

## **PERMIT PART 5 TREATMENT BY OPEN BURNING**

### **5.1 AUTHORIZATION OF THE THERMAL TREATMENT UNIT**

The Permittees are authorized to treat by open burning hazardous waste at the Thermal Treatment (TTU) located at the northern part of TA-III in accordance with this Permit Part, 40 CFR Part 264, Subparts X and BB, and 40 CFR § 268.7(b) and the current Open Burn Permit issued by the City of Albuquerque Environmental Health Department.

The Permittees shall provide the Department a copy of its open burn permit issued by the City of Albuquerque by February 1st of each year or within 30 days of receipt of the permit. The City of Albuquerque open burn permit shall be maintained in the Operating Record. In addition, to verify air emissions from the TTU, the Permittee shall submit a work plan to conduct air sampling coincident with treatment operations, within one year of the effective date of this Permit.

The Permittees are authorized to treat at the TTU only silver acetylide/silver nitrate (SASN) and SASN mixed with only the solid and hazardous wastes identified in Table 5-1 of this Permit Part, and only if these wastes are generated by the Facility operations in Building 6715. Wastes that are not mixed with SASN at the point of generation shall not be mixed with SASN for the purpose of generating a hazardous waste that is authorized for treatment at the TTU.

A burn event encompasses the duration of a burn, and begins upon ignition of the propane fuel that is used to sustain a burn at the TTU, and ends upon deliberate extinguishment of the flame regardless of whether the flame is a result of the burning of propane, waste or both. More than one burn event may take place during treatment operations, and more than one burn event may take place during a given day, subject to the requirements of this Permit.

Treatment operations may last more than one working day, and include all waste management and other activities required to prepare for a burn event(s), the burn event(s), and all waste management and other activities that must be conducted following the burn event(s) to comply with the requirements of this Permit.

Treatment operations occur periodically and are initiated when wastes requiring treatment at the TTU are generated in Building 6715. For each treatment operation, burn events shall be conducted to treat all waste, kick-out, and treatment residues generated during that operation as expeditiously as practicable.

### **5.2 WASTE PROHIBITED FROM TREATMENT AT THE TTU**

The Permittees shall not treat by open burning any of the following wastes or materials:

1. Waste generated at any location other than Building 6715 and ancillary locations (e.g., the process wastewater system) within the Building 6715 perimeter fence, or the TTU;
2. The hazardous component of mixed wastes;
3. Solid items, except for items mixed or contaminated with SASN;
4. Soils or remediation waste, except incidental soil deposited by the wind and soil as provided in Permit Sections 5.5.3 and 5.6.2 of this Permit Part for kick-out generated from the TTU that is mixed with soil; and
5. Waste containing polychlorinated biphenyls (PCBs).

### 5.3 MAXIMUM QUANTITY OF WASTE TO BE TREATED

The maximum volume of authorized solid and hazardous wastes present in the burn pan at any one time during a burn event at the TTU shall not exceed 21 gallons (80 liters). The maximum amount of SASN treated during any burn event shall not exceed 2.41 pounds (1.1 kilograms). The Permittees are prohibited from treating waste, on a per burn event basis, in excess of the quantities specified in Table 5-1.

<b>TABLE 5-1 Types and Maximum Quantities of Solid and Hazardous Wastes Allowed for Treatment at the TTU per Burn Event</b>	
Solid or Hazardous Waste	Maximum quantity
Acetone (F003)	80 L
Acetonitrile (D001)	6 L
Nitric acid (D002)	0.25 L
Silver nitrate (D001, D011)	340 gram
SASN (D001, D003, D011)	2.41 lbs (1.1 kg)
PETN (D003)	0.88 lbs (0.40 kg)
Water(1)	210 L
solid items containing SASN (e.g., filters, paper, cloth, wood, or cardboard)	50 kg

The maximum amount of SASN and SASN mixed with other authorized solid and hazardous wastes (solid and liquid combined) that can be treated per calendar year shall not exceed 9,500 pounds (4,310 kg) or 1,200 gallons (4,550 liters).

The total volume of liquid wastes can exceed 21 gallons (80 liters) during a burn event as liquids can be periodically fed into the burn pan as a burn event proceeds.

