Multi-Media Inspection Report
US Army Radford Army Ammunition Plant (RFAAP)

State Route 114
Radford, Virginia 24141
LRT: 37.101200, -80.311200

EPA RCRA ID No. VA1210020730
CWA NPDES Permit No. VA0000248
CAA Title V Permit Nos. 5112100006 and 5112100082

Inspection Dates: May 16th to 20th, 2011

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Attachment RCRA-C-3: Procedures to Handle Fire and Oil and Hazardous Materials Releases
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Attachment CAA-5: List of ACR Units with Greater Than 50 Pounds of Refrigerants Provided During Inspection
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I. Background

This multi-media inspection was organized and conducted by staff from the Office of Enforcement, Compliance and Environmental Justice (OECEJ) of EPA Region III at the Radford Army Ammunition Plant (RFAAP, the Base or the Facility) on May 16th to 20th, 2011. The Facility was notified of the inspection on May 12th, 2011. As part of this multi-media inspection, the Facility was inspected for compliance with the following rules: hazardous waste management under the Resource Conservation and Recovery Act (RCRA); underground storage tank management under RCRA; stormwater and wastewater management under the Clean Water Act (CWA); Spill Prevention, Control, and Countermeasures (SPCC) under the CWA; Emergency Preparedness and Community Right-to-Know Act (EPCRA), Section 313, Toxic Chemical Release Reporting; and control of stationary air emissions and management of ozone depleting substances under the Clean Air Act (CAA). EPA inspectors presented their credentials during the opening conference.

II. Facility Description

The Facility covers 4,080 acres and is located in the mountains of the New River Valley in southwest Virginia, in Pulaski and Montgomery counties. The area surrounding the Facility is mostly agricultural and rural residential. The Facility is the third-largest employer in the New River Valley.

RFAAP is the largest active facility of its type in the United States. The Facility is capable of manufacturing a wide variety of products for national defense. RFAAP is owned by the U.S. Army and, at the time of the inspection, operated by Alliant Techsystems, Inc. (ATK) for the Joint Munitions Command.

III. Process Description

The Facility manufactures propellant. Facility manufacturing processes consist of:

- Nitric Acid Production
- Nitrocellulose Production
- Nitroglycerin Production
- Single-Base Propellant Production
- Multi-Base Propellant Production
- Rolled Powder Solventless Propellant Production
- Green Propellant Production
- Loading, Assembling, and Packing of Modular Artillery

- Concentration of Weak and Spent Nitric and Sulfuric Acids
- Solvent Recovery

[redacted]

Sixty percent of the nitric acid is produced by an ammonia oxidation process.

VI. Inspection Observations

A. Resource Conservation and Recovery Act, Subpart C (RCRA-C)

This portion of the multi-media inspection was conducted by Mr. Wilbur Martínez, unless otherwise stated in this section of the report. The Facility has a Treatment, Storage and Disposal (TSD) permit to operate a hazardous waste propellants open burning ground and a two hazardous waste incinerators.

Nitroglycerin Production Area

This area was visited with [redacted]. The points of contact for the area were [redacted], Area Manager, and [redacted], Process Engineer. In this area, glycerin or diethylene glycol is nitrated to produce the nitroglycerin or diethylene glycol dinitrate (DEGDN) that is used in the manufacture of different propellants in other areas of the Facility. Two waste streams are produced from the nitration process; spent acid and wastewater.

Building [redacted] – Nitration House

The nitration process takes place in this building. [redacted]

Some of the spent sulfuric acid produced from the nitration process is used to start-up the nitrators and to clean-up the nitration system. This spent acid is kept in a Spent Acid Head Tank located on the top floor of Building [redacted] (see Photographs RCRA-C-4 and 5).

Photographs RCRA-C-6 and 7 show the spent acid transfer lines between Buildings [redacted]; these pipelines do not have secondary containment. From left to right in Photograph RCRA-C-4, these lines are:

1. Spent acid return from the head tank (if the nitration process is shut down, head tank is emptied and their spent acid content is transferred back to the spent acid tanks).

2. Spent acid from the diluter (insulated line).
3. Spent acid transfer line to the head tank.
4. Fume line to transfer acid fumes from the head tank.

Building [redacted] *– Spent Acid House*

Three 2,500-gallon Spent Acid Tanks are used to store diluted spent acid at this location (see Photographs RCRA-C-8 to 10). [redacted]

The diluted spent acid that is drained by gravity from the spent acid tanks is loaded into tanker trucks (see Photograph RCRA-C-13) for transfer to the NAC/SAC to be recovered for re-use in the process.

Building [redacted] *– Catch Tank House*

Three tanks are located at the Catch Tank House; a Neutralization Tank, and two Neutralizer Catch Tanks (see Photograph RCRA-C-14). [redacted] The water overflow goes through Nitroglycerin Wastewater Pre-treatment, and then to the Bioplant. The settled nitroglycerin is drained into a bucket and de-sensitized with triacetin. The nitroglycerin-triacetin mix is then poured into another bucket where it is mixed with saw dust. This mixture must be burned in one of the Hazardous Waste Incinerators within 24-hours unless they are not operating; in which case, it is sent to the Open Burning Ground. Trash-containing nitroglycerin collected in the trash collection compartment of the Neutralizer Catch Tank (see Photograph RCRA-C-16), and is treated similarly to the Neutralizer Catch Tank waste, except that it is sent to the Open Burning Ground for burning instead of to the Hazardous Waste Incinerators.

Wastewater pre-treatment system - Equalization Tanks [redacted] *– Pre-treatment Building Tanks*

Wastewater overflow from the Neutralizer Catch Tanks is transferred by gravity through an open trench (see Photograph RCRA-C-17) to the Equalization Tanks [redacted] (see Photograph RCRA-C-18) from where it is pumped to the pre-treatment tanks in Building [redacted] where it is pH-adjusted before being transferred to the Bioplant. [redacted]

Building [redacted] *– Potassium Iodine (KI) Lab*

The KI Lab is divided into two sides; the Production KI side and the Main Lab Technician side (see Photograph RCRA-C-22). At the Production KI side, the EPA inspector observed two 3-gallon buckets of waste "slum" samples (see Photograph RCRA-C-23). [redacted] (see Photograph RCRA-C-24). The two buckets were set inside a wooden corral, to prevent the buckets from tipping, and each was loosely covered with a lid. According to [redacted], the buckets are not tightly closed due to concern for explosion. Neither bucket had a label identifying the content. According to [redacted], when the buckets are filled to a pre-determined level, the content of the buckets is poured into another container with sawdust, and then taken to the Open Burning Ground for burning. A container with clean sawdust ready for adding waste was observed at the Main Lab Technician side of the KI Lab (see Photograph RCRA-C-25). According to [redacted], the Lab Technician keeps the sawdust and slum waste container in the hood at the Production KI side of the KI Lab until it is transferred to the Open Burning Ground for burning (see Photograph RCRA-C-22), but no waste container was present in this hood at the time of the inspection. According to [redacted], the sawdust and slum buckets are cleaned every week. Photograph RCRA-C-26 shows the hood and technician working area at the Main Lab Technician side of the KI Lab.

Building [redacted] *– Slurry House*

At the time of the inspection, N5 propellant was being processed. Wet material cannot be re-processed and is classified as waste. Waste material is accumulated in white (turned yellowish by the propellant), 20-gallon tubs at the process area (see Photograph RCRA-C-27). These containers are not labeled or marked to identify their content. According to [redacted], as the containers fill-up, their content is transferred into a 20-gallon "waste tub" (see Photographs RCRA-C-28 to 30) in a room adjacent to the process area. These "waste tubs" are labeled "Hazardous Waste." Each "waste tub" is weighed

to ensure that no more than 47 pounds of waste propellant is placed in the tub. A green tag identifying each tub as a "Satelite Accumulation of Waste Propellant and/or Explosive" <sic> is then applied to each waste tub. This tag also includes the tub accumulation start date that, according to [redacted], corresponds to the date the tub is generated (see Photograph RCRA-C-30). The filled waste tub is then moved to a less-than-ninety-days hazardous waste accumulation area (HWAA) within three days from the date the waste was generated at the process building.

Propellant lumps that are formed during the propellant production are removed by screens. These lumps are considered waste and are accumulated in an SAA container near the screen at the process area (see Photographs RCRA-C-31 and 32). While the container was labeled "Hazardous Waste," it was open, even though no waste was being added or removed from it at the time of the inspection. After bringing this to the attention of [redacted], the container was fitted with a lid (see Photograph RCRA-C-33). Initially, [redacted] had indicated that the reason the container did not have a lid was because it was "in use;" however, later, [redacted] indicated that, according to the operator, the lid is normally in place, although that was not the case at the time of the inspection.

Contaminated-Scrap Burn Area

This area was inspected by Mr. Martínez accompanied by [redacted]. The Contaminated-Scrap Burn Area consists of an engineered pad equipped with a double liner and a leachate collection system where open burning of solid wastes takes place. The pad is used to heat-treat metal equipment or parts that cannot be heat-decontaminated in the Facility's Decontamination Oven (Building [redacted]) (because they are too big or heavy to fit) or that cannot be decontaminated through other means (such as pressure washing) and properly inspected inside and out, in accordance with Department of Defense (DOD) requirements for the management and disposition of material potentially presenting an explosive hazard.

At the time of the inspection, the Facility was getting ready to perform a burn of debris generated from the demolition of the Nitrocellulose Manufacturing Facility B-Line (see Photographs RCRA-C-34 and 35). According to [redacted], besides the aforementioned metal equipment and parts, the pad also had wood removed from the interior of the Nitrocellulose Manufacturing Facility B-Line buildings that were exposed to potential nitrocellulose contamination (estimated at 200 tons according to e-mail correspondence provided in Attachment RCRA-C-1). This potentially nitrocellulose contaminated wood was being used as substitute fuel to enable the heat treatment of the metal equipment and parts. According to [redacted] diesel fuel would also be added to the burn pile to facilitate the burn. According to the e-mail correspondence provided by the Facility (see Attachment RCRA-C-1), the burning of the burn pile material has been authorized by the Virginia Department of Environmental Quality (VADEQ). According to [redacted], the last time a burn had taken place at this pad was in 2006. Also according to [redacted], liquid collected in the Contaminated-Scrap Burn Area's Leachate Collection Tank (see Photograph RCRA-C-36) is pumped out, as needed, and sent to the Bioplant, and the ash that results from the burn will be collected and analyzed prior to disposal.

Leachate Collection Sump for Solid Waste Management Unit (SWMU) 16

This area was inspected by Mr. Martínez accompanied by [redacted]. Solid Waste Management Unit (SWMU) 16 is an unlined, closed hazardous waste landfill that received laboratory waste. SWMU 16 is covered under the Facility's Post-Closure Care Permit VA1210020730. The Leachate Collection Sump (see Photograph RCRA-C-37) collects leachate generated at the toe of the landfill. The sump is emptied on an "as-needed" basis and the leachate is sent off-site for disposal as F039 waste. According to [redacted], the Leachate Collection Sump is inspected on a daily basis.

Building [redacted] Universal Waste Accumulation Area (UWAA)

This area was inspected by Mr. Justin Young. This Building is occupied by Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS), a tenant organization at the Facility. The Facility, however, is responsible for managing all of the hazardous and universal wastes generated within its premises. [redacted], ALTESS Chief of Facilities, was the point of contact for this area during the inspection. At the UWAA, Mr. Young observed one box for the accumulation of universal waste lamps (see Photographs RCRA-C-31 and 32). The box contained a total of thirteen used lamps; of these, five lamps were green-tip lamps. There was evidence of a broken lamp inside the box (see Photograph RCRA-C-32). The box was closed The box was not marked or labeled with the earliest date when the lamps became waste or started to be accumulated.

Open Burning Ground

Burn Pads

The Open Burning Ground (OBG) is located along the banks of the New River in the southeastern portion of the Horseshoe Area of the Facility. Operations included as part of the OBG include propellant waste transfer and treatment. According to the Facility's Permit for the Treatment of Hazardous Waste by Open Burning (the OBG Permit), the operations are conducted in an area approximately 100-feet by 1,500-feet. The actual burning of explosive waste is performed in 6-foot by 18-foot burn pans on raised pads of about 250-feet square. There are eight pads in the area, each consisting of two raised pans, for a total of sixteen pans.

According to the OBG Permit, hazardous wastes that may be managed at the OBG are waste propellants and spill "clean-up" residues generated at the Facility. The specific wastes allowed to be incinerated under the permit are listed in Table RCRA-C-1. Some of the materials treated at the OBG are the same wastes that would be treated at the Facility's permitted hazardous waste incinerators, except that they may contain rocks, tramp metal, and other debris that will damage the incinerator grinder. According to the OBG Permit, propellant wastes that will not feed into the grinder due to its physical shape and material that, through hazard analysis, is determined that cannot be safely incinerated, but that can be open burned, are also treated at the OBG.

Depending on whether the weather conditions are favorable for a burn, waste materials are transported to the OBG from the Facility's less-than-ninety-days hazardous waste storage areas contained in covered plastic 20-gallon tubs or Department of Transportation (DOT)-approved fiber drums. The waste is then loaded into burning pans on alternate burn pads. According to the OBG Permit, the waste capacity of each pan is 1,000 pounds, but to prevent untreated material from landing on the soil surrounding the pan, the OBG operator may load considerably less material. For wastes that require an aid to burn, the wastes are placed on five wood pallets covered with a diesel soaked cloth material called a "skid." The waste is spread onto the skid and soaked with diesel fuel. According to the OBG permit, a total of 12.5 gallons of diesel fuel are used in a skid burn. The wood pallets allow air under the waste, and the diesel fuel aids in the combustion of the waste. Once a pan is loaded with waste, the waste cannot be safely removed from the pan. According to the OBG permit, if precipitation occurs after the pans have been loaded, the pans are covered and no burn takes place until favorable weather conditions.

The EPA inspector witnessed an actual burn at the OBG on May 18, 2011 (see Photographs RCRA-C-40 to 43). This burn consisted of two burn pads of waste propellant. Before the waste material was ignited, an area of the New River [according to the OBG Permit 200-feet upstream from the OBG easternmost pad (pad number 8) and 200-feet from the OBG westernmost pad (pad number 1)] was evacuated, and observers were placed at these two locations to ensure that no one entered the area once the burn was cleared. Rotating red lights placed along the river in front of the OBG warned that a burn was about to begin. A siren was also sounded for about 10-seconds, followed by an announcement warning that a burn was about to begin and instructing the immediate evacuation of the river area. Once it was determined that it was safe to conduct a burn, the pans were remotely ignited. The waste material produced a mass fire, not an explosion or detonation.

According to the OBG Permit, the morning after the burn, an OBG operator inspects the pans that were used the previous day. Any untreated waste is collected and placed on a pan for re-treatment. The remaining ash from the burn pans is collected and staged on-site, pending sample analysis, and then disposed-of in a properly permitted disposal facility.

The OBG area was inspected on May 19, 2011 by Mr. Wilbur Martínez, accompanied by [redacted]. The point of contact at the OBG was [redacted], Explosive Waste Chief Operator. At the time of the inspection, operators were preparing three pads for a skid burn of pit powder (see Photographs RCRA-C-44 to 51). The pit powder was spread on wood pallets covered with cloth material. Waste cloth filters were then added and soaked with diesel fuel. The propellant waste was being transported to the OBG by truck (see Photograph RCRA-C-52). A cart was being used to transport the diesel fuel containers used to prepare the burn pads, as well as the containers used to collect the ash after the burns (see Photograph RCRA-C-53).

According to [redacted], in addition to bulk waste propellants, miscellaneous items are also burned in the OBG. These include, but are not limited to the following:

- Filter paper from the potassium iodine lab;
- Alcohol, wet nitro cellulose and nitroglycerin mixed together in a cotton media;
- Filter bags;
- Aluminum pins with propellant from rocket area (M7 TOW);
- Tie string contaminated with explosives;
- Off-spec primers and flash tubes;
- Contaminated cardboard;
- Contaminated wood; and
- NRE tape contaminated with propellant.

Primers and flash tubes are loaded into metal furnaces stuffed with straw for burning, to prevent the metal from flying off (see Photographs RCRA-C-54 to 57).

Building [redacted] Open Burning Ground Waste Ash Storage Canopy

This area is used to stage the ash collected from the burn pans. The ash is accumulated in 55-gallon drums. According to [redacted], the 55-gallon ash drums are staged on-site, pending sample analysis, until they can be sent off to a properly permitted disposal facility. According to [redacted], the ash is tested for reactivity prior to shipment; however, according to [redacted], no test has come back as reactive. According to the OBG Permit, if the test indicates that the ash is reactive, it is re-treated at the OBG. At the time of the inspection, the containers at Building [redacted] were closed, labeled "Hazardous Waste" and had an accumulation start date displayed on the corresponding label. The date of the oldest container was April 19, 2011.

Hazardous Waste Incinerators Complex

This area was inspected by Mr. Martínez accompanied by [redacted]. The Hazardous Waste Incinerators Complex is located in the [redacted] of the Facility and is subject to a Permit for the Storage and Treatment of Hazardous Waste (the Incinerators Permit). The permitted treatment and storage area includes the locations of all grinding, tank storage and treatment, and incinerator operations associated with the incineration of waste propellant at the Facility. Structures specifically within the permitted treatment and storage area include the following:

- Building [redacted] – Hazardous Waste Storage Building
- Building [redacted] – Grind House
- Buildings [redacted] – Control Houses
- Buildings [redacted] – Incinerator Buildings
- Ancillary Buildings, Accounts [redacted]

Hazardous wastes that may be managed at the permitted treatment and storage areas or the incinerators are waste propellants and spill "clean-up" residues generated at the Facility. The Specific wastes allowed to be incinerated under the permit are listed in Table RCRA-C-2.

The points of contact at the Incinerators Complex were [redacted], both of them Propellant Incinerator Control Operators. At the time of the inspection, no hazardous waste burning was taking place since the incinerator in Building [redacted] was undergoing maintenance to replace the refractory lining and, according to the Propellant Incinerator Control Operators, the incinerator in Building [redacted] cannot operate while contractors are working in the area.

Waste materials to be treated in the incinerators are stored in less-than-ninety-days storage buildings throughout the Facility, in 20-gallon tubs. These tubs of waste are retrieved by incinerator personnel and transported by truck to the Grind House (Building [redacted]) where they are prepared for incineration (see [redacted]). According to the Incinerators Permit, the waste materials to be treated in the incinerators are retrieved and incinerated before the 90-day storage period expires.

At the Grind House (Building [redacted]), the tubs of waste materials brought from the production area are loaded one by one onto a trolley conveyor system that dumps them into a hopper that feeds another conveyor (see Photograph 61). There, the waste materials are sprayed with water to minimize the chance of a waste explosion. Oversize and metallic materials are removed from the waste stream by a dump hopper and the rejected material is collected into a "dump buggy" (see Photograph RCRA-C-62). The "dump buggy" has a screen to allow water to drain from the waste (see Photograph RCRA-C-63). According to [redacted], approximately 40 pounds of rejected solids are generated per ground load. The material collected in the "dump buggy" is transferred into tubs and sent to the OBG for treatment. At the time of the inspection, no waste propellant was being processed at the Grind House (Building [redacted]) and the "dump buggy" was empty and had no labeling identifying its function as a hazardous waste accumulation container.

According to [redacted], the Hazardous Waste Incinerators Complex is designed to collect water, whether rain or floor washings, for use in the process. The Grind House (Building 442) is equipped with a trench drain system that collects the floor washings. This drain system is equipped with a "catch basket," a box-type, open top, metal canister with a screened bottom, designed to collect solids in the floor washings (see Photograph RCRA-C-64). The screened water then transfers to a sump from where it is pumped to the "Catch Tank," located outside the building, where it is accumulated to be used as makeup water for the process. The solids accumulated in the "catch basket" are managed as hazardous waste and are collected and accumulated in tubs to be sent to the OBG for treatment. At the time of the inspection, there was no waste in the "catch basket" and the "catch basket" had no labeling identifying its function as a hazardous waste accumulation container. Three tubs of "catch basket waste," however, were observed at the Grind House (Building [redacted]) (see Photograph RCRA-C-65). The tubs were closed, labeled "Hazardous Waste," and each had an accumulation start date posted on the label. The

date of the oldest container was April 20, 2011. According to [redacted], the storage of these containers at the Grind House (Building [redacted]) is managed as less-than-ninety-days storage.

The propellant waste material that is not rejected and removed from the conveyor at the dump hopper continues on the conveyor and is then dumped into a grinder feed hopper where the waste is again sprayed with water to minimize the potential for an explosion. The waste material is then ground, screened for oversize material, and dropped into one of two 1,700-gallon, open top, slurry mix tanks ([redacted]).

According to the Incinerators Permit, once the entire load (batch) of propellant has been added to a slurry mix tank, the tank is filled with water from the Makeup Tank (Tank [redacted]) to form a slurry for incineration. Once the water has been added, an agitator in the tank is used to form a homogenous slurry. The slurry is also pumped from the tank bottom and returned to the tank top in an interior recirculation loop until the desired concentration is achieved. The resulting slurry should consist of a minimum of [redacted] for every one part propellant ([redacted]). Once the desired concentration is achieved, the slurry is directed from the interior to an exterior recirculation loop that prevents settling and buildup of solids in the lines. The slurry feed pump, located in the Grind House (Building [redacted]), pumps the slurry through this exterior recirculation loop. Another pump located at each incinerator, pulls slurry from the loop into the slurry pickup line and injects it into the corresponding incinerator system. In the event of an electrical power outage, the incinerator feed is stopped and the exterior loop is flushed with water, flushing the slurry back to the slurry mix tanks.

The slurry mix tanks ([redacted]) are located in the basement of the Grind House (Building [redacted]). The Makeup Tank (Tank [redacted]) and two Neutralization Tanks that are part of the incinerators pollution abatement system (PAS) are also located in the basement of the Grind House (Building [redacted]). Secondary containment for these tank systems is provided by the Grind House (Building [redacted]) itself and, in the case of the portion of the slurry loop that extends to the incinerators, by the grated gutters surrounding the perimeters of the Incinerator Buildings [redacted]. Signs of deterioration of the Grind House (Building [redacted]) basement floor were observed during the inspection (see Photographs RCRA-C-66 to 68).

According to the Incinerators Permit, liquid or slurry collected in the Grind House (Building [redacted]) containment system sumps or in the grated gutters surrounding the perimeters of the Incinerator Buildings [redacted] is pumped to the Catch Tank ([redacted]) (see Photograph RCRA-C-69). Then, the contents of the Catch Tank (Ancillary Building [redacted]) would either be directed back to the Makeup Tank (Tank [redacted]) or pumped into an accumulation tank-truck trailer to either be later returned to the Makeup Tank (Tank [redacted]) or to be managed at the Facility's wastewater treatment system. Any collected solids from spilled slurry would be accumulated in containers and managed as hazardous waste. According to [redacted], the Hazardous Waste Incinerator Complex is also designed to collect rain water to be used in the incinerator systems. This rain water is collected in the Catch Tank (Ancillary Building [redacted]) for use as makeup water in the Makeup Tank (Tank [redacted]).

The incinerator systems are comprised of two identical rotary kilns; each equipped with an afterburner and associated pollution control devices (see Photograph RCRA-C-70). According to the Incinerators Permit, each Rotary Kiln consists of a carbon steel cylinder measuring 12 feet in length and 6 feet along the inner diameter, with an outer shell thickness of 0.5 inches. The inside of the shell is refractory lined with 6 inches of firebrick and castable refractory that runs the entire length of the kiln. The feed and discharge ends of the kiln are lined with 6-inches of castable refractory. Each rotary kiln is equipped with a variable speed drive system, a nozzle that feeds air-atomized slurry to the kiln at a rate less than [redacted] natural gas burner located on the feed end of the kiln. Each rotary kiln afterburner consists of an 8-foot and 6-inches long horizontal cylinder with a 5-foot and 8-inch inner diameter lined with 6-inches of super-duty firebrick, and an internal refractory brick vertical baffle system to promote increased gas mixing. Each afterburner is equipped with two [redacted] capacity natural gas burners located 180 degrees apart on the shell near the gas inlet. The afterburners are designed to be capable of an [redacted] degrees Fahrenheit maximum temperature to ensure destruction of unburned organic constituents and carbon monoxide.

According to the Incinerators Permit, the propellant slurry is fed into the burner end of the kiln through a slurry nozzle, and progresses through the kiln to the discharge end. The resulting incinerator ash is manually removed from the discharge end through a slide gate that is periodically opened to allow ash to fall through into an "ash buggy" (see Photographs RCRA-C-71 and 72). Only the incinerator in Building [redacted] had an "ash buggy" in use for collecting waste at the time of the inspection since, although no hazardous waste was being processed at the time, the incinerator was running on natural gas. The "ash buggy" has a holding capacity larger than 55 gallons (measuring 3 feet wide by 4 feet long by 2 feet high, for a capacity of approximately 180 gallons). According to [redacted], the "ash buggies" are managed as SAA containers. The containers are collected once per day and the contents transferred to 55-gallon drums. At the time of the inspection, the "ash buggy" for the incinerator in Building [redacted] had a loose cover (i.e., the cover is a simple lid that cannot be tightly closed) and was labeled "Hazardous Waste."

The ash is staged on site at the Incinerator Complex Ash HWAA, pending sample analysis and off-site disposal (see Photograph RCRA-C-73). At the time of the inspection, only the left row of the drums shown in Photograph RCRA-C-73 contained hazardous wastes. The containers were closed, labeled "Hazardous Waste" and had an accumulation start date displayed on the label. The date of the oldest container was April 18, 2011. If the incinerator ash is found to exhibit the characteristic of reactivity, the Incinerators Permit allows for the ash to be taken to the OBG for further treatment.

Each incinerator system is equipped with pollution control devices designed to remove acid gases, particulate, and metals. The pollution control devices include an evaporative cooler, a fabric filter, a gas pre-cooler, and a packed-bed scrubber. Additionally, each incinerator system is also equipped with a brine system that recirculates brine through the various pollution control devices.

After the afterburner, scrubber brine is sprayed into the Evaporative Cooler to reduce combustion gas temperature. Ash and salt residues that fall out during the cooling process are collected in a bottom hopper at the evaporative cooler and are periodically discharged into a holding bin and disposed of with the kiln ash. The cooled gases are then routed through the fabric filter (Bag House) to remove particulate matter.

According to the Incinerators Permit, as particulate matter collects on the filter bags, the pressure drop activates a cleaning sequence during which a burst of compressed air dislodges the particulate matter from the bags and the particulate matter falls and accumulates in a hopper located below the bags. The particulate matter is then periodically discharged from the Bag House into a holding bin and disposed-of with the kiln ash.

Photograph RCRA-C-74 shows the Evaporative Cooler ash collection container for Incinerator Building [redacted]. This unit was not operational, since the incinerator was being serviced; therefore, no waste was being added to the container at the time of the inspection. This container has a holding capacity larger than 55 gallons (measuring 3-feet wide by 4 feet long by 2 feet high, for a capacity of approximately 180 gallons). According to [redacted], this container is managed as an SAA container. At the time of the inspection, the container was labeled "Hazardous Ash Waste;," the cover was not draped over the container. The contents of the container can be seen in Photograph RCRA-C-75; based on the container dimensions and the observed fill level, the container appears to be holding more than 55 gallons.

Photograph RCRA-C-76 shows the ash collection container for the Incinerator Building [redacted] Bag House. Like the Evaporative Cooler, this unit was not operational, since the incinerator was being serviced; therefore, no waste was being added to the container at the time of the inspection. The ash collection container was a 55-gallon drum that, according to [redacted], was managed as an SAA. Although the container was draped at the time of the inspection, the drum locking ring was not secured (i.e., locking bolt was not in place). The drum was labeled "Hazardous Waste." The contents of the container can be seen in Photograph RCRA-C-77.

Photographs RCRA-C-78 to 80 show the Evaporative Cooler ash collection container for Incinerator Building [redacted]. Even though no hazardous waste was being processed at the time, this unit was operational at the time of the inspection, since the incinerator was running on natural gas. As noted for the Evaporative Cooler ash collection container for Incinerator Building [redacted], this container had a holding capacity larger than 55 gallons, and was being managed as an SAA container. The Evaporative Cooler ash collection container was fitted with a 1.5-inch (outer diameter) pipe valve located 9 inches from the bottom of the container (measured to the center of the pipe) that, according to [redacted], is used to remove water from the Evaporative Cooler ash (see Photograph RCRA-C-80). If waste inside the container is accumulated only to this level, the container capacity would be between 55 and 60 gallons. At the time of the inspection, the Evaporative Cooler ash collection container for Incinerator Building [redacted] was labeled "Hazardous Ash Waste." The cover was draped over the container at the

time of the inspection. The contents of the container can be seen in Photograph RCRA-C-81, and appears to be filled to the level of the pipe valve.

Photograph RCRA-C-82 shows the ash collection container for the Incinerator Building [redacted] Bag House. Like the Evaporative Cooler, even though no hazardous waste was being processed at the time, this unit was operational at the time of the inspection, since the incinerator was running on natural gas. As noted for the Bag House ash collection container for Incinerator Building [redacted], this 55-gallon ash collection container was being managed as an SAA. Although the container was draped at the time of the inspection, the drum locking ring was not secured (i.e., locking bolt was not in place). The drum was labeled "Hazardous Waste" (see Photograph RCRA-C-83). In addition to Bag House ash, this container also held PPE waste (see Photograph RCRA-C-84).

After exiting the Bag House, the combustion gas travels through the Pre-Cooler, a direct contact quench system that uses water sprays to cool the gas to the saturation temperature.

According to the Incinerators Permit, excess water in the Pre-Cooler is gravity-drained to the Neutralization Tank. After the Pre-Cooler, the combustion gases are routed through the Packed-Bed Scrubber where water (brine) is sprayed countercurrent to the gas flow to scrub acid gas and further remove particulate matter. Excess water from the Packed-Bed Scrubber is drained to the Neutralization Tank. The gas exiting the Packed-Bed Scrubber is then discharged through the incinerator's exhaust stack. An induced draft fan located between the Packed-Bed Scrubber and the Exhaust Stack maintains a vacuum throughout each incinerator system and provides the driving force for the gas cleaning.

