

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 0968-AOP-R6 AFIN: 26-00022

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Triumph Fabrications-Hot Springs, LLC 1923 Central Avenue Hot Springs, Arkansas 71901

3. PERMIT WRITER:

Melisha Griffin

4. PROCESS DESCRIPTION AND NAICS CODE:

NAICS Description: Other Aircraft Parts and Auxiliary Equipment Manufacturing

NAICS Code: 336413

5. SUBMITTALS:

10/17/2011

6. REVIEWER'S NOTES:

In this modification, the following changes are being incorporated into the permit:

- The Chromium Acid Anodizing process in being shut down and replaced with a boric/sulfuric acid anodizing process, and it will retain the current scrubber (SN-1-4). The Dilute Chromate Burner (SN-1-5) is being removed entirely. Since the Chromium Acid Anodizing process is ceasing operation, 40 CFR Subpart N no longer applies to this facility. The removal of the Chromium Acid Anodizing process will also completely reomove the potential to emit chromium. The new emissions associated with this source 0.06 lb/hr and 0.27 tpy of sulfuric acid (H₂SO₄).
- The Titanium Chemical Milling Line (SN-2-21) is being modified and expanded. The expansion consists of five new process tanks with a new dedicated scrubber (SN-2-21), to add to the current five tanks/scrubber currently in use (SN-2-1A). The Chem-Mill tanks are being consolidated so that all ten tanks are in the same area. The new

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process/scrubber (SN-2-21) emissions are nitrogen oxides at 6.3 lb/hr and 27.2 tpy, hydrogen flouride at 0.01 lb/hr and 0.03 tpy, and and nitric acid at 1.0 lb/hr and 4.4 tpy.

- The paint overspay filtration mechanism on the Paint Booths, SN-1-2 and SN-1-3, are being replaced. The current filtration mechanism is a waterfall design, and the replacement will be a three stage dry HEPA filter design. The change will no affect on emissions, production, or paint use, and the replacement is due to physical deterioration. The new filter system will meet MACT Subpart GG requirements, using certified HEPA filtsers.
- Return to the use of a traditional based (e.g., 75% toluene/25% xylene) maskant at SN-2-8.
- Renovate the M&W RegenSorb with catalytic oxidizer system for emissions control at the Chem-Mill Maskant Coating Operation (SN-2-8).
- Change the VOC testing requirement for SN-2-8 to Method 18 instead of Method 25 to be consistent with EPA's requirement for testing SN-2-8.
- Update the method of calculation for the pin cleaning operation (C-3) to take into account the VOC destruction efficiency at SN-2-8.

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 current enforcement actions against this facility.

8. PSD APPLICABILITY:

- a. Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)?
- 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, or
- CO_2 e potential to emit $\geq 100,000$ tpy and ≥ 100 tpy/ ≥ 250 tpy of combined GHGs?

If yes, explain why this permit modification is not PSD.

9. GHG MAJOR SOURCE (TITLE V):

Ind	icate one:
	Facility is classified as a major source for GHG and the permit includes this
	designation
\boxtimes	Facility does not have the physical potential to be a major GHG source

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Facility has restrictions on GHG or throughput rates that limit facility to a minor	•
GHG source. Describe these restrictions:	

10. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

Source	Pollutant	Regulation (NSPS, NESHAP or PSD)
1-2, 1-3, 1-9, 1-17, C-1, C-2, 2-1A, 2-2B, 2-8, 2-10, 2-11 and 2-20	VOC HAPS	40 CFR 63, Part GG

11. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

12. 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 (μg/m³)	Averaging Time	Highest Concentration (µg/m³)	% of NAAQS
PM_{10}	1.7*	150	24-Hour	13.256	26.5%
		80	Annual	39.851	26.6%
SO_2		1300	3-Hour		
		365	24-Hour		
СО		10,000	8-Hour		
	!	40,000	1-Hour		
NO _x		100	Annual		
Pb		0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)		

^{*}This is the modeled emission rate from a previous permit; since PM₁₀ emissions increased by only 0.1 lb/hr in 0968-AOP-R4, no additional modeling was performed.

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Non-Criteria Pollutants:

This permit contains a TLV table for non-criteria pollutants. Modeling was used to determine the permitted emission rates for ranges of non-criteria pollutants (grouped by TLV) that pass the PAER or PAIL. Toluene would not pass the PAER TLV table so it was modeled separately.

