

STATEMENT OF BASIS

for issuance of Draft Air Permit #: 1244-AOP-R0

1. PERMITTING AUTHORITY:

Arkansas Department of Pollution Control and Ecology
8001 National Drive
Post Office Box 8913
Little Rock, Arkansas 72219-8913.

2. APPLICANT:

Carlisle Compressor Station
P.O. Box 21734, Rm. 1205
Shreveport, LA 71151

3. PERMIT WRITER:

Blake McCord

4. PROCESS DESCRIPTION AND SIC CODE:

natural gas compressor station
SIC Code: 4922

5. REVIEWER'S NOTES:

The permit does not contain any modification to the existing facility.

6. COMPLIANCE STATUS: The following summarizes the current compliance status of the facility including active/pending enforcement actions and recent compliance activities and issues

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7. EMISSION CHANGES:

The following table summarizes plantwide emission changes associated with this permitting action.

Total Permitted Emissions (tpy)			
Pollutant	Permit #:1244-AR-1	Permit #:1244-AOP-R0	Change
PM/PM ₁₀	-	-	-
SO ₂	0.44	-	-0.44
VOC	39.6	42.1	+2.5
CO	1870.17	1913.1	+42.93
NO _x	1581.22	1585.4	+4.18
HAPs			
Formaldehyde	-	9.42	+9.42
Methanol	-	1.94	+1.94

8. CALCULATIONS:

At sources for which a check appears below, the emission calculations received the reviewer’s concurrence as submitted by the facility in the permit application.

KEY: Abbreviations used in the following tables: SN = Source Number, SC = Specific Condition.
 For all sources deemed insignificant, the permit writer has reviewed submitted calculations, and concurs with the emission estimates.

SN	Basis for emission calculation		Comment.
	lb/hr	tpy	
01	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	
02	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	The source shall be tested for CO and NO _x emissions.
03	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	
04	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	
05	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	The source shall be tested for CO and NO _x emissions.
06	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	The source shall be tested for CO and NO _x emissions.
07	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	
08	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	The source shall be tested for CO and NO _x emissions.
09	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	
10	VOC, CO, NO _x : AP-42 HAPs: GRI emission factors	(lb/hr) × 4.38	

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9. MODELING:

A. Criteria Pollutants

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu\text{g}/\text{m}^3$)	Averaging Time	Highest Concentration ($\mu\text{g}/\text{m}^3$)	% of NAAQS
PM/PM ₁₀	-	50	Annual		
		150	24-hour		
SO ₂	-	80	Annual		
		365	24-hour		
NO ₂	361.8	100	Annual	69.3	69
CO	436.6	10000	8-hour	2559	26
		40000	1-hour	4476	11

Factors are the following:

To convert from 1 hour average to :	Multiply by:
3 hour average	0.9
8 hour average	0.7
24 hour average	0.4
Annual average	0.1

B. Non-Criteria Pollutants

1st Tier Screening (PAER).

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The PAER was deemed by the Department to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (TLV), in (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

SN(s)	HAP	TLV (mg/m^3)	PAER (lb/hr) = 0.11xTLV	Proposed lb/hr	Pass?
1-10	Formaldehyde	0.37	0.0407	2.14	No
1-10	Methanol	262	28.82	0.44	Yes

2nd Tier Screening (PAIL).

ISCST3 air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict 24-hour average ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL), in Fg/m^3 , for each compound was deemed by the Department to be one one-hundredth of the Threshold Limit Value, as listed by the ACGIH.

SN(s)	HAP	PAIL ($\mu\text{g/m}^3$)	Modeled Concentration ($\mu\text{g/m}^3$)	Pass?
1-10	Formaldehyde	3.7	7.0	No

3rd Tier Screening (Risk Based).

ISCST3 air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict annual average ambient concentrations beyond the property boundary. The Risk Based Alternative Presumptively Acceptable Impact Level (site-specific PAIL), in Fg/m^3 , for each compound was deemed by the Department to be the site-specific PAIL with a target risk of $1\text{E-}5$ assuming continuous exposure 24 hours/day for 70 years.

SN(s)	HAP	site-specific PAIL ($\mu\text{g/m}^3$)	Modeled Concentration ($\mu\text{g/m}^3$)	Pass?
1-10	Formaldehyde	0.8	0.52	Yes

10. TESTING AND OPERATIONAL PARAMETERS:

This permit requires stack testing of the following sources.

SC	SN(s)	Pollutant	Test Method	Justification
3	02, 05, 06, 08	CO, NO _x	10, 7E	These sources have never been tested.

This permit requires the following operational parameters:

SC	SN(s)	Sampled Material	Parameter	Justification

11. RECORD KEEPING, REPORTING:

The following specific conditions were included in Air Permit #: 1244-AOP-R0 to require record keeping and reporting of throughput, emissions, or operational parameters:

SC	SN	Recorded Item
4	Facility	Natural gas usage
7	01 through 10	Opacity observations or readings

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12. OPACITY:

The following opacity limits are required by this permit.

SC	SN	Opacity	Justification
6	01 through 10	5%	Natural gas-fired engines

13. OTHER REQUIREMENTS:

The following conditions were included in Air Permit #: 1244-AOP-R0 for the purposes described below.

SC	Justification	Citation
1	None	
2		
3		
4		
7		
8		
9		
15		
16		

14. DELETED CONDITIONS:

The following Specific Conditions were included in the previous permit, but deleted for the current permitting action.

Previous SC	Justification for removal.
	None

15. REFERENCES:

- a. Air Permit Application received by Department on June 11, 1996.
- b. Air Permit Application received by Engineer on August 20, 1996.
- c. Regulation #18, as amended July 1, 1997.
- d. Regulation #19, as amended July 1, 1997.
- e. Regulation #26, as amended January 27, 1995.
- f. USEPA AP-42 Compilation of Emission Factors, 1/95, Section 3.2
- g. *Measurement of Air Toxic Emissions from Natural Gas-Fired Internal*

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Combustion Engines at Natural Gas Transmission and Storage Facilities.
Volume 1. Gas Research Institute, February 1996.

16. CONCURRENCE BY:

The following supervisor concurs with the permitting decision:

Gordon Burr, P.E.