Bay Area Air Quality Management District

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Permit Evaluation
and
Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT
MINOR REVISION

for

Waste Management of Alameda County
Facility #A2066

Facility Address:
10840 Altamont Pass Road
Livermore, CA 94550

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Applications: 10514 and 10515

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ENGINEERING EVALUATION and STATEMENT of BASIS

Waste Management of Alameda, Inc.; PLANT # 2066

APPLICATIONS # 10514 and 10515

A. BACKGROUND

Site Description:

Waste Management of Alameda, Inc. (Waste Management or WM) operates the Altamont Landfill and Resource Recovery Facility in Livermore, CA. This facility includes the Bay Area's largest active landfill (S-2 with more than 30 million tons of refuse in place), two 3 MW Gas Turbines (S-6 and S-7, landfill gas fired) equipped with Fogging Systems (A-6 and A-7), two 1877 bhp IC Engines (S-23 and S-24, landfill gas fired), one 71 MM BTU/hour Landfill Gas Flare (A-15), waste water treatment operations (permitted: S-19, S-140, and S-141; exempt: S-12, S-20, S-28, S-130, A-130, and S-180), a non-retail gasoline dispensing facility (S-99), and nine diesel engines providing portable or standby power (S-190, S-191, S-192, S-193, S-194, and S-195, S-196, S-197, and S-198).

Process Description for Wastewater Treatment Plant:

Waste Management collects and treats wastewater from this facility in an on-site wastewater treatment plant. The wastewater is collected from numerous locations around the site and includes surface water run-off, landfill leachate, landfill gas condensate, non-hazardous truck wash water, and supernate from the wastewater treatment sludge thickening tank. Landfill leachate may be collected and stored in two 500,000 gallon capacity tanks. Due to the low volatile organic compound (VOC) content of this leachate, these storage tanks are exempt from permitting requirements.

Leachate and other wastewater is transferred from two lift stations into an 87,800 gallon capacity agitated Equalization Tank (S-130). This tank is also exempt from permit requirements due to low VOC content. At the equalization tank, the pH of the wastewater is adjusted (if necessary), biological nutrients are added, and the wastewater and nutrients are mixed by agitation.

The nutrient enriched wastewater is transferred from S-130 into two aerated biological reactors (S-140 and S-141), which each have 144,300 gallons of storage capacity and can each treat up to 34,150 gallons per day of wastewater. At these reactors, organic compounds are removed from the wastewater by a combination of biological degradation and volatilization into the atmosphere.

Treated wastewater is stored in an exempt 298,000 gallon capacity tank (S-20). Some of the treated wastewater is used on site for dust control or irrigation. The remaining wastewater is discharged in accordance with an NPDES permit. Sludge from the biological reactors is transferred to a 15,700 gallon capacity tank (S-180), where polymers are added to enhance coagulation of the solids and gravity is used to separate a thick sludge from the remaining liquid (or supernate). The thickened sludge is disposed of in the Altamont Landfill (S-2). The supernate is recycled back to the beginning of the wastewater treatment plant.

A process diagram for the wastewater treatment plant was included with the application materials.

Project Description:

Waste Management submitted this application to request increases for several inlet concentration limits and changes to wastewater throughput rate limits at the two aerated biological reactors (S-140 and S-141). Specifically, Waste Management has requested to change the maximum permitted peak and annual average

inlet VOC concentration limits from 40 ppmw and 11 ppmw (respectively) to 53.77 ppmw. WM has also requested to increase the inlet 1,4 dichlorobenzene limit from 230 ppbw to 680 ppbw. WM requested to change the wastewater throughput limits from 34,150 gallons per day per reactor to 52,384 gallons per day per reactor and from 8,993,000 gallons per year to 7,150,000 gallons per year (for S-140 and S-141 combined).

These requests will require modifications of Condition # 20922. This application will also require a minor revision of the MFR Permit for Site # A2066 to modify Condition # 20922 and to make other related revisions.

B. EMISSIONS

From Application # 7933, the current maximum permitted daily emission rates from S-140 and S-141 are 10.00 pounds per day of POC and 0.15 pounds per day of NPOC from each reactor. Maximum permitted annual emissions from S-140 and S-141 combined are 0.362 tons/year of POC and 0.020 tons/year of NPOC. These emissions were calculated using EPA's WATERS9 Wastewater Emissions Model, which uses wastewater data, equipment specifications, process rate data, and analytical models to estimate VOC emissions for a wide variety of wastewater treatment operations. For Application # 7933, S-140 and S-141 were modeled as an aerated biological reactor with default values for many of the equipment size and process rate input parameters. Total wastewater throughput rates, inlet concentrations of total VOC, and inlet concentrations of individual toxic air contaminants (TACs) were based on permit condition limits.

