

**U.S. Army Garrison - Redstone  
Huntsville, Madison County, Alabama  
EPA I.D. Number AL 7 210 020 742**

**FACT SHEET**

An emergency permit has been prepared for the Redstone Arsenal (RSA) facility, a hazardous waste facility located in Huntsville, Madison County, Alabama. This fact sheet has been prepared to briefly advise the public of the principal permitting, legal and policy issues of the permit.

**I. PERMIT PROCESS**

The purpose of the permitting process is to allow the State and the public to evaluate RSA's ability to comply with the hazardous waste management requirements of the Alabama Hazardous Waste Management and Minimization Act (AHWMMMA), as amended. RSA must comply with hazardous waste management conditions set forth in the emergency permit during its effective period, which is ninety (90) days, from June 13, 2016 to September 12, 2016.

**II. PROCEDURES FOR REACHING A FINAL DECISION**

The Alabama Department of Environmental Management (ADEM or Department) has issued an emergency permit to allow for the thermal treatment of thirteen steel tanks: four 1,500-gallon unsymmetrical dimethyl hydrazine (UDMH) tanks, one 3,831-gallon UDMH tank, and eight 630-gallon Jet A fuel tanks. ADEM Admin. Code r. 335-14-8-.08(6)(b)1. requires that the public be given at least a 45-day comment period for each permit. The comment period will begin on June 22, 2016, which is the date of publication of the public notice in a major local newspaper of general circulation, and will end on August 8, 2016. The public notice will also be broadcast over local radio station(s).

Any person interested in commenting on the emergency permit application or emergency permit must do so within the 45-day comment period discussed above. All persons wishing to comment on any of the permit conditions or the permit application should submit their comments in writing to the Alabama Department of Environmental Management, Permits and Services Division, 1400 Coliseum Blvd. (zip 36110-2059), P.O. Box 301463 (zip 36130-1463) Montgomery, Alabama, ATTENTION: Mr. Russell A. Kelly.

ADEM will consider all written comments received during the comment period. After the comment period, notice will be given to the applicant and each person who has submitted written comments or requested information. All comments received within the 45-day period will be considered in the formulation of future permits of this type.

**III. FACILITY DESCRIPTION**

Redstone Arsenal (RSA) is a contiguous U. S. Army installation operated by the U. S. Army Aviation and Missile Command. RSA is located in Madison County, Alabama, at

latitude N34° 37' 00" and longitude W86° 39' 00". RSA is bounded on the north by Interstate 565, on the east and northeast by the City of Huntsville, on the west and northwest by the City of Madison, and on the south by the Tennessee River. RSA is approximately 6 miles wide in an east to west direction and 10 miles long in a north to south direction. The installation occupies approximately 57.4 square miles or 37,910 acres.

RSA operates a hazardous waste facility that includes storage, the operation of Subpart X (Open Burning and Open Detonation Units or OB and OD) treatment facilities, and the implementation of investigation and corrective action for solid waste management units (SWMUs) and areas of concern (AOCs). These areas are permitted under the facility's AHWMMMA Treatment, Storage and Disposal (TSD) permit. This fact sheet specifically addresses the emergency permit that has been developed to allow for treatment of thirteen steel tanks.

#### **IV. SUMMARY OF PROPOSED PERMIT**

This emergency permit allows RSA to thermally treat thirteen steel tanks: four 1,500-gallon UDMH tanks, one 3,831-gallon UDMH tank, and eight 630-gallon Jet A fuel tanks at Redstone Test Center (RTC) Test Area #4 (TA 4). The UDMH tanks will be rendered RCRA empty, allowing them to be scrapped and recycled. Any vapor remaining in the former Jet A fuel tanks will be removed so that the tanks can be cut and deformed prior to recycling. RSA has 90 days to complete the treatment.

#### **V. TECHNICAL CONTACT**

Jeanne M. Barnes  
Governmental Hazardous Waste Branch, Land Division  
Alabama Department of Environmental Management  
1400 Coliseum Blvd (zip 36110-2059)  
P.O. Box 301463 (zip 36130-1463)  
Montgomery, Alabama  
Phone: (334) 271-7752  
Fax: (334) 271-7752  
Email: [jmbarnes@adem.state.al.us](mailto:jmbarnes@adem.state.al.us)

June 13, 2016

**CERTIFIED MAIL #**

Mr. Terry Hazle, Director  
Directorate of Environmental Management  
DEPARTMENT OF THE ARMY  
Installation Restoration Division  
US Army Aviation and Missile Command  
4488 Martin Road  
Redstone Arsenal, AL 35898

RE: *Emergency Permit – Jet A Fuel and UDMH Tank Treatment*  
Redstone Arsenal (RSA) DSMOA Environmental Restoration Program  
U.S. EPA I.D. No. AL 7 210 020 742

Dear Mr. Hazle:

The Alabama Department of Environmental Management (ADEM) has made a final determination to issue an Alabama Hazardous Wastes Management and Minimization Act (AHWMMA) Emergency Permit to the U.S. Department of the Army, Redstone Arsenal. The permit is approved as of this date and a public comment period will be held from June 22, 2016 to August 8, 2016.

