

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0617-AOP-R20 AFIN: 07-00035

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Aerojet Rocketdyne, Inc.  
East Walton Road, (Highway 274), Highland Industrial Park  
East Camden, Arkansas 71701

3. PERMIT WRITER:

Shawn Hutchings

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Ammunition (except Small Arms) Manufacturing  
NAICS Code: 332993

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

Date of Application	Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment)	Short Description of Any Changes That Would Be Considered New or Modified Emissions
9/12/2022	Minor Modification/Modification	New Vacuum Epoxy Mixer, parts washer. Modified propellant cutting.

6. REVIEWER'S NOTES:

Aerojet Rocketdyne, Inc. currently operates a manufacturing facility located in the Highland Industrial Park near East Camden, Arkansas. This permit is a modification to add a Parts Washer to Building M-2, SN-141, adding a Vacuum Epoxy Mixer to Building M-2, SN-142, and increase hourly production rates for SN-104, 118, and 124. Permitted emissions increased 0.2 tpy of particulate and 13.4 tpy of VOC.

7. COMPLIANCE STATUS:

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

The permittee stated during review of the application that the two new sources were already installed. Those were referred to enforcement. The facility has a recently closed CAO involving multiple unpermitted sources.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N  
 If yes, were GHG emission increases significant? 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 for 8(b), explain why this permit modification is not PSD.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
SN-86, SN-87, SN-89, SN-95, SN-102, SN-103, SN-120, SN-123, SN-138, and SN-139	VOC CO NO <sub>x</sub>	NSPS JJJJ
81, 81A, 81B, SN-86, SN-87, SN-89, SN-91, SN-92, SN-95, SN-102, SN-103, SN-103, SN-120, SN-123, SN-138, SN-139, 90, 91, 93, 121,	HAPs	MACT ZZZZ
71	VOC/HAP	NSPS Kb
72	VOC/HAP	NSPS Kb
Plantwide	VOC/HAP	NESHAP Part 63 Subpart GG
SN- 02C,02F, 02G, 25A, 25C, 25E, 25F, 69E, 69F, 69G, 69H, 94, 96, 112, 113, 115, 116, 117, 119, and 122	HAPs	MACT DDDDD
121, 81, 81A, 81B	Criteria	NSPS IIII

10. UNCONSTRUCTED SOURCES:

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit

Unconstructed Source	Permit Approval Date	Extension Requested Date	Extension Approval Date	If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit
None added with this modification.				

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N  
 (Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N  
 If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

Source	Inapplicable Regulation	Reason
N/A		

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

Source	Pollutant Controlled	Cite Exemption or CAM Plan Monitoring and Frequency
67, 73, 104, 118, 124, 125, 126, 128	Particulate	Pre-control below major source thresholds.

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

HAP emission evaluation of the previous permit below. There were no changes to emissions.

The non-criteria pollutants listed below were evaluated. Based on Division of Environmental Quality procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

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 Division of Environmental Quality 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?
1,1,1-Trichloroethane	1,910	210	582	N
Acetone	1,781	196	372	N
Acrolein	0.2	0.022	0.05	N
Arsenic	0.01	0.0011	0.00002	Y
Beryllium	0.0001	0.000001	0.0000001	Y
Cadmium	0.01	0.0011	2.04	N
Chlorine	0.29	0.032	207	N (no increase not evaluated further)
Chromium	0.01	0.0011	23.9	N
Cobalt	0.02	0.0022	0.000007	Y
Ethyl Benzene	86.8	9.55	132	N
Hydrogen	2.98	0.328	10840	N (no increase

Pollutant	TLV (mg/m <sup>3</sup> )	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
Chloride				not evaluated further)
Hydrogen Fluoride	0.41	0.045	36.3	N (no increase not evaluated further)
Lead	0.05	0.0055	284	N
Manganese	0.1	0.011	0.00004	Y
Mercury	0.03	0.0033	0.00002	Y
Methanol	262	288	265	N
Methylene Chloride	173	19.1	354	N
MIBK	81.9	9	489	N
Selenium	0.2	0.002	0.000002	Y
Toluene	75.4	8.3	570	N
Xylene	434	47.8	520	N

### 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 Division of Environmental Quality 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?
1,1,1-Trichloroethane	19100	1350	Y
Acetone	17810	521	Y
Acrolein	2	0.006	Y
Chromium	0.03	0.001	Y
Ethyl Benzene	868	369	Y
Lead	0.5	0.015	Y
Methanol	2620	420	Y

Pollutant	PAIL ( $\mu\text{g}/\text{m}^3$ ) = 1/100 of Threshold Limit Value	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Pass?
Methylene Chloride	1730	935	Y
MIBK	819	1060	N
Toluene	754	941	N
Xylene	4340	1300	Y

The facility submitted the following to justify the modeled pollutants which exceeded the PAIL.

