

**ATTACHMENT 7**

**CLOSURE PLAN**

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## **1.0 Closure**

This closure plan applies to the Clean Harbors Aragonite Incineration Facility at Aragonite, Utah. The earliest expected date for the start of closure activities is in the year 2022.

This closure plan was prepared in accordance with the requirements of Utah Admin. Code R315-264-110 through 120 and Utah Admin. Code R315-264-140 through 151. The closure plan assumes a worst-case cost scenario which would occur when the maximum PCB/hazardous waste inventory is stored on site and a third-party contractor is hired to conduct the closure. The maximum inventory on site includes all waste items and materials which Clean Harbors Aragonite may have stored in the facility. The closure plan addresses the shipment offsite for treatment/disposal of the waste items and materials as well as decontamination of the process area and equipment, soil sampling, and all sample analyses.

Decontamination of storage areas, process areas, floors, berms, walls, and internal structures will be accomplished using hydrocarbon solvent-based cleaners and aqueous-based surfactants depending on the area cleaned. No hydrocarbon residuals will be left on any of the treated structures. Decontamination techniques following removal of waste inventory will utilize a combination of flushing, steam cleaning and sandblasting to effectively remove contaminants. Wipe/rinse samples will be collected and analyzed to determine when decontamination is complete.

The cleaning solutions will be sprayed or poured onto the surface areas to be cleaned and allowed to react for a least one hour. After this reaction period, the surface areas will be manually scrubbed or steamed, and the liquid generated from this process will be collected by vacuum into tanks or other approved containers. Where necessary, sandblasting will also be used to remove contamination. The collected liquids and sandblast residues will then be sent for treatment/disposal at state and EPA approved facilities.

Exterior site areas (e.g., waste accumulation and staging areas, runoff accumulation areas, roadways and loading/unloading areas, random soil surfaces, etc.) will be sampled to ensure that they are not contaminated. Any locations where contamination is discovered will be further investigated to identify the extent of contamination. Once the extent of contamination is determined, cleanup techniques will be reviewed and implemented after consultation with regulatory agencies.

## **2.0 Notification of Closure**

At least 45 days, before initiation of closure activities, Clean Harbors Aragonite will notify the required regulatory agencies (Division of Waste Management and Radiation Control and EPA Region VIII) that Clean Harbors Aragonite will begin closure activities on a date specified in the notice. This notice will also include a revised closure plan with necessary changes proposed including a decontamination standard for closure activities and a detailed schedule identifying the time frame for closing the individual units at the facility. The proposed decontamination

standard and other proposed changes to the closure plan will be submitted as a modification request consistent with the modification request procedures in place at the time of closure.

### 3.0 Health and Safety

The Clean Harbors Aragonite procedures for the protection of worker health and safety will be followed by those involved in closure activities. For the purpose of this closure plan, the levels of worker protection are defined as follows:

<u>Level B Protection</u>	<u>Level C Protection</u>
Self contained breathing apparatus	Air purifying respirator and cartridges
Air lines and tanks	Steel-toe, leather boots
Steel-toe, leather boots	Boot covers
Boot covers	Tyvek or cotton coveralls
Tyvek coveralls	Chemically resistant gloves
Chemically resistant gloves	Hard hat
Hard hat	Eye protection
Eye protection	

Level D protection includes the standard health and safety equipment for construction activities.

### 4.0 Cleanup Level

Clean Harbors Aragonite maintains an industrial hygiene monitoring program at its facilities for determining workplace concentrations of specified contaminants. Clean Harbors Aragonite routinely samples all process and non-process areas and initiates cleanup when contaminant levels exceed current regulatory standards.

Clean Harbors Aragonite intends to decontaminate all the process equipment to non-contaminated levels as required by the Division of Waste Management and Radiation Control and EPA Region VIII at the time of facility closure.

All areas of the incineration facility including the incinerator, gas cleaning train and storage berms, concrete floors, and building walls are to be decontaminated to the levels required by the Division of Waste Management and Radiation Control and EPA Region VIII at the time of closure. As indicated earlier in this plan, these decontamination levels will be approved as part of the modification request submitted at the time of closure notification.