Enclosed is the issued emergency permit. If questions and comments arise concerning this matter, please contact Jeanne Barnes of the Governmental Hazardous Waste Branch at (334) 271-7752 or via email at [jmbarnes@adem.state.al.us](mailto:jmbarnes@adem.state.al.us).

Sincerely,

Phillip D. Davis, Chief  
Land Division

Attachment

cc: Director, RCRA Division, US EPA Region 4  
Jason Wilson, ADEM  
Ashley Mastin, ADEM

cc/via email: Robert Morris, US EPA Region 4  
Kelley Hartley, ADEM

# HAZARDOUS WASTE EMERGENCY PERMIT

## STATEMENT OF BASIS

**US EPA Identification Number:** AL 7 210 020 742

**Facility Name:** U.S. Army Garrison – Redstone  
U.S. Army Aviation and Missile Research  
Development and Engineering Center  
(AMRDEC)

**Location:** Huntsville, Madison County

**Type of Hazardous  
Waste Management:** Treatment

**Permit Duration:** Ninety (90) days

The conditions in this permit are based on standards promulgated under Chapters 335-14-2, 335-14-3, 335-14-5 and 335-14-8 of the ADEM Administrative Code. The waste covered by this permit consists of steel tanks that once held unsymmetrical dimethyl hydrazine (UDMH) or Jet A fuel. One 3,831-gallon and four 1,500-gallon tanks may contain traces of UDMH liquid and residues that pose safety concerns to personnel. Since these five tanks cannot be properly rinsed to render them RCRA empty, the treatment described in this permit was determined to be the safest and most effective technology available.

In addition, eight 630-gallon tanks that once held Jet A fuel are currently RCRA empty. Because they are site sensitive, these tanks must be cut and deformed prior to shipment as scrap off RSA property. The below described treatment will render these tanks safe to cut and has been determined to be the safest and most effective treatment method.

This permit allows for the on-site treatment of 13 steel tanks using thermal treatment, open burning, at the Redstone Test Center (RTC) Test Area #4 (TA 4) static burn pan. RSA is currently authorized to conduct Open Burning and Open Detonation (OB/OD) operations at two units regulated by the Resource Conservation and Recovery Act (RCRA) and in accordance with the ADEM Administrative Code Rules 335-14-6-.16(13) and 335-14-6-.16(14). However, since the tanks are expected to cause larger fires than can be processed at RSA's OB area, the items will be processed at TA 4.

The issuance of this permit will result in environmental and safety benefits as compared to the current storage of this hazardous waste. The conditions of this permit are designed to protect public health and the environment. The proper treatment of the tank contents and recycling of the metal portions of the tanks will reduce risks to the public.

Issuance of an emergency permit under ADEM Administrative Code R. 335-14-8-.06(1) is warranted because there is an imminent and substantial danger to human health and the environment due to the potential instability of the tanks.



# ***HAZARDOUS WASTE FACILITY PERMIT***

**ISSUED TO:** United States Department of the Army, Redstone Arsenal

**EPA ID/PERMIT NUMBER:** AL7 210 020 742

**LOCATION:** Huntsville, Madison County, Alabama,  
Latitude 34° 35' 47" and Longitude -86° 40' 40"

**UNITS PERMITTED:** Emergency Treatment at Redstone Test Center (RTC) Test Area #4  
(TA 4)

**EFFECTIVE DATE:** June 13, 2016

**EXPIRATION DATE:** September 12, 2016

*This Permit is issued pursuant with the Code of Alabama 1975, §§ 22-30-1-et. seq., as amended, and regulations adopted thereunder and the Hazardous Waste Management and Minimization Act and in accordance with the plans and specifications and applications filed with the Department subject to the conditions appended hereto, all of which are considered a part of this Permit. This Permit shall be subject to all applicable laws of the State of Alabama, rules and regulations and orders of the Department of Environmental Management and shall be effective from the date of issuance.*

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Alabama Department of Environmental Management