### 5.4 PREVENTING EXPOSURE

1. Treatment operations shall be conducted on the day waste is loaded at the TTU, subject to the requirements of this Permit Part. If any conditions arise that prohibit commencement of treatment operations on the day waste is loaded at the TTU, treatment operations shall begin as soon as conditions allow for treatment in compliance with this Permit Part.
2. When wastes are present in the burn pan, the Permittees shall keep the burn pan closed by lowering the lid, except when wastes are being loaded into or unloaded from the pan or when treatment is occurring.
3. The TTU shall be operated remotely during burn events from a control console inside Building 6715. Operating personnel shall observe burn events using a video camera.

4. The TTU shall have a warning bell or buzzer. The sound produced by the warning bell or buzzer shall be louder than the TTU propane burners. Building 6715 or the TTU shall be equipped with a warning light in a visible location for personnel that are hearing impaired.

## **5.5 OPERATING PROCEDURES**

### **5.5.1 Pre-Burn Operations**

1. The Permittees shall notify the Permittees' Emergency Management & Response organization personnel and the Kirtland Air Force Base Fire Department of anticipated treatment operations before treatment operations begin.
2. The Permittees shall inspect the TTU burn pad and pan, and its associated equipment, within 24 hours preceding a burn event (*see* Permit Attachment E, Inspection Plan).
3. The Permittees shall inspect the camera located in Building 6715 control building to ensure it is functional before waste is transferred to the TTU for a burn event.
4. The Permittees shall check the area in the vicinity of the TTU immediately preceding burn events to ensure that no unauthorized personnel are present in or around the TTU. Prior to a burn event, the fenced area surrounding the TTU and the area between Building 6715 and the TTU (Figure 10, Permit Attachment L (Figures)) shall be cleared of all personnel by announcing over the public address system that a burn event will soon commence and by use of a bell or buzzer warning signal and warning light.
5. Vegetation and other combustible substances within a 50-foot radius of the Burn Pan shall be removed before conducting any burn events, including keeping the grounds and berms within the perimeter fence clear of dry or dead weeds, or any other combustible substances.
6. Wastes shall not be stored at the TTU prior to treatment operations for longer than 24 hours, except as provided under Section 5.4 (1) of this Permit Part

### **5.5.2 Treatment Operations**

#### **5.5.2.1 General Requirements**

1. No person shall be permitted to enter the TTU fenced area during a burn event. No personnel shall be between Building 6715 and the TTU fenced area during a burn event.
2. Any gates within the perimeter fence that surrounds the TTU shall be closed and locked during burn events and for a four-hour cool-down period after each burn event to prevent the entry of unauthorized personnel into the area.
3. A sign indicating that a burn event is underway shall be placed on the Building 6715 access gate. The sign shall be on the gate prior to the start of burn events and remain during burn events and during the four-hour cool down period following burn events.
4. A minimum of two people shall be present during burn events.
5. A minimum of four hours shall elapse between burn events before inspection of the burn pan except in cases of multiple burn events on the same day. In the case of multiple burn events on the same day, a pretreatment inspection will be performed if at least four hours elapse between burn events. If less than four hours elapse between burn events, a

pretreatment inspection will not be performed. The Permittees shall not conduct more than three burn events on a single day.

6. The TTU burn pan shall be covered with the lid except during burn events, during loading or unloading of wastes or treatment residues, or when inspections, maintenance, or repairs are taking place.
7. Only non-sparking tools shall be utilized at the TTU when waste is present.
8. Following a burn event, the TTU Operator shall be responsible for determining whether or not it is safe to approach the burn pan area. The TTU shall be closed for a minimum of four hours after a burn event before anyone is permitted to approach the burn pan area.
9. All wastes shall be treated on the same day waste is placed into the TTU burn pan, provided that if any conditions arise that prohibit commencement of a burn event, the burn event shall begin as soon as conditions allow for treatment in compliance with this Permit Part.
10. No fuel other than propane shall support open burning of waste.
11. Treatment operations shall not be conducted if there is an uncontrolled range fire within one mile from the TTU.

#### **5.5.2.2 Solid Items**

Authorized solid items, saturated (i.e., wetted or submerged) in water shall be containerized and carried to the TTU burn pan by personnel trained and qualified to manage the waste.

Authorized solid items shall be loaded manually into the burn pan. The operator shall open the screen door remotely from the control console in Building 6715. The door shall be operable only from the control console. The operator shall remove the key from the burner control, thus disabling the gas burner system before loading waste into the TTU Burn Pan. The same operator who loads the TTU burn pan shall control the gas burner system.

#### **5.5.2.3 Liquids**

Authorized liquids may be transferred to the burn pan through the waste transfer pump, waste transfer tubing, and ancillary pipes. The operator at the control console in Building 6715 shall operate the pump remotely.

