

Attachment 10

RCRA Part B Permit Application

Process Description

US Ecology Tulsa, Inc.



Tulsa, Oklahoma

Permit Application

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Attachment 10- Process Description

This section provides specific process information regarding the management of hazardous waste at the US Ecology Tulsa, Inc. (USE Tulsa) facility located near Tulsa, Oklahoma. Waste management practices at USE Tulsa have been designed in accordance with the requirements of 40 CFR 264 Subpart I and Subpart J which are incorporated by reference into OAC 252:205-3-21. USE Tulsa hazardous waste as identified in the facility Part A Permit (Section A of this document) for treatment, container/tank storage, and other management on-site. In addition, USE Tulsa may generate hazardous wastes as a result of waste management operations on-site. USE Tulsa also handles other industrial wastes (i.e., wastes not designated as "hazardous" in accordance with 40 CFR Part 261 and OAC 252:515 (see Attachment 11 for details regarding solid waste activities on-site). Although solid waste management may parallel hazardous waste activities where appropriate, this section is not applicable to non-hazardous waste management. In addition, non-hazardous wastes may be managed in tanks or container areas permitted for hazardous waste service so long as compatibility issues are addressed. Hazardous waste in containers may be stored and/or treated in five areas of the facility. Locations of these CMAs and CTAs are shown on Figure B-1-1, Facility Layout presented in Attachment 1- Maps and Figures.

Containers may be located within other areas on-site. Site generated wastes, such as but not limited to, discarded Personal Protective Equipment (PPE), tank bottoms, process residues, and laboratory waste may be managed in accordance with generator standards for satellite accumulation as specified in 40 CFR 262.34(c)(1). All other generated waste may be accumulated for ninety (90) days or less in containers complying with the requirements of Subpart I, 40 CFR Part 264 and located only within permitted areas onsite.

USE Tulsa also stores and treats hazardous waste in four (4) tanks located in one tank farm (TF-1). Liquid hazardous wastes may be treated in the tanks in Tank Farm 1 (TF-1). The locations of TF-1 and individual tank designations are shown on Figure B-1-1, Facility Layout. Tanks designated for non-hazardous waste service are also present on-site at the 200 and 400 series Tank Farms.

USE Tulsa does not manage hazardous waste in waste piles, surface impoundments, incinerators, landfills, land treatment units, or miscellaneous units.

1. CONTAINER DESIGN

Containers managed in USE Tulsa CMAs may include units of any size composed of a variety of materials of construction; non-bulk as well as bulk containers may be used (40 CFR 260.10 includes a definition of the term container as any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled. Non-bulk and bulk containers are distinguished based on capacity: non-bulk containers have a capacity of 450 liters (118.9 gallons) or less liquid or 400 kilograms (881.8 pounds) or less solid; bulk containers hold more than 450 liters liquid or 400 kilograms solid material). Most containers managed on-site are "55 gallon drums"; however, containers accepted at USE Tulsa may include containers of any capacity (e.g., pint sized cans, 5 gallon pails, 30 gallon drums, "tote tanks," glass bottles, "Marino Bags," overpack containers, etc.). In addition, bulk containers such as gondolas, sludge boxes, roll-on/roll-off boxes, and intermodal containers may be managed on-site. Containers may be constructed of carbon steel, aluminum, other metals, plastic lined metal containers, various plastics, fiberglass, glass, wood, cardboard, or other appropriate materials. Containers used to store hazardous waste on-site will comply with the requirements of Subpart I, 40 CFR Part 264. Where applicable, US DOT Performance Oriented Packaging Standards will be used for wastes offered for shipment off-site. The facility may receive and ship hazardous wastes in any appropriate US DOT approved or performance specified container (used or new); other types of containers may be used for storage and processing of site generated hazardous wastes or for specific on-site processes.

CMAs are permitted for capacity based in volume (i.e., gallons or cubic feet) to facilitate management of different container sizes. The facility Part A Permit Application provides capacity information for the permitted container storage areas.

a. CONTAINERS WITH FREE LIQUIDS AND/OR F020, F021, F022, F023, F026, AND F027 WASTES

Containerized hazardous waste with free liquids and/or F020, F021, F022, F023, F026, and F027 wastes will be stored in permitted areas equipped with secondary containment systems only. Containment systems for these container storage areas will be designed and operated as follows:

