

<b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b>  <b>STATIONARY SOURCE COMPLIANCE DIVISION</b>  <b>PERMIT APPLICATION PROCESSING AND CALCULATIONS</b>	PAGES 3	PAGE 1
	APPL NO 516006	DATE 9/12/2012
	PROCESSED BY AS08	CHECKED BY AD

**Permit to Operate (Alteration/Modification)**

**Applicant's Name** Chino Basin Desalter Authority (CDA)

**Mailing Address** P.O. Box 2290  
Chino Hills, CA 91709

**Equipment Location** 6905 Kimball Avenue  
Chino, CA 91710

**Equipment Description**  
**APPLICATION 516007, FACILITY ID 135216**

STORAGE TANK, ABOVEGROUND, AQUEOUS AMMONIA, 8' - 0" DIA. X 8' -6" L., 3,000 GALLON CAPACITY, WITH VAPOR RETURN LINE AND VENTING THROUGH THE FUME SCRUBBER (WITH SPARGER).

**Background/Process Description**

The above application was filed on November 2, 2010 for an alteration/modification of an aqueous ammonia storage tank with sparger. The applicant requested to increase the maximum throughput of ammonia for the tank from 950 gallons/year to 5,000 gallons per year. The ammonia required in the disinfection process has increased due an increase in water demands from the residential expansion in Chino Hills. The increase in throughput is based on CDA's projected growth in the service area. There is a no school within 1000 feet of the exhaust stack.

CDA is a joint powers authority owned by several cities and water districts. This facility, Chino I Desalter, is a groundwater desalinization facility owned by CDA and operated by Inland Empire Utilities Agency (IEUA). Groundwater is pumped from the Chino Basin to the desalter, where it is purified using reverse osmosis and ion exchange treatment. Chlorine and then ammonia is added to the treated water and is rapidly dissolved into solution and quickly reacts to completion to form chloramines. Chloramines are used to improve the odor and flavor of the drinking water. They also remain active through plumbing longer than other disinfecting compounds.

The ammonia tank contains a maximum of 20% aqueous ammonia. The tank has a vapor return line and is vented through a sparger that is submerged in a water tank, which acts as a fume scrubber before venting to the atmosphere. The tank headspace is vented back to the delivery truck during filling. Breathing and filling losses are assessed below. Nominal capacity of each of the tank is 3,000 gallons. The maximum throughput is 5,000 gallons/year. It is expected that the tank is filled 1.67 ~ 2 times a year.

**Emission Calculations**

Assume 95% control efficiency for vapor return line and fume scrubber. Fugitive emissions are unlikely and have been assumed to be ~ 0.

**Tanks 4.0.9d emissions**

**Ammonia emissions**

Working losses:

$$R1 = 28.17 \text{ lbs/year} \times \text{year}/2\text{fills} \times 1\text{fill}/1\text{hr} = 14.09 \text{ lbs/hr (twice a year)}$$

$$R2 = 14.09 \text{ lbs/hr} \times (1 - 0.95) = 0.70 \text{ lbs/hr}$$

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	APPL NO 516006	DATE 9/12/2012
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**Breathing losses:**

$R1 = 8,868.00 \text{ lbs/year} / 365 \text{ days/year} / 24 \text{ hr/day} = 1.01 \text{ lbs/hr}$  (24 hours/day, 7 days/week, 52 week/year)

$R2 = 1.01 \text{ lbs/hr} \times (1 - 0.95) = 0.05 \text{ lbs/hr}$

**Total losses:**

$R1 = 8,896.17 \text{ lbs/year}$  or  $15.10 \text{ lbs/hr}$

$R2 = 15.10 \text{ lbs/hr} \times (1 - 0.95) = 0.75 \text{ lbs/hr}$  or  $8,896.17 \text{ lbs/year} \times (1 - 0.95) = 444.81 \text{ lbs/year}$

NSR 30 day average =  $(0.70 \text{ lbs/hr} \times 1 \text{ hr/month} \times \text{month}/30 \text{ days}) + (0.05 \text{ lbs/hr} \times 24 \text{ hours/day} \times 365 \text{ day/year} \times \text{year}/12 \text{ months} \times \text{month}/30 \text{ days}) = 1.24 \text{ lbs/day}$  (NSR)

**Rules Evaluation**

Rule 212: Rule 212 (c)(1)- There is no school within 1000 feet of the facility.

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.

Reg. XIII: Rule 1303(a)(2)- Vapor return line and fume scrubber can be considered BACT.

Rule 1303(b)(1)- Modeling is not required. There is no criteria pollutant emission increase.

Rule 1303(b)(2)- There is no criteria pollutant emission increase. Although, this facility is an essential public service, any required offsets shall be provided through priority reserve.

Rule 1401: Toxic Air Contaminants

Rule 1401(d)- Emissions of ammonia are lower than Tier 1 screening levels. Compliance is expected.

Rule 1401(d)(1)(A)- MICR less than  $1.0 \times 10^{-6}$  limit.

Rule 1401(d)(1)(C)- Cancer burden is less than 0.5.

Rule 1401(d)(2) and Rule 1401(d)(3)- HIC and HIA values are estimated to be less than 1 respectively.

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

Reg. XXX: Increasing the maximum aqueous ammonia throughput is considered a Title V de minimis significant revision under Rule 3000(b)(7), since the cumulative emission

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increases of non-RECLAIM pollutants or HAPs do not exceed the emissions in Table 5-4 of the Draft Title V TDG March 2005 and 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 the Rules and Regulations of the AQMD. A Permit to Operate is recommended. For Permit Conditions please see Sample Permit.