**US EPA Identification No./Permit No.**      **AL7 210 020 742**

**Name of Permittee/Operator:**            **U.S. Department of the Army,**  
**Redstone Arsenal**

**Operator:**                                        **U.S. Department of the Army,**  
**Redstone Arsenal**

**Facility Location:**                            **Madison County, Alabama 35898**

**Effective Date:**                                **June 13, 2016**

**Expiration Date:**                               **September 12, 2016**

In compliance with the provisions of the Alabama Hazardous Wastes Management and Minimization Act, as amended, the Permittee is authorized to conduct hazardous waste management activities including:

\_\_\_\_\_Storage

\_\_\_\_\_ \* Treatment

\_\_\_\_\_Disposal

at the facility location in accordance with the provisions and conditions attached to this permit.  
For the Alabama Department of Environmental Management;

\_\_\_\_\_  
Alabama Department of Environmental Management

\_\_\_\_\_  
Date

A. WASTE LIST

The following hazardous wastes may be treated at this facility

Waste Number	Common Name/Description	Total Quantity
D001	Jet A Fuel	Fuel product/residues in eight 630-gallon steel tanks
U098	1,1-Dimethylhydrazine	Fuel product/residues in five steel tanks; four 1,500-gallon tank and one 3,831-gallon tank

B. HAZARDOUS WASTE TREATMENT, STORAGE, DISPOSAL UNITS LIST

The following hazardous waste management units are covered by the permit: Emergency Treatment at TA 4

1. Process Description

Design Capacity

The tanks will be thermally treated by open burning. The action will be performed at the RTC TA 4 static burn pan using shape charges and F24/Jet A fuel.

Five tanks hold trace amounts of liquid UDMH and residues. Eight tanks once stored Jet A fuel and are RCRA empty.

2. Restrictions

- (a) Management of the waste shall be in accordance with the information/procedures provided in the Army's request for an emergency permit received by the Department on January 13, 2016, the Army's response to the notice of deficiency dated February 17, 2016, and the revised emergency permit requests dated May 11, 2016 and May 18, 2016.
- (b) The treatment of any waste not included above in Part A is prohibited.
- (c) Treatment will be completed between the hours of 0700 and 1600.
- (d) Any water that is present in the burn pan prior to treatment shall be sampled and analyzed for hazardous constituents prior to discharge.
- (e) The treatment of chemical agents, nuclear or radioactive materials, biological agents, depleted uranium, or items containing or contaminated with these materials is expressly prohibited.

3. Transportation Conditions

- (a) The treatment area shall be secured and all nonessential personnel shall be

evacuated from the immediate area during removal of the tanks from their current location, transportation to the treatment area and placement in the treatment area. Road barricades will be placed to prevent unauthorized entry to the treatment area.

- (b) The tanks shall be properly blocked and braced for transportation to ensure stability during movement to the treatment area.
- (c) The predetermined route of travel shall be directly from the bunkers at Test Area 5 to the TA 4 treatment area west of Aspen Road. The route is approximately 4.2 miles along Blueberry or Sawbriar Road, McAlpine, Buxton, Shields and Aspen Roads. The truck drivers shall have commercial drivers' licenses.
- (d) The route of travel between the storage area and the treatment area shall be secured by emergency personnel prior to transport, and shall be cleared of non-essential traffic during the transport procedures.

#### 4. Storage Conditions

The tanks will remain in the storage bunker until the appropriate time for preparation and removal for treatment.

#### 5. Treatment Conditions

The tanks will be treated at Redstone Arsenal, Test Area 4 and treatment will be performed by personnel trained in open burning (OB) operations. Treatment will be accomplished using open burning. After treatment, RTC personnel will check the UDMH tanks for UDMH constituents using certified air monitoring equipment. After no constituents are detected, the UDMH tanks will be considered RCRA empty, and will be declassified. An RTC technical expert will produce a Material Determined as Safe (MDAS) statement and the empty tanks will be processed through a certified scrap metal vendor for recycling.

The Jet A fuel tanks are RCRA empty. The treatment is designed to remove any residues so that the Jet A tanks can be cut apart for shipment off base as scrap. After treatment and cutting, the remaining metal will be processed through a certified scrap metal vendor for recycling.

### C. GENERAL CONDITIONS

#### 1. Duration of Permit (Rules 335-14-8-.05 and 335-14-8-.06(1))

- (a) This permit is issued for a period of ninety (90) days.
- (b) This permit may be terminated by the Department at any time without process if



it is determined that termination is appropriate to protect human health and the environment.

- (c) In the event that more than 90 days of storage is needed, Redstone Arsenal may/shall apply for a one-time renewal of the permit.