1st 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/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

Pollutant	TLV (mg/m³)	PAER (lb/hr) = 0.11 × TLV	Proposed lb/hr	Pass?
HF	0.40	0.045	0.02	Yes
Toluene	75.36	8.290	62.05	No
Perchloroethylene	169.5	18.6	18.6*	Yes
HNO ₃	10.31	1.134	2.6	No
H ₂ SO ₄	0.2	0.022	0.06	No

The proposed lb/hr is based on a 95.2% control efficiency. @ a control efficiency of 95.2%, the facility meets the PAER, but vendor has guaranteed a control efficiency of much greater than 95.2 percent.

2nd 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/m³) = 1/100 of Threshold Limit Value	Modeled Concentration (μg/m³)	Pass?
Toluene	753.6196	742.45*	Yes
HNO ₃	103.1	46.1	Yes
H ₂ SO ₄	2.0	1.57	Yes

^{*}The pin cleaning was included in the model as a variable emission based on a worst case of all 20 gallons (18 lb/hr) of toluene being emitted over an 8 hour period (based on the facility's worst case calculations: 20 gallons/8 hrs x 7.2 lb/gal = 18 lb/hr). The modeled impact is based on the emissions (18 lb/hr) occurring every day for 8 hours per day. Since the facility is limited to only 20 gallons per

^{*}No TLV available so derived for the CEL (Corporate Exposure Limit) of 25 ppm 8 hr exposure

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<u>month</u>, and since the actual toluene loss occurs over several days/weeks, the actual impact for toluene should be considerably less than the results above.

Other Modeling:

Odor:

H₂S 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 ₂ S Standards	N
If exempt, explain:	

Pollutant	Threshold value	Modeled Concentration (ppb)	Pass?
	20 parts per million (5-minute average*)	7.47	Yes
H_2S	80 parts per billion (8-hour average) residential area	0.853	Yes
	100 parts per billion (8-hour average) nonresidential area	0.853	Yes

^{*}To determine the 5-minute average use the following equation

$$Cp = Cm (t_m/t_p)^{0.2}$$
 where

Cp = 5-minute average concentration

Cm = 1-hour average concentration

 $t_m = 60 \text{ minutes}$

 $t_p = 5 \text{ minutes}$

13. CALCULATIONS:

SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
1-1	test data				

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SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
1-2, 1-3, 1-9, 1-17, C-1, C- 2, 2-8 and	material usage mass balance for VOC and HAPs	varies per material	2-8 has a catalytic oxidzer	81%	
C-3	Material Balance	20 gallons/ 8 hrs x 7.2 lb/gal = 18 lb/hr			
1-4	Material Balance	600 gallons 5% emitted Density 18.44 lb/gal	·		test verified
1-6, 1-7, 1- 7a, 1-8, 1-11, 1-12, 1-15, 1-18, 2-5, 2- 6, 2-7, 2-9, 2-12, 2-13, 2-13a and 2- 14	AP-42	See AP-42	NA		at some paint cure ovens, age ovens, etc, VOC emission are accounted for at the paint booths
1-14	material usage mass balance	varies per material			
1-16	AP-42, test data for airborne metals				
2-1A and 2- 2B	test data		scrubbers	99%	
2-11	test data				
2-19	AP-42	Lb/MMscf NOX -= 100 CO = 84 SO2 = 0.6			

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SN	Emission Factor Source (AP-42, testing, etc.)	Emission Factor (lb/ton, lb/hr, etc.)	Control Equipment	Control Equipment Efficiency	Comments
		$PM/PM_{10} = 7.6$			
		VOC = 5.5			
2-20	Material Balance	Historical usage	Carbon bed absorber	95.2	Test verified

14. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

SN	Pollutants	Test Method	Test Interval	Justification
2-20	Carbon bed Absorber efficiency - VOC/HAPs	§63.750(g)(1)	7- to 30-day periods	Subpart GG

15. 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)
N/A				

16. 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)
1-1	nitric acid replenisher/ makeup	7,968 gal/yr	monthly records	Y
1-2 1-3 1-9 1-17 C-1	HAP calcs based on hours of operation to comply with TLV table and toluene	see tlv table, 104.1 tpy VOC acetone -42.1 tons/12 mo	HAPs - daily 3/hrs VOC monthly	Y