- Containment systems will be equipped with a base for containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;
- The base of containment systems will be sloped or the containment system will be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation (e.g., concrete floor will be sloped, or the containers will be elevated, or containers will be otherwise protected from contact with accumulated liquids);
- Containment systems will have sufficient capacity to contain 10% of the total volume of containers or the volume of the largest container, whichever is greater (containers that do not contain free liquids need not be considered in this determination)
- Run-on into the containment system will be prevented unless the collection system has sufficient excess capacity (in addition to 10% of the volume of containers or the volume of the largest container, whichever is greater) to contain any run-on which might enter the system.
- Spilled or leaked waste and accumulated precipitation will be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.
 - If the collected material is a hazardous waste as defined in 40 CFR Part 261, it will be managed as a hazardous waste in accordance with all applicable requirements of 40 CFR Parts 262 through 266, 268, and 279.

i. BASIC DESIGN PARAMETERS, DIMENSIONS, AND MATERIALS OF CONSTRUCTION

Storage of hazardous waste in containers is conducted in three (3) CMAs (CMA-1, CMA-2, and CMA-3), and two (3) Container Treatment Areas (CTA-2a, CTA-2b, CTA-3). CTA-2 consists of 2 treatment pans, CTA-2a and CTA-2b. The treatment pans in the CTA-2 area are surrounded by steel constructed secondary containment. The CTAs may only store hazardous wastes that do not contain free liquids as described in the Waste Analysis Plan. Locations of these units are shown on Figure B-1-1, Facility Layout - presented in Attachment 1- Maps and Figures. Design parameters, dimensions, and materials of construction of the secondary containment systems are presented in Section C and Section T of this application. Per 40 CFR 264.175(c), the Container Treatment Areas (CTA-2 and CTA-3) need not be provided with secondary containment since only containers with no free liquids are stored in these areas. In addition, these areas are sloped so that the containers do not sit in rainwater, or they are elevated to protect the container from accumulated liquid. Table E-7.1, Hazardous Waste - Container Management Areas (presented in Attachment E-7, Process Information Tables, of Appendix E, Process Information Attachments) provides additional details regarding containment and capacity of these units.

ii. DESCRIPTION OF HOW DESIGN PROMOTES DRAINAGE OR HOW CONTAINERS ARE KEPT FROM CONTACT WITH STANDING LIQUIDS IN CONTAINMENT SYSTEMS

Containment systems for CMAs at USE Tulsa are designed with slopes for drainage of liquids or are otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, except where the containers are elevated or are otherwise protected from contact with accumulated liquids. Hazardous waste in containers may be managed on pallets or directly on the container management area floor. Standard operating procedures include daily inspections in accordance with container inspection requirements outlined in Attachment 4- Inspection Schedules and forms and Attachment 6- Procedures to Prevent Hazards. The inspections facilitate the detection and appropriate management of liquids accumulated in CMAs.

iii. CAPACITY OF THE CONTAINMENT SYSTEM RELATIVE TO THE NUMBER AND VOLUME OF CONTAINERS TO BE STORED

In accordance with 40 CFR 264.175, containment systems for container storage areas that may contain free liquids must have sufficient capacity to contain 10% of the total volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination. Section C and Section T of this application for details regarding capacity of containment systems for container storage areas. CMAs which share containment structures with tank storage areas (CMA-2 and TF-1) will be equipped with adequate containment for 10% of the total volume of hazardous waste storage capacity (containers and tanks), the volume of the largest container, or the volume of the largest tank, whichever is greatest. In accordance with the containment requirements for tank systems, any tank and container co-management area will be provided with a containment volume adequate to contain the additional volume of the precipitation of the 24-hour, 25-year rainfall event, if the co-management area is not protected from precipitation.

iv. PROVISIONS FOR PREVENTION OR MANAGING RUN-ON

CMA-1, CMA-2, and CMA-3 are equipped with secondary containment structures which are designed to contain accumulated liquid within containment systems. Containment structures will minimize the potential for run-on of precipitation into containment systems. Where installed, the roof or canopy (or equivalent cover) will minimize the accumulation of precipitation in containment systems.

v. HOW ACCUMULATED LIQUIDS CAN BE ANALYZED AND REMOVED TO PREVENT OVERFLOW

USE Tulsa operating procedures include inspections designed to identify accumulated liquids in a timely manner (inspection schedule and criteria are outlined in Section F, Procedures to Prevent Hazards). After discovery, spilled or leaked waste and accumulated precipitation will be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. Accumulated liquids will be identified by visual observation, review of facility records, and (if deemed necessary) by

chemical analysis. If required, analyses will be conducted in accordance with the facility Waste Analysis Plan presented in Attachment 2-Waste Characteristics and Waste Analysis Plan.