2. Duty to Comply (Rule 335-14-8-.03(l)(a))

The Permittee shall comply with all conditions of this permit. All words used in this permit shall have the meaning and definitions set forth in Chapter 335-14-1, 335-14-2, 335-14-5, and 335-14-8 of the ADEM Administrative Code. The operation of the facility shall be in accordance with the conditions agreed to with ADEM. The conditions have been incorporated as part of the permit. The filing of a request by the Permittee for a permit modification, revocation, re-issuance, termination, planned changes or anticipated noncompliance does not stay any condition of this permit. Any permit noncompliance constitutes a violation of the ADEM Administrative Code and is grounds for enforcement action, permit termination, permit revocation and re-issuance, permit modification or denial of a permit renewal application. In addition, criminal or civil actions may be brought in appropriate instances.

3. Imminent Hazard Action (Rule 335-14-5-.01(4))

Notwithstanding any other provision of these Rules, enforcement actions may be brought pursuant to Section 7003 of RCRA and AHWMMMA.

4. Duty to Mitigate (Rule 335-14-8-.03(1)(d))

The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

5. Personnel Training (Rule 335-14-5-.02(7))

Contact with the wastes will be limited to personnel adequately trained in the handling of reactive and toxic wastes.

6. Emergency Coordinator (Rule 335-14-5-.04(6))

The Permittee will ensure that at all times there is at least one employee either on the premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures.

The emergency coordinator must, in addition to carrying out the responsibilities specified in Rule 335-14-5-.04(7) of the ADEM Administrative Code, be thoroughly familiar with all operations and activities at the facility, and the location layout. In

addition, this person must have the authority to commit the resources needed to carry out all emergency response measures.

7. Proper Operation and Maintenance (Rule 335-14-5-.03(2))

The Permittee must maintain and operate the facility in a manner to minimize the possibility of any unplanned fire, explosion, or sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, and surface water, which could threaten human health or the environment.

8. Security (Rule 335-14-5-.02(5))

The Permittee must prevent the unknowing entry and minimize the possibility for the unauthorized entry of persons or livestock onto the active portions of the facility by means of:

- (a) A surveillance system that continuously monitors and controls entry onto the active portion of the facility.
- (b) An artificial or natural barrier that completely surrounds the active portion of the facility and a means to control entry, at all times, through gates or other entrances to the active portion of the facility.
- (c) In addition, the facility must post a sign with the legend "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT", at each entrance to the active portion of the facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. This legend must be written in English and any other language predominant in the area surrounding the facility and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "DANGER - UNAUTHORIZED PERSONNEL KEEP OUT" may be used if the wording on the sign indicates that only authorized personnel are allowed to enter the active portion and that entry onto the active portion can be dangerous.

9. Access to Communications or Alarm System (Rule 335-14-5-.03(5))

Whenever hazardous waste is being loaded, unloaded, or otherwise handled, the Permittee must ensure that all personnel involved in the operation will have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee.

10. General Inspection Requirements (Rule 335-14-5-.02(6))

The Permittee must inspect the site prior to the unloading or managing any waste to ensure that only authorized personnel are present.

11. General Requirements for Ignitable, Reactive or Incompatible Waste (Rule 335-14-5-.02(8))

The Permittee must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste.

12. Arrangements with Local Authorities (Rule 335-14-5-.03(8))

The Permittee must assure that the following arrangements have been made with the local authorities (unless otherwise specified):

- (a) Arrangements made to familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel will normally be working, entrances to and roads inside the facility, and possible evacuation routes;
- (b) Agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any other to provide support to the primary emergency authority;
- (c) Agreements with State emergency response teams, emergency response contractors, and equipment suppliers; and
- (d) Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses that could result from fire, explosions, or releases at the facility.

13. Identification Number (Rule 335-14-5-.02(2))

An EPA Identification Number has been assigned to the facility: AL 7 210 020 742

14. Closure (Rule 335-14-5-.07(2))

- (a) All fragments, debris, and treatment residuals shall be collected and properly recycled/disposed.
- (b) A visual inspection of the treatment site shall be performed to ensure all fragments, debris, and treatment residuals have been removed.
- (c) At the completion of processing the tanks, any water that is present in the burn pan shall be sampled and analyzed for hazardous constituents prior to discharge.

15. Reporting (Rule 335-14-5-.05(8))

The Permittee shall submit to the Alabama Department of Environmental Management the following information at the conclusion of UDMH and Jet A fuel tank treatment:

- (a) The EPA identification number.
- (b) The actual treatment dates.
- (c) Name of emergency coordinator.
- (d) The treatment results.
- (e) Copy of any analytical reports and a description of the sampling and analytical methods used.
- (f) A certification that the emergency has been alleviated.