According to the Incinerators Permit, the Brine System consists of a brine tank, a neutralization tank, a caustic tank, and associated pumps and piping. The Brine System recirculates brine through the various pollution control devices on a level control. Brine is pumped from the Brine Tank to the Pre-Cooler and Packed Bed Scrubber. Excess brine drained from the Pre-Cooler and the Packed-Bed Scrubber is collected in the Neutralization Tank. There, caustic is pumped from the Caustic Tank for pH control and makeup water is also added from the Facility water supply. The neutralized brine is then transferred back from the Neutralization Tank to the Brine Tank to complete the brine recycling system. Brine is not discharged under normal operating conditions since it is recirculated through the Brine System, but in the event that the brine is not recirculated through the system, it is transferred to the wastewater treatment facility.

Building [redacted] – Hazardous Waste Accumulation Area

This building was inspected by Mr. Martínez accompanied by [redacted]. This building is located within the Incinerator Complex and is used to stage waste propellants to be disposed in the incinerators (see Photograph RCRA-C-85). The building is managed as a less-than-ninety-days hazardous waste accumulation area, although the Incinerators Permit lists this building as permitted storage. At the time of the inspection, the containers at Building [redacted] were closed, labeled "Hazardous Waste" and had an accumulation start date displayed on the label (see Photographs RCRA-C-86 and 87).

The date of the oldest container was February 25, 2011. The building is equipped with a fire suppression system. Communications in the event of an emergency is by means of intrinsically safe radios. A telephone is available at the nearby Incinerators Control Room.

Mobile Granulated Activated Carbon Unit

The Mobile Granulated Activated Carbon (GAC) Unit was inspected by Mr. Martínez accompanied by [redacted]. At the time of the inspection the unit was not in use and was parked near Building 1879. This unit, comprised of two separate activated carbon filter canisters and gasoline powered pump system mounted on a flat bed trailer (see Photographs RCRA-C-88 and 89), is used to filter wastewater generated from the production of propellant containing dinitrotoluene (DNT). The GAC Unit eliminates the DNT from the wastewater before it is sent to the Bioplant. According to [redacted], when in use, the first wastewater load is tested as it comes out of the filter before the wastewater is allowed to discharge into a drain that discharges it into the Bioplant. The carbon canisters had no labeling identifying their contents. According to [redacted], the activated carbon in the filter canisters could last up to a year. The current activated carbon was loaded into the canisters approximately three months before the inspection. The spent activated carbon is managed as hazardous waste K045.

Building [redacted] – Hazardous Waste Accumulation Area

This building was inspected by Mr. Martínez accompanied by [redacted]. The points of contact for this building were Messrs. [redacted], Green Line Finishing Area Supervisors. The building is managed as a less-than-ninety-days hazardous waste accumulation area. At the time of the inspection, the containers at Building [redacted] were closed, labeled "Hazardous Waste" and had an accumulation start date displayed on the label (see Photographs RCRA-C-90 to 94). The date of the oldest container was March 11, 2011. The building is equipped with spill control kits (see Photograph RCRA-C-95) and a fire suppression system. Communications in the event of an emergency is by means of intrinsically safe radios and a telephone located in the building.

Building [redacted] – Solvent Recovery Building

This building was inspected by Mr. Martínez accompanied by [redacted]. Ether and ethyl alcohol used in the propellant manufacturing process are recovered in four distillation units at the solvent recovery area. According to [redacted], wastewater containing propellant is generated during the cleanup of five solvent recovery tanks located in Building [redacted]. Building [redacted] is divided into five bays, each bay containing one tank. According to [redacted], wastewater generated during the cleanup of the tanks is discharged through the bottom of each tank into each bay's the drain system (see Photograph RCRA-C-96). Propellant suspended in the wastewater is collected in "catch baskets" located at the end of each drain (see Photographs RCRA-C-96 and 97) before the wastewater continues to the Bioplant for treatment. The "catch baskets" are cleaned, as needed, and the propellant accumulated in the "catch baskets" is then transferred to a

SAA container. The SAA container consists of a 20-gallon yellow plastic tub with a lid (see Photographs RCRA-C-98 and 99). The SAA container was labeled "Waste Explosives" and closed at the time of the inspection; however, only one SAA container is used to accumulate the waste propellant from the catch baskets at all five bays in Building [redacted]. Photograph RCRA-C-100 shows the relative distance between the location of the SAA container and the five bays (Bay No. 5 is located at the end of the corridor shown in the photograph). According to [redacted], a sump located outside of Building [redacted] is fitted with secondary screens for the removal of solid explosives in the wastewater (not observed during the inspection).

Building [redacted] – Decontamination Oven

This building was inspected by Mr. Martínez accompanied by [redacted]. The point of contact for this building was [redacted], Maintenance Manager. The Decontamination Oven is a natural gas fired oven used to heat-treat metal equipment or parts that cannot be decontaminated through other means (such as pressure washing) and properly inspected inside and out, in accordance with DOD requirements for the management and disposition of material potentially presenting an explosive hazard (see Photograph RCRA-C-101). Specifically, according to [redacted], the Decontamination Oven is used to decontaminate scrap metal before being released from Government control for recycling, and to decontaminate metal parts before performing maintenance work on them. According to [redacted], the Decontamination Oven operates under a Commercial/Industrial Solid Waste Incinerators (CISWI) Maximum Achievable Control Technology (MACT) exemption to operate metal recovery furnaces. The Decontamination Oven was not covered under a RCRA hazardous waste treatment permit at the time of the inspection.

According to [redacted], both the scrap metal and the metal parts destined for maintenance are washed before being sent to the oven. Photograph RCRA-C-102 shows a box of metal parts awaiting decontamination in the Decontamination Oven before maintenance work can be performed on them. Photographs RCRA-C-103 to 105 shows scrap metal awaiting decontamination before they can be released from Government control for recycling. As can be observed from the photographs, the material was placed on the ground. Some of the scrap metal awaiting decontamination came from the B-Line demolition and it is unclear how or where it was washed prior to coming to the Decontamination Oven. According to [redacted], the main concern with the material is cracks and crevices that cannot be seen, and rust in iron pipe that could entrap nitrocellulose fibers. The material is generally tagged and dated when it is removed from service (some tags are visible in Photograph RCRA-C-103). According to [redacted], prior to the B-Line demolition, about 75 percent of the material processed in the Decontamination Oven was equipment to be repaired.

Building [redacted] – Universal Waste Accumulation Area and Hazardous Waste Accumulation Area

This building was inspected by Mr. Martínez accompanied by [redacted]. The Building consists of a wood shack used for the accumulation of universal waste lamps, as well as an HWAA for other lamps that are managed as hazardous waste.

Inside the building, Mr. Martínez observed three boxes used for the accumulation of universal waste lamps (see Photograph RCRA-C-106). Two of the boxes had labels displaying the words "Universal Waste." No markings displaying the words "Universal Waste – Lamp(s)" or "Waste Lamp(s) were observed on the third box;" instead, the box was marked with words to indicate that the box was a "Fluorescent Lamp Recycling Container" and to indicate that the "lamps contain mercury." Each box displayed an accumulation start date; from left to right in Photograph RCRA-C-106, the corresponding accumulation start dates were April 24, 2011, May 17, 2011, and May 18, 2011 (see Photographs RCRA-C-107 to 109, respectively). Two of the boxes were closed and one was open (see Photograph RCRA-C-110) at the time of the inspection.

Mr. Martínez also observed in this building a 55-gallon drum that, according to [redacted], is designated for the accumulation of incandescent light bulbs, mercury vapor high-intensity discharge lamps (HID lamps), and sodium vapor lamps that are managed as hazardous waste (see Photograph RCRA-C-111). The drum was empty at the time of the inspection, but according to [redacted], will be managed as a less-than-ninety-days hazardous waste accumulation container once it begins to be filled.

There was evidence of broken lamps inside as well as outside the building (see Photographs RCRA-C-112 to 115).

Building [redacted] – Chemical Grind

This building was inspected by Mr. Martínez accompanied by [redacted]. The points of contact for this building were [redacted], Production Specialist, and [redacted], Manager. This Building is used for grinding and mixing raw materials used in the different production processes at the Facility. At the time of the inspection, several SAAs had been set up in different working areas of this building.

At the building's Bay 2, a 20-gallon fiber drum had been set up as an SAA for the collection of floor sweeps of materials spilled within Bay 2 (see Photograph RCRA-C-116). The SAA container's lid was not secured at the time of the inspection, although no waste was being added or removed from it (see Photographs RCRA-C-116 and 117). The SAA container was labeled "Hazardous Waste" (see Photograph RCRA-C-118). Also within Bay 2, there was another 20-gallon fiber drum for the accumulation of "contaminated personal protection equipment" (PPE) and trash (see Photographs RCRA-C-119 and 120). According to [redacted], this waste has been profiled by chemical analysis and determined not to be hazardous waste.

Another SAA had been set up just outside the building's Grinder Room. The SAA consisted of a 20-gallon fiber drum for the accumulation of floor sweeps from spilled material containing [redacted] in the Grinder Room (see

Photographs RCRA-C-121 and 122). The SAA container's lid was not secured at the time of the inspection, although no waste was being added or removed from it. An operator secured the lid after this was brought up. The SAA container was labeled "Hazardous Waste."

At the building's Bay 1, a 20-gallon fiber drum had been set up as an SAA for the collection of floor sweeps of spilled material containing [redacted] within Bay 1 (see Photograph RCRA-C-123). The SAA container's lid was not secured at the time of the inspection, although no waste was being added or removed from it. An operator secured the lid after this was brought up. The SAA container was labeled "Hazardous Waste." Also in Bay 1, there was another 20-gallon fiber drum for the accumulation of "contaminated PPE" and trash (see Photograph RCRA-C-124). According to [redacted], this waste has been profiled by chemical analysis and determined not to be hazardous waste.

A lead-containing material is managed at the building's Bay 3. Two 20-gallon fiber SAA containers had been set up at this room; one for the accumulation of floor sweeps of spilled lead-containing material, and the other for the accumulation of contaminated PPE generated within this area (see Photograph RCRA-C-125). Both containers' lids were not secured, although no waste was being added or removed from them. Both containers were labeled "Hazardous Waste" (see Photograph RCRA-C-126).

Building [redacted] is equipped with a ventilation system designed to control fugitive dust emissions. The ventilation system is equipped with two Bag Houses that collect fugitive dust. The dust collected in each Bag House hopper is accumulated in a 55-gallon SAA drum (see Photograph RCRA-C-127). At the time of the inspection, the drums were securely fitted into each hopper. Both containers were labeled "Hazardous Waste" (see Photograph RCRA-C-128).

Rocket Area

This area was inspected by Mr. Young accompanied by [redacted], Production Specialist, [redacted], Operations Manager, and [redacted], Maintenance Manager.

Maintenance Area

In this area, a 55-gallon drum was observed for the accumulation of empty aerosol cans. The drum was closed and was labeled "Hazardous Waste" (see Photographs RCRA-C-129 and 130). An accumulation start date of April 17, 2011was displayed on the label; however, according to the Facility personnel present during the inspection, this area is managed as an SAA. The Maintenance Area, however, is not where the empty aerosol cans are generated; according to the Facility personnel present during the inspection, there are flammable cabinets at other areas within the Rocket Area where the aerosol cans are stored and used, and when emptied, they are brought to the maintenance area where they are placed in the empty aerosol cans accumulation drum.

Building [redacted] – Saw and End Inhibiting Building

The point of contact at this building was [redacted], Operator. Extruded MK90 rocket propellant grain dowels are cut to size and wrapped in cellulose tape (an inhibitor) in this building. A dowel cutting machine (see Photograph RCRA-C-131) is used to cut the ends of the dowel. Residual grain cuttings are collected in a pan underneath the dowel cutting machine, and the cut wafers (ends) are collected in a "waste wafer drum" (no photo). At the time of the inspection, there were no cutting residues accumulated underneath the dowel cutting machine (it is not clear whether the pan is labeled hazardous waste when in service collecting residual propellant grain cuttings or how the residues accumulated in the pan are subsequently managed). According to [redacted], the "waste wafer drum" is managed as an SAA, and it takes between one to two weeks to fill.

Once cut, the rocket propellant grain dowels are wrapped with [redacted] and placed in a stand where propellant grain residue drops off and collects in a cardboard lined pan underneath the stand (see Photographs RCRA-C-132 and 133). According to the Facility personnel present during the inspection, the cardboard with grain residue is replaced at the end of the week, and the removed cardboard with grain residue is managed as hazardous waste. At the time of the inspection, the pan collecting the propellant grain residues was not labeled "Hazardous Waste." The container for the accumulation of the propellant grain residue and cardboard was not observed during the inspection.

The floor in the area where the propellant grain dowels is cut and wrapped in [redacted] is swept several times a day; the floor sweeps are collected in a 20-gallon SAA tub located in the production area (another room in the building) (no photo). Only 47 pounds of propellant may be accumulated in a 20-gallon tub (about ¾ full).

Waste gloves, rags, and inhibitor tape [the [redacted] solvent [redacted]) as the adhesive] are collected in three tubs and managed as non-hazardous waste (see Photograph RCRA-C-134). According to the Facility personnel present during the inspection, this waste has been profiled by chemical analysis and determined not to be hazardous waste.

Propellant grain screening equipment at the Building [redacted] production area separates the fines from the propellant (see Photograph RCRA-C-135). According to the Facility personnel present during the inspection, all of the fines are collected and reworked back into the nitroglycerin slurry.

Building [redacted] – Dowel Building

In this building, extruded propellant dowels are shaved to achieve the desired diameter. The dowel shaving equipment is shown in Photograph RCRA-C-136. Water is used in the shaving process, and it conveys the shavings into a screen where the wet propellant shavings are separated and collected in 20-gallon yellow tubs labeled "Waste Explosives" (see Photograph RCRA-C-137). As the containers fill-up, their content is transferred into a 20-gallon "waste tub" (see Photographs RCRA-C-138) in the same room where the dowel shavings screening equipment is located. At the time of the

inspection, three of the propellant shaving collection containers (labeled "Waste Expolsives") were observed; one was "in use," while the other two were not and were open (see Photograph RCRA-C-137).

The "waste tubs" are labeled "Hazardous Waste." Each "waste tub" is weighed to ensure that no more than 47 pounds of waste propellant is placed in the tub. After being weighed, a green tag is applied to each "waste tub" identifying it as a "Satelite Accumulation of Waste Propellant and/or Explosive" <sic>. The tag also includes the tub accumulation start date which, according to the Facility personnel present during the inspection, corresponds to the date the propellant waste exceeds 55 gallons. There were six waste tubs in the dowel shavings screening equipment room at the time of the inspection, and they were each dated May 19, 2011. According to the Facility personnel present during the inspection, approximately twenty-four "waste tubs" are generated per day at this location. The filled "waste tubs" are moved to a less-than-ninety-days HWAA within three days from the date the waste was generated.

Building [redacted] – Rocket Area Hazardous Waste Accumulation Area

Building [redacted] is the less-than-ninety-days Rocket Area HWAA. The point of contact for this area was [redacted], Chief Waste Inspector. A total of thirty-nine 20-gallon tubs of waste explosives were stored in this building at the time of the inspection (see Photographs RCRA-C-139 to 142). The containers were closed and labeled "Hazardous Waste." All but two containers displayed an accumulation start date. The date of the oldest container at this location was May 10, 2011.

One of the hazardous waste accumulation containers without a date was a tub that had been transferred to this area from Building [redacted], which was undergoing preventive maintenance at the time. The container held floor sweepings and extrusion press waste. The other hazardous waste accumulation container without a date was a tub with a green hazardous waste tag identifying it as "Satelite Accumulation of Waste Propellant and/or Explosive" <sic> (see Photograph RCRA-C-142). According to the Facility personnel present during the inspection, this container was destined for the explosive burning ground and did not have a date because it was not yet full. However, no obvious point of waste generation was observed at this location.

Building [redacted] - Coning Operations Building

In this building, extruded propellant dowels are shaped to produce a coned end. The coning equipment is shown in Photograph RCRA-C-143. The machine has a catch container underneath to collect the waste fibers resulting from the coning process. Every 1 to 2 hours the material accumulated in the catch container is dumped into a 20-gallon SAA tub. Once the tub is full, it is brought to the waste storage area located in the room next door where it is weighed and tagged for disposal (see Photograph RCRA-C-144). The building floor is swept every day and the sweepings are also collected in the same SAA tub as the coning residues.

Building [redacted] - Hospital

This area was inspected by Mr. Young. The point of contact for this area was [redacted], Nurse. Concentra, a subsidiary of Humana Inc., is the contractor that operates the hospital. The pharmacy cabinet at the hospital included isopropyl alcohol, saline solution, hand sanitizers, allergy medication, as well as single dose packages of antibiotics and other cold and sinus medicines, among other things (see Photographs RCRA-C 145 to 149). According to [redacted], no hazardous waste determinations have been made with respect to the items in the pharmacy cabinet in the event that they need to be disposed-of. According to [redacted], all pharmacy wastes are managed as bio-hazardous waste. Sci-Med Waste Systems, Inc. of Roanoke, Virginia is the medical waste removal contractor. One epinephrine injection pen was observed to have expired on April 2011. [redacted] indicated that she would call the Environmental Affairs Department arrange for pick up. No x-raying or dental work is performed at the hospital.

Building [redacted] – Main Garage

This area was inspected by Mr. Young. The point of contact for this area was [redacted], mechanic. According to [redacted], the Main Garage is used to perform maintenance and repair of equipment and vehicles. There are no parts washers at the Main Garage.

An SAA consisting of a 55-gallon drum for the accumulation of spent aerosol cans was observed at this location (see Photograph RCRA-C-151). The SAA drum was closed and labeled "Hazardous Waste." According to [redacted], the SAA container was about half-full at the time of the inspection.

The Main Garage also has a wash bay that, at the time of the inspection, appeared to be full of oil and water (see Photographs RCRA-C-152 and 153). According to [redacted], when full, the contents of the sump is pumped out into a used-oil container located in another area of the Main Garage (see Photograph RCRA-C-154).

Another SAA was observed in a metal shed located outside the Main Garage. This SAA consists of a 55-galllon drum for the accumulation of waste generated during gas tank cleanouts (see Photograph RCRA-C-155). According to [redacted], the SAA container was about one-third-full at the time of the inspection. The SAA, however, was not located at or near the garage opening, as shown in Photograph RCRA-C-156. The SAA drum was labeled "Hazardous Waste," but was open at the time of the inspection.

Lead Burning Shop

This area was inspected by Mr. Young. Lead metal sheets and scrap was observed being accumulated outside and inside this building (see Photographs RCRA-C-157 to 160). The lead is re-used for lining floors and trenches in the acid processing areas of the Facility. Some of the lead has been accumulated for one to two years. According to the Facility personnel present at the time of the inspection, the last time lead was re-used in a project was about three months ago.

Records Review

Waste Analysis Plan

The Facility has developed waste profiles for 19 waste groups that are treated in the incinerators and open burning ground (see Attachment RCRA-C-2). There is a 20th waste group that consists of screening and floor waste that is managed at the OBG for which there is no waste profile because it can be a mixture of waste groups 1 through 19, excluding waste groups 2, 3, 5, and 6. The waste profiles are based both on generator knowledge and laboratory analysis. Every waste profile is reviewed at least annually in order to confirm that it still accurately represents the waste stream.

The Facility has two written Waste Analysis Plans, one for the OBG and the other for the Incinerators Complex, as part of the Facility's RCRA Part B permit. The Plans include a list of wastes to be sampled, the location of the sampling, a list of parameters to be analyzed and the selection rationale, the test and sampling methods to be used, and the frequency of the sampling.

Ash from the OBG and the incinerators (including the solid residues generated by the Evaporative Cooler and the Bag House) is analyzed for reactivity and toxicity characteristics prior to being sent off-site for disposal. If the ash exhibits the hazardous waste characteristic of reactivity, it is re-treated by open burning at the OBG or, in the case of the ash from the incinerators, taken to the OBG for further treatment. If the ash does not exhibit the hazardous waste characteristic of reactivity, but exhibit hazardous waste toxicity characteristics, it is managed as hazardous waste. If the ash does not exhibit the hazardous waste characteristics of reactivity or toxicity, it is managed as solid waste.

Inspection Records

The Facility has a written inspection schedule that includes monitoring equipment, safety and emergency equipment, security devices, and operation and structural equipment associated with the management of hazardous wastes at the Facility. The Facility performs the required inspections and maintains the inspection records as part of the Facility Operating Records.

Training Records

The Facility maintains an electronic tracking system for personnel training. Based upon the review of the Facility's electronic training tracking system records, The RCRA inspector observed that Facility personnel have successfully completed the required training or job experience within six months after occupying the position, and that Facility personnel take part in an annual review of the initial training requirements and update them as necessary. The personnel training records includeed:

- Job title for each position related to hazardous waste management and the employee filling each job.
- A written job description for each position.

- A written description of the type and amount of training that will be given to each person.
- Records that document that the training or job experience required by facility personnel to effectively respond to emergencies and otherwise manage hazardous waste in a proper manner has been successfully completed.

Emergency Preparedness, Prevention, and Contingency Plan

The Facility has an on-site Fire Department and Hazardous Materials Emergency Response Team. The Facility also has its own medical facility.

Communications equipment consists of telephones, cell-phones, and two-way radios. At the Incinerators Complex telephones are located at the incinerators, storage facility, and control room that can be used to summon the fire department or other emergency assistance. Additionally, there is a horn on top of the Grind House (Building [redacted]) to serve as an internal alarm system that is actuated from the control room in Building [redacted]. Sprinkles located in the Incinerator Complex and HWAAs activate alarms connected to the Facility Fire Department when activated.

The Facility has two Contingency Plans, one for the OBG and the other for the Incinerators Complex, as part of the Facility's RCRA Part B permit. Additionally, the Facility has other documents that address emergency situations, including procedures to handle fire and oil and hazardous materials releases, outside the context of the two Contingency Plans; these include: a Disaster Control Plan, a Spill Prevention Control and Countermeasures Plan, a Fire Prevention and Protection Program, a Hazardous Material Emergency Response Plan, an Oil Discharge Contingency Plan, a Plant Protection Plan, and other plant operation procedures. Although these documents were not reviewed as part of the RCRA inspection, the general contents of these documents is described in Attachment RCRA-C-3

Mutual assistance agreements have been made with the following communities for providing fire-fighting assistance:

- Dublin
- Fairlawn
- Radford
- Town of Christiansburg (copy of agreement in permit)
- Riner
- Longshop/McCoy Volunteer Fire Department
- Blacksburg

Additionally, the Facility has made verbal agreements with the New River Valley Medical Center and the Montgomery County Community Hospital to provide medical assistance in the event of an accident. The Facility security personnel also maintain close

cooperation with local county law enforcement officials for traffic control in the plant area if a significant disaster should occur.

Uniform Hazardous Waste Manifests and Land Disposal Restriction Notification Certification Forms

The Facility uses Uniform Hazardous Waste Manifests and Land Disposal Restriction Notification and Certification Forms for each shipment of hazardous waste. The Facility does not receive hazardous waste for treatment. During the inspection, the EPA inspector verified that these records are kept for, at least, the last three years prior to the inspection. After verifying that that was the case, the EPA inspector used a random date generator to select which records to review over the three-year period.

Based on the random date generator, forty-three hazardous waste manifests were selected for review. The hazardous waste manifests reviewed were found to be complete and included: the Facility's name, mailing address, telephone number and EPA ID number; the transporter's name and EPA ID number; the United States Department of Transportation (DOT) waste description, including proper shipping name, hazardous waste class and DOT identification number; the number and type of containers; and the required certification. Except for one instance, each manifest reviewed was accompanied by its associated Land Disposal Restriction Notification and Certification Form (LDR Form); however, the following discrepancies were observed in the LDR Forms:

- Manifest 006748108JJK, generated on 10/26/10, did not have an accompanying LDR Form.
- Manifest 004173296JJK, generated on 03/31/10, had an incomplete LDR Form.
- Manifest 000106812MWI, generated on 01/13/11, had an incomplete LDR Form.
- Manifest 000107052MWI, generated on 03/10/11, had a waste code error in the LDR Form (waste dinitrotoluenes listed as D060 rather than D030 in LDR Form).

Copies of these manifests and their associated LDR Forms, if any, are included in Attachment RCRA-C-4.

Air Emission Standards for Process Vents

During the inspection, Mr. Martínez did not observe any distillation, fractionation, solvent extraction, thin-film evaporation, air or steam stripping units with process vents that managed hazardous waste with greater than 10 parts per million by weight (ppmw) of organics.

Air Emission Standards for Equipment Leaks

The Facility has identified, in the Incinerators Permit, several pumps, valves, and miscellaneous connections that contact the waste slurry (identified as a light liquid) before it is fed to the rotary kilns as subject to the air emission standards for equipment leaks. According to the Incinerators Permit, there are no compressors, pressure relief

devices, sampling connecting systems, or open ended lines or valves as part of the incinerator systems that contact or contain waste with greater than 10 percent organics. During the inspection, Mr. Martínez did not observe any other hazardous waste management equipment that could potentially manage waste with greater than 10 percent organics and be subject to the air emission standards for equipment leaks.

According to the Incinerators Permit, the Facility has implemented a leak detection and repair (LDAR) program. The program consists of a vapor release monitoring program in combination with visual inspections of the equipment.

Air Emission Standards for Tanks

Before being fed to the rotary kilns, the propellant waste material is mixed with water and accumulated in two 1,700-gallon, open top slurry mix tanks ([redacted]) located in the basement of the Grind House (Building [redacted]). According to the Incinerators Permit, these two tanks are subject to the air emission standards for tanks; however, although according to the Incinerators Permit, Building [redacted] has been demonstrated to meet the criteria for a permanent or temporary enclosure; however, the permit exempts Building [redacted] from the requirement to discharge the enclosure's volatile organic chemical (VOC) emissions through a control device. The permit only requires the Facility to submit a triennial report that includes a survey of VOC control technologies and a feasibility determination.

B. Resource Conservation and Recovery Act, Subpart I (RCRA-I)

This portion of the multi-media inspection was conducted by Mr. Justin Young. The Facility has two underground storage tank (UST) facilities; one consisting of three USTs used for the storage of motor fuel at the Facility Vehicle Fueling Station (Building [redacted]), and the other consisting of two USTs for the storage of motor fuel for the emergency generator located at Building [redacted] that is occupied by Acquisition, Logistics and Technology Enterprise Systems and Services (ALTESS), a tenant organization at the Facility. The observations made during the inspection of these two UST facilities are reported separately in the following sections.

Building [redacted] – Facility Vehicle Fueling Station

The point of contact for the UST inspection of the Facility Vehicle Fueling Station (Building [redacted]) USTs was [redacted] from the ATK Environmental Group. After completing the inspection, Mr. Young completed the Region III Underground Storage Tank (UST) Compliance Checklist, which is included as Attachment RCRA-I-1 to this report.

Tank Descriptions

Radford Army Ammunition plant had three USTs (see Table RCRA-I- 1). Two of the tanks store gasoline and one of the tanks stores diesel. These tanks are used for the refueling of Facility vehicles. The three tanks are based on a pressure system. The two gasoline tanks are manifolded together.

Gasoline tank [redacted] had a total of five openings above the tank (see Photograph RCRA-I-1). The first opening was the tank manway (see Photograph RCRA-I-2). The Facility stated the tanks interstitial space was brine filled. The second opening housed the sensor for the interstitial space (see Photograph RCRA-I-3). The third opening housed the automated tank gauge (ATG) sensor (see Photograph RCRA-I-4). The fourth opening housed a fill pipe with a spill bucket (see Photograph RCRA-I-5). The fifth opening housed the vapor recovery pipe (see Photograph RCRA-I-6). The Facility stated they do not use the vapor recovery pipe during fill ups. At the time of the inspection, the vapor recovery pipe was rusted and broken completely off (see Photograph RCRA-I-7).

Gasoline tank [redacted] had a total of five openings above the tank (see Photograph RCRA-I-8). The first opening was the tank manway (see Photograph RCRA-I-9). This tank was manifolded to [redacted]. There was no submersible transfer pump (STP) associated with this tank manway. The Facility stated the tanks interstitial space was brine filled. The second opening housed the sensor for the interstitial space (see Photograph RCRA-I-10). The third opening housed the ATG sensor (see Photograph RCRA-I-11). The fourth opening housed a fill pipe with a spill bucket (see Photograph RCRA-I-12). The fifth opening housed the vapor recovery pipe (see Photograph RCRA-I-13).

Diesel tank [redacted] had a total of six openings above the tank (see Photograph RCRA-I-14). The first opening was an unknown white pipe with wiring (see Photograph RCRA-I-15). The second opening housed the tank manway (see Photograph RCRA-I-

16). The third opening housed the interstitial brine sensor. The fourth opening housed the ATG sensor. The fifth opening housed the fill pipe (see Photograph RCRA-I-17). The sixth opening housed the vapor recovery pipe (see Photograph RCRA-I-18).

Tank Release Detection

The three tanks located at the Facility utilize a Continuous Statistical Leak Detection System (CSLDS) as their method of tank release detection. CSLDS is a continual reconciliation system designed to detect leaks or operational losses of product from the UST system. The system provides for a greater than 95% probability of leak detection of 0.20 gallons per hour (gph) with a probability of false alarm of less than 5%. The Facility was unable to provide release detection testing results with regards to all three tanks for a period of 12 months. Due to a power outage and battery backup failure of the monitoring system, there was no release detection monitoring on any of the three tanks for the entire month of December. The Facility also did not have a passing 0.2 gph test on gasoline tank [redacted] for the month of September 2010 (see Attachment RCRA-I-2). The equipment used for this release detection is an OPW EECO 1500 (see Photograph RCRA-I-19). At the time of the inspection, the system was reading "system activated." This system was the Facility's only means of tank release detection monitoring. There were three vent pipes associated with the tanks (see Photograph RCRA-I-20).

Piping Release Detection

The Facility uses the Veeder-Root brand of mechanical line leak detectors (MLLDs). The Facility conducts annual leak detector tests on these Veeder-Root MLLD's. The Facility received passing tests for the gasoline and diesel lines on March 2, 2010 and March 22, 2011. The second form of piping leak detection is annual line tightness testing. The EPA inspector observed the test results. The gasoline and diesel tanks received passing tests on March 2, 2010 and March 22, 2011. Both the line tightness test and the MLLD tests were conducted by Superior Services (see Attachment RCRA-I-3).

During the on-site inspection, the EPA inspector observed the diesel dispenser. The dispenser appears to be newly installed. There was no sump collection pan in the bottom of the diesel dispenser. At the time of the inspection, there appeared to be soil surrounding the piping leading from the dispenser (see Photograph RCRA-I-21). The Facility also had the capability to fill bulk trucks with fuel. The Facility stated these bulk fuel dispensers have not been used in months, but they still have the ability to use the dispensers if necessary.