Authorized liquid waste may be containerized and carried to the TTU burn pan by personnel trained and qualified to manage the waste. The containerized liquid waste shall be loaded into the burn pan following the steps in Section 5.5.2.2.

#### **5.5.2.4 Hours of Operation**

Burn events at the TTU shall be initiated only during the time period beginning one hour after astronomical sunrise and ending one hour before astronomical sunset. Burn events may continue beyond sunset as necessary to complete treatment already in progress.

#### **5.5.2.5 Weather Conditions**

1. Burn events at the TTU shall not be initiated when an electrical storm (with or without precipitation) exists within 10 miles of the TTU.

2. Burn events at the TTU shall not be initiated during inclement or threatening weather. Inclement or threatening weather is defined as : 1) sustained winds greater than 20 mph; 2) wind gusts exceeding 35 mph; 3) tornado watches or warnings; 4) snowstorms with visibility less than 2000 feet; 5) rain with accumulation rates greater than 0.3 inches per hour; and 6) hail, sleet, or ice storms.
3. Burn events at the TTU shall not be conducted when wind speeds at the Albuquerque Support exceed a sustained speed of 20 mph.
4. If one or more adverse weather conditions as defined in this Section develop during a burn event, the TTU operator shall evaluate the risk of continued operation against the risks of halting treatment operations. If the operator determines that weather conditions warrant ceasing treatment operations, the Permittees shall stop the burn event, deactivate the propane burners and close the lid on the burn pan as soon as it is safe. The TTU operator may saturate the untreated explosive waste with water to cool it and stabilize the explosive. If water is to be added to the waste, the operator will wait until the TTU is safe to approach, and will use water from the spigot located just inside the TTU fence. The operator will direct water from the spigot into the burn pan, being careful not to disperse waste from the pan. If available, water may also be pumped directly into the burn pan using the waste transfer pump.

The Permittees shall continue to comply with all requirements, including all security and safety requirements of this Permit concerning treatment operations from the time an aborted burn event is stopped through the time that the burn event is restarted and completed. An aborted burn event shall be re-started as soon as conditions allow for treatment in compliance with this Permit Part. Prior to restarting treatment, the operator shall determine whether it is necessary to wet the untreated waste and shall follow the procedures above if it is necessary.

### **5.5.3 Post-Burn Operations**

The Permittees shall operate the burners for at least 30 minutes after observing evidence that all wastes have been completely combusted. The Permittees shall use visual and audible evidence to determine that all wastes have been deactivated and combusted. The cessation of audible popping noises and visual flashes of light and puffs of smoke indicate complete combustion of waste. Other evidence of the complete combustion includes the absence of yellow flames from the burn pan and the absence of liquid inside the burn pan.

After the cool-down period of at least four hours, but within one business day, the Permittees shall perform a post-treatment inspection to check for any untreated waste in the burn pan and any contamination or untreated waste ejected from the burn pan (kick-out) during the preceding burn event(s). If the cool down period ends after sunset, the Permittees shall wait until after sunrise on the following morning to perform the inspection required by this section. If kick-out is observed, the Permittees shall wet it with water, and containerize the kick-out and any contaminated soil mixed with kick-out for treatment during the next burn event. If contamination is observed, the Permittees shall wet the contaminated area and decontaminate it with wet paper wipes or wash it with water. Residues and wipes shall be managed in accordance with Permit Section 5.5.4.

The Permittees shall remove treatment residues from the burn pan using plastic scoops or a vacuum cleaner equipped with a high-efficiency particulate air filter. The Permittees shall close

the lid on the TTU burn pan to prevent dispersal of any residue which could not be removed by the plastic scoop or vacuum cleaner. The Permittees shall remove treatment residues from the burn pan and clean treatment residues deposited on the top exterior of the lid with wet paper or cloth wipes within one working day of a burn event unless another burn event is to take place within one day, or one or more adverse weather conditions as defined in Section 5.5.2.2 is present. Residues that are removed from the burn pan and wipes used in cleaning the top exterior of the lid shall be containerized and managed in accordance with Section 5.5.4.

After treatment operations conclude, the Permittees shall notify their Emergency Management & Response organization personnel, to inform them that treatment operations have been completed.

