

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 012013 - 009 Project Number: 2012-12-025  
Installation Number: 095-0046

Parent Company: Lake City Army Ammunition Plant - Department of the Army

Parent Company Address: PO Box 330, Independence, MO 64051

Installation Name: Alliant Techsystems Operations LLC - Small Caliber Systems -  
Lake City

Installation Address: 25201 East 78 Hwy, Independence, MO 64056

Location Information: Jackson County,

Application for Authority to Construct was made for:  
Use of new lube, wash additives and brass brighteners for five high speed case manufacturing lines in building 1. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JAN 31 2013

EFFECTIVE DATE

A handwritten signature in cursive script, appearing to read "Kymal Moore", written over a horizontal line.  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

Page No.	3
Permit No.	
Project No.	2012-12-025

**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City  
Jackson County,

1. VOC Emission Limitations
  - A. Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City shall emit less than 40.0 tons of VOCs in any consecutive 12-month period from the use of new lube, wash additives and brass brighteners on the 5 case line in EP-51 Buidling 1 Case Manufacturing.
  - B. Attachment A or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1.A.
2. Operational Requirement - Solvent  
Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City shall keep the solvents and cleaning solutions in sealed containers whenever the materials are not in use. Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City shall provide and maintain suitable, easily read, permanent markings on all solvent and cleaning solution containers used with this equipment.
3. Record Keeping and Reporting Requirements
  - A. Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include MSDS for all materials used
  - B. Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (5) REVIEW

Project Number: 2012-12-025  
Installation ID Number: 095-0046  
Permit Number:

Alliant Techsystems Operations LLC  
Small Caliber Systems - Lake City  
25201 East 78 Hwy  
Independence, MO 64056

Complete: December 10, 2012

Parent Company:  
Lake City Army Ammunition Plant - Department of the Army  
PO Box 330  
Independence, MO 64051

Jackson County,

REVIEW SUMMARY

- Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City has applied for authority to use the new lube, wash additives and brass brighteners for the five high speed case manufacturing lines in building 1.
- HAP emissions are not expected from the proposed equipment.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the NESHAPs apply to this installation. None of the currently promulgated MACT regulations apply to the proposed equipment.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are conditioned to de minimis levels.
- This installation is located in Jackson County, a maintenance area for ozone and an attainment area for all other criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- An emission testing is not required for the new lube, brighteners or wash additives.
- A revision to you Part 70 Operating Permit application is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

Alliant Techsystems Incorporated operates a small arms ammunition manufacturing facility known as ATK Lake City, located in Independence, Missouri. This is an existing major source under construction permits. Alliant received a Part 70 Operating Permit in 2003 (OP2003-042). A renewal to the Part 70 Operating Permit was received in May of 2008 and is currently undergoing technical review.

The following New Source Review permits have been issued to ATK Lake City from the Air Pollution Control Program.

**Table 1: Permit History**

Permit Number	Description
1088-009A	Install three (3) new painting/sealing systems and two (2) air strippers
0690-009	Install a trinitroresorcinol (TNR) manufacturing building
0690-003	Install an explosive wastewater treatment plant to remove metals
0191-004	Install four (4) air strippers that will strip VOCs from drinking water
0492-002	Install emergency diesel pump for boiler feed, and (20) emergency generators
1192-018	Install a natural gas fired generator unit
0694-021	Install a primer popping operation
0395-027	Install nine (9) standby emergency diesel generators
1095-022	Install three (3) video-jet printers for 20-mm case marking. This equipment replaced the ink-pad and rubber-stamping method
0496-018	Install three (3) ink jet equipment for 5.56 mm packing cartons. This equipment replaced the existing rubber-stamp operation
1097-018	Modify existing process to manufacture I-136N igniter mix by eliminating calcium resinate and replacing it with a polyurethane formula
0199-021	Install emergency diesel booster pump and fuel storage tank
012000-017	Install three (3) ammunition loading machines and one (1) ammunition priming machine. Replaced four (4) WWII machines
092000-002	Install calcium resinate system for manufacturing
112000-008	Install two (2) 16.8 MMBTU/hr steam generating boilers
042001-003	Install machine gun belt link manufacturing equipment. Permit has been relinquished to Lake City Ammo by Galion, Inc
052001-012	Install two (2) 12.1 million BTU per hour natural gas fired steam generating boilers
082001-016	Install one (1) 45-ton press, one (1) 75-ton press and one (1) resistance welding station to an existing machine gun belt link manufacturing operation. Permit has been relinquished to Lake City Ammo by Valentec Wells, LLC (formerly Galion, Inc.)
102001-006	Install two (2) 150-ton presses and one (1) 100-ton press to an existing machine gun belt link manufacturing operation
112001-009A	Install two (2) 30-ton presses and one (1) 60 ton press to an existing machine gun belt link manufacturing operation
012003-008	Two (2) Manuhrin loaders for the combat cartridge tip identification and cartridge sealing operation (EP-14 and EP-15, respectively)
032005-012	Installation of one (1) 33.5 MMBtu per hour boiler
112008-012	Installation of eight (8) new priming machines and five (5) new loading machines, including one (1) Manurhin loading machine. (Phase I)
122008-007	Installation of six (6) new draw presses, three (3) new wash and dry lines, two (2) new pickle/wash/lube lines and eight (8) new back end case cells. (Phase II)
062009-004	Installation of five (5) ammunition can printing lines and four (4) new crate printing lines. (Phase III)
022010-008	The installation of .50 caliber ammunition case equipment including six draw presses, two annealing furnaces, two pickling lines, three wash lines, and five back end case cells, and an amendment to Phase II.
042010-005	Temporary permit for a concrete crusher
022011-010	Temporary permit for thermally neutralizing, trace explosives residues from equipment associated with the following buildings (4, 22A, 23A, 23B, 23C, 24C, 20A, 20B, 22B, 24E, 65,67 and 121G)

