

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMPLIANCE DIVISION PERMIT APPLICATION PROCESSING AND CALCULATIONS	PAGES 4	PAGE 1
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	PROCESSED BY AS08	CHECKED BY

Permit to Operate (Alteration/Modification)

Applicant BFI Waste Systems of North America/Azusa Gas Systems Operations

Equipment Location 1209 W. Gladstone Street
Azusa, CA 91702

Equipment Location 8514 Mast Blvd.
Santee, CA 92071

APPLICATION 498353, FACILITY ID 113465

Equipment Description

LANDFILL GAS CONDENSATE/LEACHATE COLLECTION AND TREATMENT SYSTEM CONSISTING OF:

1. CONDENSATE/LEACHATE STORAGE TANK, T-3A, 9,100 GALLON CAPACITY WITH TRANSFER PUMP, VENTED TO A 200 POUND CARBON ADSORBER.
2. EMERGENCY CONDENSATE/LEACHATE STORAGE TANKS T-1 AND T-2, 3,810 GALLON CAPACITY EACH, VENTED TO A 200 POUND CARBON ADSORBER.
3. EMERGENCY CONDENSATE/LEACHATE STORAGE TANK, T-3, 6,700 GALLON CAPACITY, VENTED TO A 200 POUND CARBON ADSORBER.
4. TWO PARTICULATE FILTERS, PF-1 AND PF-2, CONDENSATE/LEACHATE, 50 GPM EACH.
5. THREE LIQUID-PHASE ACTIVATED CARBON VESSELS, GAC-1, GAC-2, AND GAC-3, CONDENSATE/LEACHATE, 2,000 POUND CAPACITY EACH.
6. EFFLUENT NEUTRALIZATION/MIXING TANK, T-5, 250 GALLON CAPACITY WITH MIXER, VENTED TO 200 POUND CARBON ADSORBER.
7. NAOH STORAGE TANK, T-6, 200 GALLON CAPACITY WITH METERING PUMP.
8. LIQUID CHLORINE STORAGE TANK, T-7, 500 GALLON CAPACITY WITH METERING PUMP.
9. DEFOAMER DRUM, 55 GALLON CAPACITY, WITH METERING PUMP INJECTING FOAM SUPPRESSANT INTO EFFLUENT TANK T-5.

Background/Process Description

The above application was submitted on April 28, 2009 for alteration/modification of an existing landfill condensate collection and treatment system under Permit F18556, A/N 347624. This application was submitted to correct the equipment description in the condensate/leachate treatment system. Previously the condensate/leachate management system (CMS) was operated under two sections, a condensate treatment system and a leachate pretreatment system. The leachate wastewater had more extensive treatment including metal precipitation and an anaerobic reactor for biodegradation of organic compounds before entering the main system of carbon filtration, neutralization, and sewage discharge. Late 2007, BFI Waste Systems contracted Invirotreat Inc to conduct evaluation of the leachate and condensate waste streams composition. The CMS upgrade project was then initiated and completed in May 2008. The

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upgrade project removed the leachate pretreatment system and was automated with a programmable logic controller (PLC) system based on T-3a liquid level for unattended continuous operation .

Leachate and condensate are sent to the influent equalization tank (T-3A) then pumped by level controls to two particulate filters (PF-1 and PF-2), through three liquid phase granular activated carbon (GAC) in series to remove volatile organic compounds (VOCs) and semi volatile organic compounds (SVOCs). After passing through the GACs, the effluent is sent to the pH neutralization tank (T-5) where pH is adjusted by NaOH and is treated with chlorine to prevent the formation of sulfides. The final effluent overflows through the meter/sampling box into the lift station where it is pumped into the sewer. In case of pumping shut down or system malfunction emergency condensate/leachate storage tanks (T-1, T-2, and T-3) will receive the overflow until T-3A is able to receive liquids again. The third tank , T-3 has a larger capacity and is used if a longer storage time is needed. The equipment will operate a maximum of 24 hr/day, 7 day/week, 52 weeks/year.

Emission Calculations

There is no emission increase from this system. The condensate/leachate mixing tank and leachate storage tank are vented to activated carbon vessels or the landfill gas collection system which is vented to the flares for combustion.