Spill/Overfill

Spill buckets and overfill protection were present for all three of the USTs. The three spill buckets were free from liquid at the time of the inspection. In each of the three fill pipes located directly over the tank had a flapper valve installed.

Cathodic Protection

Based on Facility statements, all three tanks were stated to be fiberglass with secondary containment.

Financial Responsibility

Pursuant to 9 Virginia Administrative Code (VAC) 25-590-20 C. (the VAC includes Virginia's federally authorized UST regulations), federal government entities are relieved of the requirements to further demonstrate an ability to provide financial responsibility as outlined in the regulations.

Building [redacted] Emergency Generator Underground Storage Tanks

The point of contact for the UST inspection of the Building [redacted] Emergency Generator USTs was Messrs. [redacted], ALTESS Chief of Facilities, and [redacted] ALTESS Facility Operations Manager. Due to the nature of the operations at this building, the observations made during the inspection of this UST are reported as an attachment to this report (Attachment RCRA-I-4).

C. Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES)

This portion of the multi-media inspection was conducted by EPA inspector Joe Reyna, USEPA Environmental Scientist. The NPDES portion of the multi-media inspection was conducted on May 16 – 20, 2011. Mr. Reyna was escorted by [redacted], from ATK Armament Systems. After introductions and the presentation of credentials, Mr. Reyna described the purpose of the inspection and the general format the inspection would follow. The inspector asked [redacted] to give a Facility overview and explain the Facility's treatment processes.

In Virginia, the Federal National Pollutant Discharge Elimination System (NPDES) delegation is split between various State departments including the Department of Conservation and Recreation (DCR) and VADEQ. DCR implements the Municipal Separate Storm Sewer System (MS4) and Construction Stormwater NPDES programs, under the Virginia Stormwater Management Program (VSMP). VADEQ implements the Industrial Stormwater and Point Source NPDES programs, under the Virginia Pollution Discharge Elimination System (VDPES) program.

Radford Army Ammunition Plant (RFAAP) has one permit governing its wastewater discharges: a VPDES Permit issued by VADEQ (VA0000248). RFAAP's VPDES permit is considered a major industrial permit that allows RFAAP to discharge industrial wastewater; domestic wastewater; and stormwater from the production of nitrocellulose, nitroglycerin, diethylene glycol dinitrate and propellants, the treatment of sanitary sewage, and the burning of coal to produce steam and electricity.

RFAAP is an industrial complex owned by the U.S. Government and operated by a contractor. Most of the manufacturing operations are performed in batches or on a semi-continuous basis. Many of the operations are operated continuously to fill storage tanks and then are shut down when the tanks are full. [redacted]

RFAAP has 6 industrial outfalls and over 130 stormwater outfalls within the manufacturing areas of the complex. All industrial outfalls and stormwater outfalls with permit parameter limitations were evaluated for compliance; however, not all stormwater outfalls were observed during the inspection, due to time constraints.

Compliance History

On June 25, 2010, RFAAP received a Consent Order issued by the VADEQ Blue Ridge Regional Office (see Attachment CWA-1). The Consent Order was issued for the following reasons: RFAAP exceeded discharge limitations from Outfall 005 for pH (minimum & maximum) in the month of April 2009, RFAAP exceed discharge limitations from Outfall [redacted] for pH (minimum) in the month of August 2009, and RFAAP exceeded discharge limitations from Outfall 006 for pH in the month of

September 2009. Alliant Techsystems, Inc., asserts there was a sulfuric acid spill in the NAC/SAC building that migrated beyond the building because the concrete surrounding a drain located on the outside south side of the building had deteriorated and allowed acid to infiltrate a nearby abandoned acid sewer line. The abandoned sewer line runs approximately five hundred yards and enters the Outfall [redacted] sewer system. The Consent Order required Alliant Techsystems (ATK), Inc. to pay a civil penalty of $3,300.00 and correct/repair the drain at the nitric and sulfuric acid concentrator (NAC/SAC) building to prevent entry of spilled acid in the abandoned sewer line. In addition, the abandoned sewer line was permanently plugged with concrete to assure that this pathway to Outfall [redacted] is blocked.

On-site Inspection

The on-site portion of the CWA inspection began on May 17, 2011. At approximately 10:55 a.m., Outfall [redacted] was observed (see Photographs CWA-1 and 2). This outfall receives stormwater. This outfall used to receive cooling water; however, in 1995, this outfall was modified and has not received cooling water since. At the time of the inspection, Outfall [redacted] had a slight flow. The flow was clear.

The inspection continued to Outfall [redacted] (see Photograph CWA-3). This outfall receives stormwater. At the time of the inspection, the outfall did not have a flow.

After Outfall [redacted] was observed, the inspection continued to Outfall [redacted] (see Photographs CWA- 4 to 6). Outfall [redacted] receives stormwater, cooling water, and cooling tower blow down from the ammonia refrigeration system in the nitrocellulose production area. At approximately 11:19 a.m., Outfall [redacted] pH meter (Foxboro model) was measuring the effluent to be 7.92 S.U. The outfall also has an ISCO 3710 Model 2710 FR to collect effluent samples. The temperature inside the sampler was reading 35 degrees Fahrenheit.

The next area observed was the Rigger's Loft area (see Photographs CWA -7 to 10). The Rigger's Loft area is used as heavy machinery parking and a staging area. Four 5-gallon buckets of potassium silicate were observed outside a shed area (Building [redacted]) (see Photograph CWA-7, notice four white buckets); the containers were closed at the time of the inspection. At the time of the inspection, Rigger Loft personnel were not able to identify how the buckets arrived at their location because they were not notified that someone dropped off the buckets. The buckets were moved indoors after Photograph CWA-7 was captured. After the buckets were observed, the heavy machinery parking area was examined. The inspector observed oily sheens on a few pools of standing stormwater (see Photographs CWA-8 and 9). The inspector was told one of the heavy machines was leaking fluids.

The CWA inspection continued to the main fueling area (Building [redacted]). According to personnel, stormwater runoff from the fueling operation area collects stormwater and treats it via an oil/water separator. The oil/water separator discharges water into an adjacent drainage ditch. According to Facility personnel, the oil/water separator was last cleaned April 2008. At approximately 11:55 a.m., no flow was observed discharging from the oil/water separator into the drainage ditch.

After the main fueling area was observed, the inspection continued to Outfall [redacted] (see Photographs CWA-11 and 12). Outfall [redacted] receives cooling water and raw water overflow. The cooling water is unprocessed river water taken from the New River. At the time of the inspection, the outfall had a high flow. The outfall's flow meter measured the flow to be 10.74 MGD, at 12:20 pm. The effluent pH was measured to be 7.48 S.U. The outfall also has an ISCO 3710 Model 2710 FR to collect effluent samples. The temperature inside the sampler was reading 2 degrees Celsius. The effluent appeared slightly turbid at the time of the inspection.

At approximately 1:55 pm, the inspection continued at the abandoned C-Line waste acid treatment plant (Building [redacted]) (see Photographs CWA-13 and 14). The inspection continued to the vehicle washing pad, located across the street from the main fueling operation (Building [redacted]). The vehicle washing pad had drains to collect and direct the flow of the wash water; however, at the time of the inspection, Facility personnel were unable to determine where the drain connects.

After the vehicle washing pad was observed, the inspection continued to the Bioplant (see Photographs CWA-17 to 29). The Bioplant is used to process wastewater from the manufacture of nitroglycerin, propellants, TNT, DNT, and still bottoms from solvent recovery. [redacted] The Bioplant consists of a divided 7-million-gallon equalization basin, several banks of rotating biological contactors (RBCs), and secondary clarification. Sludge is aerobically digested and pressed with a plate and frame press. The associated outfall for the Bioplant is Outfall [redacted].

At approximately 2:35 p.m., the influent pH meter was measuring the influent to be 8.38 S.U. The incoming influent enters the equalization basins. From the equalization basins, the treatment of wastewater continues to the RBCs. There are two lines of four RBCs located indoors (see Photograph CWA-22), and there is one line of four RBCs located outside (see Photograph CWA- 23). From the RBCs, the treatment of wastewater continues to the east and west clarifiers (see Photograph CWA-25). Polyaluminum chloride is added to settle sludge and solids in the clarifiers. After the water is treated in the clarifiers, it flows over the clarifier weirs and is discharged through Outfall [redacted]. At approximately 3:20 pm, the effluent water appeared clear with slight turbidity. The Facility's ISCO 4230 Bubbler Flow Meter was measuring the effluent flow to be 1.215 MGD. Settled sludge and solids from the clarifiers are pumped to the Facility's two sludge digesters (see Photographs CWA-26 and 27). Round plastic balls are used in the digesters for temperature insulation purposes. The final pH of the Bioplant's effluent was measured to be 8.07 S.U., at approximately 3:37 p.m.

According to Bioplant operators, the last effluent violation that had occurred was January 2009. The Bioplant had a total suspended solids (TSS) violation due to recirculation pump failures.

Upon review of the Bioplant's sludge disposal records, it appears the sludge used to carry a K044 hazardous waste code listing for being reactive, but according to Facility

personnel, the sludge has been tested and found not to be reactive (see Attachment CWA-2). The sludge is now disposed-of in a RCRA Subtitle D sanitary landfill.

The Bioplant inspection was completed at approximately 3:45 p.m. This was the last site visited on May 17, 2011.

On May 18, 2011, at approximately 9:25 a.m., the CWA inspection continued at Building [redacted] (aka Blue Lagoon) (see Photographs CWA-30 to 32). The Blue Lagoon consists of four basins that are used as flow equalization for the AB Waste Acid Treatment Plant. The Blue Lagoon receives wastewaters from the acid and the nitrocellulose (NC) production areas, powerhouse water, and water from the fly ash pit. On the date of the inspection, Equalization Basin#1 and Equalization Basin #3 were the only basins that were in operation. Equalization Basin #1 was being used for nitrocellulose degradation while Equalization Basin #3 was being used for flow equalization.

After the Blue Lagoon was observed, the inspection continued at the AB Waste Acid Treatment Plant ([redacted]) (see Photographs CWA-33 to 51). At approximately 9:50 am, the Facility's pH meter was measuring the incoming influent (see Photograph CWA-33) to be 1.66 S.U. The AB Waste Acid Treatment Plant receives wastewater from the NAC/SAC; waste acid from TNT or DNT manufacturing; process wastewater from nitrocellulose purification, nitrocellulose nitration, and power house blow downs; stormwater runoff from manufacturing buildings; and water from the fly ash truck loading area. The associated outfall for the AB Waste Acid Treatment Plant is Outfall [redacted].

The AB Waste Acid Treatment Plant uses lime slurry to treat the incoming acid wastewaters. The treatment system essentially consists of lime slurry addition and sludge settling. The lime slurry is added in stages. The treatment plant has three tanks (Tank A, Tank B, and Tank C) where lime slurry is mixed and reacts with the acidic wastewaters to raise the pH. At approximately 9:57 a.m., Tank A's continuous pH meter was measuring the pH to be 2.65 S.U., Tank B's continuous pH meter was measuring the pH to be 6.23 S.U, and Tank C's continuous pH meter was measuring the pH to be 6.87 S.U. The sludge produced from the reaction of the lime slurry and the acidic wastewaters is mostly comprised of calcium sulfate. The sludge from the treatment process is settled out in a sludge settling tank, and the sludge is then pumped into one of eight sludge drying beds (see Photograph CWA-44). After the sludge passes a paint filter test, it is sent to North Carolina to be used as a soil amendment for petroleum contaminated soils. At approximately 11:23 a.m., the inspector observed the treatment plant's final effluent (see Photographs CWA-46 and 47). The effluent appeared straw yellow in color and was slightly turbid. The treatment plant's final effluent pH meter was measuring the effluent to be 6.77 S.U. The treatment plant's ISCO 4230 Bubbler flow meter was measuring the effluent flow to be 4.26 MGD, at approximately 11:27 a.m.

While the inspector was on-site at the AB Waste Acid Treatment Plant, the lime storage area was observed (see Photographs CWA-37 to 42). Lime was observed spilled on the soil where lime is unloaded from railcars (see Photograph CWA-38). Lime was also observed in and around a stormwater drain (see Photograph CWA-39). Upon further

review, lime grit was also being stored for disposal in roll-off bins (see Photographs CWA-40 and 41). The roll-off bins were not properly covered or otherwise protected from precipitation. Water was dripping out of the roll-off bins, and [redacted] used pH paper to approximate the pH of the water dripping out of the roll-off bin. The pH paper indicated the pH of the water dripping out of the roll-off bin was between 12 and 13 S.U. Before the inspection was over, the area Facility personnel had covered the roll off box with tarps to prevent rainwater from getting into the roll-off box. According to an email message received on August 15, 2011, the Facility has taken further actions and obtained a roll-off box specifically designed to keep rainfall out of the container; lime had also been cleaned off the ground where it is unloaded from railcars; and the Facility rerouted the storm sewer to discharge into the AB Waste Acid Treatment sewer system (see Attachment CWA-3).

At approximately 11:40 a.m., the inspection continued to the Sanitary Sewage Treatment Plant (Building [redacted]) (see Photographs CWA-52 to 59). This treatment plant is the main sewage treatment plant for RFAAP, and it receives mostly domestic type sewage. It has a design capacity of 1.0 million gallons per day (MGD); however, the plant has been operated at significantly reduced flows for the past few decades, due to fewer employees. The plant's current average flows are approximately 0.22 MGD. The plant's treatment units consists of: a bar screen, a flow equalization basin, two primary sedimentation basins , trickling filter, final clarifier, chlorination and dechlorination chambers, an anaerobic sludge digester, and sludge drying beds. The treatment plant's associated outfall is Outfall [redacted].

According to Sanitary Sewage Treatment Plant personnel, during rain events, acidic wastewater from the acid waste lines will enter the sanitary sewer collection system. Personnel stated acidic wastewater will enter the sanitary sewer lines because the acidic wastewater lines and the sanitary lines are cracked and are situated near each other. The acidic wastewater should only go to the AB Waste Acid Treatment Plant. During rain events, the sanitary sewage treatment plant will see dips in the pH of the incoming wastewater influent. At the time of the inspection, it was not raining, and the pH of the influent was measured to be 6.88 S.U. The wastewater treatment plant appeared to be operating under normal conditions, and the plant's effluent appeared clear with no solids or foam entering Outfall [redacted] (see Photograph CWA-59). The pH of the plant's final effluent was measured to be 7.20 S.U., at approximately 12:33 p.m.

After a break for lunch, the inspection continued at the Pipe Yard (Building [redacted]). The Pipe Yard had more than 150 oil filled electrical transformers. At least four of the transformers were observed leaking. The Pipe Yard and the leaking transformers pose as potential stormwater pollution sources. Photographs and further description of the Pipe Yard are mentioned in the SPCC portion of the multi-media inspection report.

The CWA inspection continued to Outfall [redacted] (see Photograph CWA-60). Outfall 401 is designed to monitor discharge from the coal pile stormwater runoff treatment plant clarifier. The coal pile stormwater runoff treatment plant clarifier adjusts the pH of the runoff and allows for the removal of solids from the system (see

Photograph CWA-65). At the time of the inspection, the effluent from Outfall [redacted] appeared clear, and the pH of the effluent was measured to be approximately 7 S.U.

After Outfall [redacted] was observed, the inspection continued at the coal pile storage pads (see Photographs CWA-61 to 67). Coal sediment was observed outside the coal pile storage pads. The coal sediment was observed on the east end. The east end of the coal pile storage pads drain toward Outfall [redacted] (see Photograph CWA-67).

Following the observation of the coal pile storage pads, the inspection continued at the Power House. At the Power House, the Facility's fly ash pit was observed (see Photographs CWA-68 and 69). Building [redacted] (aka Lead Burning Shop) was also observed (see Photographs CWA-70 to 73). Lead was being stored outside of the Lead Burning Shop, exposed to the environment. Lead was also being stored inside the Lead Burning Shop in trash bins.

On May 19, 2011, at approximately 9:30 am, the CWA inspection continued to the open burning ground to observe Outfall [redacted] (see Photograph CWA-74). Stormwater from a portion of the open burning ground discharges through a small settling pond and Outfall [redacted]. Waste propellant is burned once a day in shallow open pans. Ash is collected and disposed of after TCLP testing. According to [redacted], they have never collected a sample from Outfall [redacted] because the settling pond has not filled enough to produce an overflow.

The next few stormwater outfalls that were observed were Outfalls [redacted], [redacted] (see Photographs CWA-75 to 79). After [redacted] were observed, the inspection continued to Outfall [redacted] (see Photographs CWA-80 to 82). Outfall 024 was used to hold water from the old steam plant and drinking water plant, in the east basin and west basin. This area has been taken out of service, and Outfall [redacted] has been plugged to prevent any flows from the basins. At the time of the inspection, the outfall was observed to be plugged and there was no flow.

The next area that was observed was the Imhoff Tank area (Building [redacted]). Sanitary wastewater in the "horseshoe area" was formerly routed to the 0.07 MGD Imhoff Tank; however, the treatment system is now deactivated. Due to the current population of the area, septic tanks are now being used to collect sewage from the horseshoe area. In the event usage requirements increase, RFAAP retains the use of this facility. At the time of the inspection, the Imhoff Tank was not in operation and there was no flow. The associated outfall for the Imhoff Tank is Outfall [redacted] (see Photographs CWA-83 and 84).

After the Imhoff Tank area was observed, Outfall [redacted] was examined (see Photographs CWA-85 and 86). Outfall [redacted] drains the Hazards Test area. At approximately 10:32 am, no flow was observed at Outfall 015c. After Outfall [redacted] was observed, the inspection continued to Building [redacted] (see Photographs CWA-87 to 92). Eleven small electrical transformers were observed stored outside. Water coolers, refrigerators, and window air conditioning units were also stored outside.

On the way to the TNT area, Outfall [redacted] was observed (see Photograph CWA-94). The Outfall [redacted] drainage area includes: the magazine area, the Blue Lagoon area,

and the decontamination oven area. At approximately 11:05 am, a clear flow of water was observed in the outfall. Outfall [redacted] drains into Stroubles Creek. Mr. Reyna arrived at the TNT area at approximately 11:20 am (see Photographs CWA-95 to 98). The associated outfall for the TNT area is Outfall [redacted]. At the time of the inspection, there was only a slight flow from the outfall. The majority of the TNT area is not in operation. All industrial wastewater discharges from the TNT area are directed to the Bioplant for treatment. The outfall only receives stormwater from the TNT drainage area.

After a break for lunch, the inspection continued to the NG2 area. The EPA inspector was greeted by [redacted]. [redacted] gave a brief overview of the NG2 operation and its wastewater generation. On the access road adjacent to the NG2 area, there was white material covering the road (see Photographs CWA-99 to 101). [redacted] used pH paper to get an approximate pH of standing water that was located adjacent to the access road with the white material (see Photograph CWA-100). The pH paper indicated the pH of the standing water was approximately 12 S.U. The white material was determined to be caustic soda ash. Caustic water was found to be leaking from Building [redacted] (see Attachment CWA-4). Later that afternoon, the spill was cleaned up, and photographs of the clean up were sent to Mr. Reyna (see Attachment CWA-5).

After the caustic spill was observed and documented, the inspection continued to the "Orange Monster". The Orange Monster is an open grate water conveyance system that receives wastewaters and stormwater from the NG area. The waters are conveyed to Equalization tanks where the pH of the water is adjusted with sulfuric acid. The wastewater is then pumped to the Bioplant for further treatment.

Records Review

Upon review of RFAAP's Stormwater Pollution Prevention Plan, close attention was paid toward the most recent Annual Comprehensive Compliance Evaluation. The last evaluation was conducted by [redacted] in July 2010. The evaluation illustrated issues and concerns that were also observed during the current EPA multi-media inspection. For example, [redacted] mentioned coal sediment was observed outside the coal storage pad and lime was observed spilled on the ground at the AB Waste Acid Treatment Plant. However, corrective action measures were not mentioned or identified in the evaluations. Photographs of the concerns or corrective action were also not in the evaluation report.

D. Spill Prevention Control and Countermeasures (SPCC)

General Information

This portion of the multi-media inspection was conducted by EPA inspector José Jiménez. As part of the inspection, Mr. Jiménez completed the EPA SPCC Field Inspection and Plan Review Checklist, which is included as Attachment SPCC-1 to this report. This section addresses compliance with the Spill Prevention, Control and Countermeasure (SPCC) regulations and preparation of an SPCC Plan. No permits are required or issued under the federal SPCC regulations. The Clean Water Act (CWA) and the EPA's Oil Pollution Prevention Regulations require the preparation, certification and implementation of an SPCC Plan.

These regulations apply to any facility engaged in drilling, producing, gathering, storing, processing, refining, transferring or consuming oil and oil products, providing that all the following conditions are met: the facility is non-transportation related, the aboveground storage capacity of a single container is in excess of 660 gallons, or the aggregate aboveground storage capacity is greater than 1,320 gallons, or the total underground capacity is greater than 42,000 gallons, and due to the facility location, oil spilled at the facility could reasonably be expected to reach waters of the United States.

The Facility stores oil (as defined by EPA) in various forms, primarily fuel. According to the Facility's Oil and Hazardous Substance Spill Prevention and Response Plan, the RFAAP's aggregate above ground storage capacity exceed 1,320 gallons. The Facility is owned by the U.S. Army, and managed by ATK at the time of the inspection.

The Facility is located in the mountains of southwest Virginia in Pulaski and Montgomery Counties, and lies along the New River in Radford, Virginia. The New River divides the Facility in two sections, and is used as source of drinking water.

The Facility tank representative was [redacted], an ATK employee with four years of experience as Tank Manager. He is responsible for the SPCC requirements. [redacted] also answered some questions concerning training and the Facility emergency response team.

Documents Reviewed and Related Observations

On May 17, 2011, the EPA inspector, started to review the Facility's SPCC requirements. At the time of the inspection, the Facility had an SPCC Plan. The SPCC Plan was certified by a professional engineer on January 23, 2009 and signed by ATK and the Army representatives on January 5 and January 6, 2010, respectively. The Certification of the Applicability of the Substantial Harm Criteria was completed in January 2010.

According to pages 12 to 19 of the SPCC Plan, the plan provides an inspection schedule as follows: monthly inspections for shop-fabricated above-ground storage tanks (ASTs), piping, containment, dikes, and 55-gallon containers; daily inspections for field-erected tanks. According to [redacted] tank inspections are conducted monthly and

daily for the AST located at the Power Plant. Weekly inspection checklists for aboveground storage tanks are provided in Attachment SPCC-2.

Based on the SPCC Plan, the Facility has a large field-erected fuel oil tank for the powerhouse, many ASTs, oil-water separators, and 55-gallon containers. The SPCC Plan mentioned the existence of 163 oil-filled transformers, but did not provide specific information on their location or size. No secondary containment or alternatives to the secondary containment requirement were provided for this oil-filled operational equipment.

Based on the review of the SPCC Plan, the SPCC Plan does not have a list of contacts in case of an emergency. [redacted] stated that the Facility has a list of contacts. A redacted version of the Environmental Department Call list was provided to Mr. Jiménez during the inspection, which is included as Attachment SPCC-3 to this report. The SPCC plan also addresses tanks storing chemical products. According to [redacted], this is done based on U.S. Army regulations. Based on the SPCC Plan, two tanks were located in the Oleum Plant, but at the time of the inspection, the tanks were not longer at the Facility. The Facility provided a copy of the closure report for these two tanks (see Attachment SPCC-4).

No major oil spills have been reported by the Facility. The last oil spill occurred on May 4, 2010, and it was less than two gallons. A copy of the Environmental Event Report associated with this oil spill is included as Attachment SPCC-5 to this report. The Facility conducts annual spill drills.

Training for oil handlers are conducted annually. A computer-based training system is available to employees. The computer-based training system notifies the oil handlers, via e-mail, of the need to take the training. According to a list of trained people reviewed during the inspection, more than 300 people have been trained on SPCC compliance issues under Assignment A4-A-068, a U.S. Army guidance concerning tanks.

Facility Observations

As part of this inspection, other EPA inspectors observed some of the ASTs at the Facility. Photos were taken by Facility representatives during the inspection.

On May 17, 2011, around 1:45 p.m., Mr. Jiménez joined EPA Inspector Joe Reyna to visit several locations at the Facility. At the C-Line Acid Treatment, Mr. Jiménez observed a 275-gallon diesel tank. The tank had a secondary containment and a fuel level (see Photograph SPCC-1). At the Pump Station for the Bioplant, Mr. Jiménez observed a 500-gallon diesel tank (see Photograph SPCC-2). The tank had a fuel level, emergency vent and a secondary containment. At the fueling Station Area 7220, Mr. Jiménez observed a trench to capture spills from the refueling process (see Photographs SPCC-3 and 4). This trench is connected to an oil/water separator. The trench was observed with a lot of sediments in several sections, which could jeopardize the proper function of collecting and directing any spilled oil to the oil/water separator. The Facility proceeded to clean the trench at the time of the inspection.

At the Bioplant, Mr. Jiménez observed a 500-gallon diesel AST for an emergency power generator (see Photograph SPCC-5). The tank had an emergency vent, fuel level and secondary containment.

On May 18, 2011, around 2:00 p.m., Mr. Jiménez visited the Pipe Yard, because some oil-filled transformers were observed by one of the EPA inspectors the previous date. At the Pipe Yard, more than 150 oil filled transformers were observed by Mr. Reyna and Mr. Jiménez (see Photographs SPCC-6 and 7). None of the greater-than-55-gallon oil-filled transformers had secondary containment; furthermore, the SPCC plan did not address these items. Stained ground was observed around at least four of the oil-filled transformers. Based on name plates and/or labels, none of the transformers contained more of 50 parts per million (ppm) PCBs. The oil-filled transformers around which stained ground was observed were the following:

- Transformer RFA-16742: Based on its relative size, it appeared to have less than 55 gallons of oil. The transformer had a green label indicating that it contained less than 50 ppm PCBs (see Photograph SPCC-8).
- Transformer RFA-21110 (S/N 79330-01): Based on its relative size, it appeared to have less than 55 gallons of oil. The transformer had a green label indicating that it contained less than 50 ppm PCBs (see Photograph SPCC-9.
- Transformer RFA 16761 (S/N 6138306-03): Based on its relative size, it appeared to have more than 55 gallons of oil. The transformer had a green label indicating that it contained less than 50 ppm PCBs (see Photographs SPCC-10 and 11).
- Transformer RFA 16923: Based on its relative size, it appeared to have more than 55 gallons of oil. The transformer had a green label indicating that it contained less than 50 ppm PCBs (see Photographs SPCC-12 through 14).

After the visit to the area, the Facility provided photos that showed the Facility begining to address the apparently leaking units and the ground around those units.

From the pipe yard, the inspectors proceeded to the Coal Pile, where Mr. Jiménez observed an emergency power generator with a 310-gallon diesel Gen Set. According to [redacted], this emergency power generator is included in the SPCC Plan.

Around 3:20 p.m., Mr. Jiménez visited the Powerhouse Plant (Building [redacted]). A large AST was observed containing No. 2 Fuel Oil. The secondary containment area was in good condition. A visual inspection of the tank from the outside showed a tank to be in good condition. According to [redacted], the tank is inspected daily. The area had light poles.

Three 22,000-gallon fuel oil tanks were observed in front of the power plant (see Photograph SPCC-15). These tanks were not identified in the SPCC Plan. According to [redacted], the tanks were empty and not connected to a process (see Photographs SPCC-16 to 18). Concerns were raised with the possibility of connecting theses tanks to

a process in the future. The tanks do not have a secondary containment. According to the Facility, the tanks will not be used in the future. The tanks were not permanently closed.

Additional observations made by the other EPA inspectors include the following:

- An oil-filled transformer located next to a drain outside Building [redacted] at the Nitroglycerin Production Area that had no secondary containment (see Photograph SPCC-19);
- A 1500-gal Diesel AST located outside Building [redacted] at the Nitroglycerin Production Area (see Photograph SPCC-19);
- Three ASTs at the Hazards Test Area that were marked with the words "used oil" and additional wording indicating that the tanks had been permanently closed on March 16, 2010" (see Photograph SPCC-20);
- A 300-Gallon Diesel AST at the OBG (see Photogaph SPCC-21);
- A 275-Gallon diesel AST at the Nitroglycerin Production Area Lift Station 906-15 (see Photograph SPCC-22); and
- Three Gen Sets and two ASTs at the Hazardous Waste Incinerator Complex (see Photographs SPCC-23 to 26).

E. EPCRA Section 313 Toxic Chemical Release Reporting

The Title III of the 1986 Superfund Amendments and Reauthorization Act (SARA) (also known as the Emergency Planning and Planning and Community Right-to-Know Act [EPCRA]) requires all manufacturing facilities to annually report to the public information about stored toxic substances, as well as about releases of such substances, into the environment. The report is known as the Toxic Release Inventory (TRI). Executive Order (EO) 12856 made the TRI reporting requirement applicable to all Federal facilities. Consequently, Federal facilities were required to submit their first set of TRI data to EPA on July 1, 1995.

Section 313 of EPCRA requires those facilities subject to the EPCRA 313 requirements to report to the Federal and state governments the annual quantity of toxic chemicals (listed in 40 C.F.R. Section 372.65) entering each environmental medium, either through normal operations or as the result of an accident, quantities transferred off-site in waste, as well as other information. Facilities subject to this requirement must submit to EPA and state officials a toxic chemical release form (Form R) for each toxic chemical manufactured, processed, or otherwise used in quantities exceeding minimum threshold values during the preceding calendar year. Releases that must be reported include those to air, water, and land (including land disposal and underground injection). In addition, discharges to a POTW and transfers to off-site locations for treatment, disposal, energy recovery, and recycling must also be reported. Facilities must also report on the quantities of the chemicals treated, recycled, or combusted for energy recovery on-site. Form R reports must be submitted to both the EPA and the state on or before July 1. Copies of Form R reports and related documentation must be kept at the facility for three years after the report is submitted.

On May 19, 2011, the EPA Inspector José J. Jiménez met [redacted]. He is the technical contact concerning EPCRA 313 requirements.

Facility Background

The Facility has 1,500 employees and their primary activity is manufacturing ammunition. The NAICS is 332993 or Ammunition Manufacturing (SIC = 3483, Ammunition). According to the EPA internal database OTIS (the EPA Online Tracking Information System), the Facility has reported under EPCRA Section 313 since 2001.

TRI threshold quantity determinations are based on the amount of the EPCRA Section 313 chemical that is manufactured, processed or otherwise used; separate thresholds apply to the amount of the EPCRA 313 chemical.