To determine proposed emissions from S-140 and S-141, Waste Management prepared a refined WATERS9 emissions model for their wastewater treatment plant. WM included the equalization tank (S-130), the two aerated biological reactors (S-140 and S-141), the effluent storage tank (S-20) and the sludge thickening tank (S-180) in the analysis. Although the WATERS9 program calculates the air emissions from the entire wastewater treatment process, all emissions are assumed to occur at S-140 and S-141 because emissions from the other operations are very small compared to the emissions from the biological reactors.

Wastewater throughput was based on processing 2.3 liters/second of wastewater at each reactor. Inlet concentration rates were based on either existing or proposed permit limits and two times the maximum detected concentration for compounds without current limits. The total inlet concentration rate for this analysis was 52.33 ppmw of VOC (2.96 ppmw of NPOC and 49.37 ppmw of POC). S-130 was modeled as an agitated equalization tank unit, S-140 and S-141 were modeled as diffused air biotreatment units, S-20 was modeled as a storage tank unit, and S-180 was modeled as a covered separator unit. Site-specific data was used for all equipment sizes and for most process parameters.

Overall, the wastewater treatment plant was determined to remove more than 98% by weight of the organic compounds from the wastewater. Nearly half of this removal was accomplished by volatilization of the compounds into the atmosphere. Total VOC emissions to the air were determined to be 0.118 grams/second (22.48 pounds/day). The WATERS9 program output also reported specific air emission fractions for each individual organic compound.

To establish permit condition limits, the District made the following minor revisions to Waste Management's proposed limits: rounded wastewater throughput limits to nearest hundred gallons, limited annual throughput based on the amount of offsets available, rounded maximum VOC concentration to the nearest ppm, estimated inlet toxic compound concentrations based on existing limits or three times the maximum detected concentration (which ever was greater), and rounded TAC concentrations to the nearest 10 ppb by weight. Therefore, permitted emissions are based on the wastewater treatment plant processing a maximum of 52,400 gallons of wastewater per day per reactor and 6,460,000 gallons of wastewater per year from both reactors. The average wastewater throughput over the last three years was 5,050,549

gallons per year, which is less than 80% of the proposed limit, and the average daily throughput rate per reactor was 6920 gallons per day per reactor (about 13% of the proposed limit).

The wastewater will be permitted to contain a maximum of 54 ppm (by weight) of volatile organic compounds. The highest concentration detected in the last three years was 39 ppmw, which is about 72% of the proposed limit. These organic compounds may consist of 94%-100% precursor organic compounds (up to 54 ppmw of POC) and 0%-6% non-precursor organic compounds (up to 3 ppmw of NPOC). The maximum inlet concentration values for individual compounds and the WATERS9 individual air emission fractions (from WM's refined analysis) were used to calculate emission factors (in units of pounds/M gallon) for S-140 and S-141. The emission factors, calculations, and maximum permitted emission rates are summarized below. Detailed calculations are attached.

Emission Factors:
Emission factors were calculated using the following equation:

$EF_i = AEF_i * IC_i / 10^6 * \rho * Mgal = 8.321E\text{-}3 * AEF_i * IC_i$

where,

EF_i = Emission Factor for pollutant i, pounds of i / M gallons of wastewater
AEF_i = Air Emission Fraction for pollutant i from refined WATERS9 model, pounds of i emitted / pound of i in wastewater
IC_i = Inlet Concentration of pollutant i in wastewater, ppmw
ρ = Density of wastewater, 8.321 pounds/gallon
Mgal = Conversion factor to mega gallons, 1000 gallons / M gallon

$EF_{POC} = 8.321E\text{-}3 * 0.42380 * 54 = 0.19043$ pounds/M gallon
$EF_{NPOC} = 8.321E\text{-}3 * 0.65983 * 3 = 0.01647$ pounds/M gallon

Maximum Emissions Per Reactor:
(52,400 gals/day)/(1000 gals/Mgal)*(0.19043 lbs POC/Mgal) = 9.98 pounds/day POC
(52,400 gals/day)/(1000 gals/Mgal)*(0.01647 lbs NPOC/Mgal) = 0.86 pounds/day NPOC

Maximum Annual Emissions:
(6460 M gals/year)*(0.19043 lbs POC/Mgal)/(2000 pounds/ton) = 0.615 tons/year POC
(6460 M gals/year)*(0.01647 lbs NPOC/Mgal)/(2000 pounds/ton) = 0.053 tons/year NPOC

Significant Toxic Air Contaminants:
The significant toxic air contaminants (TAC) and emissions are summarized below. All other compounds have emissions that are at least two orders of magnitude below the risk screen trigger level or have no risk screen trigger level.

