	Plant road	19	135	0.2 - 19	6.0
Sand and gravel processing	Plant road	1	3	4.1 - 6.0	4.8
	Material storage area	1	1	-	7.1
Stone quarrying and processing	Plant road	2	10	2.4 - 16	10
	Haul road to/from pit	4	20	5.0-15	8.3
Taconite mining and processing	Service road	1	8	2.4 - 7.1	4.3
	Haul road to/from pit	1	12	3.9 - 9.7	5.8
Western surface coal mining	Haul road to/from pit	3	21	2.8 - 18	8.4
	Plant road	2	2	4.9 - 5.3	5.1
	Scraper route	3	10	7.2 - 25	17
	Haul road (freshly graded)	2	5	18 - 29	24
Construction sites	Scraper routes	7	20	0.56-23	8.5
Lumber sawmills	Log yards	2	2	4.8-12	8.4
Municipal solid waste landfills	Disposal routes	4	20	2.2 - 21	6.4

[a]References 1,5-15.

The following empirical expressions may be used to estimate the quantity in pounds (lb) of size-specific particulate emissions from an unpaved road, per vehicle mile traveled (VMT):

For vehicles traveling on unpaved surfaces at industrial sites, emissions are estimated from the following equation:

$$E = k\,(s/12)^a (W/3)^b \quad (1a)$$

and, for vehicles traveling on publicly accessible roads, dominated by light duty vehicles, emissions may be estimated from the following:

$$E = \frac{k\,(s/12)^a (S/30)^d}{(M/0.5)^c} - C \quad (1b)$$

where k, a, b, c and d are empirical constants (Reference 6) given below and

E = size-specific emission factor (lb/VMT)
s = surface material silt content (%)
W = mean vehicle weight (tons)
M = surface material moisture content (%)
S = mean vehicle speed (mph)
C = emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

The source characteristics s, W and M are referred to as correction parameters for adjusting the emission estimates to local conditions. The metric conversion from lb/VMT to grams (g) per vehicle kilometer traveled (VKT) is as follows:

1 lb/VMT = 281.9 g/VKT

The constants for Equations 1a and 1b based on the stated aerodynamic particle sizes are shown in Tables 13.2.2-2 and 13.2.2-4. The PM-2.5 particle size multipliers (k-factors) are taken from Reference 27.

Table 13.2.2-2. CONSTANTS FOR EQUATIONS 1a AND 1b

Constant	Industrial Roads (Equation 1a)			Public Roads (Equation 1b)		
	PM-2.5	PM-10	PM-30*	PM-2.5	PM-10	PM-30*
k (lb/VMT)	0.15	1.5	4.9	0.18	1.8	6.0
a	0.9	0.9	0.7	1	1	1
b	0.45	0.45	0.45	-	-	-
c	-	-	-	0.2	0.2	0.3
d	-	-	-	0.5	0.5	0.3
Quality Rating	B	B	B	B	B	B

*Assumed equivalent to total suspended particulate matter (TSP)
"-" = not used in the emission factor equation

Table 13.2.2-2 also contains the quality ratings for the various size-specific versions of Equation 1a and 1b. The equation retains the assigned quality rating, if applied within the ranges of source conditions, shown in Table 13.2.2-3, that were tested in developing the equation:

Table 13.2.2-3. RANGE OF SOURCE CONDITIONS USED IN DEVELOPING EQUATION 1a AND 1b

Emission Factor	Surface Silt Content, %	Mean Vehicle Weight		Mean Vehicle Speed		Mean No. of Wheels	Surface Moisture Content, %
		Mg	ton	km/hr	mph		
Industrial Roads (Equation 1a)	1.8-25.2	1.8-260	2-290	8-69	5-43	4-17[a]	0.03-13
Public Roads (Equation 1b)	1.8-35	1.4-2.7	1.5-3	16-88	10-55	4-4.8	0.03-13

[a] See discussion in text.

As noted earlier, the models presented as Equations 1a and 1b were developed from tests of traffic on unpaved surfaces. Unpaved roads have a hard, generally nonporous surface that usually dries quickly after a rainfall or watering, because of traffic-enhanced natural evaporation. (Factors influencing how fast a road dries are discussed in Section 13.2.2.3, below.) The quality ratings given above pertain to the mid-range of the measured source conditions for the equation. A higher mean vehicle weight and a higher than normal traffic rate may be justified when performing a worst-case analysis of emissions from unpaved roads.

The emission factors for the exhaust, brake wear and tire wear of a 1980's vehicle fleet (*C*) was obtained from EPA's MOBILE6.2 model [23]. The emission factor also varies with aerodynamic size range

as shown in Table 13.2.2-4

Table 13.2.2-4. EMISSION FACTOR FOR 1980'S VEHICLE FLEET EXHAUST, BRAKE WEAR AND TIRE WEAR

Particle Size Range[a]	*C*, Emission Factor for Exhaust, Brake Wear and Tire Wear[b] lb/VMT
$PM_{2.5}$	0.00036
PM_{10}	0.00047
PM_{30}[c]	0.00047

[a] Refers to airborne particulate matter (PM-x) with an aerodynamic diameter equal to or less than x micrometers.
[b] Units shown are pounds per vehicle mile traveled (lb/VMT).
[c] PM-30 is sometimes termed "suspendable particulate" (SP) and is often used as a surrogate for TSP.

It is important to note that the vehicle-related source conditions refer to the average weight, speed, and number of wheels for all vehicles traveling the road. For example, if 98 percent of traffic on the road are 2-ton cars and trucks while the remaining 2 percent consists of 20-ton trucks, then the mean weight is 2.4 tons. More specifically, Equations 1a and 1b are *not* intended to be used to calculate a separate emission factor for each vehicle class within a mix of traffic on a given unpaved road. That is, in the example, one should *not* determine one factor for the 2-ton vehicles and a second factor for the 20-ton trucks. Instead, only one emission factor should be calculated that represents the "fleet" average of 2.4 tons for all vehicles traveling the road.

Moreover, to retain the quality ratings when addressing a group of unpaved roads, it is necessary that reliable correction parameter values be determined for the road in question. The field and laboratory procedures for determining road surface silt and moisture contents are given in AP-42 Appendices C.1 and C.2. Vehicle-related parameters should be developed by recording visual observations of traffic. In some cases, vehicle parameters for industrial unpaved roads can be determined by reviewing maintenance records or other information sources at the facility.

In the event that site-specific values for correction parameters cannot be obtained, then default values may be used.In the absence of site-specific silt content information, an appropriate mean value from Table 13.2.2-1 may be used as a default value, but the quality rating of the equation is reduced by two letters. Because of significant differences found between different types of road surfaces and between different areas of the country, use of the default moisture content value of 0.5 percent in Equation 1b is discouraged. The quality rating should be downgraded two letters when the default moisture content value is used. (It is assumed that readers addressing industrial roads have access to the information needed to develop average vehicle information in Equation 1a for their facility.)

The effect of routine watering to control emissions from unpaved roads is discussed below in Section 13.2.2.3, “Controls”. However, all roads are subject to some natural mitigation because of rainfall and other precipitation. The Equation 1a and 1b emission factors can be extrapolated to annual

average uncontrolled conditions (but including natural mitigation) under the simplifying assumption that annual average emissions are inversely proportional to the number of days with measurable (more than 0.254 mm [0.01 inch]) precipitation:

$$E_{ext} = E\ [(365 - P)/365] \quad (2)$$

where:

E_{ext} = annual size-specific emission factor extrapolated for natural mitigation, lb/VMT

E = emission factor from Equation 1a or 1b

P = number of days in a year with at least 0.254 mm (0.01 in) of precipitation (see below)

Figure 13.2.2-1 gives the geographical distribution for the mean annual number of "wet" days for the United States.

Equation 2 provides an estimate that accounts for precipitation on an annual average basis for the purpose of inventorying emissions. It should be noted that Equation 2 does not account for differences in the temporal distributions of the rain events, the quantity of rain during any event, or the potential for the rain to evaporate from the road surface. In the event that a finer temporal and spatial resolution is desired for inventories of public unpaved roads, estimates can be based on a more complex set of assumptions. These assumptions include:

1. The moisture content of the road surface material is increased in proportion to the quantity of water added;
2. The moisture content of the road surface material is reduced in proportion to the Class A pan evaporation rate;
3. The moisture content of the road surface material is reduced in proportion to the traffic volume; and
4. The moisture content of the road surface material varies between the extremes observed in the area. The CHIEF Web site (http://www.epa.gov/ttn/chief/ap42/ch13/related/c13s02-2.html) has a file which contains a spreadsheet program for calculating emission factors which are temporally and spatially resolved. Information required for use of the spreadsheet program includes monthly Class A pan evaporation values, hourly meteorological data for precipitation, humidity and snow cover, vehicle traffic information, and road surface material information.

It is emphasized that the simple assumption underlying Equation 2 and the more complex set of assumptions underlying the use of the procedure which produces a finer temporal and spatial resolution have not been verified in any rigorous manner. For this reason, the quality ratings for either approach should be downgraded one letter from the rating that would be applied to Equation 1.

13.2.2.3 Controls[18-22]

A wide variety of options exist to control emissions from unpaved roads. Options fall into the following three groupings:

1. Vehicle restrictions that limit the speed, weight or number of vehicles on the road;

2. Surface improvement, by measures such as (a) paving or (b) adding gravel or slag to a dirt road; and
3. Surface treatment, such as watering or treatment with chemical dust suppressants.

Available control options span broad ranges in terms of cost, efficiency, and applicability. For example, traffic controls provide moderate emission reductions (often at little cost) but are difficult to enforce. Although paving is highly effective, its high initial cost is often prohibitive. Furthermore, paving is not feasible for industrial roads subject to very heavy vehicles and/or spillage of material in transport. Watering and chemical suppressants, on the other hand, are potentially applicable to most industrial roads at moderate to low costs. However, these require frequent reapplication to maintain an acceptable level of control. Chemical suppressants are generally more cost-effective than water but not in cases of temporary roads (which are common at mines, landfills, and construction sites). In summary, then, one needs to consider not only the type and volume of traffic on the road but also how long the road will be in service when developing control plans.

Vehicle restrictions. These measures seek to limit the amount and type of traffic present on the road or to lower the mean vehicle speed. For example, many industrial plants have restricted employees from driving on plant property and have instead instituted bussing programs. This eliminates emissions due to employees traveling to/from their worksites. Although the heavier average vehicle weight of the busses increases the base emission factor, the decrease in vehicle-miles-traveled results in a lower overall emission rate.

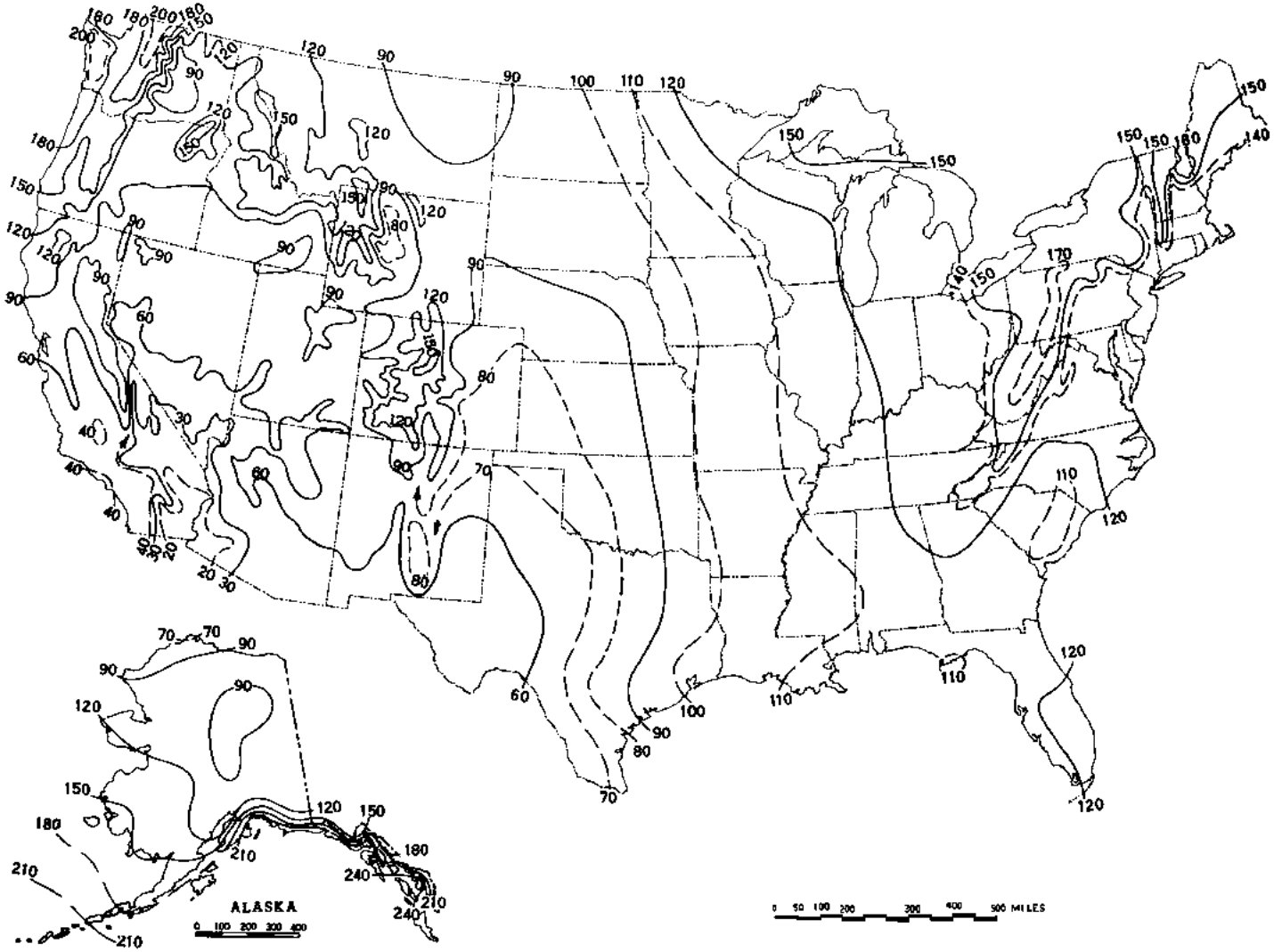


Figure 13.2.2-1. Mean number of days with 0.01 inch or more of precipitation in United States.

WRAP Fugitive Dust Handbook

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Fugitive Dust Control Measures Applicable for the WRAP Region

Source Category	Control Measure	Published PM10 Control Efficiency
Agricultural Tilling	Reduce tilling during high winds	1 – 5%
	Roughen surface	15 – 64%
	Modify equipment	50%
	Employ sequential cropping	50%
	Increase soil moisture	90%
	Use other conservation management practices	25 - 100%
Agricultural Harvesting	Limited activity during high winds	5 – 70%
	Modify equipment	50%
	Night farming	10%
	New techniques for drying fruit	25 –60%
Construction/Demolition	Water unpaved surfaces	10 – 74%
	Limit on-site vehicle speed to 15 mph	57%
	Apply dust suppressant to unpaved areas	84%
	Prohibit activities during high winds	98%
Materials Handling	Implement wet suppression	50 – 90%
	Erect 3-sided enclosure around storage piles	75%
	Cover storage pile with a tarp during high winds	90%
Paved Roads	Sweep streets	4 – 26%
	Minimize trackout	40 – 80%
	Remove deposits on road ASAP	> 90%
Unpaved Roads	Limit vehicle speed to 25 mph	44%
	Apply water	10 – 74%
	Apply dust suppressant	84%
	Pave the surface	>90%
Mineral Products Industry	Cyclone or muliclone	68 –79%
	Wet scrubber	78 –98%
	Fabric filter	99 – 99.8%
	Electrostatic precipitator	90 – 99.5%
Abrasive Blasting	Water spray	50 – 93%
	Fabric filter	> 95%
Livestock Husbandry	Daily watering of corrals and pens	> 10%
	Add wood chips or mulch to working pens	> 10%
Wind Erosion (agricultural, open area, and storage piles)	Plant trees or shrubs as a windbreak	25%
	Create cross-wind ridges	24 – 93%
	Erect artificial wind barriers	4 – 88%
	Apply dust suppressant or gravel	84%
	Revegetate; apply cover crop	90%
	Water exposed area before high winds	90%

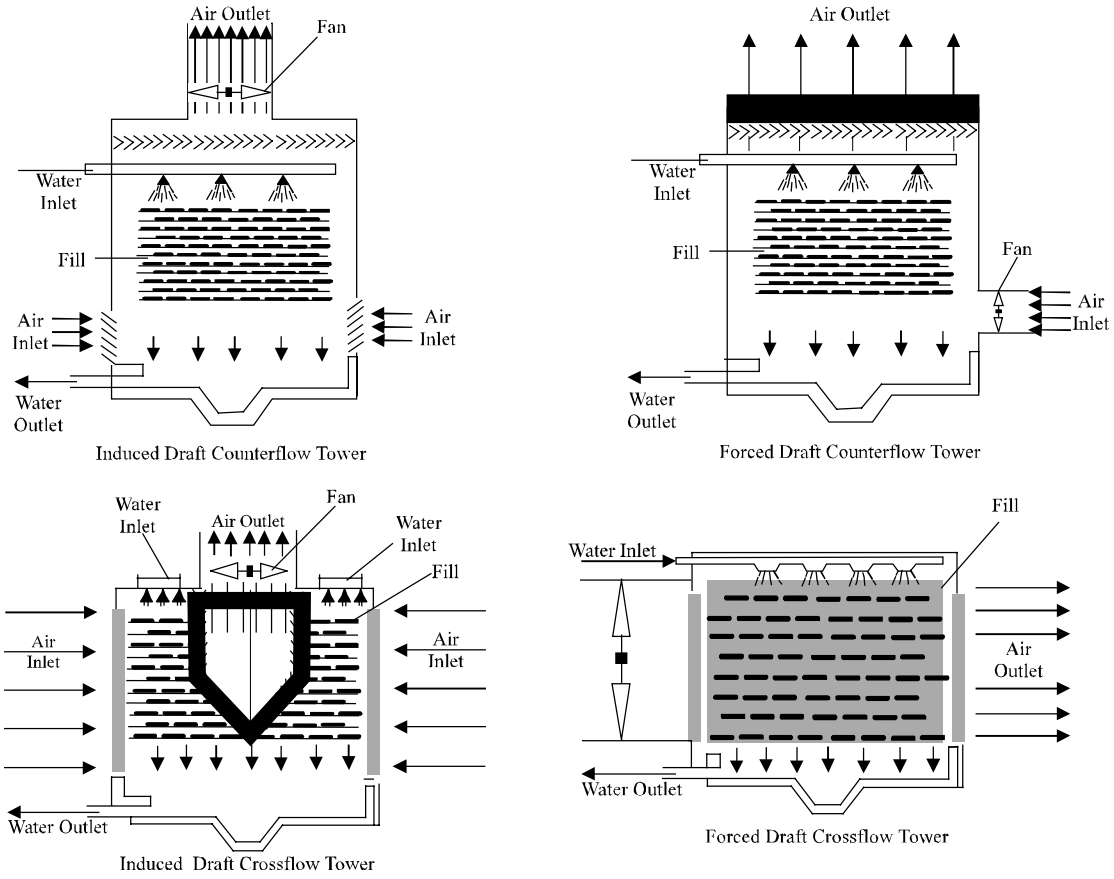

Figure 13.4-2. Mechanical draft cooling towers.

To reduce the drift from cooling towers, drift eliminators are usually incorporated into the tower design to remove as many droplets as practical from the air stream before exiting the tower. The drift eliminators used in cooling towers rely on inertial separation caused by direction changes while passing through the eliminators. Types of drift eliminator configurations include herringbone (blade-type), wave form, and cellular (or honeycomb) designs. The cellular units generally are the most efficient. Drift eliminators may include various materials, such as ceramics, fiber reinforced cement, fiberglass, metal, plastic, and wood installed or formed into closely spaced slats, sheets, honeycomb assemblies, or tiles. The materials may include other features, such as corrugations and water removal channels, to enhance the drift removal further.

Table 13.4-1 provides available particulate emission factors for wet cooling towers. Separate emission factors are given for induced draft and natural draft cooling towers. Several features in Table 13.4-1 should be noted. First, a *conservatively high* PM-10 emission factor can be obtained by (a) multiplying the total liquid drift factor by the total dissolved solids (TDS) fraction in the circulating water and (b) assuming that, once the water evaporates, all remaining solid particles are within the PM-10 size range.

Second, if TDS data for the cooling tower are not available, a source-specific TDS content can be estimated by obtaining the TDS data for the make-up water and multiplying them by the cooling tower cycles of concentration. The cycles of concentration ratio is the ratio of a measured

Table 13.4-1 (Metric And English Units). PARTICULATE EMISSIONS FACTORS FOR WET COOLING TOWERS[a]

Tower Type[d]	Total Liquid Drift[b]				PM-10[c]		
	Circulating Water Flow[b]	g/daL	lb/10^3 gal	EMISSION FACTOR RATING	g/daL[e]	lb/10^3 gal	EMISSION FACTOR RATING
Induced Draft (SCC 3-85-001-01, 3-85-001-20, 3-85-002-01)	0.020	2.0	1.7	D	0.023	0.019	E
Natural Draft (SCC 3-85-001-02, 3-85-002-02)	0.00088	0.088	0.073	E	ND	ND	—

[a] References 1-17. Numbers are given to 2 significant digits. ND = no data. SCC = Source Classification Code.

[b] References 2,5-7,9-10,12-13,15-16. Total liquid drift is water droplets entrained in the cooling tower exit air stream. Factors are for % of circulating water flow (10^{-2} L drift/L [10^{-2} gal drift/gal] water flow) and g drift/daL (lb drift/10^3 gal) circulating water flow. 0.12 g/daL = 0.1 lb/10^3 gal; 1 daL = 10^1 L.

[c] See discussion in text on how to use the table to obtain PM-10 emission estimates. Values shown above are the arithmetic average of test results from References 2,4,8, and 11-14, and they imply an effective TDS content of approximately 12,000 parts per million (ppm) in the circulating water.

[d] See Figure 13.4-1 and Figure 13.4-2. Additional SCCs for wet cooling towers of unspecified draft type are 3-85-001-10 and 3-85-002-10.

[e] Expressed as g PM-10/daL (lb PM-10/10^3 gal) circulating water flow.

parameter for the cooling tower water (such as conductivity, calcium, chlorides, or phosphate) to that parameter for the make-up water. This estimated cooling tower TDS can be used to calculate the PM-10 emission factor as above. If neither of these methods can be used, the arithmetic average PM-10 factor given in Table 13.4-1 can be used. Table 13.4-1 presents the arithmetic average PM-10 factor calculated from the test data in References 2, 4, 8, and 11 - 14. Note that this average corresponds to an effective cooling tower recirculating water TDS content of approximately 11,500 ppm for induced draft towers. (This can be found by dividing the total liquid drift factor into the PM-10 factor.)

As an alternative approach, if TDS data are unavailable for an induced draft tower, a value may be selected from Table 13.4-2 and then be combined with the total liquid drift factor in Table 13.4-1 to determine an apparent PM-10 factor.

As shown in Table 13.4-2, available data do not suggest that there is any significant difference between TDS levels in counter and cross flow towers. Data for natural draft towers are not available.

Since flares do not lend themselves to conventional emission testing techniques, only a few attempts have been made to characterize flare emissions. Recent EPA tests using propylene as flare gas indicated that efficiencies of 98 percent can be achieved when burning an offgas with at least 11,200 kJ/m^3 (300 Btu/ft^3). The tests conducted on steam-assisted flares at velocities as low as 39.6 meters per minute (m/min) (130 ft/min) to 1140 m/min (3750 ft/min), and on air-assisted flares at velocities of 180 m/min (617 ft/min) to 3960 m/min (13,087 ft/min) indicated that variations in incoming gas flow rates have no effect on the combustion efficiency. Flare gases with less than 16,770 kJ/m^3 (450 Btu/ft^3) do not smoke.