b. CONTAINERS WITHOUT FREE LIQUIDS OR F020, F021, F022, F023, F026, AND F027 WASTES

Except for hazardous wastes identified as F020, F021, F022, F023, F026, and F027, containers holding wastes that do not contain free liquids may be stored in areas not equipped with secondary containment. In accordance with the requirements of 40 CFR 264.175, test procedures and results or other documentation that the wastes do not contain free liquids will be obtained prior to storage of these wastes in these areas not equipped with secondary containment systems. This documentation may include use of the Paint Filter Liquids Test, Method 9095 in SW-846 or other equivalent method.

Hazardous wastes designated as F020, F021, F022, F023, F026, and F027 will not be stored in areas not equipped with a secondary containment system.

c. CONTAINER MANAGEMENT

Permitted hazardous wastes managed in containers on-site are identified in the facility Part A Permit Application.

Types of containers managed on-site are described previously; compatibility of waste with containers is discussed in Section ii below.

Container management at the USE Tulsa facility consists of storage and treatment of waste in a variety of container types. Treatment activities conducted at USE Tulsa include carbon adsorption, chemical fixation, chemical oxidation, chemical reduction, deactivation, decanting, encapsulation, filtration, fuel blending, gravity and chemical separation, neutralization, permissible dilution, polymerization, precipitation, sand filtration, sedimentation, solidification, stabilization, ultra-filtration, wet air and chemical oxidation, or equivalent procedures. Treatment activities will take place only in permitted waste management units, and if the treatment in the container involves free liquids, in secondary containment. Secondary containment is not required for containers that do not contain or involve free liquids and meet the requirements of 40 CFR 264.175(c).

i. CONDITION OF CONTAINERS: 40 CFR 264.171

USE Tulsa may reject any container of hazardous waste if the container is in poor condition, the container is incompatible with the waste, or if the container is not in compliance with US DOT requirements. If an accepted hazardous waste is in a container that is not in good condition (e.g., severe rusting, apparent structural defects) or if the container begins to leak, USE Tulsa personnel will transfer the hazardous waste from this container to a container that is in good condition, will provide an "over-pack" for the affected container, or manage the waste in on-site processes. Other deficiencies in containers of incoming wastes will be addressed on a "case-by-case" basis.

ii. COMPATIBILITY OF WASTE WITH CONTAINERS: 40 CFR 264.172

When placing waste in a container, USE Tulsa will use a container made of or lined with materials which will not react with, and is otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

iii. MANAGEMENT OF CONTAINERS: 40 CFR 264.173

Management of containers at USE Tulsa is conducted as follows:

- Containers holding hazardous waste will always be closed during storage, except when it is necessary to add, remove, or inspect waste
 - Sampling of containers may occur during pre-acceptance, staging, or storage; sampling methods are presented in Attachment 2- Waste Characteristics and Waste Analysis Plan
- Any container holding hazardous waste will not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

(1). HANDLING PROCEDURES

Containerized hazardous wastes may remain on the transport vehicle during completion of acceptance protocol; acceptance protocol is outlined in Attachment 2- Waste Characteristics and Waste Analysis Plan. Acceptance protocol will be completed within ten (10) days. After acceptance, hazardous wastes will be transferred into permitted CMAs within five (5) days of acceptance. If unloaded for sampling, containers will be managed as

appropriate for the material manifested. Containers waiting for receipt approval will be moved into a contained, if not permitted, area if the wastes will be held overnight and not be attended. Containerized wastes will be moved to an appropriate CMA if analysis identifies any compatibility problems. Containment (permanent or portable) will be provided for hazardous waste pending acceptance. Examples of portable containment include overpack drums, self-contained pallets and portable spill berms. Portable containment is intended to be used for non-bulk or small bulk containers that have been unloaded from the vehicle for sampling and are waiting for receipt approval.

(2). CONTAINER TYPES, QUANTITY, AND STACKING ARRANGEMENTS

As discussed in Section 1, USE Tulsa may accept containers of any size for management on-site. To accommodate operational requirements and depending on compatibility requirements, any container management area may be used for any container type or volume provided the permitted volume is not exceeded. If applicable, containment systems will be decontaminated prior to storage of an incompatible waste type in the unit.

Permitted storage of hazardous waste in containers occurs in five (5) areas on-site. Section C and Section T of this application, for details regarding permitted volumes and design parameters for these areas.