All pollutants “pass” the comparison to the PAIL or alternate standard except MIBK and Toluene.

The modeled concentrations of MIBK and Toluene that are above the PAIL limit occur at receptors along or just beyond Aerojet’s fence line. Those beyond the fence line all fall within industrial areas similar to Aerojet’s. The PAIL limit is for residential exposure, which is not a concern because there is restricted public access to these areas. The predicted impact is well below OSHA exposure standards, which is the only type of exposure that would occur at these receptors.

Therefore, the emissions of all non-criteria pollutants proposed in this modification will not cause any significant impact on human health and environment.

c) H<sub>2</sub>S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H<sub>2</sub>S Standards N  
 If exempt, explain: No H<sub>2</sub>S emitted

15. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
Natural Gas Fired sources	AP-42 Natural gas	Varied	None	None	
Engines	AP-42 Combustion engines	Varied	None	None	
Bubbled Sources,	Usage Rates Mass Balance	Varied	None	None	

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
Lacquer, foam blowing					
03A-F 04 30	EQTCH Products of Combustion model	Varied	None	None	
Blast Machines	BAAQMD emission factors for abrasive blasting	Varied per material used	Cyclone and Baghouses	90 and 99%	
Tanks	EPA Tanks Program	Equations	None	none	
13 19	AP-42 Table 4.6-2	0.08 Lb/hr/ft2			
56	Mass Balance				
63	Mass Balance		Condenser	95%	
64 84 98 141, 142	Mass Balance		None	N/A	
73 104 118, 124	Mass Balance	5% material loss	Baghouse	99.9	

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
This permit contains no testing requirements.				

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

SN	Parameter or Pollutant to be Monitored	Method (CEM, Pressure Gauge, etc.)	Frequency	Report (Y/N)
24, 125, 126	differential pressure and/or air velocity	Pressure gauge, or velocity meter	Weekly	Y

## 18. 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)
SN- 02C,02F, 02G, 25A, 25C, 25E, 25F, 69E, 69F, 69G, 69H, 94, 96, 112, 113, 115, 116, 117, 119, and 122	DDDDD Records	None	As needed	Y
03	Materials Tested	Table in Specific Condition 12	Monthly	Y
11	Lacquer premix used	20,000 pounds	Monthly	Y
4	Materials Processed hourly. Emissions monthly	Conditions 16, 17, and 18	Daily, Monthly	Y
30	Energetic materials used	300 pounds per hour 24,000 pounds per 12 months	Monthly	Y
47	Resin usage	40,000 lbs/12 mo	Monthly	Y
48A, 48B, and 49	Phenolic Resin	500,000 lbs/12 mo	Monthly	Y
63	Stabilizing Solvent	20,000lb/12 months	Monthly	Y
81, 81A, 81B	Hours	8760 per 12-month combined	Monthly	Y
84	Asphalt and wax coatings	15,000 pounds each	Monthly	Y
Emergency Engines	Operation hours and maintainence	Hours based on calculations see permit	Monthly	Y
07, 12, 13, 19, 20A & B, 22, 24, 28, 36 37B, 38A & B, 39A & B, 40A & B, 41A & B, 42, 43, 44A - AC, 52A & B, 74, 75, 76A & B,	Solvent usage	See Plantwide Condition 10	Monthly	Y



SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
77A & B, 78A & B, 85, 98, 99, 101A & B, 107, 108, 109, 110, 111, 125, 126, 127, 128, 129, 140, 141				
SN-12, 24, 43, 44A - AC, 101A & B, 125, 126	Surface Coating Materials	63,000 pounds	Monthly	Y
SN-12, 24, 43, 44A - AC, 101A & B, 125, 126	VOC and HAP contents	See table Plantwide Condition 14	Monthly	Y
SN-44A - AC, SN-100A, SN-100B and 128	Miscellaneous Materials	35,500 pounds	Monthly	Y
SN-44A - AC, SN-100A, SN-100B and 128	VOC and HAP content	See table Plantwide Condition 14	Monthly	Y
SN-39A & B, 40A & B, 41A & B, 44A - AC, 76A & B, 77A & B, 78A & B, 98, 99, 101A & B, 108, and 109	Usage	41,400 lbs per 12 mo	Monthly	Y
SN-39A & B, 40A & B, 41A & B, 44A - AC, 76A & B, 77A & B, 78A & B, 98, 99, 101A & B, 108, and 109	Content	Plantwide 22	Monthly	Y
SN-48 and 49	Phenolic Molding compounds	500,000 per year	Monthly	Y
SN-67C through S	Blasting Media	300,000 per 12 months	Monthly	Y
SN-39A & B, 40A & B, 41A & B, 44A - AC, 76A & B, 77A & B, 78A & B, 98, 99, 101A & B,	adhesives, adhesive primers, adhesive catalysts, barrier coatings, and related	27,600 pounds	Monthly	Y

SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
108, and 109	compounds			
SN-39A & B, 40A & B, 41A & B, 44A – AC, 76A & B, 77A & B, 78A & B, 98, 99, 101A & B, 108, and 109	VOC and HAP content	See table Plantwide Condition 19	Monthly	Y
All	HAP substitution records	Comply with Plantwide Condition 22	Annual	N
71	Gasoline throughput	200,000 gallons per 12 months	Monthly	Y
72	Diesel Throughput	40,000 gallons per year	Monthly	Y
SN-86, SN-87, SN-89, SN-90, SN-91, SN-92, SN-93, SN-95, SN-102, SN-103, SN104, SN-105, SN-106, SN-120, SN-121, SN-123, 130, 138, and 139	III JJJJ and ZZZZ records	None	As needed	Y
84	Throughput	15,000 pounds asphalt coating	Monthly	Y
SN-86, SN-87, SN-89, SN-90, SN-91, SN-92, SN-93, SN-95, SN-102, SN-103, SN104, SN-105, SN-106, SN-120, SN-121, SN-123, 130, 138, and 139	Hours of Operation	500 per 12 mo.	Monthly	Y
Plantwide	GG Records	None	As Needed	Y

## 19. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
SN-02C, 02F, 02G,	5%	Department Guidance	Natural Gas

SN	Opacity	Justification for limit	Compliance Mechanism
25A, 25C, 25E, 25F, 69E, 69F, 69G, 69H, 94, 96, 97, 101A, 101B, 112, 113, 115, 116, 117, 119, 122, 131, 132, 133, 134, 135, 136, and 137			Combustion only.
SN-24, 40A, 40B, 43	5%	Department Guidance	Weekly Observations
56	5%	Department Guidance	
67C through Y	5%	Department Guidance	Weekly Observations
73, 73B, 73C, 73D, 73E, 73F	5%	Department Guidance	Established standard operating procedures for processing energetic materials.
81, 81A, 81B	20%	Department Guidance	Daily Observations
SN-86 SN-87 SN-89 SN-90 SN-95 SN-102 SN-103 SN-105 SN-120 SN-123 SN-138 SN-139	5%	Department Guidance	Natural Gas Combustion only.
SN-91 SN-92 SN-93 SN-106 SN-121 SN-130	20%	Department Guidance	
SN-125 SN-126	5%	Department Guidance	Weekly control device monitoring
81, 81A, 81B	20%	Department Guidance	Daily Observation
118, 124, 12, 44A-44AC, 100A, 100B, 56	5%	Department Guidance	Plantwide Condition 5