Table 1. Significant Toxic Emissions from S-140 and S-141 Aerated Biological Reactors

Wastewater Throughput: 7150 M gallons/year	Max. Concentration ppmw	Air Emission Fraction (WATERS9)	Emission Factor pounds/M gallon	Permitted Emissions pounds/year	Risk Screen Trigger Level pounds/year
benzene	0.08	0.46570	3.10E-4	2.0	6.7
chloroform	0.47	0.58444	2.29E-3	14.8	36
1,4 dichlorobenzene	1.02	0.25112	2.13E-3	13.8	18
methylene chloride	2.53	0.63424	1.34E-2	86.3	190
naphthalene	3.59	0.25830	7.72E-3	49.8	270
perchloroethylene	0.43	0.79667	2.85E-3	18.4	33
trichloroethylene	1.29	0.70150	7.53E-3	48.6	97
vinyl chloride	0.03	0.96557	2.41E-4	1.6	2.5

Cumulative Emission Increases:

Since the proposed maximum permitted emission rates (0.615 tons/year of POC and 0.059 tons/year of NPOC) will exceed the current permitted emission rates (0.362 tons/year of POC and 0.020 tons/year of NPOC), this project is considered to be a modification pursuant to Regulation 2-1-234.2 and is subject to New Source Review (NSR). Cumulative emission increases for this application will be calculated in accordance with Regulation 2-2-604.2 and 2-2-605.

Since offsets have now been provided for the current permitted POC emissions from S-140 and S-141, the baseline POC emission rate is the amount of offsets provided, which is 0.362 tons/year of POC.

For NPOC emissions, the baseline is the actual annual average emission rate calculated pursuant to 2-2-605.1-3. For this project the actual annual average emissions were determined using quarterly flow rate, quarterly wastewater concentration data, and the refined WATERS9 air emission fractions provided by Waste Management. The actual emissions for each of twelve consecutive quarters were calculated using the same procedures as those described above for maximum permitted emissions. Actual annual average emissions were determined to be 0.001 pounds/year (0.000 tons/year) of NPOC. Detailed emission calculations are attached.

Cumulative emission increases for this application are:
(0.615 – 0.362) = 0.253 tons/year of POC and
(0.059 – 0.000) = 0.059 tons/year of NPOC.

Since POC emissions from this facility exceed 50 tons/year, POC offsets are required at a rate of 1.15 to 1.0. The amount of POC offsets required is 0.253*1.15 = 0.291 tons/year. WM will supply all required offsets from Banking Certificate # 919, which now includes a balance of 0.291 tons/year of POC emission reduction credits. Offset requirement are discussed in more detail in the Statement of Compliance Section below. The cumulative increase inventory for this facility is summarized in Table 2.

Table 2. Plant Cumulative Emission Increase Inventory for Site # A2066 and Application # 10515

Pollutant	Current Balance tons/year	Application Increases tons/year	Offsets Provided tons/year	New Balance tons/year
CO	76.124	0.000		76.124
SO_2	27.762	0.000		27.762
PM_{10}	7.404	0.000		7.404
NPOC	0.538	0.059		0.597
POC	0.000	0.253	0.291	0.000
NO_x	0.000	0.000		0.000

C. STATEMENT OF COMPLIANCE

Regulation 2, Rule 1:

This application is for a change of permit conditions at the S-140 and S-141 aerated biological reactors that does not involve any physical modifications but does result in some emission increases. This project will comply with the no net increase provisions of the new source review rule, because the POC emission increases will be fully offset. NPOC emission increases are not subject to any offset requirements. The sources in this project are not subject to BACT, because the maximum daily emissions from each source will be less than 10 pounds per day. The maximum permitted toxic emission rates from all sources in this application are less than the risk screen trigger levels. Therefore, this application complies with all requirements of Regulations 2-1-312.11.1-4 and is categorically exempt from CEQA review pursuant to Regulation 2-1-312.11.

The project is over 1000 feet from the nearest school and is therefore not subject to the public notification requirements of Regulation 2-1-412.

Regulation 2, Rule 2:

The S-140 and S-141 aerated biological reactors are subject to new source review (NSR) because this application will result in emission increases above current permitted levels.