Inspection Observations

For reporting years 2007 and 2008, the Facility submitted 12 and 13 Form Rs, respectively (see Attachment EPCRA 1 for a view of all 313 Chemicals reported by the Facility on those two years). For reporting year 2009, the Facility submitted 13 Form Rs. Due to time limitation during the inspection, Mr. Jiménez selected Nitrate Compounds for reporting year 2009 to be reviewed during the inspection (see Attachment EPCRA 2

for a copy of the Nitrate Compounds 2009 Form R, and Attachment EPCRA 3 for information used for the preparation of the Form R for Nitrate Compounds). Also, the EPA inspector evaluated 313 chemicals that were below the reportable threshold and did not meet the reporting thresholds, these were: Barium, Zinc, Methanol and Polycyclic Aromatic.

Nitrate Compounds

According to [redacted], 90 percent of the reportable Nitrate Compounds are generated from the treatment of waste water generated in some of the processes. The Nitrate Compounds calculations are based on outfall readings taken every Tuesday. These readings are average per months in Kg/day. Calculations were not available at the time of the inspection, but according to [redacted], the following equation was used to estimate the releases:

Reportable Release for Nitrate = Average Daily Flow * Monthly Average Concentration * 2.1 * Days* 62/14.

Where:

- 2.1 is the weight conversion factor between pounds and kilograms;
- Days are the days in a month; and
- 62/14 is the molecular weight ratio between nitrate and nitrogen.

The nitrate releases were calculated every month.

F. Clean Air Act (CAA)

This section addresses evaluation of compliance with the Clean Air Act (CAA) related to stationary air emissions sources and ozone depleting substances (ODSs). This portion of the multi-media inspection was conducted by Mr. Michael Prescott, EPA Contractor.

Current Applicability and Permit Status

Radford Army Ammunition Plant is subject to the CAA due to its emissions of air pollutants from two hazardous waste incinerators, four coal and oil fired boilers, several chemical and ammunition component production plants, and other sources. The Facility was issued a Virginia Title V Operating Permit by the Virginia Department of Environmental Quality (VADEQ) (Source ID 511200006) for the air emissions sources with an effective date of January 15, 2004 and for a period of five years, but the permit has been administratively continued past the expiration date of January 14, 2009 until VADEQ can renew the Permit. The Facility also has numerous air conditioning and refrigeration (ACR) units with ODSs that are regulated under Title VI of the CAA and a general condition in the Title V Permit.

A CAA Synthetic Minor Permit (Source ID 511210082) had been previously issued to New River Energetics (NRE), but this permit was incorporated into the RFAAP Title V Permit when it was issued in 2004. According to [redacted], Environmental Manager for Alliant Techsystems, Inc. (ATK), NRE is a private facility located on the RFAAP property that makes gunpowder for commercial use. Consequently, NRE was not evaluated for CAA compliance because it was not within the inspection's scope. According to [redacted], Air Program Manager for ATK, RFAAP had submitted several notifications of new sources to VADEQ that required a New Source Review (NSR) be conducted for each source and permits were subsequently issued by VADEQ on July 11, 2008, to construct and operate an energetic material pilot plant and on December 21, 2009, to construct and operate two ammonia oxidation production (AOP) units, an activated carbon recovery system, and a water layer stripping column. [redacted] reported that only the energetic material pilot plant had started operating and that it only ran a few days per year. No compliance concerns had been identified by ATK during these operating days.

RFAAP is a major source of air pollutants, but many of the emissions units are older units that are not regulated by Federal standards. Consequently, large reductions of these air pollutants are unlikely without new standards being issued (e.g., the Boiler Maximum Achievable Control Technology (MACT) standards) or with replacement or major retrofitting of the units.

Previous Compliance Inspections and Enforcement Actions

VADEQ's current inspection schedule provides for conducting a CAA full compliance evaluation (FCE) of RFAAP about every two years, and partial compliance evaluations (PCEs), as needed, of report submittals, observing stack tests, etc. VADEQ

reports of the FCE completed in April 2010 and PCEs back to March 19, 2009 were obtained from VADEQ, as well as Notices of Violations (NOVs) and follow-up Consent Orders (COs), for the past three years. The most recent FCE at RFAAP was started in December 2009 with a PCE of the boilers at the Powerhouse and finished up in March and April 2010 with evaluations of the rest of the major emission sources at the Facility.

The following bullets summarize the noncompliance identified in the last VADEQ FCE, in significant PCEs, and in enforcement actions for the past three years:

- June 4, 2008 NOV and May 14, 2009 CO with a $3,510 penalty for failure to maintain records of visible emissions and record an inspection as identified in a report submitted by RFAAP.
- March 19, 2009 PCE review of the 2008 Annual Compliance Certification (ACC): Noncompliance and intermittent noncompliance issues were identified in the ACC including excess visible emissions from the boilers and Piccolo scrubber and failure to record visible emissions.
- September 22, 2009 PCE visit to observe Comprehensive Performance Test (CPT) of Hazardous Waste Incinerators (HWIs) Units [redacted] and January 8, 2010 PCE review of CPT Report for the HWIs: The CPT demonstrated that the semi-volatile metals (SVM) standard for lead and cadmium combined was exceeded.
- December 8, 2009 PCE of Powerhouse Boilers and March 24 to April 20, 2010, FCE of the rest of the Facility: The PCE of the Powerhouse Boilers did not identify any noncompliance, but the FCE identified noncompliance with the HWIs including the SVM exceedance described above and operation and recordkeeping deficiencies. An NOV and a CO were issued for the SVM exceedance (see next bullet) and a warning letter was issued for the operation and recordkeeping deficiencies.
- February 9, 2010 NOV and March 22, 2010 CO with a $20,388 penalty for the SVM exceedance at the HWIs described above. During the FCE, a PCE was conducted on March 24, 2010 that consisted of observing the follow-up CPT that demonstrated compliance with the SVM standard.
- March 11, 2010 PCE review of the 2009 ACC: Numerous noncompliance and intermittent noncompliance issues were identified in the ACC including excess opacity from the boilers and excess visible emissions from the Piccolo scrubber, the fired heater acid gas outlet temperature was less than the permitted range during the operation of the selective catalytic reduction (SCR), and failure to record visible emissions.
- January 10, 2011 NOV and April 5, 2011 CO with a $20,309 penalty for the exceedance of the carbon monoxide standard during the November 23, 2010 stack test of the new Nitric Acid Concentrator/Sulfuric Acid Concentrator (NAC/SAC). The CO contained a schedule of compliance for meeting carbon monoxide emission standards.

- March 9, 2011 PCE review of the 2010 ACC: Numerous noncompliance and intermittent noncompliance issues were identified in the ACC including excess opacity from the boilers and excess visible emissions from the Piccolo scrubber, operator errors, and the fired heater acid gas outlet temperature was less than the permitted range.

No prior CAA Title VI compliance evaluations for ODSs are known to have been conducted by EPA or VADEQ and no known enforcement actions related to ODSs have been taken.

Facilities Inspected and Related Observations

Because of the constraints and dangers related to visiting many of the production processes and the limited time available for the inspection, only a few select processes were physically inspected for compliance with applicable regulations and permit conditions. These processes included the HWIs, the four operating boilers at the Powerhouse, and the coal storage area. Also, the emissions from the SCR exhaust and Piccolo scrubber at the Nitrocellulose Plant, and the open burning of energetics wastes at the open burning ground were observed from a safe distance to check for obvious visible emissions. In addition, the ATK Heating Ventilations and Air Conditioning (HVAC) Shop and an area where refrigerants were stored were also visited.

The processes and areas visited and related observations are presented below according to the chronological order they were visited. These observations are based on interviews with RFAAP personnel supplemented with physical observations, where possible. The EPA contractor inspector, Michael Prescott, was accompanied by [redacted] and other RFAAP environmental staff during the inspection. Photographs referenced below were taken using EPA or RFAAP cameras, but were screened by RFAAP. Observations of visible emissions made during the inspection and described below were casual observations and did not comply with EPA Method 9 requirements.

Open Burning Ground

The Open Burning Ground is located along the New River shoreline and, according to [redacted], is used almost daily for burning of waste propellants, except when weather conditions do not allow burns. I observed a burn from the opposite shoreline that lasted for about 10 minutes and generated visible emissions (see Photographs CAA-1 and 2). A technician present during the burn reported that burns can last as long as two to three hours. This area is not specifically regulated by the Title V Permit or any other VADEQ CAA permit.

Hazardous Waste Incinerators

According to [redacted], the two active HWIs were installed and began operation in the 1970s and are used to destroy hazardous waste propellants generated from the production processes on-site. [redacted] also reported that a third incinerator next to the other two had not been used since the 1970s. The incinerators were retrofitted with baghouses in 1993 and also have scrubbers for the final air emissions.

[redacted] reported the hazardous waste burned in the incinerators is reactive and fails the Toxicity Characteristic Leaching Procedure (TCLP) for lead and 2, 4-Dinitrotoluene. These incinerators are regulated by the Title V Permit and by the EPA MACT regulations in 40 CFR Part 63, Subpart EEE. Discussion of the review of records related to these incinerators is provided in the subsection below.

At the time of the inspection, the two incinerators were not burning hazardous waste because a contractor was relining the kiln for the Building [redacted] incinerator. One of the Propellant Incinerator Control Operators (PICOs) reported the Building [redacted] incinerator was burning natural gas to keep it warmed-up until the contractor left for the day and hazardous waste could again be fed into the incinerator.

Mr. Prescott inspected the waste preparation area in Building [redacted] and the two incinerators. Mr. Prescott also visited the control room for the incinerators and reviewed the operating records for May 2011 that were present. Mr. Prescott did not identify any concerns during these inspections and on those records reviewed during the inspection.

One of the PICOs reported the wood roof and supporting structure for the Building [redacted] incinerator had burned down in 2005 and 2006, and was eventually replaced with a metal roof and supporting structure. However, the Building [redacted] incinerator still had a wood roof and structure that could similarly catch on fire and adversely affect the incinerator.

Powerhouse Boilers

Five large boilers are located in the Powerhouse building that provided steam for the Facility. These boilers were installed in 1941 and overhauled in the 1980s, but the burners were replaced with units that did not increase the emissions rates (per [redacted]). The boilers are equipped with electrostatic precipitating systems (ESPs) and use a common exhaust stack. Boiler #1 was no longer operational and the Title V Permit Renewal Application stated it should be removed from the future permit. According to [redacted], all of the boilers burn coal as the primary fuel, and use fuel oil as backup and when significant loading changes occur. Discussion of the review of records related to these boilers is provided in the subsection below.

[redacted] reported that low Sulfur coal (below 1%) cannot be used in the boilers because it reduces the efficiency of the ESPs. Based on the coal analyses that accompany every shipment provided by [redacted], Powerhouse Engineer, at the time of the inspection, the sulfur content varied from between 1.2 and 1.35 percent.

At the time of the inspection, Boilers [redacted] were operating. No visible emissions were observed in the common stack emissions. This stack is equipped with a continuous opacity monitor that was showing an opacity reading of 2.8 percent, instantaneously, and 3.0 percent, on a rolling 6 minute average. Mr. Prescott also inspected the coal receiving area, ESPs, boilers, and control area and did not identify any observable concerns at the time of the inspection.

Nitrocellulose Plant

Mr. Prescott did not inspect the inside of the Nitrocellulose Plant (see Photograph CAA-3), but inspected the emissions from the SCR exhaust and Piccolo scrubber. Mr. Prescott did not see visible emissions from the SCR exhaust stack (see Photograph CAA-4) which was operating, and the Piccolo scrubber was not operating (see Photograph CAA-5). [redacted] reported the Piccolo scrubber only operates when the Nitrocellulose process and the SCR are shutdown and the Piccolo scrubber is then switched on to treat the nitric acid tank emissions. Discussion of the review of records related to this plant is provided in the subsection below.

Contaminated Scrap Burn Area

According to [redacted], the contaminated scrap burn area is used to accumulate and burn solid waste that may be contaminated with energetics. The last burn was in February 2006, but additional waste had recently been accumulated for another burn. Mr. Prescott observed solid wastes were being accumulated in the area which consisted of wood, tanks, and piping (see Photograph CAA-6). This area is not specifically regulated by the Title V Permit or any other VADEQ CAA permit.

Coal Storage Area

[redacted] reported the coal storage area contained coal for both RFAAP and Virginia Tech University. Mr. Prescott observed no fugitive dust emissions at the time of the inspection (see Photograph CAA-7), but there had been rain showers recently. According to [redacted], RFAAP does not employ dust suppression, but he has never seen any fugitive emissions from the coal, likely as a result of the type of coal used.

ATK HVAC Shop and Building [redacted]

At the ATK HVAC Shop, Mr. Prescott met with the two ATK Refrigerant Technicians, [redacted]. Both of these technicians provided copies of their refrigerant management certifications. Mr. Prescott observed four refrigerant recovery units at this shop and they were approved for the refrigerants recovered by the Facility. Recovered refrigerants were stored in the van used to service ACR units. Discussion of the review of records related to this shop and ACR units is provided in the next subsection.

Mr. Prescott also visited Building [redacted] and the surrounding area in response to observations made by Joe Reyna, the EPA CWA inspector. Mr. Prescott checked the five refrigerant 30-pound cans in the metal recycling dumpster and they were all empty. Mr. Prescott observed two 30-pound cans of refrigerant in the building and [redacted] reported on May 26, 2011, that [redacted] told him the cans contained refrigerant that ATK Technicians had recovered from appliances.

<u>Documents Reviewed and Related Observations</u>

Numerous documents were obtained in advance of the inspection, as well as during the inspection. Because there was a recent FCE conducted by VADEQ that included a comprehensive review of most of the documents, plans, and records required

by the Title V Permit, and due to the time constraints for inspecting such a large complex Facility, Mr. Prescott did not review many of the records previously reviewed by VADEQ. These records included the maintenance schedules and records of all maintenance, inspection schedules and records of inspections, written operating procedures for process and air pollution control (APC) equipment, and records of training provided to equipment operators for several regulated processes, as listed in the Title V Permit. Following is the list of documents reviewed as part of the inspection; observations related to the review of these records are presented according to whether they apply generally to the Facility or to a particular process or operation::

1. VADEQ Title V Operating Permit #VA20656 effective January 15, 2004 and expired January 14, 2009.
2. Statement of Basis for VADEQ Title V Operating Permit #VA20656.
3. RFAAP Title V Permit Renewal Application dated June 2008.
4. VADEQ Operating Permit for explosives production Line B effective January 11, 2005 with no expiration date.
5. Miscellaneous Organic National Emissions Standards for Hazardous Air Pollutant (NESHAP) Compliance Report from ATK dated January 10, 2011 reporting the explosives Production Line B was not operating.
6. VADEQ Permit to construct and operate an energetic material pilot plant issued on July 11, 2008 with no expiration date.
7. VADEQ Permit to construct and operate the new NAC/SAC Plant issued on December 2, 2008 with no expiration date.
8. VADEQ Permit to construct and operate two ammonia oxidation production units, an activated carbon recovery system and a water layer stripping column issued on December 21, 2009 with no expiration date.
9. Enforcement actions and correspondence between VADEQ and the Facility related to various CAA issues.
10. VADEQ CAA Reports for a FCE on-site inspection conducted from December 2009 to April 2010 and numerous PCEs with on-site visits and off-site document reviews conducted between March 19, 2009 and March 19, 2011.
11. Title V Annual Compliance Certifications for 2008, 2009, and 2010.
12. Semi-Annual Monitoring Reports (SAMRs) for 2009 and 2010.
13. 2005 to 2010 Emissions Inventories.
14. Summary of Visible Emission Exceedances for Powerhouse Boilers in 2011.
15. Operating logs for HWIs.
16. Operating logs and analyses for fuel shipments for Powerhouse Boilers.

17. List of ACR units with greater than 50 lbs. of regulated refrigerants.
18. ACR service records for the two contractors for 2009 to 2011.
19. Copies of refrigerant management certifications for ATK and contractor ACR service technicians.
20. Copy of the notification to EPA of refrigerant recovery and recycling devices owned by ATK.

General Facility

According to [redacted], the following air emissions sources and related operations regulated by the Title V Permit are no longer in operation:

- Powerhouse Boiler No. 1
- Waste Oil Boilers
- All DNT and TNT production units
- Old NAC/SAC Plant
- Paint spray booth at the Facility's maintenance shop.

Mr. Prescott compared the known air emissions units at the Facility with the list of air emissions units in the Title V Permit and other VADEQ Permits and Mr. Prescott did not identify any units that were not included in permit applications and notifications to VADEQ, except new emergency generators, which are identified as insignificant sources by the Title V Permit.

The pollutant emissions inventories for RFAAP for the years 2005 to 2010 are contained in Attachment CAA-1. As shown in the inventories, RFAAP is a large emitter of volatile organic compounds (VOCs) – 1,491 tons per year (TPY), NOx – 1,388 TPY, SO2 – 2,779 TPY, and other pollutants for a total of 6,013 tpy in 2010. [redacted] indicated VOCs were not specifically controlled in most areas and calculations of VOCs emissions were developed using Facility-wide mass balance calculations. RFAAP has implemented some Facility changes to reduce VOCs emissions from solvents, and the total VOCs emitted has gone from 3,903 tpy in 2006 to the 1,491 tpy in 2010. RFAAP has also installed a new solvent recovery system which should be going online soon and should reduce VOCs emissions by another 100 – 200 tpy (according to [redacted]). For most of the other pollutants, the coal fired boilers are the primary emissions sources, and no reductions in these emissions are anticipated until major changes to the boilers and/or APC equipment are implemented.

The 2009 and 2010 ACCs and SAMRs identified numerous noncompliance issues and intermittent noncompliance including the following:

- Visible emissions exceedances from the four operational coal and oil fired boilers at the Powerhouse;
- Visible emissions exceedances from the old NAC/SAC incinerator exhaust;

- Excess visible emissions from the Piccolo scrubber for the Nitrocellulose Plant;
- The Nitrocellulose Plant fired heater acid gas outlet temperature was less than the minimum temperature during the SCR operation on numerous occasions; and
- Operator errors and recordkeeping deficiencies facility-wide.

Table CAA-1 lists the visible emissions exceedances and the number of times they occurred during the period covered by the 2009 and 2010 SAMRs. Copies of the two SAMRs for 2010 are provided in Attachment CAA-2.

Additionally, a summary of visible emissions exceedances for 2011 through May 25, for the Powerhouse Boilers is provided in Attachment CAA-3. This summary showed 67 incidents of visible emissions exceedances and six incidents lasting more than one hour and requiring reporting to VADEQ.

Powerhouse Boilers

As noted previously, the four operating boilers at the Powerhouse were installed in 1941, and primarily burn coal. According to [redacted], the ESP units were upgraded to increase efficiencies about two years ago. Excess visible emissions observations for the Powerhouse boilers have regularly been noted in the SAMRs submitted to VADEQ. The number of excess emissions deviations is provided in Table 1, for 2009 and 2010, and in Attachment CAA-3, for 2011 through May 25. The excess visible emissions were attributed to startup, shutdown, soot blowing, and malfunctions, and RFAAP asserted that they continued to maintain and operate the boilers and associated APC equipment in a manner consistent with air pollution control practices for minimizing emissions as required by the Title V Permit. There were also exceedances due to increases in steam demand, cleaning, testing, burner fire, and unknown causes (see Attachment CAA-3).

[redacted] reported a continuous opacity monitor was used to identify exceedances to allow for quicker response to problems, even though the monitor was not required by the Permit. The use of the opacity monitor does result in more instances of recorded emissions exceedances.

In December 2010, a series of malfunctions occurred resulting in 15 visible emissions exceedances lasting for over an hour each over six days (see December 21, 2010 letter in the 2H 2010 SAMR in Attachment CAA-2 and Attachment CAA-3). There were also further exceedances in February 2010 (see February 18, 2011 letter in Attachment CAA-4). In response to these exceedances, VADEQ issued a warning letter to RFAAP on March 16, 2010 requiring a response within 20 days detailing the actions taken or that would be taken to ensure compliance with state laws and regulations (see Attachment CAA-4). The Facility responded on April 6, 2011 with a letter discussing the causes and actions taken (see Attachment CAA-4).

According to [redacted], RFAAP has considered many options for improving operation of the boilers ranging from installing new APC equipment to switching to

natural gas as a fuel. RFAAP had started planning for compliance with the Boiler MACT rules until they were vacated in June 2007, issued again, and then delayed in 2011. At the time of the inspection, RFAAP does not anticipate making any large capital expenditures until the Boiler MACT rules are finalized (per [redacted]).

Hazardous Waste Incinerators

As discussed previously, the two operating HWIs were installed and began operating in the 1970s. A CPT was conducted on September 22, 2009, and semi-volatile metals (lead and cadmium) emissions exceeded the applicable standard. [redacted] reported this was likely a result of the spiked lead waste that was burned. VADEQ and RFAAP signed a CO with a $20,388 penalty as a result of this emissions exceedance. According to [redacted], the controls on the HWIs were substantially upgraded during the summer of 2010 and the second CPT, conducted on March 24, 2010 without spiked lead waste, showed all standards were passed. Consequently, this CO was closed out (per [redacted]).

There were also operational and recordkeeping deficiencies identified in the FCE conducted by VADEQ in 2010. In addition, there were deviations identified by RFAAP in 2011, although there were no 60-day rolling periods with 10 or more exceedances requiring reporting under the Subpart EEE MACT rules.

According to [redacted], the HWIs have been operating very well since the upgrades made in the summer of 2010, and it appears that the significant problems experienced in the past have been corrected. There are still some occasions when the operating parameter limits (OPLs) are exceeded, but the automatic waste feed cutoff (AWFCO) system shuts down the feed of hazardous waste and the operators correct any problems before wastes are fed again (per [redacted]).

NAC/SAC Plant

At the time of the inspection, RFAAP was under a CO issued by VADEQ and signed by the Facility representatives on March 30, 2011, for exceedances of the carbon monoxide emission standard from the new NAC/SAC Plant, as demonstrated in a stack test conducted on November 23, 2010. The CO contained a schedule of compliance that included submittal of a Best Achievable Control Technology (BACT) analysis for controlling carbon monoxide emissions (due by May 20, 2011), submittal of a construction schedule for the installation of additional APC equipment by June 30, 2011, and follow-up stack testing within 60 days after installation of the APC equipment. RFAAP has continued to operate the NAC/SAC Plant with these continuing exceedances of carbon monoxide. The old NAC/SAC Plant had visible emissions exceedances up until it was shut down and replaced with the new plant.

Nitrocellulose Plant

RFAAP identified several occasions in 2009 and 2010 when the temperature in the fired heater acid gas outlet was less than 500 degrees F. during the operation of the SCR at the Nitrocellulose Plant, as required by the Title V Permit. [redacted] reported that this occurred when the Nitrocellulose process shutdown and because the setpoint for the temperature alarm had been set at 500 degrees F. which resulted in these deviations.

After deviations occurred on July 17, 2010 and August 1, 2010, adjustments were made to the setpoint for the alarm to go off at 550 degrees Fahrenheit to allow for operational changes to be made prior to going below the temperature limit. Since these adjustments were made, Mr. [redacted] reported there had been no deviations of this temperature requirement. According to Mr. [redacted], the Piccolo scrubber visible emissions exceedances have been decreasing primarily because it has been used less often. There were no exceedances in 2011.

Wastewater Treatment Plant Equalization Tanks

Mr. Prescott reviewed records of data for VOCs, ethanol, and ether generated by ATK to comply with the Title V Permit conditions for influent loadings of VOCs based on daily ethanol and ether concentrations. Mr. Prescott did not identify any exceedances of emissions limits from the January 2009 to May 2011. In fact, the influent loadings of VOCs and concentrations of ethanol and ether generated results that were far below the limits in the permit.

ATK HVAC Shop and Contractors Servicing ACR Units

According to [redacted], ACR units had been serviced by both ATK and contractor technicians up until June 2009 when ATK technicians went on disability. The two ACR service contractors, Johnson Controls and Comfort Systems, have continued servicing the ACR units at the Facility up to the present time, but two ATK technicians were hired in September 2010 and are slowly transitioning to take over most servicing of ACR units (per [redacted]).

ATK, Johnson Controls, and Comfort Systems were able to produce copies of refrigerant training certifications for the two in-house technicians and the contractor technicians working on ACR equipment at RFAAP. Refrigerant recovery equipment used by ATK was inspected and all had the required approvals on them and ATK was able to produce a copy of the notification to EPA of the acquisition of the equipment.

During the inspection, [redacted] provided a table listing ACR units with greater than 50 lbs. of regulated refrigerants that was only recently prepared on an unknown date (see Attachment CAA-5). Note that this list includes ACR units that are at commercial tenants of the Facility that were not part of the inspection, and that these are crossed out. Mr. Prescott reviewed the contractor service records for ACR units at the Facility for 2010 and identified numerous discrepancies that Mr. Prescott noted in a request for clarification which Mr. Prescott sent to [redacted] at RFAAP in an email on May 27, 2011. Mr. Prescott received a partial response from [redacted] on June 10, 2011 (see Attachment CAA-6 for a copy of the discrepancies and RFAAP's responses) and the balance of the response related to servicing of the Metrology ACR units on June 21, 2011 (see Attachment CAA-7 for copies of these emails). The following is a summary of some of the key discrepancies and concerns related to the ACR units' service records:

- There were service records for the ACR units at Buildings [redacted] and [redacted] that showed additions of R-22 greater than 50 lbs., but these units were not listed on RFAAP's list of ACR units. RFAAP reported these were inadvertently left off the list (see the explanation in Attachment

CAA-6). Additionally, there were service records for an ACR unit at Building [redacted] showing additions of greater than 50 lbs. of R-22. RFAAP reported this unit was not on the list of units because it was supposed to be mothballed (see the explanation in Attachment CAA-6).

- RFAAP has not performed the calculations necessary to determine the leak rates for ACR units with greater than 50 lbs. of regulated refrigerants at the Facility.
- One of the ACR contractors, Johnson Controls, implemented a system in March 2010 to provide leak rates to customers, but my review of their service records since then showed that leak rates were not always provided, and some of the leak rates provided were suspect. Furthermore, some of the records showed leak rates exceeding the regulatory threshold rates requiring servicing and potentially making EPA notifications for comfort cooling units.
- For two ACR units at Building [redacted] Metrology, there were numerous additions of R-22. For the unit with serial number [redacted] with a 225 pound capacity of R-22: 60 lbs. on May 4, 2010, 150 lbs. on May 19, 2010, 180 lbs. on May 22, 2010, 30 lbs. on July 9, 2010, for a total of 360 lbs; and for the unit with serial number [redacted] with a 225 pound capacity of R-22: 45 0n March 8, 10, 30 on March 18, 2010, 52 lbs. on April 14, 2010, 90 lbs. on May 12, 2010, 30 lbs. on May 24, 2010, 60 lbs. on May 27, 2010, 180 lbs. on October 14, 2010, and 210 lbs. on October 22, 2010, for a total of 682 lbs. As shown in the documents in Attachment CAA-6, these units were removed from service in March 2011 and are being replaced.
- For the ice flake machine in Building [redacted] with a charge of 125 lbs., 30 lbs. of R-22 were added on March 26, 2010, 54 lbs. on July 20, 2010, and 45 lbs. on August 2, 2010, for a total of 129 lbs.
- For the condenser in Building [redacted] with a charge of 80 lbs., the following quantities of R-22 were added on the noted dates: 30 lbs. on January 20, 2010, 26 lbs. on February 22, 2010, 30 lbs. on February 23, 2010, 28 lbs. on April 12, 2010, 20 lbs. on August 7, 2010, and 15 lbs. on September 3, 2010, for a total of 149 lbs.
- For the condenser in Building [redacted] with a charge of 90 lbs., 60 lbs. of R-22 were added on July 2, 2010 and 60 lbs. of R-22 were added on July 9, 2010.
- The following quantities of R-22 were added to the specified buildings ACR units on the noted dates: 55 lbs. at Building [redacted] on September 22, 2010; 40 lbs. at Building [redacted] over two weeks in May 2010; 58 lbs. at Building 5010 on January 22, 2010; and 47 lbs. at Building [redacted] on September 3, 2010.

Despite the additional information provided by the Facility on June 10 and 29, 2011, and the concerns and discrepancies noted above, the ACR service records provided by the Facility were incomplete.

RFAAP has not used refrigerant management software to manage refrigerant data in the past, but the Facility recently purchased such software. [redacted] reported that training on the software was scheduled for June 2011, for the two ATK technicians, and that implementation of the software would follow thereafter.

According to [redacted], no motor vehicle air conditioning systems are serviced at RFAAP; all such systems are serviced off-site by contractors.

