

## STATEMENT OF BASIS

### *for the issuance of Draft Air Permit # 617-AOP-R2*

1. PERMITTING AUTHORITY:

Arkansas Department of Environmental Quality  
8001 National Drive  
Post Office Box 8913  
Little Rock, Arkansas 72219-8913

2. APPLICANT:

Atlantic Research Corporation  
East Walton Road, Highland Industrial Park  
East Camden, Arkansas 71701

3. PERMIT WRITER:

Michael H. Watt

4. PROCESS DESCRIPTION AND SIC CODE:

SIC Description: Manufacture of Solid Rocket Motors and Missile Systems  
SIC Code: 3764

5. SUBMITTALS:        March 15, 2003

6. REVIEWER'S NOTES:

Atlantic Research Corporation (ARC), a division of Sequa Corporation, currently operates a manufacturing facility located in the Highland Industrial Park near East Camden, Arkansas. ARC manufactures solid rocket motors, missile systems, aircraft ordnance, rocket warheads, and similar products for the United States Department of Defense. ARC also produces the propellant and related components (igniters, inflators) for automobile air bag systems. The facility also manufactures the rocket propellants, explosives, pyrotechnics, and air bag propellants used in the aforementioned products. These energetic materials are utilized in the on-site production operations and are commercially distributed as finished products. Research and Development (R&D) activities for the products are also performed.

This minor modification application is to allow for a replacement of a 1.7 MMBTU/hr boiler in SN-02 with a new 3.352 MMBTU/hr boiler.

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

There are no enforcement actions at this time.

8. **APPLICABLE REGULATIONS:**

A. **Applicability**

Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, et cetera) (Y/N)   N    
 Has this facility underwent PSD review in the past (Y/N)   N   Permit # \_\_\_\_\_  
 Is this facility categorized as a major source for PSD? (Y/N)   N    
     \$ 100 tpy and on the list of 28 (100 tpy)? (Y/N)   N    
     \$ 250 tpy all other (Y/N)   N  

B. **PSD Netting**

Was netting performed to avoid PSD review in this permit? (Y/N)   N  

C. **Source and Pollutant Specific Regulatory Applicability**

<b>Source</b>	<b>Pollutant</b>	<b>Regulation [NSPS, NESHAP (Part 61 &amp; Part 63), or PSD <u>only</u>]</b>
36	VOC/HAP	NESHAP Part 63 Subpart T
71	VOC/HAP	NSPS Kb
72	VOC/HAP	NSPS Kb
Plantwide	VOC/HAP	NESHAP Part 63 Subpart GG

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9. EMISSION CHANGES:

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

<b>Plantwide Permitted Emissions (ton/yr)</b>			
<b>Pollutant</b>	<b>Air Permit 617-AOP-R1</b>	<b>Air Permit 617-AOP-R1</b>	<b>Change</b>
PM/PM <sub>10</sub>	241.3	241.4	0.1
SO <sub>2</sub>	3.4	3.5	0.1
VOC	194.8	194.8	0
CO	91.3	91.8	0.5
NO <sub>x</sub>	62.9	63.5	0.6
Lead	4.01	4.01	0
Acetone*	56.39	56.39	0
Ammonia	0.02	0.02	0
Butyl Cellosolve	12.25	12.25	0
Chlorene*	1.39	1.39	0
Chromium	0.05	0.05	0
1,3 Dioxolane	7.98	7.98	0
Ethyl Acrylate	5.13	5.13	0
Ethyl Benzene	7.64	7.64	0
Formaldehyde	0.87	0.87	0
Glycol Ethers	32.41	32.41	0
Hydrogen- Chloride*	124.87	124.87	0
Hydrogen- Fluoride*	0.02	0.02	0

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Plantwide Permitted Emissions (ton/yr)			
Pollutant	Air Permit 617-AOP-R1	Air Permit 617-AOP-R1	Change
Methanol	4.05	4.05	0
Methylene- Chloride*	75.39	75.39	0
Methyl Ethyl- Ketone	47.38	47.38	0
Methyl Isobutyl- Ketone	32.91	32.91	0
Phenol	2.45	2.45	0
Tetrachloro- ethylene*	1.93	1.93	0
Toluene	40.89	40.89	0
1,1,1 Trichloro- ethane*	27.14	27.14	0
Trichloro- ethylene	4.52	4.52	0
Xylene	33.97	33.97	0

\* Are not included in VOC emissions

10. MODELING:

A. 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. The physical size of the facility is the main factor in this determination.