DEPARTMENT OF THE ARMY  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, REDSTONE  
4488 MARTIN ROAD  
REDSTONE ARSENAL, ALABAMA 35898-5000

REPLY TO  
ATTENTION OF

Environmental Management Division

Mr. Phillip D. Davis  
Chief, Land Division  
Alabama Department of Environmental Management  
Post Office Box 301463  
Montgomery, AL 36130-1463



RE: Emergency Permit – UDMH Tank Treatment  
Redstone Arsenal (RSA) DSMOA Environmental Restoration Program  
U.S. EPA I.D. No. AL 7 210 020 742

Dear Mr. Davis:

The referenced 90-Day Emergency Permit dated March 11, 2016 will expire on June 10, 2016. We are formally requesting a 90-day extension to this emergency permit – until September 10, 2016. The process description on page 3 of 8 discusses using shape charges and JP-8 fuel. The shape charges have been requested through the Navy's vendor – Donovan Commercial Industries as the Army does not have this type of charge and it is taking a little longer than anticipated to procure these flexible linear shape charges. We have received notification that the flexible linear shape charges will be onsite at Redstone Arsenal no later than May 31, 2016.

A secondary issue is the use of JP-8 fuel for the open burn portion of the treatment. The DOD is phasing out this fuel in favor of F24/Jet A fuel. The basic composition is the same as JP-8 with some different additives for corrosion and de-icing. Redstone only has the F24/Jet A fuel available onsite and a search of the southeast area was unsuccessful in locating any JP-8 fuel that could be used to execute this permit. A copy of the Material Safety Data Sheet for Jet A fuel is included as an attachment to this letter. We are requesting a modification to the permit that will allow the use of F24/Jet A fuel in place of the JP-8 fuel for the thermal treatment.

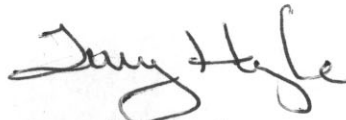
One of the large UDMH tanks (3831 gallons) originally scheduled for treatment under this emergency permit is still being used by the Missile Defense Agency. Because its mission is not complete, we will only have five (5) instead of six (6) UDMH tanks to treat under the emergency permit. However we are requesting to add an additional eight (8) tanks that are classified as site sensitive to this emergency permit. These tanks previously held Jet A fuel and are now RCRA empty.

They are too large (630 gallons each) for the OB/OD area to treat in their burn pans. The shape charge will ensure that a hole is made in the tank that will allow the thermal treatment to flash any remaining residues. The only reason for their emergency treatment is to ensure no flammable residue remains that could be a hazard when the tanks are cut-up and deformed (because they are visually classified and must be treated on Redstone) prior to being scrapped.

The total number of tanks to be treated under this modified emergency permit is thirteen (13). Five (5) that previously held UDMH and eight (8) that previously held Jet A fuel and are now RCRA empty. All of these tanks are classified as site sensitive and must be treated and deformed prior to being scrapped. Thank you for your consideration of these modifications to the emergency permit.

My point of contact for this matter is Ms. Lisa Douglas, Directorate of Public Works, Environmental Management Division, 256-842-2843 or email at [Melissa.L.Douglas2.civ@mail.mil](mailto:Melissa.L.Douglas2.civ@mail.mil).

Sincerely,



Terry W. Hazle  
Chief, Environmental Management  
Division

Enclosure



# Material Safety Data Sheet

## JET A AVIATION FUEL

July 31, 2001

MSDS #: 1975

Revision #1

CHEVRON PHILLIPS CHEMICAL COMPANY LP  
10001 Six Pines Drive  
The Woodlands, TX 77380

### PHONE NUMBERS

#### HEALTH:

Chevron Phillips Emergency  
Information Center 866.442.9628  
(North America) and  
1.832.813.4984(International)

#### TRANSPORTATION:

North America: CHEMTREC 800.424.9300  
or 703.527.3887  
ASIA: 1.703.527.3887  
EUROPE: BIG .32.14.584545 (phone)  
or .32.14.583516 (telefax)  
SOUTH AMERICA SOS-Cotec  
Inside Brazil: 0800.111.767  
Outside Brazil: 55.19.3467.1600  
Technical Services: (832) 813-4862  
For Additional MSDSs: (800) 852-5530

## A. Product Information

Synonyms: Aviation Turbine Fuel A; Kerosine Turbine Fuel;  
Kerosine; Jet Fuel A; Philjet® A Aviation Fuel;  
TS-1 Aviation Fuel, Jet A-1

Chemical Name: Mixture  
Chemical Family: Hydrocarbon  
Chemical Formula: Mixture

CAS Reg. No.: 8008-20-6

Product No.: 1014060(30393), (30493), 1014061

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions. This product contains a component that is subject to TSCA Section 12b export notification and TSCA Section 4 test rule.

