

STATEMENT OF BASIS

For the issuance of Draft Air Permit # 1009-AOP-R26 AFIN: 70-00098

1. PERMITTING AUTHORITY:

Division of Environmental Quality
5301 Northshore Drive
North Little Rock, Arkansas 72118-5317

2. APPLICANT:

Clean Harbors El Dorado, LLC
309 American Circle
El Dorado, Arkansas 71730

3. PERMIT WRITER:

Elliott Marshall

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Hazardous Waste Treatment and Disposal
NAICS Code: 562211

5. ALL SUBMITTALS:

The following is a list of ALL permit applications included in this permit revision.

| Date of Application | Type of Application (New, Renewal, Modification, Deminimis/Minor Mod, or Administrative Amendment) | Short Description of Any Changes That Would Be Considered New or Modified Emissions |
|---------------------|---|---|
| 1/26/2023 | Minor Mod | N/A |
| 2/10/2023 | Administrative Amendment | N/A |

6. REVIEWER'S NOTES:

This permitting action is necessary to remove the requirement to run the De-NO_x unit at all times (previous Specific Condition #173) while the SN-44 incinerator is in operation. The facility often incinerates low nitrogen wastes which produce significantly less NO_x in the stack gases than high nitrogen wastes. In such situations, the facility does not need to run De-NO_x unit to achieve compliance with the NO_x emission limit listed in Specific Condition #160. The facility already shows compliance with Specific Condition #160 NO_x limit by operating a CEMS, required by Specific Condition #172. In addition, the

facility is adding two electric heaters and fans in Pellet Silos #1 and #2 as A-13 Insignificant Activities. Permitted emissions are unchanged.

7. COMPLIANCE STATUS:

The following summarizes the current compliance of the facility including active/pending enforcement actions and recent compliance activities and issues.

There are no active or pending enforcement actions.

8. PSD/GHG APPLICABILITY:

a) Did the facility undergo PSD review in this permit (i.e., BACT, Modeling, etc.)? N
If yes, were GHG emission increases significant? N

b) Is the facility categorized as a major source for PSD? Y

- *Single pollutant ≥ 100 tpy and on the list of 28 or single pollutant ≥ 250 tpy and not on list*

If yes for 8(b), explain why this permit modification is not PSD.

There are no emission increases associated with this change

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|---------------------------|---------------------------|-------------------------------------|
| SN-34, SN-50 | SO ₂ , opacity | 40 CFR 60, Subpart Dc |
| SN-21 | VOC | 40 CFR 60, Subpart Kb |
| Equipment Leaks | VOC | 40 CFR 60, Subpart VVa |
| Facility | VOC | 40 CFR 61, Subpart C |
| Facility | VOC | 40 CFR 61, Subpart E |
| Equipment Leaks | HAP | 40 CFR 61, Subpart V |
| Facility | VOC | 40 CFR 61, Subpart FF |
| SN-31, 37, 38, 39, 40, 41 | HAP | 40 CFR 63, Subpart DD |
| Tanks | HAP | 40 CFR 63, Subpart OO |
| Containers | HAP | 40 CFR 63, Subpart PP |
| Facility | ALL | 40 CFR 63, Subpart EEE |
| SN-24A, 24B, 24D | HAP | 40 CFR 63, Subpart ZZZZ |
| SN-24C, 24E | - | 40 CFR 60, Subpart IIII |
| SN-50, SN-51 | HAP | 40 CFR 63, Subpart DDDDD |
| SN-24F | - | 40 CFR 63, Subpart JJJJ |

10. UNCONSTRUCTED SOURCES:

| Unconstructed Source | Permit Approval Date | Extension Requested Date | Extension Approval Date | If Greater than 18 Months without Approval, List Reason for Continued Inclusion in Permit |
|----------------------|----------------------|--------------------------|-------------------------|---|
| SN-51 | MM 9-17-20 | | | |

11. PERMIT SHIELD – TITLE V PERMITS ONLY:

Did the facility request a permit shield in this application? N
 (Note - permit shields are not allowed to be added, but existing ones can remain, for minor modification applications or any Rule 18 requirement.)

If yes, are applicable requirements included and specifically identified in the permit? N
 If not, explain why.

For any requested inapplicable regulation in the permit shield, explain the reason why it is not applicable in the table below.

| Source | Inapplicable Regulation | Reason |
|--------|-------------------------|--------|
| N/A | | |

12. COMPLIANCE ASSURANCE MONITORING (CAM) – TITLE V PERMITS ONLY:

List sources potentially subject to CAM because they use a control device to achieve compliance and have pre-control emissions of at least 100 percent of the major source level. List the pollutant of concern and a brief summary of the CAM plan (temperature monitoring, CEMs, opacity monitoring, etc.) and frequency requirements of § 64.

| Source | Pollutant Controlled | Cite Exemption or CAM Plan Monitoring and Frequency |
|---|----------------------|---|
| SN-07 | PM ₁₀ | Daily opacity reading and inspection of bag filters |
| SN-21 | VOC | Monitor liquid throughput, VOC concentration and daily inspection of carbon canisters |
| SN-25 | VOC | Monitor liquid throughput, VOC concentration and daily inspection of carbon canisters |
| SN-31 SN-37 SN-38 SN-39 SN-40 | VOC | Monitor liquid throughput, VOC concentration and daily inspection of carbon canisters |
| SN-48 | PM ₁₀ | Daily opacity readings |

13. EMISSION CHANGES AND FEE CALCULATION:

See emission change and fee calculation spreadsheet in Appendix A.

14. AMBIENT AIR EVALUATIONS:

The following are results for ambient air evaluations or modeling.

a) NAAQS

A NAAQS evaluation is not required under the Arkansas State Implementation Plan, National Ambient Air Quality Standards, Infrastructure SIPs and NAAQS SIP per Ark. Code Ann. § 8-4-318, dated March 2017 and the DEQ Air Permit Screening Modeling Instructions.

b) Non-Criteria Pollutants:

The facility emits HAPs related to incomplete combustion, waste incineration and handling, storage tanks and solvent recovery.

This permit does not contain a TLV table for organic HAPs since the Hazardous Waste Multipathway Risk Assessment dated November 16, 2012 included the evaluation of organic HAPs for all sources.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Division of Environmental Quality has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m³), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

No modeling was performed for this revision, 1009-AOP-R26.

| Pollutant | TLV (mg/m ³) | PAER (lb/hr) = 0.11 × TLV | Proposed lb/hr | Pass? |
|--------------------|--------------------------|---------------------------|----------------|-------|
| Antimony Compounds | 0.5 | 0.055 | 0.68 | N |
| Arsenic | 0.01 | 0.0011 | 0.0542* | N |
| Beryllium | 0.00005 | 0.0000055 | 0.0245*** | N |
| Cadmium | 0.002 | 0.00022 | 0.0562** | N |
| Calcium cyanamide | 0.5 | 0.055 | 3.07 | N |
| Chlorine | 1.45 | 0.1595 | 15.455 | N |
| Chromium | 0.01 | 0.0011 | 0.0272 | N |