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/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?
Acetone	1188	130.68	338.77	NO
Butyl Cellosolve	121	13.31	49.71	NO
Chromium	0.5	0.055	0.18	NO
1,3 Dioxolane	97	10.67	34.60	NO
Ethyl Acrylate	20	2.2	25.20	NO
Ethyl Benzene	434	47.74	54.61	NO
Formaldehyde	14.0	1.54	5.06	NO
Glycol Ethers	100	110	165.35	NO
Methanol	262.1	288.3	34.11	YES
Methylene-Chloride	174	19.14	351.04	NO
Methyl Ethyl-Ketone	590	64.9	347.84	NO

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11*TLV	Proposed lb/hr	Pass?
Methyl Isobutyl-Ketone	205	22.55	215.26	NO
Phenol	19.25	21.17	16.45	YES
Tetrachloro-ethylene	170	18.7	17.62	YES
Toluene	188	20.68	324.61	NO
1,1,1 Trichloro-ethane	19100	2101	164.84	YES
Trichloro-ethylene	269	29.59	45.17	YES
Xylene	434	47.74	307.28	NO

\*\*\* Emissions of Hydrogen Chloride Hydrogen Fluoride and Chlorine from the thermal treatment areas (SN-03, SN-04, and SN-30) were not modeled because of the extremely short term emissions.

**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, µg/m <sup>3</sup> ) = 1/100 of Threshold Limit Value	Modeled Concentration (µg/m <sup>3</sup> )	Pass?
Acetone	11880	606.25	YES
Butyl Cellosolve	1210	88.48	YES
Chromium	5	0.26	YES
1,3 Dioxolane	970	422.81	YES

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<b>Pollutant</b>	<b>(PAIL, <math>\mu\text{g}/\text{m}^3</math>) = 1/100 of Threshold Limit Value</b>	<b>Modeled Concentration (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Pass?</b>
Ethyl Acrylate	200	44.86	YES
Ethyl Benzene	4340	97.20	YES
Formaldehyde	140	9.00	YES
Glycol Ethers	1000	294.32	YES
Methylene- Chloride	1740	1031.07	YES
Methyl Ethyl- Ketone	5900	582.54	YES
Methyl Isobutyl- Ketone	2050	168.63	YES
Toluene	1880	1120.74	YES
Xylene	4340	130.28	YES

C. CALCULATIONS:

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
02	AP-42	Natural Gas	None	-	
03	Test Data	See Comments	None	-	Rockets PM 33.84 lb/100 lb CO 34.60 lb/100 lb NOx 0.32 lb/100 lb HCl 22.92 lb/100 lb CL2 0.01 lb/100 lb HF 0.09 lb/100 lb Air Bags PM 44.75 lb/100 lb CO 14.34 lb/100 lb NOX 0.01 lb/100 lb HCl 1.51 lb/100 lb
04	Test Data	See Comments	None	-	Rockets PM 25.99 lb/100 lb CO 25.28 lb/100 lb NOx 1.91 lb/100 lb HCl 21.69 lb/100 lb CL2 0.37 lb/100 lb Lead 0.65 lb/100 lb HF 0.15 lb/100 lb Air Bags PM 48.30 lb/100 lb NOX 0.04 lb/100 lb HCl 0.03 lb/100 lb
05	MSDS	See VOC limit.	-	-	
06	MSDS	See VOC	-	-	



SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
		limit.			
07	MSDS	See VOC limit.	-	-	
08	MSDS	See VOC limit.	-	-	
11	MSDS	See VOC limit.	-	-	
12	MSDS	See VOC limit.	-	-	
13	MSDS	See VOC limit.	-	-	
19	MSDS	See VOC limit.	-	-	
20	MSDS	See VOC limit.	-	-	
22	MSDS	See VOC limit.	-	-	
24	MSDS	See VOC limit.	-	-	
25	AP-42	Natural Gas	-	-	
28	MSDS	See VOC limit.	-	-	
30	Test Data	See Comments	None	-	Rockets PM 33.81 lb/100 lb CO 34.60 lb/100 lb NOx 0.32 lb/100 lb

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
					HCl 22.92 lb/100 lb CL2 0.01 lb/100 lb Lead 0.78 lb/100 lb Air Bags PM 44.75 lb/100 lb CO 14.34 lb/100 lb NOX 0.01 lb/100 lb HCl 1.51 lb/100 lb
36	MSDS	See VOC limit.	-	-	
37	MSDS	See VOC limit.	-	-	
38	MSDS	See VOC limit.	-	-	
39	MSDS	See VOC limit.	-	-	
40	MSDS	See VOC limit.	-	-	
41	MSDS	See VOC limit.	-	-	
42	MSDS	See VOC limit.	-	-	
43	MSDS	See VOC limit.	-	-	
44	MSDS	See VOC limit.	-	-	
45	MSDS	See VOC limit.	-	-	

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SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
46	MSDS	See VOC limit.	-	-	
47	MSDS	See VOC limit.	-	-	
48	MSDS	See VOC limit.	-	-	
49	MSDS	See VOC limit.	-	-	
50	MSDS	See VOC limit.	-	-	
51	MSDS	See VOC limit.	-	-	
52	MSDS	See VOC limit.	-	-	
53	MSDS	See VOC limit.	-	-	
54	MSDS	See VOC limit.	-	-	
55	MSDS	See VOC limit.	-	-	
56	SCF/m3	-	-	-	
57	MSDS	See VOC limit.	-	-	
58	MSDS	See VOC limit.	-	-	

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
59	SCF/m3 MSDS	See VOC limit.	-	-	
60	SCF/m3 MSDS	See VOC limit.	-	-	
61	SCF/m3	-	-	-	
62	MSDS	See VOC limit.	-	-	
63	MSDS	See VOC limit.	-	-	
64	MSDS	See VOC limit.	-	-	
65	MSDS	See VOC limit.	-	-	
66	SCF/m3	-	-	-	
67	SCF/m3	-	-	-	
68	MSDS	See VOC limit.	-	-	
69	AP-42	Natural Gas	-	-	
70	Tanks	-	-	-	
71	Tanks	-	-	-	
72	Tanks	-	-	-	
73	SCF/m3	-	-	-	
74	MSDS	See VOC	-	-	

SN	Emission Factor Source (AP-42, Testing, etc)	Emission Factor and units (lbs/ton, lbs/hr, etc)	Control Equipment Type (if any)	Control Equipment Efficiency	Comments (Emission factor controlled/uncontrolled, etc)
		limit.			
75	MSDS	See VOC limit.	-	-	
76	MSDS	See VOC limit.	-	-	
77	MSDS	See VOC limit.	-	-	
78	MSDS	See VOC limit.	-	-	
79	AP-42	Natural Gas			
80	MSDS	See VOC limit.	-	-	
81	MSDS	See VOC limit.	-	-	
82	MSDS	See VOC limit.	-	-	
83	MSDS	See VOC limit.	-	-	

13. TESTING REQUIREMENTS:

This permit requires no stack testing.

14. MONITORING OR CEMS

There are no parameters that must be monitored with CEMs or other monitoring equipment.

15. RECORD KEEPING REQUIREMENTS

The following are items (such as throughput, fuel usage, VOC content of coating, etc) that must be tracked and recorded, frequency of recording and whether records are needed to be included in any annual, semiannual or other reports.