Table 13.5-1 presents flare emission factors, and Table 13.5-2 presents emission composition data obtained from the EPA tests.[1] Crude propylene was used as flare gas during the tests. Methane was a major fraction of hydrocarbons in the flare emissions, and acetylene was the dominant intermediate hydrocarbon species. Many other reports on flares indicate that acetylene is always formed as a stable intermediate product. The acetylene formed in the combustion reactions may react further with hydrocarbon radicals to form polyacetylenes followed by polycyclic hydrocarbons.[2]

In flaring waste gases containing no nitrogen compounds, NO is formed either by the fixation of atmospheric nitrogen (N) with oxygen (O) or by the reaction between the hydrocarbon radicals present in the combustion products and atmospheric nitrogen, by way of the intermediate stages, HCN, CN, and OCN.[2] Sulfur compounds contained in a flare gas stream are converted to SO_2 when burned. The amount of SO_2 emitted depends directly on the quantity of sulfur in the flared gases.

Table 13.5-1 (English Units). EMISSION FACTORS FOR FLARE OPERATIONS[a]

EMISSION FACTOR RATING: B

Component	Emission Factor (lb/10^6 Btu)
Total hydrocarbons[b]	0.14
Carbon monoxide	0.37
Nitrogen oxides	0.068
Soot[c]	0 - 274

[a] Reference 1. Based on tests using crude propylene containing 80% propylene and 20% propane.
[b] Measured as methane equivalent.
[c] Soot in concentration values: nonsmoking flares, 0 micrograms per liter (µg/L); lightly smoking flares, 40 µg/L; average smoking flares, 177 µg/L; and heavily smoking flares, 274 µg/L.

7.1.3.1 Routine Losses From Fixed Roof Tanks[8-14,22]

The following equations, provided to estimate standing and working loss emissions, apply to tanks with vertical cylindrical shells and fixed roofs and to tanks with horizontal cylindrical shells. These tanks must be substantially liquid- and vapor-tight. The equations are not intended to be used in estimating losses from tanks which have air or other gases injected into the liquid, or which store unstable or boiling stocks or mixtures of hydrocarbons or petrochemicals for which the vapor pressure is not known or cannot be readily predicted. Tanks containing aqueous mixtures in which phase separation has occurred, resulting in a free layer of oil or other volatile materials floating on top of the water, should have emissions estimated on the basis of the properties of the free top layer.

Total routine losses from fixed roof tanks are equal to the sum of the standing loss and working loss:

$$L_T = L_S + L_W \tag{1-1}$$

where:

L_T = total routine losses, lb/yr
L_S = standing losses, lb/yr, see Equation 1-2
L_W = working losses, lb/yr, see Equation 1-35

7.1.3.1.1 Standing Loss

The standing loss, L_S, for a fixed roof tank refers to the loss of stock vapors as a result of tank vapor space breathing. Fixed roof tank standing losses can be estimated from Equation 1-2.

$$L_S = 365\ V_V\ W_V\ K_E\ K_S \tag{1-2}$$

where:

L_S = standing loss, lb/yr
V_V = vapor space volume, ft^3, see Equation 1-3
W_V = stock vapor density, lb/ft^3
K_E = vapor space expansion factor, per day
K_S = vented vapor saturation factor, dimensionless
365 = constant, the number of daily events in a year, (days/year)

Tank Vapor Space Volume, V_V - The tank vapor space volume is calculated using the following equation:

$$V_V = \left(\frac{\pi}{4} D^2\right) H_{VO} \tag{1-3}$$

where:

V_V = vapor space volume, ft^3
D = tank diameter, ft, see Equation 1-14 for horizontal tanks
H_{VO} = vapor space outage, ft, see Equation 1-16

The standing loss equation can be simplified by combining Equation 1-2 with Equation 1-3. The result is Equation 1-4.

$$L_S = 365 K_E \left(\frac{\pi}{4} D^2 \right) H_{VO} K_S W_V \quad \textbf{(1-4)}$$

where:

L_S = standing loss, lb/yr
K_E = vapor space expansion factor, per day, see Equation 1-5, 1-12, or 1-13
D = diameter, ft, see Equation 1-14 for horizontal tanks
H_{VO} = vapor space outage, ft, see Equation 1-16; use $H_E/2$ from Equation 1-15 for horizontal tanks
K_S = vented vapor saturation factor, dimensionless, see Equation 1-21
W_V = stock vapor density, lb/ft^3, see Equation 1-22
365 = constant, the number of daily events in a year, (days/year)

Vapor Space Expansion Factor, K_E

The calculation of the vapor space expansion factor, K_E, depends upon the properties of the liquid in the tank and the breather vent settings, as shown in Equation 1-5. As shown in the equation, K_E is greater than zero. If K_E is less than zero, standing losses will not occur. In that K_E represents the fraction of vapors in the vapor space that are expelled by a given increase in temperature, a value of 1 would indicate that the entire vapor space has been expelled. Thus the value of K_E must be less than 1, in that it is not physically possible to expel more than 100% of what is present to begin with.

$$0 < K_E \leq 1$$

$$K_E = \frac{\Delta T_V}{T_{LA}} + \frac{\Delta P_V - \Delta P_B}{P_A - P_{VA}} \quad \textbf{(1-5)}$$

where:

ΔT_V = average daily vapor temperature range, °R; see Note 1
ΔP_V = average daily vapor pressure range, psi; see Note 2
ΔP_B = breather vent pressure setting range, psi; see Note 3
P_A = atmospheric pressure, psia
P_{VA} = vapor pressure at average daily liquid surface temperature, psia; see Notes 1 and 2 for Equation 1-22
T_{LA} = average daily liquid surface temperature, °R; see Note 3 for Equation 1-22

Notes:

1. The average daily vapor temperature range, ΔT_V, refers to the daily temperature range of the tank vapor space averaged over all of the days in the given period of time, such as one year, and should

not be construed as being applicable to an individual day. The average daily vapor temperature range is calculated for an uninsulated tank using Equation 1-6.

$$\Delta T_V = \left(1 - \frac{0.8}{2.2\,(H_S/D) + 1.9}\right)\Delta T_A + \frac{0.042\alpha_R I + 0.026(H_S/D)\alpha_S I}{2.2\,(H_S/D) + 1.9} \quad (1\text{-}6)$$

where:

ΔT_V = average daily vapor temperature range, °R
H_S = tank shell height, ft
D = tank diameter, ft,
ΔT_A = average daily ambient temperature range, °R; see Note 4
α_R = tank roof surface solar absorptance, dimensionless; see Table 7.1-6
α_S = tank shell surface solar absorptance, dimensionless; see Table 7.1-6
I = average daily total insolation factor, Btu/ft^2 d; see Table 7.1-7.

API assigns a default value of $H_s/D = 0.5$ and an assumption of $\alpha_R = \alpha_S$, resulting in the simplified equation shown below for an uninsulated tank:[22]

$$\Delta T_V = 0.7\,\Delta T_A + 0.02\,\alpha\,I \quad (1\text{-}7)$$

where:

α = average tank surface solar absorptance, dimensionless

For purposes of estimating emissions, a storage tank should be deemed insulated only if the roof and shell are both sufficiently insulated so as to minimize heat exchange with ambient air. If only the shell is insulated, and not the roof, the temperature equations are independent of H_s/D. Also, there likely will be sufficient heat exchange through the roof such that Equation 1-7 would be applicable.

A more accurate method of accounting for the average daily vapor temperature range, ΔT_V, in partially insulated scenarios is given below. When the tank shell is insulated but the tank roof is not, heat gain to the tank from insolation is almost entirely through the tank roof and thus the liquid surface temperature is not sensitive to H_S/D.

$$\Delta T_V = 0.6\,\Delta T_A + 0.02\,\alpha_R\,I \quad (1\text{-}8)$$

In the case of a fully insulated tank maintained at constant temperature, the average daily vapor temperature range, ΔT_V, should be taken as zero. This assumption that ΔT_V is equal to zero addresses only temperature differentials resulting from the diurnal ambient temperature cycle. In the case of cyclic heating of the bulk liquid, see Section 7.1.3.8.4.

2. The average daily vapor pressure range, ΔP_V, refers to the daily vapor pressure range at the liquid surface temperature averaged over all of the days in the given period of time, such as one year, and should not be construed as being applicable to an individual day. The average daily vapor pressure range can be calculated using the following equation:

$$\Delta P_V = P_{VX} - P_{VN} \quad (1\text{-}9)$$

where:

ΔP_V = average daily vapor pressure range, psia
P_{VX} = vapor pressure at the average daily maximum liquid surface temperature, psia; see Note 5
P_{VN} = vapor pressure at the average daily minimum liquid surface temperature, psia; see Note 5

See Section 7.1.6.1 for a more approximate equation for ΔP_V that was used historically, but which is no longer recommended.

In the case of a fully insulated tank maintained at constant temperature, the average daily vapor pressure range, ΔP_V, should be taken as zero, as discussed for the vapor temperature range in Note 1.

3. The breather vent pressure setting range, ΔP_B, is calculated using the following equation:

$$\Delta P_B = P_{BP} - P_{BV} \quad (1\text{-}10)$$

where:

ΔP_B = breather vent pressure setting range, psig
P_{BP} = breather vent pressure setting, psig
P_{BV} = breather vent vacuum setting, psig

If specific information on the breather vent pressure setting and vacuum setting is not available, assume 0.03 psig for P_{BP} and -0.03 psig for P_{BV} as typical values. If the fixed roof tank is of bolted or riveted construction in which the roof or shell plates are not vapor tight, assume that $\Delta P_B = 0$, even if a breather vent is used.

4. The average daily ambient temperature range, ΔT_A, refers to the daily ambient temperature range averaged over all of the days in the given period of time, such as one year, and should not be construed as being applicable to an individual day. The average daily ambient temperature range is calculated using the following equation:

$$\Delta T_A = T_{AX} - T_{AN} \quad (1\text{-}11)$$

where:

ΔT_A = average daily ambient temperature range, °R
T_{AX} = average daily maximum ambient temperature, °R
T_{AN} = average daily minimum ambient temperature, °R

Table 7.1-7 gives historical values of T_{AX} and T_{AN} in degrees Fahrenheit for selected cities in the United States. These values are converted to degrees Rankine by adding 459.7.

5. The vapor pressures associated with the average daily maximum and minimum liquid surface temperatures, P_{VX} and P_{VN}, respectively, are calculated by substituting the corresponding temperatures, T_{LX} and T_{LN}, into Equation 1-25 or 1-26 after converting the temperatures to the units indicated for the respective equation. If T_{LX} and T_{LN} are unknown, Figure 7.1-17 can be used to calculate their values. In

the case of a fully insulated tank maintained at constant temperature, the average daily vapor pressure range, ΔP_V, should be taken as zero.

If the liquid stored in the fixed roof tank has a true vapor pressure less than 0.1 psia and the tank breather vent settings are not greater than ±0.03 psig, Equation 1-12 or Equation 1-13 may be used with an acceptable loss in accuracy.

If the tank location and tank color and condition are known, K_E may be calculated using the following equation in lieu of Equation 1-5:

$$K_E = 0.0018 \Delta T_V = 0.0018 [0.7 (T_{AX} - T_{AN}) + 0.02 \alpha I] \quad (1\text{-}12)$$

where:

K_E = vapor space expansion factor, per day
ΔT_V = average daily vapor temperature range, °R
T_{AX} = average daily maximum ambient temperature, °R
T_{AN} = average daily minimum ambient temperature, °R
α = tank surface solar absorptance, dimensionless
I = average daily total insolation on a horizontal surface, Btu/(ft^2 day)
0.0018 = constant, (°R)$^{-1}$
0.7 = constant, dimensionless
0.02 = constant, (°R ft^2 day)/Btu

Average daily maximum and minimum ambient temperatures and average daily total insolation can be determined from historical meteorological data for the location or may be obtained from historical meteorological data for a nearby location. Historical meteorological data for selected locations are given in Table 7.1-7, where values of T_{AX} and T_{AN} are given in degrees Fahrenheit. These values are converted to degrees Rankine by adding 459.7.

If the tank location is unknown, a value of K_E can be calculated using typical meteorological conditions for the lower 48 states. The typical value for daily insolation is 1,370 Btu/(ft^2 day), the average daily range of ambient temperature is 21°R, and the tank surface solar absorptance is 0.25 for white paint in average condition. Substituting these values into Equation 1-12 results in a value of 0.04, as shown in Equation 1-13.

$$K_E = 0.04 \quad (1\text{-}13)$$

Diameter

For vertical tanks, the diameter is straightforward. If a user needs to estimate emissions from a horizontal fixed roof tank, some of the tank parameters can be modified before using the vertical tank emission estimating equations. First, by assuming that the tank is one-half filled, the surface area of the liquid in the tank is approximately equal to the length of the tank times the diameter of the tank. Next, assume that this area represents a circle, i.e., that the liquid is an upright cylinder. Therefore, the effective diameter, D_E, is then equal to:

$$D_E = \sqrt{\frac{L D}{\frac{\pi}{4}}} \quad \textbf{(1-14)}$$

where:

D_E = effective tank diameter, ft
L = length of the horizontal tank, ft (for tanks with rounded ends, use the overall length)
D = diameter of a vertical cross-section of the horizontal tank, ft

By assuming the volume of the horizontal tank to be approximately equal to the cross-sectional area of the tank times the length of the tank, an effective height, H_E, of an equivalent upright cylinder may be calculated as:

$$H_E = \frac{\pi}{4} D \quad \textbf{(1-15)}$$

D_E should be used in place of D in Equation 1-4 for calculating the standing loss (or in Equation 1-3, if calculating the tank vapor space volume). One-half of the effective height, H_E, should be used as the vapor space outage, H_{VO}, in these equations. This method yields only a very approximate value for emissions from horizontal storage tanks. For underground horizontal tanks, assume that no breathing or standing losses occur ($L_S = 0$) because the insulating nature of the earth limits the diurnal temperature change. No modifications to the working loss equation are necessary for either aboveground or underground horizontal tanks. However, standing losses from underground gasoline tanks, which can experience relatively fast vapor growth after the ingestion of air and dilution of the headspace, are addressed in Section 5.2 of AP-42.

Vapor Space Outage

The vapor space outage, H_{VO} is the height of a cylinder of tank diameter, D, whose volume is equivalent to the vapor space volume of a fixed roof tank, including the volume under the cone or dome roof. The vapor space outage, H_{VO}, is estimated from:

$$H_{VO} = H_S - H_L + H_{RO} \quad \text{(1-16)}$$

where:

H_{VO} = vapor space outage, ft; use $H_E/2$ from Equation 1-15 for horizontal tanks
H_S = tank shell height, ft
H_L = liquid height, ft; typically assumed to be at the half-full level, unless known to be maintained at some other level
H_{RO} = roof outage, ft; see Note 1 for a cone roof or Note 2 for a dome roof

Notes:

1. For a cone roof, the roof outage, H_{RO}, is calculated as follows:

$$H_{RO} = (1/3)\ H_R \tag{1-17}$$

where:

H_{RO} = roof outage (or shell height equivalent to the volume contained under the roof), ft
H_R = tank roof height, ft

$$H_R = S_R\ R_S \tag{1-18}$$

where: S_R = tank cone roof slope, ft/ft; if unknown, a standard value of 0.0625 is used
R_S = tank shell radius, ft

2. For a dome roof, the roof outage, H_{RO}, is calculated as follows:

$$H_{RO} = H_R \left[\frac{1}{2} + \frac{1}{6} \left[\frac{H_R}{R_S} \right]^2 \right] \tag{1-19}$$

where:

H_{RO} = roof outage, ft
R_S = tank shell radius, ft
H_R = tank roof height, ft

$$H_R = R_R - \left(R_R^2 - R_S^2 \right)^{0.5} \tag{1-20}$$

H_R = tank roof height, ft R_R = tank dome roof radius, ft R_S = tank shell radius,ft

The value of R_R usually ranges from 0.8D - 1.2D, where D = 2 R_S. If R_R is unknown, the tank diameter is used in its place. If the tank diameter is used as the value for R_R, Equations 1-19 and 1-20 reduce to H_{RO} = 0.137 R_S and H_R = 0.268 R_S.

Vented Vapor Saturation Factor, K_S

The vented vapor saturation factor, K_S, is calculated using the following equation:

$$K_S = \frac{1}{1 + 0.053 P_{VA} H_{VO}} \tag{1-21}$$

where:

K_S = vented vapor saturation factor, dimensionless
P_{VA} = vapor pressure at average daily liquid surface temperature, psia; see Notes 1 and 2 to Equation 1-22
H_{VO} = vapor space outage, ft, see Equation 1-16

0.053 = constant, $(psia\text{-}ft)^{-1}$

Stock Vapor Density, W_V - The density of the vapor is calculated using the following equation:

$$W_V = \frac{M_V P_{VA}}{R T_V} \quad \textbf{(1-22)}$$

where:

W_V = vapor density, lb/ft^3
M_V = vapor molecular weight, lb/lb-mole; see Note 1
R = the ideal gas constant, 10.731 psia ft^3/lb-mole °R
P_{VA} = vapor pressure at average daily liquid surface temperature, psia; see Notes 1 and 2
T_V = average vapor temperature, °R; see Note 6

Notes:

1. The molecular weight of the vapor, M_V, can be determined from Table 7.1-2 and 7.1-3 for selected petroleum liquids and selected petrochemicals, respectively, or by analyzing vapor samples. Where mixtures of organic liquids are stored in a tank, M_V can be calculated from the liquid composition. The molecular weight of the vapor, M_V, is equal to the sum of the molecular weight, M_i, multiplied by the vapor mole fraction, y_i, for each component. The vapor mole fraction is equal to the partial pressure of component i divided by the total vapor pressure. The partial pressure of component i is equal to the true vapor pressure of component i (P) multiplied by the liquid mole fraction, (x_i). Therefore,

$$M_V = \sum M_i y_i = \sum M_i \left(\frac{P x_i}{P_{VA}} \right) \quad \textbf{(1-23)}$$

where:

P_{VA}, total vapor pressure of the stored liquid, by Raoult's Law[30], is:

$$P_{VA} = \sum P x_i \quad \textbf{(1-24)}$$

For more detailed information on Raoult's Law, please refer to Section 7.1.4. Frequently, however, the vapor pressure is not known for each component in a mixture. For more guidance on determining the total vapor pressure at a given temperature (*i.e.*, the true vapor pressure), see Note 2 below.

2. True vapor pressure is defined in various ways for different purposes within the industry, such as "bubble point" for transportation specifications, but for purposes of these emissions estimating methodologies it is the sum of the equilibrium partial pressures exerted by the components of a volatile organic liquid, as shown in Equation 1-24. True vapor pressure may be determined by ASTM D 2879 (or ASTM D 6377 for crude oils with a true vapor pressure greater than 3.6 psia) or obtained from standard reference texts. For certain petroleum liquids, true vapor pressure may be predicted from Reid vapor pressure, which is the absolute vapor pressure of volatile crude oil and volatile non-viscous petroleum

liquids, as determined by ASTM D 323. ASTM D 5191 may be used as an alternative method for determining Reid vapor pressure for petroleum products, however, it should not be used for crude oils.

Caution should be exercised when considering ASTM D 2879 for determining the true vapor pressure of certain types of mixtures. Vapor pressure is sensitive to the lightest components in a mixture, and the de-gassing step in ASTM D 2879 can remove lighter fractions from mixtures such as No. 6 fuel oil if it is not done with care (*i.e.* at an appropriately low pressure and temperature). In addition, any dewatering of a sample prior to measuring its vapor pressure must be done using a technique that has been demonstrated to not remove the lightest organic compounds in the mixture. Alternatives to the method may be developed after publication of this chapter.

True vapor pressure can be determined for crude oils from Reid vapor pressure using Figures 7.1-13a and 7.1-13b. However, the nomograph in Figure 7.1-13a and the correlation equation in Figure 7.1-13b for crude oil are known to have an upward bias, and thus use of ASTM D 6377 is more accurate for crude oils with a true vapor pressure greater than 3.6 psia. ASTM D 6377 may be used to directly measure true vapor pressure at a given temperature. In order to utilize ASTM D 6377 to predict true vapor pressure values over a range of temperatures, the method should be applied at multiple temperatures. A regression of the log-transformed temperature versus vapor pressure data thus obtained may be performed to obtain A and B constants for use in Equation 1-25. In order to determine true vapor pressure for purposes of estimating emissions of volatile organic compounds, ASTM D 6377 should be performed using a vapor-to-liquid ratio of 4:1, which is expressed in the method as $VPCR_4$.

For light refined stocks (gasolines and naphthas) for which the Reid vapor pressure and distillation slope are known, Figures 7.1-14a and 7.1-14b can be used. For refined stocks with Reid vapor pressure below the 1 psi applicability limit of Figures 7.1-14a and 7.1-14b, true vapor pressure can be determined using ASTM D 2879. In order to use Figures 7.1-13a, 7.1-13b, 7.1-14a, or 7.1-14b, the stored liquid surface temperature, T_{LA}, must be determined in degrees Fahrenheit. See Note 3 to determine T_{LA}.

Alternatively, true vapor pressure for selected petroleum liquid stocks, at the stored liquid surface temperature, can be determined using the following equation:

$$P_{VA} = \exp\left[A - \left(\frac{B}{T_{LA}}\right)\right] \quad \textbf{(1-25)}$$

where:

exp = exponential function
A = constant in the vapor pressure equation, dimensionless
B = constant in the vapor pressure equation, °R
T_{LA} = average daily liquid surface temperature, °R; see Note 3
P_{VA} = true vapor pressure, psia

For selected petroleum liquid stocks, physical property data including vapor pressure constants A and B for use in Equation 1-25 are presented in Table 7.1-2. For refined petroleum stocks with Reid vapor pressure within the limits specified in the scope of ASTM D 323, the constants A and B can be calculated from the equations presented in Figure 7.1-15 and the distillation slopes presented in Table 7.1-2. For

crude oil stocks, the constants A and B can be calculated from Reid vapor pressure using the equations presented in Figure 7.1-16. However, the equations in Figure 7.1-16 are known to have an upward bias[29], and thus use of ASTM D 6377 is more accurate. Note that in Equation 1-25, T_{LA} is determined in degrees Rankine instead of degrees Fahrenheit.

The true vapor pressure of organic liquids at the stored liquid temperature can also be estimated by Antoine's equation:

$$\log P_{VA} = A - \left(\frac{B}{T_{LA} + C}\right) \quad \textbf{(1-26)}$$

where:

log = log 10
A = constant in vapor pressure equation, dimensionless
B = constant in vapor pressure equation, °C
C = constant in vapor pressure equation, °C
T_{LA} = average daily liquid surface temperature, °C
P_{VA} = vapor pressure at average liquid surface temperature, mm Hg

For selected pure chemicals, the values for the constants A, B, and C are listed in Table 7.1-3. Note that in Equation 1-26, T_{LA} is determined in degrees Celsius instead of degrees Rankine. Also, in Equation 1-26, P_{VA} is determined in mm of Hg rather than psia (760 mm Hg = 14.7 psia).

More rigorous thermodynamic equations of state are available in process simulation software packages. The use of such programs may be preferable in determining the true vapor pressure of mixtures that are not adequately characterized by Raoult's Law.

3. The average daily liquid surface temperature, T_{LA}, refers to the liquid surface temperature averaged over all of the days in the given period of time, such as one year, and should not be construed as being applicable to an individual day. While the accepted methodology is to use the average temperature, this approach introduces a bias in that the true vapor pressure, P_{VA}, is a non-linear function of temperature. However, the greater accuracy that would be achieved by accounting for this logarithmic function is not warranted, given the associated computational burden. The average daily liquid surface temperature is calculated for an uninsulated fixed roof tank using Equation 1-27.

$$T_{LA} = \left(0.5 - \frac{0.8}{4.4(H_S/D) + 3.8}\right) T_{AA} + \left(0.5 + \frac{0.8}{4.4(H_S/D) + 3.8}\right) T_B + \frac{0.021\ \alpha_R\ I + 0.013(H_S/D)\ \alpha_S\ I}{4.4(H_S/D) + 3.8} \quad \text{(1-27)}$$

where:

T_{LA} = average daily liquid surface temperature, °R
H_S = tank shell height, ft
D = tank diameter, ft,
T_{AA} = average daily ambient temperature, °R; see Note 4
T_B = liquid bulk temperature, °R; see Note 5

α_R = tank roof surface solar absorptance, dimensionless; see Table 7.1-6
α_S = tank shell surface solar absorptance, dimensionless; see Table 7.1-6
I = average daily total insolation factor, Btu/(ft^2 day); see Table 7.1-7

API assigns a default value of $H_s/D = 0.5$ and an assumption of $\alpha_R = \alpha_S$, resulting in the simplified equation shown below for an uninsulated fixed roof tank:[22]

$$T_{LA} = 0.4T_{AA} + 0.6T_B + 0.005\ \alpha\ I \quad (1\text{-}28)$$

where:

α = average tank surface solar absorptance, dimensionless

Equation 1-27 and Equation 1-28 should not be used to estimate liquid surface temperature for insulated tanks. In the case of fully insulated tanks, the average liquid surface temperature should be assumed to equal the average liquid bulk temperature (see Note 5). For purposes of estimating emissions, a storage tank should be deemed insulated only if the roof and shell are both fully insulated so as to minimize heat exchange with ambient air. If only the shell is insulated, and not the roof, there likely will be sufficient heat exchange through the roof such that Equation 1-28 would be applicable.