| Pollutant | TLV (mg/m ³) | PAER (lb/hr) = 0.11 × TLV | Proposed lb/hr | Pass? |
|-------------------------------------|-----------------------------|------------------------------|-------------------|-------|
| Cobalt | 0.02 | 0.0022 | 1.10* | N |
| Cyanide Compounds | 0.75 | 0.0825 | 3.061 | N |
| Dioxins/Furans ^a | 0.001 | 0.00011 | 1.069E-7 | Y |
| Fluorene | 0.2 | 0.022 | 0.03* | N |
| Hydrazine | 0.01311 | 0.001311 | 2.10 ^c | N |
| Hydrochloric acid | 2.98 | 0.3278 | 15.908 | N |
| Hydrogen fluoride | 0.409 | 0.04499 | 6.88 | N |
| Lead | 0.05 | 0.0055 | 0.0832* | N |
| Manganese | 0.1 | 0.022 | 7.28* | N |
| Mercury | 0.01 | 0.0011 | 0.061* | N |
| Methyl chloroform | 1909.89 | 210.08 | 16.521 | Y |
| Methylene chloride | 173.68 | 19.104 | 31.551 | N |
| Nickel | 0.1 | 0.011 | 2.60* | N |
| Phenanthrene | 0.2 | 0.022 | 0.03* | N |
| Phosphine | 0.417 | 0.0458 | 3.111 | N |
| Phosphorus | 0.1 | 0.011 | 3.061 | N |
| Selenium | 0.2 | 0.022 | 5.60 | N |
| Tetrachloroethylene | 169.52 | 18.64 | 5.351 | Y |
| Titanium tetrachloride ^b | 0.54 | 0.0594 | 3.121 | N |
| H ₂ S | 13.93 | 1.53 | 0.1 | Y |
| Formaldehyde | 0.37 | .0407 | 1.32E-4 | Y |
| Acrolein | 0.220 | 0.0242 | 4.4 E-05 | Y |
| Acetaldehyde | 45.04 | 4.9544 | 1.1E-04 | Y |
| Acrylic Acid | 6.0 | 0.66 | 4.4E-05 | Y |
| Propionaldehyde | 47.53 | 5.2283 | 4.4E-05 | Y |

^a Hypothetical value. The reviewing engineer screened these pollutants based on a hypothetical TLV of 0.001 mg/m³. The emission rates for dioxins and furans were based on the requirements of 40 CFR Part 63, Subpart EEE.

- ^b No TLV found. Used AEGL-1 (8-h)
- ^c Based on highest product received in past (51,000 lb/yr = 1.02 lb/hr); includes fugitives
- * SN-08 & SN-34 = 0.01 lb/hr - Fluorene and Phenanthrene for SN-24 Emergency Generators and Fire Pump not included
- ** SN-08 & SN-34 = 0.001 lb/hr
- *** SN-08 & SN-34 = 0.0001 lb/hr

2nd Tier Screening (PAIL)

AERMOD air dispersion modeling was performed on the estimated hourly emissions from the following sources, in order to predict ambient concentrations beyond the property boundary. The Presumptively Acceptable Impact Level (PAIL) for each compound has been deemed by the Division of Environmental Quality to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

SN-24 Emergency Equipment is not modeled per ADEQ guidance. Modeling was only performed on pollutants that had a change in emissions for R22 which includes SN-50 and SN-51 which replaced SN-34. All other modeling results were from the R11, R17 or R21 version of the permit.

| Pollutant | PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value | Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Version | Pass? |
|--------------------|--|--|---------|-------|
| Antimony Compounds | 5.0 | 0.08226 | R11 | Y |
| Arsenic | 0.1 | 0.0757 | R22 | Y |
| Beryllium * | 0.0005 | 0.00212 | R22 | N |
| Cadmium | 0.02 | 0.00786 | R22 | Y |
| Calcium cyanamide | 5.0 | 0.29893 | R11 | Y |
| Chlorine | 14.5 | 1.291 | R22 | Y |
| Chromium | 0.1 | 0.00729 | R22 | Y |
| Cobalt | 0.2 | 0.1145 | R22 | Y |
| Cyanide Compounds | 7.5 | 0.29893 | R11 | Y |
| Fluorene | 2.0 | 0.0728 | R22 | Y |
| Hydrazine* | 0.1311 | 0.507 | R22 | N |
| Hydrochloric acid | 29.8 | 1.326 | R22 | Y |
| Hydrogen fluoride | 4.09 | 0.641 | R22 | Y |

| Pollutant | PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value | Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Version | Pass? |
|------------------------|--|--|---------|-------|
| Lead | 0.5 | 0.0757 | R22 | Y |
| Manganese | 1.0 ^a | 0.6627 | R22 | Y |
| Mercury | 0.1 | 0.0757 | R22 | Y |
| Methylene chloride | 1,736.8 | 595.402 | R22 | Y |
| Nickel | 1.0 | 0.2311 | R22 | Y |
| Phenanthrene | 2.0 | 0.0728 | R22 | Y |
| Phosphine | 4.17 | 0.612 | R22 | Y |
| Phosphorus | 1.0 | 0.29893 | R11 | Y |
| Selenium | 2.0 | 0.5071 | R22 | Y |
| Titanium tetrachloride | 5.4 | 0.612 | R22 | Y |

^a TLV for manganese and inorganic compounds as manganese. Manganese cyclopentadienyl tricarbonyl has a lower TLV, however, since this compound is organic it would be emitted at a lower rate and pass the strategy.

* The vapor pressure of Hydrazine is 0.31 psi which is very low. In addition, the facility receives Hydrazine as a mixture of waste. Therefore, in the past permit application/renewal (R17), it is assumed that negligible amounts of fugitive emissions occur during material handling and modeled for incinerator emissions only using very conservative assumptions. The highest amount of Hydrazine received in the past (51,000 lb/yr = 1.02 lb/hr) which includes fugitives which also should account for SN-49 and SN-52 emissions.

Alternate modeling was performed for beryllium for R22 and hydrazine for R17. The results are summarized in the following Table:

| Pollutant | Highest Modeling Result ($\mu\text{g}/\text{m}^3$) | OEHHA – Chronic REL ($\mu\text{g}/\text{m}^3$) | Averaging Period | Pass? |
|-----------|--|--|------------------|-------|
| Beryllium | 0.00034 | 0.007 | Annual | Pass |
| Hydrazine | 0.086* | 0.2 | Annual | Pass |

* Based on highest product received in past (51,000 lb/yr = 1.02 lb/hr); includes fugitives

REL = Reference Exposure Level

OEHHA = California Office of Environmental Health Hazard Assessment

Air quality standards established by the California Office of Environmental Health Hazard Assessment (OEHHA) were used to evaluate the modeling results. Said agency has promulgated a Chronic REL for the target pollutant.

ADEQ has accepted the use of OEHHA values as alternate air quality criteria in previous permitting actions for other Arkansas industrial facilities. The Air Division has determined that if the ambient air concentrations of a given HAP are less than 100% of the Chronic REL, then the emissions are acceptable from an air quality standpoint.

c) H₂S Modeling:

A.C.A. §8-3-103 requires hydrogen sulfide emissions to meet specific ambient standards. Many sources are exempt from this regulation, refer to the Arkansas Code for details.