BACT: Regulation 2-2-301 requires BACT for each source that emits more than 10 pounds per day of a pollutant. The maximum daily wastewater throughput rate to each biological reactor and the maximum inlet VOC concentration limit were set to ensure that maximum permitted emissions from each reactor would not exceed 10 pounds per day of POC or NPOC emissions. Since the biological reactors will not emit more than 10 pounds per day of organic compounds, BACT is not required for S-140 or S-141. The actual average daily wastewater throughput rate for these reactors is far below the proposed limit. Therefore, these sources are not expected to ever approach the BACT emission limit. The monitoring in BAAQMD Condition # 20922, Parts 4 and 5 will ensure that emissions do not exceed 10 pounds per day.

Offsets: Regulation 2-2-302 requires offsets for any POC or NO_x emission increases at facilities that will emit more than 15 tons/year of POC or NO_x. If the facility will emit more than 50 tons/year of POC or NO_x, the facility does not qualify for the small facility banking account and must provide all required offsets at a ratio of 1.15 to 1.0. From the District's emission inventory, this site is currently emitting 94.0 tons/year of nitrogen oxides and 103.3 tons/year of organic compounds. The organic compounds include 4.6 tons/year of NPOC emissions. Therefore, POC emissions are 98.7 tons/year.

Facility wide emissions of POC now exceed 50 tons/year, and Waste Management is required to reimburse the District for any offsets provided from the small facility banking account pursuant to Regulation 2-2-302. Offset that were provided from the small facility banking account pursuant to H&SC 42314 for qualifying resource recovery projects do not need to be reimbursed. (See Applications # 3821 and 6875 for additional details about this state requirement.) For non-resource recovery projects, the District's small facility banking account originally provided 0.405 tons/year of POC offsets for Application # 10156 and 0.362 tons/year of POC offsets for Application # 10603. Several sources permitted under Application # 10156 have been removed from service or found to be exempt from permit requirements. The only remaining permitted source is S-19. The maximum permitted emissions for S-19 were recalculated pursuant to Application # 7199 and determined to be 0.043 tons/year of POC. The amount of offsets required for Application # 10156 was adjusted down to this new maximum permitted emission rate for S-19. The 0.362 tons/year of POC offsets for Application # 10603 apply to S-140 and S-141, and no adjustments of this offset amount is necessary. The total amount of POC offsets that need to be reimbursed are therefore (0.043 + 0.362) = 0.405 tons/year.

This application results in 0.253 tons/year of POC emission increases. The amount of POC offsets required is (0.253*1.15) = 0.291 tons/year. Waste Management surrendered Banking Certificate # 919, which included 0.696 tons/year of POC emission reduction credits, to satisfy the offset requirements. A total of 0.405 tons/year of POC emission reduction credits will be used to reimburse the District's small facility banking account. The remaining balance of 0.291 tons/year of POC emission reduction credits will be used to offset cumulative emission increases for Application # 10515. The remaining balance for Banking Certificate # 919 is 0.000 tons/year.

There are no offset requirements for the NPOC emission increases.

PSD and Major NSR: Since this facility does not include any of the 28 PSD source categories that are subject to a lower PSD threshold, the PSD threshold for this facility is 250 tons/year of criteria pollutants. Since this facility will not emit more than 250 tons/year of any pollutant, it is not subject to PSD. Furthermore, there are no applicable PSD requirements for POC or NPOC emission increases.

Since this application does not result in more than 40 tons/year of POC emission increases, it is not considered to be a major modification of a major facility. Therefore, the major NSR requirements of Regulation 2-2-314 do not apply.

New Source Review for Toxic Air Contaminants:

This application will result in emission increases for several Toxic Air Contaminants (TACs). However, the proposed emission rate of each TAC (from S-140 and S-141 combined) is less than the risk screen trigger level for that TAC. Therefore, a risk screening analysis was not required, and TBACT does not apply to S-140 or S-141.

Regulation 2, Rule 6:

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act (40 CFR, Part 70) and BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR), because it is a major facility for NOx and CO emissions and also because it is a designated facility (since it is subject to the control requirements of the Emission Guidelines for MSW Landfills). Therefore, this facility is required to have an MFR permit pursuant to Regulations 2-6-301 and 2-6-304.

The initial MFR Permit for this facility was issued on December 1, 2003 and was revised on February 5, 2004. A significant revision (related to the gas turbines) of the MFR permit was proposed on October 5, 2004. Minor revisions of the MFR permit (related to the gas turbines and to the IC engines) were proposed on September 1, 2004 and October 5, 2004, respectively. All comment periods are complete. and staff has prepared a final issuance package. All revisions are expected to be finalized in December 2004.

