

STATEMENT OF BASIS

For the issuance of Air Permit # 1884-AOP-R7 AFIN: 72-00144

1. PERMITTING AUTHORITY:

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

2. APPLICANT:

Eco-Vista, LLC.—Waste Management of Arkansas, Inc.
2210 Waste Management Drive
Springdale, Arkansas 72762

3. PERMIT WRITER:

Kyle Crane

4. NAICS DESCRIPTION AND CODE:

NAICS Description: Solid Waste Landfill
NAICS Code: 562212

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 |
|---------------------|---|---|
| 8/12/2019 | Renewal | Installing a thermal oxidizer (SN-09) and process flare (SN-10) with renewable natural gas project, adding natural gas fuel operating scenario to the engines (SN-04 through SN-08) |

6. REVIEWER'S NOTES:

Waste Management of Arkansas, Inc. (WM) owns and operates a municipal solid waste landfill (NAICS 562212), Eco-Vista, LLC (EVLf), (AFIN: 72-00144), located at 2210 Waste Management Drive, Springdale, Washington County, Arkansas 72762. The facility submitted an application to renew the facility's Title V operating permit, recalculate the facility's emissions, and to permit the Renewable Natural Gas project, which includes a

change from 7 operating scenarios to 2 operating scenario for engines SN-04 through SN-08, the addition of a plantwide carbon monoxide limit, and the addition of a thermal oxidizer as SN-09 and a process flare as SN-10. NSPS conditions were updated from Subpart WWW to Subpart XXX as the project changes the facility’s applicability. The permit’s general provisions have also been updated. Annual permitted emissions increase by 26.6 tons per year (tpy) of PM, 10.1 tpy of PM₁₀, 42.1 tpy of SO₂, 4.6 tpy of CO, and 79.1 tpy of NO_x. Annual permitted emissions decrease by 20.9 tpy of VOC. HAP emissions are set at 9.40 tpy of a Single HAP and 22.87 tpy of Total HAP.

Dispersion modeling for HAPs was performed with Lakes Environmental AERMODView 9.7.0. Emissions were estimated using EPA AP-42 emission factors, EPA LandGEM, mass balances, and manufacturer information.

7. COMPLIANCE STATUS:

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

The facility was last inspected on November 18, 2020 and was found to be in compliance.

EPA ECHO shows “No Violation Identified” for Clean Air Act compliance.

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? N

- *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.

9. SOURCE AND POLLUTANT SPECIFIC REGULATORY APPLICABILITY:

| Source | Pollutant | Regulation (NSPS, NESHAP or PSD) |
|---------------|--------------------------|-------------------------------------|
| Facility | VOC (NMOC) | 40 C.F.R. § 60 Subpart XXX |
| 04 through 08 | VOC, CO, NO _x | 40 C.F.R. § 60 Subpart JJJJ |
| 04 through 08 | HAPs | 40 C.F.R. § 63 Subpart ZZZZ |
| Facility | HAPs | 40 C.F.R. § 63 Subpart AAAA |

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 |
|----------------------|----------------------|--------------------------|-------------------------|---|
| 09 | Issue Date of R7 | - | - | - |
| 10 | Issue Date of R7 | - | - | - |

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 Regulation 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 |
|--------|----------------------|---|
| N/A | | |

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 non-criteria pollutants listed below were evaluated. Based on Department procedures for review of non-criteria pollutants, emissions of all other non-criteria pollutants are below thresholds of concern.

1st Tier Screening (PAER)

Estimated hourly emissions from the following sources were compared to the Presumptively Acceptable Emission Rate (PAER) for each compound. The Department has deemed the PAER to be the product, in lb/hr, of 0.11 and the Threshold Limit Value (mg/m^3), as listed by the American Conference of Governmental Industrial Hygienists (ACGIH).

| Pollutant | TLV (mg/m^3) | PAER (lb/hr) = $0.11 \times \text{TLV}$ | Proposed lb/hr | Pass? |
|---------------------------|-----------------------------------|--|----------------|-------|
| Acetaldehyde | 45.04 | 4.954 | 0.338 | Yes |
| Acrolein | 0.229 | 0.0252 | 0.208 | No |
| Benzene | 1.597 | 0.176 | 0.337 | No |
| Chloroform | 48.83 | 5.371 | 0.0012 | Yes |
| Ethylbenzene | 86.838 | 9.552 | 0.1256 | Yes |
| Formaldehyde | 1.5 | 0.0405 | 3.756 | No |
| Hydrogen Chloride | 2.983 | 0.328 | 2.784 | No |
| Methyl Isobutyl Ketone | 81.93 | 9.012 | 0.016 | Yes |
| Phenol | 19.245 | 2.117 | 0.001 | Yes |
| Styrene | 85.202 | 9.372 | 0.001 | Yes |
| Toluene | 75.362 | 8.289 | 0.464 | Yes |
| Vinyl Chloride | 2.556 | 0.281 | 0.0213 | Yes |
| Xylene | 434.192 | 47.761 | 0.3123 | Yes |