Is the facility exempt from the H₂S Standards N

| Pollutant | Threshold value | Modeled Concentration (ppb) | Pass? |
|------------------|--|-------------------------------------|-------|
| H ₂ S | 20 parts per million (5-minute average*) | 10.2321 ppb or 0.0102 ppm | Y |
| | 80 parts per billion (8-hour average) residential area | 2.183 µg/m ³ = 1.566 ppb | Y |
| | 100 parts per billion (8-hour average) nonresidential area | 2.183 µg/m ³ = 1.566 ppb | Y |

*To determine the 5-minute average use the following equation

$$C_p = C_m (t_m/t_p)^{0.2} \text{ where}$$

C_p = 5-minute average concentration

C_m = 1-hour average concentration

t_m = 60 minutes

t_p = 5 minutes

15. CALCULATIONS:

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----|---|---------------------------------------|-------------------|------------------------------|----------|
|----|---|---------------------------------------|-------------------|------------------------------|----------|

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----|--|---|------------------------------------|------------------------------|--|
| 01 | PM/PM ₁₀ : NESHAP limit | 0.013 gr/dscf at 7% oxygen | Baghouse | Unknown | |
| 01 | SO ₂ : Sulfur feed rate | 2045 lb/hr | Scrubber | 98.9% | Sulfur content of fuel tested before burning |
| 01 | VOC: Testing and Material Balance | 55,837 micrograms/L (groundwater) 1.1 lb/hr (combustion) | Incineration – Secondary Combustor | 99.998% | 125 gal groundwater/hr 1,095,000 gal groundwater/yr |
| 01 | CO: NESHAP limit | 100 ppm | N/A | N/A | |
| 01 | NO _x : 2011 Stack Test | 110.17 lb/hr, Standard Deviation = 24.01 lb/hr | N/A | N/A | 2 standard deviation safety factor |
| 01 | Organic HAPs: Material Balance | Assumed 100% of waste is organic HAP | Incineration – Secondary Combustor | 99.998% | 61,025 lb feed/hr |
| 01 | HCl and Cl ₂ : NESHAP limit | 32 ppmv | Scrubber | 95% | |
| 01 | Mercury: NESHAP limit | 130 µg/dscm | Activated Carbon | Unknown | |
| 01 | Lead and Cadmium (SVM): NESHAP limit | 230 µg/dscm | Baghouse | Unknown | |
| 01 | Arsenic, Beryllium, Chromium (LVM): NESHAP limit | 92 µg/dscm | Baghouse | Unknown | |
| 01 | Sb Co Mn Ni Se | 489 µg/dscm 2224 µg/dscm 29719 µg/dscm 8898 µg/dscm 22245 µg/dscm | | | Conservative estimates |
| 01 | Dioxins/Furans: NESHAP limit | 0.40 ng TEQ/dscm | Activated Carbon | Unknown | Combustion gas temp < 400 °F |
| 07 | Grain loading | 25 gr/scf | Baghouse | 99.9% | 8,500 ft ³ /min |
| 08 | AP-42 | Boiler factors Natural gas | N/A | N/A | 8760 hr/yr |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|--------------|---|---|--------------------------------|------------------------------|---|
| 09 A&B | AP-42 Table 11.12-2 | 0.73 lb PM/ton 0.47 lb PM ₁₀ /ton | Baghouse | 95% | 20 tons/truck 2 trucks/hr 1,794 trucks/yr |
| 11 | Tanks 4.0 | N/A | N/A | N/A | 55,496 gal/yr |
| 16 | Estimate | 0.1 lb/hr | Scrubber | Unknown | |
| 18 47 | AP-42 Table 11.12-2 | 0.73 lb PM/ton 0.47 lb PM ₁₀ /ton | Baghouse | 95% | 20 tons/truc 1 truck/hr 600 trucks/yr |
| 20 | Grain loading | 15 gr/ft ³ | Baghouse | 99.9% | 1,200 ft ³ /min |
| 21 | Tanks 4.0 | N/A | 2 Carbon Canisters (in series) | 99% | 6,000 gal/hr 18,000,000 gal/yr |
| 24A, B, C | AP-42 Table 3.3-1 | 0.31 lb PM/PM ₁₀ /MMBtu 0.29 lb SO _x /MMBtu 0.36 lb VOC/MMBtu 0.95 lb CO/MMBtu 4.41 lb NO _x /MMBtu | None | N/A | 24A – 44.25 HP 24B – 196 HP 24C – 275 HP |
| 24D, E | AP-42 Table 3.4-1 | 0.10 lb PM/PM ₁₀ /MMBtu 0.0505 lb SO _x /MMBtu 0.09 lb VOC/MMBtu 0.85 lb CO/MMBtu 3.20 lb NO _x /MMBtu | None | N/A | 24D – 805 HP 24E – 755 HP |
| 24F | AP-42 Table 3.2-3 Subpart JJJJ Table 1 | 1.94E-2 lb PM/PM ₁₀ /MMBtu 5.88E-4 lb SO _x /MMBtu | None | N/A | 149 HP 500 hrs |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----|--|--|-------------------|------------------------------|--|
| | | 1.0 g VOC/HP-hr 4.0 g CO/HP-hr 2.0 g NO _x /HP-hr | | | |
| 25 | Drum Sampling Air Emission Models for Waste and Wastewater | 6.2 lb VOC/1000 gallons S=1.45 (splash loading) | N/A | N/A | 825,000 samples/yr 95 samples /hr |
| 25 | Drum Filling and Rinsing: Air Emission Models for Waste and Wastewater | L _L =6.2 lb VOC/1000 gallons M=102.6 lb/lb-mol P=1.75 psia T= 524 °R S=1.45 (splash loading) | N/A | N/A | 2,400,000 gal/yr for filling and rinsing combined 2000 hr/yr |
| 25 | Drum Rinsing: Air Emission Models for Waste and Wastewater | E=2701 lb/yr F _c =0.0037 lb/drum N= 730,000 drums/yr (1333 drums/day) W _i =1 (100% VOC) | | | Plastic drum= 10 lb each Steel drum= 40 lb each Non-haz waste limit = 7,300 tpy 2,400,000 gal/yr limit for filling and rinsing combined |
| 25 | Waste Repackaging | 0.0037 lb/drum | N/A | N/A | 56,000 drums/yr |
| 25 | Pumps, Flanges, Valves: EPA's Protocol for Equipment Leak Emission Estimates dated November 1995 | Varied. See permit application for emission factors | N/A | N/A | |
| 25 | Tanker and Railcar Cleaning: | 5.1808 lb/car 0.686 lb/truck | N/A | N/A | 152 rail cars/yr 1930 tank |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----|---|---|--------------------------------|------------------------------|---|
| | AP-42 Tables 4.8-1 and 4.8-2 | | | | trucks/yr |
| 25 | Tanker Loading/Unloading: Air Emission Models for Waste and Wastewater | 19.88 lb/1000 gallons S=1.45 | Series Carbon Canister | 95% | 100 tankers/yr |
| 25 | Drum Pumping: Air Emission Models for Waste and Wastewater | 19.88 lb/1000 gallons S=1.45 | 110-gallon carbon tank | 95% | 25 drums/hr 1,930 tankers/yr |
| 25 | Vacuum Truck Loading: Air Emission Models for Waste and Wastewater | 0.18 lb/1000 gallons S=1.45 | N/A | N/A | 3,000 gal/hr 750,000 gal/yr |
| 25 | Equipment and Truck Wash Decontamination: Tanks 4.0 | N/A | N/A | N/A | 1,260,000 gal washwater/yr |
| 25 | Barrel Crushing | 1.0 lb/hr | N/A | N/A | |
| 25 | Paved Roads: AP-42 13.2.1 | 0.1108 lb PM/VMT 0.0222 lb PM ₁₀ /VMT | N/A | N/A | 8 |
| 25 | Railcar Loading | 18.01 lb/1000 gallons | Two carbon canisters in series | 99% | 4,800 gal/hr 1,380,000 gal/yr |
| 25 | Some pollutants emission rates are based on previous permit values | 0.13% lb/hr; 0.67% tpy Chlorine, Hydrazine, Hydrochloric acid, Hydrogen fluoride, Phosphine, Titanium tetrachloride 1.46% lb/hr; 11.77% tpy Methyl chloroform 2.96% lb/hr; 24.47% tpy Methylene chloride | N/A | N/A | HAPS based on VOC ratio method – previous testing |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|-----------|--|---|---|------------------------------|--|