This application will modify permit conditions and will therefore require a revision of the current MFR permit. The definition of significant revision is discussed below to determine if this application constitutes a significant MFR revision.

- Regulation 2-6-226.1 and 226.2: This application does not involve the incorporation of a change considered to be a major modification, or a modification under NSPS, NESHAPs, or Section 112 of the CAA.
- Regulation 2-6-226.3: This application does not involve the relaxation of any monitoring, record keeping or reporting requirements.
- Regulation 2-6-226.4: This application involves changes to wastewater throughput limits and VOC concentration limits that were originally established to ensure that the S-140 and S-141 aerated biological reactors would not emit more than 10 pounds/day of organic compounds and would therefore not be subject to BACT requirements. These wastewater and VOC content limits are being revised under this application, but the new limits will still ensure that S-140 and S-141 will not emit more than 10 pounds/day of organic compounds and will not trigger BACT. Since the maximum daily emission rates and the reasons for the limits have not changed, there will be no significant changes to the applicable requirements for these sources and specifically no changes to the fact that these sources have limits that allow them to avoid BACT.
- Regulation 2-6-226.5: This application does not involve the establishment of or change to a case-by-case emission limit or standard.
- Regulation 2-6-226.7: This application does not involve the incorporation of any requirements promulgated by the EPA.

The proposed permit condition revisions make no significant changes to the applicable requirements for S-140 and S-141 and result in very minor annual emission increases. This application does not involve any federal requirements, relaxation of monitoring requirements, or case-by-case determinations. While this application does involve limits that were originally imposed to avoid BACT at S-140 and S-141, the daily emission limits, the reason for the emission limits, and applicable requirements remain the same. Therefore, this application is not considered significant pursuant to Regulation 2-6-226 and will be processed as a minor MFR permit revision.

The proposed MFR permit revisions related to this application are described later in this document.

Regulation 8, Rule 2:

Regulation 8-2-301 limits total carbon emissions from a source to either 15 pounds per day or no more 300 ppmv of total carbon in an emission point. The maximum daily emissions from either S-140 or S-141 are 9.98 pounds/day of organic compounds. These compounds consist of 78.3% MEK, 4.6% trimethylbenzene, 4.1% naphthalene, 4.0% trichloroethylene, 1.2% isopropyl toluene, and 7.6% of C6 or larger, and 0.2% C5 or smaller. The average molecular weight of the organic emissions is estimated to be 79 lbs/lbmol, and the average number of carbon atoms per mole is estimated to be 4.5. The total carbon emission rate is estimated to be 6.83 pounds/day. The S-140 and S-141 aerated biological reactors comply with 8-2-301 by emitting less than 15 pounds per day of total carbon.

Federal Requirements:

The S-140 and S-141 aerated biological reactors are not subject to any federal requirements.

D. MFR PERMIT MODIFICATIONS

Section I:

No changes are proposed to this section.

Section II:

As discussed in Sections A-C of this report, this application will revise several limits for S-140 and S-141. The new maximum daily wastewater throughput limit for S-140 and S-141 will be reflected in Table II-A, as shown below.

Table II A - Permitted Sources

Each of the following sources has been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. The capacities in this table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-301.

S-#	Description	Make or Type	Model	Capacity
...				
S-140	SBR 1, aerated biological reactor	Peabody TecTank	API 12BPRINC	144,300 gallon capacity, 500 cfm of air, and ~~34,150~~ 52,400 gallons/day
S-141	SBR 2, aerated biological reactor	Peabody TecTank	API 12BPRINC	144,300 gallon capacity, 500 cfm of air, and ~~34,150~~ 52,400 gallons/day
...				

Section III:

Several revisions are being made to Table III to reflect EPA adoptions of rules into the SIP, to add two new California ATCMs related to asbestos, and to update amendment dates for several federal rules.