Rules Evaluation

- Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of the facility.
Rule 212 (c)(2)- On-site emission increases do not exceed the following:
- | | |
|----------------------------|-------------|
| Volatile Organic Compounds | 30 lbs/day |
| Nitrogen Oxides | 40 lbs/day |
| PM10 | 30 lbs/day |
| Sulfur Dioxide | 60 lbs/day |
| Carbon Monoxide | 220 lbs/day |
| Lead | 3 lbs/day |
- Rule 212(c)(3)(A)(i)- There is no increase of emissions.
Public Notice is not required.

Rule 401: Visible Emissions No violations are expected, limits listed under Rule 401(b)(1).

Rule 402: Nuisance
Nuisance is not expected with proper operation, monitoring and maintenance. Based on previous operation of the facility for the last two years, compliance is expected. There have been no complaints received in the last two years against the facility.

Rule 1150.1 Control of Gaseous Emissions from Municipal Solid Waste Landfills
Rule 1150.1(d)(1)(A)- Gas collection & control system shall be designed to handle maximum expected gas flow rate from entire area of MSW landfill that requires control to minimize migration of subsurface gas to comply with (d)(10), and collect gas at an extraction rate to comply with (d)(11-12). 2006 IPCC Guidelines for National GHG Inventories, Chapter 3 IPCC Model shall be used to calculate maximum expected gas generation flow rate from the landfill.
The LFG generated flow peaked around 1991-1992 at an average of 2700 cfm when the landfill stopped accepting waste. The estimated average LFG generated in 2012 was 1830 cfm and it is projected to be 1559 cfm by 2020. The LFG is expected to decrease with

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time. The flare is permitted to combust 4000 scfm of LFG. The capacity of the LFG collection and control system are adequately designed to handle maximum expected gas flow rate from the landfill.

Rule 1150.1(d)(1)(B)- The design plan shall conform with active collection systems in 40 CFR 60.759 or Executive Officer approved alternative.

Rule 1150.1(d)(1)(C)- Design plan shall meet (d)(1)(C)(i-iv) or provide the collection and sale of collected MSW landfill emissions as in (d)(1)(C)(v).

Rule 1150.1(d)(1)(C)(i)- Route all LFG to control system to reduce methane by at least 99% by weight and reduce NMOC by at least 98% by weight or reduce the outlet of NMOC concentration to less than 20 ppmv, dry basis as hexane at 3% O₂ established by an initial and subsequent annual source tests per 40 CFR 60.8 and using test methods in Rule 1150.1(j)(1). The annual source test shall be conducted no later than 45 days after the anniversary date of the initial source test.

Rule 1150.1(d)(1)(C)(v)- Route the collection gas to a treatment system that processes collection gas for subsequent sale or use. All emissions from any atmospheric vent shall be subject to the requirements of (d)(1)(C)(i).

Rule 1150.1(d)(3)-Owner or operator of existing gas collection and control systems who modify them to meet requirements of this rule shall submit for approval an amendment of the existing design plan to include updates or addenda. Design plan amendments shall be prepared by a PE.

Rule 1150.1(d)(10)- TOC as methane \leq 5% by volume in subsurface refuse boundary sampling probes for detecting lateral migration of LFG away from waste mass.

Rule 1150.1(d)(11)- TOC as methane \leq 25 ppmv from integrated samples taken on numbered 50,000 sq foot landfill grids.

Rule 1150.1(d)(12)- TOC as methane \leq 500 ppmv above background by instantaneous monitoring at any location on the landfill except at outlet of a gas control device.

Rule 1150.1(d)(13)- TOC as methane \leq 500 ppmv at any component under positive pressure. If exceeded, must be tagged and repaired within 10 calendar days.

Rule 1150.1(d)(14)- All valves in gas collection and control system shall be closed \leq 1 hour after breakdown or reasonably knew or should have known.

Rule 1150.1(d)(16)- Wellheads gauge pressure shall be under constant vacuum, except during (A) wellhead raising or (B) during repair or temporary shutdown due to catastrophic event, during repair to connect collection components, and for permitted construction included in the design plan and emissions are minimized.