## **5.0 Start of Closure**

Closure of the facility will begin on the closure date specified in the notification letter to the Division of Waste Management and Radiation Control and EPA Region VIII. The first step in closure of the facility will be removal of waste inventory. Before decontamination of a specific unit begins, all RCRA hazardous waste, all TSCA waste such as solvents, askeral, oil, and water, and any other waste stored in the unit will be incinerated on-site or removed from the unit and shipped off-site to state and EPA approved treatment/disposal facilities.

## **6.0 Decontamination Procedures**

The closure/decontamination procedures shall include, but not necessarily be limited to, the following activities for each type of process equipment:

### **6.1 Tanks**

- a. Flush the inside surface of each unit thoroughly with a pressure sprayer using clean solvent in which the type of waste previously stored readily dissolves. Utilize additional steam cleaning/pressure washing and sand blasting as needed to remove residual contamination and vacuum it out until dry. Cleaning solution and sandblast residue will be considered as hazardous waste and managed accordingly;
- b. Repeat step (a) as needed to completely decontaminate target surface;
- c. Clean the outer tank surface with detergents;
- d. Wipe test both the inside and outside surfaces and certify the tank as clean if all samples meet Division of Waste Management and Radiation Control and EPA Region VIII requirements. If samples fail to meet the established decontamination standards, the associated surfaces will be recleaned until wipe samples demonstrate successful decontamination; and
- e. Level D Personal Protection will be required unless entering the tank which will require Level C protection.

### **6.2 Process Tanks, Pipes, and Cranes**

- a. Pressure wash or steam clean the interior and exterior surfaces of all equipment. Utilize additional steam cleaning/pressure washing and sand blasting as needed to remove residual contamination and vacuum it out until dry. Cleaning solution and sandblast residue will be considered as hazardous waste and managed accordingly;

- b. After the surfaces are dry, a wipe sample will be taken from the surface that had been in contact with the waste material. If the test result exceeds the regulatory requirement for cleanliness, steps (a-b) are repeated until the regulatory requirement is met; and
- c. Level D Personal Protection is required during decontamination operations.

### **6.3 Process Pipes and Hoses**

- a. Isolate and/or disconnect each section of pipe or hose to be cleaned;
- b. Flush the inside of each pipe and/or hose unit by slowly pumping clean solvent fluid through it;
- c. Vacuum out each unit until the inside surface is dry;
- d. Clean the outside of each pipe or hose unit with clean solvent or water-based detergents using pressure sprayers;
- e. Wipe test both the inside and outside of the pipe or hose and repeat steps (b-d) if the samples exceed the established standard set by the Division of Waste Management and Radiation Control; and
- f. Level D Personal Protection is required during decontamination operations.

### **6.4 Process Floors, Berms, Building Walls, and Ceilings**

- a. Pressure wash or steam clean the surface of all secondary containment, berms, walls, and ceilings, as necessary. Utilize additional steam cleaning/pressure washing and sand blasting as needed to remove residual contamination and vacuum it out until dry. Cleaning solution and sandblast residue will be considered as hazardous waste and managed accordingly;
- b. Wipe test surfaces and certify the unit as clean if all samples meet the established decontamination standard. If samples fail to meet the established decontamination standards, the associated surfaces will be re-cleaned as described in (a) until wipe samples demonstrate successful decontamination; and
- c. Level D Personal Protection is required during decontamination operations.

### **6.5 Incineration and Gas Cleaning Train**

- a. Run incinerator on auxiliary fuel for at least 48 hours at the design temperature of 1200°C ± 100 °C to ensure the destruction of all organic material.
- b. Begin cool down; and

- c. Remove all refractory from the kiln, afterburner, hot duct, and spray dryer. Remove scrubber solution and baghouse residues. All removed residues, including refractory, scrubber solution, and baghouse residue will be considered a hazardous waste and managed accordingly.

## **6.6 All Process Equipment/Valves/Fittings**

- a. Dismantle and open the process equipment;
- b. Decontaminate all inner and outer surfaces using pressure washing/steam cleaning. Utilize additional steam cleaning/pressure washing and sand blasting as needed to remove residual contamination and vacuum out until dry. Cleaning solution and sandblast residue will be considered as hazardous waste and managed accordingly;
- c. Wipe test surfaces and certify the unit as clean if all samples meet the established decontamination standard. If samples fail to meet the established decontamination standards, the associated surfaces will be re-cleaned as described in (b) until wipe samples demonstrate successful decontamination; and
- d. Level D Personal Protection is required during decontamination operations.