A more accurate method of estimating the average liquid surface temperature, T_{LA}, in partially insulated fixed roof tanks is given below. When the tank shell is insulated but the tank roof is not, heat gain to the tank from insolation is almost entirely through the tank roof and thus the liquid surface temperature is not sensitive to H_S/D.

$$T_{LA} = 0.3\ T_{AA} + 0.7\ T_B + 0.005\ \alpha_R\ I \quad (1\text{-}29)$$

If T_{LA} is used to calculate P_{VA} from Figures 7.1-13a, 7.1-13b, 7.1-14a, or 7.1-14b, T_{LA} must be converted from degrees Rankine to degrees Fahrenheit (°F = °R – 459.7). If T_{LA} is used to calculate P_{VA} from Equation 1-26, T_{LA} must be converted from degrees Rankine to degrees Celsius (°C = [°R – 491.7]/1.8).

4. The average daily ambient temperature, T_{AA}, is calculated using the following equation:

$$T_{AA} = \left(\frac{T_{AX} + T_{AN}}{2}\right) \quad \textbf{(1-30)}$$

where:

T_{AA} = average daily ambient temperature, °R
T_{AX} = average daily maximum ambient temperature, °R
T_{AN} = average daily minimum ambient temperature, °R

Table 7.1-7 gives historical values of T_{AX} and T_{AN} in degrees Fahrenheit for selected U.S. cities. These values are converted to degrees Rankine by adding 459.7.

5. The liquid bulk temperature, T_B, should preferably be based on measurements or estimated from process knowledge. For uninsulated fixed roof tanks known to be in approximate equilibrium with

ambient air, heat gain to the bulk liquid from insolation is almost entirely through the tank shell; thus the liquid bulk temperature is not sensitive to H_S/D and may be calculated using the following equation:

$$T_B = T_{AA} + 0.003\,\alpha_S\,I \tag{1-31}$$

where:

T_B = liquid bulk temperature, °R
T_{AA} = average daily ambient temperature, °R, as calculated in Note 4
α_S = tank shell surface solar absorptance, dimensionless; see Table 7.1-6
I = average daily total insolation factor, Btu/(ft^2 day); see Table 7.1-7.

6. The average vapor temperature, T_V, for an uninsulated tank may be calculated using the following equation:

$$T_V = \frac{[2.2\,(H_S/D)+1.1]\,T_{AA} + 0.8\,T_B + 0.021\alpha_R I + 0.013(H_S/D)\alpha_S I}{2.2\,(H_S/D) + 1.9} \tag{1-32}$$

where:

H_S = tank shell height, ft
D = tank diameter, ft,
T_{AA} = average daily ambient temperature, °R
T_B = liquid bulk temperature, °R
α_R = tank roof surface solar absorptance, dimensionless
α_S = tank shell surface solar absorptance, dimensionless
I = average daily total insolation factor, Btu/(ft^2 day).

API assigns a default value of $H_s/D = 0.5$ and an assumption of $\alpha_R = \alpha_S$, resulting in the simplified equation shown below for an uninsulated tank:[22]

$$T_V = 0.7T_{AA} + 0.3T_B + 0.009\,\alpha\,I \tag{1-33}$$

where:

α = average tank surface solar absorptance, dimensionless

When the shell is insulated, but not the roof, the temperature equations are independent of H_s/D.

$$T_V = 0.6T_{AA} + 0.4T_B + 0.01\,\alpha_R\,I \tag{1-34}$$

When the tank shell and roof are fully insulated, the temperatures of the vapor space and the liquid surface are taken as equal to the temperature of the bulk liquid.

7.1.3.1.2 Working Loss

The fixed roof tank working loss, L_W, refers to the loss of stock vapors as a result of tank filling operations. Fixed roof tank working losses can be estimated from:

$$L_W = V_Q K_N K_P W_V K_B \quad \textbf{(1-35)}$$

where:

L_W = working loss, lb/yr

V_Q = net working loss throughput, ft^3/yr, see Note 1

K_N = working loss turnover (saturation) factor, dimensionless

for turnovers > 36, $K_N = (180 + N)/6N$

for turnovers ≤ 36, $K_N = 1$

for tanks that are vapor balanced and tanks in which flashing occurs, $K_N = 1$ regardless of the number of turnovers; further adjustment of K_N may be appropriate in the case of splash loading into a tank.

N = number of turnovers per year, dimensionless:

$$N = \Sigma H_{QI} / (H_{LX} - H_{LN}) \quad \textbf{(1-36)}$$

ΣH_{QI} = the annual sum of the increases in liquid level, ft/yr

If ΣH_{QI} is unknown, it can be estimated from pump utilization records. Over the course of a year, the sum of increases in liquid level, ΣH_{QI}, and the sum of decreases in liquid level, ΣH_{QD}, will be approximately the same. Alternatively, ΣH_{QI} may be approximated as follows:

$$\Sigma H_{QI} = (5.614\ Q) / ((\pi/4)\ D^2) \quad (1\text{-}37)$$

5.614 =the conversion of barrels to cubic feet, ft^3/bbl

Q = annual net throughput, bbl/yr

For horizontal tanks, use D_E (Equation 1-14) in place of D in Equation 1-37

H_{LX} = maximum liquid height, ft

If the maximum liquid height is unknown, for vertical tanks use one foot less than the shell height and for horizontal tanks use (π/4) D where D is the diameter of a vertical cross-section of the horizontal tank

H_{LN} = minimum liquid height, ft

If the minimum liquid height is unknown, for vertical tanks use 1 and for horizontal tanks use 0

K_P = working loss product factor, dimensionless

for crude oils, $K_P = 0.75$; adjustment of K_P may be appropriate in the case of splash loading into a tank

for all other organic liquids, $K_P = 1$

W_V = vapor density, lb/ft^3, see Equation 1-22

K_B = vent setting correction factor, dimensionless, see Note 2 for open vents and for a vent setting range up to ± 0.03 psig, $K_B = 1$

1. Net Working Loss Throughput.

The net working loss throughput, V_Q, is the volume associated with increases in the liquid level, and is calculated as follows:

$$V_Q = (\Sigma H_{QI})(\pi/4)\, D^2 \quad (1\text{-}38)$$

where:

ΣH_{QI} = the annual sum of the increases in liquid level, ft/yr

D_E should be used for horizontal tanks in place of D in Equation 1-38.

If ΣH_{QI} is unknown, ΣH_{QI} can be estimated from pump utilization records. Over the course of a year, the sum of increases in liquid level, ΣH_{QI}, and the sum of decreases in liquid level, ΣH_{QD}, will be approximately the same. Alternatively, V_Q may be approximated as follows:

$$V_Q = 5.614\, Q \quad (1\text{-}39)$$

where:

5.614 = the conversion of barrels to cubic feet, ft^3/bbl

Q = annual net throughput, bbl/yr

Use of gross throughput to approximate the sum of increases in liquid level will significantly overstate emissions if pumping in and pumping out take place at the same time. However, use of gross throughput is still allowed, since it is clearly a conservative estimate of emissions.

2. Vent Setting Correction Factor

When the breather vent settings are greater than the typical values of ± 0.03 psig, and the condition expressed in Equation 1-40 is met, a vent setting correction factor, K_B, must be determined using Equation 1-41. This value of K_B will be used in Equation 1-35 to calculate working losses.

When:

(1-40)

$$K_N \left[\frac{P_{BP} + P_A}{P_I + P_A} \right] > 1.0$$

Then:

(1-41)

$$K_B = \left[\frac{\frac{P_I + P_A}{K_N} - P_{VA}}{P_{BP} + P_A - P_{VA}} \right]$$

where:

K_B = vent setting correction factor, dimensionless

P_I = pressure of the vapor space at normal operating conditions, psig

P_I is an actual pressure reading (the gauge pressure). If the tank is held at atmospheric pressure (not held under a vacuum or at a steady pressure) P_I would be 0.

P_A = atmospheric pressure, psia

K_N = working loss turnover (saturation) factor (dimensionless), see Equation 1-35 P_{VA} = vapor pressure at the average daily liquid surface temperature, psia; see Notes 1 and 2 to Equation 1-22

P_{BP} = breather vent pressure setting, psig.

See Section 7.1.6.2 for a more approximate equation for fixed roof tank working loss that was used historically, but which is no longer recommended.

Section 8

Map(s)

A map such as a 7.5 minute topographic quadrangle showing the exact location of the source. The map shall also include the following:

The UTM or Longitudinal coordinate system on both axes	An indicator showing which direction is north
A minimum radius around the plant of 0.8km (0.5 miles)	Access and haul roads
Topographic features of the area	Facility property boundaries
The name of the map	The area which will be restricted to public access
A graphical scale	

A map showing the location of the facility is attached.

Source: Google Maps Imagery
Zone: 13
Coordinate Datum: NAD 83

DCP Operating Company LP
Artesia Gas Plant Area Map
EOSolutions

Section 9

Proof of Public Notice

(for NSR applications submitting under 20.2.72 or 20.2.74 NMAC)

(This proof is required by: 20.2.72.203.A.14 NMAC "Documentary Proof of applicant's public notice")

☐ **I have read the AQB "Guidelines for Public Notification for Air Quality Permit Applications"**

This document provides detailed instructions about public notice requirements for various permitting actions. It also provides public notice examples and certification forms. Material mistakes in the public notice will require a re-notice before issuance of the permit.

Unless otherwise allowed elsewhere in this document, the following items document proof of the applicant's Public Notification. Please include this page in your proof of public notice submittal with checkmarks indicating which documents are being submitted with the application.

New Permit and **Significant Permit Revision** public notices must include all items in this list.

Technical Revision public notices require only items 1, 5, 9, and 10.

Per the Guidelines for Public Notification document mentioned above, include:

1. ☑ A copy of the certified letter receipts with post marks (20.2.72.203.B NMAC)
2. ☑ A list of the places where the public notice has been posted in at least four publicly accessible and conspicuous places, including the proposed or existing facility entrance. (e.g: post office, library, grocery, etc.)
3. ☑ A copy of the property tax record (20.2.72.203.B NMAC).
4. ☑ A sample of the letters sent to the owners of record.
5. ☑ A sample of the letters sent to counties, municipalities, and Indian tribes.
6. ☑ A sample of the public notice posted and a verification of the local postings.
7. ☑ A table of the noticed citizens, counties, municipalities and tribes and to whom the notices were sent in each group.
8. ☑ A copy of the public service announcement (PSA) sent to a local radio station and documentary proof of submittal.
9. ☑ A copy of the classified or legal ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
10. ☑ A copy of the display ad including the page header (date and newspaper title) or its affidavit of publication stating the ad date, and a copy of the ad. When appropriate, this ad shall be printed in both English and Spanish.
11. ☑ A map with a graphic scale showing the facility boundary and the surrounding area in which owners of record were notified by mail. This is necessary for verification that the correct facility boundary was used in determining distance for notifying land owners of record.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
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County Manager Roberta Gonzales
Eddy County Administration Complex
101 W Greene St, Ste 110
Carlsbad, NM 88220

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X [signature] ☑ Agent ☑ Addressee

B. Received by (Printed Name) ADRIENNE JONES
C. Date of Delivery 10/20/23

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EOSolutions
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Houston, Texas 77040

County Manager Roberta Gonzales
Eddy County Administration Complex
101 W. Greene St, Suite 110
Carlsbad, NM 88220

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Commissioner of Public Lands
310 Old Santa Fe Trail
Santa Fe, NM 87501

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☐ Adult Signature Required	$0.00
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13201 NW Freeway, Suite 220
Houston, Texas 77040

State of New Mexico
Commissioner of Public Lands
310 Old Santa Fe Trail
Santa Fe, NM 87501

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1. Article Addressed to:

Mr. Clinton Key
Key Livestock LLC
1012 E 2nd
Roswell, NM 882 01

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X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery
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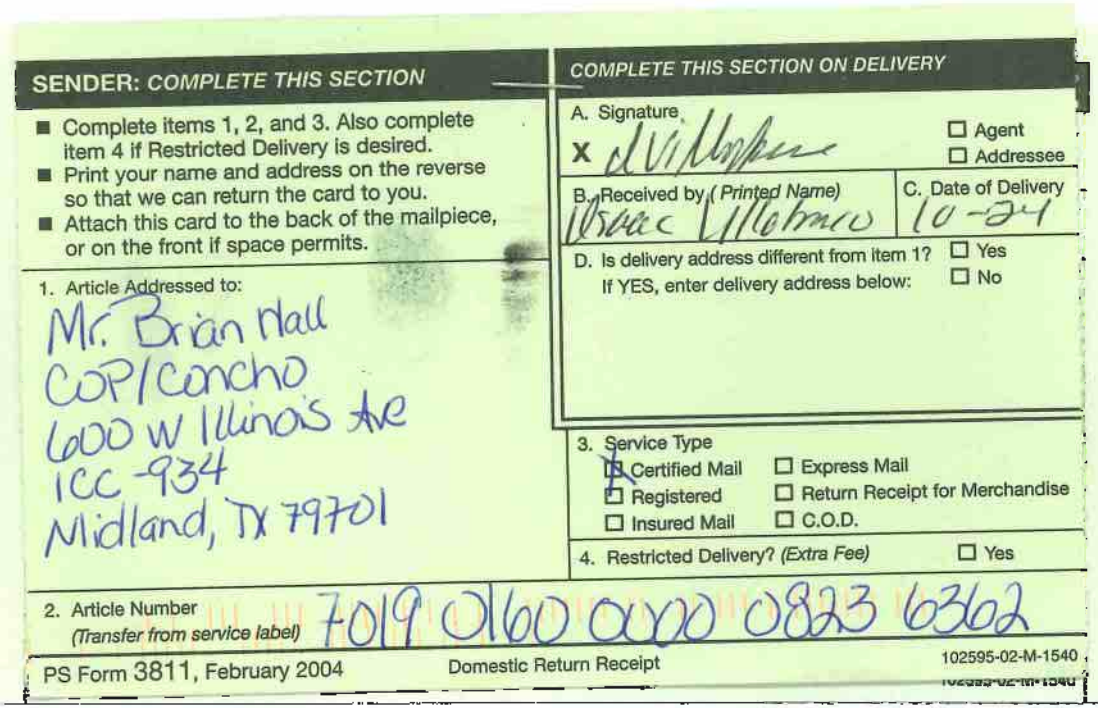
Mr. Clinton Key
Key Livestock LLC
1012 E. 2nd
Roswell, NM 88210

EOSolutions
1320I NW Freeway, Suite 220
Houston, Texas 77040



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1. Article Addressed to:

Mr. Brian Hall
COP/Concho
600 W Illinois Ave
ICC-934
Midland, TX 79701

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X [signature] ☐ Agent ☐ Addressee

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☐ Return Receipt (electronic)	$
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Product	Qty	Unit Price	Price
First-Class Mail® Letter	1		$0.66
Carlsbad, NM 88220			
Weight: 0 lb 0.80 oz			
Estimated Delivery Date			
Fri 10/20/2023			
Certified Mail®			$4.35
Tracking #:			
70190160000008236393			
Return Receipt			$3.55
Total			$8.56
First-Class Mail® Letter	1		$0.66
Santa Fe, NM 87501			
Weight: 0 lb 1.00 oz			
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Fri 10/20/2023			
Certified Mail®			$4.35
Tracking #:			
70190160000008236386			
Return Receipt			$3.55
Total			$8.56
First-Class Mail® Letter	1		$0.66
Midland, TX 79701			
Weight: 0 lb 1.00 oz			
Estimated Delivery Date			
Fri 10/20/2023			
Certified Mail®			$4.35
Tracking #:			
70190160000008236362			
Return Receipt			$3.55
Total			$8.56
First-Class Mail® Letter	1		$0.66
Roswell, NM 88201			
Weight: 0 lb 0.90 oz			
Estimated Delivery Date			
Fri 10/20/2023			
Certified Mail®			$4.35
Tracking #:			
70190160000008236379			
Return Receipt			$3.55
Total			$8.56
Grand Total:			$34.24
Credit Card Remit			$34.24
Card Name: VISA			
Account #: XXXXXXXXXXXX4055			
Approval #: 01411G			
Transaction #: 828			
AID: A0000000031010		Chip	
AL: VISA CREDIT			
PIN: Not Required			

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit www.usps.com USPS Tracking or call 1-800-222-1811.

In a hurry? Self-service kiosks offer quick and easy check-out. Any Retail Associate can show you how.

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 480177-0025
Receipt #: 840-57700023-2-8567480-1
Clerk: 04

General Posting of Notices – Certification

I, Stacey Daly, the undersigned, certify that on **October 19th,** posted a true and correct copy of the attached Public Notice in the following publicly accessible and conspicuous places in the **City of Artesia** of **Eddy** County, State of New Mexico on the following dates:

1. Facility entrance 10/19/2023
2. BRE Riverside Brewer Gas Station - 11354 Hwy 82, Artesia, NM 88210 10/19/2023
3. City Hall of Artesia - 511 W. TEXAS ARTESIA, NM 88210 – 10/19/2023
4. Artesia Public Library - 205 W Quay Ave, Artesia, NM 88210 – 10/19/2023

Signed this 19 day of October, 2023

Stacey Daly
Signature

10-19-23
Date

Stacey Daly
Printed Name

Environmental Compliance Coordinator
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

Laurie Pruitt
Treasurer of Eddy County
101 W. GREENE, SUITE 117
CARLSBAD, NM 88220
(575) 885-3913

2022 TAX BILL

NOTICE: THIS TAX BILL IS THE ONLY NOTICE YOU WILL RECEIVE FOR PAYMENT OF BOTH INSTALLMENTS OF YOUR 2022 PROPERTY TAX BILL

Online Tax Bill Payment: www.co.eddy.nm.us/treasurer
A CONVENIENCE FEE WILL APPLY

050035

DCP OPERATING CO LP
ATTN PROPERTY TAX
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

434

Second half payment is delinquent if received after May 10th.

050035

Taxpayer:
DCP OPERATING CO LP
ATTN PROPERTY TAX
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

SECOND HALF: 5,288.42

Send both coupons with full year payment or this coupon with second half payment.

First half payment is delinquent if received after December 10th.

050035

Taxpayer:
DCP OPERATING CO LP
ATTN PROPERTY TAX
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

FIRST HALF:	5,288.42
SECOND HALF:	5,288.42
TOTAL:	10,576.84

Send both coupons with full year payment or this coupon with first half payment.

Laurie Pruitt
Treasurer of Eddy County
101 W. GREENE, SUITE 117
CARLSBAD, NM 88220
(575) 885-3913

2022 TAX BILL

050035
Taxpayer:
DCP OPERATING CO LP
ATTN PROPERTY TAX
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

FIRST HALF: 5,288.42
SECOND HALF: 5,288.42
TOTAL: 10,576.84

LEGAL DESCRIPTION	ACCOUNT ID NO.	1ST HALF PAYMENT	2ND HALF PAYMENT	FULL PAYMENT
LOMAS Subd: CARLSBAD AIRPORT IND PK UN IT 1 Lot: 1 Block: 4	R064549	5,111.54	5,111.54	10,223.08
			TAX AREA: CI NR TAXABLE VALUE: 348,577	
PROPERTY TOTAL		5,111.54	5,111.54	10,223.08
LOMAS Subd: CARLSBAD AIRPORT IND PK UN IT 1 Lot: 2 Block: 4	R084561	26.04	26.04	52.08
			TAX AREA: CI NR TAXABLE VALUE: 1,776	
PROPERTY TOTAL		26.04	26.04	52.08
LOMAS Subd: CARLSBAD AIRPORT IND PK UN IT 1 Lot: 3 Block: 4	R084562	26.04	26.04	52.08
			TAX AREA: CI NR TAXABLE VALUE: 1,776	
PROPERTY TOTAL		26.04	26.04	52.08
5301 SIERRA VISTA Subd: LAR-CO DEVELOPMENT CO REPL AT #1 Lot: 30 Block: 4	R084563	23.38	23.38	46.76
			TAX AREA: CI NR TAXABLE VALUE: 1,594	
PROPERTY TOTAL		23.38	23.38	46.76
5301 SIERRA VISTA Subd: LAR-CO DEVELOPMENT CO REPL AT #1 Lot: 33 Block: 4	R084564	23.30	23.30	46.60
			TAX AREA: CI NR TAXABLE VALUE: 1,589	
PROPERTY TOTAL		23.30	23.30	46.60
5301 SIERRA VISTA Subd: CARLSBAD AIRPORT IND PK UN IT 1 Lot: 27 Block: 4	R084565	26.04	26.04	52.08
			TAX AREA: CI NR TAXABLE VALUE: 1,776	
PROPERTY TOTAL		26.04	26.04	52.08
5301 SIERRA VISTA Subd: CARLSBAD AIRPORT IND PK UN IT 1 Lot: 28 Block: 4	R084566	26.04	26.04	52.08
			TAX AREA: CI NR TAXABLE VALUE: 1,776	
PROPERTY TOTAL		26.04	26.04	52.08

* * * CONTINUED * * *

* * * CONTINUED * * *

Laurie Pruitt
Treasurer of Eddy County
101 W. GREENE, SUITE 117
CARLSBAD, NM 88220
(575) 885-3913

2022 TAX BILL

050035
Taxpayer:

DCP OPERATING CO LP
ATTN PROPERTY TAX
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

FIRST HALF: 5,288.42
SECOND HALF: 5,288.42
TOTAL: 10,576.84

LEGAL DESCRIPTION	ACCOUNT ID NO.	1ST HALF PAYMENT	2ND HALF PAYMENT	FULL PAYMENT
5301 SIERRA VISTA Subd: CARLSBAD AIRPORT IND PK UN IT 1 Lot: 29 Block: 4	R084567	26.04	26.04	52.08 TAX AREA: CI NR TAXABLE VALUE: 1,776
PROPERTY TOTAL		26.04	26.04	52.08
OWNER TOTAL		**5,288.42**	**5,288.42**	**10,576.84**

Laurie Pruitt
Treasurer of Eddy County
101 W. GREENE, SUITE 117
CARLSBAD, NM 88220
(575) 885-3913

2022 TAX BILL

NOTICE: THIS TAX BILL IS THE ONLY NOTICE YOU WILL RECEIVE FOR PAYMENT OF BOTH INSTALLMENTS OF YOUR 2022 PROPERTY TAX BILL

Online Tax Bill Payment: www.co.eddy.nm.us/treasurer
A CONVENIENCE FEE WILL APPLY

049339

DCP OPERATING COMPANY LP
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

69

Second half payment is delinquent if received after May 10th.

049339

Taxpayer:
DCP OPERATING COMPANY LP
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

SECOND HALF: 399,198.36

Send both coupons with full year payment or this coupon with second half payment.

First half payment is delinquent if received after December 10th.

049339

Taxpayer:
DCP OPERATING COMPANY LP
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

FIRST HALF:	399,203.72
SECOND HALF:	399,198.36
TOTAL:	798,402.08

Send both coupons with full year payment or this coupon with first half payment.