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Tables

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Table RCRA-I- 1: UST & Piping Details for Radford Army Ammunition Plant

Tank #	Material Stored	Capacity (gal.)	Installation Date	Tank Construction Material	Piping Construction Material
Tank [redacted]	Gasoline	20,000	July 1992	DW fiberglass	Fiberglass w/secondary containment
Tank [redacted]	Gasoline	20,000	July 1992	DW fiberglass	Fiberglass w/secondary containment
Tank [redacted]	Diesel	25,000	July 1992	DW fiberglass	Fiberglass w/secondary containment

Table CAA- 1: Number of Exceedances for Visible Emission Limits

EXCEEDANCE TYPE	1H 2009	2H 2009	1H 2010	2H 2010
Boiler Visible Emissions Limits (VELs)	97	131	157	128
Boiler VELs > 1 hour	1	5	3	15
Old NAC/SAC VELs	59	77	14	Taken out of service
Piccolo VELs	11	5	1	0

Photographs

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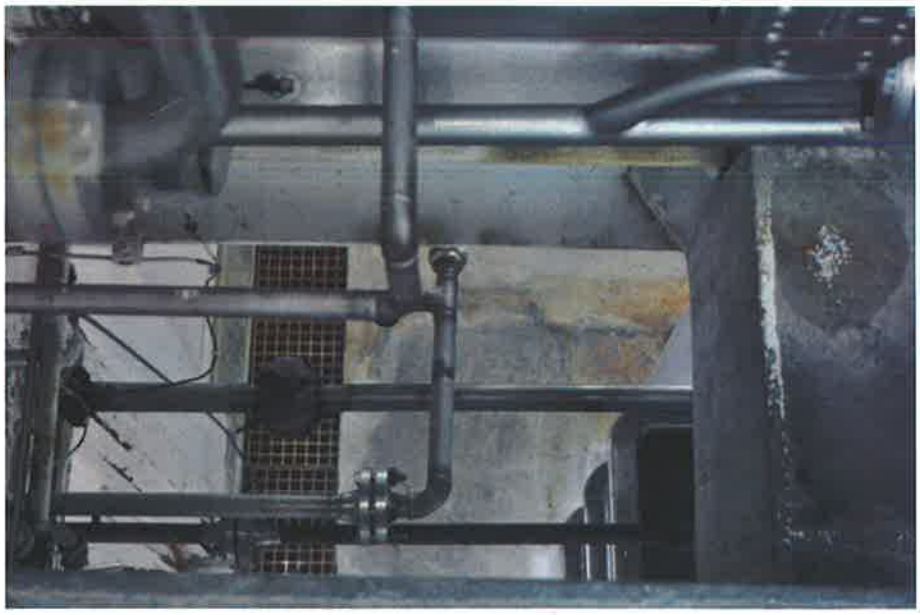
Photograph RCRA-C - 1: Building [redacted] - Bottom of Acid Separator - EPA Audit 127



Photograph RCRA-C - 2: Building [redacted] - Portion of 1-inch Spent Acid Pipeline not over the Nitration Drowner Tank - EPA Audit 128

Photograph RCRA-C - 3: Building [redacted] - Spent Acid Diluter - EPA Audit 131

Photograph RCRA-C - 4: Building [redacted] Head Tank House - EPA Audit 134

Photograph RCRA-C - 5: Building [redacted] Head Tank House - EPA Audit 135

Photograph RCRA-C - 6: Spent Acid Transfer Lines between Buildings [redacted] - EPA Audit 132

Photograph RCRA-C - 7: Setting of Spent Acid Transfer Lines between Buildings [redacted] - EPA Audit 133

Photograph RCRA-C - 8: Building [redacted] Spent Acid Tank [redacted] - EPA Audit 137

Photograph RCRA-C - 9: Building [redacted] Spent Acid Tank [redacted] - EPA Audit 138

Photograph RCRA-C - 10: Building [redacted] Spent Acid Tanks [redacted] - EPA Audit 136

Photograph RCRA-C - 11: Building [redacted] Spent Acid Tank [redacted] Boot (typical) - EPA Audit 139

Photograph RCRA-C - 12: Building [redacted] Heel Drowner Tank - EPA Audit 140

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Photograph RCRA-C - 13: [redacted]

Photograph RCRA-C - 14: Building [redacted] Neutralizer Tank (top) and two Neutralizer Catch Tanks (bottom) - EPA Audit 142

Photograph RCRA-C - 15: Building [redacted] Neutralizer Catch Tank (typical) - EPA Audit 143

Photograph RCRA-C - 16: Building [redacted] Trash Collection Compartment in Neutralizer Catch Tank (typical) - EPA Audit 144

Photograph RCRA-C - 17: Nitroglycerin Production Area Wastewater Conveyance System - EPA Audit 145

Photograph RCRA-C - 18: Nitroglycerin Production Area Equalization Tanks [redacted] - EPA Audit 146

Photograph RCRA-C - 19: Building [redacted] De-nitration Tank [redacted] - EPA Audit 147

Photograph RCRA-C - 20: Building [redacted] Wastewater Tank [redacted] - EPA Audit 149

Photograph RCRA-C - 21: Building [redacted] Wastewater Tank [redacted] - EPA Audit 148

Photograph RCRA-C - 22: Building [redacted] KI Testing Lab Production Room (left) and Lab Technician Room (right) - EPA Audit 156

Photograph RCRA-C - 23: Building [redacted] KI Testing Lab Production Room Waste Slums Satellite Accumulation Area - EPA Audit 152

Photograph RCRA-C - 24: Building [redacted] Contents of KI Testing Lab Production Room Waste Slums Bucket - EPA Audit 153

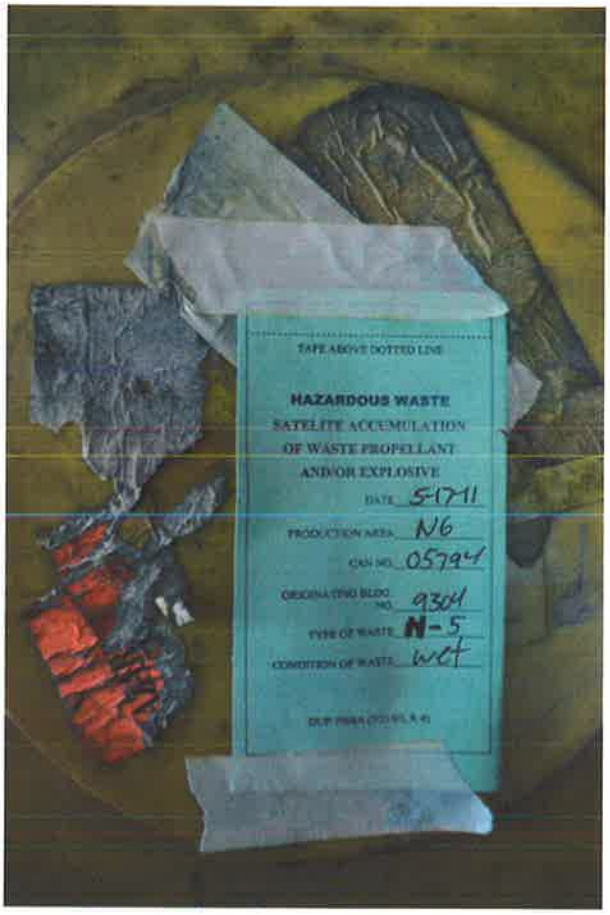
Photograph RCRA-C - 25: Building [redacted] Container of Clean Sawdust at the Lab Technician Room ready for KI Testing Slum Waste - EPA Audit 154

Photograph RCRA-C - 26: Building [redacted] Hood and Working Area at the Lab Technician Room - EPA Audit 155

Photograph RCRA-C - 27: Building [redacted] Reject Wet Propellant Collection Containers - EPA Audit 160

Photograph RCRA-C - 28: Building [redacted] Scale and "Waste Tubs" - EPA Audit 161

Photograph RCRA-C - 29: Building [redacted] Cart with "Waste Tubs" - EPA Audit 162



Photograph RCRA-C - 30: Building [redacted] "Waste Tub" Label with Accumulation Start Date - EPA Audit 163

Photograph RCRA-C - 31: Building [redacted] Reject Propellant Lumps Collection Container - EPA Audit 164

Photograph RCRA-C - 32: Building [redacted] Contents of Reject Propellant Lumps Collection Container - EPA Audit 165

Photograph RCRA-C - 33: Building [redacted] Reject Propellant Lumps Collection Container with Lid - EPA Audit 166

Photograph RCRA-C - 34: Contaminated Scrap Burn Area - EPA Audit 167

Photograph RCRA-C - 35: Contaminated Scrap Burn Area - EPA Audit 176

Photograph RCRA-C - 36: Contaminated Scrap Burn Area Leachate Collection Tank - EPA Audit 168

Photograph RCRA-C - 37: SWMU 16 Leachate Collection Sump - EPA Audit 169

Photograph RCRA-C - 38: ALTESS Universal Waste Accumulation Area Used Lamps Container - DSCN0760

Photograph RCRA-C - 39: Contents of ALTESS Universal Waste Accumulation Area Used Lamps Container - DSCN0761

Photograph RCRA-C - 40: Burning at Open Burning Ground (1 of 4) - DSC01298

Photograph RCRA-C - 41: Burning at Open Burning Ground (2 of 4) - DSC01299

Photograph RCRA-C - 42: Burning at Open Burning Ground (3 of 4) - DSC01300

Photograph RCRA-C - 43: Burning at Open Burning Ground (4 of 4) - DSC01301

Photograph RCRA-C - 44: Open Burning Ground Pad 8 East Pan Loaded with wet Pit Powder for Burning - DSC01353

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Photograph RCRA-C - 45: [redacted]

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Photograph RCRA-C - 46: [redacted]

Photograph RCRA-C - 47: Containers of Explosive Waste to be loaded for Burning at the Open Burning Ground Pad 6 East Pan - DSC01358

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Photograph RCRA-C - 48: [redacted]

Photograph RCRA-C - 49: Wet Pit Powder loaded on the Open Burning Ground Pad 4 East Pan for Burning - DSC01360

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Photograph RCRA-C - 50: [redacted]

Photograph RCRA-C - 51: Additional Burn Pads at Open Burning Ground - DSC01357

Photograph RCRA-C - 52: Truck used to transport Explosive Waste for Burning at Open Burning Ground - DSC01356

Photograph RCRA-C - 53: Ash Collection Containers and Diesel Containers used in Open Burning Ground - DSC01361

Photograph RCRA-C - 54: Furnaces used in the Burning of Primers and Flash Tubes at Open Burning Ground - DSC01363

Photograph RCRA-C - 55: Straw used as Combustible Material in the Furnaces during the Burning of Primers and Flash Tubes - DSC01366

Photograph RCRA-C - 56: Cages used to load Primers into Furnaces for Burning - DSC01369

Photograph RCRA-C - 57: Heavy Grates and Screens used in Furnaces during Burning - DSC01370

Photograph RCRA-C - 58: Open Burning Ground Waste Ash Storage Canopy (Building [redacted]) (background on photo) - DSC01368

Photograph RCRA-C - 59: Grinder Building (Building [redacted]) - DSC01326

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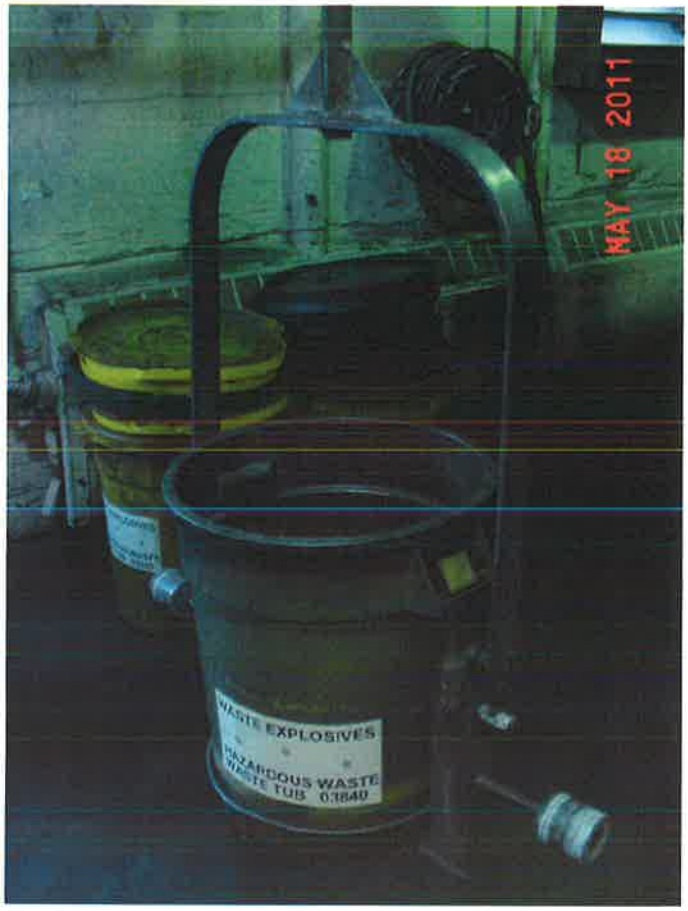
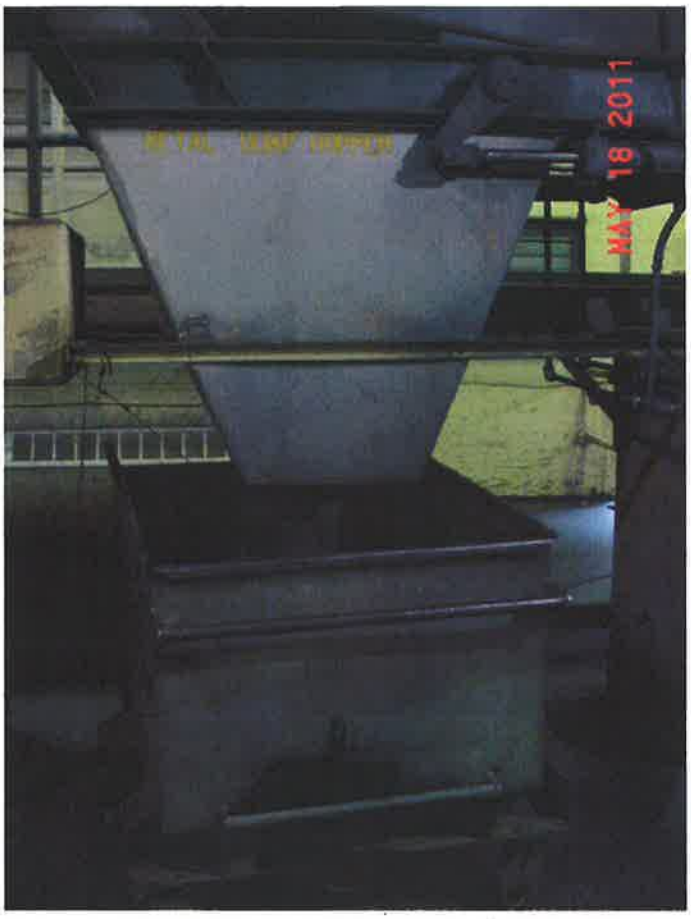
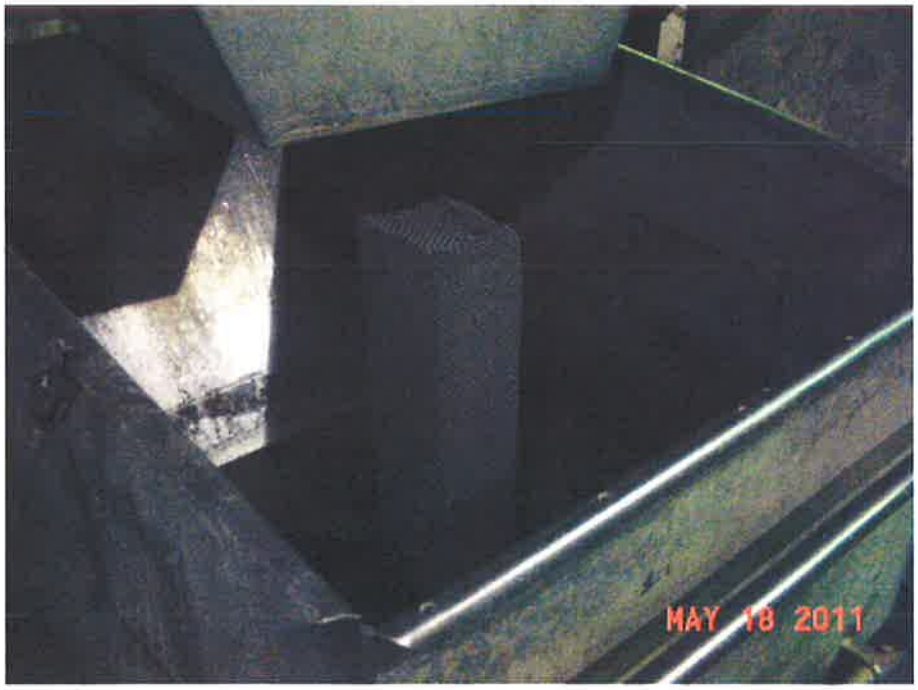
Photograph RCRA-C - 60: [redacted]



Photograph RCRA-C - 61: Tub Trolley used to process Waste Explosives in Grinder Building (Building [redacted]) - DSC01305



Photograph RCRA-C - 62: Metal Dump Hopper and Dump Buggy at Grinder Building (Building [redacted]) - DSC01308



Photograph RCRA-C - 63: Inside View of Dump Buggy at Grinder Building (Building [redacted]) (Edited for Brightness and Contrast) - DSC01309

Photograph RCRA-C - 64: Spillage Catch Basket at Grinder Building (Building [redacted]) (Edited for Brightness and Contrast) - DSC01306

Photograph RCRA-C - 65: Three Tubs of Catch Basket Waste generated at Grinder Building (Building [redacted] and Destined for Burning Ground - DSC01307

Photograph RCRA-C - 66: Condition of Slurry Tanks T1A and T1B Secondary Containment (1 of 3) (Edited for Brightness and Contrast) - DSC01310

Photograph RCRA-C - 67: Condition of Slurry Tanks T1A and T1B Secondary Containment (2 of 3) (Edited for Brightness and Contrast) - DSC01311

Photograph RCRA-C - 68: Condition of Slurry Tanks T1A and T1B Secondary Containment (3 of 3) (Edited for Brightness and Contrast) - DSC01312

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Photograph RCRA-C - 69: [redacted]

Photograph RCRA-C - 70: Incinerator Building [redacted] (Typical of Two) - DSC01325

Photograph RCRA-C - 71: Incinerator Building [redacted] Kiln Waste Ash Buggy (1 of 2) (Typical of Two)- DSC01333

Photograph RCRA-C - 72: Incinerator Building [redacted] Kiln Waste Ash Buggy (2 of 2) (Typical of Two)-DSC01335

Photograph RCRA-C - 73: Incinerator Complex Ash Hazardous Waste Accumulation Area -DSC01339

Photograph RCRA-C - 74: Evaporative Cooler Ash Collection Container for Incinerator Building [redacted] - DSC01315

Photograph RCRA-C - 75: Contents of Evaporative Cooler Ash Collection Container for Incinerator Building [redacted] - DSC01317

Photograph RCRA-C - 76: Bag House Ash Collection Container for Incinerator Building [redacted] - DSC01314

Photograph RCRA-C - 77: Contents of Bag House Ash Collection Container for Incinerator Building [redacted] - DSC01318

Photograph RCRA-C - 78: Evaporative Cooler Ash Collection Container for Incinerator Building [redacted] (1 of 3) - DSC01329

Photograph RCRA-C - 79: Evaporative Cooler Ash Collection Container for Incinerator Building [redacted] (2 of 3) - DSC01332

Photograph RCRA-C - 80: Evaporative Cooler Ash Collection Container for Incinerator Building [redacted] (3 of 3) - DSC01334

Photograph RCRA-C - 81: Contents of Evaporative Cooler Ash Collection Container for Incinerator Building [redacted] (Edited for Brightness and Contrast) - DSC01330

Photograph RCRA-C - 82: Bag House Ash Collection Container for Incinerator Building [redacted] - DSC01327

Photograph RCRA-C - 83: Labeling on Bag House Ash Collection Container for Incinerator Building [redacted] - DSC01328

Photograph RCRA-C - 84: Contents of Bag House Ash Collection Container for Incinerator Building [redacted] - DSC01331

Photograph was Removed

Photograph RCRA-C - 85: [redacted]

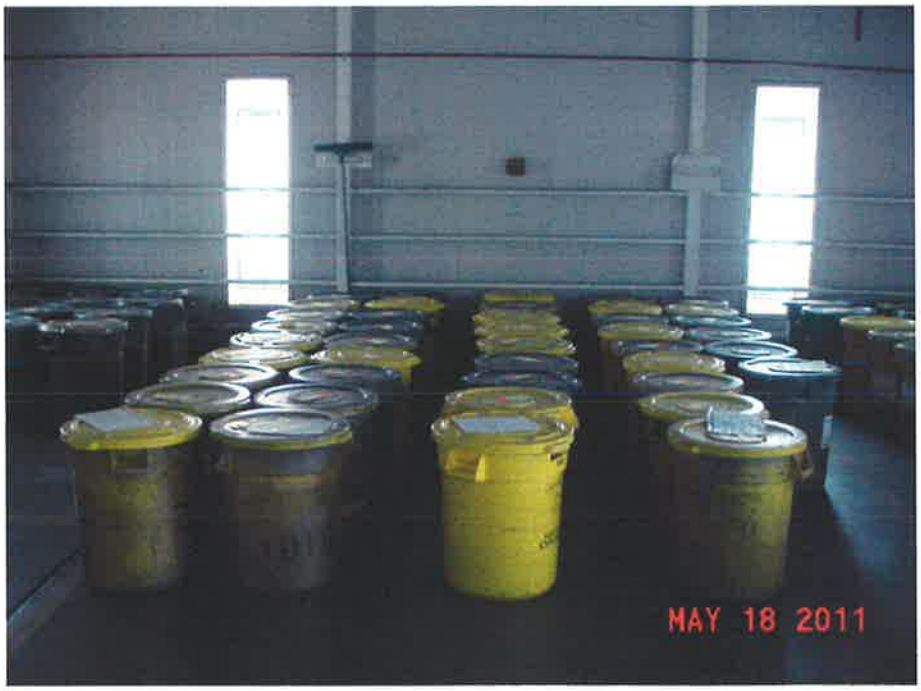
Photograph RCRA-C - 86: Hazardous Waste Containers at Building [redacted] Hazardous Waste Accumulation Area - DSC01336

Photograph RCRA-C - 87: Isle Space at Building [redacted] Hazardous Waste Accumulation Area - DSC01337

Photograph RCRA-C - 88: Mobile Granulated Activated Carbon Unit (1 of 2) - DSC01340

Photograph RCRA-C - 89: Mobile Granulated Activated Carbon Unit (2 of 2) - DSC01341

Photograph RCRA-C - 90: Building [redacted] Hazardous Waste Accumulation Area (1 of 5) - DSC01342



Photograph RCRA-C - 91: Building [redacted] Hazardous Waste Accumulation Area (2 of 5) - DSC01343

Photograph RCRA-C - 92: Building [redacted] Hazardous Waste Accumulation Area (3 of 5) - DSC01344

Photograph RCRA-C - 93: Building [redacted] Hazardous Waste Accumulation Area (4 of 5) - DSC01346

Photograph RCRA-C - 94: Building [redacted] Hazardous Waste Accumulation Area (5 of 5) - DSC01347

Photograph RCRA-C - 95: Kitty Litter at Building [redacted] Hazardous Waste Accumulation Area - DSC01345

Photograph RCRA-C - 96: Bay 5 Floor Drain (typical) at Solvent Recovery Building (Building [redacted]) (Edited for Brightness and Contrast) - DSC01349

Photograph RCRA-C - 97: Bay 5 Floor Drain Sump Catch Basket (typical) at Solvent Recovery Building (Building [redacted]) - DSC01348

Photograph RCRA-C - 98: Satellite Accumulation Area at Solvent Recovery Building (Building [redacted] - DSC01350

Photograph RCRA-C - 99: Labeling on Satellite Accumulation Area Container at Solvent Recovery Building (Building [redacted]) - DSC01351

Photograph RCRA-C - 100: Location of Satellite Accumulation Area Container at Building [redacted] relative to Points of Waste Generation (Bay 1 in Foreground and Bay 5 in Background) - DSC01352

Photograph RCRA-C - 101: Decontamination Oven (Building [redacted]) - DSC01375

Photograph RCRA-C - 102: Box of Metal Parts for Decontamination at Decontamination Oven (Building [redacted]) - DSC01371

Photograph RCRA-C - 103: Scrap Metal for Decontamination at Decontamination Oven (Building [redacted]) (1 of 3) - DSC01372

Photograph RCRA-C - 104: Scrap Metal for Decontamination at Decontamination Oven (Building [redacted]) (2 of 3) - DSC01373

Photograph RCRA-C - 105: Scrap Metal for Decontamination at Decontamination Oven (Building [redacted]) (3 of 3) - DSC01374

Photograph RCRA-C - 106: Three Boxes of Universal Waste Lamps at Building [redacted] Universal Waste Accumulation Area - DSC01376

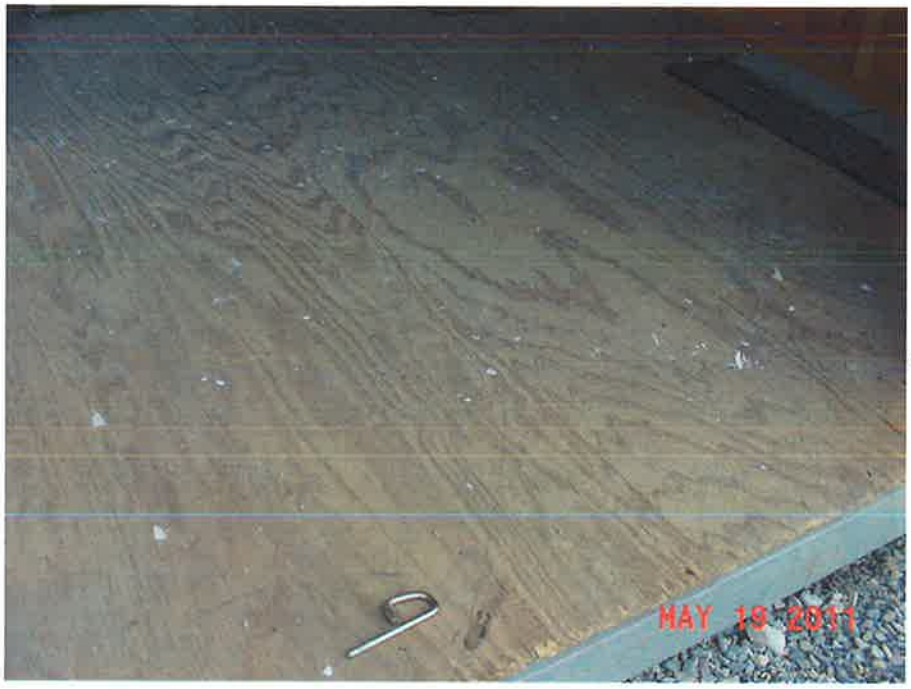
Photograph RCRA-C - 107: Accumulation Start Date on Box of Universal Waste Lamps at Building [redacted] Universal Waste Accumulation Area (1 of 3) - DSC01380

Photograph RCRA-C - 108: Accumulation Start Date on Box of Universal Waste Lamps at Building [redacted] Universal Waste Accumulation Area (2 of 3) - DSC01379

Photograph RCRA-C - 109: Accumulation Start Date on Box of Universal Waste Lamps at Building [redacted] Universal Waste Accumulation Area (3 of 3) - DSC01378

Photograph RCRA-C - 110: Open Box of Universal Waste Lamps at Building [redacted] Universal Waste Accumulation Area - DSC01381

Photograph RCRA-C - 111: Drum for Accumulating Waste Lamps managed as Hazardous Waste at Building [redacted] - DSC01382



Photograph RCRA-C - 112: Broken Glass inside Building [redacted] - DSC01377

Photograph RCRA-C - 113: Broken Glass outside Building [redacted] (1 of 3) - DSC01383

Photograph RCRA-C - 114: Broken Glass outside Building [redacted] (2 of 3) - DSC01384

Photograph RCRA-C - 115: Broken Glass outside Building [redacted] (3 of 3) - DSC01385

Photograph RCRA-C - 116: Floor Sweeps Satellite Accumulation Area Container at Chemical Grind Building (Building [redacted]) Bay 2 - DSC01386

Photograph RCRA-C - 117: Open Floor Sweeps Satellite Accumulation Area Container at Chemical Grind Building (Building [redacted]) Bay 2 - DSC01390

Photograph RCRA-C - 118: Label on Floor Sweeps Satellite Accumulation Area Container at Chemical Grind Building (Building [redacted]) Bay 2 - DSC01387

Photograph RCRA-C - 119: Contaminated Personal Protective Equipment and Trash Collection Container at Chemical Grind Building (Building [redacted]) Bay 2 - DSC01388

Photograph RCRA-C - 120: Contents of Contaminated Personal Protective Equipment and Trash Collection Container at Chemical Grind Building (Building [redacted]) Bay 2 - DSC01389

Photograph RCRA-C - 121: 2NDPA Grinder Floor Sweeps Satellite Accumulation Area Container next to Grinder Room at Chemical Grind Building (Building [redacted]) - DSC01391

Photograph RCRA-C - 122: Location of 2NDPA Grinder Floor Sweeps Satellite Accumulation Area relative to Grinder Room at Chemical Grind Building (Building [redacted]) - DSC01392

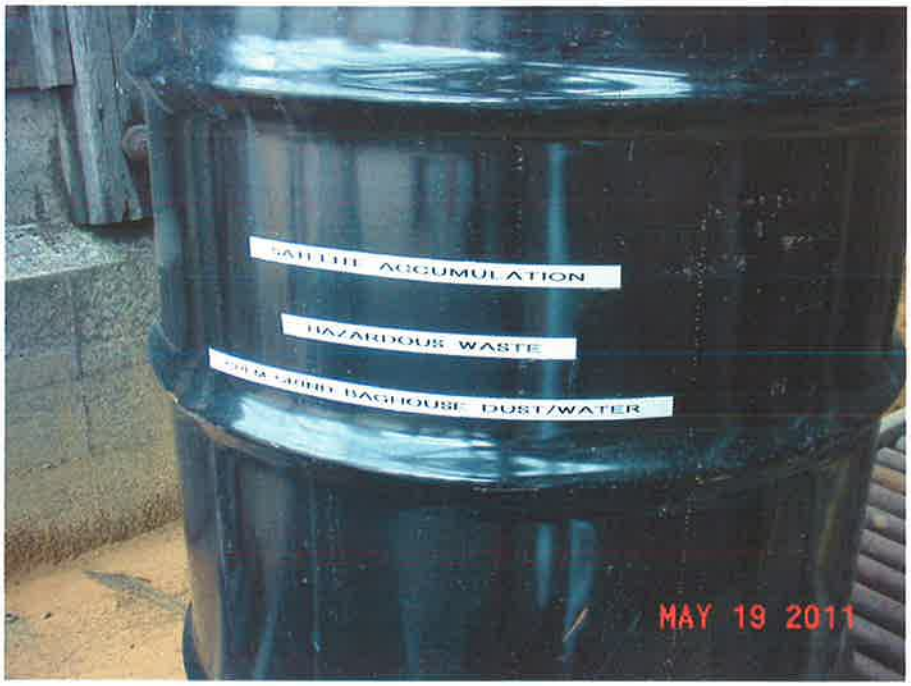
Photograph RCRA-C - 123: 2NDPA Floor Sweeps Satellite Accumulation Area at Chemical Grind Building (Building [redacted]) Bay 1 - DSC01393

Photograph RCRA-C - 124: Contaminated PPE and Trash Collection Container at Chemical Grind Building (Building [redacted]) Bay 1 - DSC01394

Photograph RCRA-C - 125: Lead Floor Sweeps (Background) and Lead-Contaminated PPE (Foreground) Satellite Accumulation Area Containers at Chemical Grind Building (Building [redacted]) Bay 3 - DSC01395

