

STATEMENT OF BASIS

for issuance of Draft Air Permit No. 972-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 - Woolsey Compressor Station
County Road 508
Ozark, Arkansas 72949

3. PERMIT WRITER:

Blake McCord

4. PROCESS DESCRIPTION AND SIC CODE:

Natural Gas Compression and Dehydration Station
SIC Code: 4923

5. REVIEWER'S NOTES:

Air permit 972-AOP-R0 is the first operating permit issued to AWG-Woolsey Compressor Station under Regulation 26. This facility is subject to Title V permitting because it has the potential to emit in excess of 100 tons per year (tpy) of oxides of nitrogen (NO_x).

6. EMISSION CHANGES:

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

Plant wide Permitted Emissions (ton/yr)			
Pollutant	Air Permit 972-AR-3	Air Permit 972-AOP-R0	Change
VOC	37.4	33.9	-3.5
CO	72.6	75.8	+3.2
NO _x	134.9	134.3	-0.6
Formaldehyde	-	5.4	+5.4
Acrolein	-	0.9	+0.9

7. CALCULATIONS:

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 of final permit limits.		Comment.
	lb/hr	tpy	
01-04	Criteria pollutant calculations based on criteria emission furnished by equipment manufacturers and by testing of these engines. Non-criteria pollutant calculations based on GRI field test emission factors found in the Topical Report <i>Measurement of Air Toxic Emissions from Natural Gas-Fired Internal Combustion Engines at Natural Gas Transmission and Storage Facilities</i> , Volume I, Table 6-12, Gas Research Institute, February, 1996. (at applicants request 0.027 g/hp-hr was used for acrolein factor in lieu of .020)		
06-07	All calculations based on AP-42 emission factors for natural gas combustion and operating at 8760 hr/yr.		
45 Blow Downs	Gas contained (acf) * (Max. pressure/atmospheric pressure) * % VOC by weight in gas * density of VOC in gas (lb/scf)* 2 Blow downs/yr = worst-case lb/yr		Gas contained = 6832 acf Max. pressure = 500 psig % VOC = 0.074% Density VOC = 0.4228lb/scf (The total emissions were <0.1 tpy of VOC)
45 Fugitives	Fugitive calculations based on EPA manual <i>Protocal for Equipment Leak Emission Estimates</i> , June 1993. The fugitive emissions were 0.3 lb/hr and 1.2 tpy of VOC.		
45 Total	0.1 + 0.2 = 0.3 lb/hr	0.1 + 0.7 = 0.8 tpy	The total emissions were 0.4 lb/hr and 1.3 tpy of VOC; therefore, the source is deemed insignificant.

8. MODELING:

A. Criteria Pollutants

The total criteria pollutant emissions were modeled using SCREEN3 and compared to the National Ambient Air Quality Standards (NAAQS).

Pollutant	Averaging Period	Conc. (ug/m ³)	Back-ground	NAAQS (ug/m ³)	PASS?
NO _x	Annual	37.603	n/a	100	Yes
CO	8-hour	148.60	n/a	10,000	Yes
	1-hour	212.28	n/a	40,000	Yes

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 (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m ³)	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
Formaldehyde	0.37	0.0407	1.22	No

2nd Tier Screening (PAIL)

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

Pollutant	(PAIL, $\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value	Modeled Concentration ($\mu\text{g}/\text{m}^3$)	Pass?
Formaldehyde	3.7	3.36	Yes.

9. TESTING AND OPERATIONAL PARAMETERS:

This permit requires the following stack testing:

SC	SN(s)	Pollutant	Test Method	Justification
4	SN-01 thru SN-04	NO _x CO	7E 10	To assure that the engines are combusting natural gas properly.

10. RECORD KEEPING, REPORTING:

The following specific conditions were included in Air Permit 1185-AOP-R0 to require record keeping and reporting of throughput, emissions, or operational parameters:

SC	SN	Recorded Item
4	SN-01 thru SN-04	Stack test reporting.

11. OPACITY:

The following opacity limits are required by this permit.

SC	SN	Opacity	Justification
2	SN-01 thru SN-04	5%	No more than 5% opacity shall be emitted from these sources if they are burning natural gas.
6	SN-06 and SN-07	5%	No more than 5% opacity shall be emitted from these sources if they are burning natural gas.

12. OTHER REQUIREMENTS:

The following conditions were included in Air Permit 1185-AOP-R0 for the purposes described below.

SC	Justification	Citation
1	Criteria pollutant emission limits.	19.5 40CFR52
2	Non-criteria pollutant emission limits.	18.8
5	Criteria pollutant emission limits.	19.5 40CFR52

13. DELETED CONDITIONS:

The format of the permit has changed. Therefore, individual deleted conditions were not accounted for.

14. REFERENCES:

- a. Air Permit Application, received October 14, 1996.
- b. Regulation No. 18, as amended July 1, 1997.
- c. Regulation No. 19, as amended July 1, 1997.
- d. Regulation No. 26, as amended January 27, 1995.
- e. USEPA AP-42 Compilation of Emission Factors, 1/95, Section 1.4.

15. CONCURRENCE BY:

The following supervisor concurs with the permitting decision:

Gordon Burr, P.E.