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SN	Recorded Item	Permit Limit	Frequency	Report (Y/N)
C-2 2-8	limits, VOC calculations monthly to comply with annual limits Aerospace NESHAP - special limits on VOC content of non- specialty coatings, see permit for applicable requirements Acetone			
1-4	Sulfuric acid makeup or replenisher	600 gal/yr	Monthly records	Y
1-5 1-6 1-7 1-7a 1-8 1-11 1-12 1-15 1-181- 16 2-5 2-6 2-7 2-9 2-12 2-13 2-13a 2-14	no specific records	natural gas only should occasionally be verified	NA	N
1-14	developer VOC - MSDS developer usage	6.29 lb/gal 120 gal/yr		Y
2-1A and 2-21	nitric acid makeup	21,696 gal/yr		Y
2-20	Maskant throughput	900 gal/day	daily	Y

17. OPACITY:

SN	Opacity	Justification for limit	Compliance Mechanism
all	5/20	all gas fire 5%, the rest 20 % dept standards	natural gas only, equipment designs and the nature of the process prevent excesses of 20 % opacities from all other sources

18. DELETED CONDITIONS:

Former SC	Justification for removal
N/A	

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19. GROUP A INSIGNIFICANT ACTIVITIES

0 1	Group A	Emissions (tpy)						
Source Name	Category	PM/PM ₁₀	SO_2	VOC	СО	NO _x	HA Single	P _S Total
Analytical Testing Lab	A-5						Single	Total
Welding	A-7							
10,000 gallon Caustic Storage Tank	A-4							
4,000 gallon Toluene Storage Tank	A-3							
3,000 gallon Acetone Storage Tank	A-13							
2 - 250 gallon MEK Storage Tanks	A-2							
Age oven #6 (1.5 MM Btu/ hr)	A-1	0.05	0.01	0.04	0.54	0.64		
2 - 250 gallon Methyl Propyl Ketone Storage Tanks	A-2							
6,000 gallon Caustic Storage Tank	A-4							
Oven #3 (Electric)	A-13							
Penetrant Drying (Electric Furnace)	A-13							
Deburring Baghouse	A-13							
MOCO Drop Bottom Furnace	A-13							

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4 - 1,500 gallon Triethanolamine Storage Tanks	A-13						
Oven #4 (1.2 MM Btu/hr)	A-1	0.04	0.01	0.03	0.43	0.52	
Electric Autocalve	A-13						
Oven #7 (Electric)	A-13						
Metal Routing Baghouse	A-13						
Hot Water Rinse Burner	A-1	0.5	0.05	0.5	1.8	1.8	
Cooling Tower	A-13	0.011					

20. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

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

Permit #0968-AOP-R	
0968-AOP-R5	

21. CONCURRENCE BY:

The following supervisor concurs with the permitting decision.

Phillip Murchy P.F.

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 08-20-12

acility Name: Triumph Fabrications - Hot Springs, LLC

Permit Number: 0968-AOP-R6

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\$/ton factor Permit Type	22.97 Minor Mod	Annual Chargeable Emissions (tpy) Permit Fee \$	260.5
Termit Type	Willion Wood	remm ree \$	500
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	gamera.		
If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$	0		
Total Permit Fee Chargeable Emissions (tpy) Initial Title V Permit Fee Chargeable Emissions (tpy)	-13.13		

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 condensible 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
РМ	V	8.1	8.1	0	0	8.1
PM_{10}	***	8.1	8.1	0		
SO_2	V	5.7	5.7	0	0	5.7
voc	V	112.6	112.1	-0.5	-0.5	112.1
co		19.1	18.7	-0.4		
NO_X	V	53.2	80	26.8	26.8	80
H2SO4	V	0	0.27	0.27	0.27	0.27
HNO3	V	6.7	11.1	4.4	4.4	11.1
Chromium Compounds	,	0.00206	0	-0.00206		
РЬ		0.3	0.3	0		
Zinc		0.3	0.3	0		
нғ	V	0.03	0.06	0.03	0.03	0.06
H2S	V	0.8	1.07	0.27	0.27	1.07
Acetone	V	42.1	42.1	0	0	42.1
CBTF	V	44.4	0	-44.4	-44.4	0
HAPs*	: greenie	104.1	104.1	0		
Toluene**	<u> </u>	0	0	0		
Perchloroethylene (Perc)***	***************************************	0	0	0		

Pollutant (tpy)	Check if Chargeable Emission	Old Permit	New Permit	Change in Emissions	Permit Fee Chargeable Emissions	Annual Chargeable Emissions
*HAPs are Included in VOC totals unless specified		0	0	0		
**Toluene is Included in HAP totals	galacean g	0	0	0		
*Perc is a HAP but not a VOC. Perc is included in the		0	0	0		
facility-wide total HAPS. HAPs are billed in the	*****	0	0	0		
VOC totals. So, Perc is not being billed separtely.		0	0	0		!