## B. Components

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Kerosene, may include	8008-20-6	100	NE	NE
Paraffinic hydrocarbons	Various	> 50	NE	NE
includes, n-Octane	111-65-9	> 1	500 ppm	300 ppm
n-Nonane	111-84-2	> 3	NE	200 ppm
Naphthenes	Various	< 33	NE	NE
Aromatic hydrocarbons	Various	< 17	NE	NE
includes, Benzene	71-43-2	< 0.8	10 ppm*	0.5 ppm
Toluene	108-88-3	< 1	100 ppm	50 ppm
p-Xylene	106-42-3	< 1	100 ppm	100 ppm
m-Xylene	108-38-3	< 3	100 ppm	100 ppm
o-Xylene	95-47-6	< 1.4	100 ppm	100 ppm
1,3,5-Trimethylbenzene	108-67-8	< 1.4	NE	25 ppm**
1,2,4-Trimethylbenzene	95-63-6	< 3.8	NE	25 ppm**
1,2,3-Trimethylbenzene	526-73-8	< 1.0	NE	25 ppm**
Sulfur compounds	Various	< 0.3	NE	NE

\* Areas covered by the Benzene Standard, 29 CFR 1910.1028, will have a 1 ppm 8 hour TWA and 5 ppm STEL.

\*\* As trimethylbenzene

## C. Personal Protection Information

Ventilation: Use adequate ventilation to control below recommended exposure levels.

Respiratory Protection: For concentrations exceeding the recommended exposure level, use NIOSH/MSHA approved air purifying respirator. In case of spill or leak resulting in unknown concentration, use NIOSH/MSHA approved supplied air respirator. If conditions immediately dangerous to life or health (IDLH) exist, use NIOSH/MSHA approved self-contained breathing

apparatus (SCBA).

Eye Protection: Use safety glasses with side shields. For splash protection wear chemical goggles and face shield.

Skin Protection: Use protective garments to prevent skin contact. Use gloves impervious (neoprene, nitrile) to the material being used.

NOTE: Personal protection information shown in Section C is based upon general information as to normal uses and conditions. Where special or unusual uses or conditions exist, it is suggested that the expert assistance of an industrial hygienist or other qualified professional be sought.



## **D. Handling and Storage Precautions**

Do not get in eyes, on skin or on clothing. Do not breathe vapors. Do not swallow, may be aspirated into lungs. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Wash thoroughly after handling. Immediately remove and launder contaminated clothing before reuse. Use only with adequate ventilation.

Keep away from heat, sparks and flame. Store in well-ventilated area. Bond and ground during transfer. Store in closed container.

## **E. Reactivity Data**

Stability: Stable

Conditions to Avoid: Not Applicable

Incompatibility (Materials to Avoid): Oxygen and strong oxidizing agents

Hazardous Polymerization: Will Not Occur

Conditions to Avoid: Not Applicable

Hazardous Decomposition Products: Carbon oxides and various hydrocarbons formed when burned.

## **F. Health Hazard Data**

### **Recommended Exposure Limits**

See Section B.

### **Acute Effects of Overexposure**

Eye: Vapors may cause slight irritation. Liquid may cause intense stinging without long term effects.

Skin: Repeated skin contact may cause severe skin irritation.

Inhalation: May cause headache, nausea and sedation.

Ingestion: May be irritating to intestines. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs.

### **Subchronic and Chronic Effects of Overexposure:**

Kerosene generally contains benzene which has been designated a carcinogen by the National Toxicology Program (NTP), the International

Agency for Research on Cancer (IARC), and the Occupational Safety and Health Administration (OSHA). Benzene may produce blood changes which include reduced platelets, red blood cells, and white blood cells; also aplastic anemia, and acute nonlymphatic leukemia. Benzene has produced fetal death in laboratory animals and caused chromosome changes in humans and mutation changes in cells of other organisms. Health effects attributable to benzene are not known to occur in humans exposed to kerosene.

Kerosene has caused kidney injury in male rats only. No comparable health hazard for kidney disease is known to occur in humans.

Exposure of pregnant rats during gestation to toluene at levels of 250 ppm and higher produces some maternal toxicity and embryo/feto toxicity. A lifetime inhalation study in rats did not show any toxic effects even at the high dose of 300 ppm. Behavioral signs of hearing loss were observed in rats exposed to toluene subchronically at levels of 1000 ppm or more. Comparable effects have not been reported in humans.