Laurie Pruitt
Treasurer of Eddy County
101 W. GREENE, SUITE 117
CARLSBAD, NM 88220
(575) 885-3913

2022 TAX BILL

049339
Taxpayer:
DCP OPERATING COMPANY LP
6900 E LAYTON AVE STE 900
DENVER CO 80237-3658

FIRST HALF: 399,203.72
SECOND HALF: 399,198.36
TOTAL: 798,402.08

LEGAL DESCRIPTION	ACCOUNT ID NO.	1ST HALF PAYMENT	2ND HALF PAYMENT	FULL PAYMENT
	C060287	190,385.66	190,385.66	380,771.32
LAND,BLDGS & IMPROVEMENTS, PERSO NAL PROPERTY, PIPELINE-UNREGULATED, PIPELINE & GAS UTILI TY PLANT - CAB #410-074			TAX AREA: 16O_NR TAXABLE VALUE: 19,221,168	
PROPERTY TOTAL		190,385.66	190,385.66	380,771.32
544 BURTON FLAT ROAD	C069235	183,894.38	183,894.38	367,788.76
LAND, BLDG & IMPROVEMENTS, PERSO NAL PROPERTY, PIPELINE-UNREGULATED - CAB #410-074			TAX AREA: CO_NR TAXABLE VALUE: 16,298,359	
PROPERTY TOTAL		183,894.38	183,894.38	367,788.76
	C079888	24,406.46	24,406.46	48,812.92
PERSONAL PROPERTY, PIPELINE-UNRE GULATED, PIPELINE & GAS UTILITY PLANT - CAB #410-074			TAX AREA: 10O_NR TAXABLE VALUE: 3,312,944	
PROPERTY TOTAL		24,406.46	24,406.46	48,812.92
	C098057	511.86	511.86	1,023.72
PERSONAL PROPERTY, PIPELINE - UN REGULATED - CAB #410-074			TAX AREA: CI_NR TAXABLE VALUE: 35,760	
PROPERTY TOTAL		511.86	511.86	1,023.72
	C098058	5.36	0.00	5.36
PIPELINE - UNREGULATED - CAB #41 0-074			TAX AREA: 10I_NR TAXABLE VALUE: 317	
PROPERTY TOTAL		5.36	0.00	5.36
OWNER TOTAL		**399,203.72**	**399,198.36**	**798,402.08**

Eddy County
Treasurer

Laurie Pruitt

101 W. Greene St.
Suite 117
Carlsbad, NM 88220
Phone: 575-885-3913
Fax: 575-234-1835

March 22, 2023

Re: Statement of Taxes Due

DCP OPERATING COMPANY

C098058, C079888, C060287, C098057, C069235

Enclosed are Statements of Taxes Due for Tax Year 2022.

We received instructions from NM State Assessed Bureau to bill you accordingly.

Please submit full amount due by May 10, 2023 (postmarked) to avoid penalty and interest.

If you have any questions, please let me know.

Respectfully,

Carolyn Stroble

Carolyn Stroble
Chief Deputy Treasurer

Eddy County NM - Treasurer's Office

Statement of Taxes Due

Account Number C069235 Parcel 4000254351001

Acres 0.000

Legal Description

LAND, BLDG & IMPROVEMENTS, PERSONAL PROPERTY, PIPELINE-UNREGULATED - CAB #410-074

Situs Address

544 BURTON FLAT ROAD

Account: C069235
DCP OPERATING COMPANY LP
6900 E. LAYTON AVE., STE. 900
DENVER, CO 80237-3658

Year	Tax	Adjustments	Interest	Fees	Payments	Balance
Tax Charge						
2022	$367,788.76	$19,341.84	$0.00	$0.00	($367,788.76)	$19,341.84
2021	$220,240.96	$201,858.32	$0.00	$0.00	($422,099.28)	$0.00
2020	$236,503.68	$165,550.68	$0.00	$0.00	($402,054.36)	$0.00
2019	$296,141.16	$103,184.00	$0.00	$0.00	($399,325.16)	$0.00
2018	$306,837.08	$48,158.72	$0.00	$0.00	($354,995.80)	$0.00
2017	$243,489.68	$152,284.20	$0.00	$0.00	($395,773.88)	$0.00
2016	$2.68	$0.00	$0.00	$0.00	($2.68)	$0.00
Total Tax Charge						$19,341.84
Grand Total Due as of 12/09/2022	Full amount due. 5-10-2023					$19,341.84

Tax Billed at 2022 Rates for Tax Area CO_NR - CARLSBAD-OUT (Nonresidential)

Authority	Mill Levy	Amount
CARLSBAD SCHOOLS OPERATIONA	0.5000000	$8,577.74
CARLSBAD SCHOOL DIST DEBT S	4.4320000	$76,033.09
CARLSBAD HB 33 SCH BLDG-NON	1.9870000	$34,087.94
CARLSBAD SCH DIST CAP IMP-N	2.0000000	$34,310.96
CARLSBAD SCHOOL DIS ED TECH	1.7870000	$30,656.85
EDDY COUNTY OPERATIONAL	7.5000000	$128,666.11
SOUTHEAST NEW MEXICO COLLEG	3.0000000	$51,466.45
STATE DEBT SERVICE	1.3600000	$23,331.46
Taxes Billed 2022	22.5660000	$387,130.60

Values	Actual	Assessed
CORP - PIPELINE	$51,466,447	$17,155,482
Total	$51,466,447	$17,155,482

Eddy County NM - Treasurer's Office

Statement of Taxes Due

Account Number C098057 Parcel 4000265440002

Acres 0.000

Legal Description Situs Address

PERSONAL PROPERTY, PIPELINE - UNREGULATED - CAB #410-074

Account: C098057
DCP OPERATING COMPANY LP
6900 E. LAYTON AVE., STE. 900
DENVER, CO 80237-3658

Year	Tax	Adjustments	Interest	Fees	Payments	Balance
Tax Charge						
2022	$1,023.72	$629.36	$0.00	$0.00	($1,023.72)	$629.36
2021	$634.40	$1,082.72	$0.00	$0.00	($1,717.12)	$0.00
2020	$755.60	$982.80	$0.00	$0.00	($1,738.40)	$0.00
2019	$1,196.92	$582.32	$0.00	$0.00	($1,779.24)	$0.00
2018	$1,461.24	$1,368.60	$0.00	$0.00	($2,829.84)	$0.00
2017	$1,029.12	$705.16	$0.00	$0.00	($1,734.28)	$0.00
2016	$1,708.32	$0.00	$0.00	$0.00	($1,708.32)	$0.00
2015	$2,383.19	$0.00	$0.00	$0.00	($2,383.19)	$0.00
2014	$3,302.15	$0.00	$0.00	$0.00	($3,302.15)	$0.00
Total Tax Charge						$629.36
Grand Total Due as of 12/09/2022					Due by 5.10.2023	$629.36

Tax Billed at 2022 Rates for Tax Area CI_NR - CARLSBAD-IN (Nonresidential)

Authority	Mill Levy	Amount
CARLSBAD MUNICIPAL OPERATIO	6.0620000	$350.04
CARLSBAD SCHOOLS OPERATIONA	0.5000000	$28.87
CARLSBAD SCHOOL DIST DEBT S	4.4320000	$255.92
CARLSBAD HB 33 SCH BLDG-NON	1.9870000	$114.74
CARLSBAD SCH DIST CAP IMP-N	2.0000000	$115.49
CARLSBAD SCHOOL DIS ED TECH	1.7870000	$103.19
EDDY COUNTY OPERATIONAL	7.5000000	$433.08
SOUTHEAST NEW MEXICO COLLEG	3.0000000	$173.23
STATE DEBT SERVICE	1.3600000	$78.53
Taxes Billed 2022	28.6280000	$1,653.08

Values	Actual	Assessed
CORP - PIPELINE	$173,229	$57,743
Total	$173,229	$57,743

Eddy County NM - Treasurer's Office

Statement of Taxes Due

Account Number C060287
Acres 0.000

Parcel 4000112757003

Legal Description
LAND,BLDGS & IMPROVEMENTS, PERSONAL PROPERTY, PIPELINE-UNREGULATED, PIPELINE & GAS UTILITY PLANT - CAB #410-074

Situs Address

Account: C060287
DCP OPERATING COMPANY LP
6900 E. LAYTON AVE., STE. 900
DENVER, CO 80237-3658

Year	Tax	Adjustments	Interest	Fees	Payments	Balance
Tax Charge						
2022	$380,771.32	$37,072.00	$0.00	$0.00	($380,771.32)	$37,072.00
2021	$251,436.72	$210,593.96	$0.00	$0.00	($462,030.68)	$0.00
2020	$293,450.68	$158,589.16	$0.00	$0.00	($452,039.84)	$0.00
2019	$452,052.04	($11,737.28)	$0.00	$0.00	($440,314.76)	$0.00
2018	$498,073.72	$89,846.00	$0.00	$0.00	($587,919.72)	$0.00
2017	$425,593.92	$141,740.04	$0.00	$0.00	($567,333.96)	$0.00
2016	$672.00	$0.00	$0.00	$0.00	($672.00)	$0.00
Total Tax Charge						$37,072.00
Grand Total Due as of 12/09/2022					Due by 5.10.2023	$37,072.00

Tax Billed at 2022 Rates for Tax Area 16O_NR - ARTESIA-OUT (Nonresidential)

Authority	Mill Levy	Amount
ARTESIA GENERAL HOSPITAL-NO	2.7000000	$56,949.87
ARTESIA SCHOOLS OPERATIONAL	0.5000000	$10,546.27
ART_GEN_HSP_DEBT	0.7500000	$15,819.41
ARTESIA HB 33 SCH BLDG NR	5.0000000	$105,462.73
ARTESIA SCH DIST CAP IMP-NO	2.0000000	$42,185.09
EDDY COUNTY OPERATIONAL	7.5000000	$158,194.09
STATE DEBT SERVICE	1.3600000	$28,685.86
Taxes Billed 2022	19.8100000	$417,843.32

Values	Actual	Assessed
CORP - PIPELINE	$63,277,638	$21,092,546
Total	$63,277,638	$21,092,546

Eddy County NM - Treasurer's Office

Statement of Taxes Due

Account Number C079888
Acres 0.000

Parcel 4000261512001

Legal Description
PERSONAL PROPERTY, PIPELINE-UNREGULATED, PIPELINE & GAS UTILITY PLANT - CAB #410-074

Situs Address

Account: C079888
DCP OPERATING COMPANY LP
6900 E. LAYTON AVE., STE. 900
DENVER, CO 80237-3658

Year	Tax	Adjustments	Interest	Fees	Payments	Balance
Tax Charge						
2022	$48,812.92	$6,947.60	$0.00	$0.00	($48,812.92)	$6,947.60
2021	$23,602.32	$24,348.64	$0.00	$0.00	($47,950.96)	$0.00
2020	$25,953.32	$2,790.92	$0.00	$0.00	($28,744.24)	$0.00
2019	$41,162.68	$8,173.28	$0.00	$0.00	($49,335.96)	$0.00
2018	$25,489.56	$2,806.00	$0.00	$0.00	($28,295.56)	$0.00
2017	$30,990.68	$16,762.24	$0.00	$0.00	($47,752.92)	$0.00
2016	$4,097.72	$0.00	$0.00	$0.00	($4,097.72)	$0.00
Total Tax Charge						$6,947.60
Grand Total Due as of 12/09/2022			Due by 5-10-2023			$6,947.60

Tax Billed at 2022 Rates for Tax Area 10O_NR - LOVING-OUT (Nonresidential)

Authority	Mill Levy	Amount
EDDY COUNTY OPERATIONAL	7.5000000	$28,383.60
LOVING SCHOOLS OPERATIONAL	0.4310000	$1,631.11
LOVING SCHOOL DIST DEBT SVC	3.4430000	$13,029.96
LOVING SCH DIST CAP IMP-NON	2.0000000	$7,568.96
STATE DEBT SERVICE	1.3600000	$5,146.89
Taxes Billed 2022	14.7340000	$55,760.52

Values	Actual	Assessed
CORP - PIPELINE	$11,353,441	$3,784,480
Total	$11,353,441	$3,784,480

Eddy County NM - Treasurer's Office

Statement of Taxes Due

Account Number C098058
Acres 0.000

Parcel 4000265441001

Legal Description
PIPELINE - UNREGULATED - CAB #410-074

Situs Address

Account: C098058
DCP OPERATING COMPANY LP
6900 E. LAYTON AVE., STE. 900
DENVER, CO 80237-3658

Year	Tax	Adjustments	Interest	Fees	Payments	Balance
Tax Charge						
2022	$5.36	$5.40	$0.00	$0.00	($5.36)	$5.40
2021	$3.40	$7.96	$0.00	$0.00	($11.36)	$0.00
2020	$4.40	$8.20	$0.00	$0.00	($12.60)	$0.00
2019	$6.08	$5.20	$0.00	$0.00	($11.28)	$0.00
2018	$6.40	$0.56	$0.00	$0.00	($6.96)	$0.00
2017	$7.20	$3.96	$0.00	$0.00	($11.16)	$0.00
2016	$10.56	$0.00	$0.00	$0.00	($10.56)	$0.00
2015	$11.64	$0.00	$0.00	$0.00	($11.64)	$0.00
2014	$12.53	$0.00	$0.00	$0.00	($12.53)	$0.00
2013	$10.22	$0.00	$0.00	$0.00	($10.22)	$0.00
Total Tax Charge						$5.40
Grand Total Due as of 12/09/2022			Due by 5.10.2023			$5.40

Tax Billed at 2022 Rates for Tax Area 10I_NR - LOVING-IN (Nonresidential)

Authority	Mill Levy	Amount
EDDY COUNTY OPERATIONAL	7.5000000	$4.76
LOVING MUNICIPAL OPERATIONA	2.2250000	$1.41
LOVING SCHOOLS OPERATIONAL	0.4310000	$0.27
LOVING SCHOOL DIST DEBT SVC	3.4430000	$2.18
LOVING SCH DIST CAP IMP-NON	2.0000000	$1.27
STATE DEBT SERVICE	1.3600000	$0.86
Taxes Billed 2022	16.9590000	$10.76

Values	Actual	Assessed
CORP - PIPELINE	$1,901	$634
Total	$1,901	$634

Print

Check/Serial#:527001 Account#:601895196 Amount: 808,978.92

FOR SECURITY PURPOSES, THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK

DCP Operating Company, LP
6900 E. Layton Ave., Ste. 900
Denver, CO 80237
dcpaccountspayable@dcpmidstream.com
720-381-4278

CHECK NO. 0000527001
50-937/213
JP Morgan Chase, N.A.
Syracuse, NY

VENDOR NO.	DATE	AMOUNT
0000076198	12/01/2022	$*****808,978.92

PAY Eight Hundred Eight Thousand Nine Hundred Seventy Eight And 92/100 Dollars

TO THE ORDER OF
EDDY COUNTY
TREASURER
101 W GREENE ST STE 117
CARLSBAD, NM 88220-6258

3

AUTHORIZED SIGNATURE

SIGNATURE HAS A BLUE-GREEN BACKGROUND • BORDER CONTAINS MICROPRINTING MP

⑈527001⑈ ⑆021309379⑆ 601895196⑈

J 057883320

THIS CHECK ALSO CONTAINS THE FOLLOWING SECURITY FEATURES
2. Face of check has a COLOR PRINTED BACKGROUND
3. SIGNATURE AREA
4. HOLD PAPER AT ANGLE TO SEE ARTIFICIAL WATERMARK

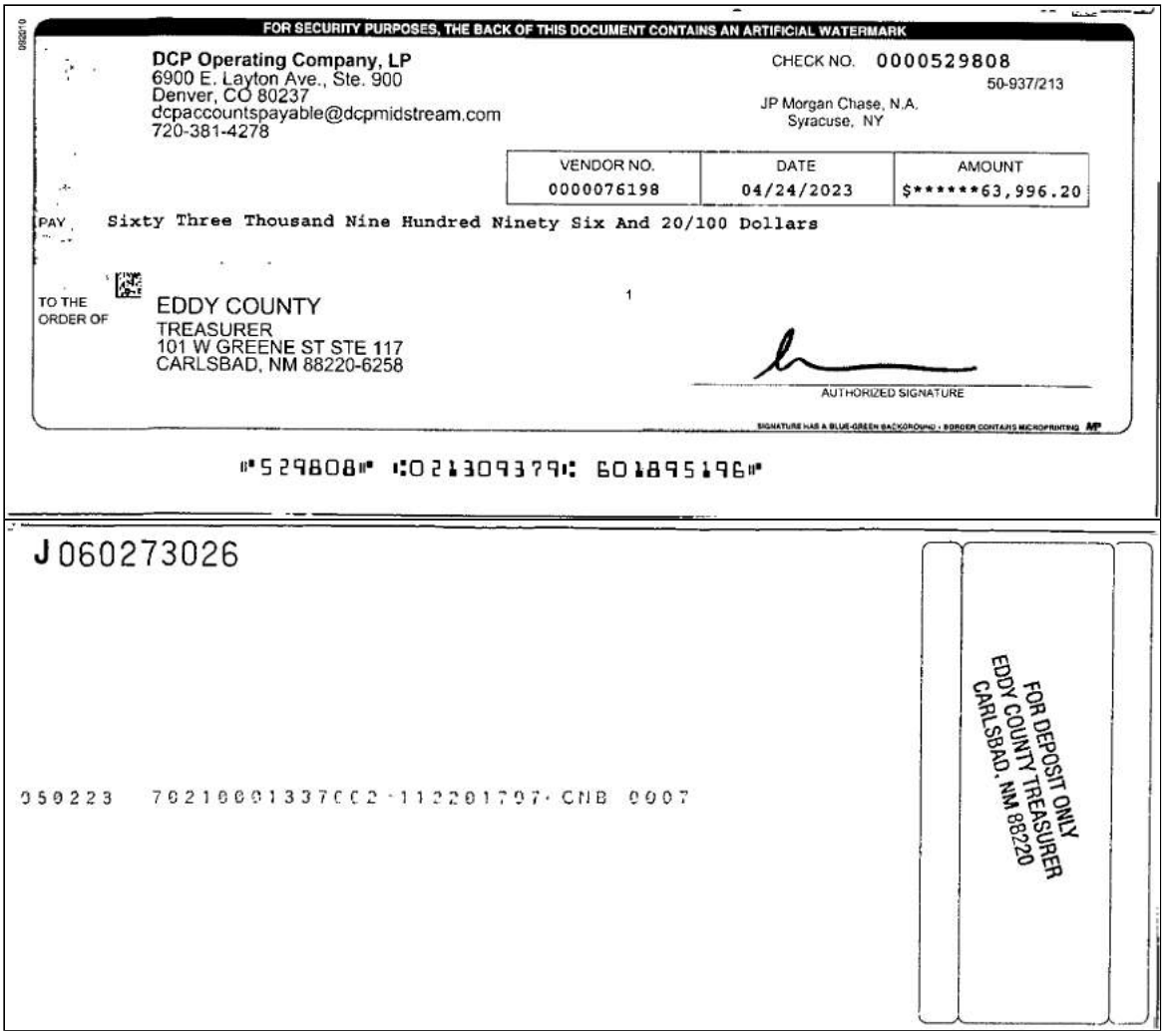
0001280910 -112201797- CNB 0003

FOR DEPOSIT ONLY
EDDY COUNTY TREASURER
CARLSBAD, NM 88220

THIS CHECK IS VOID WITHOUT A COLOR PRINTED BACKGROUND ON THE FRONT AND

Print

Check/Serial#:529808 Account#:601895196 Amount: 63,996.20



FOR SECURITY PURPOSES, THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK

DCP Operating Company, LP
6900 E. Layton Ave., Ste. 900
Denver, CO 80237
dcpaccountspayable@dcpmidstream.com
720-381-4278

CHECK NO. 0000529808
50-937/213
JP Morgan Chase, N.A.
Syracuse, NY

VENDOR NO.	DATE	AMOUNT
0000076198	04/24/2023	$******63,996.20

PAY Sixty Three Thousand Nine Hundred Ninety Six And 20/100 Dollars

TO THE ORDER OF
EDDY COUNTY
TREASURER
101 W GREENE ST STE 117
CARLSBAD, NM 88220-6258

1

AUTHORIZED SIGNATURE

SIGNATURE HAS A BLUE-GREEN BACKGROUND - BORDER CONTAINS MICROPRINTING

⑈529808⑈ ⑆021309379⑆ 601895196⑈

J060273026

050223 702100013370002 112201797 CNB 0007

FOR DEPOSIT ONLY
EDDY COUNTY TREASURER
CARLSBAD, NM 88220

EOSolutions

13201 NW Freeway, Suite 220
Houston, Texas 77040
T 713.533.8511 F 281.971.0521
www.eosolutions.net

October 17, 2023

CERTIFIED MAIL 7019 0160 0000 0823 6386
RETURN RECEIPT REQUESTED

State of New Mexico
Commissioner of Public Lands
310 Old Santa Fe Trail
Santa Fe, NM 87501

To Whom It May Concern,

DCP Operating Company, LP, announces its application to the New Mexico Environment Department for an air quality permit for the modification of its Gas Plant facility. The expected date of application submittal to the Air Quality Bureau is 11/03/2023. This notification is being resent due to updates to the reported emissions and modification explanation below.

The exact location for the facility, known as Artesia Gas Plant, is at latitude 32.754972-degree North and longitude -104.210028-degree West. The approximate location of this facility is 13 miles southeast of Artesia, New Mexico in Eddy County.

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Total sum of all Hazardous Air Pollutants (HAPs)	10 pph	15 tpy
Green House Gas Emissions as Total CO_2e	N/A	107,167 tpy

The standard operating schedule of the facility will be continuous, 7 days a week and a maximum of 52 weeks per year.

The owner and/or operator of the Facility is: **DCP Operating Company, LP**
2331 City West Blvd.,
Houston, TX 77042

If you have any comments about the operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address:

Permit Programs Manager
New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1
Santa Fe, New Mexico 87505-1816

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Sincerely,

Elena L. Hofmann
President
EOSolutions
13201 NW Freeway, Suite 220
Houston, TX 77040

Notice of Non-Discrimination

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1. Article Addressed to:

State of New Mexico
Commissioner of Public Lands
310 Old Santa Fe Trail
Santa Fe, NM 87501

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State of New Mexico
Commissioner of Public Lands
310 Old Santa Fe Trail
Santa Fe, NM 87501

EOSolutions

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Houston, Texas 77040
T 713.533.8511 F 281.971.0521
www.eosolutions.net

October 17, 2023

CERTIFIED MAIL 7019 0160 0000 0823 6362
RETURN RECEIPT REQUESTED

Mr. Brian Hall
COP/Concho
600 W. Illinois Ave, 1CC-934
Midland, TX 79701

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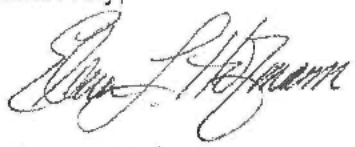
Sincerely,



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President
EOSolutions
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October 17, 2023

CERTIFIED MAIL 7019 0160 0000 0823 6379
RETURN RECEIPT REQUESTED

Mr. Clinton Key
Key Livestock LLC
1012 E. 2nd
Roswell, NM 88210

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President
EOSolutions
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Houston, TX 77040

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1. Article Addressed to:

Mr. Clinton Key
Key Livestock LLC
1012 E 2nd
Roswell, NM 88210

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X ☐ Agent ☐ Addressee

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Key Livestock LLC
1012 E. 2nd
Roswell, NM 88210

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www.eosolutions.net

October 17, 2023,

CERTIFIED MAIL 7019 0160 0000 0823 6393
RETURN RECEIPT REQUESTED

County Manager Roberta Gonzales
Eddy County Administration Complex
101 W. Greene St, Suite 110
Carlsbad, NM 88220

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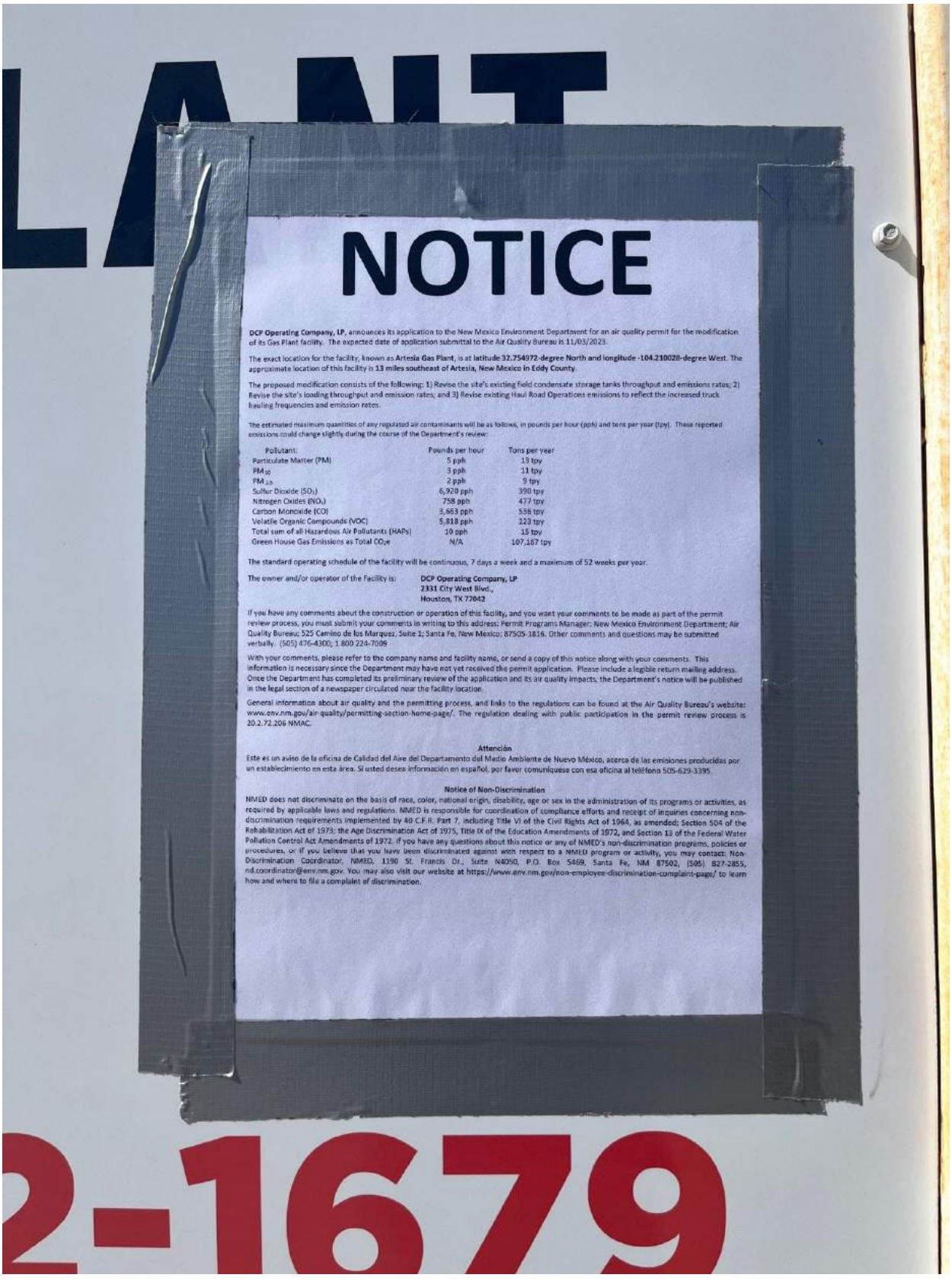
PHILLIPS
66
ARTESIA GAS PLA
NOTICE
24-Hour Emergency: 1-800-432-1679



NOTICE

DCP Operating Company, LP, announces its application to the New Mexico Environment Department for an air quality permit for the modification of its Gas Plant facility. The expected date of application submittal to the Air Quality Bureau is 11/03/2023.

