

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMPLIANCE DIVISION PERMIT APPLICATION PROCESSING AND CALCULATIONS	PAGES 4	PAGE 1
	APPL NO 546354	DATE 5/24/2013
	PROCESSED BY AK07	CHECKED BY

ALTERATION/MODIFICATION FOR PERMIT TO CONSTRUCT/OPERATE (EXISTING PO - A/N 355398)

Applicant

San Bernardino County Solid Waste Management Division – San Timoteo Landfill
 222 West Hospitality Lane, 2nd Floor
 San Bernardino, CA 92415

Equipment Location (Facility ID 007068, Title V)

31 Refuse Road, Redlands, CA 92373

Equipment Description

See Sample Permit

Applications Back Ground:

Applicant is installing a new condensate tank of 6600 - 6700 gallons tank to replace one of the existing condensate tanks. The tank being replaced has volume of 9,200 gallon. The existing 9,200 gallons condensate tank has been actually listed in the flare permit (A/N 360906, P/N F28029) instead of leachate/condensate treatment system permit (A/N 355398, P/N F31565). The condensate tank from the flare permit shall be removed under administrative revision and the new condensate tank will be added to the equipment description of leachate/condensate permit equipment description. This application will be treated as modification of existing landfill gas leachate/condensate system.

Calculations

VOC emissions From Leachate Storage Tank:

When previous application (A/N 360906, flare system) was evaluated, where the condensate tank was actually listed under, no emissions from the condensate tank were considered. Please see attached pertinent pages from the flare system evaluation have been placed in application folder.

When leachate and condensate system application (A/N 355398) was processed, it was assumed the VOC concentration in the liquid is around 200 PPMV. VOC emissions from the entire Leachate and Condensate storage and collection system came out to be negligible, hence no entries were made in NSR.

Assuming that annual turnover for this tank is around 400,000 gallons (very conservative approach). As per the applicant, maximum possible turnover is only 263,000 gallons.

In the permit, a condition limits the exhaust to 1 PPMV as hexane. So if we calculate emissions from the carbon adsorber on the basis of 400,000 gallons of VOC vapors displaced in one year with 1 PPMV as hexane,

1 gallon = 0.133 cubic feet

$$400,000 \text{ gallons in one year} = 400,000 \text{ gallons} \times (0.133 \text{ cubic feet / gallon}) \times 1 / (365 \times 24 \times 60) \times (1/\text{min}) = 0.102 \text{ scfm}$$

$$1 \text{ ppmv} / 10^6 \times 0.102 \text{ scfm} \times 60 \text{ min/hr} \times \text{lb-mole}/379 \text{ ft}^3 \times 86 \text{ lbs/lb-mole} \\ = 0.000014 \text{ lbs/hr} = 0.00003329 \text{ lbs/day} = 0.01215 \text{ lb/year}$$

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These will be the emissions at the exhaust of carbon adsorber.

Even if we assume that the condensate has 500 micrograms/liter of VOC's and all of those VOC's get transferred through the liquid to vapor stream and get released via carbon adsorber,

$$\begin{aligned} \text{Emissions} &= 500 \text{ micro-gram/L} \times (400,000/365) \text{ gallons/day} \times 3.785 \text{ L/gal} \times 2.2 \text{ lbs/kg} \times 10^{-9} \text{ kg/micro-gram} \\ &= 0.0045 \text{ lb/day.} \end{aligned}$$

If we assume only 90% adsorbtion by the carbon, the exhaust VOC emissions will be 0.00045 lb/day only.

Disposal of Condensate

As per the applicant, condensate is combusted in flare, only during the wet weather months if they can not combust all of the condensate in flare, rest is disposed offsite.

Toxic Risk Analysis for VOC's emissions:

Based on our experience with similar systems at other site, the cancer risk will be less than 1 in a million as the carbon is a passive carbon and the flow rate of vapors and the concentrations of toxics coming out is negligible.

NSR Emissions entries and Permit Conditions:

No emissions will be entered in NSR and please see sample permit for equipment description and conditions. No changes will be made to permit conditions of A/N 355398 permit. Amount of condensate combusted in the flare is the same as before, no new emissions as a result of this tank replacement project is expected.

Evaluation

Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of equipment location. Rule 212 (c)(2)- Not exceeding 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)- MICR is below 1 in a million.
Public Notice is not required.

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

Rule 402: Nuisance
Nuisance is not expected.

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- Rule 1150: Compliance can be expected. Excavation of landfill to install leachate/condensate systems is allowed without getting 1150 excavation plan through SCAQMD.
- Rule 1150.1: Applicant had submitted alteration to Rule 1150.1 landfill compliance plan 05/06/2011. Previous inspection reports were reviewed and facility has been operating in compliance.
- Reg. XIII: Rule 1303 (a) (2)- Additional emissions are negligible. Please see calculations in the evaluation above.
Rule 1303(b)(1)- Modeling for VOC is not required (1303 Appendix A).
Rule 1303(b)(2)- Emissions are less than 22 lb/day for this facility. Offsets are not required.

Statewide Compliance:

Compliance database was checked for NOV's for last four years for other landfill sites operated by San Bernardino County Waste Management. No NOV/NC's were found.

Sensitive Zone Requirements:

Not applicable.

Major Polluting Facility Alternative Analysis:

Not applicable.

Protection of Visibility:

Not applicable. Redlands is not near any of the specified Federal Class I area, and there are no PM-10 & NOx emissions.

- Rule 1401: Toxic Air Contaminants: Compliance is expected.

REG. XVII: Preventative Significant Deterioration (PSD):

- Rule 1701: Not applicable. This is not a new source or modification at an existing source where the increase in potential to emit is at least 100 or 250 tons of attainment air contaminants per year, depending on the source category.
- Rule 1703: Not applicable as there are no emissions generated as a result of this tank replacement project.
- Rule 1714: This project shall not emit any GHG's listed in Rule 1714.

- REG XXX:** This is a Title V facility and is in compliance with all requirements of Title V permit. This permit will be issued after EPA 45 day review period. Applicant has also filed A/N 539396 for Title V permit renewal as their Title V permit had expired in December 2012. They also filed a CAM application 540734 for flare at site which combusts the landfill

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gas. Title V revision application 546419 was also filed, this tank replacement project will be a De-minimis Significant Revision. Please see other A/N folders for complete application evaluations.

FEDERAL REGULATIONS: 40 CFR PART 60 SUBPART WWW AND AAAA:

Title 40 part 63 subpart AAAA - 63.1955 - If the landfill is operated in compliance with 40 CFR part 60 subpart WWW, it is in compliance with Title 40 part 63 subpart AAAA.

Title 40 part 60 subpart WWW - 60.752 - the site has a gas collection and control system installed in compliance with this subpart and is able to destroy NMOC by 98 percent or 20 PPMV by volume. The site is in Title V program and the applicant is aware of federal requirements for compliance with title 40 part 60 subpart WWW. Gas collection system is expected to be operated in accordance with the provisions of 60.753, 60.755, & 60.756. Compliance is expected.

CONCLUSION/RECOMMENDATION:

This equipment is expected to be in compliance with applicable AQMD Rules and Regulations. Issue a permit to construct/operate for modification of the leachate/condensate collection system after EPA commenting period. For Permit Conditions please see draft version of Title V permit.