## PROJECT DESCRIPTION

The small caliber systems portion of Alliant Techsystems consist of 5 existing high speed case manufacturing lines located in building 1 (EP-51). These lines were installed in the mid-1970s and the equipment is considered grandfathered. The current drawing lube used in these lines is Milform 6276. The supplier for drawing lube is discontinuing the production of Milform 6276 and replacing it with Milform 10-6276T.

The current lube, Milform 6276, contains some additives that reduce biological growth, but current conditions necessitate that the solution be changed frequently due to a significant odor from the biological growth in the lube. Preliminary testing of the new Milform 10-6276T shows a longer recirculation time before the odor becomes problematic. The expected volume usage of the new drawing lube is 330 gallons per month per line which equates to a total of 19,800 gallons per year. The VOC content of the Milform 10-6276T is higher than the original. Using the expected usage rate with the expected operational hours of 504 hours per month, the maximum hourly design rate was derived to be 0.655 gallons per hour.

It is also projected that future additional chemicals such as wash additive products and brass brighteners will be needed due to the above change in the lube. The wash consists of water with the following additives: Aquaease 72 PL6 (4% of the total volume per wash, BB Special A (0.3% of the total volume per wash), Auto Crew spray wax (0.2% of the total volume per wash) and sulfuric acid (5% of the total volume per wash). It takes approximately 35 gallons of water to wash 24,000 cases. The maximum hourly design rate of the 5 case lines is 1200 pieces per minute (3,153,600,000 cases per year). Aquaease does not contain any VOCs.

There are no controls being used in conjunction with the new lube or wash additives.

Note that the only VOC emissions in Building 1 are those that are emitted from the use of the new lube, wash additives and brass brighteners associated with the five high speed cases lines and whose use are being permitted here.

## EMISSIONS/CONTROLS EVALUATION

A material balance approach was used to estimate the VOC emissions associated with the usage of the new lube and wash additives. 100% of the volatile material was assumed to be emitted. Sulfuric acid emissions were based on a tested emission rate of a similar process. The sulfuric acid concentration measured in the outlet was 0.6 milligrams per meter cubed ( $\text{mg}/\text{m}^3$ ). The maximum air flowrate for this process is 1000  $\text{ft}^3/\text{min}$ .

The following table provides an emissions summary for this project. Existing potential emissions were taken from Permit No. 022010-009 Existing actual emissions were taken from the installation's 2011 EIQ. Potential emissions of the application represent the potential of the usage of the new lube and wash additives, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2011 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	N/A	N/A
PM <sub>10</sub>	15.0	75.10	10.64	N/A	N/A
PM <sub>2.5</sub>	10.0	N/D	2.09	N/A	N/A
SO <sub>x</sub>	40.0	1,780.63	1.51	N/A	N/A
NO <sub>x</sub>	40.0	359.24	46.91	N/A	N/A
VOC	40.0	1,405.02	113.66	60.59	<40
CO	100.0	165.28	18.05	N/A	N/A
Lead	0.6	2.15	N/A	N/A	N/A
GHG (CO <sub>2</sub> e)	75,000	N/D	N/D	N/A	N/A
GHG (mass)	0.0	N/D	N/D	N/A	N/A
HAPs	10.0/25.0	271.42	2.09	N/A	N/A
Sulfur Acid Mist	7.0	1.62 E -02	N/D	0.002	N/A

N/A = Not Applicable; N/D = Not Determined

### PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOC are below de minimis levels.

### APPLICABLE REQUIREMENTS

Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

## SPECIFIC REQUIREMENTS

- *Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-6.405*

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

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Susan Heckenkamp  
New Source Review Unit

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated November 27, 2012, received December 3, 2012, designating Lake City Army Ammunition Plant - Department of the Army as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.



## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	
<b>CFR</b> .....	Code of Federal Regulations	.....	National Emissions Standards for Hazardous Air Pollutants
<b>CO</b> .....	carbon monoxide	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>NSR</b> .....	New Source Review
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM</b> .....	particulate matter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>ppm</b> .....	parts per million
<b>EP</b> .....	Emission Point	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EPA</b> .....	Environmental Protection Agency	<b>PTE</b> .....	potential to emit
<b>EU</b> .....	Emission Unit	<b>RACT</b> .....	Reasonable Available Control Technology
<b>fps</b> .....	feet per second	<b>RAL</b> .....	Risk Assessment Level
<b>ft</b> .....	feet	<b>SCC</b> .....	Source Classification Code
<b>GACT</b> .....	Generally Available Control Technology	<b>scfm</b> .....	standard cubic feet per minute
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Ms. Tonya Aggson  
Environmental Engineer  
Alliant Techsystems Operations LLC - Small Caliber Systems - Lake City  
PO Box 1000  
Independence, MO 64051

RE: New Source Review Permit - Project Number: 2012-12-025

Dear Ms. Aggson:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to me at the Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:shl

Enclosures

c: Kansas City Regional Office  
PAMS File: 2012-12-025

Permit Number: