Louisville Metro Air Pollution Control District
701 W. Ormsby Avenue
Louisville, Kentucky 40203

**Xx xxxx 2016**

# Construction Statement of Basis

**Source:** BAE Systems
**Owner**: BAE Systems Land & Armaments L.P.

**Plant Location:** 163 Rochester Drive Louisville, KY 40214

**Date Application Received:** 29 June 2016 **Application Number:** 78030

**Public Comment Date:** 07/28/2016

**District Engineer:** Nantaporn Noosai **Permit No:** C-1216-1004-16-V

**Plant ID:** 1216 **SIC Code:** 3489 **NAICS**: 332994

**Introduction:**

This permit will be issued pursuant to District Regulation 2.03, *Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements*. Its purpose is to provide methods of determining continued compliance with all applicable requirements.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide ($NO_2$), carbon monoxide (CO), 1 hr and 8 hr ozone ($O_3$), and particulate matter less than 10 microns ($PM_{10}$); and is a non-attainment area for the 1997 standard for particulate matter less than 2.5 microns ($PM_{2.5}$), unclassifiable for the 2012 standard for particulate matter less than 2.5 micron ($PM_{2.5}$) and partial non-attainment for sulfur dioxide ($SO_2$).

**Application Type/Permit Activity:**
[X] Initial Issuance
[ ] Permit Revision
- [ ] Administrative
- [ ] Minor
- [ ] Significant

[ ] Permit Renewal
[X] Construction

**Compliance Summary:**
[X] Compliance certification signed [ ] Compliance schedule included
[ ] Source is out of compliance [ X ] Source is operating in compliance

## I. Source Information

**1. Plantwide Overall Process Description:** The source manufactures and refurbishes weapons systems for the military.

**2. Project Description:** The source submitted an application for a replacement of an existing shot blast cabinet (Emission Unit U12: E39a) with a Trinco shot blast cabinet with aluminum oxide blast media, make Trinco, model DP850-PC, for surface preparation of miscellaneous metal parts controlled by a filter (C39a) (the dust is collected in the dust collector) located inside Building 51.

**3. Site Determination:** There are no other facilities that are contiguous or adjacent and under common control.

**4. Emission Unit Summary:**

| Emission Unit /Emission Point | Equipment Description |
|---|---|
| U12/E39a | One (1) 268 lb/hr Trinco shot blast cabinet with aluminum oxide blast media (U12, E39a), make Trinco, model DP850-PC, for surface preparation of miscellaneous metal parts controlled by a filter (C39a) (the dust is collected in the dust collector) located inside Building 51. |

**5. Permit Revisions**

| Revision No. | Permit No. | Issue Date | Public Notice Date | Change Scope | Description |
|---|---|---|---|---|---|
| Initial | C-1216-1004-16-V | Xx/xx/xxxx | 07/28/2016 | Entire Permit | Initial Permit Issuance for one (1) 268 lb/hr Trinco shot blast cabinet with aluminum oxide blast media (U12, E39a), make Trinco, model DP850-PC, for surface preparation of miscellaneous metal parts controlled by a filter (C39a) |

**6. Fugitive Sources:** There are no fugitive emissions for this project.

**7. Plantwide Emission Summary:**

| Pollutant | District Calculated Actual Emissions (tpy) 2014 Data | Pollutant that triggered major source status |
|---|---|---|
| **CO** | 1.103 | No |
| **$NO_x$** | 4.76 | No |
| **$SO_2$** | 0.023 | No |
| **$PM/PM_{10}$** | 4.50/4.43 | Yes[1] |
| **VOC** | 10.475 | No |
| **Total HAPs** | 0.73 | Yes |
| **Single HAP > 1 tpy** | N/A | Yes |

Note[1]: Limit taken to be synthetic minor for PSD.

**8. Applicable Requirements:**

[ ] PSD [ ] 40 CFR 60 [X] SIP [ ] 40 CFR 63
[ ] NSR [ ] 40 CFR 61 [X] District-Origin [ ] Other

**9. MACT Requirements:**

There are no MACT requirements in the permit number C-1216-1004-16-V.

**10. Referenced Federal Regulations in Permit:**

N/A

## II. Regulatory Analysis

**1. Acid Rain Requirements:** This equipment is not subject to the Acid Rain Program.

**2. Stratospheric Ozone Protection Requirements**: Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. This source does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

**3. Prevention of Accidental Releases 112(r):** The source does not manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount.

**4. 40 CFR Part 64 Applicability Determination:** This project and affected equipment is not major for any criteria pollutant. In accordance with 40 CFR 64, Compliance Assurance Monitoring for Major Stationary Sources, the source is not required to propose a CAM plan based on current process and control device requirements and practices.

**5. Basis of Regulation Applicability**

a. **Plant-wide**

The source has taken a federally enforceable limit of 100 tons per consecutive 12-month period for PM/$PM_{10}$ emissions to preclude the applicability of Regulation 2.05 – *Prevention of Significant Deterioration of Air Quality*.

Regulation 2.03, section 6.1 requires sufficient monitoring, record keeping, and reporting to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.

Regulations 5.00, 5.01, 5.20, 5.21, 5.22, and 5.23 (STAR Program) establish requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards. BAE Systems submitted an Environmental acceptability (EA) demonstration on June 29, 2016 demonstrating that emissions of TACs from the Trinco shot cabinet are *de minimis* and comply with the STAR requirements in Regulation 5.21.

b. **Applicable Regulations:**

| Regulation | Title | Type |
|---|---|---|
| 2.03 | Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements | SIP |
| 2.16 | Title V Operating Permits | SIP |
| 2.05 | Prevention of Significant Deterioration of Air Quality | SIP |
| 5.00 | Definitions | Local |
| 5.01 | General Provisions | Local |
| 5.02 | Adoption of National Emission Standards for Hazardous Air Pollutants | Local |
| 5.20 | Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant | Local |
| 5.21 | Environmental Acceptability for Toxic Air Contaminants | Local |

| Regulation | Title | Type |
|---|---|---|
| 5.22 | Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant | Local |
| 5.23 | Categories of Toxic Air Contaminants | Local |
| 7.08 | Standards of Performance for New Process Operations | SIP |

c. **Permit C-1216-1004-16:**

i. **Equipment:**

| Emission Point | Description | Applicable Regulation | Basis for Applicability |
|---|---|---|---|
| U12 – E39a | One (1) 268 lb/hr Trinco shot blast cabinet with aluminum oxide blast media (U12, E39a), make Trinco, model DP850-PC, for surface preparation of miscellaneous metal parts controlled by a filter (C39a) | 2.03, 2.16, 5.00, 5.01, 5.02, 5.20, 5.21, 5.22, 5.23, 7.08 | Regulation 2.03 establishes the requirements for permits to construct and operate and demolition/renovation and permits.<br><br>Regulation 2.16 establishes procedures for the operating permit issuance under Title V of the Clean Air Act.<br><br>Regulations 5.00, 5.01, 5.02, 5.20, 5.21, 5.22, 5.23 establish the requirements for Environmental Acceptability for TACs.<br><br>Regulation 7.08 establishes the requirements for PM emissions from new processes that commenced construction after September 1, 1976. |

ii. **Standards/Operating Limits**

1) **$PM/PM_{10}$**

(a) Per Regulation 7.08, section 3.1.2, the equation to calculate the PM emission limits is $E = 3.59P^{0.62}$, where P is expressed in tons/hr. The PM emission limits are 2.34 lb/hr for the Trinco shot blast cabinet.

(b) Per Regulation 2.03, section 6.1, the owner or operator is required to use control device filters that meet the manufacturer's original specifications with 90% control efficiency or greater .

2) **Opacity**

Regulation 7.08, section 3.1.1 establishes an opacity standard of less than 20%.

3) **TAC**

Regulations 5.00, 5.21 and Regulation 2.03, section 6.1, the source is required to operate the control device for the blast booth in order to be in compliance with the *de minimis* limits. Based on the company's EA demonstration, Aluminum (Al), Antimony (Sb), Arsenic (As), Chromium III and VI ($Cr^{3+}$ and $Cr^{6+}$), Cobalt (Co), Copper (Cu), Lead (Pb), Manganese (Mn), and Mercury (Hg) emissions are *de minimis* uncontrolled, Cadmium (Cd), and Nickel (Ni) emissions are *de minimis* controlled but not *de minimis* uncontrolled. Therefore, the permit will require the control device for the Trinco shot blast cabinet to be operated at all times in order to comply with the STAR program. As of the effective of this permit, the *de minimis* levels of the determined TACs are:

| TAC | De minimis (lbs/hr) | De minimis (lbs/ averaging period) | Averaging Period | TAC | De minimis (lbs/hr) | De minimis (lbs/ averaging period) | Averaging Period |
|---|---|---|---|---|---|---|---|
| Aluminum | 1.00 | 1.00 | 8 hr | Cobalt | 0.00022 | 0.19 | 8 hr |
| Antimony | 0.76 | 672.00 | Annual | Copper | 0.04 | 0.04 | 8 hr |
| Arsenic | 0.00012 | 0.11 | Annual | Lead | 0.043 | 38.40 | Annual |
| Cadmium | 0.00030 | 0.27 | Annual | Manganes | 0.027 | 24.00 | Annual |
| Chromium III | 0.10 | 0.10 | 8 hr | Mercury | 0.16 | 144.00 | Annual |
| Chromium VI | 0.000045 | 0.04 | Annual | Nickel | 0.0021 | 1.82 | Annual |

## III. Other Requirements

**1. Temporary Sources:** The source did not request to operate any temporary facilities.

**2. Short Term Activities:** The source did not report ant short term activities.

**3. Emissions Trading**: N/A

**4. Operational Flexibility**: The source did not request any operational flexibility for these emission points.

**5. Compliance History:**

| Incident Date | Regulation Violated | Result |
|---|---|---|
| 5/19/1993 | Reg. 2.03, Section 1, Permit required -Construct/Modify | Agreement |

| Incident Date | Regulation Violated | Result |
|---|---|---|
| 8/24/1993 | Reg. 7.59, Section 3, VOC exceeding standard<br>Reg. 1.06, Section 3, Source self-monitoring -emissions reporting | Agreement |
| 7/13/1994 | Reg. 2.03, Section 1, Permit required-operating | Agreement |
| 8/10/1994 | Reg. 5.04, Section 7, Asbestos notification none | Board Order |
| 8/23/1994 | Reg. 2.03, Section 1, Permit required-operating | Agreement |
| 11/21/1994 | Reg. 1.05, Section 5, CMES maintenance requirements;<br>Reg. 5.12, Air toxics exceeding standards | Board Order |
| 7/10/1998 | Reg. 7.59, Section 3, VOC exceeding standard | Agreement |
| 3/1/2005 | Reg. 5.02, Section 2, Subpart N emission standard, Chromium emissions | Board Order |
| 3/31/2007 | Reg. 2.03, Section 1, Permit required –construction /modify;<br>Reg. 2.03, Section 5, Failure to comply with District permit;<br>Reg. 2.16, Section 5, Failure to comply with Title V permit | Board Order |
| 2/19/2014 | Reg. 1.05, Section 5, CMES maintenance requirements,<br>Reg. 2.03, Section 5, Failure to comply with District permit | Board Order |

6. **Calculation Methodology:** Emission factor from AP-42, 13.2.6, Abrasive Blasting can be used to calculate PM/$PM_{10}$ emissions. The HAP and TAC emissions shall be determined based on the most recent available lab analysis results of the emission sample from similar equipment[1], or the SDS of the materials.

7. **Insignificant Activities:** There are no insignificant activities contained in this construction permit.

[1] The Trinco shot blast cabinet does not have a stack for emission sampling. The laboratory analysis results of the sampling from similar equipment with the same or greater capacity is acceptable.