

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 4	PAGE 1
	APPL NO 357035 & 357036	DATE 8/5/2010
	PROCESSED BY AS08	CHECKED BY

Permit to Operate (PC to PO conversion)

Applicant Inland Empire Utilities Agency (IEUA)

Mailing Address PO Box 9020
Chino Hills, CA 91709

Equipment Location 6063 Kimball Avenue
Chino, CA 91710

Equipment Description

APPLICATION 357035, FACILITY ID 147371

WASTEWATER TREATMENT PLANT (REGIONAL PLANT NO. 5), 12 MGD CAPACITY (PHASE -I), CONSISTING OF:

1. AN INFLUENT PUMP STATION WITH THREE DRY PIT SUBMERSIBLE PUMPS.
2. HEADWORKS STATION WITH TWO BAR SCREENS, A VORTEX GRIT CHAMBER, SCREENINGS, GRIT WASHING AND COMPACTING.
3. TWO PRIMARY CLARIFIERS, COVERED, EACH 100' DIA. X 12'- 0" D. WITH ASSOCIATED PUMPS AND PRIMARY CLARIFIER SPLITTER BOX.
4. TWO AERATION BASINS, EACH 343' -0" L. X 114' - 0" W. X 19'- 0" D. WITH FINE BUBBLE AERATION SYSTEM.
5. FOUR SECONDARY CLARIFIERS, EACH 130' DIA. X 17' - 0" D. WITH ASSOCIATED PUMPS.
6. TWELVE TERTIARY FILTERS, EACH WITH 300 FT² SURFACE AREA AND 15' - 0" D.
7. FLOCCULATION TANK, 275'- 0" L. X 45'- 0" W. X 15' -0" D. WITH A FLASH MIXER.
8. A LOW PRESSURE ULTRAVIOLET DISINFECTION SYSTEM.
9. CHEMICAL STORAGE, MIXING AND DISTRIBUTION AREA;
 - A. PRIMARY CHEMICAL FACILITY:
 - i. STORAGE TANK, FERRIC CHLORIDE, 9,240 GALLONS.
 - ii. TWO ANIONIC POLYMER TOTES, EACH 260 GALLONS.
 - B. SECONDARY CHEMICAL FACILITY:
 - i. STORAGE TANK, SODIUM HYPOCHLORITE, 10,000 GALLONS.
 - ii. STORAGE TANK, SODIUM BISULFITE, 6,200 GALLONS.
 - iii.. STORAGE TANK, ALUMINUM SULFATE, 6,700 GALLONS.
 - iv. STORAGE TANK, CATIONIC POLYMER, 1,000 GALLONS.

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v. STORAGE TANK, ALUM/POLYMER BLEND, 6,700 GALLONS.

10. UTILITY WATER PUMP STATION.

11. EMERGENCY STORAGE BASIN, 480'- 0" L. X 155'- 0" W. X 13' -0" D. WITH ASSOCIATED PUMPS.

APPLICATION 357036, FACILITY ID 147371

AIR POLLUTION CONTROL SYSTEM CONSISTING OF:

1. BIOFILTER, CUSTOM MADE, MULTI-COMPARTMENTS, 75'- 0" W. X 180'- 0" L. X 6'- 6" D. OVERALL DIMENSIONS, CONTAINING BIOFILTER MEDIA, WITH INCOMING FOUL AIR AND EXHAUST AIR HUMIDIFICATION.
2. EXHAUST SYSTEM WITH A 90 H.P. BLOWER SERVING THE INFLUENT PUMP STATION WET WELL, HEADWORKS, GRIT TANKS, SPLITTER BOXES AND PRIMARY CLARIFIERS (A/N 357035), 40,000 CFM.

Background

Application 357035 and 357036 were filed on July 2, 1999 for a Permit to Construct a sewage treatment plant (>5 MGD), aerobic and a biofilter which vents the influent pump station wet well, headworks, grit tanks, splitter boxes, and primary clarifiers, respectively. On November 2, 1999 a Permit to Construct was issued for both the 12 mgd wastewater treatment plant and biofilter at IEUA Regional Plant 5 (RP-5). Construction was completed on March 3, 2004 and testing and operation of all the structures commenced. A source test was required by condition no. 5 of A/N 357036 and was conducted for the biofilter on September 7, 2005. The source test demonstrated compliance with the permit conditions. See the calculations section for more detailed information. The applicant has confirmed that the equipment description of the Permit to Construct for the sewage treatment plant and the biofilter is current and correct.

There is no school within 1000 feet of the emission source. There is no increase of emissions. No public notice is required. There are no violations issued against the above facility within the last three years. The last notice of violation was issued 5/13/05 for failure to emit less than 5 lbs/day total sulfur compounds calculated as H2S per permit condition #9 on Permits to Operate F53212 and F53220.