Liver and kidney changes have been noted in long term studies in animals exposed to xylenes. Fetotoxicity has been observed in animals with subchronic exposure to mixed xylenes at concentrations approximately five times the permissible exposure limit.

### Other Health Effects:

An epidemiology study of workers exposed to two isomers of trimethylbenzene had symptoms of nervousness, tension and anxiety, and asthmatic bronchitis. In addition, after inhalation of 60 ppm measured as hydrocarbon vapor, the workers' peripheral blood showed a tendency to hypochromic anemia and a deviation from normal in the coagulability of the blood.

Combustion (burning) of most carbon-containing material forms carbon monoxide. Carbon monoxide inhalation may cause carboxyhemoglobinemia. Chronic exposure to carbon monoxide causes fatigue, poor memory, loss of sensation in fingers, visual disturbances and insomnia. Carboxyhemoglobinemia is frequently misdiagnosed as flu.

Sensitive sub-populations to the inhalation of carbon monoxide exist. Carbon monoxide displaces oxygen in the bloodstream and therefore, can adversely effect people with pre-existing heart disease, pregnant women and smokers.

### Health Hazard Categories:

	Animal	Human		Animal	Human
Known Carcinogen	<u>  X  </u>	<u>  X  </u>	Toxic	—	—
Suspect Carcinogen	—	—	Corrosive	—	—
Mutagen	<u>  X  </u>	—	Irritant	<u>  X  </u>	<u>  X  </u>

Teratogen	___	___	Target Organ Toxin	<u>X</u>	<u>X</u>
Allergic Sensitizer	___	___	Specify - Lungs-Aspiration Hazard;		
Highly Toxic	___	___	Blood, Liver and Kidney		
			Toxin; Reproductive Toxin		
			-Embryo/Fetotoxin		

### First Aid and Emergency Procedures:

Eye: Flush eyes with running water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Skin: Immediately wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.

Ingestion: Do not induce vomiting. Seek immediate medical attention.

Note to Physician: Gastric lavage using a cuffed endotracheal tube may be performed at your discretion.

### G. Physical Data

Appearance: Colorless Liquid  
 Odor: Mild  
 Boiling Point: 300-572F (149-300C)  
 Vapor Pressure: <1  
 Vapor Density (Air = 1): Not Established  
 Solubility in Water: Negligible  
 Specific Gravity (H2O = 1): 0.775-0.840  
 Percent Volatile by Volume: 100  
 Evaporation Rate (Ethyl Ether = 1): <1  
 Viscosity: 8 cSt @ -4F (-20C)

### H. Flash and Explosion Data

Flash Point (Method Used): 100-150F (38-66C) (TCC, ASTM D-56)  
 Flammable Limits (% by Volume in Air): LEL - Not Established  
 UEL - Not Established

Fire Extinguishing Media: Dry chemical, foam or carbon dioxide (CO2)

Special Fire Fighting Procedures: Evacuate area of all unnecessary personnel. Shut off source, if possible. Use NIOSH/MSHA approved

self-contained breathing apparatus (SCBA) and other protective equipment and/or garments described in Section C if conditions warrant. Water fog or spray may be used to cool exposed containers and equipment. Do not spray water directly on fire - product will float and could be reignited on surface of water.

Fire and Explosion Hazards: Carbon oxides, and various hydrocarbons formed when burned. Highly flammable vapors which are heavier than air may accumulate in low areas and/or spread along ground away from handling site. Flash back along vapor trail is possible.

## **I. Spill, Leak and Disposal Procedures**

Precautions Required if Material is Released or Spilled:

Evacuate area of all unnecessary personnel. Wear protective equipment and/or garments described in Section C if exposure conditions warrant. Shut off source, if possible and contain spill. Protect from ignition. Keep out of water sources and sewers. Absorb in a dry, inert material (sand, clay, etc). Transfer to disposal drums using non-sparking equipment.

Waste Disposal (Insure Conformity with all Applicable Disposal Regulations):  
Incinerate or place in permitted waste management facility.

## **J. DOT Transportation**

Shipping Name: Fuel, aviation, turbine engine  
Hazard Class: 3 (Flammable liquid)  
ID Number: UN 1863  
Packing Group: III  
Marking: Fuel, aviation, turbine engine, UN 1863  
Label: Flammable liquid  
Placard: Flammable/1863

Hazardous Substance/RQ: Not Applicable

Shipping Description: Fuel, aviation, turbine engine, 3 (Flammable liquid), UN 1863, PG III

Packaging References: 49 CFR 173.150, 173.203, 173.241

NOTE: This product may be reclassified as a combustible liquid when shipped domestically, by land only. If reclassified as a combustible liquid, this product is unregulated by DOT when shipped in non-bulk quantities.