20. DELETED CONDITIONS:

Former SC	Justification for removal
	None

## 21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

Source Name	Group A Category	Emissions (tpy)							
		PM/PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs		
							Single	Total	
DOA Storage Tank (3,500 gallons)	Group A, Number 3			0.01					
Diesel Fuel Tank #1, 550 gal, Building 41, for SN-81	Group A, Number 3			0.01					
Diesel Fuel Tank #2, 550 gal, Building 41, for SN-81	Group A, Number 3			0.01					
Diesel Fuel Tank, 500 gal, Building 66, for SN-91	Group A, Number 3			0.01					
Diesel Fuel Tank, 200 gal, Building M-2, for SN-92	Group A, Number 3			0.01					
Diesel Fuel Tank, 520 gal, Building M-14, for SN-106	Group A, Number 3			0.01					
Diesel Fuel Tank, 460 gal, Building 105, for SN-121	Group A, Number 3			0.01					
Diesel Fuel Tank, 2,400 gal, Building 301, for SN-141	Group A, Number 3			0.01					
Total	Group A, Number 3			0.08					

Water Heater #4 (Building 301) 1.05 MMBTU	Group A, Number 1	0.04	0.01	0.03	0.38	0.46	0.01	
Water Heater #2 (Building M-11) 1.314 MMBTU	Group A, Number 1	0.05	0.01	0.04	0.48	0.57	0.02	
Laboratory at Building 17	Group A, Number 5			0.79				0.79
Laboratory at Building 109	Group A, Number 5			0.79				0.79
Total	Group A, Number 5			1.59				1.59
MLRS Igniter Assembly at Building M-85	Group A, Number 13			0.09				0.06
Ingredient Preparation Room	Group A, Number 13	0.03						
Metalworking Lathes at Building 2-SH-3	Group A, Number 13	0.28						
Polymer Tank Farm	Group A, Number 13			0.04				
Parts Fabrication in Trailer at Building 2-SH-4	Group A, Number 13	0.27						
Dry Ice Blasting	Group A, Number 13	CO2 only						
Vibratory Ceramic Pill Parts Cleaner at Building M-82	Group A, Number 13	0.01						
Winding and Curing Operation A	Group A, Number 13			0.07			0.01	0.01

at Building M-8								
Winding and Curing Operation B at Building M-8	Group A, Number 13			0.07			0.01	0.01
Winding and Curing Operation C at Building M-8	Group A, Number 13			0.07			0.01	0.01
Winding and Curing Operation D at Building M-8	Group A, Number 13			0.07			0.01	0.01
Composite Case Grinder A at Building M-8	Group A, Number 13	0.05						
Composite Case Grinder B at Building M-8	Group A, Number 13	0.05						
Composite Case Grinder C at Building M-8	Group A, Number 13	0.05						
Composite Case Grinder D at Building M-8	Group A, Number 13	0.05						
Saw, Drill, & Chamfer Machine A at Building M-8	Group A, Number 13	0.21						
Saw, Drill, & Chamfer Machine B at Building M-8	Group A, Number 13	0.21						
Saw, Drill, & Chamfer Machine C at Building M-8	Group A, Number 13	0.21						

Winding and Curing Operation at Building M-85	Group A, Number 13			0.07			0.01	0.01
Six (6) Cooling Towers at Buildings 2-SH-14, 2-SH-3, 23, 24, 25, & 51	Group A, Number 13	0.44						
Total	Group A, Number 13	1.81		0.48			0.11	0.11

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

Permit #
0617-AOP-R19





APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

## Fee Calculation for Major Source

Revised 03-11-16

Aerojet Rocketdyne, Inc.  
 Permit #: 0617-AOP-R20  
 AFIN: 07-00035

\$/ton factor	27.27	Annual Chargeable Emissions (tpy)	<u>795.05</u>
Permit Type	Modification	Permit Fee \$	<u>1000</u>

Minor Modification Fee \$	500
Minimum Modification Fee \$	1000
Renewal with Minor Modification \$	500
Check if Facility Holds an Active Minor Source or Minor Source General Permit	<input type="checkbox"/>
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0
Total Permit Fee Chargeable Emissions (tpy)	13.8
Initial Title V Permit Fee Chargeable Emissions (tpy)	

*HAPs not included in VOC or PM: Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride*

*Air Contaminants: All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)*

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
PM		235.8	236	0.2		
PM <sub>10</sub>		235.8	236	0.2	0.2	236
PM <sub>2.5</sub>		0	0	0		
SO <sub>2</sub>		9.9	9.9	0	0	9.9
VOC		203.6	217.2	13.6	13.6	217.2
CO		110.4	110.4	0		
NO <sub>x</sub>		89.4	89.4	0	0	89.4
Lead	<input type="checkbox"/>	7.37	7.37	0		

