The exact location for the facility, known as **Artesia Gas Plant**, is at **latitude 32.754972-degree North and longitude -104.210028-degree West**. The approximate location of this facility is **13 miles southeast of Artesia, New Mexico in Eddy County.**

The proposed modification consists of the following: 1) Revise the site's existing field condensate storage tanks throughput and emissions rates; 2) Revise the site's loading throughput and emission rates; and 3) Revise existing Haul Road Operations emissions to reflect the increased truck hauling frequencies and emission rates.

The estimated maximum quantities of any regulated air contaminants will be as follows, in pounds per hour (pph) and tons per year (tpy). These reported emissions could change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
Particulate Matter (PM)	5 pph	13 tpy
PM_{10}	3 pph	11 tpy
$PM_{2.5}$	2 pph	9 tpy
Sulfur Dioxide (SO_2)	6,920 pph	390 tpy
Nitrogen Oxides (NO_x)	758 pph	477 tpy
Carbon Monoxide (CO)	3,663 pph	536 tpy
Volatile Organic Compounds (VOC)	5,818 pph	123 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	10 pph	15 tpy
Green House Gas Emissions as Total CO_2e	N/A	107,167 tpy

The standard operating schedule of the facility will be continuous, 7 days a week and a maximum of 52 weeks per year.

The owner and/or operator of the Facility is: **DCP Operating Company, LP**
2331 City West Blvd.,
Houston, TX 77042

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009

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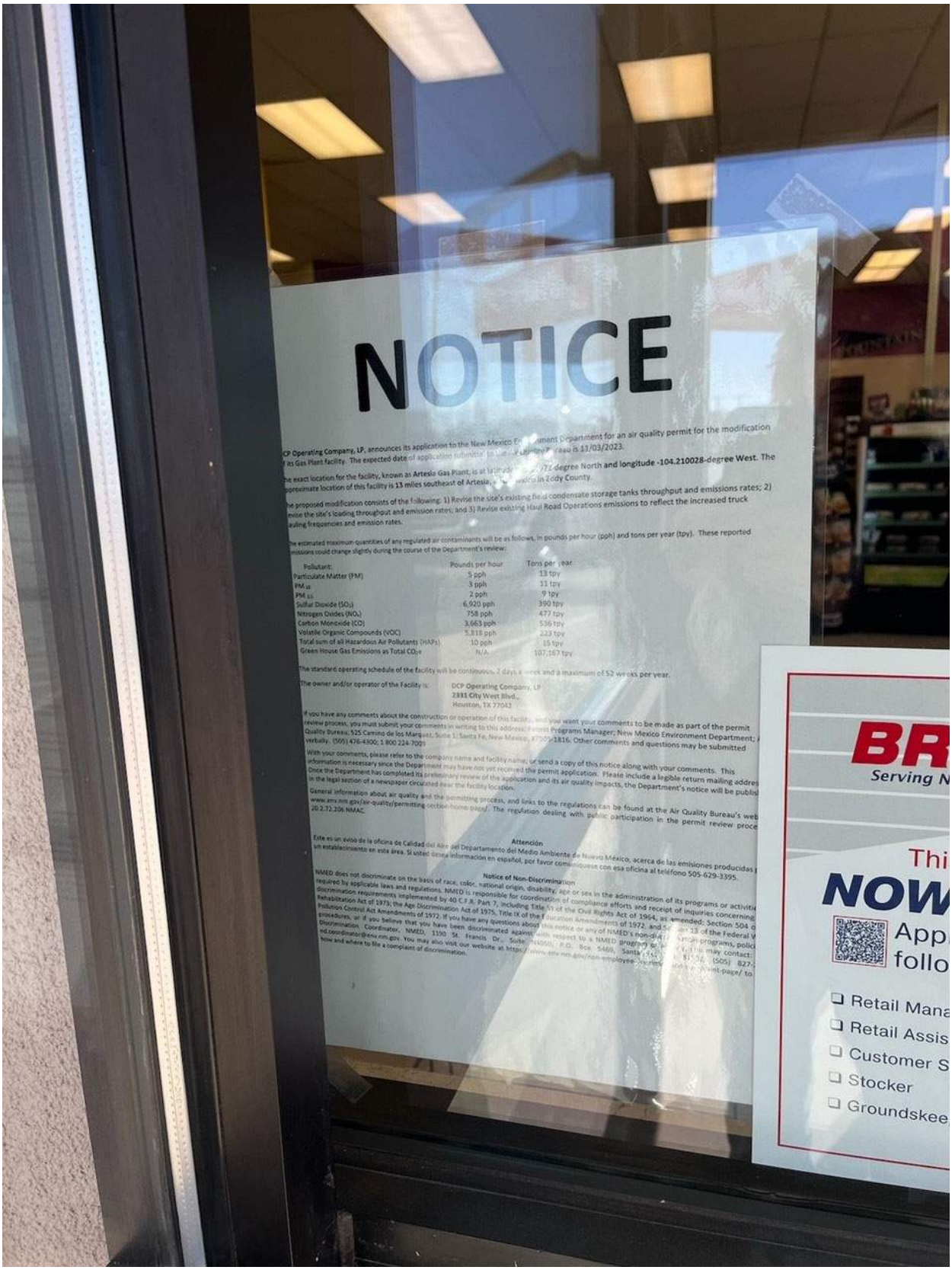

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Pollutant:	Pounds per hour	Tons per year
Particulate Matter (PM)	5 pph	18 tpy
PM 10	3 pph	11 tpy
PM 2.5	2 pph	9 tpy
Sulfur Dioxide (SO_2)	6,920 pph	390 tpy
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The owner and/or operator of the Facility is:

DCP Operating Company, LP
2331 City West Blvd.,
Houston, TX 77042

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- ❑ Retail Mana
- ❑ Retail Assis
- ❑ Customer S
- ❑ Stocker
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CITY HALL
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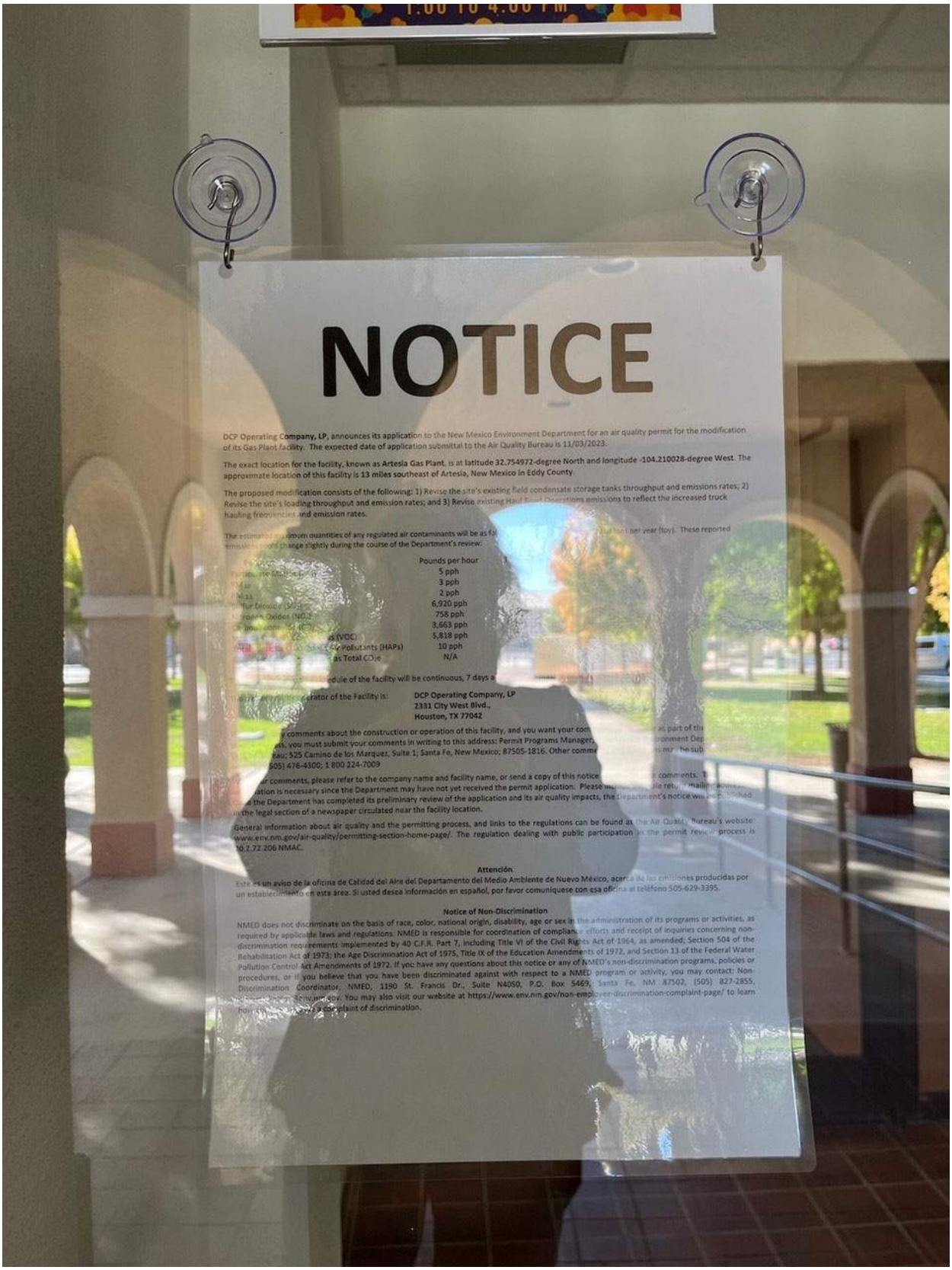

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	Pounds per hour
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[illegible]	3,663 pph
[illegible]s (VOC)	5,818 pph
[illegible] Pollutants (HAPs)	10 pph
[illegible] as Total CO2e	N/A

[illegible]edule of the facility will be continuous, 7 days a [illegible]

[illegible]erator of the Facility is:

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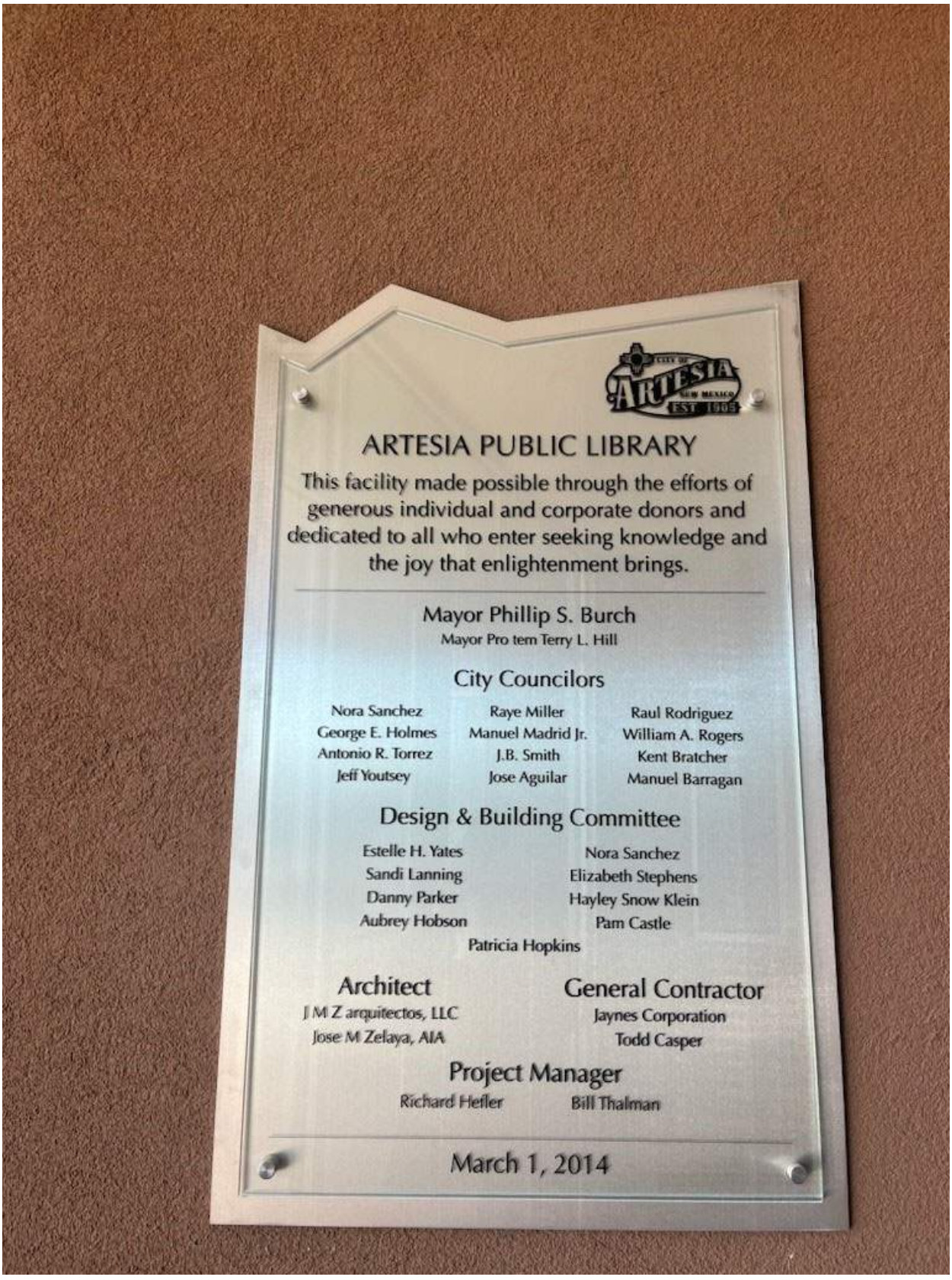
MAIN
ENTRANCE
CAUTION


ARTESIA
NEW MEXICO
EST 1905
ARTESIA PUBLIC LIBRARY
This facility made possible through the efforts of generous individual and corporate donors and dedicated to all who enter seeking knowledge and the joy that enlightenment brings.
Mayor Phillip S. Burch
Mayor Pro tem Terry L. Hill
City Councilors
Nora Sanchez
George E. Holmes
Antonio R. Torrez
Jeff Youtsey
Raye Miller
Manuel Madrid Jr.
J.B. Smith
Jose Aguilar
Raul Rodriguez
William A. Rogers
Kent Bratcher
Manuel Barragan
Design & Building Committee
Estelle H. Yates
Sandi Lanning
Danny Parker
Aubrey Hobson
Nora Sanchez
Elizabeth Stephens
Hayley Snow Klein
Pam Castle
Patricia Hopkins
Architect
J M Z arquitectos, LLC
Jose M Zelaya, AIA
General Contractor
Jaynes Corporation
Todd Casper
Project Manager
Richard Hefler
Bill Thalman
March 1, 2014

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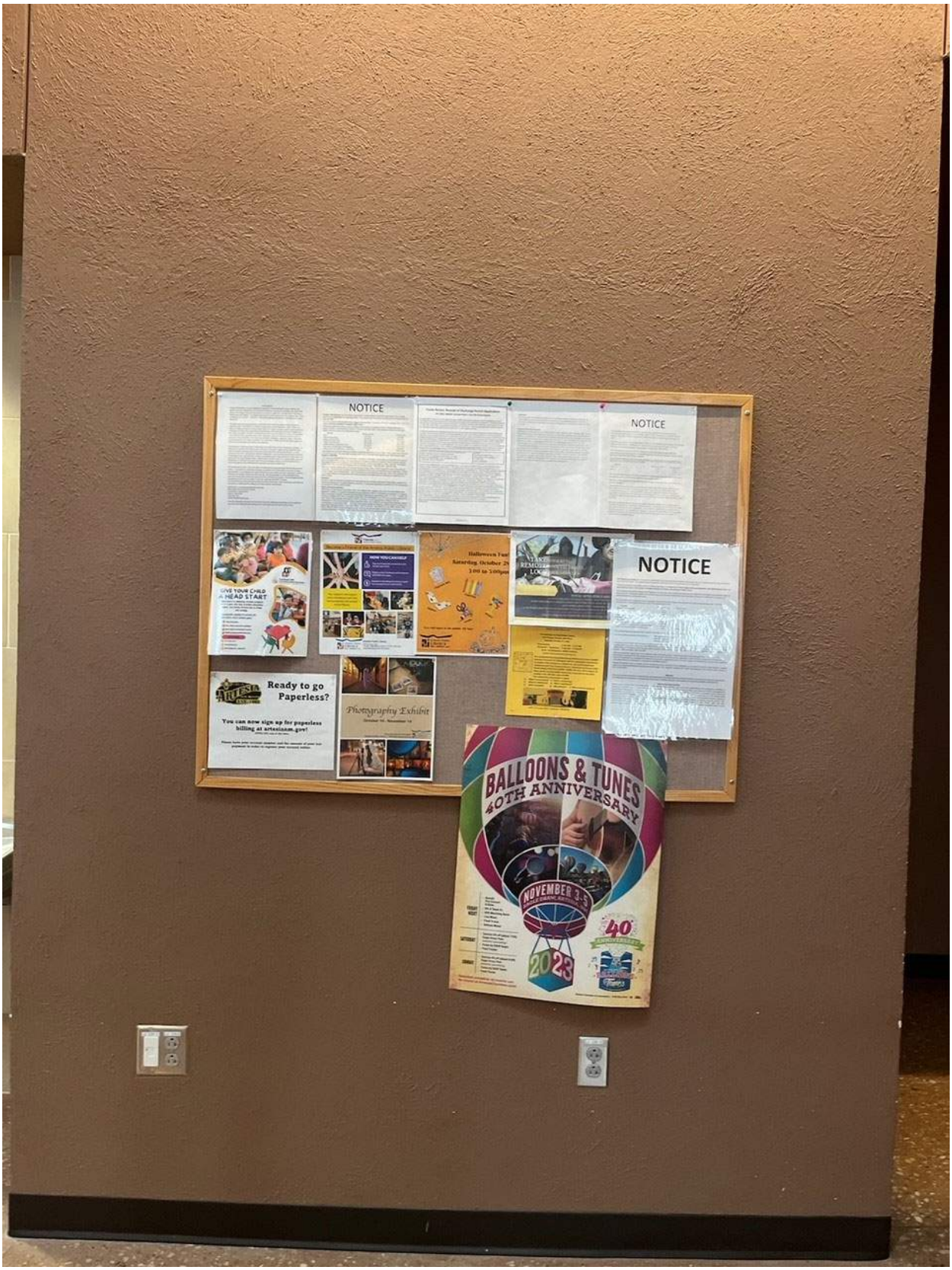
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You can now sign up for paperless billing at artesianwi.gov!
Photography Exhibit
BALLOONS & TUNES
40TH ANNIVERSARY
NOVEMBER 3-5
2023
40

TABLE OF NOTICED CITIZENS, COUNTIES, MUNICIPALITIES, AND TRIBES

1)	Mr. Brian Hall COP/Concho 600 W. Illinois Ave, 1CC-934 Midland, TX 79701
2)	Mr. Clinton Key Key Livestock LLC 1012 E. 2nd Roswell, NM 88201
3)	State of New Mexico Commissioner of Public Lands 310 Old Santa Fe Trail Santa Fe, NM 87501
4)	County Manager Roberta Gonzales Eddy County Administration Complex 101 W. Greene St, Suite 110 Carlsbad, NM 88220

Radio Public Service Announcement

NOTICE OF AIR QUALITY PERMIT APPLICATION

DCP Operating Company, LP, operates a natural gas gathering, compressing, dehydrating, and NGL extraction facility at its Artesia Gas Plant. DCP Operating Company, LP announces its application to the New Mexico Environment Department for an air quality permit for the modification of its Artesia Gas Plant facility, NSR air quality permit 434-M10-R8.

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The Public Notice Posting of this proposed modification is posted at the following locations:

1. Artesia Gas Plant Facility Entrance
2. BRE Riverside Brewer Gas Station - 11354 Hwy 82, Artesia, NM 88210
3. City Hall of Artesia - 511 W. TEXAS, ARTESIA, NM 88210
4. Artesia Public Library - 205 W Quay Ave, Artesia, NM 88210

If you have any comments regarding this application, please send your comments to:

Permit Programs Manager
New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1;
Santa Fe, New Mexico; 87505-1816.
(505) 476-4300
1 800 224-7009

Pecos Valley Broadcasting Co.
317 West Quay Avenue
Artesia, New Mexico 88210-2194

Statement of Account

Account ID: 3366
Statement Date: 10/24/2023
Account Rep: House Accounts

Please Pay This Amount $25.00

Amount Paid: _____

EO SOLUTIONS
13201 NW FREEWAY, SUITE 220
HOUSTON, TX 77040

Pay by mail: PVBC, 317 W. Quay Ave, Artesia, NM 88210

Pay by credit card: Call 575-746-2751 Press 2

Sponsor: EO Solutions

Reference	Date	Type	Description	Amount	Balance
BalForward	9/24/2023	Bal	Balance Forward as of 9/23/2023	0.00	0.00
23100131	10/23/2023	INV	Invoice: KSVP-AM 3366-001 EO Solutions [1-Package / 1-2:00 Spot]	25.00	25.00
			Statement Total:		**$25.00**

Please Pay This Amount **$25.00**

Current	31-60 Days	61-90 Days	91-120 Days	121+ Days	Total Due
$25.00					$25.00

KSVP-AM Invoice

Pecos Valley Broadcasting Co.
317 West Quay Avenue
Artesia, New Mexico 88210-2194

Invoice ID: 23100131
Invoice Date: 10/23/2023
Account ID: 3366
Order ID: 3366-001
Account Rep: House Accounts

Amount Due: $25.00

Amount Paid: _____

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HOUSTON, TX 77040

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Pay by credit card: Call 575-746-2751 Press 2

Sponsor: EO Solutions
EO Solutions

Date	Time	Length	Description	CopyID / ISCI Code	Cost
10/23/2023 10/23/2023	09:15 AM	2:00	Spot Package	Air Quality Permit App/DCP Operating C	[Package] 25.00
		1 Total Items		Total Cost:	$25.00

AFFIDAVIT OF PERFORMANCE: I certify that, in accordance with the Official Station Logs, announcements were broadcast as shown on this invoice.