## **6.7 Physical Removal**

- a. In some cases, adequate testing for decontamination of surfaces may not be possible, e.g., with porous materials. Consequently, such items will be considered hazardous waste and shipped off-site to approved hazardous waste treatment/disposal facilities.

## **6.8 Non-recyclable Materials**

- a. All contaminated materials that cannot be decontaminated, such as insulators, electrical wiring, wood frames, etc., will be considered hazardous waste and shipped off-site to approved hazardous waste treatment/disposal facilities.

## **6.9 Disposal of Cleanup Equipment and Clothing**

- a. Unless successfully decontaminated, all equipment contaminated during the closure process will be considered as hazardous waste and shipped off-site to approved hazardous waste facilities; and
- b. All contaminated clothing, plastic sheets, cloth wipes, etc., generated during closure will also be considered hazardous waste and be shipped off-site to approved hazardous waste treatment/disposal facilities.

## **6.10 Cleanup and Sampling of Exterior Site Areas**

- a. Inspect all exterior areas for contamination such as yards, driveways, and loading/unloading bays;
- b. Sample (by wipe test or soil scoop) any areas where the visual inspection indicates possible contamination;
- c. Verify extent of contamination if any sample indicates the presence of RCRA or TSCA regulated waste above background;
- d. A random pattern for site area sampling will be designed using a computer program to prepare a grid system over the site plan. Five percent of all sample points will be sampled and analyzed. Any locations where contamination is discovered will be further investigated to identify the extent of contamination;
- e. Once the extent of contamination is determined, cleanup techniques will be reviewed and implemented after approval by the appropriate regulatory agencies.

## **7.0 Sampling and Analysis**

The sampling plan and all analytical testing during the closure performance period shall conform to the Clean Harbors Aragonite Quality Assurance/Quality Control Plan included as part of Attachment 1, Waste Analysis Plan. A closure sampling plan will be submitted to the regulatory agencies for approval prior to the start of closure activities.

## **8.0 Closure Cost Estimates**

The total cost to close the facility using third party costs and 2001 dollars, adjusted for inflation to make current as of 2012, is estimated to be \$13,692,607. Details of the closure cost estimate are attached as Appendix 1 of this plan.

## **9.0 Post-Closure Plan**

As discussed above, Clean Harbors Aragonite will fully decontaminate all waste management units of the facility to non-contaminated status except where noted. Contaminated items that cannot be decontaminated will be disposed of at approved hazardous waste facilities. It is therefore not anticipated that any post-closure monitoring of the site will be required.

## **10.0 Liability Requirements**

Clean Harbors Aragonite maintains liability insurance for sudden accidental occurrences as required by R315-264-147(a)(1) and Condition 2.P.1. The current Certificate of Liability Insurance is maintained on file at the offices of the Division of Waste Management and Radiation Control.

### **11.0 Financing Closure Cost**

Clean Harbors Aragonite is required by R315-264-143 to provide assurance that there will be funds available to close the facility in the future. The purpose of this assurance is to guarantee that the closure can be accomplished by a third party, if Clean Harbors Aragonite is unable or unwilling to do so. The closure cost estimate is updated annually for inflation, and as often as needed to reflect changes at the Aragonite facility.

There are six different mechanisms allowed by rule to provide financial assurance for closure:

- Closure Trust Fund
- Surety Bond Guaranteeing Payment into a Closure Trust Fund
- Surety Bond Guaranteeing Performance of Closure
- Closure Letter of Credit
- Closure Insurance
- Financial Test and Corporate Guarantee for Closure

Clean Harbors has obtained closure insurance in accordance with R315-264-143(e) to satisfy financial assurance requirements for closure.

### **12.0 Timeline for Closure Activities**

As indicated earlier in this plan, a detailed schedule identifying the time frame for closing the individual units at the facility will be approved as part of the modification request submitted at the time of closure notification.



**Appendix 1 -- Closure Cost Estimate**



Insert Appendix 1 -- Closure Cost Estimate