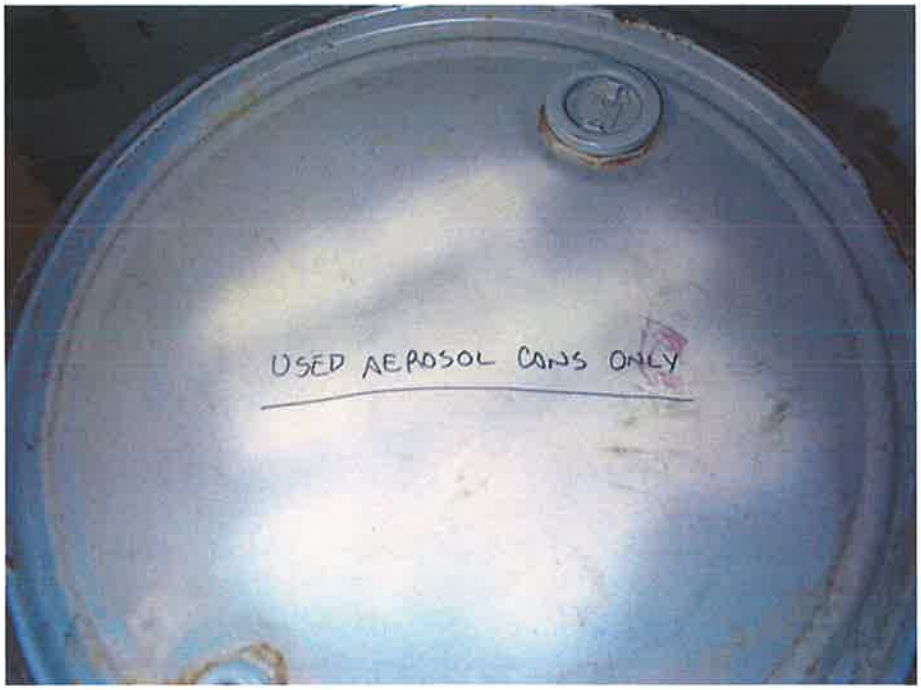
Photograph RCRA-C - 126: Labeling on Satellite Accumulation Area Containers at Chemical Grind Building (Building [redacted]) Bay 3 - DSC01396

Photograph RCRA-C - 127: Two Bag House Hoppers each fitted with a Bag House Dust Satellite Accumulation Area Container at Chemical Grind Building (Building [redacted]) - DSC01397

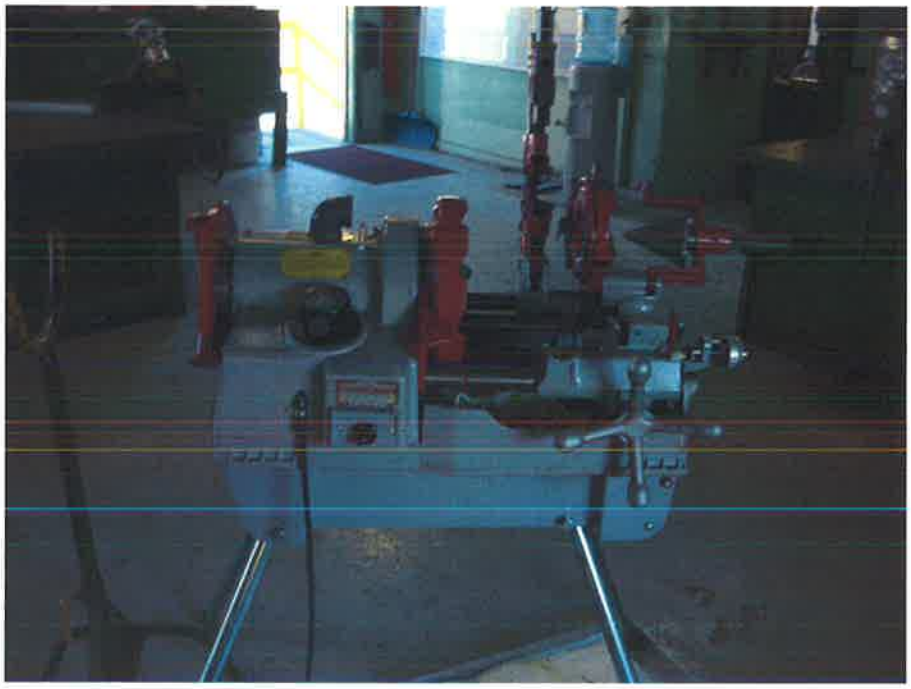


Photograph RCRA-C - 128: Labeling on Bag House Dust Satellite Accumulation Area Container (typical) at Chemical Grind Building (Building [redacted]) Bag House Hopper - DSC01398

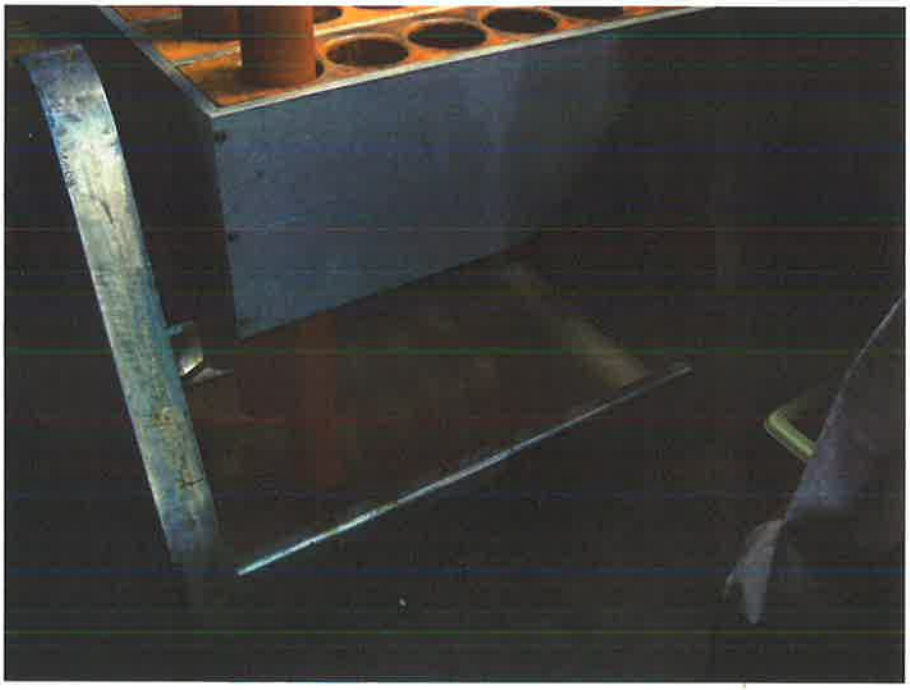
Photograph RCRA-C - 129: Aerosol Cans Satellite Accumulation Area at the Rocket Area Maintenance Area (1 of 2) - DCP05773



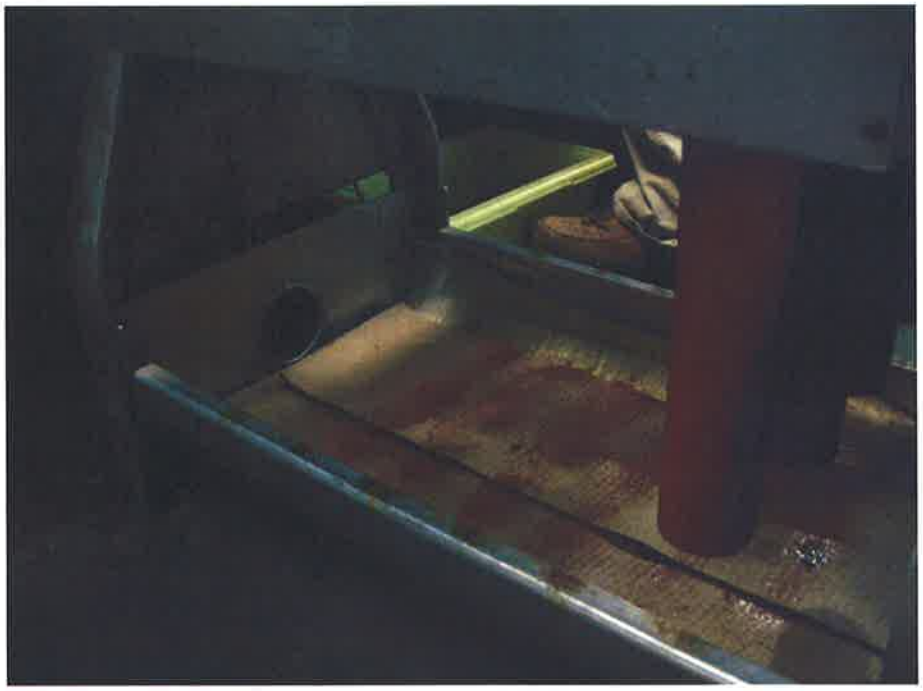
Photograph RCRA-C - 130: Area Aerosol Cans Satellite Accumulation Area at the Rocket Area Maintenance (2 of 2) - DCP05774



Photograph RCRA-C - 131: MK90 Propellant Grain Rocket Motor Dowel Cutter at Building [redacted] (Edited for B & C) - EPA - Rocket - 5-19-11 001



Photograph RCRA-C - 132: Shavings Collected from MK90 Propellant Grain Rocket Motor Dowel at the Rockets Area Saw and End Inhibiting Building (Building [redacted]) (1 of 2) - EPA - Rocket - 5-19-11 002



Photograph RCRA-C - 133: Shavings Collected from MK90 Propellant Grain Rocket Motor Dowel at the Rockets Area Saw and End Inhibiting Building (Building [redacted]) (2 of 2) - (Edited for Brightness and Contrast) EPA - Rocket - 5-19-11 003

Photograph RCRA-C - 134: Containers for Accumulation of Waste Gloves Rags and Inhibitors at the Rockets Area Saw and End Inhibiting Building (Building [redacted]) - EPA - Rocket - 5-19-11 004

Photograph RCRA-C - 135: MK90 Propellant Grain Screening Equipment at the Rockets Area Saw and End Inhibiting Building (Building [redacted]) - EPA - Rocket - 5-19-11 005

Photograph RCRA-C - 136: Dowel Shaving Equipment at the Rockets Area Dowel Building (Building [redacted]) - EPA - Rocket - 5-19-11 015

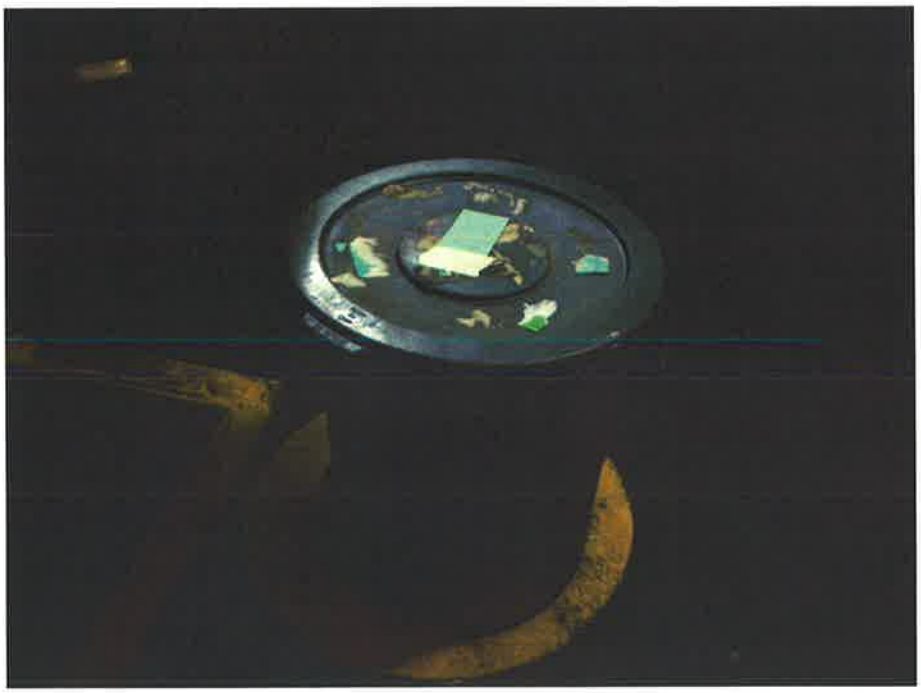
Photograph RCRA-C - 137: MK90 Propellant Grain Screening Equipment at the Rockets Area Dowel Building (Building [redacted]) - EPA - Rocket - 5-19-11 007

Photograph RCRA-C - 138: Filled Satellite Accumulation Area Containers of Waste Propellant Shavings at the Rockets Area Dowel Building (Building [redacted]) (Edited for Brightness and Contrast) - EPA - Rocket - 5-19-11 006

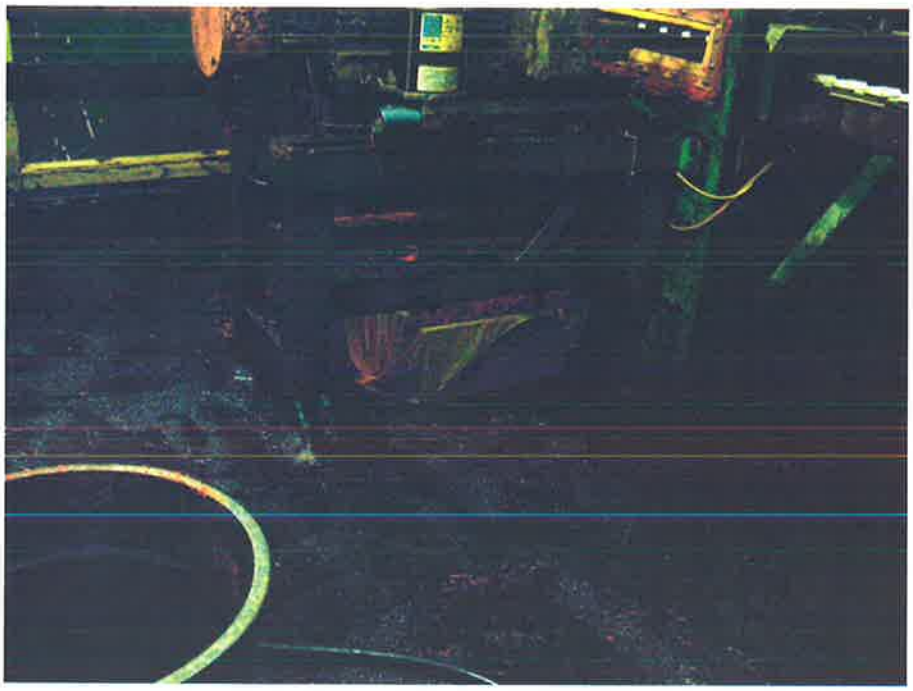
Photograph RCRA-C - 139: Building [redacted] Hazardous Waste Accumulation Area (1 of 2) - EPA - Rocket - 5-19-11 008

Photograph RCRA-C - 140: Building [redacted] Hazardous Waste Accumulation Area (2 of 2) - EPA - Rocket - 5-19-11 009

Photograph RCRA-C - 141: Explosive Waste Containers at Building [redacted]
Hazardous Waste Accumulation Area Destined for Incinerators - EPA - Rocket - 5-19-11 010

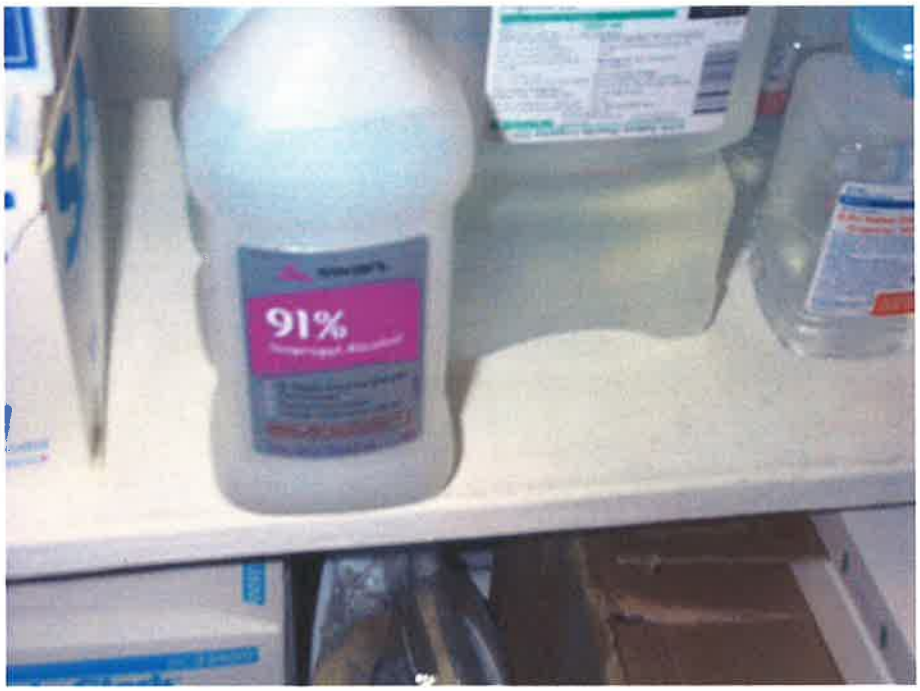


Photograph RCRA-C - 142: Explosive Waste Container at Building [redacted]
Hazardous Waste Accumulation Area Destined for Open Burning Ground - EPA - Rocket - 5-19-11 011



Photograph RCRA-C - 143: MK90 Propellant Grain Rocket Motor Dowel Coning Equipment at Coning Operations Building (Building [redacted]) (Edited for Brightness and Contrast) - EPA - Rocket - 5-19-11 013

Photograph RCRA-C - 144: Explosive Waste Containers at Building [redacted] (Edited for Brightness and Contrast) - EPA - Rocket - 5-19-11 014



Photograph RCRA-C - 145: Hospital Building (Building [redacted]) Medicine Cabinet (1 of 5) - dcp05779

Photograph RCRA-C - 146: Hospital Building (Building [redacted]) Medicine Cabinet (2 of 5) - DCP05780

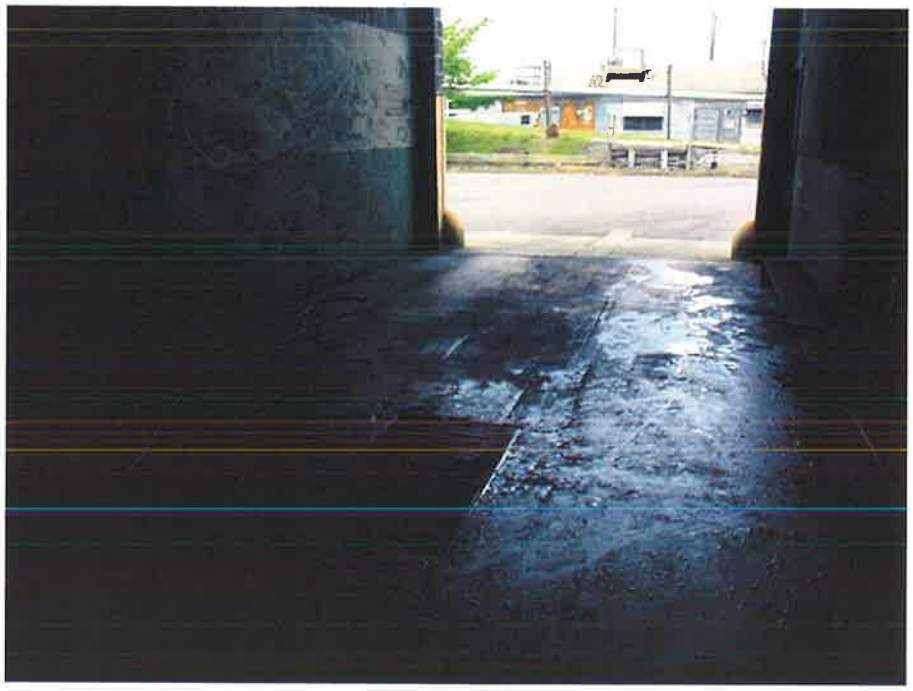
Photograph RCRA-C - 147: Hospital Building (Building [redacted]) Medicine Cabinet (3 of 5) - DCP05781

Photograph RCRA-C - 148: Hospital Building (Building [redacted]) Medicine Cabinet (4 of 5) - DCP05782

Photograph RCRA-C - 149: Hospital Building (Building [redacted]) Medicine Cabinet (5 of 5) - DCP05783

Photograph RCRA-C - 150

Photograph RCRA-C - 151: Aerosol Cans Satellite Accumulation Area at Main Garage (Building [redacted]) - DCP05788



Photograph RCRA-C - 152: Main Garage (Building [redacted]) Wash Bay (1 of 2) - DCP05784

Photograph RCRA-C - 153: Main Garage (Building [redacted]) Wash Bay (2 of 2) - DCP05784

Photograph RCRA-C - 154: Used Oil Collection Container at Main Garage (Building [redacted]) - DCP05789

Photograph RCRA-C - 155: Main Garage (Building [redacted]) Waste Gasoline Satellite Accumulation Area - DCP05786

Photograph RCRA-C - 156: Location of Main Garage (Building [redacted]) Waste Gasoline Satellite Accumulation Area relative to Main Garage Door - DCP05787

Photograph RCRA-C - 157: Overview of Lead Burning Shop

Photograph RCRA-C - 158: Scrap Lead Stored Outside of Lead Burning Shop

Photograph RCRA-C - 159: First of Two Scrap Lead Accumulation Containers at Lead Burning Shop

Photograph RCRA-C - 160: Second of Two Scrap Lead Accumulation Containers at Lead Burning Shop

Photograph RCRA-I - 1: Tank [redacted] Overview - 11232010 032

Photograph RCRA-I - 2: Tank [redacted] Manway - 11232010 025

Photograph RCRA-I - 3: Tank [redacted] Interstitial Space Monitor - 11232010 027

Photograph RCRA-I - 4: Tank [redacted] Automatic Tank Gauge Sensor - 11232010 028

Photograph RCRA-I - 5: Tank [redacted] Fill Pipe with Butterfly Valve - 11232010 029

Photograph RCRA-I - 6: Tank [redacted] Vapor Recovery Pipe - 11232010 030

Photograph RCRA-I - 7: Tank [redacted] Vapor Recovery Pipe Broken Off - 11232010 031

Photograph RCRA-I - 8: Tank [redacted] Overview - 11232010 039

Photograph RCRA-I - 9: Tank [redacted] Manifold Manway - 11232010 034

Photograph RCRA-I - 10: Tank [redacted] Interstitial Space Sensor - 11232010 035

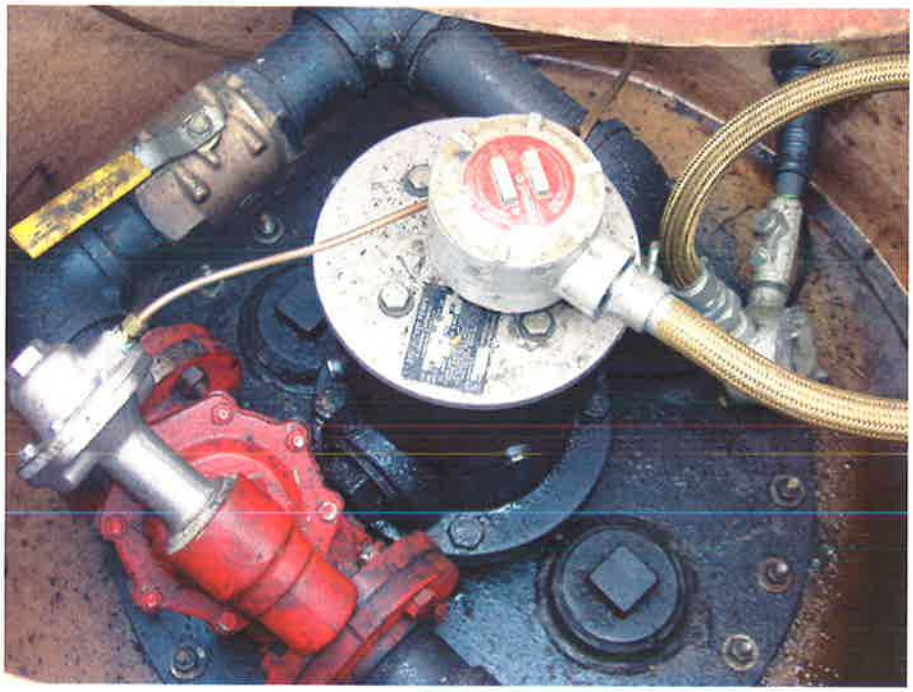
Photograph RCRA-I - 11: Tank [redacted] Automatic Tank Gauge Sensor - 11232010 036

Photograph RCRA-I - 12: Tank [redacted] Fill Pipe with Butterfly Valve - 11232010 037

Photograph RCRA-I - 13: Tank [redacted] Vapor Recovery Pipe - 11232010 038

Photograph RCRA-I - 14: Tank [redacted] Overview - IMG_5897

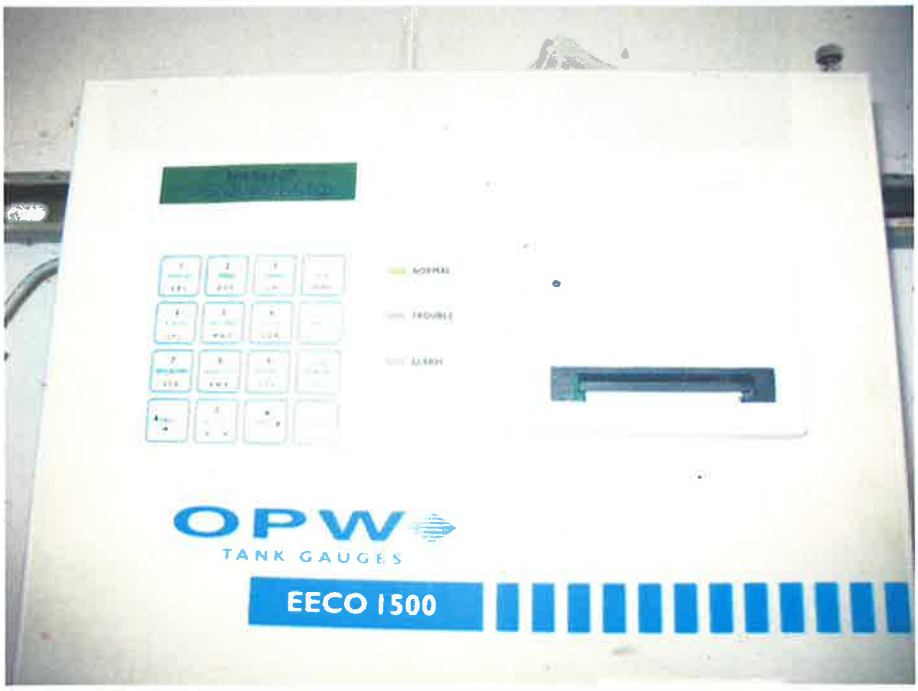
Photograph RCRA-I - 15: Tank [redacted] Unknown White Pipe with Wiring - 11232010 040



Photograph RCRA-I - 16: Tank [redacted] Manway - 11232010 041

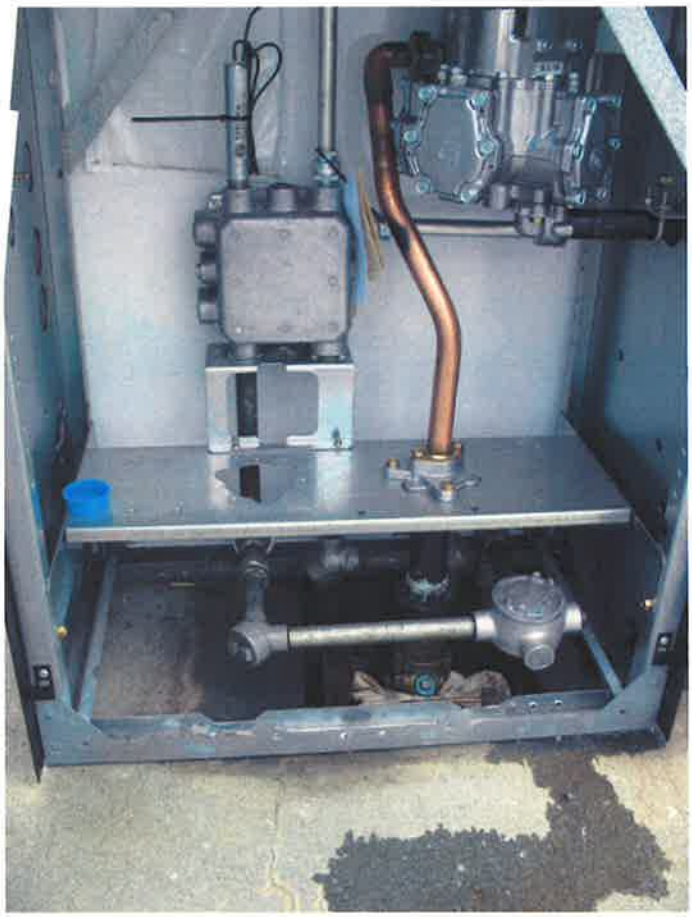
Photograph RCRA-I - 17: Tank [redacted] Fill Pipe with Butterfly Valve - IMG_5894

Photograph RCRA-I - 18: Tank [redacted] Vapor Recovery Pipe - IMG_5895



Photograph RCRA-I - 19: OPW Automatic Tank Gauge Monitoring System - IMG_5898

Photograph RCRA-I - 20: Vent Pipes - IMG_5896



Photograph RCRA-I - 21: Diesel Dispenser - IMG_5901

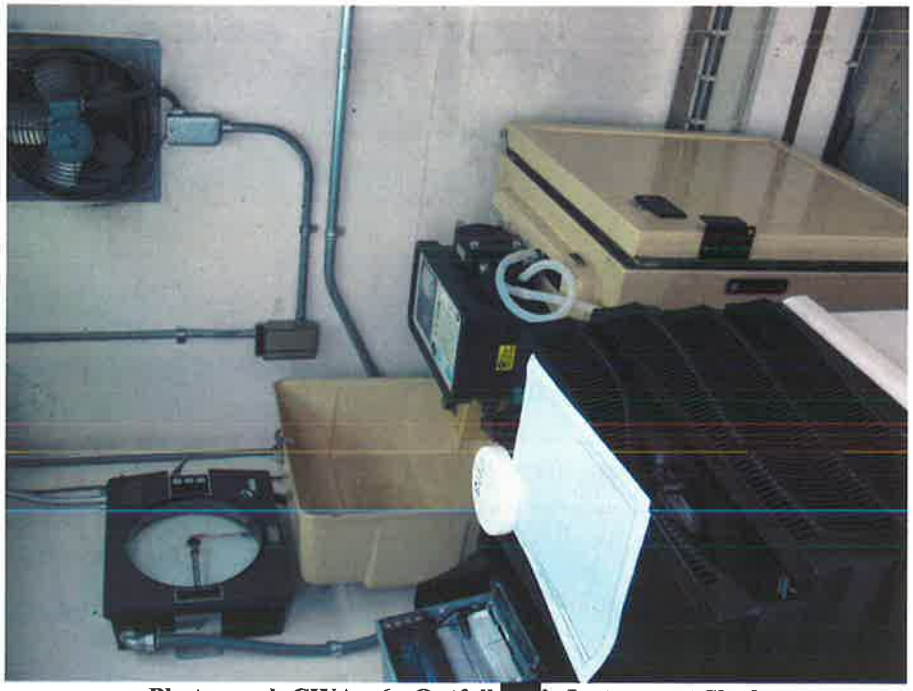
Photograph CWA - 1: Outfall [redacted]