#### **5.5.4 Management of Treatment Residues**

Residues that are removed from the burn pan and wipes used in cleaning the lid shall be characterized in accordance with Permit Attachment C. If the Permittees find any untreated waste or treatment residue requiring further treatment at the TTU, the waste may be left in the burn pan for treatment as soon as possible in compliance with the requirements of this Permit. Alternatively, untreated waste, treatment residue requiring further treatment at the TTU, contaminated paper wipes from cleaning the pad, or kick-out collected during inspection of the Unit after a burn event may be containerized and treated during the next burn event.

#### **5.5.5 Alternative Treatment Assessment**

The Permittees shall submit an open burn alternative treatment assessment report to the Department no later than the eighth anniversary of the effective date of this Permit. The assessment report shall include an analysis of risk to human health and the environment for each alternative discussed.

### **5.6 MAINTENANCE AND MITIGATION REQUIREMENTS**

#### **5.6.1 Accumulated Precipitation**

If the burn pan lid is open during precipitation, any standing water in any portion of the burn pan shall be removed within one business day of a precipitation event, containerized, characterized in accordance with Permit Attachment C, and managed accordingly.

The Permittees shall make a hazardous waste determination of the water that has drained from the pad surrounding the burn cage and accumulated in the catch tank in accordance with 40 CFR § 262.11 and Permit Attachment C (Waste Analysis Plan) upon removal of any such water and manage the water appropriately.

#### **5.6.2 Mitigation of Spills**

1. Spills of solid items on the ground or on the TTU pad shall be wetted as needed to stabilize any unreacted explosive. Spills of solid or liquids shall be wiped or scooped up and placed in the burn pan or containerized for treatment, as appropriate and safe. Soils contaminated by a spill from the TTU shall be wetted, excavated, and placed in the burn pan or containerized for treatment, as appropriate.

2. In the event of a spill from the burn pan, the spilled waste shall be contained on the steel-lined concrete pad until it is wiped or scooped up as necessary to remove the spilled waste.
3. Spill cleanup wastes placed in the burn pan shall be treated in compliance with the requirements of this Permit.

### **5.6.3 Maintenance and Repair Activities**

The Permittees shall check the surfaces of the burn cage, the pad, and the surrounding area with a portable propane burner before maintenance and repair activities that involve hot work or friction (e.g., cutting, welding, or grinding) to ensure that residual or untreated waste, treatment residue requiring further treatment at the TTU, or kick-out are not present to cause a hazard to workers.

## **5.7 WASTE ANALYSIS PLAN**

The Permittees shall comply with the requirements of Section 2.4 of Permit Part 2 and Permit Attachment C (Waste Analysis Plan) for characterizing wastes to be treated at the TTU and wastes treated at the TTU.

## **5.8 RUN-ON AND RUN-OFF CONTROLS**

The Permittees shall inspect monthly and prior to the first burn event that is conducted for any given day of treatment operations, and shall maintain as necessary, the surface water run-on and run-off control features (e.g., all associated retention structures, retaining walls, covers, berms, ditches) associated with the TTU in accordance with Permit Attachment E (Inspection Plan).

## **5.9 SOIL MONITORING REQUIREMENTS**

### **5.9.1 Sampling and Analysis**

The Permittees shall conduct a soil sampling program to monitor for hazardous waste or constituents released to soils as a result of treatment operations or spills, and to ensure that any releases from the Unit do not have an adverse effect on human health or the environment (*see* 40 CFR § 264.602). Samples shall be collected annually no later than August 1 of each year sampling is required, beginning no later than the first August after the effective date of this Permit. Samples shall also be collected no later than August 1 of the next year (year two) and of years four, seven, and nine after the effective date of this Permit. The Permittees shall provide oral and written notification to the Department of the scheduled sampling activities at least 15 days prior to commencing each sampling event.

Soil samples collected for the first two sampling events shall be analyzed for silver, semi-volatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and dioxin/furan congeners (Table 5-3). If the results for all samples analyzed for SVOCs, PAHs, and dioxin/furan congeners are less than or equal to their applicable New Mexico industrial soil screening levels (NMED 2012 or current, see Permit Section 5.9.2), soil samples collected for sampling years four, seven, and nine may be analyzed for silver only. However, if results are greater than their applicable New Mexico industrial soil screening levels, the Permittees shall

continue to analyze soil samples for any of those parameters listed in Table 5-3 that are greater than their applicable New Mexico industrial soil screening levels, in addition to silver, for each subsequent sampling event.

Soil samples shall be collected at a depth of 0-6 inches at the locations listed in Table 5-2 of this Permit Part. Soil samples shall also be collected at a depth of 2 feet for the first sampling event and analyzed for the same parameters required for the samples collected at a depth of 0-6 inches. Approved analytical methods, preservation methods, holding times, and container requirements are listed in Table 5-3 of this Permit Part. Sample locations must be surveyed pursuant to Permit Section 8.10.2.5.