Rule 1150.1(d)(17)- Install and maintain 3-cup wind speed assembly (0-50mph, min $<$ 0.75mph) and a vane (0-540° azimuth, \pm 2°) direction monitoring system w/continuous recorder at representative site.

Rule 1150.1(d)(18)- Comply w/ 27CCR, subchapter 5 Sect. 21140 (Attachment B)

Rule 1150.1(d)(19)- Comply w/ Sect. 20200 SWRCB 27CCR, Article 2 (Attachment C).

Rule 1150.1(d)(20)- Comply w/ 40 CFR 63 Subpart AAAA.

Rule 1150.1(e)(1)- Monitor and sample per Attachment A for TOC and TAC each month from subsurface refuse boundary sampling probes.

Rule 1150.1(e)(2)- Collect monthly integrated samples per Sect. 2, Attachment A for TOC and TAC from landfill surface.

Rule 1150.1(e)(3)-Instantaneous surface monitoring per Sect. 3, Attachment A for TOC each quarter. If no readings exceed 500 ppmv for last 4 consecutive quarterly monitoring events, with approval, may monitor annually. TOC \geq 500 without remedy w/in 10 days shall return to quarterly monitoring. (A) Exceedance shall be marked on a topographic

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map or identified by GPS and recorded per Sect. 3.4, Attachment A. (B) Corrective action (cover maintenance/repair, well vacuum adjustments) shall be taken and remonitored within 10 days after exceedance. (C) If remonitoring shows a third exceedance it is violation unless a new/replacement well is needed and replaced \leq 45 days after third exceedance.

Rule 1150.1(e)(4)- If wellheads show positive pressure: (A) Initiate corrective action w/in 5 days. (B) If within 15 days it is not corrected, initiate further action (expansion). (C) Corrective actions must be completed and new wells must be operational within 120 days of first positive pressure reading. (D) Gauge pressure shall be determined by approved device and calibrated and operated per manufacturer's specs.

Rule 1150.1(e)(5)- Collect and analyze monthly LFG sample per Sect. 4.0, Attachment A for TOC and TAC from main gas collection header line entering control systems.

Rule 1150.1(e)(6)- Collect and analyze monthly LFG sample per Sect. 5.0, Attachment A for TOC and TAC from landfill property boundary.

Rule 1150.1(e)(7)(A)- Enclosed combustors and flares shall install, calibrate, maintain, and operate per manufacture specs (i) a temperature monitoring device with continuous recorder w/ +/-1%. (ii) Shall record flow to gas control device(s) at least every 15 minutes.

Rule 1150.1(e)(7)(B)- Open flares or non-combustion systems shall provide information of operation, parameters indicating proper performance, and monitoring procedures.

Rule 1150.1(e)(7)(C)- Quarterly monitoring for leaks for components under positive pressure. Component must be tagged and repairs in 10 calendar days. Gas to energy facilities may leak test prior to scheduled maintenance or during planned outages.

Rule 1150.1(f)- All records shall be kept up to day, readily accessible and maintained for at least 5 years.

Compliance is expected.

Reg XIII: Rule 1303(a)- There is no increase of emissions, BACT is not required.
Rule 1303(b)(1)- There is no increase of emissions; modeling is not required.
Rule 1303(b)(2)- There is no increase of emissions. Since the facility is an essential public service, any required offsets shall be provided through priority reserve.
Compliance with Regulation XIII is expected.

Rule 1401: Toxic Air Contaminants
There are no emissions associated with this equipment.
Compliance is expected

Rule 1401.1: Rule 1401.1(b)- Equipment is exempt since it is located at an existing facility.

Reg. XXX: The alteration of the landfill condensate collection system is considered a Title V Minor permit revision under Rule 3000(b)(15), since there is no emission increase and the modification of the equipment does not result in new or additional NSPS or NESHAP requirements and will be subject to an EPA review (Rule 3003 (j)). A public notice is not required. Compliance is expected.

Conclusions & Recommendations

The equipment is in compliance with all the applicable Rules and Regulations of the AQMD. A Permit to Operate is recommended for applications 498353. For Permit Conditions please see Sample Permit. A revised Title V permit is recommended after EPA review.