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
BAAQMD Regulation 1	General Provisions and Definitions (5/2/01)	N
SIP Regulation 1	General Provisions and Definitions (6/28/99)	Y
BAAQMD Regulation 2, Rule 1	General Requirements (8/1/01)	N
BAAQMD 2-1-429	Federal Emissions Statement (6/7/95)	Y
SIP Regulation 2, Rule 1	General Requirements (1/26/99)	Y
BAAQMD Regulation 4	Air Pollution Episode Plan (3/20/91)	N
SIP Regulation 4	Air Pollution Episode Plan (8/06/90)	Y
BAAQMD Regulation 5	Open Burning (3/6/02)	N
SIP Regulation 5	Open Burning (9/4/98)	Y
BAAQMD Regulation 6	Particulate Matter and Visible Emissions (12/19/90)	Y
BAAQMD Regulation 7	Odorous Substances (3/17/82)	N
BAAQMD Regulation 8, Rule 1	Organic Compounds - General Provisions (6/15/94)	Y
BAAQMD Regulation 8, Rule 2	Organic Compounds – Miscellaneous Operations (6/15/94)	Y
BAAQMD Regulation 8, Rule 3	Organic Compounds - Architectural Coatings (11/21/01)	~~N~~Y
~~SIP Regulation 8, Rule 3~~	~~Organic Compounds - Architectural Coatings (2/18/98)~~	~~Y~~
BAAQMD Regulation 8, Rule 4	Organic Compounds - General Solvent and Surface Coating Operations (10/16/02)	~~N~~Y
~~SIP Regulation 8, Rule 4~~	~~Organic Compounds - General Solvent and Surface Coating Operations (12/23/97)~~	~~Y~~
BAAQMD Regulation 8, Rule 16	Organic Compounds - Solvent Cleaning Operations (10/16/02)	~~N~~Y
~~SIP Regulation 8, Rule 16~~	~~Organic Compounds - Solvent Cleaning Operations (12/9/94)~~	~~Y~~
BAAQMD Regulation 8, Rule 40	Organic Compounds – Aeration of Contaminated Soil and Removal of Underground Storage Tanks (12/15/99)	Y
BAAQMD 8-40-116	Exemption, Small Volume	Y
BAAQMD 8-40-117	Exemption, Accidental Spills	Y
BAAQMD Regulation 8, Rule 47	Organic Compounds - Air Stripping and Soil Vapor Extraction Operations (6/15/94)	Y
BAAQMD Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (12/20/95)	N
SIP Regulation 8, Rule 49	Organic Compounds - Aerosol Paint Products (3/22/95)	Y
BAAQMD Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (7/17/02)	N
SIP Regulation 8, Rule 51	Organic Compounds - Adhesive and Sealant Products (2/26/02)	Y
BAAQMD Regulation 11, Rule 1	Hazardous Pollutants – Lead (3/17/82)	N
SIP Regulation 11, Rule 1	Hazardous Pollutants – Lead (9/2/81)	Y
BAAQMD Regulation 11, Rule 2	Hazardous Pollutants - Asbestos Demolition, Renovation and Manufacturing (10/7/98)	N

Table III
Generally Applicable Requirements

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)
BAAQMD Regulation 11, Rule 14	Hazardous Pollutants - Asbestos Containing Serpentine (7/17/91)	N
BAAQMD Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (7/11/90)	N
SIP Regulation 12, Rule 4	Miscellaneous Standards of Performance - Sandblasting (9/2/81)	Y
California Code of Regulations Title 17, Section 93105	Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (7/26/01)	N
California Code of Regulations Title 17, Section 93106	Asbestos Airborne Toxic Control Measure for Asbestos-Containing Serpentine (7/20/00)	N
California Health and Safety Code Section 44300 et seq.	Air Toxics “Hot Spots” Information and Assessment Act of 1987	N
40 CFR Part 61, Subpart A	National Emission Standards for Hazardous Air Pollutants –General Provisions (~~5/28/03~~ 4/9/04)	Y
40 CFR Part 61, Subpart M	National Emission Standards for Hazardous Air Pollutants – National Emission Standard for Asbestos (~~6/19/95~~ 7/20/04)	Y
EPA Regulation 40 CFR 82	Protection of Stratospheric Ozone (~~2/21/95~~ 6/9/03)	
Subpart F, 40 CFR 82.156	Leak Repair	Y
Subpart F, 40 CFR 82.161	Certification of Technicians	Y
Subpart F, 40 CFR 82.166	Records of Refrigerant	Y

Section IV:

The applicable requirements for the aerated biological reactors are listed below. This application will not change which requirements are applicable to S-140 and S-141. However, the basis for Part 1 was revised to clarify which requirement is being avoided. The bases for Parts 2, 4, and 5 have changed from “Cumulative Increase” to “Offsets”, because Application # 10515 required POC emission reduction credits to offset increases in annual POC emissions from S-140 and S-141. These bases changes are reflected in Table IV-F, as shown below.