Soil samples must be collected according to the requirements in Permit Section 8.10.2. The samples shall not contain vegetation, debris, or large rocks.

The Permittees shall document field activities in accordance with Permit Section 8.10.2.14. Information provided in the logbooks must be sufficient to allow reviewers to reconstruct sampling events, and must note any deviations from the requirements of this Permit Section (5.9). The sample documentation along with the data recorded in logbooks must ensure that each sample has a unique identification number and sufficient sample information to ensure traceability of each sample to a specific sample location. A chain-of-custody (COC) form shall be maintained with samples from the time of collection through shipment to the laboratory and analysis of the samples. The Permittees shall collect field quality control samples in accordance with Section 8.10.2.4.vii. The Permittees shall comply with the requirements of Permit Part 8.10.3 regarding sample analysis, including all applicable requirements for quality assurance samples and review of laboratory data. If re-usable sampling equipment is used for collection of soil samples, trowels and stainless steel bowls and any other equipment that comes in direct contact with the samples shall be decontaminated between each sample in accordance with the requirements of Permit Part 8.10.2.11.

The Permittees shall manage investigation-derived waste in accordance with Permit Section 8.10.2.13.

### **5.9.2 Reporting of Sampling Results and Risk Assessment**

The risk assessment screening method outlined in the most current New Mexico Soil Screening Guidance (NMED 2012 or current) must be applied for assessing the risks to human health.

Sampling results (including associated field and laboratory quality control results), the comparison to the Soil Screening Guidance, and the results of the screening risk assessment based on an industrial receptor shall be reported to the Department by October 1 of each year that sampling occurs under this Permit Part.

### **5.9.3 References**

NMED, 2012. NMED Risk Assessment Guidance for Site Investigations and Remediation.

SNL, 1996. Joint Sandia National Laboratory/New Mexico Kirtland Air Force Base Background Study.



<b>TABLE 5-2</b>	
<b>Summary of Sample Locations and Analytes</b>	
<p>Number and Locations of Samples (11 samples)</p>	<p>2 discrete samples from around the burn unit and within the berm area,</p> <p>2 discrete samples from the top of the berm area with one sample being located immediately south of the burn unit,</p> <p>2 discrete samples outside the berm area but within the fence,</p> <p>1 discrete sample outside the fence to the East of the unit collected at 30 meters from the unit,</p> <p>1 discrete sample outside the fence to the West of the unit, collected at 30 meters from the unit,</p> <p>1 discrete sample outside the fence to the South of the unit collected at 30 meters from the unit</p> <p>1 discrete sample outside the fence to the Northeast of the unit, collected at approximately 30 meters from the unit, and</p> <p>1 discrete sample outside the fence to the Southeast of the unit, collected at approximately 30 meters from the unit</p>
<p>Surveying Locations</p>	<p>Locations to be surveyed and recorded using GPS</p>
<p>Sample Type</p>	<p>Surface soil (0-6 inches)</p>
<p>Analytes of Concern</p>	<p>Silver, SVOCs, PAHs, dioxins/furans</p>
<p>Quality Assurance</p>	<p>Field duplicate and matrix spike (frequency of one per 20 samples) and equipment blank (at least one per day) if re-usable sampling equipment is used.</p>

<b>Table 5-3 Soil Sample Analysis Requirements<sup>1</sup></b>				
<b>Parameter<sup>2</sup></b>	<b>Laboratory Method(s)</b>	<b>Preservation</b>	<b>Holding Time</b>	<b>Container Requirements</b>
Silver	6010/6020	None	6 months	Glass or plastic
SVOCs	8270	Cool to 4°C	14 days	Glass
PAHs	8310	Cool to 4°C	14 days	Glass
Dioxin/Furan Congeners	8280	Cool to 4°C	30 days	Glass
<p>1. Unless otherwise noted, methods are taken from EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 1986 and all approved updates. Use the most current method for analysis Method numbers shown in this table are subject to change through future updates and may differ from those shown here. Equivalent methods may be substituted only if the equivalent method includes the same analyte list, method detection limits equal to or lower than the original method, and equivalent or higher data quality. If an equivalent method is used, the Permittees shall provide justification in the report to the Department.</p> <p>2. Parameters to be analyzed for may vary over the life of the Permit (see Permit Section 5.9).</p>				