| | | 0.31% lb/hr; 2.35% tpy Tetrachloroethylene | | | |
| 31 | Waste Solvent Tanks: Tanks 4.0 | N/A | Carbon Canisters in series when SCC unavailable | 95% | 15,000 gal/hr 11,720,000 gal/yr 15% annually sent to carbon canisters |
| 31 | Intermediate and Final Product Tanks: Tanks 4.0 | N/A | Carbon Canisters in series when SCC unavailable | 95% | 1,831.25 gal/hr 8,790,000 gal/yr 15% annually sent to carbon canisters |
| 32 | Stack Testing | Average of stack test: 0.002 lb/hr PM/PM ₁₀ 7.5E-6 lb/hr mercury Plus a safety factor | Baghouse and Carbon Adsorber | N/A | 2,542 bulbs/hr * 0.63 lb/bulb * 24 hr/day = 38,435 lb/day |
| 34 | AP-42 Tables 1.4-1 through 4 | Natural Gas Factors | N/A | N/A | 33.75 MMBTU/hr |
| 35, 36 | AP-42 Section 13.4 | PM/PM ₁₀ =Water Circulation Rate x Drift Rate x TDS | N/A | N/A | Drift Rate = 0.005% TDS = 13,600 ppm Water flow rate = 825 gal/min |
| 37 | AP-42 Table 4.7-1 (Highest of Range) | i8.34 lb/ton | Carbon Canisters in series when SCC unavailable | 95% | 14.1 ton/hr 67,373 ton/yr |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----|---|--|---|------------------------------|--|
| 38 | AP-42 Section 5.2 Equation 1 | 18.04 lb/1000 gallons HAPs estimated based on molecular weight and vapor pressure | Carbon Canisters in series | 99% | 4,800 gal/hr 1,771,000 gal/yr |
| 39 | AP-42 Section 5.2 Equation 1 | 18.04 lb/1000 gallons HAPs estimated based on molecular weight and vapor pressure | Carbon Canister | 95% | 4,400 gal/hr 879,000 gal/yr |
| 40 | AP-42 Section 5.2 Equation 1 | 18.04 lb/1000 gallons HAPs estimated based on molecular weight and vapor pressure | Vapor Balance System (emissions sent back to tanks) | 90% | 1 tanker/hr 6,000 gal/tanker 6,153,000 gal/yr |
| 41 | Pumps, Flanges, Valves: EPA's Protocol for Equipment Leak Emission Estimates dated November 1995 | Varied. See permit application for emission factors | N/A | N/A | 28 pumps 749 valves 597 connectors |
| 42 | AP-42 Section 13.4 | PM=Water Circulation Rate x Drift Rate x TDS PM ₁₀ = 15% PM | N/A | N/A | Drift Rate = 0.008% TDS = 13,600 ppm Water flow rate = 6,200 gal/min |
| 43 | | | | | Drift Rate = 0.0006% TDS = 13,600 |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|-------------------------------------|---|--|------------------------------------|---------------------------------|--|
| | | | | | ppm Water flow rate = 6,500 gal/min |
| 44 | PM/PM ₁₀ , Sb, Co, Mn, Ni, Se : NESHAP limit | 0.0016 gr/dscf at 7% oxygen | Baghouse | Unknown | 41,272.9 DSCFM |
| | SO ₂ : Sulfur feed rate | 2045 lb/hr | Scrubber | 98.9% | Sulfur content of fuel tested before burning |
| | VOC: 2011 CPT Testing | Feed Rate x removal efficiency | Incineration – Secondary Combustor | 99.997% | 61,025 lb/hr |
| | CO: NESHAP limit | 100 ppm | N/A | N/A | |
| | NO _x : 2015 Emission Data (SN-01) | 42.8 lb/hr, Standard Deviation = 6.7 lb/hr | N/A | De-NO _x 55% (hourly) | SN-01 (190 MMBtu/hr) SN-44 (155 MMBtu/hr) 2 standard deviation safety factor |
| | Organic HAPs: Material Balance | Assumed 100% of waste is organic HAP | Incineration – Secondary Combustor | 99.997% | 61,025 lb feed/hr |
| | Hydrazine | 51,000 lb/hr | Incineration – Secondary Combustor | 99.998% | |
| | Hydrogen Fluoride | 100 lb/hr | Incineration – Secondary Combustor | 99.4% | |
| | HCl and Cl ₂ : NESHAP limit | 21 ppmv | Scrubber | | |
| | Mercury: NESHAP limit | 8.1 µg/dscm | Activated Carbon | Unknown | |
| | Lead and Cadmium (SVM): NESHAP limit | 10 µg/dscm | Baghouse | Unknown | |
| Arsenic, Beryllium, Chromium (LVM): | 23 µg/dscm | Baghouse | Unknown | | |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|-----|---|---|-------------------|------------------------------|---|
| | NESHAP limit | | | | |
| | Dioxins/Furans: NESHAP limit | 0.11 ng TEQ/dscm | Activated Carbon | Unknown | |
| | Ammonia Emission test | 20ppm | | | Deer Park, TX 5ppm x 4 safety factor |
| 45 | Tanks 4.0.9d | N/A | SCC/Carbon Tank | 99% | 399,360 gallons/yr |
| 46 | AP-42 Table 11.17-7 | 0.01 PM grains/DSCF 55% of PM is PM ₁₀ | Baghouse | 99% | 1,800,000 cubic feet/hr blower capacity |
| 48 | Grain loading | 0.01 PM grains/DSCF | Baghouse | 99% | 20,000 cubic feet/min blower capacity |
| 49A | Shredding AP-42 Table 11.19.2-2 Tertiary Crushing of Stone | PM - 0.0054 lb/ton | N/A | N/A | 55 gal drum – 20 lb/drum 110 drums/hr |
| 49A | VOC/HAP Clement's Equation for drum residues HAPs based on VOC ratio - established on historical permitted values and testing | W=2.35E-04 lb/sec 0.13% lb/hr Chlorine, Hydrazine, Hydrochloric acid, Hydrogen fluoride, Phosphine, Titanium tetrachloride 1.46% lb/hr Methyl chloroform 2.96% lb/hr Methylene chloride 0.31% lb/hr Tetrachloroethylene | N/A | N/A | MW for MC 84.9 g/gmol A=Area of spill 3.14 ft ² U=0.1 mph enclosed building D=0.26 cm ² /sec |
| 49B | Injection Molding Michigan Air Emissions Reporting System MAERS – Molding Machine | PM - 0.1302 lb/ton VOC - 6.14E-02 FORMALDEHYDE - 1.20E-04 ACROLEIN - 4.00E-05 ACETALDEHYDE - | N/A | N/A | 55 gal drum – 20 lb/drum 110 drums/hr Pelletizing PM |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----------|--|--|---|------------------------------|---|
| | | 1.00E-04 ACRYLIC ACID - 4.00E-05 PROPIONALDEHYDE - 4.00E-05 ACETONE - 6.00E-05 | | | accounted for in shredding calcs |
| 50 51 | AP-42 Tables 1.4-1 through 4 Natural Gas | lb/MMscf PM/PM ₁₀ – 7.6 SO _x – 0.6 VOC – 5.5 CO – 84 NO _x - 100 | Controlled Flue Gas recirculation | N/A | 400HP - 18 MMBTU/hr 200HP – 9 MMBTU/hr |
| 52 | Shredding and Mixing: AP-42 Table 11.19.2-2 Tertiary Crushing of Stone | 0.0054 lb/ton each activity | N/A | N/A | 25 ton/hr 7,300 ton/yr |
| | Waste Unloading and Waste Transfer: AP-42 13.2.4 Equation 1 | 0.00022 lb/ton each activity | | | |
| | VOC/HAP Mass balance | 0.13% lb/hr Chlorine, Hydrazine, Hydrochloric acid, Hydrogen fluoride, Phosphine, Titanium tetrachloride 1.46% lb/hr Methyl chloroform 2.96% lb/hr Methylene chloride 0.31% lb/hr Tetrachloroethylene | | | 40,000 lb/day Non-haz liquid – 37% Non-haz VOC contents = 3,453 mg/L (VOC) Paint = 0.3% Paint VOC = 5% wt (propylene glycol) |