**K. RCRA Classification - Unadulterated Product as a Waste**

Ignitable (D001)

Prior to disposal, consult your environmental contact to determine if TCLP (Toxicity Characteristic Leaching Procedure, EPA Test Method 1311) is required. Reference 40 CFR Part 261.

**L. Protection Required for Work on Contaminated Equipment**

Contact immediate supervisor for specific instructions before work is initiated. Wear protective equipment and/or garments described in Section C if exposure conditions warrant.

**M. Hazard Classification**

X  This product meets the following hazard definition(s) as defined by the Occupational Safety and Health Hazard Communication Standard (29 CFR Section 1910.1200):

- |                               |                                      |                            |
|-------------------------------|--------------------------------------|----------------------------|
| <u> X </u> Combustible Liquid | <u>    </u> Flammable Aerosol        | <u>    </u> Oxidizer       |
| <u>    </u> Compressed Gas    | <u>    </u> Explosive                | <u>    </u> Pyrophoric     |
| <u>    </u> Flammable Gas     | <u> X </u> Health Hazard (Section F) | <u>    </u> Unstable       |
| <u>    </u> Flammable Liquid  | <u>    </u> Organic Peroxide         | <u>    </u> Water Reactive |
| <u>    </u> Flammable Solid   |                                      |                            |

    Based on information presently available, this product does not meet any of the hazard definitions of 29 CFR Section 1910.1200.

**N. Additional Comments**

SARA 313

This product contains the following chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. (See Section B).

- Benzene
- Toluene
- p-Xylene
- o-Xylene
- m-Xylene
- 1,2,4-Trimethylbenzene

NFPA 704 Hazard Codes - - - - -  
- Signals

Health	: 1	Least	- 0
Flammability:	2	Slight	- 1
Reactivity	: 0	Moderate	- 2
Special Haz.:	-	High	- 3
		Extreme	- 4

**Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by EHS Product Stewardship Group, Chevron Phillips Chemical Company LP, 10001 Six Pines Drive, The Woodlands, TX 77380**

**The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.**



DEPARTMENT OF THE ARMY  
US ARMY INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, REDSTONE  
4488 MARTIN ROAD  
REDSTONE ARSENAL, ALABAMA 35898-5000

REPLY TO  
ATTENTION OF

Environmental Management Division

MAY 18 2016

Mr. Phillip D. Davis  
Chief, Land Division  
Alabama Department of Environmental Management  
Post Office Box 301463  
Montgomery, AL 36130-1463



RE: *Emergency Permit – UDMH Tank Treatment – Transportation Route*  
Redstone Arsenal (RSA) DSMOA Environmental Restoration Program  
U.S. EPA I.D. No. AL 7 210 020 742

Dear Mr. Davis:

The referenced 90-Day Emergency Permit dated March 11, 2016 was requested to be extended and modified to address 8 additional visually classified RCRA empty tanks that previously held Jet A fuel. The transportation route has also been updated to reflect both the initial and alternate transportation routes to move these tanks from TA-5 to TA-4 area for treatment. Travel on publically traveled roads begins at Mcalpine Road and the intersection of either Blueberry Road or Sawbriar Road and ends at the intersection of Shields Road and Aspen Road. The entrance location will depend on the truck driver's ability to make it through the narrow gate at Blueberry Road. Otherwise the wider gate at Sawbriar Road will be used to leave TA-5.

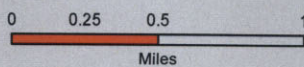
Thank you for your consideration of these modifications to the emergency permit. My point of contact for this matter is Ms. Lisa Douglas, Directorate of Public Works, Environmental Management Division, 256-842-2843 or email at [Melissa.L.Douglas2.civ@mail.mil](mailto:Melissa.L.Douglas2.civ@mail.mil).

Sincerely,

Terry W. Hazle  
Chief, Environmental Management  
Division

Enclosure

# TA 5 To TA 4 Route - Redstone Arsenal, AL



1:26,000



Map Projection: Transverse Mercator  
Horizontal Datum: North American Datum 1983  
Grid Coordinate System: State Plane Coordinates, Alabama East  
Planar Distance Units: Survey Feet (U.S.)

Name: TA5toTA4Route

Date Saved: 3/2/2016 3:10:27 PM

Classification: Unclassified Limited Distribution

For official use. For general location purposes only.

Map Author: Lawrence Crawford  
US Army Garrison-Redstone (256) 875-5982



Directorate of Public Works - Environmental Mgt  
US Army Garrison - Redstone  
Redstone Arsenal, AL 35898