Amount Due: **$25.00**

Tana Steinback

TANA STEINBACK
NOTARY PUBLIC
STATE OF NEW MEXICO
COMMISSION # 1095295
COMMISSION EXPIRES: 02-13-2026

STATION DOCUMENTATION APPROVED BY
THE ASSOCIATION OF NATIONAL ADVERTISERS
Form at bottom of script indicates how many times script ran, at what cost

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Station call letters: KSVP-AM
Client: EO Solutions **for:**
Begin: 10/23/2023 End: 10/23/2023 **Date: 10/23/2023**

Radio Public Service Announcement
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New Mexico Environment Department
Air Quality Bureau
525 Camino de los Marquez, Suite 1;
Santa Fe, New Mexico; 87505-1816.
(505) 476-4300
1 800-224-7009

This announcement was broadcast a total of 1 times at the dates and times coded Air Quality Permit App/DCP Operating Co on our attached invoice number 23100131 dated 10/23/2023, as entered in the station's program log. This announcement was billed to this client at a total cost of $25.00

Printed Name and Title

(Signature of Station Official) for KSVP-AM

TANA STEINBACK
NOTARY PUBLIC
STATE OF NEW MEXICO
COMMISSION # 1095295
COMMISSION EXPIRES: 02-13-2026

Submittal of Public Service Announcement – Certification

I, Ana Nolazco, the undersigned, certify that on **October 17, 2023** submitted a public service announcement to **Pecos Valley Broadcasting Co.** that serves the City of **Artesia, Eddy** County, New Mexico, in which the source is or is proposed to be located and that Pecos Valley Broadcasting Co. **RESPONDED THAT IT WOULD AIR THE ANNOUNCEMENT.**

Signed this 24 day of October, 2023

Ana C Nolazco
Signature

10/24/23
Date

Ana C. Nolazco
Printed Name

Lead Admin
Title {APPLICANT OR RELATIONSHIP TO APPLICANT}

Affidavit of Publication

No. 26670

State of New Mexico

County of Eddy:

Danny Scott

being duly sworn, sayes that he is the **Publisher**

of the Artesia Daily Press, a daily newspaper of General circulation, published in English at Artesia, said county and state, and that the hereto attached

Legal Notice

was published in a regular and entire issue of the said Artesia Daily Press, a daily newspaper duly qualified for that purpose within the meaning of Chapter 167 of the 1937 Session Laws of the state of New Mexico for

1 Consecutive weeks/day on the same day as follows:

First Publication October 19, 2023

Second Publication

Third Publication

Fourth Publication

Fifth Publication

Subscribed ans sworn before me this

15th day of October 2023

LATISHA ROMINE
Notary Public, State of New Mexico
Commission No. 1076338
My Commission Expires
05-12-2027

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

Legal Notice

NOTICE OF AIR QUALITY PERMIT APPLICATION

DCP Operating Company, LP, announces its application to the New Mexico Environment Department for an air quality permit for the modification of its Gas Plant facility. The expected date of application submittal to the Air Quality Bureau is 11/03/2023.

The exact location for the facility, known as Artesia Gas Plant, is at latitude 32.754972-degree North and longitude -104.210028-degree West. The approximate location of this facility is 13 miles southeast of Artesia, New Mexico in Eddy County.

The proposed modification consists of the following: 1) Revise the site's existing field condensate storage tanks throughput and emissions rates; 2) Revise the site's loading throughput and emission rates; and 3) Revise existing Haul Road Operations emissions to reflect the increased truck hauling frequencies and emission rates.

The estimated maximum quantities of any regulated air contaminants will be as follows, in pounds per hour (pph) and tons per year (tpy). These reported emissions could change slightly during the course of the Department's review:

Pollutant:	Pounds per hour	Tons per year
Particulate Matter (PM)	5 pph	13 tpy
PM 10	3 pph	11 tpy
PM 2.5	2 pph	9 tpy
Sulfur Dioxide (SO2)	6,920 pph	390 tpy
Nitrogen Oxides (NOx)	758 pph	477 tpy
Carbon Monoxide (CO)	3,663 pph	536 tpy
Volatile Organic Compounds (VOC)	5,818 pph	223 tpy
Total sum of all Hazardous Air Pollutants (HAPs)	10 pph	15 tpy
Green House Gas Emissions as Total CO2e	N/A	107,167 tpy

The standard operating schedule of the facility will be continuous, 7 days a week and a maximum of 52 weeks per year.

The owner and/or operator of the Facility is:
DCP Operating Company, LP
2331 City West Blvd.,
Houston, TX 77042

If you have any comments about the construction or operation of this facility, and you want your comments to be made as part of the permit review process, you must submit your comments in writing to this address: Permit Programs Manager; New Mexico Environment Department; Air Quality Bureau; 525 Camino de los Marquez, Suite 1; Santa Fe, New Mexico; 87505-1816. Other comments and questions may be submitted verbally. (505) 476-4300; 1 800 224-7009
With your comments, please refer to the company name and facility name, or send a copy of this notice along with your comments. This information is necessary since the Department may have not yet received the permit application. Please include a legible return mailing address. Once the Department has completed its preliminary review of the application and its air quality impacts, the Department's notice will be published in the legal section of a newspaper circulated near the facility location. General information about air quality and the permitting process, and links to the regulations can be found at the Air Quality Bureau's website: www.env.nm.gov/air-quality/permitting-section-home-page/. The regulation dealing with public participation in the permit review process is 20.2.72.206 NMAC.

Attención
Este es un aviso de la oficina de Calidad del Aire del Departamento del Medio Ambiente de Nuevo México, acerca de las emisiones producidas por un establecimiento en esta área. Si usted desea información en español, por favor comuníquese con esa oficina al teléfono 505-629-3395.

Notice of Non-Discrimination
NMED does not discriminate on the basis of race, color, national origin, disability, age or sex in the administration of its programs or activities, as required by applicable laws and regulations. NMED is responsible for coordination of compliance efforts and receipt of inquiries concerning non-discrimination requirements implemented by 40 C.F.R. Part 7, including Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Rehabilitation Act of 1973; the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, and Section 13 of the Federal Water Pollution Control Act Amendments of 1972. If you have any questions about this notice or any of NMED's non-discrimination programs, policies or procedures, or if you believe that you have been discriminated against with respect to a NMED program or activity, you may contact: Non-Discrimination Coordinator, NMED, 1190 St.

Affidavit of Publication

No.

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Display Ad

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LATISHA ROMINE
Notary Public, State of New Mexico
Commission No. 1076338
My Commission Expires
05-12-2027

Latisha Romine

Latisha Romine

Notary Public, Eddy County, New Mexico

Copy of Publication:

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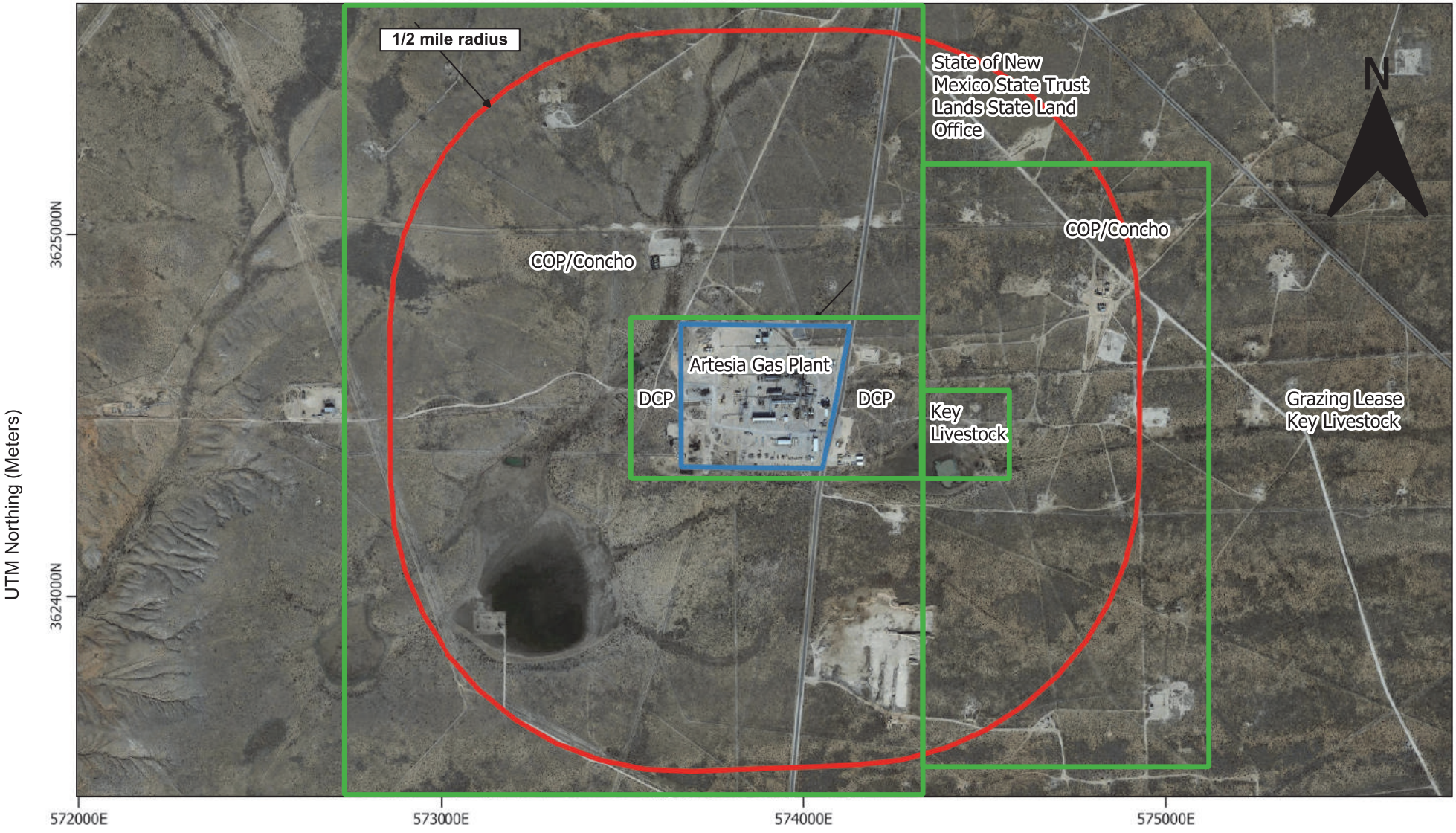

Source: Google Maps Imagery
Zone: 13
Coordinate Datum: NAD 83

DCP Operating Company LP
Artesia Gas Plant Landowner Map
EOSolutions

Section 10

Written Description of the Routine Operations of the Facility

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A written description of the routine operations of the facility. Include a description of how each piece of equipment will be operated, how controls will be used, and the fate of both the products and waste generated. For modifications and/or revisions, explain how the changes will affect the existing process. In a separate paragraph describe the major process bottlenecks that limit production. The purpose of this description is to provide sufficient information about plant operations for the permit writer to determine appropriate emission sources.

DCP's Artesia Gas Plant is a natural gas processing plant that sweetens and recovers liquids from sour natural gas. Artesia has a permitted throughput of 100 MMscf of natural gas per day.

As shown on the block flow diagram in Section 4, there are two types of sour natural gas sources entering the Artesia Plant: low pressure (LP) and high pressure (HP). Liquids are separated from the field gas and sent to a slop oil tank. The liquids are then further separated in the tank. Subsequently, the oil is sent to a storage tank and the water to the disposal system. The liquids from the HP receiver are routed to the existing stabilizer system. This stabilizer system consists of a feed tank for primary separation of water, hydrocarbon condensate, and gas, a stabilizer that heats the hydrocarbon liquid to reduce the vapor pressure of the liquid, and associated equipment. The stabilized condensate is then sent to storage (TK-C). Unit TK-C is a condensate storage tank with blanket gas. Residue gas is used as blanket gas within the tank because it creates an anaerobic environment within the system while at the same time not allowing for the formation of working and breathing emissions. The blanket gas is then combusted by the wet flare, Unit 22. Water from the feed tank is routed to the disposal system and gas is routed to the low-pressure receiver. There are two 500 bbl offload tanks (TK-48 and 49), one free water knockout, one heater treater, and one 500 bbl sales tank (TK-50) to remove water from field liquids. The crude oil is removed from the facility by trucks. The combined low-pressure inlet gas is then compressed to high pressure using compressor Unit 25, 26, 30-34, or 39. Utilities for the compression include jacket cooling water and lube oil storage.

The compressed gas is then combined with the high-pressure inlet gas from the HP receiver system and sent to the amine system for sweetening. An inlet coalescer removes liquids. The sweetening process occurs in the high-pressure contactor and uses an amine/water solution whose primary component is methydicthanol amine (MDEA) for removal of hydrogen sulfide and carbon dioxide from the gas. The rich amine is then regenerated using steam heat from the steam boilers (EU 20 and 28). Boiler treatment chemicals used in the steam system are stored in auxiliary storage tanks.

The regenerated or lean amine is then pumped back to the contactor vessel for continued sweetening of the gas. This project consolidates all treating in the high-pressure contactor for improved efficiency and process simplification, removing the low-pressure contactor and associated equipment from service. The MDEA supply for the amine system is stored in TK-12.

There are two gas streams out of the amine regeneration system. The first is the flash gas, which is a sour hydrocarbon gas stream. This stream is routed back to the LP receiver for recompression. The second gas stream is the acid gas product consisting of hydrogen sulfide, carbon dioxide, some hydrocarbons, and water. The acid gas enters the acid gas injection (AGI) system where it is compressed to reservoir pressure and injected back into the Devonian formation. SO_2 emissions from the AGI are essentially zero except during shutdowns of the acid gas injection system. During these periods the acid gas is flared (Unit 23).

The overhead gas from the high-pressure contactor is sweet gas. The sweet gas is next dehydrated in two process steps. The first step uses contact with triethylene glycol (TEG) in a contactor vessel to remove the bulk of the water. The pressure on the rich TEG from the contactor is reduced and flash gas evolving from the TEG flash tank is returned to low-pressure compression. The rich TEG is then regenerated with steam heat, the water vapor driven off, and the regenerated or lean TEG is then pumped back to the glycol contactor. The steam from the TEG regenerator, which contains various hydrocarbons including BTEX, is compressed in a vapor recovery unit and returned to low-pressure compression.

The second dehydration step uses molecular sieve to remove the rest of the water. The system has three process vessels containing molecular sieves. One vessel is on-line removing water from the gas in an adsorption process; while the second vessel is off-line being thermally regenerated with hot gas to remove water. The third molecular sieve vessel is available so that two vessels can be on-line drying the gas while the third is being regenerated. The regeneration gas is heated in the regeneration gas heater (Unit 19). A filter-coalescer removes entrained liquids upstream of the molecular sieve system. A gas cooler uses cooling water from the plant's remaining cooling water system to cool the gas. Gas leaving the mol sieve dehydrator will enter the glycol dehydrator (Unit Dehy-2). The gas leaving the glycol dehydrator will then be routed to the residue sales line.

The dry gas is then further cooled in the expander plant for recovery of natural gas liquids (NGL). The process was reconfigured in an enhanced Gas Subcooled Process (GSP) modification to replace two expander-compressors with a single larger unit. The GSP process previously added two new heat exchangers, an absorber column, and absorber column pumps. NGL from the expander plant is pumped to storage (TK-31, 32, 33, and 34).

Some of the gas chilling in the expander process is provided by a propane refrigeration system. This system uses two engine-driven refrigeration compressors (Units 10 and 11) for energy to reject heat from the process. The propane for the refrigeration system is stored on-site (Units TK-35 and 36). The remaining natural gas or residue gas is reheated in the expander process and sent to the recompression system. The gas is compressed back to high pressure by recompression units, which are engine-driven units (existing Units 12-17 and 27). A portion of the residue gas is used as regeneration gas in the molecular sieve system and then returned to the residue system. Some of the residue gas is used as fuel for the compressor engines and heaters.

The proposed modification consists of the following:

1) Revise the site’s existing field condensate storage tanks throughput and emissions rates;
2) Revise the site’s loading throughput and emission rates; and
3) Revise existing Haul Road Operations emissions to reflect the increased truck hauling frequencies and emission rates.

Section 11

Source Determination

Source submitting under 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC

Sources applying for a construction permit, PSD permit, or operating permit shall evaluate surrounding and/or associated sources (including those sources directly connected to this source for business reasons) and complete this section. Responses to the following questions shall be consistent with the Air Quality Bureau's permitting guidance, Single Source Determination Guidance, which may be found on the Applications Page in the Permitting Section of the Air Quality Bureau website.

Typically, buildings, structures, installations, or facilities that have the same SIC code, that are under common ownership or control, and that are contiguous or adjacent constitute a single stationary source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes. Submission of your analysis of these factors in support of the responses below is optional, unless requested by NMED.

A. Identify the emission sources evaluated in this section (list and describe)**:**

B. Apply the 3 criteria for determining a single source:

SIC Code: Surrounding or associated sources belong to the same 2-digit industrial grouping (2-digit SIC code) as this facility, OR surrounding or associated sources that belong to different 2-digit SIC codes are support facilities for this source.

☑ **Yes** ☐ **No**

Common Ownership or Control: Surrounding or associated sources are under common ownership or control as this source.

☑ **Yes** ☐ **No**

Contiguous or Adjacent: Surrounding or associated sources are contiguous or adjacent with this source.

☑ **Yes** ☐ **No**

C. Make a determination:

☑ The source, as described in this application, constitutes the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes. If in "A" above you evaluated only the source that is the subject of this application, all "**YES**" boxes should be checked. If in "A" above you evaluated other sources as well, you must check **AT LEAST ONE** of the boxes "**NO**" to conclude that the source, as described in the application, is the entire source for 20.2.70, 20.2.72, 20.2.73, and 20.2.74 NMAC applicability purposes.

☐ The source, as described in this application, **does not** constitute the entire source for 20.2.70, 20.2.72, 20.2.73, or 20.2.74 NMAC applicability purposes (A permit may be issued for a portion of a source). The entire source consists of the following facilities or emissions sources (list and describe):

Section 12

Section 12.A

PSD Applicability Determination for All Sources

(Submitting under 20.2.72, 20.2.74 NMAC)

A PSD applicability determination for all sources. For sources applying for a significant permit revision, apply the applicable requirements of 20.2.74.AG and 20.2.74.200 NMAC and to determine whether this facility is a major or minor PSD source, and whether this modification is a major or a minor PSD modification. It may be helpful to refer to the procedures for Determining the Net Emissions Change at a Source as specified by Table A-5 (Page A.45) of the EPA New Source Review Workshop Manual to determine if the revision is subject to PSD review.

A. This facility is:

- ☐ **a minor PSD source before and after this modification (if so, delete C and D below).**
- ☐ **a major PSD source before this modification. This modification will make this a PSD minor source.**
- ☑ **an existing PSD Major Source that has never had a major modification requiring a BACT analysis.**
- ☐ **an existing PSD Major Source that has had a major modification requiring a BACT analysis**
- ☐ **a new PSD Major Source after this modification.**

B. **This facility is not one of the listed 20.2.74.501 Table I – PSD Source Categories. The "project" emissions** for this modification are **not significant. The proposed emission increases do not exceed the PSD significance thresholds. The "project" emissions listed below only result from changes described in this permit application, thus no emissions from other revisions or modifications, past or future to this facility. This project does not result in "de-bottlenecking", or other associated emissions resulting in higher emissions. See Table 1-1 in Section 6 with project emissions details and PSD significance levels.**

Emission Increases – shown below threshold levels

a. **VOC: 17.01 TPY**
b. **PM: 1.4 TPY**
c. **PM10: 0.36 TPY**
d. **PM2.5: 0.04 TPY**

C. **Netting is not required (project is not significant)**

D. **BACT** is **not required for this modification, as this application is a minor modification**

E. If this is an existing PSD major source, or any facility with emissions greater than 250 TPY (or 100 TPY for 20.2.74.501 Table 1 – PSD Source Categories), determine whether any permit modifications are related, or could be considered a single project with this action, and provide an explanation for your determination whether a PSD modification is triggered.

The Artesia Gas Plant is a PSD major source as the facility's potential to emit emissions are greater than 250 tpy of NO_x, CO, and SO_2. Therefore, a determination is made below to show that the proposed changes do not result in a significant emission increase above thresholds requiring a netting analysis.

The proposed modification consists of the following:

1) Revise the site's existing field condensate storage tanks throughput and emissions rates;
2) Revise the site's loading throughput and emission rates; and
3) Revise existing Haul Road Operations emissions to reflect the increased truck hauling frequencies and emission rates.

Table 6-1 in Section 6 and attached to this section shows the currently permitted emission rates (from NSR Permit 434-M10R8, issued December 7, 2021) and the proposed facility emissions as a result of the changes proposed in this application. The emission increase is compared to the PSD significance thresholds. The changes proposed in this application do not result in an increase in emissions above the PSD significance thresholds.

Table 6-1
Requested Allowable Emissions (NMED Table 2-E)
DCP Operating Company, LP
Artesia Gas Plant
Eddy County, New Mexico

Unit #	Source Description	NO_X		CO		VOC		SO_2		TSP		PM10		PM2.5		H_2S	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
10	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
11	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
12	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
13	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
14	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
15	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
16	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
17	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.02	0.06	0.28	0.06	0.28	0.06	0.28		
19	Gas Furnace	0.30	1.30	0.30	1.10	0.02	0.07	0.002	0.01	0.00	0.10	0.00	0.10	0.00	0.10		
20	Boiler #2	3.53	15.46	2.96	12.99	0.19	0.85	0.02	0.09	0.27	1.17	0.27	1.17	0.27	1.17		
22	Emergency Wet Gas Flare	0.22	0.98	1.20	5.30			0.02	0.10							2.30E-05	1.00E-04
23	Emergency Acid Gas Flare	0.09	0.38	0.47	2.06			0.01	0.04							9.00E-06	3.90E-05
25	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
26	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
27	White Superior 8G825	5.30	23.20	5.30	23.20	0.88	3.80	0.004	0.00	0.06	0.28	0.06	0.28	0.06	0.28		
28	Boiler #1	3.60	15.60	3.00	13.10	0.20	0.86	0.02	0.09	0.27	1.20	0.27	1.20	0.27	1.20		
30	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
31	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
32	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
33	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
34	Caterpillar G3516LE	5.90	25.90	5.90	25.90	1.50	6.50	0.01	0.03	0.10	0.44	0.10	0.44	0.10	0.44		
38	Fugitives (FUG-1)					9.00	39.60									0.14	0.60
39	Waukesha 7042GSI	8.60	37.70	11.90	52.10	0.40	1.70	0.12	0.53	0.17	0.73	0.17	0.73	0.17	0.73		
40	Reboiler	0.05	0.21	0.04	0.18	0.00	0.01	0.01	0.03	0.00	0.02	0.00	0.02	0.00	0.02		
Dehy	TEG Dehydrator Still Vent and Flash Tank																
Dehy-2	TEG Dehydrator Still Vent and Flash Tank																
GT-1	Gunbarrel Separator																
CT-N	Cooling Tower									0.31	1.40	0.20	0.86	0.001	0.003		
CT-S	Cooling Tower									0.28	1.20	0.18	0.78	0.001	0.003		
TK-C	Condensate Tank w/ blanket Gas																
TK-1	Gasoline Tank																
TK-48	Feed Tank																
TK-49	Feed Tank																
TK-50	Oil Tank																
TK-51	Feed Tank																
Load-1	Truck Loadout & Loading of Condensate					80.24	43.08										
Amine-RS	Amine Regeneration Still Vent & Flash Tank																
Amine-C	Amine Contactor																
Haul-1	Hauling emissions from condensate loading out of facility									1.23	1.32	0.31	0.34	0.03	0.03		
Haul-2	Hauling emissions from condensate loadout into facility									1.23	0.94	0.31	0.24	0.03	0.02		
SSM(22)	Wet gas flare: flaring during routine or predictable SSM	642.90	7.50	3498.30	40.70	2685.10	27.20	4918.40	49.90							52.30	0.53
SSM(23)	Acid gas flare: flaring during routine and predictable SSM	10.40	2.40	56.60	13.20			2001.00	328.20							21.30	3.50
SSM	Venting during routine and predictable SSM					3025.44	25.43									93.39	0.71
M	Venting of gas and combustion of gas flared due to Malfunction (for SSM 22 and/or SSM 23)	642.90	10.00	3498.30	10.00	2685.10	10.00	4918.40	10.00							52.30	9.00
REVISED SITEWIDE EMISSION TOTALS		**757.49**	**476.23**	**3,662.58**	**535.43**	**5,817.77**	**223.10**	**6,919.67**	**389.26**	**4.98**	**13.36**	**2.93**	**10.72**	**1.98**	**8.56**	**167.13**	**14.34**
CURRENT SITEWIDE EMISSION TOTALS		**757.49**	**476.23**	**3,662.58**	**535.43**	**5,678.20**	**206.09**	**6,919.67**	**389.26**	**4.91**	**11.94**	**2.92**	**10.35**	**1.98**	**8.53**	**167.13**	**14.34**
EMISSIONS INCREASES			0.00		0.00		17.01		0.00		1.42		0.36		0.04		0.00
PSD Significance Level			40		100		40		40		NA		15		10		10
Exceeds Thresholds?			**No**		**No**		**No**		**No**				**No**		**No**		**No**

Section 13

Determination of State & Federal Air Quality Regulations

This section lists each state and federal air quality regulation that may apply to your facility and/or equipment that are stationary sources of regulated air pollutants.