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

| SN | Pollutants | Test Method | Test Interval | Justification |
|--|--|---|---|--|
| 01, 44 | SO ₂ Removal Efficiency | 6C | Every Five Years | To ensure compliance with SO ₂ limits |
| 01, 44 | Condensable PM | 202 | Every Five Years | To ensure compliance with PM limits |
| 01, 44 (Comprehensive Performance Test) | D/F | 0023A or 23 of Part 60 Appendix A (approval required) | Every 61 months and after a change in the design, operation, or maintenance practices of the source | NESHAP EEE |
| | Mercury | 29 | | |
| | Lead and cadmium | 29 | | |
| | Arsenic, beryllium, and chromium | 29 | | |
| | Carbon monoxide and hydrocarbons | CO or Hydrocarbon CEMS | | |
| | HCl and chlorine gas | 26/26A of Part 60 Appendix A, 320 or 321 of Part 63 Appendix A, or ASTM D 6735-01 and 26/26A with additional requirements | | |
| | PM | 5 or 5I of Part 60 Appendix A | | |
| | Hydrocarbons (Destruction and Removal Efficiency Test) | Refer to NESHAP EEE | Once unless source is modified | |
| 01, 44 (Confirmatory Performance) | D/F | 0023A or 23 of Part 60 Appendix A (approval | 31 months after the previous comprehensive | NESHAP EEE |

| SN | Pollutants | Test Method | Test Interval | Justification |
|--|---------------------------|----------------------|--|--|
| Test) | | required) | performance test | |
| 21 | VOC concentration | 21 | See permit | To determine breakthrough. See CAM plan. |
| 25 | VOC concentration | 21 | See permit | To determine breakthrough. See CAM plan. |
| 31 | VOC | 21 | See Permit | To determine breakthrough. See CAM plan. |
| 34 | Opacity | 9 | See NSPS Dc | Per NSPS Dc |
| 41 | VOC | 21 | Varied. See 60, VVa | 60, VVa |
| Carbon Canisters for Subpart DD Sources (unless use design analysis) | VOC | 18 | 63, DD | 63, DD |
| Incinerator for Subpart DD (unless use design analysis) | VOC | 18 | 63, DD | 63, DD |
| Leak Interface | VOC | 21 | 63, DD | 63, DD |
| 35, 36, 42, 43 | PM/PM ₁₀ (TDS) | Conductivity and TDS | Weekly conductivity testing, with quarterly direct TDS testing | To ensure proper maintenance and operation |
| 50 | Opacity | 9 | See NSPS Dc | Per NSPS Dc |

17. MONITORING OR CEMS:

The permittee must monitor the following parameters with CEMS or other monitoring equipment (temperature, pressure differential, etc.)

| SN | Parameter or Pollutant to be Monitored | Method (CEM, Pressure Gauge, etc.) | Frequency | Report (Y/N) |
|----|--|------------------------------------|-----------|--------------|
|----|--|------------------------------------|-----------|--------------|

| SN | Parameter or Pollutant to be Monitored | Method (CEM, Pressure Gauge, etc.) | Frequency | Report (Y/N) |
|--------|---|------------------------------------|---|--------------|
| 01, 44 | Mercury Emissions | Monitors | Daily – ONLY if requirements of Plantwide Condition 24 are not met. | Y |
| 01, 44 | CO | CEM | Continuously | Y |
| 01, 44 | O ₂ | CEM | Continuously | Y |
| 01, 44 | NO _x | CEM | Continuously | Y |
| 01, 44 | Opacity | COM or CPM | Continuously | Y |
| 01, 44 | PM | CEM | Not required until Agency promulgates all performance specifications and operational requirements | N/A |
| 01, 44 | Feedrates: Hazardous Waste; Ash; Chlorine and chloride; Mercury; Semivolatile Metals; Low Volatility Metals; Activated Carbon | CMS | Continuously | Y |
| 01, 44 | Temperature: Secondary combustion chamber; waste fired boiler | CMS | Continuously | Y |
| 01, 44 | Flue gas flowrate | CMS | Continuously | Y |
| 01, 44 | Scrubber Pressure Drop | CMS | Continuously | Y |
| 01 | Scrubber Liquid Flowrate | CMS | Continuously | Y |
| 44 | Condenser Liquid Flowrate | | | |
| 01 | Scrubber Inlet Liquid pH | CMS | Continuously | Y |
| 44 | Condenser Inlet Liquid pH | | | |
| 01, 44 | Activated Carbon Carrier Fluid Flowrate | CMS | Continuously | Y |
| 01, 44 | Baghouse pressure drop, per cell | CMS | Continuously | Y |
| 01, 44 | Combustion Chamber pressure: Kiln; Secondary | CMS | Continuously | Y |

| SN | Parameter or Pollutant to be Monitored | Method (CEM, Pressure Gauge, etc.) | Frequency | Report (Y/N) |
|-----------------------------|---|------------------------------------|--|--------------|
| | Combustion Chamber; Waste Fired Boiler | | | |
| 41 | Equipment Leaks | See 60, VVa | See 60, VVa | |
| 41 | Equipment Leaks of Pumps | 60.485a(b) | Monthly | Y |
| 41 | Equipment Leaks of Valves in Gas/Vapor/Light Liquid Service | 60.485a(b) | Monthly | Y |
| 41 | Equipment Leaks of Connectors in Gas/Vapor/Light Liquid Service | 60.485a(b) | See 60, VVa | Y |
| 01, 44 SCC | Vent Stream Flow | CMS | Hourly | Y |
| Subpart DD Carbon Canisters | Concentration of Organic Compounds | CMS | Continuously | Y |
| Subpart DD Carbon Canisters | Concentration of Organic Compounds | CMS | Daily or no greater than 20% of the time required to consume the total carbon working capacity | Y |
| 01, 44 SCC | Concentration of Organic Compounds | CMS | Continuously | Y |

18. RECORDKEEPING REQUIREMENTS:

The following are items (such as throughput, fuel usage, VOC content, etc.) that must be tracked and recorded.