Photograph CWA - 2: Close Up of Outfall [redacted]

Photograph CWA - 3: Outfall [redacted]

Photograph CWA - 4: Outfall [redacted] West Lagoon

Photograph CWA - 5: Outfall [redacted] Flume



Photograph CWA - 6: Outfall [redacted]'s Instrument Shed

Photograph CWA - 7: Roads and Grounds Riggers Loft Buckets

Photograph CWA - 8: Stormwater with a Sheen on the Surface of the Water at the Heavy Equipment Storage Lot (1 of 2)

Photograph CWA - 9: Stormwater with a Sheen on the Surface of the Water at the Heavy Equipment Storage Lot (2 of 2)

Photograph CWA - 10: Overview of the Heavy Equipment Storage Lot

Photograph CWA - 11: Outfall [redacted] Flume

Photograph CWA - 12: Outfall [redacted]'s Instrument Shed

Photograph CWA - 13 Overview of the Abandoned C-Line Waste Acid Treatment Plant

Photograph CWA - 14: Fuel Storage Tank at the Abandoned C-Line Waste Acid Plant

Photograph CWA - 15: Fuel Storage Tank at at Bioplant Pump Station (Building [redacted])

Photograph CWA - 16: Drains at Fuel Station

Photograph CWA - 17: Bioplant Lift Station

Photograph CWA - 18: Bioplant Lift Station Generator

Photograph CWA - 19: Bioplant West Equalization Basin

Photograph CWA - 20: Bioplant East Equalization Basin

Photograph CWA - 21: Bioplant Sludge

Photograph CWA - 22: Bioplant's Internal Rotating Biological Contactors

Photograph CWA - 23: Bioplant's External Rotating Biological Contactors

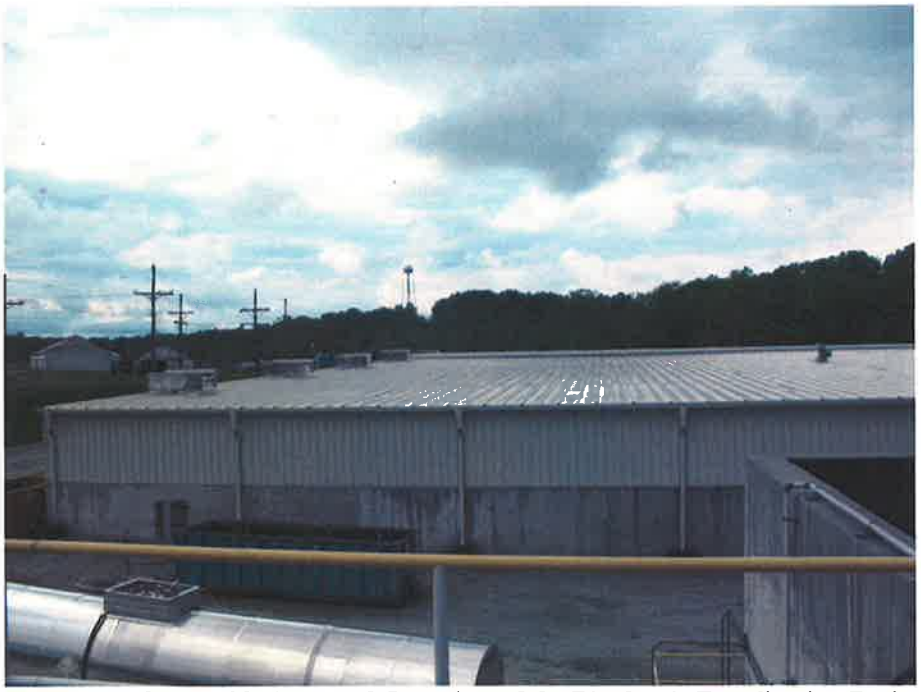
Photograph CWA - 24: Outfall 029's Instrument Shed

Photograph was Removed

Photograph CWA - 25: [redacted]

Photograph CWA - 26: Bioplant's East Digester

Photograph CWA - 27: Bioplant's West Digester



Photograph CWA - 28: Elevated Overview of the Bioplant's Equalization Basins

Photograph CWA - 29: Bioplant's Laboratory

Photograph CWA - 30: Overview of the Building [redacted] Equalization Basins (aka Blue Lagoon)

Photograph CWA - 31: Building [redacted] Equalization Basin #1

Photograph CWA - 32: Building [redacted] Equalization Basin #3

Photograph CWA - 33: AB Lines Waste Acid Plant Influent Flume

Photograph CWA - 34: AB Waste Acid Treatment Plant Diverter Tank

Photograph CWA - 35: Overview of the AB Waste Acid Treatment Plant

Photograph CWA - 36: AB Waste Acid Treatment Plant Lime Slurry Pit

Photograph CWA - 37: AB Waste Acid Treatment Plant Lime Silo

Photograph CWA - 38: Overview of the AB Waste Acid Treatment Plant Lime Unloading Spur (Notice Spilled Lime on the Ground)

Photograph CWA - 39: Drain Outside of the AB Waste Acid Treatment Plant Lime Unloading Spur

Photograph CWA - 40: First of Two Uncovered Roll-off Boxes at the AB Waste Acid Treatment Plant

Photograph CWA - 41: Second of Two Uncovered Roll-off Boxes at the AB Waste Acid Treatment Plant

Photograph CWA - 42: Lime on the Ground at the AB Waste Acid Treatment Plant

Photograph CWA - 43: AB Waste Acid Treatment Plant Crowder Tanks

Photograph CWA - 44: AB Waste Acid Treatment Plant Sludge Drying Beds

Photograph CWA - 45: Truck Body Used As Storage at the AB Waste Acid Treatment Plant

Photograph CWA - 46: Effluent Box at the AB Waste Acid Treatment Plant (1 of 2)

Photograph CWA - 47: Effluent Box at the AB Waste Acid Treatment Plant (2 of 2)

Photograph CWA - 48: AB Waste Acid Treatment Plant Effluent Flume

Photograph CWA - 49: First of Two AB Waste Acid Treatment Plant Baby Crowders

Photograph CWA - 50: Second of Two AB Waste Acid Treatment Plant Baby Crowders

Photograph CWA - 51: AB Waste Acid Treatment Plant Baby Crowder Flume

Photograph CWA - 52: Sanitary Sewage Treatment Plant Influent Bar Screen

Photograph CWA - 53: Sanitary Sewage Treatment Plant Equalization Basin

Photograph CWA - 54: Sanitary Sewage Treatment Plant Primary Clarifier

Photograph CWA - 55: Sanitary Sewage Treatment Plant Sludge Drying Beds

Photograph CWA - 56: Sanitary Sewage Treatment Plant Trickling Filter

Photograph CWA - 57: Sanitary Sewage Treatment Plant Final Clarifier

Photograph CWA - 58: Sanitary Sewage Treatment Plant Chlorine Contact Chamber

Photograph CWA - 59: Sanitary Sewage Treatment Plant Effluent

Photograph was Removed

Photograph CWA - 60: [redacted]

Photograph CWA - 61: Coal Pile Pad #1

Photograph CWA - 62: Coal Pile Pad #2

Photograph CWA - 63: Coal Pile Pad Stormwater Runoff Collection System

Photograph CWA - 64: Coal Pile Stormwater Runoff Treatment Plant Pit

Photograph CWA - 65: Coal Pile Stormwater Runoff Treatment Plant Clarifier

Photograph CWA - 66: East End of Coal Pile

Photograph CWA - 67: Coal Pile East End Rail Spur

Photograph CWA - 68: Powerhouse Fly Ash Pit (1 of 2)

Photograph CWA - 69: Powerhouse Fly Ash Pit (2 of 2)

Photograph CWA - 70: Lead Burning Shop with Lead Being Stored Outside

Photograph CWA - 71: Overview of the Lead Burning Shop

Photograph CWA - 72: First of Two Lead Storage Containers at the Lead Burning Shop

Photograph CWA - 73: Second of Two Lead Storage Containers at the Lead Burning Shop

Photograph CWA - 74: Outfall [redacted] at the Open Burning Ground

Photograph CWA - 75: Outfall [redacted]

Photograph CWA - 76: Upstream of Outfall [redacted]

Photograph CWA - 77: Outfall [redacted]

Photograph CWA - 78: Upstream of Outfall [redacted]

Photograph CWA - 79: Outfall [redacted]

Photograph CWA - 80: Outfall [redacted] West Basin

Photograph CWA - 81: Outfall [redacted]'s Collection Chamber

Photograph CWA - 82: Outfall [redacted] East Basin

Photograph CWA - 83: Building [redacted] Outfall [redacted]'s Closed Imhoff Tank

Photograph CWA - 84: Building [redacted] Outfall [redacted]'s Closed Lagoon

Photograph was Removed

Photograph CWA - 85: [redacted]

Photograph CWA - 86: Upstream of Outfall [redacted] at Hazards Test Area

Photograph CWA - 87: Electrical Transformer at Building [redacted]

Photograph CWA - 88: Inside of a Roll-off with Scrap Metal at Building [redacted]

Photograph CWA - 89: Refrigerants Being Stored Inside Building [redacted]

Photograph CWA - 90: Electrical Transformers Being Stored Outside Building

Photograph CWA - 91: Electrical Transformer Being Stored Outside Building

Photograph CWA - 92: Storage area for Water Fountains and Air Conditioning Units Located Outside of Building [redacted]

Photograph CWA - 93: Closed Oil Tanks near the Hazards Test Area

Photograph CWA - 94: Outfall [redacted]

Photograph CWA - 95: Outfall [redacted]

Photograph CWA - 96: TNT [redacted] Basin

Photograph CWA - 97: TNT [redacted] South Basin

Photograph CWA - 98: TNT [redacted] North Basin

Photograph CWA - 99: Caustic Soda Ash Spill at the NG2 Area (1 of 2)

Photograph CWA - 100: Caustic Soda Ash Spill at the NG2 Area (2 of 2)

Photograph CWA - 101: Approximate Location where Caustic Soda Ash Spill may have Originated

Photograph SPCC - 1: 275-Gallon Diesel Above-ground Storage Tank at the Abandoned C-Line Waste Acid Plant

Photograph SPCC - 2: 500-Gallon Diesel Above-ground Storage Tank at Bioplant Pump Station (Building [redacted])

Photograph SPCC - 3: Trench at Fuel Station - 19May2011 013

Photograph SPCC - 4: Trench and Drain System at Fuel Station - 19May2011 010

Photograph SPCC - 5: 500-Gallon Diesel Above-ground Storage Tank at Bioplant Lift Station Generator

Photograph SPCC - 6: Transformers at Pipe Yard - 19May2011 018

Photograph SPCC - 7: View of Other Transformers at Pipe Yard - 19May2011 020

Photograph SPCC - 8: Transformer RFA-16742 at Pipe Yard - DSCN0763

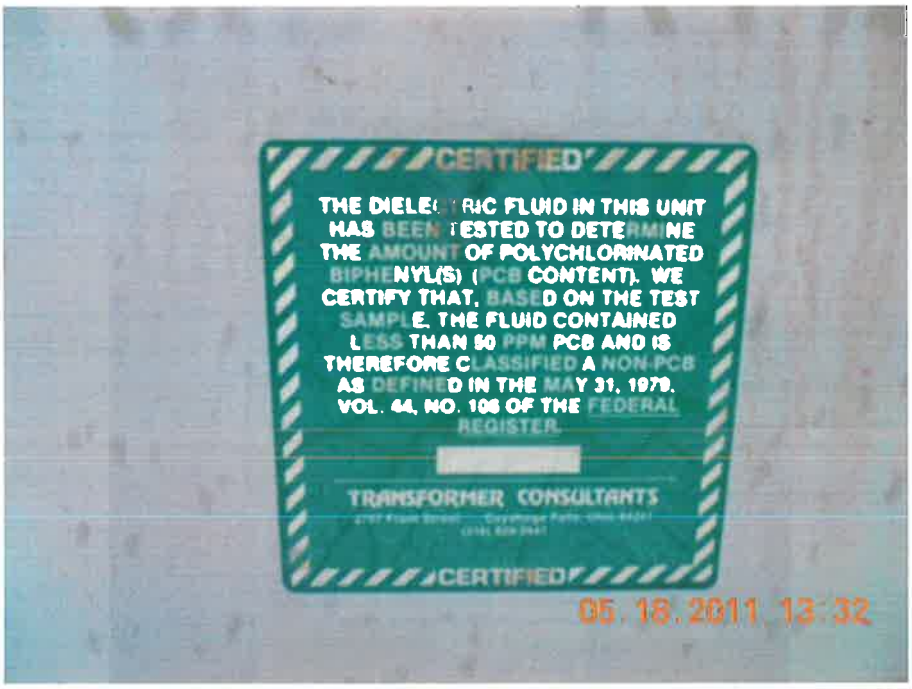
Photograph SPCC - 9: Transformer RFA-21110 (S/N 79330-01) at Pipe Yard - DSCN0765

Photograph SPCC - 10: Transformer RFA 16761 (S/N 6138306-03) at Pipe Yard - DSCN0766

Photograph SPCC - 11: Lower portion of Transformer RFA 16761 - DSCN0767

Photograph SPCC - 12: Transformer RFA 16923 at Pipe Yard - DSCN0768

Photograph SPCC - 13: Lower Portion of Transformer RFA 16923 - DSCN0769



Photograph SPCC - 14: Green Label on Transformer RFA 16923 - DSCN0770

Photograph SPCC - 15: Three 22,000-Gallon Fuel Oil Above-ground Storage Tanks at the Power Plant IMG_5993

Photograph SPCC - 16: View of the Base of two of the three 22,000-Gallon Fuel Oil Above-ground Storage Tanks at the Power Plant - IMG_6001

Photograph SPCC - 17: View of how one of the three 22,000-Gallon Fuel Oil Above-ground Storage Tanks at the Power Plant has been Disconnected - IMG_5994

Photograph SPCC - 18: View of how another of the three 22,000-Gallon Fuel Oil Above-ground Storage Tanks at Power Plant has been Disconnected - IMG_5996

Photograph SPCC - 19: 1500-gal Diesel Tank and Oil Filled Transformer Next to Drain System outside Building [redacted] at Nitroglycerin Production Area - EPA Audit 159

Photograph SPCC - 20: Closed Oil Tanks near the Hazards Test Area

Photograph SPCC - 21: 300-Gallon Diesel Above-ground Storage Tank at Open Burning Ground - DSC01367

Photograph SPCC - 22: 275-Gallon Diesel Above-ground Storage Tank at Nitroglycerin Production Area Lift Station [redacted] - EPA Audit 150

Photograph SPCC - 23: Gen Set RFA28929 at Hazardous Waste Incinerator Complex - DSC01313

Photograph was Removed

Photograph SPCC - 24: [redacted]

Photograph SPCC - 25: Two 264-gal Diesel Tanks for Emergency Power Generator 6304 at Hazardous Waste Incinerator Complex - DSC01321

Photograph SPCC - 26: Mobile Emergency Power Gen Set (Temporary Replacement for Generator 6304) at Hazardous Waste Incinerator Complex - DSC01324

Photograph CAA - 1: View of Burning of Propellants at Open Burning Ground - Burning Ground 5

Photograph CAA - 2: Another View of Burning of Propellants at Open Burning Ground - DSC01298

Photograph CAA - 3: Overview of Nitrocellulose Plant - EPA Audit 174

Photograph CAA - 4: View of Top of SCR Exhaust Stack at Nitrocellulose Plant - EPA Audit 173

Photograph CAA - 5: View of Top of Piccolo Scrubber Stack at Nitrocellulose Plant - EPA Audit 175

Photograph CAA - 6: Contaminated Scrap Burn Area - EPA Audit 176

Photograph CAA - 7: Overview of Coal Storage Area - EPA Audit 177

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Attachment RCRA-C-1: Virgina Department of Environmental Quality Approval for Open Burning at Contaminated Scrap Burn Area

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[redacted]

From: [redacted]
Sent: Thursday, October 28, 2010 9:30 AM
To: [redacted]
Cc: [redacted]
Subject: FW: RFAAP: B-Line Demo Project - rotary vacuum filter drums

DEQ approved open burring of the Vacuum Filter Drums

Thank You

[redacted]

Environmental Affairs Department
Alliant Techsystems Inc.
P.O. Box 1
Radford, VA 24143

[redacted]

"Together Everyone Accomplishes More." (TEAM)

From: Adams, Frank (DEQ) [mailto:Frank.Adams@deq.virginia.gov]
Sent: Thursday, October 28, 2010 7:32 AM
To: [redacted]
Cc: [redacted]
Subject: RE: RFAAP: B-Line Demo Project - rotary vacuum filter drums

[redacted]

The DEQ Air and Waste staff have reviewed your request. Based upon the circumstances presented, DEQ has no objection to including these two items for open burning.

From: [redacted] t@ATK.COM]
Sent: Monday, October 18, 2010 6:45 PM
To: [redacted]
Cc: [redacted]
Subject: RFAAP: B-Line Demo Project - rotary vacuum filter drums

[redacted]

We have two pieces of equipment coming from the B-Line Project that we propose to open burn rather than run through the oven. In the poacher blender building (Bldg 2024) the rotary vacuum filter drums are too heavy to get into the oven. They were removed by a track hoe from the upper floor and will require

a crane to put it on flat bed truck. The oven is accessed with a fork truck horizontally through doors. These pieces of equipment are too heavy for the fork trucks to move into and out of the oven.

RFAAP requests that the rotary vacuum filter drums be added to the list of equipment to be open burned. If you have any questions or need additional information please contact me.

Thank You

[redacted]
Environmental Affairs Department
Alliant Techsystems Inc.
P.O. Box 1
Radford, VA 24143
[redacted]

"Together Everyone Accomplishes More." (TEAM)

From: Adams, Frank (DEQ) [mailto:Frank.Adams@deq.virginia.gov]
Sent: Thursday, June 03, 2010 10:05 AM
To: [redacted]
Cc: [redacted]
Subject: RE: B-Line Demo Project

[redacted]

The DEQ Air and Waste staff has discussed your proposal for open burning materials from the demolition project. We agree with your proposal, provided that only those materials identified in section 5c are burned.
As a condition to this approval, you must notify this office of the days when open burning will be conducted. This notification must be submitted 24 hours prior to conducting the burning. In the event that the DEQ declares an alert, warning, or emergency stage of an air pollution episode, all open burning shall immediately be terminated.

Should you have any questions concerning this correspondence, please contact my office.

Frank Adams
Air Compliance Manager
Blue Ridge Regional Office
(540) 562-6773
Frank.adams@deq.virginia.gov

From: [redacted]
Sent: Monday, May 24, 2010 11:11 AM
To: [redacted]

Cc: [redacted]
Subject: RE: B-Line Demo Project

[redacted]

Thank you for your response to the site visit. We have discussed these issues with our safety department and think that we have struck a good balance to protect human health and the environment.

1. What is the total volume of material to be open burned?

There is an estimated 200 tons of wood from the building walls that will need to be burned. This wood has been exposed to many years of building nitrocellulose/nitrocotton (NC) purification. The building has been in "stand-by" status for many years with operations continuing to wash the building down due to the risk of nitrocellulose in the building. An estimated 100 tons of scrap metal requires burning to decontaminate prior to recycling off-plant as scrap metal.

2. What percentage is wood, metal and plastic?

The plastic will be removed and disposed of off-plant. The plastic will not accumulate NC such that burning will be required.

3. Describe how the facility will manage pressure treated wood and asbestos-containing materials.

Asbestos materials (such as pipe insulation, roofing and siding) have been identified by a certified asbestos inspector and are being removed by a licensed contractor. No burning of Asbestos materials will be required. Treated wood will be removed before demolition begins, cleaned, inspected, and transported off-plant for proper disposal.

4. A similar demolition project occurred in the mid-2000's: similar buildings in number, size and type. The demotion debris was open burned. How many burns did it take to process all of the demo debris from that project?

A review of our records indicate that about 140,000 pounds were accumulated on the scrap burning ground during the first calendar quarter 2001 (January - March) and 165,000 pounds were accumulated on the scrap burning ground during the second calendar quarter 2001 (April - June). Records indicate that the scrap burning ground was burned once in 2001 on June 8, 2001.

5. In the mid-2000's, the DEQ asked the facility to evaluate the waste streams being processed at the open burn pile and to employ a waste management hierarchy. The DEQ asked the facility to categorize the material as follows:

a) Wastestreams, which do not pose a real safety concern, that could be diverted to a landfill without treatment.
b) Wastestreams, which have a real safety concern, that could be diverted to more conventional waste management options such as the decon oven or pressure washing prior to conventional recycling or disposal.
c) Wastestreams, which have a real safety concern, but that are too large to be processed in the decon oven.

It is this last group (c) that the DEQ indicated consideration would be given to for open burning in the future. Describe the challenges the facility faces in categorizing and managing the demolition debris from this project per

the above protocol. Sufficient detail should be provided to evaluate whether the conditions pose a real challenge for the facility.

Here is a breakdown of how the materials will be managed:

a) Wastestreams, which do not pose a real safety concern, that could be diverted to a landfill without treatment.

From this project the metal pipes that are in the building that were not in NC service like the fire water lines and metal conduit can be recycled as scrap metal after washing and inspection. Plastic conduit can be disposed of as solid waste after washing and inspection. The support buildings will be handled as nonhazardous solid waste. The building bricks and concrete will be managed as solid waste or inert debris after washing and inspection.

b) Wastestreams, which have a real safety concern, that could be diverted to more conventional waste management options such as the decon oven or pressure washing prior to conventional recycling or disposal.

The stainless steel tanks that have been in NC service can be washed and inspected inside and out. These will be prepared on-site for scrap metal recycling off-plant to minimize mishandling of the material by scrap dealers. The roof materials will be managed as solid waste after washing and inspection. The metal siding on the NC service buildings will be managed as scrap metal after washing and inspection. The treated wood decking was replaced shortly before the building was put into stand-by and has not been used in any significant NC production. Therefore, this material will be managed as solid waste after washing and inspection.

c) Wastestreams, which have a real safety concern, but that are too large to be processed in the decon oven.

This project will generate three kinds of materials that present a safety concern that requires open burning. First there are carbon steel tanks and piping (mostly wastewater piping) that have been in NC service that have a rust layer in contact with NC. Our experience indicates that NC is incorporated into this rust layer as it is formed and cannot be removed by washing. The joints of pipe that are less than 9' feet long will be sent to the decon oven. The tanks and longer piping sections will require open burning. Second there are stainless steel items that have been in NC service such as long joints of pipe that are too big to go in the decon oven and cannot be adequately cleaned and inspected to be sold as scrap metal without heat decontamination. Third there is wood that has been in NC service that has sufficient cracks and NC exposure that the Safety Department requires heat decontamination before removal from the facility. In general, this will be limited to the interior wood walls and structural support for the NC service buildings. The hollow wall construction and years of operation has allowed NC to build up in the space between the metal siding and the interior wooden walls. These buildings have been kept wet by weekly wet downs during the standby period. The wood will be keep wet during demolition and removal but has sufficient cracks and NC exposure that the Safety Department requires heat decontamination before removal from the facility.

Thank You

[redacted]

Environmental Affairs Department
Alliant Techsystems Inc.
P.O. Box 1

Radford, VA 24143
[redacted]

"Together Everyone Accomplishes More." (TEAM)

From: Lohman, Elizabeth (DEQ) [mailto:Elizabeth.Lohman@deq.virginia.gov]
Sent: Friday, February 12, 2010 5:50 PM
To: [redacted]
Cc: [redacted]
Subject: B-Line Demo Project

[redacted]

I would like to thank you for the opportunity to meet with ATK staff to discuss the demolition project and the debris management that is proposed. As we discussed at the close of the site visit, I am forwarding the below request for information. Once we have your responses, DEQ's Waste and Air Programs will discuss the proposal to open burn materials from the demolition project.

1. What is the total volume of material to be open burned?
2. What percentage is wood, metal and plastic?
3. Describe how the facility will manage pressure treated wood and asbestos-containing materials.
4. A similar demolition project occurred in the mid-2000's: similar buildings in number, size and type. The demotion debris was open burned. How many burns did it take to process all of the demo debris from that project?
5. In the mid-2000's, the DEQ asked the facility to evaluate the wastestreams being processed at the open burn pile and to employ a waste management hierarchy. The DEQ asked the facility to categorize the material as follows:
   a) Wastestreams, which do not pose a real safety concern, that could be diverted to a landfill without treatment.
   b) Wastestreams, which have a real safety concern, that could be diverted to more conventional waste management options such as the decon oven or pressure washing prior to conventional recycling or disposal.
   c) Wastestreams, which have a real safety concern, but that are too large to be processed in the decon oven.

   It is this last group (c) that the DEQ indicated consideration would be given to for open burning in the future. Describe the challenges the facility faces in categorizing and managing the demolition debris from this project per the above protocol. Sufficient detail should be provided to evaluate whether the conditions pose a real challenge for the facility.

If you have any questions, please feel free to contact me.
Beth

Elizabeth A. Lohman
Environmental Program Planner
Virginia Department of Environmental Quality
Blue Ridge Regional Office
Tel. 540.562.6799
Email. Elizabeth.Lohman@deq.virginia.gov ***NEW***

This email is provided as informational only, and should not be considered a legal opinion or a case decision as defined by the Administrative Process Act, Code of Virginia § 2.2-4000 *et seq*.

Attachment RCRA-C-2: Profiles for Hazardous Waste Treated at RFAAP under RCRA Part B Permit

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TABLE 1

WASTE GENERATED AT RFAAP ALLOWED FOR TREATMENT AT OPEN BURNING GROUND

Group No.	Category	Defining Characteristics	
1	Miscellaneous Waste	Ignitable and reactive Liquids and Sawdust D001, D003	Propellant wastes, Nitrate ester wastes only. No solvents unless more than 50% Propellant
2	Miscellaneous Waste	Propellant Laboratory Waste D003, D008, D030, D004	Not allowed at OBG
3	Miscellaneous Waste:	Pit Cotton Solid Waste	Not allowed at OBG
4	Miscellaneous Waste	Off specification Dinitrotoluene, Trinitrotoluene, Isotrioil D030	
5	Liquid Waste	Water Containing Triethlyene Glycol Solid Waste	Not allowed at OBG
6	Liquid Waste	Water Containing Diethylene Glycol Solid Waste	Not allowed at OBG
7	Single Base Propellants	Propellant with Nitrocellulose or lead D003, D008	
8	Single Base Propellants	Propellant with Nitrocellulose D003	
9	Single Base propellant	Propellant with Nitrocellulose and Dinitrotoluene D003, D030	
10	Double Base Propellants	Propellant with Nitrocellulose or Nitrate Esters D003	
11	Double Base Propellant	Propellant with Nitrocellulose, Nitrate Esters or a Non toxic metal COC D003	
12	Single or Double Base propellant	Propellant with Nitrocellulose, Lead, or Nitrate Esters D003, D008	

TABLE 1

WASTE GENERATED AT RFAAP ALLOWED FOR TREATMENT AT OPEN BURNING GROUND

13	Double base propellant	Propellant with Nitrocellulose, Nitrate Esters or Solid Explosives D003,	
14	Triple base propellant	Propellant with Nitrocellulose, Nitrate Esters or Nitroguanidine D003	
15	Load, Assemble, & Pack Waste	Energetic materials from manufacturing cartridges D003	
16	Single Base Propellants	Propellant with Nitrocellulose, Dinitrotoluene or Lead D003, D008, D030	
17	Specialty Products Waste Group A	Propellant with Nitrocellulose, Nitrate Esters, Nitroguanidine, Solid Explosives , or 40 CFR Part 261, App VIII Constituents D003	
18	Specialty Products Waste Group B	Propellant with Nitrocellulose, Nitrate Esters, Nitroguanidine, Solid Explosives, or 40 CFR Part 261, App VIII Constituents, Chlorides or Perchlorates D003	
19	Specialty Products Waste Group C	Propellant with Nitrocellulose, Nitrate Esters, Nitroguanidine, Solid Explosives, or 40 CFR Part 261, App VIII Constituents, or Metals D003, D004-D010	
20	Screening and floor wastes	Items that require extra fuel for burning but otherwise are D003.	