Table IV – F
Source-Specific Applicable Requirements
S-140 SBR 1, AERATED BIOLOGICAL REACTOR
S-141 SBR 2, AERATED BIOLOGICAL REACTOR

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
BAAQMD Regulation 8, Rule 2	**Organic Compounds-Miscellaneous Operation (3/22/95)**	Y	
8-2-301	Miscellaneous Operations	Y	
BAAQMD Condition # 20922			
Part 1	Daily Wastewater Throughput and Organic Content Limits (~~Cumulative Increase~~ Regulation 2-1-403: Keep Emissions Below BACT Trigger)	Y	
Part 2	Annual Wastewater Throughput and Organic Content Limits (~~Cumulative Increase~~ Offsets)	Y	
Part 3	Permit Requirements If Wastewater Contains Specified Compounds above the Indicated Concentration Limits (Toxic Risk Management Policy)	N	
Part 4	Wastewater Testing Requirements (~~Cumulative Increase~~ Offsets and Toxic Risk Management Policy	Y	
Part 5	Record Keeping Requirements (~~Cumulative Increase~~ Offsets and Toxic Risk Management Policy)	Y	
Part 6	Permit Condition Effective Date (Regulation 2-1-403)	Y	

Section V:

No changes are proposed to this section.

Section VI:

This MFR Permit revision will modify Condition # 20922, Parts 1-5. The wastewater throughput and concentration limits in Parts 1-3 were changed due to the applicant's request. In Part 2, the VOC concentration limit was also changed from an annual average limit to a peak limit at the applicant's request. Record keeping requirements in Part 5 were modified to reflect this change of format for the VOC concentration limit in Part 2. The basis for Part 1 was revised to clarify which requirement is being avoided. The bases for Parts 2, 4, and 5 changed from "Cumulative Increase" to "Offsets", because Application # 10515 required POC emission reduction credits to offset increases in annual POC emissions from S-140 and S-141. All text changes are shown below in strikeout and underline format.

Condition # 20922
For: S-140 SBR 1 AND S-141 SBR 2 (AERATED BIOLOGICAL REACTORS)

1. In order to avoid triggering BACT requirements for S-140 and S-141, the wastewater throughput to each reactor (S-140 and S-141) shall not exceed ~~34,150~~ 52,400 gallons during any one day (as determined by Part 5f), and the total volatile organic compound concentration in the wastewater shall not exceed ~~40~~ 54 ppm by weight (as determined by Parts 4 and 5b). (Basis: ~~Cumulative Increase~~ Regulation 2-1-403: Keep Emissions Below BACT Trigger)

2. ~~In order to avoid triggering Offset requirements for S-140 and S-141, t~~The total combined wastewater throughput to S-140 and S-141 shall not exceed ~~8,993,000~~ 6,460,000 gallons during any consecutive 12-month period (as determined by Part 5g), and the ~~annual average~~ total volatile organic compound concentration in the wastewater shall not exceed ~~11~~ 54 ppm by weight (as determined by Parts 4 and 5~~c~~b).
(Basis: ~~Cumulative Increase~~ Offsets)

*3. The Permit Holder shall submit a permit application for a Change of Permit Conditions, if the annual average concentration of a compound in untreated wastewater (as determined by Parts 4 and 5c) is greater than the concentration limit listed below. The Permit Application shall be submitted to the Engineering Division, within 45 days of determining that an annual average concentration is above a limit listed below. (Basis: Toxic Risk Management Policy)

Compound	Concentration Limit (ppbw)
Benzene	80
Chloroform	470
1,4 Dichlorobenzene	~~230~~1020
Methylene Chloride	2530
Naphthalene	3590
Perchloroethylene	430
Trichloroethylene	1290
Vinyl Chloride	30

4. In order to demonstrate compliance with Parts 1-3, the Permit Holder shall analyze the primary sources of untreated wastewater (wastewater that is delivered to the S-130 Equalization Tank from the lift station and wastewater from the leachate storage tanks) on a quarterly basis. Wastewater samples shall be collected and analyzed in accordance with EPA Method 8260B and shall be tested for the following:
   a. Each of the compounds listed in Part 3 (benzene, chloroform, 1,4-dichlorobenzene, methylene chloride, naphthalene, perchloroethylene, trichloroethylene, and vinyl chloride),

b. Any compounds that have been detected in wastewater during the last three years including: bromodichloromethane, 2-butanone (methyl ethyl ketone), butyl benzene (n- and sec-), 1,2 dichlorobenzene, dichlorodifluoromethane, ethyl benzene, 4-isopropyl toluene, 4-methyl 2-pentanone (methyl isobutyl ketone), methyl-tert-butyl ether (MTBE), propyl benzene (iso- and n-), styrene, toluene, 1,2,4-trichlorobenzene, 1,1,1 trichloroethane, trimethyl benzenes, and xylenes (o-, m-, p-),

c. Any other organic compounds required to be measured pursuant to EPA Method 8260B, and

d. Organic compound has the same meaning as the definition in Regulation 8-1-201. Total organic compounds shall include all volatile and semi-volatile organic compounds that have been detected in the wastewater. Any compounds that have not been detected may be assumed to have zero contribution toward the total organic compound concentration.

