

## STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1310-AOP-R2 AFIN: 24-00090

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality  
5301 Northshore Drive  
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Arkansas Western Gas Co. - Davis Compressor Station  
8521 Fairhaven Road  
Altus, Arkansas 72821

3. PERMIT WRITER:

Patty Campbell, PE

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Pipeline Transportation of Natural Gas  
NAICS Code: 486210

5. SUBMITTALS:

10/28/2008

6. REVIEWER'S NOTES:

Arkansas Western Gas Company (AWG) owns and operates a natural gas transmission station (NAICS 486210), known as Davis Compressor Station, located at 8521 Fairhaven Road Altus, Franklin County, Arkansas 72821. This is the second Title V renewal for the facility. There are no changes in the operation of the facility from the previous permit. PM, PM<sub>10</sub>, and SO<sub>2</sub> emissions, which were considered negligible in the past, are being added to the permit with this renewal, reflecting updated Department guidance. The facility consists of four 4-stroke, rich-burn compressor engines and a natural gas fueled dehydrator. Items on the Insignificant Activities list have been combined and/or removed. Potential annual emissions are permitted at: 0.8 tpy PM/PM<sub>10</sub>, 0.4 tpy SO<sub>2</sub>, 24.0 tpy VOC, 19.0 tpy CO, 193.8 tpy NO<sub>x</sub>, 1.22 tpy Formaldehyde, and 0.16 tpy Acrolein.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no active or pending air enforcement issues.

8. PSD APPLICABILITY:

a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N

b. Is the facility categorized as a major source for PSD? N  
*Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list?*

If yes, explain why this permit modification not PSD?

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
None identified.		

10. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

11. MODELING:

Criteria Pollutants

Examination of the source type, location, plot plan, land use, emission parameters, and other available information indicate that modeling is not warranted at this time.

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
CO	4.4	10,000	8-Hour	2432.1*	24.4
		40,000	1-Hour	3027.0*	7.57
NO <sub>x</sub>	44.4	100	Annual	37.2*	37.2

\* Includes Background Values. Files in E drive, 2/4/09.

Non-Criteria Pollutants:

1<sup>st</sup> Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value

(mg/m<sup>3</sup>), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Formaldehyde	1.5	0.165	0.30	No
Acrolein	0.229	0.0252	0.06	No

2<sup>nd</sup> Tier Screening (PAIL)

AERMOD 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 has been deemed by the Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

Pollutant	PAIL (µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	Pass?
Formaldehyde	15	3.59	Yes
Acrolein	2.29	0.26	Yes

12. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01 & 02	Ajax Manufacturer's Data, dated July 21, 1989	<u>g/bhp-hr</u> VOC = 1.5 CO = 1.0 NO <sub>x</sub> = 4.0	Uncontrolled	N/A	Two (2) 345 BHP, 4-stroke, rich-burn engines, plus a 15% safety factor
	AP-42 Section 3.2 Table 2 (07/00) pp. 14-18	<u>lb/MMCF</u> PM <sub>10</sub> = 0.07710 SO <sub>2</sub> = 0.58800 <u>g/bhp-hr</u> Formaldehyde = 1.74E-1 Acrolein = 1/70E-2	Uncontrolled	N/A	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
01 & 02	Ajax Manufacturer's Data, dated July 21, 1989	<u>g/bhp-hr</u> VOC = 1.25 CO = 1.0 NO <sub>x</sub> = 15.0	Uncontrolled	N/A	Two (2) 576 BHp, 4-stroke, rich-burn engines
	AP-42 Section 3.2 Table 2 (07/00) pp. 14-18	<u>lb/MMCF</u> PM <sub>10</sub> = 0.07710 SO <sub>2</sub> = 0.58800 <u>g/bhp-hr</u> Formaldehyde = 1.74E-1 Acrolein = 1/70E-2	Uncontrolled	N/A	

13. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
01 or 02 and 03 or 04	NO <sub>x</sub> CO	7E 10	Once Every 5 Years	<i>Each Type Compressor engine is tested once every 5 years as confirmation of the Permit.</i>

14. MONITORING OR CEMS

No CEMS or other monitoring equipment.

15. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
01, 02, 03 & 04	Compliance with the specifications for grains of H <sub>2</sub> S	Contains < 0.5 grains of total sulfur per 100 SCF of natural gas	N/A	No. Maintain valid gas tariff; fuel purchase or pipeline transportation contract; vendor certification based on fuel sampling and analysis or other appropriate documentation; or periodic testing.

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16. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
Facility-wide	5%	Department Guidance	Natural Gas Fuel <i>only</i>

17. DELETED CONDITIONS:

Former SC	Justification for removal
5, 6, & 7	SC #5, 6, & 7 were repeats of SC #1, 2, & 3. The four engines (2 different types) were combined into a single Specific Condition.
4 & 8	SC #4 & SC #8 (they are the same) became PWC #8.

18. GROUP A INSIGNIFICANT ACTIVITIES

Source Name	A	Emissions (tpy)						
		PM/ PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs	
							Single	Total
One Dehydrator Reboiler	A-1	0.02	0.0	0.01	0.22	0.39	0.0	0.0
One Lube Oil Tank, 550 gallon capacity	A-3	0.0	0.0	0.56	0.0	0.0	0.0	0.0
Blowdown and Equipment Leaks	A-13	0.0	0.0	3.23	0.0	0.0	0.02	0.02


19. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

List all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
1310-AOP-R1

20. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

  
Paula Parker, P.E.



**APPENDIX A – EMISSION CHANGES AND FEE CALCULATION**





### Fee Calculation for Major Source

<b>Fee Calculation for Major Source</b>						
Facility Name: AWG - Davis Compressor Station						
Permit Number: 1310-AOP-R2						
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\$/ton factor	22.07	Annual Chargeable Emission (tpy)				219
Permit Type	Renewal No Changes		Permit Fee \$			0
Minor Modification Fee \$	500					
Minimum Modification Fee \$	1000					
Renewal with Minor Modification \$	500					
Check if Facility Holds an Active Minor Source Permit						
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0					
Total Permit Fee Chargeable Emissions (tpy)	-0.6					
<i>HAPs not included in VOC or PM:</i>		<i>Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride</i>				
<i>Air Contaminants:</i>		<i>All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensible PM, H2S in TRS, etc.)</i>				
Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		0	0.8	0.8	0.8	0.8
PM <sub>10</sub>		0	0.8	0.8		
SO <sub>2</sub>		0	0.4	0.4	0.4	0.4
VOC		24.8	24	-0.8	-0.8	24
CO		18.6	19.0	0.4		
NO <sub>x</sub>		194.8	193.8	-1	-1	193.8
Formaldehyde		1.22	1.22	0		
Acrolein		0	0.16	0.16		
		0	0	0		