Not all state and federal air quality regulations are included in this list. Go to the Code of Federal Regulations (CFR) or to the Air Quality Bureau's regulation page to see the full set of air quality regulations.

Required Information for Specific Equipment:
For regulations that apply to specific source types, in the 'Justification' column **provide any information needed to determine if the regulation does or does not apply**. **For example**, to determine if emissions standards at 40 CFR 60, Subpart IIII apply to your three identical stationary engines, we need to know the construction date as defined in that regulation; the manufacturer date; the date of reconstruction or modification, if any; if they are or are not fire pump engines; if they are or are not emergency engines as defined in that regulation; their site ratings; and the cylinder displacement.

Required Information for Regulations that Apply to the Entire Facility:
See instructions in the 'Justification' column for the information that is needed to determine if an 'Entire Facility' type of regulation applies (e.g. 20.2.70 or 20.2.73 NMAC).

Regulatory Citations for Regulations That Do Not, but Could Apply:
If there is a state or federal air quality regulation that does not apply, but you have a piece of equipment in a source category for which a regulation has been promulgated, you must **provide the low level regulatory citation showing why your piece of equipment is not subject to or exempt from the regulation. For example** if you have a stationary internal combustion engine that is not subject to 40 CFR 63, Subpart ZZZZ because it is an existing 2 stroke lean burn stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, your citation would be 40 CFR 63.6590(b)(3)(i). **We don't want a discussion of every non-applicable regulation, but if it is possible a regulation could apply, explain why it does not. For example,** if your facility is a power plant, you do not need to include a citation to show that 40 CFR 60, Subpart OOO does not apply to your non-existent rock crusher.

Regulatory Citations for Emission Standards:
For each unit that is subject to an emission standard in a source specific regulation, such as 40 CFR 60, Subpart OOO or 40 CFR 63, Subpart HH, include the low level regulatory citation of that emission standard. Emission standards can be numerical emission limits, work practice standards, or other requirements such as maintenance. **Here are examples:** a glycol dehydrator is subject to the general standards at 63.764C(1)(i) through (iii); an engine is subject to 63.6601, Tables 2a and 2b; a crusher is subject to 60.672(b), Table 3 and all transfer points are subject to 60.672(e)(1)

Federally Enforceable Conditions:
All federal regulations are federally enforceable. All Air Quality Bureau State regulations are federally enforceable except for the following: affirmative defense portions at 20.2.7.6.B, 20.2.7.110(B)(15), 20.2.7.11 through 20.2.7.113, 20.2.7.115, and 20.2.7.116; 20.2.37; 20.2.42; 20.2.43; 20.2.62; 20.2.63; 20.2.86; 20.2.89; and 20.2.90 NMAC. Federally enforceable means that EPA can enforce the regulation as well as the Air Quality Bureau and federally enforceable regulations can count toward determining a facility's potential to emit (PTE) for the Title V, PSD, and nonattainment permit regulations.

INCLUDE ANY OTHER INFORMATION NEEDED TO COMPLETE AN APPLICABILITY DETERMINATION OR THAT IS RELEVENT TO YOUR FACILITY'S NOTICE OF INTENT OR PERMIT.

EPA Applicability Determination Index for 40 CFR 60, 61, 63, etc: http://cfpub.epa.gov/adi/

Table for State Regulations:

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.1 NMAC	General Provisions	Yes	Facility	General Provisions apply to Notice of Intent, Construction, and Title V permit applications. Artesia Gas Plant operates under both a construction permit and Title V permit; therefore, this regulation applies.
20.2.3 NMAC	Ambient Air Quality Standards NMAAQS	Yes	Facility	20.2.3 NMAC is a State Implementation Plan (SIP) approved regulation that limits the maximum allowable concentration of, Sulfur Compounds, Carbon Monoxide and Nitrogen Dioxide. The TSP NM ambient air quality standard was repealed by the EIB effective November 30, 2018.
20.2.7 NMAC	Excess Emissions	Yes	Facility	This regulation establishes requirements for the facility if operations at the facility result in any excess emissions. The owner or operator will operate the source at the facility having an excess emission, to the extent practicable, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions. The facility will also notify the NMED of any excess emission per 20.2.7.110 NMAC.
20.2.23 NMAC	Fugitive Dust Control	No	Facility	Facility is subject to a permit issued pursuant to the NM Air Quality Control Act (20.2.23.108.B NMAC).
20.2.33 NMAC	Gas Burning Equipment - Nitrogen Dioxide	No	N/A	This facility does not have existing gas burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.33.108 NMAC.
20.2.34 NMAC	Oil Burning Equipment: NO_2	No	N/A	This facility does not have oil burning equipment having a heat input of greater than 1,000,000 million British Thermal Units per year per unit. The facility is not subject to this regulation and does not have emission sources that meet the applicability requirements under 20.2.34.108 NMAC.
20.2.35 NMAC	Natural Gas Processing Plant – Sulfur	No	N/A	AQB determined that 20.2.35 NMAC does not apply to facilities that control sulfur emissions with an AGI. See AQB Memorandum dated March 4, 2016.
20.2.38 NMAC	Hydrocarbon Storage Facility	Yes	TK-48, TK-49, TK-50	The purpose of this regulation is to minimize hydrogen sulfide emissions from hydrocarbon storage facilities. Tanks TK-48, TK-49, and TK-50 meet the capacity and throughput requirements of this regulation and are therefore subject. These units comply by controlling emissions with a VRU. TK-C, TK-51, and GT-1 have capacities less than 20,000-gallon threshold and are therefore not subject to this regulation.
20.2.39 NMAC	Sulfur Recovery Plant - Sulfur	No	N/A	This regulation establishes sulfur emission standards for sulfur recovery plants which are not part of petroleum or natural gas processing facilities. This regulation does not apply to the facility because Artesia Gas Plant does not have a sulfur recovery plant.
20.2.50 NMAC	Oil and Gas Sector – Ozone Precursor Pollutants	Yes	Facility	This regulation establishes emission standards for volatile organic compounds (VOC) and oxides of nitrogen (NOx) for oil and gas production, processing, compression, and transmission sources. 20.2.50 NMAC subparts below: Include the construction status of applicable units as “New”, “Existing”, “Relocation of Existing”, or “Reconstructed” as defined by this Part in your justification: Check the box for the subparts that are applicable: ☒113 – Engines and Turbines (Existing Unit 39) ☒114 – Compressor Seals (Existing Units 10, 11, 13, 14, 15, 16, 17, 27A, 30, 31a, 32a, 33, 34, & 39) ☐115 – Control Devices and Closed Vent Systems ☒116 – Equipment Leaks and Fugitive Emissions (Existing) ☐ 117 – Natural Gas Well Liquid Unloading ☐ 118 – Glycol Dehydrators ☒ 119 – Heaters (Existing Units 20 & 28)

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
				☒ 120 – Hydrocarbon Liquid Transfers (Existing Unit LOAD-1) ☐121 – Pig Launching and Receiving ☐122 – Pneumatic Controllers and Pumps ☐ 123 – Storage Vessels ☐124 – Well Workovers ☐ 125 – Small Business Facilities ☐126 – Produced Water Management Unit ☐127 – Flowback Vessels and Preproduction Operations
20.2.61.109 NMAC	Smoke & Visible Emissions	Yes	10-17, 19-23, 25-28, 30-34, 39-40	Since 20.2.37 NMAC was repealed, this regulation now applies to all combustion emissions sources.
20.2.70 NMAC	Operating Permits	Yes	Facility	This regulation establishes requirements for obtaining an operating permit. Artesia is a Title V major source of NOx, CO, VOC, and SO2. The facility operates under Title V permit P095-R4.
20.2.71 NMAC	Operating Permit Fees	Yes	Facility	Source is subject to 20.2.70 NMAC as cited at 20.2.71.109 NMAC.
20.2.72 NMAC	Construction Permits	Yes	Facility	This regulation establishes the requirements for obtaining a construction permit. The facility is a stationary source that has potential emission rates great than 10 pounds per hour or 25 tons per year of any regulated air contaminant for which there is a National or New Mexico Air Quality Standard. The facility has a construction permit (NSR Permit) 0434-M10R8 to meet the requirements of this regulation.
20.2.73 NMAC	NOI & Emissions Inventory Requirements	Yes	Facility	This regulation establishes emission inventory requirements. The facility meets the applicability requirements of 20.2.73.300 NMAC. The facility will meet all applicable reporting requirements under 20.2.73.300.B.1 NMAC.
20.2.74 NMAC	Permits – Prevention of Significant Deterioration (PSD)	Yes	Facility	This regulation establishes requirements for obtaining a PSD permit. This facility is a major source for PSD purposes and is in compliance with the applicable requirements of this regulation.
20.2.75 NMAC	Construction Permit Fees	Yes	Facility	This regulation establishes the guidelines and requirements for construction permitting fees. This facility is subject to this regulation per 20.2.75.10.A and will be required to submit a $500 permit filing fee.
20.2.77 NMAC	New Source Performance	Yes	31, 32, 38 (FUG-1), TK-48, TK-49, TK-50	These units are stationary sources which are subject to the requirements of 40 CFR Part 60, as amended through September 23, 2013. These units are subject to NSPS Subparts A, Kb, KKK, and JJJ.
20.2.78 NMAC	Emission Standards for HAPS	Potentially	N/A	This regulation applies to all sources subject to a 40 CFR 60 regulation, as amended through December 31, 2010. Although this standard does not apply to this facility under routine operating conditions, in the case of asbestos demolition, Subpart M would apply.
20.2.79 NMAC	Permits – Nonattainment Areas	No	N/A	This regulation establishes the requirements for obtaining a nonattainment area permit. The facility is not located in a non-attainment area and therefore is not subject to this regulation.
20.2.80 NMAC	Stack Heights	No	N/A	This regulation establishes requirements for the evaluation of stack heights and other dispersion techniques. This regulation does not apply as all stacks at the facility follow good engineering practice.

State Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification: (You may delete instructions or statements that do not apply in the justification column to shorten the document.)
20.2.82 NMAC	MACT Standards for source categories of HAPS	Yes	Dehy, Dehy-2, 10-17, 25-27, 30-34, 39	This regulation applies to all sources emitting hazardous air pollutants, which are subject to the requirements of 40 CFR Part 63, as amended through August 29, 2013. MACT Subparts HH and ZZZZ apply.

Table for Applicable Federal Regulations (Note: This is not an exhaustive list):

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 50	NAAQS	Yes	Facility	This regulation defines national ambient air quality standards. The facility meets all applicable national ambient air quality standards for NOx, CO, SO2, PM10, and PM2.5 under this regulation.
NSPS 40 CFR 60, Subpart A	General Provisions	Yes	31, 32, 38 (FUG-1), TK-48, TK-49, TK-50	This regulation defines general provisions for relevant standards that have been set under this part. This subpart applies as Subparts Kb, KKK, and JJJ are applicable.
NSPS 40 CFR60.40a, Subpart Da	Subpart Da, Performance Standards for **Electric Utility Steam Generating Units**	No	N/A	This regulation establishes standards of performance for electric utility steam generating units. This regulation does not apply because the facility does not operate any electric utility steam generating units.
NSPS 40 CFR60.40b Subpart Db	**Electric Utility Steam Generating Units**	No	N/A	This regulation establishes standards of performance for industrial-commercial-institutional steam generating units. This regulation does not apply because the facility does not operate any industrial-commercial-institutional steam generating units.
40 CFR 60.40c, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units	No	N/A	Applicability: facility has steam generating units for which construction, modification or reconstruction is commenced after June 9, 1989 and that have a maximum design heat input capacity of 29 MW (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr). Units 19 and 40 have a heat rate capacity less than 10 MMBtu/hr Unit 20 and Unit 28 are 36 MMBtu/hr but have construction dates prior to applicability date of June 9, 1989.
NSPS 40 CFR 60, Subpart Ka	Standards of Performance for **Storage Vessels for Petroleum Liquids** for which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and **Prior** to July 23, 1984	No	N/A	This regulation establishes performance standards for storage vessels for petroleum liquids for which construction, reconstruction, or modification commenced after May 18, 1978, and prior to July 23, 1984. There are no petroleum liquid storage vessels which commenced construction, reconstruction, or modification after May 18, 1978, and prior to July 23, 1984. Accordingly, this regulation does not apply.
NSPS 40 CFR 60, Subpart Kb	Standards of Performance for **Volatile Organic Liquid Storage**	Yes	TK-48, TK-49, TK-50	This regulation establishes performance standards for storage vessels for volatile organic liquids for which construction, reconstruction, or modification commenced after July 23, 1984. This facility has storage vessels, TK-48, 49, and 50, each with a capacity greater than or equal to 75 cubic meters that are used

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced **After** July 23, 1984			to store volatile organic liquids (VOL) for which construction, reconstruction, or modification commenced after July 23, 1984. Units TK-51 and GT-1 have capacities less than 75 cubic meters and are therefore not subject to the requirements of this regulation. Unit TK-C has a capacity less than 1,589.874 cubic meters and is used for petroleum or condensate stored, processed, or treated prior to custody transfer; and is therefore not subject to the requirements of this regulation.
NSPS 40 CFR 60.330 Subpart GG	**Stationary Gas Turbines**	No	N/A	This regulation establishes standards of performance for stationary gas turbines with a heat input at a peak load equal to or greater than 10 MMBtu/hr based on the lower heating value of the fuel fired and have commenced construction, modification, or reconstruction after October 3, 1977. This regulation is not applicable as this facility does not have any stationary gas turbines.
NSPS 40 CFR 60, Subpart KKK	Leaks of VOC from **Onshore Gas Plants**	Yes	38 (FUG-1)	This regulation defines standards of performance for equipment leaks of VOC emissions from onshore natural gas processing plants for which construction, reconstruction, or modification commenced after January 20, 1984, and on or before August 23, 2011. Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 20, 1984, is subject to the requirements of this subpart. The group of all equipment (each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart) except compressors (defined in § 60.631) within a process unit is an affected facility. A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant. If the unit is not located at the plant site, then it is exempt from the provisions of this subpart.
NSPS 40 CFR Part 60 Subpart LLL	Standards of Performance for **Onshore Natural Gas Processing**: SO_2 Emissions	No	N/A	This regulation establishes standards of performance for SO_2 emissions from onshore natural gas processing for which construction, reconstruction, or modification of the amine sweetening unit commenced after January 20, 1984 and on or before August 23, 2011. This regulation is not applicable. The facility does have an affected unit (amine treater), but pursuant to 60.640(e) the provisions of this subpart do not apply as produced acid gas is completely re-injected into oil or gas bearing geologic strata via the AGI well.
NSPS 40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission, and Distribution for which construction, modification or reconstruction commenced after August 23, 2011 and before September 18, 2015	No	N/A	This facility was constructed prior to August 23, 2011 (40 CFR 60.5365), and has no affected units that were constructed or modified between August 23, 2011 and April 18, 2015.
NSPS 40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which	No	N/A	The facility currently has no affected units that were constructed after April 18, 2015. If any are constructed after that date, the units will be subject.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
	Construction, Modification or Reconstruction Commenced **After** September 18, 2015			
NSPS 40 CFR 60 Subpart IIII	Standards of performance for Stationary Compression Ignition Internal Combustion Engines	No	N/A	The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. There are no CI engines at the facility.
NSPS 40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	Yes	31, 32	The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (5) of section 60.4230. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator. Units 31 and 32 were constructed after June 12, 2006 and manufactured after July 1, 2007 so are subject. See 40 CFR 60(a)(4) and (4)(i). Units 31 and 32 are subject to emission standards at 60.4233(e) Table 1. All other SI RICE were either constructed before 2006 or manufactured before July 1, 2007, and are not subject to this subpart.
NESHAP 40 CFR 61 Subpart A	General Provisions	No	N/A	This part applies to the owner or operator of any stationary source for which a standard is prescribed under this part. Although this regulation does not apply during normal operation, this facility could emit hazardous air pollutants which are subject to the requirements of 40 CFR Part 61 as amended through November 30, 2006. In the case of asbestos demolition, one NESHAP could apply (see Subpart M below.)
NESHAP 40 CFR 61 Subpart E	National Emission Standards for **Mercury**	No	N/A	The provisions of this subpart are applicable to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate or dry wastewater treatment plant sludge. These activities do not occur at Artesia Gas Plant.
NESHAP 40 CFR 61 Subpart M	National Emission Standards for **Asbestos**	Potentially	N/A	Although this standard does not apply to this facility under routine operating conditions, in the case of asbestos demolition, Subpart M would apply.
NESHAP 40 CFR 61 Subpart V	National Emission Standards for **Equipment Leaks** (Fugitive Emission Sources)	No	N/A	The provisions of this subpart apply to each of the following sources that are intended to operate in volatile hazardous air pollutant (VHAP) service: pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, surge control vessels, bottoms receivers, and control devices or systems required by this subpart. VHAP service means a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 10 percent by weight of VHAP. VHAP means a substance regulated under this subpart for which a standard for equipment leaks of the substance has been promulgated. Benzene is a VHAP (See 40 CFR 61 Subpart J). Artesia does not have equipment in VHAP service as determined according to the provisions of §61.245(d).
MACT 40 CFR 63, Subpart A	General Provisions	Yes	Dehy, Dehy-2, 10-17, 25-27, 30-34, 39	This regulation defines general provisions for relevant standards that have been set under this part. This regulation applies as MACT Subparts HH and ZZZZ apply.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
MACT 40 CFR 63.760 Subpart HH	**Oil and Natural Gas Production Facilities**	Yes	Dehy, Dehy-2	The glycol dehydrator (unit Dehy) at the Artesia Plant is a closed system with flash and regeneration gases routed to inlet compression for recycling thus meeting the requirements of this part. The ancillary equipment associated with this unit are subject to NSPS KKK and have no requirements under subpart HH. The glycol dehydrator (unit Dehy-2) that was added to the facility is a closed system and has a condenser and reboiler associated with the unit. Gas that is leaving the mol sieve dehydrator will enter the glycol dehydrator. Gas leaving the dehydrator will be routed to the residue gas line.
MACT 40 CFR 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants from Natural Gas Transmission and Storage Facilities	No	N/A	This regulation establishes national emission standards for hazardous air pollutants from natural gas transmission and storage facilities. This regulation does not apply because this facility is not a natural gas transmission or storage facility as defined in this regulation [40 CFR Part 63.1270(a)]. This facility is also not a major source of HAPs.
MACT 40 CFR 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Industrial, Commercial, and Institutional Boilers & Process Heaters	No	N/A	Facility is subject to this subpart if it owns or operates an industrial, commercial, or institutional boiler or process heater as defined in §63.7575 that is located at, or is part of, a major source of HAP as defined in §63.2 or §63.761 (40 CFR part 63, subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities), except as specified in §63.7491. This facility is not a major source of HAP.
MACT 40 CFR 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (**RICE MACT**)	Yes	10-17, 25-27, 30-34, 39	This regulation defines national emissions standards for HAPs for stationary reciprocating Internal Combustion Engines. Units 10, 31, 32, and 39 are new units at an area source of HAPs and subject to MACT ZZZZ, but pursuant to 63.6590(c), have no further requirements under this part by virtue of meeting the requirements under 40 CFR 60, Subpart JJJJ (if they are subject to NSPS JJJJ). As Units 10 and 39 are not subject to NSPS JJJJ, they have no requirements under NSPS JJJJ or MACT ZZZZ. All other stationary RICE are existing units at an area source of HAPS and subject to MACT ZZZZ. Pursuant to 40 CFR 63.6595(a), these units must comply with applicable emission limitation and operating limitations no later than October 19, 2013.
MACT 40 CFR 63 Subpart CCCCCC	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities	Yes	TK-1	Each GDF that is located at an area source. The affected source includes each gasoline cargo tank during the delivery of product to a GDF and includes each storage tank. TK-1 has a monthly throughput of less than 10,000 gallons of gasoline and must comply with the requirements in §63.11116.

Federal Regulation Citation	Title	Applies? Enter Yes or No	Unit(s) or Facility	Justification:
40 CFR 64	**Compliance Assurance Monitoring**	Yes	Amine-RS, Amine-C, AGI Well, 23, 10-17, 25-27, 30-34, 39	This regulation defines compliance assurance monitoring. In general terms, a CAM-affected unit must: •Be at a major source that is required to obtain a part 70 or 71 permit; •Be subject to an emission limit for a pollutant; •Use a control device to achieve compliance with that limit; and •Have a pre-control potential to emit that pollutant greater than major source level. This regulation applies to the Amine-RS (regeneration still) and Amine-C (contactor) and controlled by an AGI well and Flare Unit 23 (Acid Gas Flare). Amine unit flash tank emissions are not subject since they are routed back to the low-pressure receiver. Per 64.1 definitions, this is not considered a control device subject to this part. Stationary RICE Units 10 through 17, 25 through 27, 30-34, and 39 are CAM affected units.
40 CFR 68	**Chemical Accident Prevention**	Yes	Facility	The facility is an affected facility as it has quantities of materials regulated by 40 CFR Part 68 that are in excess of the triggering threshold. The facility maintains a current RMP for these chemicals.
Title IV – Acid Rain 40 CFR 72	**Acid Rain**	No	N/A	This part establishes the acid rain program. This facility is not an acid rain source. This regulation does not apply.
Title IV – Acid Rain 40 CFR 73	**Sulfur Dioxide** Allowance Emissions	No	N/A	This regulation establishes sulfur dioxide allowance emissions for certain types of facilities. This facility is not an acid rain source. This regulation does not apply.
Title IV – Acid Rain 40 CFR 76	**Acid Rain** Nitrogen Oxides **Emission Reduction Program**	No	N/A	This regulation establishes an acid rain nitrogen oxides emission reduction program. This regulation applies to each coal-fired utility unit that is subject to an acid rain emissions limitation or reduction requirement for SO_2. This part does not apply because the facility does not operate any coal-fired units [40 CFR Part 76.1].
Title VI – 40 CFR 82	Protection of **Stratospheric Ozone**	No	N/A	Not Applicable –facility does not “service”, “maintain” or “repair” class I or class II appliances nor “disposes” of the appliances. Note: Disposal definition in 82.152: Disposal means the process leading to and including: (1) The discharge, deposit, dumping or placing of any discarded appliance into or on any land or water; (2) The disassembly of any appliance for discharge, deposit, dumping or placing of its discarded component parts into or on any land or water; or (3) The disassembly of any appliance for reuse of its component parts. “Major maintenance, service, or repair means” any maintenance, service, or repair that involves the removal of any or all of the following appliance components: compressor, condenser, evaporator, or auxiliary heat exchange coil; or any maintenance, service, or repair that involves uncovering an opening of more than four (4) square inches of “flow area” for more than 15 minutes.