<b>SN</b>	<b>Recorded Item</b>	<b>Limit (as established in permit)</b>	<b>Frequency *</b>	<b>Report (Y/N)**</b>
03	Pounds of Rocket Propellant	56,400	Hourly	Y
03	Pounds of Rocket Propellant	369,880	12-month	Y
03	Pounds of Air Bag Propellant	3.0	Hourly	Y
03	Pounds of Air Bag Propellant	10,000	12-month	Y
03	Pounds of Arcadene #428 Rocket Propellant	625	Hourly	Y
03	Pounds of Arcadene #428 Rocket Propellant	6,250	12-month	Y
04	Pounds of Rocket Propellant	8,000	Hourly	Y
04	Pounds of Rocket Propellant	737,100	12-month	Y
04	Pounds of Air Bag Propellant	8,000	Hourly	Y
04	Pounds of Air Bag Propellant	33,000	12-month	Y
04	Pounds of Arcadene #428 Rocket Propellant	5,000	Hourly	Y
04	Pounds of Arcadene #428 Rocket Propellant	10,000	Hourly	Y

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SN	Recorded Item	Limit (as established in permit)	Frequency *	Report (Y/N)**
11	Pounds of Lacquer Pre-mix	40,000	12-month	Y
30	Pounds of Rocket Propellant	131	Hourly	Y
30	Pounds of Rocket Propellant	65,400	12-month	Y
30	Pounds of Air Bag Propellant	131	Hourly	Y
30	Pounds of Air Bag Propellant	10,000	12-month	Y
47	Pounds of Polyurethane Resin	40,000	12-month	Y
48	Pounds of Phenolic Resin	10,000	12-month	Y
49	Pounds of Phenolic Resin	10,000	12-month	Y
51	Pounds of Dioctyl Adipate	2,920	12-month	Y
55	Gallons of Egyptian Lacquer	10	12-month	Y
55	VOC Content	See Table	12-month	Y
60	Pounds of Maleic Anhydride	10,000	12-month	Y
60	Pounds of Tri-Phenyl Bismuth	20,000	12-month	Y
60	Pounds of Isocyanate Compounds	150,000	12-month	Y
67	Pounds of Blasting Media	600,000	12-month	Y
68	Pounds of Kerosene	336	12-month	Y
70	Gallons of Butadiene-based Polymers	141,000	12-month	Y
70	Dimension of Tank	-	-	-
71	Gallons of Gasoline	40,000	12-month	Y
71	Dimension of Tank	-	-	-
72	Gallons of Diesel Fuel	40,000	12-month	Y
72	Dimension of Tank	-	-	-

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SN	Recorded Item	Limit (as established in permit)	Frequency *	Report (Y/N)**
PW	Solvent Throughputs	See Table	12-month	Y
PW	Paint Throughput	16,250 lbs	12-month	Y
PW	Paint VOC Content	See Table	12-month	Y
PW	Pounds of Adhesive	13,105	12-month	Y
PW	Adhesive VOC Content	See Table	12-month	Y
PW	CF of Natural Gas	317,510,000	12-month	Y
PW	Other MACT Standards as Applied	See Conditions	-	-



16. OPACITY

SN	Opacity %	Justification (NSPS limit, Dept. Guidance, etc)	Compliance Mechanism (daily observation, weekly, control equipment operation, etc)
02	5%	Dept. Guidance	Natural Gas
03	20%	Dept. Guidance	Daily
04	20%	Dept. Guidance	Daily
25	5%	Dept. Guidance	Natural Gas
30	20%	Dept. Guidance	Daily
59	5%	Dept. Guidance	Weekly
60	5%	Dept. Guidance	Weekly
61	5%	Dept. Guidance	Weekly
66	5%	Dept. Guidance	Weekly
67	5%	Dept. Guidance	Weekly
69	5%	Dept. Guidance	Natural Gas
73	5%	Dept. Guidance	Weekly
79	5%	Dept. Guidance	Natural Gas
81	20%	Dept. Guidance	Daily
82	5%	Dept. Guidance	Weekly

17. DELETED CONDITIONS:

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

There were none.

18. VOIDED, SUPERSEDED OR SUBSUMED PERMITS

List all active permits for this facility which are voided/superseded/subsumed by issuance of this permit.

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19. CONCURRENCE BY:

The following supervisor concurs with the permitting decision:

\_\_\_\_\_  
*Phillip Murphy, P.E.*