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|--------|---|--------------------------|--------------|--------------|
| 01, 44 | Opacity | 20% | Continuously | N |
| 01 | Sulfur Feed Rate | 2045 lb/hr 2681.8 tpy | Monthly | Y |
| 44 | | 2045 lb/hr 1590 tpy | | |
| 01, 44 | Scrubber efficiency for SO ₂ from test | 98.9% | 5 yrs | Y |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|---------|---|--------------------------|--------------|--------------|
| 01, 44 | PM, cyanide compounds, hydrazine, hydrogen fluoride, phosphine, and titanium tetrachloride Testing results | See Permit Limits | 5 yrs | Y |
| 01 | NO _x Emissions | 158.2 lb/hr 451.0 tpy | Continuously | Y |
| 44 | | 56.2 lb/hr 38.0 tpy | | |
| 01 | Utilization Rate of Recovered Energy from liquid waste | 74% Maximum | Monthly | Y |
| 07 | Opacity | 5% | Weekly | Y |
| 07 | Bag Filter Inspections | N/A | Daily | Y |
| 08 | Natural Gas | 15,840,000 scf/yr | Monthly | Y |
| 09A&B | Opacity | 5% | Weekly | N |
| 09A&B | Number of trucks containing lime | 1794 trucks/yr combined | Monthly | Y |
| 11 | Gasoline | 55,496 gal/yr | Monthly | Y |
| 11 | Vapor Pressure of Gasoline | 6.2 psia at 70°F | As Needed | N |
| 18 & 47 | Opacity | 5% | Weekly | N |
| 18 & 47 | Number of trucks of flyash and/or lime | 520 trucks/yr | Monthly | Y |
| 20 | Opacity | 5% | Weekly | N |
| 21 | Operating plan for carbon canisters and maintenance performed | N/A | N/A | N/A |
| 21 | Vessel Analysis | Size | N/A | N |
| 21 | Organic liquids | 18,000,000 gal/yr | Monthly | Y |
| 21 | Vapor Pressure of tank contents | 6.159 psia at 65°F | As Needed | N |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|--------------|---|--|------------------------|--------------|
| 21 | VOC Concentration between carbon canisters | 500 ppmv or greater requires replacement of one or both carbon canisters | See Permit | Y |
| 21 | Inspection Documentation for carbon canisters | N/A | Daily | Y |
| 24 | Opacity | 5% | Daily when operating | N |
| 24A, C, D, E | Hours of Operation | 100 hrs each | Monthly when operating | N |
| 24B, 24F | Hours of Operation | 500 hrs each | Monthly when operating | N |
| 25 | Drum Filling | 2,400,000 gal/yr | Monthly | Y |
| 25 | Waste Repackaging | 56,000 drums/yr | Monthly | Y |
| 25 | Tanker and Railcar Cleaning | 152 rail tank cars/yr | Monthly | Y |
| 25 | Tanker and Railcar Cleaning | 1930 tank trucks/yr | Monthly | Y |
| 25 | Tanker Loading/Unloading | 100 tankers/yr | Monthly | Y |
| 25 | Tanker Loading/Unloading | 1930 tankers pumped/yr | Monthly | Y |
| 25 | Vacuum Truck Loading | 750,000 gal rain water collection/yr | Monthly | Y |
| 25 | Equipment and Truck Wash/Decontamination | 1,260,000 gal wash water/yr | Monthly | Y |
| 25 | Paved roads | 3,100 vehicle miles traveled via 18-wheel traffic/yr | Monthly | Y |
| 25 | Paved roads | 133,360 vehicle miles traveled via Clean Harbors vehicles/yr | Monthly | Y |
| 25 | Road Maintenance Plan Recordkeeping | N/A | N/A | N |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|----|--|--|------------|--------------|
| 25 | Railcar Loading | 1,380,000 gal/yr | Monthly | Y |
| 25 | Railcar Loading: VOC Concentration between carbon canisters | 500 ppmv or greater requires replacement of one or both carbon canisters | See Permit | Y |
| 25 | Railcar Loading: Inspection Documentation for carbon canisters | N/A | Daily | Y |
| 31 | Throughput of Waste Solvent | 11,720,000 gal/yr | Monthly | Y |
| 31 | Throughput of Intermediate and Final Products | 8,790,000 gal/yr | Monthly | Y |
| 31 | Throughput of waste solvent while venting to carbon canister | 1,758,000 gal/yr | Monthly | Y |
| 31 | Throughput of intermediate and final products while venting to carbon canister | 1,318,500 gal/yr | Monthly | Y |
| 31 | Vapor Pressure of Tank Contents | 6.159 psia at 65°F | As Needed | N |
| 32 | Amount of bulbs processed per day | 38,435 lbs of bulbs/day | Daily | N |
| 32 | Opacity | 5% | Weekly | N |
| 34 | Amount of fuel combusted per NSPS | N/A | Monthly | N |
| 34 | Records required by NSPS | See NSPS | See NSPS | Y |
| 37 | Throughput of Solvent | 67,373 tons/yr | Monthly | Y |
| 37 | Throughput of solvent while venting to carbon canister | 10,106 tons/yr | Monthly | Y |
| 38 | Loadout to Railcar | 1,771,000 gal/yr | Monthly | Y |
| 39 | Loadout to 55 gallon drums | 879,000 gal/yr | Monthly | Y |
| 40 | Loadout to Tanker | 6,153,000 | Monthly | Y |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|------------------------|---|--|-----------------------------------|--------------|
| | Trucks | gal/yr 1 tanker/hr | As needed | N |
| 41 | Items specified in 60.486a(a)(3) | See 60, VVa | Varied. See 60, VVa | N |
| 41 | Leak detected log (items specified in 60.486a(c)) | See 60, VVa | As Needed when each leak detected | N |
| 41 | Log for 60.486a(e) | See 60, VVa | As Needed | N |
| 41 | Log for 60.486a(j) | N/A | As Needed | N |
| 41 | See 60.487a(b) | N/A | Semiannual | Y |
| 41 | See 60.487a(c) | N/A | Semiannual | Y |
| 45 | Diesel fuel throughput | 399,360 gallons per year | Monthly | N |
| 46 | Opacity | 5% | Daily | N |
| 48 | Opacity | 5% | Daily | N |
| 49 | Opacity | 5% | Weekly | N |
| 49 | Drums Processed | 963,600 drums/yr | Monthly | Y |
| 49 | Drum Bill of Lading | El Dorado RCRA waste codes | Monthly | N |
| 52 | Facility Database | | | |
| 50, 51 | Amount of fuel combusted | N/A | Monthly | N |
| 50, 51 | Records required by NSPS | See NSPS | See NSPS | Y |
| 52 | Opacity | 5% | Weekly | N |
| 52 | Debris and waste processed | 7,300 tons/yr | Monthly | Y |
| 01, 44 SCC | Temperature | ≤50°F below average combustion temperature during most recent test | Continuous | Y |
| 01, 44 SCC | Vent stream flow | Must be established | Continuous | Y |
| 63, Subpart DD sources | 63.696(g)(1) and (g)(2) | N/A | Semiannual | N |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|---|--|--|--|----------------|
| Tanks (Level 2) | Inspections | N/A | Annual | N |
| Closed vent systems | Inspections and Monitoring | N/A | 63, DD 63.695(c) | N |
| Closed vent complying with 63.693(c)(1)(ii) | Inspections | N/A | 63.695(c)(2) | N |
| Closed vent systems | Defect repair | N/A | As Needed | N |
| 63, Subpart DD control device systems | Malfunctions 63.696(h)(1) to (h)(3) | N/A | As Needed | Y |
| Plantwide | Divert Stack Procedures | See Plantwide Conditions 10, 11, 13, and 15 | As needed | Y |
| Plantwide | Monthly Fuel Use | No limit specified, used to show compliance with NSPS Dc | Monthly | N |
| 01, 44 | Operating Record Requirements | See NESHAP EEE | As needed | N |
| 01 | Total Hazardous Waste Feedrate | 13,383 lb/hr Kiln 1 | Continuously (Hourly Rolling Average) | Y ¹ |
| | | 30,168 lb/hr Kiln 2 | | |
| | | 13,601 lb/hr (secondary combustion chamber) | | |
| | | 3,873 lb/hr (waste fired boiler) | | |
| 44 | | 28,035 lb/hr Kiln | | |
| | | 12,602 lb/hr SCC | | |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|----|-----------------------------------|----------------------------------|---------------------------------------|----------------|
| 01 | Pumpable Hazardous Waste Feedrate | 5,005 lb/hr Kiln 1 | Continuously (Hourly Rolling Average) | Y ¹ |
| | | 9,527 lb/hr Kiln 2 | | |
| | | 13,601 lb/hr SCC | | |
| | | 3,873 lb/hr (waste fired boiler) | | |
| 44 | | 6,827 lb/hr Kiln | | |
| | | 12,602 lb/hr SCC | | |
| 01 | Ash Feedrate | 15,695 lb/hr | Continuously (Rolling 12-hr average) | Y ¹ |
| | | 164.2 lb/hr (WFB) | | |
| 44 | | 10,252 lb/hr | | |
| 01 | Chlorine and Chloride Feedrate | Total: 2718 lb/hr | Continuously (Rolling 12-hr average) | Y ¹ |
| | | 1,020 lb/hr (WFB) | | |
| 44 | | 2,035 lb/hr | | |
| 01 | Mercury Feedrate | 0.46 lb/hr | Continuously (Rolling 12-hr average) | Y ¹ |
| | | 0.187 lb/hr (WFB) | | |
| 44 | | 0.38 lb/hr | | |
| 01 | Semi volatile metals feedrate | 123 lb/hr | Continuously (Rolling 12-hr average) | Y ¹ |
| 44 | | 73 lb/hr (kiln) | | |
| 01 | | 3.12 lb/hr (WFB) | | |
| 01 | Low volatile metals feedrate | 44 lb/hr | Continuously (Rolling 12-hr average) | Y ¹ |
| 44 | | 46 lb/hr (kiln) | | |
| 01 | | 2.87 lb/MMBtu And 30 lb/hr (WFB) | | |
| 01 | Activated carbon | 22.4 lb/hr | Continuously | Y ¹ |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|--------|---|---|---------------------------------------|----------------|
| 44 | feedrate | 24.9 lb/hr | (Hourly Rolling Average) | |
| 01 | Secondary combustion chamber temperature | 1,851°F | Continuously (Hourly Rolling Average) | Y ¹ |
| 44 | | 1,855°F | | |
| 01 | Waste fired boiler temperature | 1,856°F | Continuously (Hourly Rolling Average) | Y ¹ |
| 01 | Flue gas flowrate | 100,568 acfm | Continuously (Hourly Rolling Average) | Y ¹ |
| 44 | | 86,967 acfm | | |
| 01 | WFB Max combustion air flow rate | 8,630 acfm | Continuously (Hourly Rolling Average) | Y ¹ |
| 01 | Scrubber pressure drop | 33.8 in. w.c. | Continuously (Hourly Rolling Average) | Y ¹ |
| 44 | Condenser pressure drop | 10.9 psi | | |
| 01 | Scrubber liquid flowrate | 664 gpm | Continuously (Hourly Rolling Average) | Y ¹ |
| 44 | Condenser liquid flowrate | 3635 gpm | | |
| 01 | Scrubber liquid pH | 3.4 | Continuously (Hourly Rolling Average) | Y ¹ |
| 44 | Condenser liquid pH | 4.1 | | |
| 01 | Activated carbon carrier fluid flowrate | 30 scfm | Continuously (Hourly Rolling Average) | Y ¹ |
| 44 | | 60.1 scfm | | |
| 01, 44 | Baghouse pressure drop, per cell | 1 in. w.c. (minimum) 16 in. w.c. (maximum) | Continuously (Hourly Rolling Average) | Y ¹ |
| 01, 44 | Combustion chamber pressure: kiln, secondary combustion chamber | Below atmospheric | Instantaneous | Y ¹ |
| 01 | waste fired boiler | | | |
| 01, 44 | CO Emissions | 100 ppmv | Continuously | Y ¹ |