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 Department to be one one-hundredth of the Threshold Limit Value as listed by the ACGIH.

| Pollutant | PAIL ($\mu\text{g}/\text{m}^3$) = 1/100 of Threshold Limit Value | Modeled Concentration ($\mu\text{g}/\text{m}^3$) | Pass? |
|-------------------|--|--|-------|
| Acrolein | 2.29 | 0.550 | Yes |
| Benzene | 15.97 | 1.099 | Yes |
| Formaldehyde | 15 | 5.649 | Yes |
| Hydrogen Chloride | 29.83 | 5.996 | Yes |

a) 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 Y

If exempt, explain: This facility does not emit H₂S

15. CALCULATIONS:

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----|---|---------------------------------------|-------------------|------------------------------|---|
| 01 | AP-42 – criteria WIAC* for HAPs * Trade Organization | Varies | None | n/a | Operating scenario: 100% of LFG is emitted uncontrolled over the landfill surface. Concentration of NMOC based on site specific Tier 2 test values of 239 ppmv as hexane (Mar 2009) |

| SN | Emission Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|---|---|---|---|--------------------------------------|---|
| 01 – PCS** | Data provided by WM ** Petroleum Contaminated Soil | 50 ppm organic content | None | n/a | 100% fuel evaporation highly conservative, assumed all organics would be emitted into air |
| 02A/B Flares | <u>PM</u> – AP-42 2.4 Table 2.4-5 footnote a (11/98) <u>SO₂</u> – 4/2009 Test data 77 ppmv <u>NMOC</u> – AP-42 2.4 Table 2.4-2 (11/98) <u>CO</u> & <u>NO_x</u> – <u>Vendor/Flare</u> <u>Guarantee</u> HAPs – WIAC | <u>PM</u> = 17 lb/10- 6 dscf Methane (0.00102 lb/hr/dscfm) <u>SO₂</u> = 400 ppmv Reduced S <u>NMOC</u> = 595 ppmv default <u>CO</u> = 0.370 lb/MMBtu <u>NO_x</u> = 0.068 lb/MMBtu Varies , see Table 2.4-1 | Flares | NMOC – 98% HAPs - 98.0% | 6 Op Scenarios Open candlestick, dual Flares , variable each 225 to 2250 scfm = combined 450 to 4500 scfm max @8760 hr/yr @1012 BTU/scf Methane @55% Methane Concentration for PM, SO ₂ & NO _x NMOC = 100% VOC |
| 03 | <u>PM</u> –AP-42 Section 13.2.2 Tables 13.2.1.3, 13.2.2-1,-2,-3 (11/06) | formula <u>PM</u> = 5.38 lb/ VMT* PM10 = 1.45 lb/VMT* | Water suppression, speed limits, etc., as necessary | None | Other means to suppress dust are allowed, speed limits, plastic cover instead of soil, etc. |
| 04-08 IC Engines (LFG Fueled) | <u>PM</u> – AP-42, Table 2.4-5 (11/98) <u>SO₂</u> –4/2009 Test data 77 ppmv | <u>PM</u> = 48 lb/10 ⁶ dscfm <u>SO₂</u> = 400 ppmv VOC = <u>CO</u> = 2.7 | 5 Cat Engines Lean Burn After cooled Filter | n/a | New Engines to be installed in 2010 for LFGTE |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|--|--|---|--|------------------------------|--|
| | AP-42 2.4 Eq #3, 4, & 7 <u>VOC = NMOC</u> = <u>CO & NO_x</u> – based on Two Pine LF, Cat 3516 engines perf stack test dated 04/15/2008 <u>Formaldehyde-Process</u> knowledge | g/bhp-hr <u>NO_x</u> = 1.5 g/bhp-hr @max 313 scfm <u>Formaldehyde</u> = 453.59 g/lb | treatment to remove PM10 prior to gas entering engines | | |
| 04-08 IC Engines (Natural-gas Fueled) | AP-42 3.2 Table 3.3-2 Caterpillar 3516 Natural Gas Engine Spec. | <u>lb/MMBtu:</u> PM: 9.91E-03 PM ₁₀ : 7.71E-05 SO ₂ : 5.88E-04 Total HAP: 7.17E-02 <u>g/BHP-hr:</u> NO _x : 2.00 CO: 2.230 VOC: 0.790 | | | |
| 09 | AP-42 2.4.4.2 Manufacturer Specifications | PM/PM ₁₀ : 3.46 lb/hr SO ₂ : 10,935 kg/yr Total HAP: 1226 ppmv VOC: 276.69 lbmol LFG/hr <u>lb/MMBtu</u> NO _x : 0.068 CO: 0.31 | | | 98% destruction efficiency assumed from AP-42 13.5.2 |
| 10 | AP-42 2.4.4.2 | PM/PM ₁₀ : 5.00 lb/MMscf of | | | 98.0% |

