

**Closure Cost Estimate  
Clean Harbors Aragonite  
Incineration Facility  
Aragonite, Utah**

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**SECTION I**

**EXECUTIVE SUMMARY**

## **I. Executive Summary**

Clean Harbors Aragonite, LLC, has prepared a closure cost estimate for the Aragonite incineration facility. This estimate is based on the eventual closure of the entire facility by a third party.

The current closure cost estimate is \$18,750,121. Sections II through VII of this Appendix are found in the associated Calculations Insert. In Section II, a table is provided which summarizes the total closure cost estimate broken out by closure activity and area. In Section III, detailed closure cost estimates are provided for each major process area. These estimates indicate costs by area closure activity. Additionally, a table is provided for each of these major process areas, which tabulates the closure activity cost estimate total for that process area.

Costs associated with the removal and disposal of waste in storage are calculated by using current or adjusted-for-inflation current gate rates for waste disposal at the Clean Harbors Grassy Mountain, UT and Deer Park, TX facilities. Costs for removal and disposal of 1.3G explosive wastes are based on current or adjusted-for-inflation current rates at the Clean Harbors Colfax, LA facility. Costs associated with sampling and analyses are calculated by utilizing the sampling and analytical methods necessary for decontamination verification.

This closure cost estimate is based upon the assumption that at closure, all areas are full to their permitted capacities, off-site transportation and disposal costs are calculated using commercially available rates, independent third-party closure analytical costs are quoted by Utah certified commercial laboratories, and closure certification is made by a Utah registered Professional Engineer. All cost estimates use available current or adjusted-for-inflation current pricing.

**SECTION II**  
**DECONTAMINATION STANDARDS/ANALYTICAL  
PARAMETERS**

**Table I-1.3  
Decontamination Rinse Water Analysis**

<u>Parameters</u> (T=Total Metals)	<u>Maximum Concentration Increase*</u> (mg/l)
Oil and Grease	15.0
Phenols	0.2
Arsenic - T	0.1
Barium - T	5.0
Cadmium - T	0.03
Copper - T	1.0
Lead - T	0.1
Mercury- T	0.005
Selenium - T	0.05
Silver - T	0.1
Total Organic Halides	0.5
Total Organic Carbon	40.0
Cyanides	0.2

\* The values given are the maximum allowable increase in a parameter, over the level that exists in the final rinse water prior to use. This "prior existing level" shall be established as the average of at least three (3) analyses of the rinsewater, plus three (3) standard deviations. These analyses will be made at the time of closure, when a water source is known.

The decontamination rinse water will also be analyzed for extractable explosives (SW-846 Method 8330B) for the ATF magazines final rinse. If extractable explosives are detected based upon the lower detection limits established by the analytical method, a decision will be made to

repeat decontamination procedures until no explosives are detected or dispose of the entire magazine(s) as hazardous waste.

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**Table I-1.3 (Continued)**  
**Decontamination Rinse Water Analysis**

NOTE:

1. Many different waste codes will be handled through-out the Aragonite facility. Over the facility's operating lifetime, it is likely that each unit will eventually handle practically all waste codes received either directly or through the "mixture" and "derived from" rules. From a regulatory viewpoint, then, the potential variety of contamination at all units will be identical. Therefore, only one list of parameters will be considered. This list will be used for all waste management units throughout the facility.

The parameters listed in Table I-1.3 are intended to represent the contaminants likely to be present in the highest levels, and to give an indication of potentially toxic constituents. It must be noted that many of the constituents of concern - the organics, especially the chlorinated organics - are volatile and will likely vaporize for the most part during the cleaning process itself. The loss of these relatively small amounts of materials is considered as unavoidable and non-threatening to the environment or the general public. Any remaining heavy, residual organics will be included by the analyses for Oil and Grease, TOC, and/or TOX. All these parameters will detect general contamination to relatively small values.

It must also be remembered that the decontamination procedures listed in the closure plan apply only to surfaces which are relatively impermeable (designated as "hard surfaces"). They will be used only for metallic items, such as tanks, and concrete. Any porous material, such as soils are intended for landfilling or other EPA/State approved treatment technologies. For most of the items to be decontaminated, a visual inspection will be as useful as actual analysis of the wash; however, to provide a quantitative, objective measure of contamination (or the absence thereof), and a historical record, these analyses will be conducted as described previously for "hard surfaces."

Wide ranging analyses for specific organic chemicals, such as that achieved by GC/MS work, will not provide significantly more useful information. In addition, these analyses take considerable periods of time, during which site conditions would have changed markedly (due to continuing exposure to the elements).

The parameters chosen will adequately sample for all constituents of real concern, or for indicators of those constituents.