TABLE I

WASTE GROUPS BURNED AT THE RFAAP INCINERATORS

Group No.	Description	Defining Characteristics
1	Miscellaneous Waste	Ignitable and reactive liquids and sawdust D001, D003
2	Miscellaneous Waste	Propellant Laboratory Waste D003, D008, D030, D004
3	Miscellaneous Waste	Pit Cotton (Waste Nitrocellulose) Solid Waste
4	Miscellaneous Waste	Off-specification dinitrotoluene D030
5	Liquid Waste	Water Containing Triethylene Glycol Solid Waste
6	Liquid Waste	Water Containing Diethylene Glycol Solid Waste
7	Single Base Propellants	Propellant with Nitrocellulose and Lead D003, D008
8	Single Base Propellants	Propellant with Nitrocellulose D003
9	Single Base Propellants	Propellant with Nitrocellulose and Dinitrotoluene D003, D030
10	Double Base Propellants	Propellant with Nitrocellulose and Nitrate Esters D003
11	Double Base Propellants	Propellant with Nitrocellulose, Nitrate Esters and Perchlorate salts D003
12	Double Base Propellants	Propellant with Nitrocellulose, Nitrate Esters and Lead D003, D008
13	Double Base Propellants	Propellant with Nitrocellulose, Nitrate Esters and Solid Explosives D003
14	Triple Base Propellants	Propellant with Nitrocellulose, Nitrate Esters and Nitroguanidine D003
15	Load, Assemble, & Pack Waste	Energetic materials from manufacturing cartridges D003
16	Single Base Propellants	Propellant with Nitrocellulose, Dinitrotoluene, and Lead D003, D008, D030
17	Specialty Products Waste	Propellant with Nitrocellulose, Nitrate Esters, Nitroguanidine, Solid Explosives, or Appendix VIII[1] Constituents D003
18	Specialty Products Waste	Propellant with Nitrocellulose, Nitrate Esters, Nitroguanidine, Solid Explosives, and Appendix VIII[1] Constituents, Chlorides, or Perchlorates D003
19	Specialty Products Waste	Propellant with Nitrocellulose, Nitrate Esters, Nitroguanidine, Solid Explosives, and Appendix VIII[1] Constituents, or Metals D003, D004-D010

1. 40 CFR 261, Appendix VIII

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
D001																			
Acetone	<20	<5								<5				0 7	<5				
Alcohol	<20	<5						0 26	0 17	<5				0 11	<5				
Ethanol		<5																	
Ether	<20	<5						0 74	0 25										
Isopropanol	<20	<5																	
Methanol	<20	<5																	
1-Methoxy-2-propanol	<20	<5																	
1-Methoxy-2-propanol-acetate	<20	<5																	
Methyl chloride	<20	<5																<5	
D003																			
2-Nitratoethyl-nitramine		<5																0 100	
2 Hydroxy methyl-2-methyl-1,3-propanediol trinitrate (TMETN)	<20	<5								0 45	0 45	0 45	0 45	0 45			0 45	0 45	0 45
Ammonium perchlorate		<5											0 100		0 100			0 100	
Butanol	<20	<5								0 45	0 45	0 45	0 45	0 45			0 45	0 45	0 45

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
Diethylene glycol dinitrate (DEGDN)	<20	0 45								0 45							0 45	0 45	0 45
Metriol trinitrate	<20	<5								0 45		0 38.5					0 45	0 45	0 45
N-propanol	<20	<5																	
Nitroglycerin (NG)	<20	0 45								0 45	0 35.5	0 45	15 17	17.0 23.5	42.5 45.5		0 45	0 45	0 45
Nitroguanidine (NQ)		<5															<5	<5	<5
Toluene	<20	<5															<5	<5	<5
Triethylene glycol dinitrate (TEGDN)	<20	<5								0 45	0 35	0 40.6	0 17	0 23.5	42.5 45.6		0 45	0 45	0 45
Cyclonite (RDX)													0 35		0 35		0 50	0 50	0 50
Cyclotetramethylenetetra-nitramine (HMX)													0 35		0 35		0 50	0 50	0 50
D004-D011																			
Arsenic		<5																	<5
Barium N.O.S		<5																	<5
Lead compounds N.O.S.		<5					1.2					0.8 5.4				0.8 2.0	<5	<5	<5
Mercury		<5																	<5
Silver		<5																	

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
40 CFR 261, Appendix VIII																			
2,4 Dinitrotoluene		0 10		5 100					6 12							5 10	<5	<5	<5
2-Nitrodiphenylamine		<5								1.5 2.5		0 2.5	0.0 1.2				<5	<5	<5
Antimony sulfide		<5															<5	<5	<5
Chlorobenzene		<5															<5	<5	<5
Chromium nitrate		<5															<5	<5	<5
Dibutyl phthalate		<5				<5		1 3	1 3			0 9		0 3.3	1 3	<5.0	<5	<5	<5
Diethyl phthalate		<5								1 3		0 10.5					<5	<5	<5
Diphenylamine		<5						0.4 1.7	0.5 1.3	<5						0 10	<5	<5	<5
Hexachloroethane		<5															<5	<5	<5
Mercuric chloride		<5															<5	<5	<5
Methylene chloride		<5								0 25							<5	<5	<5
Potassium perchlorate		<5									7.8 8.05						<5	<5	<5
OTHERS																			
Akardit II		<5								0 1									

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
Aluminum		<5								0 1.50		0 1.5							
Aluminum magnesium alloy		<5																	
Antioxidant		<5																	
Benzene carboxylic acid		<5																	
Black copper oxide (cupric oxide, CuO)		<5																	
Boric acid		<5																	
Butyl stearate		<5							<5										
Candella wax		<5								0.1 0.2		0 0.2			0 0.2				
Carbolac		<5																	
Carbon black		<5						0.4		0.05 0.5	0.60 1.2	0 0.05		0 0.1	0.1 0.3				
Cellulose acetate		<5								<5									
Charcoal		<5						9 10											
Chlorowax		<5																	
Chlorowax 70		<5																	
Copper carbonate		<5																	

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
Copper chromite		<5																	0 1
Copper oxide (Cu_2O)		<5																	
Copper oxychloride		<5																	
Copper salicylate		<5										0 2.5							
Cryolite		<5												0 0.4					
Dextroamphetamine sulfate (dextrine)		<5																	
Dihydrate, tetrasodium pyrphasate		<5																	
Di-N-propyl-adipate		<5								0.4		0 3.3							
1,3-Diphenylguanidine		<5																	
Ethyl centralite		<5						0.4 0.6	1.0 1.4	0.25 2.0	0 0.9	0 2.3		0 1.6	1.7 2.3				0.60
Ethyl cellulose		<5								<5									
Ethylene-vinyl acetate polymer		<5													<5				
Ferrous ammonium sulfate		<5																	
Graphite		<5					0.10	0 0.4	0 0.4	0.2 0.4		0 0.5		0 0.2	<5				0.30
Herkote		<5								<5									

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
Hydrocarbon resin		<5																	
Iron		<5																	
Isopropyl acetate		<5																	
Lactoge shellac		<5																	
Laxtose		<5																	
Magnesium		<5																	
Magnesium carbonate		<5																	
Magnesium oxide		<5								0 0.05									
Methyl centralite		<5						0.5 6.0											
Morpholine		<5																	
N-butyl acetate		<5																	
N-butyl stearate							0 3.0		0 3.3										
Nitrocellulose		0 45	0 30				94	14 98	13.0 90	53 80	0 59	48.5 53	18 52	20.5 29.5	50 54	55 85	0 80	0 80	0 80
Orasol blue		<5								<5									
Orasol yellow		<5								<5									

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
Oxamide		<5											0 5.5						
Perchloric acid		<5																	
Phenolilc resin		<5																	
Phosphorous pentoxide		<5																	
Polyvinyl chloride		<5																	
Potassium benzoate		<5																	
Potassium chlorate		<5																	
Potassium hydrogen phthalate		<5																	
Potassium nitrate		<5						0 65		0 1.5									0.075
Potassium salts		<5						0 2.2											
Potassium sulfate		<5					0 1.25	0 77	0.1 1.5	<5		0 1.5		0 1.5	<5	0 1.0			
Red gum – N.F.V.		<5																	
Remix		<5								<5									
Rosin		<5																	
Shellac		<5																	

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
Silicon		<5																	
Sodium acetate		<5																	
Sodium alkyl benzene sulfonates		<5																	
Sodium bicarbonate		<5																	
Sodium carbonate		<5																	
Sodium citrate		<5																	
Sodium dichloro-3-triazinetrione		<5																	
Sodium methoxide		<5																	
Sodium oxalate		<5																	
Sodium salicylate		<5																	
Sodium sulfate anhydrous		<5																	
Stearic acid		<5																	
Strontium carbonate		<5																	
Strontium nitrate		<5																	
Sulfur		<5						6 7											

TABLE II

PROFILES OF RFAAP WASTE GROUPS PRESENTED IN RANGES OF COMPOSITION (wt. %)

Constituent	GRP 1	GRP 2	GRP 3	GRP 4	GRP 5	GRP 6	GRP 7	GRP 8	GRP 9	GRP 10	GRP 11	GRP 12	GRP 13	GRP 14	GRP 15	GRP 16	GRP 17	GRP 18	GRP 19
Tetra bromethane		<5																	
Titanium		<5																	
Titanium dioxide		<5								<5									
Triacetin	10 25	<5								0 3.25		0 3.25							
Vinsol		<5								<5									
Ethyl lactate												0 37.8							
Butyl acetate												0 69.8							
Di-normal-propyl-adipate												0 2.0							
Sawdust	57 79			0 95															
Ash	0 57	0.2 4.5	0 0.6	0.2 45	0.7 1.2	0.7 0.8	0.9 2.4	0.2 75.2	0 5.3	0 4.1	0.1 3.1	0.2 9.3		0 1.1	0.2 8.3	0.4 2.5			0.9 1.6
Maximum Theoretical Heat of Explosion – (BTU/pound)	**110**	**2350**	**0**	**270**	**0**	**0**	**1350**	**1800**	**1440**	**2340**	**1980**	**1800**	**2340**	**1530**	**2340**	**1130**	**2340**	**1980**	**1980**

Attachment RCRA-C-3: Procedures to Handle Fire and Oil and Hazardous Materials Releases

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TABLE 1
EMERGENCY PROCEDURES

RFAAP Disaster Control Plan (RFAAP-DCP) provides plans for:

1) Equipment and/or facility damage
2) Oil and hazardous substance control
3) Chemical, nuclear or radiological accidents
4) Emergency situation reporting
5) Search and rescue operations
6) Crisis emergency/relocation plan
7) Communications-electronics

Spill Prevention, Control and Countermeasure (SPCC) Plan and Installation Spill Contingency Plan (ISCP) for spills other than hazardous waste described in the Part B permit.

SPCC provides:

1) The location and capacity of tanks containing process materials and wastes
2) A description of equipment and/or operation
3) Spill potential information (types of failure, description of flow, maximum loss anticipated, detection methods, time to reach river)

ISCP is concerned with the recognition, reporting, containment and notification procedures in the event of leaks and spills.

Fire Prevention and Protection Program Describes:

1) Employee and Fire Department personnel responsibilities for fire prevention and protection
2) Inspection and use of equipment and supplies
3) Fire Department training program
4) Building evacuation procedures
5) Annual Fire Prevention and Protection Program
6) Prefire plan and other fire plans

RFAAP Hazardous Material Emergency Response Plan provides:

1) Emergency response notification requirements
2) Training requirements
3) Medical surveillance
4) HAZCOM MSDS information
5) List of hazardous materials at RFAAP
6) PPE selection criteria
7) Available material and equipment
8) Emergency response procedure
9) Incident command structure and response
10) Emergency response guidelines (per chemical basis)

TABLE 1
EMERGENCY PROCEDURES (Continued)

Oil Discharge Contingency Plan provides:

1) Regulated petroleum tank information
2) Emergency notification requirements
3) Worst case discharge information
4) Disaster plan strategies
5) I.D. of natural responses at risk or facilities
6) Oil discharge drills
7) Facility staffing, equipment and material levels and inventories
8) Training requirements
9) Inspection procedures
10) Facility security

Plant Protection Plan (PPP)

Outlines plant protection/security procedures including the security of explosives, intrusion detection systems, protective communications and key and lock control.

Procedures

4-27-2: Maintenance Responsibilities During Disaster and Major Emergencies

Applicable Plant Operating Procedure: Protective Clothing and Equipment

Attachment II.H of this Permit: Flood Proofing/Protection Plans and Specifications and 100-Year Response Procedures

4-15-53: Clean-up and Decontamination of NG/Nitrate Ester and Other Hazardous Spills

4-3-2: Area General Waste Propellant Incinerator Facility

Attachment RCRA-C-4: Select Uniform Hazardous Waste Manifests and Land Disposal Restriction Notification Forms

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D5939

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: VA1 210 020 730
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300 Chemtrec
4. Manifest Tracking Number: 006748108 JJK

5. Generator's Name and Mailing Address
Alliant Techsystems, Inc.
PO Box 1, Radford, VA 24143
Generator's Phone: 540 639-7686 Attn: H R Blankenship

Generator's Site Address (if different than mailing address)
Alliant Techsystems, Inc.
110 Peppers Ferry Rd
Radford, VA 24141

6. Transporter 1 Company Name: Triad Transport
U.S. EPA ID Number: OKD 981 588 701

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EBV Explosives Environmental Co.
4174 County Road 180
Facility's Phone: 417 624-0212 Carthage, MO 64836
U.S. EPA ID Number: MOD 988 798 164

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ, NA3082, Hazardous Waste Liquid, NOS (2,4 DNT, TNT), 9, PGIII (D030)	006	DM	2565	P	D030		
X	2. RQ, UN1838, Waste Titanium tetrachloride, 8 (6.1), PGII	001	DF	0.5	P	None		
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1. 1308-4002 TNT contaminated debris ERG# 171 CESI Job # ROAN-TFORT-1883-18874
2. 1308-9901 smoke gun refills ERG# 137

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ALLIANT TECHSYSTEMS INC BY: H.R.BLANKENSHIP, TRANSPORTATION ANALYST
Signature: H.R. Blankenship
Month 10 Day 25 Year 10

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Michael Richards
Signature:
Month 10 Day 26 Year 10
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H040 2. H040 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: Chris Feather
Signature:
Month 10 Day 25 Year 10

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR STATE (IF REQUIRED)

GENERAL DYNAMICS
Ordnance and Tactical Systems
Munition Services

General Dynamics OTS - Munition Services
EPA I.D. # MOD985798164

P.O. Box 1386
Joplin, MO 64802
(417) 624-0212
(417) 782-6366 (fax)

CERTIFICATE OF DISPOSAL

On behalf of Alliant Techsystems, Inc. (RFAAP), Generator,

EPA I.D. # VA1210020730 the waste listed on

Hazardous Waste Manifest No. 006748108JJK,

received from its Radford, VA 24143-0100 Facility, on

Oct-29-2010 has been treated by

incineration and disposed of on Dec-20-2010.

Signed: Pat Rickman

Date: Dec-28-2010

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	VA1 210 020 730	1	800-424-9300	004173296 JJK

5. Generator's Name and Mailing Address
Alliant Techsystems, Inc.
PO Box 1, Radford, VA 24143
Generator's Phone: 540 839-6743 ATTN: H.R. Blankenship

Generator's Site Address (if different than mailing address)
Alliant Techsystems, Inc.
Rt. 114 Peppers Ferry Road
Radford, VA 24141

6. Transporter 1 Company Name: Freehold Cartage Inc — U.S. EPA ID Number: NJD 054 126 164

7. Transporter 2 Company Name: E/O Industrial Services — U.S. EPA ID Number: MID 000263871

8. Designated Facility Name and Site Address
Michigan Disposal Waste Treatment Plant
49350 N. I-94 Service Drive
Facility's Phone: 800-592-5489 Belleville, MI 48111
U.S. EPA ID Number: MID 000 724 831

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ, NA3082, Hazardous Waste Liquid, N O S. (F039 leachate) 9, PGII	004	DM	1745	~~G~~ P	F039
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
A. 121102MDE F039 waste ERG# 171
CESI Job# ROAN-TFORT-1983-18209

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ALLIANT TECHSYSTEMS INC BY: H.R. BLANKENSHIP, TRANSPORTATION ANALYST — Signature: [signature] — Month 0 Day 3 Year 1 1

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: [signature] — Signature: [signature] — Month 3 Day 31 Year 10
Transporter 2 Printed/Typed Name: [signature] — Signature: [signature] — Month 04 Day 02 Year 10

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 11075 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name: [signature] — Signature: [signature] — Month 4 Day 12 Year 10

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

Land Disposal Restriction & Certification Form

Please check the appropriate facility:

☒	**Michigan Disposal Waste Treatment Plant**	49350 N. I-94 Service Drive, Belleville, MI 48111	EPA ID # MID 000 724 831
☐	**Wayne Disposal, Inc. Site #2 Landfill**	49350 N. I-94 Service Drive, Belleville, MI 48111	EPA ID # MID 048 090 633
☐	**EQ Detroit, Inc.**	1923 Frederick Street, Detroit, MI 48211	EPA ID # MID 980 991 566
☐	**EQ Resource Recovery, Inc.**	36345 Van Born Road, Romulus, MI 48174	EPA ID # MID 060 975 844
☐	**EQ North Carolina**	1005 Investment Blvd, Apex, NC 27502	EPA ID # NCD 982 170 292
☐	**EQ Florida, Inc.**	7202 East 8th Ave, Tampa, FL 33619	EPA ID # FLD 981 932 494

Generator Name: Alliant Techsystems, Inc. **U.S. EPA ID No.:** VA1 210 020 730

Generator Address: Rt. 114 Peppers Ferry Road, Radford, VA 24141

State Manifest No.: **Manifest Doc. No.:** 004173296 JJK

Instructions

Column 1: Identify all U.S. EPA hazardous waste codes that apply to this waste shipment.
Column 2: Choose the appropriate treatability group: Non-Wastewater (NWW) or Wastewater (WW).
Column 3: Enter the appropriate Subcategory, if applicable, and also enter "Contaminated Soil" or "Debris" if the waste will be treated using one of the alternative treatment technologies provided by 268.49 (c) – soil, or 268.45 – debris.
Column 4: Enter the letter of the appropriate paragraph from pages 1-2 of this form.
Column 5: For F001 – F005, F039, D001 – D043, Debris and Contaminated Soil: please enter the Reference Number(s) for any constituents in your waste stream subject to treatment. The Reference Number(s) can be found in the EQ Resource Guide, LDR/UHC Constituent Table.

Manifest Line Item	U.S. EPA Hazardous Waste Code (s)	NWW or WW	Subcategory	How Must the Waste be Managed?	Reference Number(s) of Hazardous Constituents contained in the waste. Complete for F001-F005, F039, D001-D043, Soil and Debris wastes.
11A	F039	NNW		A	None
11B					
11C					
11D					

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature: H.R. Blankenship **Title:** Transportation Analyst

Printed Name: H.R. Blankenship **Date:** 03-31-2010

How Must the Waste Be Managed?

S. THIS CONTAMINATED SOIL *DOES / DOES NOT* (CIRCLE ONE) CONTAIN LISTED HAZARDOUS WASTE AND *DOES / DOES NOT* (CIRCLE ONE) EXHIBIT A CHARACTERISTIC OF HAZARDOUS WASTE AND *IS SUBJECT TO / COMPLIES WITH* (CIRCLE ONE) THE SOIL TREATMENT STANDARDS AS PROVIDED BY 268.49(c) OR THE UNIVERSAL TREATMENT STANDARDS. I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

CERTIFICATE OF DISPOSAL

This certificate is to verify the wastes specified on Manifest # 004173291 JJK

have been properly disposed of in accordance with all local, state and federal regulations.

"Disposed of" means either: 1) Burial or 2) Processed as specified in 40 CFR et sea.

FACILITY NAME: *(Please check one)*

☒ Michigan Disposal Waste Treatment Plant (EPA I.D. # MID000724831)

☐ Wayne Disposal, Inc. (EPA I.D. # MID048090633)

ADDRESS: 49350 N. I-94 Service Drive
Belleville, Michigan 48111

PHONE NUMBER: 1-800-592-5489

FAX NUMBER: 1-800-593-5329

Authorized Signature: Kenneth J Enright

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: VA1210020730
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 000106812MWI

5. Generator's Name and Mailing Address:
ALLIANT TECHSYSTEMS INC CHEMTREC CONTACT # 213056
ENERGETIC SYSTEMS DIVISION PO BOX 1
RADFORD, VA 24141
540-639-8504

Generator's Site Address (if different than mailing address):
ALLIANT TECHSYSTEMS INC CHEMTREC CONTRACT #.
ENERGETIC SYSTEMS DIVISION STATE ROUTE 114
RADFORD, VA 24141

Generator's Phone:

6. Transporter 1 Company Name: ENVIRONMENTAL OPTIONS INC
U.S. EPA ID Number: VA0000120084

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address:
EQ - MICHIGAN
49350 N I-94 SERVICE DR
BELLEVILLE, MI 48111
800-592-5489
U.S. EPA ID Number: MID000724831
Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (lead), 9, NA3077, III, RQ	27	DM	8,100	P	D008		
X	2. NA3077, Hazardous waste, solid, n.o.s. (LEAD), 9, III RQ	17	DM	5,100	P	D008		
X	3. UN1479, Waste Oxidizing solid, n.o.s. (potassium nitrite), 5.1, III	04	DM	1,200	P	D001	D008	
	4.							

14. Special Handling Instructions and Additional Information

1.) 082003MOE ; INCINERATOR ASH ; ERG # 171
2.) 082003MOE ; BURNING GROUND ASH ; ERG # 171
3.) 091401MAE ; FLASH SUPPRESANT ASH ; ERG # 140

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable International and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: ALLIANT TECHSYSTEMS INC BY: H.R.BLANKENSHIP, TRANSPORTATION ANALYST
Signature: H.R. Blankenship
Month 01 Day 13 Year 11

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Transporter signature (for exports only):
Port of entry/exit:
Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: DRIAN S. Lemon
Signature:
Month 01 Day 13 Year 11
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H111 2. H111 3. H111 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name:
Signature:
Month 01 Day 17 Year 11

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

LAND DISPOSAL RESTRICTION & CERTIFICATION FORM 6/98

Please check the facility you are shipping to:

☒ Michigan Disposal Waste Treatment Plant
(Stabilization and Treatment)
49350 N. I-94 Service Drive
Belleville, MI 48111
EPA ID # MID 000 724 831

☐ Wayne Disposal, Inc.
Subtitle C Landfill
(Secure Hazardous Waste Landfill)
49350 N. I-94 Service Drive
Belleville, MI 48111
EPA ID # MID 048 090 633

☐ Michigan Recovery Systems, Inc.
(Solvent Recycling, Fuel Blending & Wastewater Treatment)
36345 Van Born Road
Romulus, MI 48174
EPA ID # MID 060 975 844

Generator Name ALLIANT TechSystems Generator USEPA ID No. VA12100202730

Generator Address PO BOX 1 STATE ROUTE 114 RADFORD VA 24143

State Manifest No. MI Manifest Doc. No. 000106812 MWI

INSTRUCTIONS

- In Column 1 identify all USEPA hazardous waste codes that apply to this waste shipment.
- In Column 2, choose the appropriate treatability group: Non-Wastewater (NWW) or Wastewater (WW).
- In Column 3, enter the appropriate Subcategory, if applicable, and also enter "Contaminated Soil" or "Debris" if the waste will be treated using one of the alternative treatment technologies provided by 268.49(c) (soil) or 268.45 (debris).
- In Column 4, circle the letter of the appropriate paragraph from Pages 1-2 of this form.
- In Column 5, for F001-F005, F039, D001-D043, Debris & Contaminated Soil wastes, enter the Reference Number(s) from the EQ Resource Guide--LDR/UHC Constituent Table for any constituents subject to treatment in your waste stream.

Manifest Line Item #	1. USEPA HAZARDOUS WASTE CODE(S)	2. NWW or WW	3. SUBCATEGORY	4. HOW MUST THE WASTE BE MANAGED? (Circle one)	5. REFERENCE NUMBER(S) of Hazardous Constituents contained in the waste. Complete for F001-F005, F039, D001-D043, Soil & Debris wastes.
11.A	D008	☒ NWW ☐ WW		(A) B C D E F G H I J K L M S	209 202 204
11.B	D001 D008	☐ NWW ☐ WW		(A) B C D E F G H I J K L M S	209 202 204
11.C		☐ NWW ☐ WW		A B C D E F G H I J K L M S	
11.D		☐ NWW ☐ WW		A B C D E F G H I J K L M S	

I hereby certify that all information submitted on this and all associated documents is complete and accurate to the best of my knowledge and information.

Generator Signature H.R. Blankenship Title Transportation Analyst

Printed Name H.R. Blankenship Date 01-13-2011

HOW MUST THE WASTE BE MANAGED?

For S, circle the appropriate response for the 3 *italicized* options:

S. THIS CONTAMINATED SOIL *DOES / DOES NOT* (CIRCLE ONE) CONTAIN LISTED HAZARDOUS WASTE AND *DOES / DOES NOT* (CIRCLE ONE) EXHIBIT A CHARACTERISTIC OF HAZARDOUS WASTE AND *IS SUBJECT TO / COMPLIES WITH* (CIRCLE ONE) THE SOIL TREATMENT STANDARDS AS PROVIDED BY 268.49(c) OR THE UNIVERSAL TREATMENT STANDARDS. I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: VA1210020730
2. Page 1 of 1
3. Emergency Response Phone: 800-424-9300
4. Manifest Tracking Number: 000107052 MWI

5. Generator's Name and Mailing Address: ALLIANT TECHSYSTEMS INC CHEMTREC CONTACT # 213056 ENERGETIC SYSTEMS DIVISION PO BOX 1 RADFORD, VA 24141 540-639-8504

Generator's Site Address (if different than mailing address): ALLIANT TECHSYSTEMS INC CHEMTREC CONTRACT # . ENERGETIC SYSTEMS DIVISION STATE ROUTE 114 RADFORD, VA 24141

Generator's Phone:

6. Transporter 1 Company Name: ENVIRONMENTAL OPTIONS INC — U.S. EPA ID Number: VA0000122994

7. Transporter 2 Company Name: Midwest Environmental Transport — U.S. EPA ID Number: OHD000.000.529

8. Designated Facility Name and Site Address: ENVIRONMENTAL ENTERPRISES INC, 4650 SPRING GROVE AVE, CINCINNATI, OH 45232 — U.S. EPA ID Number: OHD083377010

Facility's Phone: 800-545-1823

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3077, Hazardous waste, solid, n.o.s. (LEAD), 9, III RQ	02	BSF DM DF	85	P	D008		
X	2. NA3082, Hazardous waste, liquid, n.o.s. (LEAD), 9, III RQ	01	DM	165	P	D008		
X	3. UN2811, Waste Toxic solids, organic, n.o.s. (DINITROTOLUENE), 6.1, II RQ	09	DM	390	P	D030		
X	4. UN3454, Waste Dinitrotoluenes, solid, 6.1, II RQ 12976-77	02	DM	520	P	D030	U105	

14. Special Handling Instructions and Additional Information

1.) X71574 ; LEAD CONTAMINATED PPE ; ERG # 171 1-12964-65
2.) V1498 ; LEAD ROTOCLONE WATER ; ERG # 171 2966
3.) X72628 ; DNT CONTAMINATED PLASTIC BAGS ; ERG # 154 12967-75

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: BY: H. R. BLANKENSHIP, TRANSPORTATION ANALYST — Signature: H R Blankenship — Month 03 Day 10 Year 11

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Brian S. Lemon — Signature: [signature] — Month 03 Day 10 Year 11

Transporter 2 Printed/Typed Name: Karen Y. Kent — Signature: Karen Y. Kent — Month 03 Day 10 Year 11

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1. H141 2. H111 3. H141 4. H141

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Greg Reid — Signature: Greg Reid — Month 4 Day 4 Year 11

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

ENVIRONMENTAL ENTERPRISES, INC.
RESTRICTED WASTE NOTIFICATION & CERTIFICATION

___ALLIANT TECHSYSTEMS Manifest Document No:__000107052MWI State Manifest No:_____.
Shipment contains waste(s) restricted from land disposal under 40 CFR Part 268 and OAC Chapter 3745-59. A copy of this notice and all supporting analysis must be kept for three (3) years.

INSTRUCTIONS:

Column 1: List all waste codes that apply to this waste.
Column 2: Mark the appropriate treatability Group that applies to the waste at the point of Generation. Wastewater is <1% total Suspended solids and <1% total organic carbon, NWW (Non-Waste Water) or WW (Waste Water)
Column 3: Enter legend if any for the subcategory that applies to this waste from the subcategory list on page 2 of this form.
Column 4: Enter the letter of the appropriate paragraph from pages 1 & 2 of this form
Column 5: If D001-D043, enter the Reference # for All underlying hazardous constituents that may be present in the waste. If F001-F005, enter the Reference # of the constituents of concern from the attached: EEI's Restricted Waste Notification & Certificate for Underlying Hazardous Constituent Treatment Standards.

EEI Profile Number	1. Waste Code	2. Treatability Group	3. Subcategory Legend (if any)	4. How Waste must be Managed (A-N)	5. Reference # of hazardous constituents in waste (complete for F001-F005 & D001-D043), Soil & Debris
X71574	D008	NWW		A	248
V1498	D008	NWW		A	248
X72629	D030	NWW		A	105
V4122	D060 U105	NWW		A	105

FOR ADDITIONAL PROFILES, USE ATTACHED CONTINUATION FORM.

CERTIFICATION! (Please sign)

The information provided is true and correct and is based on analysis of a representative sample of the waste in accordance with EPA guidelines Document SW-846 EPA 60012-80018 or on my thorough knowledge of the waste.

Signature H R Blackwelder Title Transportation Analyst Date 03-10-2011

HOW WASTE MUST BE MANAGED

A. RESTRICTED WASTE REQUIRING TREATMENT TO THE APPROPRIATE TREATMENT STANDARD
This shipment contains restricted waste that must be treated to comply with applicable treatment standards and/or prohibitions prior to land disposal.

B. RESTRICTED WASTE THAT CAN BE LANDFILLED WITHOUT FURTHER TREATMENT
This shipment contains a restricted waste that meets the applicable treatment standards and/or prohibition levels and can be landfilled without further treatment. I have attached all available supporting data. "I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CRF part 268 Subpart D, in Rules 3745-59-40 to 3745-59-44 of the Administrative Code, and all applicable prohibitions set forth in 40 CFR 268.32, and Rules 3745-59-32 of the Administrative Code or Section 3004(d) of RCRA. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment." Evaluation of this waste is based upon:____Analysis (attached)____Knowledge of waste (materials used/process employed)

C. RESTRICTED WASTE TREATMENT TO PERFORMANCE STANDARDS
"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that the waste complies with the treatment standards specified in 40 CFR part 268 Subpart D, (and) in Rules 3745-59-32 to 3745-59-44 of the Administrative Code, and all applicable prohibitions set forth in 40 CFR 268.32 and in Rule 3745-59-32 of the Administrative Code or Section 3004(d) of RCRA without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

D. RESTRICTED WASTE FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY) "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42 and rule 3745-59-42 of the Administrative Code. I am aware that there are significant penalties for submitting a false certification, including the possibility of fines and imprisonment."

E. CHARACTERISTIC WASTE TREATED TO REMOVE HAZARDOUS CHARACTERISTICS THAT REQUIRES ADDITIONAL TREATMENT FOR UNDERLYING HAZARDOUS CONSTITUENTS (Reference Underlying Hazardous Constituent Form.) "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This de-characterized waste contains underlying hazardous constituents that require further treatment to meet Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

F. LAB PACK QUALIFYING FOR ALTERNATIVE CERTIFICATION UNDER 40 CFR 268.
Hazardous waste with the following waste codes may not be placed in lab packs under alternate treatment standards of 168.42 (INCIN) D009, K019, K003, K004, K005, K006, K071, K100, K106, P010, P011, P012, P076, P078, U134 and U151."I certify under penalty of law that I have personally examined and am familiar with the waste and that the lab pack contains only wastes which have been excluded under Appendix IV to 40 CFR part 268 or solid wastes not subject to regulation under 40 CFR part261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."