¹. CMS performance report and summary report.

19. OPACITY:

| SN | Opacity | Justification for limit | Compliance Mechanism |
|----------|-------------|-------------------------|---|
| 01, 44 | 20% | Dept. Guidance | COMS |
| 04 | 5% | Dept. Guidance | Natural Gas as Fuel |
| 07 | 5% | Dept. Guidance | Weekly |
| 08 | 5% | Dept. Guidance | Natural Gas as Fuel |
| 09 | 5% | Dept. Guidance | Weekly |
| 18 | 5% | Dept. Guidance | Weekly |
| 20 | 5% | Dept. Guidance | Weekly |
| 22 | 5% | Dept. Guidance | Weekly |
| 24 | 20% | Dept. Guidance | Daily during operation |
| 25 | Off-site 5% | Dept. Guidance | Inspections |
| 32 | 5% | Dept. Guidance | Weekly |
| 34 | 20% | NSPS Dc | Performance Testing as required by NSPS |
| 42, 43 | 20% | Dept. Guidance | Conductivity & TDS sampling |
| 46 | 5% | Dept. Guidance | Daily |
| 48 | 5% | Dept. Guidance | Daily |
| 49A, 49B | 5% | Dept. Guidance | Weekly |
| 50, 51 | 5% | Dept. Guidance | Natural Gas as Fuel |
| 52 | 5% | Dept. Guidance | Weekly |

20. DELETED CONDITIONS:

| Former SC | Justification for removal |
|-----------|--|
| #173 | The facility often incinerates low nitrogen wastes which produce significantly less NO _x in the stack gases than high nitrogen wastes. In such situations, the facility does not need to run De-NO _x unit to achieve compliance with the NO _x emission limit listed in Specific Condition #160. The facility already shows compliance with Specific Condition #160 NO _x limit by operating a CEMS, |

| | |
|-----------|--------------------------------------|
| Former SC | Justification for removal |
| | required by Specific Condition #172. |

21. GROUP A INSIGNIFICANT ACTIVITIES:

The following is a list of Insignificant Activities including revisions by this permit.