Single containers may be unloaded and/or moved manually or with mechanical drum handling equipment such as hand carts, drum dollies, forklifts, backhoe or equivalent equipment. Forklifts or industrial trucks may be used for palletized containers. Equipment is available for over-packing, repackaging, or bulking operations. Ramps (permanent or portable) as well as portable containment units may be used during unloading, staging, or storage of containers.

USE Tulsa conducts regular inspections to facilitate the detection of accumulated liquids in containment areas and to assess container status (i.e., that containers are sealed, stacked properly, and are in good condition). Specifics regarding facility inspections are presented in Attachment 6-Procedures to Prevent Hazards. Accumulated liquids will be removed from containment systems in CMAs within 24 hours of detection. Response to

container leaks and spills (including identification of accumulated liquids in CMAs) is addressed in Attachment 5-Contingency Plan.

Minimum aisle space of three (3) feet will be maintained in CMAs and CTAs to facilitate inspections and (if necessary) the movement of emergency equipment. Where applicable, stacking of compatible wastes in containers is conducted in accordance with the National Fire Protection Association (NFPA) code. Containers may only be stacked if they have sufficient strength and stiffness to resist bending or buckling and remain vertical without perceptible leaning. Fifty-five (55) gallon size or larger containers may be double stacked during storage; pallets, skids, plywood or equivalent devices may be used to facilitate container management. Smaller containers may be stored in stacks of multiple containers. Total stack height will be limited to eight (8) feet or less unless all drums are secured on pallets and pallet racks are used. Configuration of pallets will be in rows approximately four to five (4-5) feet wide. Shipments of palletized containers may be "banded," "shrink-wrapped," or otherwise consolidated for shipping purposes and, after acceptance approval, may be placed in storage "as is." Containers holding multiple smaller containers (such as lab packs) may be double-stacked or multi-stacked, as applicable, for the size of the consolidating container. Total volume of containerized hazardous wastes will not exceed the permitted capacity.

(3). LOCATION OF IGNITABLE, REACTIVE, AND INCOMPATIBLE WASTE

Management practices for ignitable, reactive, and incompatible wastes at USE Tulsa have been designed to minimize the potential for fires, explosions, gaseous emission, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if containers break or leak. A specific procedure for the management of these wastes is outlined in Section F-5, Prevention of Reaction of Ignitable, Reactive, and Incompatible Waste. USE Tulsa will not place incompatible wastes, or incompatible wastes and materials in the same container, unless the requirements of 40 CFR 264.17(b) are complied with. In addition, hazardous waste will not be placed in an unwashed container that previously held an incompatible waste or material.

Containers holding ignitable or reactive wastes will be located at least 50 feet from the USE Tulsa facility property line. Any container holding a hazardous waste that is incompatible with any waste or other materials will be separated from the other materials by means of a dike, berm, wall, or other equivalent device; portable containment units may be used for this purpose.

(4). MARKINGS AND LABELS FOR CONTAINERS

USE Tulsa will store wastes subject to the Land Disposal Restrictions (LDR) in accordance with the applicable requirements of 40 CFR 268.50s. Specifically, incoming LDR wastes will be dated during acceptance procedures (i.e., the container will be clearly marked to identify its contents and the date each period of accumulation begins). Lab pack wastes will be marked on the outside of the lab pack. Palletized shipments of small containers will be marked on each side of the consolidated stack.

(5). CLOSURE

USE Tulsa has developed a closure plan for final and partial closure which is presented in Attachment 8-Closure, Post-Closure, and Insurance Documents. During final closure, all hazardous waste and hazardous waste residues will be removed from CMAs. Containment structures will be decontaminated or removed.

iv. CONTAINER INSPECTIONS: 40 CFR 264.174

As required under 40 CFR 264.174, USE Tulsa will inspect areas where containers are stored, looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors. See Attachment 4 Inspection Schedules and Forms for details regarding inspection of CMAs.

2. TANK SYSTEMS

USE Tulsa uses an above ground tank system for management of liquid hazardous waste. Locations of the tanks are shown on Figure B-1-1, Facility Layout presented in Attachment 1- Maps and Figures. Hazardous waste tanks are located in one tank farm (TF) on-site [Tank Farm 1 (TF-1)]. The tank systems may be used for non-hazardous waste or product management when not in hazardous waste service and the tank has been documented as decontaminated.

Section T of this application provides information regarding the number of tanks, tank volumes, and material of construction.