Section 14

Operational Plan to Mitigate Emissions

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

☐ **Title V Sources** (20.2.70 NMAC)**:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Emissions During Startups, Shutdowns, and Emergencies** defining the measures to be taken to mitigate source emissions during startups, shutdowns, and emergencies as required by 20.2.70.300.D.5(f) and (g) NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☒ **NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has developed an **Operational Plan to Mitigate Source Emissions During Malfunction, Startup, or Shutdown** defining the measures to be taken to mitigate source emissions during malfunction, startup, or shutdown as required by 20.2.72.203.A.5 NMAC. This plan shall be kept on site to be made available to the Department upon request. This plan should not be submitted with this application.

☒ **Title V** (20.2.70 NMAC)**, NSR** (20.2.72 NMAC)**, PSD** (20.2.74 NMAC) **& Nonattainment** (20.2.79 NMAC) **Sources:** By checking this box and certifying this application the permittee certifies that it has established and implemented a Plan to Minimize Emissions During Routine or Predictable Startup, Shutdown, and Scheduled Maintenance through work practice standards and good air pollution control practices as required by 20.2.7.14.A and B NMAC. This plan shall be kept on site or at the nearest field office to be made available to the Department upon request. This plan should not be submitted with this application.

Startup and shutdown procedures are performed according to DCP guidelines and procedures. The procedures dictate a sequence of operations designed to minimize emissions from the facility during such activities. Equipment located at the plant is equipped with various safety devices that aid in preventing excess emissions to the atmosphere in the event of an operational emergency. In addition, the plant has a closed flare system to handle the gas diverted from the normal process in the event of a major equipment malfunction that would require a significant gas release. The two flares (plant and acid gas flare) operate with a constant natural gas pilot and purge gas. If an operational emergency occurs and emission rates from the facility exceed the allowable permitted rates, DCP will notify the NMED in accordance with 20.2.7 NMAC. DCP will endeavor to repair the equipment responsible for the exceedances as quickly as possible.

Section 15

Alternative Operating Scenarios

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

Alternative Operating Scenarios: Provide all information required by the department to define alternative operating scenarios. This includes process, material and product changes; facility emissions information; air pollution control equipment requirements; any applicable requirements; monitoring, recordkeeping, and reporting requirements; and compliance certification requirements. Please ensure applicable Tables in this application are clearly marked to show alternative operating scenario.

Construction Scenarios: When a permit is modified authorizing new construction to an existing facility, NMED includes a condition to clearly address which permit condition(s) (from the previous permit and the new permit) govern during the interval between the date of issuance of the modification permit and the completion of construction of the modification(s). There are many possible variables that need to be addressed such as: Is simultaneous operation of the old and new units permitted and, if so for example, for how long and under what restraints? In general, these types of requirements will be addressed in Section A100 of the permit, but additional requirements may be added elsewhere. Look in A100 of our NSR and/or TV permit template for sample language dealing with these requirements. Find these permit templates at: www.env.nm.gov/air-quality/permitting-section-procedures-and-guidance/. Compliance with standards must be maintained during construction, which should not usually be a problem unless simultaneous operation of old and new equipment is requested.

In this section, under the bolded title "Construction Scenarios", specify any information necessary to write these conditions, such as: conservative-realistic estimated time for completion of construction of the various units, whether simultaneous operation of old and new units is being requested (and, if so, modeled), whether the old units will be removed or decommissioned, any PSD ramifications, any temporary limits requested during phased construction, whether any increase in emissions is being requested as SSM emissions or will instead be handled as a separate Construction Scenario (with corresponding emission limits and conditions, etc.

The term "alternative operating scenario" is not defined by regulation. DCP understands this term to apply to a source which may routinely operate with alternative fuels or processes in such a manner as to potentially affect emissions. Based on this understanding, this facility has no alternative operating scenarios.

Units at the facility may be shut down from time to time due to factors including but not limited to market demand, maintenance, malfunctions, and emergency shutdowns. Operating in alternative modes and temporary shutdowns are not alternative operating scenarios as DCP understands the term.

Section 16

Air Dispersion Modeling

1) Minor Source Construction (20.2.72 NMAC) and Prevention of Significant Deterioration (PSD) (20.2.74 NMAC) ambient impact analysis (modeling): Provide an ambient impact analysis as required at 20.2.72.203.A(4) and/or 20.2.74.303 NMAC and as outlined in the Air Quality Bureau's Dispersion Modeling Guidelines found on the Planning Section's modeling website. If air dispersion modeling has been waived for one or more pollutants, attach the AQB Modeling Section modeling waiver approval documentation.
2) SSM Modeling: Applicants must conduct dispersion modeling for the total short term emissions during routine or predictable startup, shutdown, or maintenance (SSM) using realistic worst case scenarios following guidance from the Air Quality Bureau's dispersion modeling section. Refer to "Guidance for Submittal of Startup, Shutdown, Maintenance Emissions in Permit Applications (http://www.env.nm.gov/aqb/permit/app_form.html) for more detailed instructions on SSM emissions modeling requirements.
3) Title V (20.2.70 NMAC) ambient impact analysis: Title V applications must specify the construction permit and/or Title V Permit number(s) for which air quality dispersion modeling was last approved. Facilities that have only a Title V permit, such as landfills and air curtain incinerators, are subject to the same modeling required for preconstruction permits required by 20.2.72 and 20.2.74 NMAC.

What is the purpose of this application?	Enter an X for each purpose that applies
New PSD major source or PSD major modification (20.2.74 NMAC). See #1 above.	
New Minor Source or significant permit revision under 20.2.72 NMAC (20.2.72.219.D NMAC). See #1 above. **Note:** Neither modeling nor a modeling waiver is required for VOC emissions.	X
Reporting existing pollutants that were not previously reported.	
Reporting existing pollutants where the ambient impact is being addressed for the first time.	
Title V application (new, renewal, significant, or minor modification. 20.2.70 NMAC). See #3 above.	
Relocation (20.2.72.202.B.4 or 72.202.D.3.c NMAC)	
Minor Source Technical Permit Revision 20.2.72.219.B.1.d.vi NMAC for like-kind unit replacements.	
Other: i.e. SSM modeling. See #2 above.	
This application does not require modeling since this is a No Permit Required (NPR) application.	
This application does not require modeling since this is a Notice of Intent (NOI) application (20.2.73 NMAC).	
This application does not require modeling according to 20.2.70.7.E(11), 20.2.72.203.A(4), 20.2.74.303, 20.2.79.109.D NMAC and in accordance with the Air Quality Bureau's Modeling Guidelines.	

Check each box that applies:

☐ See attached, approved modeling **waiver for all** pollutants from the facility.

☒ See attached, approved modeling **waiver for some** pollutants from the facility.

☐ Attached in Universal Application Form 4 (UA4) is a **modeling report for all** pollutants from the facility.

☐ Attached in UA4 is a **modeling report for some** pollutants from the facility.

☐ No modeling is required.

New Mexico Environment Department
Air Quality Bureau
Modeling Section
525 Camino de Los Marquez - Suite 1
Santa Fe, NM 87505

Phone: (505) 476-4300
Fax: (505) 476-4375
www.env.nm.gov/air-quality/

For Department use only:

Approved by: Eric Peters

Date: October 26, 2023

Air Dispersion Modeling Waiver Request Form

This form must be completed and submitted with all air dispersion modeling waiver requests.

If an air permit application requires air dispersion modeling, in some cases the demonstration that ambient air quality standards and Prevention of Significant Deterioration (PSD) increments will not be violated can be satisfied with a discussion of previous modeling. The purpose of this form is to document and streamline requests to certify that previous modeling satisfies all or some of the current modeling requirements. The criteria for requesting and approving modeling waivers are found in the Air Quality Bureau Modeling Guidelines. Typically, only construction permit applications submitted per 20.2.72, 20.2.74, or 20.2.79 NMAC require air dispersion modeling. However, modeling is sometimes also required for a Title V permit application.

A waiver may be requested by e-mailing this completed form in **MS Word** format to the modeling manager, sufi.mustafa@env.nm.gov.

This modeling waiver is not valid if the emission rates in the application are higher than those listed in the approved waiver request.

Section 1 and Table 1: Contact and facility information:

Contact name	Josh Reddoch
E-mail Address:	Josh.Reddoch@eosolutions.net
Phone	979-530-0166
Facility Name	Artesia Gas Plant
Air Quality Permit Number(s)	434-M10R8 and P095-R4
Agency Interest Number (if known)	199
Latitude and longitude of facility (decimal degrees)	LAT 32.754972 and LONG -104.210028

General Comments: (Add introductory remarks or comments here, including the purpose of and type of permit application.)

DCP will be submitting a revision to Air Quality Permit Numbers 434-M10R8 and PO95-R4 to increase the amount of field condensate offloaded to the facility and then the total condensate loaded out of the facility. The increase in condensate will affect the haul road emissions related to unit Haul-2. The increase in short-term emissions is negligible (<0.005 lb/hr PM10), as such a modeling waiver is being requested. Similar modeling for haul road emission increases was submitted as part of a revision in 2014. This waiver request form was prepared by EOSolutions at the request of DCP Operating Company.

Section 2 – List All Regulated Pollutants from the Entire Facility - Required

In Table 2, below, list all regulated air pollutants emitted from your facility, except for New Mexico Toxic Air Pollutants, which are listed in Table 6 of this form. All pollutants emitted from the facility must be listed whether or not a modeling waiver is requested for that pollutant or if the pollutant emission rate is subject to the proposed permit changes.

Table 2: Air Pollutant summary table (Check all that apply. Include all pollutants emitted by the facility):

Pollutant	Pollutant is not emitted at the facility and modeling or waiver are not required.	Pollutant does not increase in emission rate at any emission unit (based on levels currently in the permit) and stack parameters are unchanged. Modeling or waiver are not required.	Stack parameters or stack location has changed.	Pollutant is new to the permit, but already emitted at the facility.	Pollutant is increased at any emission unit (based on levels currently in the permit).	A modeling waiver is being requested for this pollutant.	Modeling for this pollutant will be included in the permit application.
CO		x					
NO_2		x					
SO_2		x					
PM10					x	x	
PM2.5					x	x	
H_2S		x					
Reduced S	x						
O_3 (PSD only)	x						
Pb	x						

Section 3: Pollutants, other than NMTAPs, with very small emission rates

The Air Quality Bureau has performed generic modeling to demonstrate that small sources, as listed in Appendix 2 of this form, do not need computer modeling. This modeling compared emissions from a project (the increase in emissions from the previous permit or total facility emissions for a new facility) with significance levels. After comparing the project's emission rates for various pollutants to Appendix 2, list in Table 3 the pollutants that do not need to be modeled because of very small emission rates.

The facility must be at least 2 km from the nearest Class I area to qualify for a waiver due to very small emission rates. List the nearest Class I area and the distance from the facility in Section 3 comments.

Section 3 Comments. (If you are not requesting a waiver for any pollutants based on their low emission rate, then note that here. You do not need to complete the rest of Section 3 or Table 3.)
<Add comments here>

Table 3: List of Pollutants with very small emission rates from the project

Pollutant	Requested Allowable Emission Rate for Project (pounds/hour)	Release Type (select "all from stacks >20 ft" or "other")	Waiver Threshold (from appendix 2) (lb/hr)
PM10	0.0046	Other	0.015
PM2.5	0.0005	Other	0.003

Section 4: Pollutants that have previously been modeled at equal or higher emission rates

List the pollutants and averaging periods in Table 4 for which you are requesting a modeling waiver based on previous modeling for this facility. The previous modeling reports that apply to the pollutant must be submitted with the modeling waiver request. Request previous modeling reports from the Modeling Section of the Air Quality Bureau if you do not have them and believe they exist in the AQB modeling file archive.

Section 4 Comments. (If you are not asking for a waiver based on previously modeled pollutants, note that here. You do not need to complete the rest of section 4 or table 4.)

Table 4: List of previously modeled pollutants (facility-wide emission rates)

Pollutant	Averaging period	Proposed emission rate (pounds/hour)	Previously modeled emission rate (pounds/hour)	Proposed minus modeled emissions (lb/hr)	Modeled percent of standard or increment	Year modeled
PM2.5	Annual	1.98	1.98	0.0005	64.9%	2014
PM2.5	24-hr	1.98	1.98	0.0005	49.3%	2014
PM10	Annual	2.92	2.92	0.0046	50.8%	2014

Section 4, Table 5: Questions about previous modeling:

Question	Yes	No
Was AERMOD used to model the facility?	x	
Did previous modeling predict concentrations less than 95% of each air quality standard and PSD increment?	x	
Were all averaging periods modeled that apply to the pollutants listed above?	x	
Were all applicable startup/shutdown/maintenance scenarios modeled? (NA)		
Did modeling include all sources within 1000 meters of the facility fence line that now exist?	x	
Did modeling include background concentrations at least as high as current background concentrations?	x	
If a source is changing or being replaced, is the following equation true for all pollutants for which the waiver is requested? (Attach calculations if applicable.) (NA) $\frac{[(g) \times (h1)] + [(v1)^2/2] + [(c) \times (T1)]}{q1} \leq \frac{[(g) \times (h2)] + [(v2)^2/2] + [(c) \times (T2)]}{q2}$ Where g = gravitational constant = 32.2 ft/sec^2 h1 = existing stack height, feet v1 = exhaust velocity, existing source, feet per second c = specific heat of exhaust, 0.28 BTU/lb-degree F T1 = absolute temperature of exhaust, existing source = degree F + 460 q1 = emission rate, existing source, lbs/hour h2 = replacement stack height, feet v2 = exhaust velocity, replacement source, feet per second T2 = absolute temperature of exhaust, replacement source = degree F + 460 q2 = emission rate, replacement source, lbs/hour		

If you checked "no" for any of the questions, provide an explanation for why you think the previous modeling may still be used to demonstrate compliance with current ambient air quality standards.

Section 5: Modeling waiver using scaled emission rates and scaled concentrations

At times it may be possible to scale the results of modeling one pollutant and apply that to another pollutant. Increases in emissions of one pollutant might also demonstrate compliance by applying a scaling factor to the modeling results. If the analysis for the waiver gets too complicated, then it becomes a modeling review rather than a modeling waiver, and applicable modeling fees will be charged for the modeling. Plume depletion, ozone chemical reaction modeling, post-processing, and unequal pollutant ratios from different sources are likely to invalidate scaling.

If you are not scaling previous results, note that here. You do not need to complete the rest of section 5. Scaling analyses are not intended to be used for previously modeled pollutants with decreasing emissions, which is already addressed in section 4.

- We are not scaling previously modeled results.

To demonstrate compliance with standards for a pollutant describe scenarios below that you wish the modeling section to consider for scaling results.

Section 6: New Mexico Toxic air pollutants – 20.2.72.400 NMAC

Modeling must be provided for any New Mexico Toxic Air Pollutant (NMTAP) with a facility-wide controlled emission rate in excess of the pound per hour emission levels specified in Tables A and B at **20.2.72.502 NMAC** - Toxic Air Pollutants and Emissions. An applicant may use a stack height correction factor based on the release height of the stack for the purpose of determining whether modeling is required. See Table C - Stack Height Correction Factor at 20.2.72.502 NMAC. Divide the emission rate for each release point of a NMTAP by the correction factor for that release height and add the total values together to determine the total adjusted pound per hour emission rate for that NMTAP. If the total adjusted pound per hour emission rate is lower than the emission rate screening level found in Tables A and B, then modeling is not required.

In Table 6, below, list the total facility-wide emission rates for each New Mexico Toxic Air Pollutant emitted by the facility. The table is pre-populated with common examples. Extra rows may be added for NMTAPS not listed or for NMTAPS emitted from multiple stack heights. NMTAPS not emitted at the facility may be deleted, left blank, or noted as 0 emission rate. Toxics previously modeled may be addressed in Section 5 of this waiver form. For convenience, we have listed the stack height correction factors in Appendix 1 of this form.

Section 6 Comments. (If you are not requesting a waiver for any NMTAPs then note that here. You do not need to complete the rest of section 6 or Table 6.)

- We are not requesting a waiver for any NMTAPs.

Table 6: New Mexico Toxic Air Pollutants emitted at the facility

If requesting a waiver for any NMTAP, all NMTAPs from this facility must be listed in Table 3 regardless of if a modeling waiver is requested for that pollutant or if the pollutant emission rate is subject to the proposed permit changes.

Pollutant	Requested Allowable Emission Rate (pounds/hour)	Release Height (Meters)	Correction Factor	Allowable Emission Rate Divided by Correction Factor	Emission Rate Screening Level (pounds/hour)
Ammonia					1.20
Asphalt (petroleum) fumes					0.333
Carbon black					0.233
Chromium metal					0.0333
Glutaraldehyde					0.0467
Nickel Metal					0.0667

Wood dust (certain hard woods as beech & oak)					0.0667
Wood dust (soft wood)					0.333
(add additional toxics if they are present)					

Section 7: Approval or Disapproval of Modeling Waiver

The AQB air dispersion modeler should list each pollutant for which the modeling waiver is approved, the reasons why, and any other relevant information. If not approved, this area may be used to document that decision.

The modeling waiver is issued for PM10 and PM2.5 because the emission rate increases for these pollutants are well below the modeled values that show these amounts do not cause or contribute to violations of air quality standards or PSD increments.

Appendix 1: Stack Height Release Correction Factor (adapted from 20.2.72.502 NMAC)

Release Height in Meters	Correction Factor
0 to 9.9	1
10 to 19.9	5
20 to 29.9	19
30 to 39.9	41
40 to 49.9	71
50 to 59.9	108
60 to 69.9	152
70 to 79.9	202
80 to 89.9	255
90 to 99.9	317
100 to 109.9	378
110 to 119.9	451
120 to 129.9	533
130 to 139.9	617
140 to 149.9	690
150 to 159.9	781
160 to 169.9	837
170 to 179.9	902
180 to 189.9	1002
190 to 199.9	1066
200 or greater	1161

Appendix 2. Very small emission rate modeling waiver requirements (updated 7/27/2023)
Modeling is waived if emissions of a pollutant for the project are below the amount:

Pollutant	If all emissions come from stacks 20 feet or greater in height and there are no horizontal stacks or raincaps (lb/hr)	If not all emissions come from stacks 20 feet or greater in height, or there are horizontal stacks, raincaps, volume, or area sources (lb/hr)
CO	16.037	2.580
H_2S (Pecos-Permian Basin)	0.114	0.015
H_2S (Not in Pecos-Permian Basin)	0.022	0.003
Lead	0.005	0.001
NO_2	0.189	0.024
PM2.5 – Point Sources	0.056	0.009
PM2.5 – Volume Sources		0.003
PM10 – Point Sources	0.255	0.039
PM10 – Volume Sources		0.015
SO_2	0.179	0.023
Reduced sulfur (Pecos-Permian Basin)	0.033	No waiver
Reduced sulfur (Not in Pecos-Permian Basin)	No waiver	No waiver

Section 17

Compliance Test History

(Submitting under 20.2.70, 20.2.72, 20.2.74 NMAC)

To show compliance with existing NSR permits conditions, you must submit a compliance test history. The table below provides an example.

Compliance Test History Table

Unit No.	Test Description	Test Date
13	NMED Periodic (Quarterly) Test	11/17/2022
16	NMED Periodic (Quarterly) Test	11/17/2022
17	NMED Periodic (Quarterly) Test	11/15/2022
30	NMED Periodic (Quarterly) Test	11/15/2022
31	NMED Periodic (Quarterly) Test	11/15/2022
32	NMED Periodic (Quarterly) Test	11/15/2022
33	NMED Periodic (Quarterly) Test	12/12/2022
34	NMED Periodic (Quarterly) Test	11/15/2022
10	NMED Periodic (Quarterly) Test	2/20/2023
11	NMED Periodic (Quarterly) Test	2/20/2023
12	NMED Periodic (Quarterly) Test	2/20/2023
14	NMED Periodic (Quarterly) Test	2/20/2023
15	NMED Periodic (Quarterly) Test	2/21/2023
16	NMED Periodic (Quarterly) Test	2/21/2023
17	NMED Periodic (Quarterly) Test	2/21/2023
27	NMED Periodic (Quarterly) Test	2/22/2023
30	NMED Periodic (Quarterly) Test	2/22/2023
33	NMED Periodic (Quarterly) Test	2/22/2023
31	NMED Periodic (Quarterly) Test	2/22/2023
32	NMED Periodic (Quarterly) Test	2/22/2023
39	NMED Periodic (Quarterly) Test	2/21/2023
34	NMED Periodic (Quarterly) Test	2/21/2023
13	NMED Periodic (Quarterly) Test	3/8/2023
10	NMED Periodic (Quarterly) Test	4/3/2023
11	NMED Periodic (Quarterly) Test	4/3/2023
12	NMED Periodic (Quarterly) Test	4/3/2023
13	NMED Periodic (Quarterly) Test	4/20/2023
14	NMED Periodic (Quarterly) Test	4/3/2023
15	NMED Periodic (Quarterly) Test	4/3/2023
16	NMED Periodic (Quarterly) Test	4/3/2023
17	NMED Periodic (Quarterly) Test	4/4/2023
27	NMED Periodic (Quarterly) Test	4/4/2023
30	NMED Periodic (Quarterly) Test	4/4/2023
33	NMED Periodic (Quarterly) Test	4/4/2023
34	NMED Periodic (Quarterly) Test	4/4/2023
39	NMED Periodic (Quarterly) Test	4/4/2023
31	NSPS JJJJ Test	4/5/2023
32	NSPS JJJJ Test	4/20/2023
10	NMED Periodic (Quarterly) Test	8/7/2023
11	NMED Periodic (Quarterly) Test	8/7/2023

12	NMED Periodic (Quarterly) Test	8/7/2023
13	NMED Periodic (Quarterly) Test	8/7/2023
14	NMED Periodic (Quarterly) Test	8/7/2023
15	NMED Periodic (Quarterly) Test	8/8/2023
16	NMED Periodic (Quarterly) Test	8/8/2023
17	NMED Periodic (Quarterly) Test	8/8/2023
27	NMED Periodic (Quarterly) Test	8/8/2023
30	NMED Periodic (Quarterly) Test	8/9/2023
31	NMED Periodic (Quarterly) Test	8/9/2023
32	NMED Periodic (Quarterly) Test	8/9/2023
33	NMED Periodic (Quarterly) Test	8/9/2023
34	NMED Periodic (Quarterly) Test	8/9/2023
39	NMED Periodic (Quarterly) Test	8/8/2023

Section 20

Other Relevant Information

Other relevant information. Use this attachment to clarify any part in the application that you think needs explaining. Reference the section, table, column, and/or field. Include any additional text, tables, calculations or clarifying information.

Additionally, the applicant may propose specific permit language for AQB consideration. In the case of a revision to an existing permit, the applicant should provide the old language and the new language in track changes format to highlight the proposed changes. If proposing language for a new facility or language for a new unit, submit the proposed operating condition(s), along with the associated monitoring, recordkeeping, and reporting conditions. In either case, please limit the proposed language to the affected portion of the permit.

There is no other relevant information.

Section 22: Certification

Company Name: DCP Operating Company, LP

I, Steven R. Torpey, hereby certify that the information and data submitted in this application are true and as accurate as possible, to the best of my knowledge and professional expertise and experience.

Signed this 1st day of November, 2023, upon my oath or affirmation, before a notary of the State of Texas.

Steven R Torpey
*Signature

11/1/2023
Date

Steven R. Torpey
Printed Name

Senior Air Permitting Engineer
Title

Scribed and sworn before me on this 1st day of November, 2023.

My authorization as a notary of the State of Texas expires on the 24th day of October, 2026.

Ana C Nolazco
Notary's Signature

11/1/23
Date

Ana C. Nolazco
Notary's Printed Name

ANA C NOLAZCO
Notary ID #131762500
My Commission Expires
October 24, 2026

*For Title V applications, the signature must be of the Responsible Official as defined in 20.2.70.7.AE NMAC.