| SN | Emission Factor Source (AP-42, testing, etc.) | Emission Factor (lb/ton, lb/hr, etc.) | Control Equipment | Control Equipment Efficiency | Comments |
|----|---|---|-------------------|------------------------------|---|
| | Manufacturer Specifications | CH ₄ SO ₂ : 27,337 kg/yr Total HAP: 2452 ppmv VOC: 276.69 lbmol LFG/hr <u>lb/hr</u> NO _x : 3.50 CO: 3.00 | | | Combustion Efficiency from Manufacturer |

16. TESTING REQUIREMENTS:

The permit requires testing of the following sources.

| SN | Pollutants | Test Method | Test Interval | Justification |
|---------------------|-----------------------|--------------------------------------|--|---|
| 04-08 | CO NO _x | EPA Methods 7E and 10 | Within 180 Days of initial startup plus every 8760 op hours or 3 years whichever comes first | PWC #3 & Subpart JJJ, §60.4243(b)(2)(ii) & Reg.19.501 |
| 04-08 | VOC | EPA Methods 25A & 18 | Within 180 Days of initial startup plus every 8760 op hours or 3 years whichever comes first | NSPS – 40 C.F.R. Part 60, Subpart JJJ & Reg.19.501 |
| 04-08 (One only) | Formaldehyde | EPA Method 320 or otherwise approved | One engine, initial test within 180 days of startup | Reg.18.1004 & Ark. Code Ann. |

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) |
|-----|--|------------------------------------|-----------|--------------|
| N/A | | | | |

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) |
|-------------------------------------|---|---|--------------------------------|--------------|
| Facility | Total amount of waste-in-place | 23,190,000 cubic yards | Annually | Yes |
| Facility | Plot Map of collector system | None | On-going | No |
| Facility | Asbestos-containing or non-degradable waste: nature, date, quantity received & location | None | On-going | No |
| Facility | Total CO emissions and calculations | 245.0 tons per rolling 12 month period | Monthly | Yes |
| 04 thru 08 | Maintenance Log | Maintain Good Operating Practices Maintain records | Monthly | No |
| 40 C.F.R. § 60 Subpart JJJJ engines | Notification, documentation (tests) of meeting emissions | Maintain Good Operating Practices | On-going | Yes |
| Facility (04 thru 08) | List of Engines w/model date and purchase date | Keep for life of engine | Within 30 days of installation | No |
| 04 thru 08 | Operating Hours | Non-resettable Hourly Operating Meter | On-going | No |
| 04 thru 08 | Operating Scenario | N/A | As Needed/When Switching | No |
| 02A, 02B, 04 thru 08, 09, 10 | Gas flow in scfm | N/A – For CO Calculations | Every 15 minutes | No |
| 01 | NMOC SN-01 | 50 Mg/yr | Annually | Yes |

| SN | Recorded Item | Permit Limit | Frequency | Report (Y/N) |
|------------|-------------------|--------------|-----------|--------------|
| 04 thru 08 | Performance Tests | Varies | Varies | Yes |

19. OPACITY:

| SN | Opacity | Justification for limit | Compliance Mechanism |
|---------------|---------|-----------------------------|---|
| Off-site | 5% | Reg.18.501 & Ark. Code Ann. | Observation & Dust Suppression methods, NPDES permit required |
| 04 through 08 | 5% | Reg.18.501 & Ark. Code Ann. | Landfill gas as the only fuel/Natural gas as the only fuel |
| 09 | 5% | Reg.18.501 & Ark. Code Ann. | Post-treatment tail gas as the only fuel |

20. DELETED CONDITIONS:

| Former SC | Justification for removal |
|-----------|--|
| #12-13 | Replacing operating scenarios with combined CO limit in Plantwide Conditions #9-10 |

