

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT STATIONARY SOURCE COMPLIANCE DIVISION PERMIT APPLICATION PROCESSING AND CALCULATIONS	PAGES 5	PAGE 1
	APPL NO 543050	DATE 3/26/2013
	PROCESSED BY AK07	CHECKED BY AD

ALTERATION/MODIFICATION FOR PERMIT TO CONSTRUCT (EXISTING PC - A/N 499317)

Applicant

OC Waste & Recycling, PRIMA Landfill
300 N Flower Street, Suite 400
Santa Ana, CA 92703

Equipment Location (Facility ID 052753, Title V)

32250 La Pata Avenue
San Juan Capistrano, CA 92675

Equipment Description

See Sample Permit

Applications Back Ground and Site History:

These permit to construct and corresponding Title V revision applications were submitted by the applicant as part of the project to install a higher capacity Landfill Condensate/Leachate Storage tank and remove one smaller capacity tank and make one 5,000 gallons tank as optional. 5,000 gallons tank was never installed but they may want to install it later. Initially when this application was submitted applicant was going to install the new tank of 8,000 gallons capacity tank later they decided to install a 9,100 gallons capacity tank. Applicant was asked to resubmit the form 400-E-18 (storage tank equipment form).

This is a Title V Facility. Initial Title V was issued on April 20, 2004. Title V Revision No. 1 was issued on July 26, 2006. Title V Revision No. 2 was issued on April 23, 2010. Title V Renewal was completed on October 6, 2011.

Additional request by Applicant:

- 5,000 gallons tank which was listed as item no. 4 in P/C 499317 was actually never installed, so applicant requested to add word optional in front of that item. When we will change this P/C to P/O, if the applicant still has not installed this tank yet, it will be removed from equipment description.
- Pump station no. 3 – 10 listed in the P/C 499317 as item 9 & 10, have not been installed as well. As per applicant they often add or remove these sump pumps as per the site need and they just install the sump/pump with whatever they have available. They requested that we rather not list the specifications for these sumps related pumping systems. So generic language in equipment description was added for these sumps related pumping systems because these equipment are exempt under Rule 219 as the sumps will not be larger than 80 gallons in volume.

CEQA:

Notice of Exemption (NOE) with General Rule Section 15061 (b) (3) was filed on September 11, 2012 with Orange County Recorder. Copy of the notice of exemption has been attached in the application folder.

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Previous A/N 499317 issued on April 22, 2010 was still a PC and was not changed to PO (Permit to Operate) yet. Please see attached PC evaluation and the PC in the application folder.

Process Description:

Prima Landfill is an active landfill site. Applicant has communicated that the main reason behind replacing these tanks is that they will have to empty the bigger tank less often.

As per the applicant, condensate from the PRIMA landfill is hauled to Coyote Canyon Landfill and there it is dumped to a manhole and it ultimately gets treated in Irvine Ranch Water District Waste Water Treatment Facility.

Applicant has requested to leave the option open to store either leachate or condensate in the tank. Last time also, it was not specified in the permit if they are going to store condensate or leachate in the tank. As per the applicant, they are going to primarily store condensate in the new tank but may have to store leachate in the future.

Calculations

VOC emissions From Leachate Storage Tank:

When previous application (A/N 499317) was evaluated, VOC emissions from the entire Leachate and Condensate storage and collection system were assumed to be zero. As per the applicant, they do not send condensate samples for lab analysis.

Condensate analysis data from the other landfills was looked at also. The vapor pressure of the condensate came out to be extremely low (in the range of 10^{-6} psi, please see the attached spreadsheet) even though very high concentrations of contaminants were used. Please see the Leachate and Condensate analysis sent by the applicant for other landfills in OC.

In the storage tank information form, applicant has indicated that they may be treating 400,000 gallons in one year.

In the permit, a condition limits the exhaust to 50 PPMV as methane for VOC's which is equivalent to $(50 \times 16/86) = 9.3$ 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 9.3 PPMV as hexane,

1 gallon = 0.133 cubic feet

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

$$9.3 \text{ ppmv} / 10^6 \times 0.102 \text{ scfm} \times 60 \text{ min/hr} \times \text{lb-mole}/379 \text{ ft}^3 \times 86 \text{ lbs/lb-mole} \\ = 0.0000129 \text{ lbs/hr} = 0.000774 \text{ lbs/day} = 0.282 \text{ lb/year}$$

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 (extremely conservative number) and all of those VOC's get transferred through the liquid to vapor stream and get released via carbon adsorber,

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

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

Also applicant is removing a 3,000 gallons condensate tank (A/N 499317), there were no emissions entered in NSR for the entire leachate and condensate system last time.

Toxic Risk Analysis for VOC's and HCl 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. Last time, permit was issued with 50 PPMV as Methane VOC's emissions limit. Same emissions limit will be maintained.

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.

Rule 1150: Compliance can be expected. Excavation of landfill to install leachate 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: Rule1303 (a) (2)- Additional emissions are negligible. Please see calculations in the evaluation above.

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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 searched for Orange County sites and no NOV's (notice of violation) were found in the database.

Sensitive Zone Requirements:

Not applicable.

Major Polluting Facility Alternative Analysis:

Not applicable.

Protection of Visibility:

Not applicable. San Juan Capistrano 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 are 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 543051 for title V revision and this will be a De-minimis Significant Revision. Please see A/N 543051 folder for further details.

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

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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.