| Source Name | Group A Category | Emissions (tpy) | | | | | | |
|---|------------------|---------------------|-----------------|----------|----|-----------------|----------|----------|
| | | PM/PM ₁₀ | SO ₂ | VOC | CO | NO _x | HAPs | |
| | | | | | | | Single | Total |
| 10,000 gal Diesel Storage Tank and Dispenser Unit | A-3 | 0 | 0 | 0.03 | 0 | 0 | 0.03 | 0.03 |
| 550 gal Diesel Storage Tank | A-3 | 0 | 0 | 0.000475 | 0 | 0 | 0.000475 | 0.000475 |
| 1,000 gal Diesel Storage Tank (formally SN-12) | A-3 | 0 | 0 | 0.00082 | 0 | 0 | 0.00082 | 0.00082 |
| 500 gal Diesel Storage Tank (formally SN-12) | A-3 | 0 | 0 | 0.00082 | 0 | 0 | 0.00082 | 0.00082 |
| Nine (9) Solar Sipper Recovery Systems | A-13 | 0 | 0 | 0.0014 | 0 | 0 | 0 | 0 |
| Surface Water Treatment | A-13 | 0 | 0 | 0.00014 | 0 | 0 | 0.00003 | 0.00014 |
| SN-22 Brine Plant Sources (other than | A-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| Source Name | Group A Category | Emissions (tpy) | | | | | | |
|---|------------------|---------------------|-----------------|------|----|-----------------|--------|-------|
| | | PM/PM ₁₀ | SO ₂ | VOC | CO | NO _x | HAPs | |
| | | | | | | | Single | Total |
| listed) | | | | | | | | |
| Filter Aid Loading Operation (at Tank 597) (formally SN-22) | A-13 | 0.0000078 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bulk Solid Mixing Process Backup Carbon Filter | A-13 | 0 | 0 | 0.91 | 0 | 0 | 0.91 | 0.91 |
| Railcar Unloading Emergency Scrubber | A-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Electric Heater and Fan at Pellet Silo #1 | A-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Electric Heater and Fan at Pellet Silo #2 | A-13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

22. VOIDED, SUPERSEDED, OR SUBSUMED PERMITS:

The following is a list of all active permits voided/superseded/subsumed by the issuance of this permit.

| |
|--------------|
| Permit # |
| 1009-AOP-R25 |

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Clean Harbors El Dorado, LLC
 Permit Number: 1009-AOP-R26
 AFIN: 70-00098

| | | | |
|---------------|-----------|-----------------------------------|---------|
| \$/ton factor | 27.27 | Annual Chargeable Emissions (tpy) | 1045.68 |
| Permit Type | Minor Mod | Permit Fee \$ | 500 |

| | |
|---|--------------------------|
| Minor Modification Fee \$ | 500 |
| Minimum Modification Fee \$ | 1000 |
| Renewal with Minor Modification \$ | 500 |
| Check if Facility Holds an Active Minor Source or Minor Source General Permit | <input type="checkbox"/> |
| If Hold Active Permit, Amt of Last Annual Air Permit Invoice \$ | 0 |
| Total Permit Fee Chargeable Emissions (tpy) | 0 |
| Initial Title V Permit Fee Chargeable Emissions (tpy) | |

HAPs not included in VOC or PM:

Chlorine, Hydrazine, HCl, HF, Methyl Chloroform, Methylene Chloride, Phosphine, Tetrachloroethylene, Titanium Tetrachloride

Air Contaminants:

All air contaminants are chargeable unless they are included in other totals (e.g., H2SO4 in condensable PM, H2S in TRS, etc.)

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|-------------------|------------------------------|------------|------------|---------------------|---------------------------------|-----------------------------|
| PM | | 91.7 | 91.7 | 0 | 0 | 91.7 |
| PM ₁₀ | | 66.8 | 66.8 | 0 | | |
| PM _{2.5} | | 0 | 0 | 0 | | |
| SO ₂ | | 94.9 | 94.9 | 0 | 0 | 94.9 |
| VOC | | 59.4 | 59.4 | 0 | 0 | 59.4 |
| CO | | 234.4 | 234.4 | 0 | | |
| NO _x | | 535.7 | 535.7 | 0 | 0 | 535.7 |
| Lead Compounds | <input type="checkbox"/> | 0.26 | 0.26 | 0 | | |

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|---------------------|-------------------------------------|------------|------------|---------------------|---------------------------------|-----------------------------|
| Acetaldehyde | <input type="checkbox"/> | 0.01 | 0.01 | 0 | | |
| Acrolein | <input type="checkbox"/> | 0.01 | 0.01 | 0 | | |
| Acrylic Acid | <input type="checkbox"/> | 0.01 | 0.01 | 0 | | |
| Antimony Compounds | <input type="checkbox"/> | 2.97 | 2.97 | 0 | | |
| Arsenic Compounds | <input type="checkbox"/> | 0.14 | 0.14 | 0 | | |
| Beryllium Compounds | <input type="checkbox"/> | 0.14 | 0.14 | 0 | | |
| Cadmium Compounds | <input type="checkbox"/> | 0.26 | 0.26 | 0 | | |
| Calcium cyanimide | <input type="checkbox"/> | 13.37 | 13.37 | 0 | | |
| Chlorine | <input checked="" type="checkbox"/> | 67.58 | 67.58 | 0 | 0 | 67.58 |
| Chromium Compounds | <input type="checkbox"/> | 0.13 | 0.13 | 0 | | |
| Cobalt Compounds | <input type="checkbox"/> | 4.69 | 4.69 | 0 | | |
| Cyanide Compounds | <input type="checkbox"/> | 13.37 | 13.37 | 0 | | |
| Dioxins/Furans | <input type="checkbox"/> | 4.69E-07 | 4.69E-07 | 0 | | |
| Fluorene | <input checked="" type="checkbox"/> | 0.07 | 0.07 | 0 | 0 | 0.07 |
| Formaldehyde | <input type="checkbox"/> | 0.01 | 0.01 | 0 | | |
| Hydrazine | <input checked="" type="checkbox"/> | 9.11 | 9.11 | 0 | 0 | 9.11 |
| Hydrochloric acid | <input checked="" type="checkbox"/> | 69.57 | 69.57 | 0 | 0 | 69.57 |
| Hydrogen fluoride | <input checked="" type="checkbox"/> | 30.1 | 30.1 | 0 | 0 | 30.1 |
| Manganese Compounds | <input type="checkbox"/> | 31.76 | 31.76 | 0 | | |
| Mercury Compounds | <input type="checkbox"/> | 0.16 | 0.16 | 0 | | |
| Methyl chloroform | <input checked="" type="checkbox"/> | 20.65 | 20.65 | 0 | 0 | 20.65 |
| Methylene chloride | <input checked="" type="checkbox"/> | 28.67 | 28.67 | 0 | 0 | 28.67 |
| Nickel Compounds | <input type="checkbox"/> | 11.26 | 11.26 | 0 | | |
| Phenanthrene | <input type="checkbox"/> | 0.07 | 0.07 | 0 | | |
| Phosphine | <input checked="" type="checkbox"/> | 13.52 | 13.52 | 0 | 0 | 13.52 |
| Phosphorus | <input type="checkbox"/> | 13.37 | 13.37 | 0 | | |
| Propionaldehyde | <input type="checkbox"/> | 0.01 | 0.01 | 0 | | |
| Selenium Compounds | <input type="checkbox"/> | 24.4 | 24.4 | 0 | | |

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|------------------------|-------------------------------------|------------|------------|---------------------|---------------------------------|-----------------------------|
| Tetrachloroethylene | <input checked="" type="checkbox"/> | 14.71 | 14.71 | 0 | 0 | 14.71 |
| Titanium tetrachloride | <input type="checkbox"/> | 13.52 | 13.52 | 0 | | |
| Single Organic HAP | <input type="checkbox"/> | 42.44 | 42.44 | 0 | | |
| Total Organic HAP | <input type="checkbox"/> | 46.11 | 46.11 | 0 | | |
| H2S | <input checked="" type="checkbox"/> | 0.1 | 0.1 | 0 | 0 | 0.1 |
| Ammonia | <input checked="" type="checkbox"/> | 9.8 | 9.8 | 0 | 0 | 9.8 |
| Acetone | <input checked="" type="checkbox"/> | 0.1 | 0.1 | 0 | 0 | 0.1 |