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 |
| 500 Gallon Used Oil Tank | A-3 | | | 1.00E-05 | | | | 1.00E-05 |
| 350 Gallon Engine Oil Tank | A-3 | | | 1.50E-05 | | | | 1.50E-05 |
| 350 Gallon Transmission Oil Tank | A-3 | | | 1.50E-05 | | | | 1.50E-05 |
| 350 Gallon Hydraulic Oil Tank | A-3 | | | 1.50E-05 | | | | 1.50E-05 |
| 350 Gallon Hydraulic Oil Tank | A-3 | | | 1.50E-05 | | | | 1.50E-05 |
| 550 Gallon Diesel Fuel Tank | A-3 | | | 2.41E-03 | | | | 2.41E-03 |

| Source Name | Group A Category | Emissions (tpy) | | | | | | |
|--------------------------------------|------------------|---------------------|-----------------|----------|----|-----------------|----------|----------|
| | | PM/PM ₁₀ | SO ₂ | VOC | CO | NO _x | HAPs | |
| | | | | | | | Single | Total |
| 2,000 Gallon Diesel Fuel Tank | A-3 | | | 4.73E-03 | | | | 4.73E-03 |
| Solidification Activities | A-13 | 2.55E-03 | | | | | | |
| Parts Washer | A-13 | 0.44 | | 4.79 | | | 5.97E-06 | 2.98E-05 |
| One (1) 100,000 Gallon Leachate Tank | A-13 | | | 5.82E-03 | | | | 5.82E-03 |
| Ten (10) 5,000 Gallon Leachate ASTs | A-13 | | | 5.69E-03 | | | | 5.69E-03 |
| 550 Gallon Gasoline Fuel Tank | A-13 | | | 0.164 | | | | 0.164 |

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 # |
|-------------|
| 1884-AOP-R6 |

APPENDIX A – EMISSION CHANGES AND FEE CALCULATION

Fee Calculation for Major Source

Revised 03-11-16

Facility Name: Eco-Vista, LLC.—Waste Management of
Arkansas, Inc.
Permit Number: 1884-AOP-R7
AFIN: 72-00144

| | | | |
|---------------|--------------|-----------------------------------|-----------------|
| \$/ton factor | 23.93 | Annual Chargeable Emissions (tpy) | <u>739.7</u> |
| Permit Type | Modification | Permit Fee \$ | <u>3036.717</u> |

| | |
|---|--------------------------|
| 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) | 126.9 |
| 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 | | 347.2 | 373.8 | 26.6 | 26.6 | 373.8 |
| PM ₁₀ | | 105.8 | 115.9 | 10.1 | | |
| PM _{2.5} | | 0 | 0 | 0 | | |
| SO ₂ | | 78.8 | 120.9 | 42.1 | 42.1 | 120.9 |
| VOC | | 86.5 | 65.6 | -20.9 | -20.9 | 65.6 |
| CO | | 240.4 | 245 | 4.6 | | |
| NO _x | | 100.3 | 179.4 | 79.1 | 79.1 | 179.4 |

| Pollutant (tpy) | Check if Chargeable Emission | Old Permit | New Permit | Change in Emissions | Permit Fee Chargeable Emissions | Annual Chargeable Emissions |
|----------------------|------------------------------|------------|------------|---------------------|---------------------------------|-----------------------------|
| Single HAP | <input type="checkbox"/> | 0 | 9.4 | 9.4 | | |
| Total HAP | <input type="checkbox"/> | 0 | 22.87 | 22.87 | | |
| HCl | <input type="checkbox"/> | 5.82 | 0 | -5.82 | | |
| 1,1-Dichloroethane | <input type="checkbox"/> | 0.32 | 0 | -0.32 | | |
| 1,1-Dichloroethylene | <input type="checkbox"/> | 0.04 | 0 | -0.04 | | |
| Dichlorobenzene | <input type="checkbox"/> | 0.91 | 0 | -0.91 | | |
| Ethyl Benzene | <input type="checkbox"/> | 3.06 | 0 | -3.06 | | |
| Toluene | <input type="checkbox"/> | 9.93 | 0 | -9.93 | | |
| Vinyl Chloride | <input type="checkbox"/> | 0.19 | 0 | -0.19 | | |
| Xylenes | <input type="checkbox"/> | 7.47 | 0 | -7.47 | | |
| Formaldehyde | <input type="checkbox"/> | 7.1 | 0 | -7.1 | | |