Management practices for reactive and incompatible wastes at USE Tulsa have been designed to minimize the potential for fires, explosions, gaseous emission, leaching, or other discharge of hazardous waste or hazardous waste constituents which could result from the mixing of incompatible wastes or materials if tank systems ruptured or failed. Specific procedures for the management of these wastes are outlined in Attachment 6- Procedures to Prevent Hazards. USE Tulsa will not place incompatible wastes, or incompatible wastes and materials in the same tank unless the requirements of 40 CFR 264.17 are complied with. In addition, hazardous waste will not be placed in a tank that has not been decontaminated and previously held an incompatible waste or material unless the requirements of 40 CFR 264.17(b) are met.

Where reactive waste will be stored or treated in a tank system, USE Tulsa will comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in the NFPA code (National Fire Protection Association (NFPA), "Flammable and Combustible Liquids Code," Tables 2-1 through 2-6, 1990. NFPA Tables 2-1 through 2-6, 1977 or 1981, are incorporated by reference into 40 CFR 260.11).

In addition, reactive waste will not be placed in the tank systems, unless the waste is treated by deactivation/neutralization during or immediately after placement in the tank system so that:

- The resulting waste, mixture, or dissolved material no longer meets the definition of reactive waste under 261.23 and the requirements of 40 CFR 264.17(b) are complied with
- The waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to react
- The tank system is used solely for emergencies.

The facility Part A Permit Application identifies specific EPA waste codes managed onsite; waste information including associated waste characteristics are addressed in Attachment 2-

Waste Characteristics and Waste Analysis Plan. Waste types managed in tank systems are addressed in the tank certification documents presented in Section T of this application

a. EXISTING TANK SYSTEMS

i. ASSESSMENT OF EXISTING TANK SYSTEM'S INTEGRITY: 40 CFR 264.191; 40 CFR 270.16(a)

Per 40 CFR 261.10, "Existing tank system" is defined as the tank system that is used for the storage or treatment of hazardous waste and that is in operation, or for which installation has commenced on or prior to July 14, 1986. Tanks T101, T102 T103 and 107 were installed after 1986. Hence, this section does not apply to USE Tulsa.

ii. EXTERNAL CORROSION PROTECTION

This subsection for the existing tank system does not apply to USE Tulsa.

b. NEW TANK SYSTEMS

i. ASSESSMENT OF NEW TANK SYSTEM'S INTEGRITY: 40 CFR 264.191; 40 CFR 270.16(a)

A written assessment, reviewed and certified by an independent, qualified, registered professional engineer, on the structural integrity and suitability of each tank system for handling hazardous waste is presented in Section T of this application. The assessment shows that the foundation, structural support, seams, connections and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength and compatibility with the waste to be managed to ensure that it will not collapse, rupture, or fail. Information provided in the assessment and associated documents include the following:

- Design standards (where applicable) according to which tank and ancillary equipment is (or will be) constructed
- Hazardous characteristics of the wastes that are and will be handled
- Corrosion assessment (where applicable)
- Documented or estimated age of tank system

- Design considerations to ensure that tank foundations will maintain the load of a full tank.
- Results of a leak test, internal inspection, or other tank integrity examination (as applicable).

ii. EXTERNAL CORROSION PROTECTION

Fiberglass tanks (T101, T102 T103 and 107) are finished with a "gel-coat" which provides weather protection.

iii. TANK INSTALLATION AND TESTING

Prior to placement of a tank system in hazardous waste service, an independent, qualified installation inspector or an independent, qualified registered professional engineer has inspected the tank system for the following items: 1) weld breaks; 2) punctures; 3) scrapes of protective coatings; 4) cracks; 5) corrosion; 6) other structural damage or inadequate construction/installation. In addition, the inspection specifies how all discrepancies were (or will be) repaired, how tank systems (including ancillary equipment) was (or will be) tightness tested, and how ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

c. DIMENSIONS AND CAPACITY OF EACH TANK SYSTEM

Details regarding dimensions and capacity of each tank system are provided in Section T of this application.

d. DESCRIPTION OF FEED SYSTEMS, SAFETY CUTOFF, BYPASS SYSTEMS, AND PRESSURE CONTROLS

USE Tulsa uses closed top tanks for storing liquid hazardous waste which are equipped with loading and unloading ports and vents; tank details for T101, T102 T103 and 107 are provided in Section T of this application. These tanks on-site are typically loaded using top fill lines and unloaded through bottom discharge lines or loaded/unloaded from bottom fill/discharge lines. Where present, manholes are used for inspection and cleaning operations.

-----END OF ATTACHMENT-----