Calculations

VOC Emissions for A/N 357035 sewage treatment plant

All emissions from the sewage treatment plant and biofilter will be applied to the basic equipment (sewage treatment plant) for NSR purposes.

$$\begin{aligned}
 R1 &= 2.83 \text{ lbs/day (headworks)} + 1.22 \text{ lbs/day (primary clarifiers)} + 6.25 \text{ lbs/day (aeration basins)} + \\
 &0.39 \text{ lbs/day (secondary clarifiers)} + 0.02 \text{ lbs/day (tertiary filters)} \\
 &= 10.71 \text{ lbs/day} \qquad \qquad \qquad = 0.45 \text{ lbs/hr}
 \end{aligned}$$

$$R2 = [\text{biofilter controlled emissions}] + [\text{uncontrolled emissions}]$$

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$$\begin{aligned}
&= [(2.83 \text{ lbs/day (headworks)} + 1.22 \text{ lbs/day (primary clarifiers)}) \times (1 - 0.95)] + [6.25 \text{ lbs/day (aeration basins)} + 0.39 \text{ lbs/day (secondary clarifiers)} + 0.02 \text{ lbs/day (tertiary filters)}] \\
&= 0.20 \text{ lbs/day} + 6.66 \text{ lbs/day} \\
&= 6.86 \text{ lbs/day} \qquad \qquad = 0.28 \text{ lbs/hr}
\end{aligned}$$

VOC Emissions from source test of biofilter

R1 = 0.24 lbs/hr
R2 = 0.146 lbs/hr < 0.20 lbs/hr (emission from PC): In Compliance
Control efficiency is 39.2%.

VOC Emissions from source test of biofilter

R1 = 3.44 ppm
R2 = 0.94 < 1 ppm (concentration limit from PC): In Compliance
Control efficiency is 72.7%.

H2S Emissions

R1 (sewage treatment)
= 40 ppmv x 40,000 dcfm x 34.08lb/lbmole x 1.583E-7(conversion factor @ 60F std.)
= 8.63 lbs/hr
R2 (biofilter)
= 1 ppmv x 40,000 dcfm x 34.08lb/lbmole x 1.583E-7(conversion factor @ 60F std.)
= 0.22 lbs/hr

Toxic Risk Analysis

There is no emission increase due to the facility modification from the previous permit. No increase in MICR, cancer burden, HIC or HIA expected. Compliance is expected.

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)- There are no increases in emissions of TACs, since the issuance of the Permit to Construct.
Public Notice is not required.

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

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- Rule 402: Nuisance
Nuisance is not expected with proper operation, monitoring and maintenance. The headworks, grit tanks, splitter boxes, and primary clarifiers are vented through a biofilter for odor control.
- Reg. XIII: Rule 1303(a)(2)- The proposed equipment is expected to comply with BACT. The headworks, grit tanks, splitter boxes, and primary clarifiers are vented through a biofilter for odor control (H2S). Digester gas is recovered and combusted in permitted combustion equipment.
Rule 1303(b)(1)- There is no emission increase since the issuance of the Permit to Construct for this application. Modeling for VOC and SOx is not required (1303 Appendix A). NOx, CO and PM10 are less than the allowable emissions in Table A-1, no further analysis is required (1301 Appendix A).
Rule 1303(b)(2)- There is no emission increase due to the conversion of Permit to Construct to Permit to Operate. No offsets are required.
- Rule 1401: Toxic Air Contaminants
Rule 1401 not applicable, this is not a new, relocated, or modified permit unit, since the Permit to Construct was issued. Furthermore, there is no emission increase due to the Permit to Operate conversion from the Permit to Construct, therefore there is no increase in MICR, cancer burden, HIC or HIA expected. Compliance is expected.
- Rule 1401.1: Rule 1401.1(b)- Equipment is exempt since it is located at an existing facility.
- Rule XXX: Updating the operating permit section of the facility permit to include equipment that has met requirements for preconstruction review, including public and EPA notices, and permit content (that is, upgrade P/C to P/O with either administrative or no changes) is considered a Title V Administrative permit revision under Rule 3000(b)(1), since it is the issuance of a final permit to operate for equipment previous issued a Title V permit to construct, with no change in permit terms and conditions except for the removal of permit to construct terms or conditions which are no longer applicable and inclusion of requirements for more frequent monitoring, recordkeeping, or reporting by the permittee and will not subject to an EPA review (Rule 3003 (j)). A public notice is not required. Compliance is expected.

Conclusions and 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.