

STATEMENT OF BASIS

for issuance of Draft Air Permit #: 1310-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:

Arkansas Western Gas Company
P.O. Box 1288
Fayetteville, AR 72702-1288

3. PERMIT WRITER:

Blake McCord

4. PROCESS DESCRIPTION AND SIC CODE:

natural gas compressor station
SIC Code: 4922

5. REVIEWER'S NOTES:

All compressor engines are allowed to be operated 8760 hours annually.
Draft permit includes previously not permitted existing sources.

6. EMISSION CHANGES:

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

Total Permitted Emissions (tpy)			
Pollutant	Permit #:1310-A	Permit #:1310-AOP-R0	Change
PM/PM ₁₀	0.01	0.0	-0.01
SO ₂	0.04	0.0	-0.44
VOC	66.46	39.9	-26.56
CO	15.59	18.6	3.01
NO _x	159.96	194.6	34.64
HAPs			
Formaldehyde	0.0	1.86	1.86

7. 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 : emission factors from manufacturer HAPs: GRI's emission factors	(lb/hr) × 4.38	This source shall be tested for CO, NO _x , and VOC emissions.
02	VOC, CO, NO _x : emission factors from manufacturer HAPs: GRI's emission factors	(lb/hr) × 4.38	
03	VOC, CO, NO _x : emission factors from manufacturer HAPs: GRI's emission factors	(lb/hr) × 4.38	This source shall be tested for CO, NO _x , and VOC emissions.

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SN	Basis for emission calculation		Comment.
	lb/hr	tpy	
04	VOC, CO, NO _x : emission factors from manufacturer HAPs: GRI's emission factors	(lb/hr) × 4.38	
36	VOC: GRI-GLYCalc software program, Version 3.0	GRI-GLYCalc software program, Version 3.0	
40	VOC: <i>Protocol for Equipment Leak Emission Estimates</i> , EPA-453/R-93-026, June 1993.	(lb/hr) × 4.38	

8. MODELING:

A. Criteria Pollutants

Pollutant	Emission Rate (lb/hr)	NAAQS Standard (µg/m ³)	Averaging Time	Highest Concentration (µg/m ³)	% of NAAQS
PM/PM ₁₀	-	50	Annual		
		150	24-hour		
SO ₂	-	80	Annual		
		365	24-hour		
NO _x	44.4	100	Annual	13.9	13.90
CO	4.2	10000	8-hour	58.5	0.59
		40000	1-hour	83.55	0.21

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/m³), 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?
1-4	Formaldehyde	0.37	0.0407	0.42	No

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/m³, 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 (µg/m ³)	Modeled Concentration (µg/m ³)	Pass?
1-4	Formaldehyde	3.7	3.34	Yes

9. TESTING AND OPERATIONAL PARAMETERS:

This permit requires stack testing of the following sources.

SC	SN(s)	Pollutant	Test Method	Justification
7	01, 03	VOC, CO, NO _x	25A, 10, 7E	

This permit requires the following operational parameters:

SC	SN(s)	Sampled Material	Parameter	Justification
3	Facility	Natural gas usage	maximum 302.02 MMscf	

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10. 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
6	01 through 04	Opacity observations or readings

11. OPACITY:

The following opacity limits are required by this permit.

SC	SN	Opacity	Justification
5	01 through 04	5%	Natural gas-fired engines

12. OTHER REQUIREMENTS:

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

SC	Justification	Citation
	None	

13. DELETED CONDITIONS:

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

Previous SC	Justification for removal.
2	De minimis emission source
6	Emissions from compressor engines are effectively limited by SC3

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14. REFERENCES:

- a. Air Permit Application received by Department on June 11, 1996.
- b. Regulation #18, as amended July 1, 1997.
- c. Regulation #19, as amended July 1, 1997.
- d. Regulation #26, as amended January 27, 1995.
- e. USEPA AP-42 Compilation of Emission Factors, 1/95, Section 3.2
- f. *Measurement of Air Toxic Emissions from Natural Gas-Fired Internal Combustion Engines at Natural Gas Transmission and Storage Facilities.* Volume 1. Gas Research Institute, February 1996.
- g. *Protocol for Equipment Leak Emission Estimates.* EPA-453/R-93-026, June 1993.

15. CONCURRENCE BY:

The following supervisor concurs with the permitting decision:

Gordon Burr, P.E.