(Basis: ~~Cumulative Increase~~ Offsets and Toxic Risk Management Policy)

5. In order to demonstrate compliance with Parts 1-3, the Permit Holder shall maintain the following records in a District approved logbook:

a. Maintain records that identify the source of each wastewater sample collected, sample collection dates, sample collection procedures, analytical procedures, analysis dates, and analytical results for each wastewater analysis required by Part 4,

b. On a quarterly basis, calculate and record the total organic compound concentration and the concentration for each compound listed in Part 3, in accordance with Part 4d. If more than one wastewater sample has been collected and analyzed for a quarter, calculate and record the weighted average concentrations (for each compound in Part 3 and total organic compounds) based on the relative wastewater throughput contribution from each source of wastewater during the past quarter. Compare the total organic compound concentration determined for this subpart to the limit in Parts 1 and 2.

c. On a quarterly basis, calculate and record the annual average concentration (average of four consecutive quarters) for each compound listed in Part 3~~ and the annual average total organic compound concentration (average of four consecutive quarters)~~. Compare the annual average concentrations determined for this subpart to the limits in Part~~s 2 and~~ 3.

d. Record the operating dates, times, and rates for S-140 and S-141 on a daily basis.

e. Record the total wastewater throughput to S-140 and S-141 on a monthly basis and identify the source(s) of the untreated wastewater that was delivered to the S-130 Equalization Tank during the last month. If the wastewater delivered to S-130 comes

from more than one source, estimate the relative throughput contributions for each source of the wastewater.

f. On a monthly basis, calculate and record the maximum daily wastewater throughput to each reactor (S-140 and S-141) using the operating data and throughput rates recorded per Parts 5d-e. Compare the maximum daily wastewater throughput rate determined by this subpart to the limit in Part 1.

g. On a monthly basis, calculate and record the total wastewater throughput to S-140 and S-141 combined for each consecutive 12-month period. Compare the total wastewater throughput rate determined by this subpart to the limit in Part 2.

All records shall be maintained on site or shall be made readily available to District staff upon request for a period of at least 5 years from the date of entry. These record keeping requirements do not replace the record keeping requirements contained in any applicable rules or regulations. (Basis: ~~Cumulative Increase~~ Offsets and Toxic Risk Management Policy)

6. The Permit Holder shall begin complying with the testing and record keeping requirements described in Parts 4 and 5 above by no later than December 23, 2003. (Basis: Regulation 2-1-403)

Section VII:

The revised wastewater throughput rates, total VOC concentration limits, and 1,4-dichlorobenzene concentration limit are identified in Table VII-F below. The current monitoring procedures and monitoring frequency are adequate for demonstrating compliance with the new limits. The condition changes do not involve any new monitoring requirements or a change in the monitoring frequency.

Table VII – F
Applicable Limits and Compliance Monitoring Requirements
S-140 SBR 1, AERATED BIOLOGICAL REACTOR
S-141 SBR 2, AERATED BIOLOGICAL REACTOR

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Total Carbon	BAAQMD 8-2-301	Y		15 Pounds/Day or 300 ppm, dry basis	BAAQMD Condition # 20922, Parts 4-5	P/D, M, Q	Daily Operating Rate Records, Monthly Wastewater Throughput Records, and Quarterly VOC Content Analyses
Waste-water Through-put	BAAQMD Condition # 20922, Parts 1-2	Y		~~34,150~~ 52,400 gallons per day and ~~8,993,000~~ 6,460,000 gallons per 12-month period	BAAQMD Condition # 20922, Part 5	P/D, M	Daily Operating Rate Records and Monthly Wastewater Throughput Records
VOC in Waste-water	BAAQMD Condition # 20922, Parts 1-2	Y		≤ ~~40~~ 54 ppmw (weighted average of quarterly wastewater samples) ~~and < 11 ppmw (annual average for any 4 consecutive quarters)~~	BAAQMD Condition # 20922, Parts 4-5	P/Q	Quarterly VOC Content Analyses and Records
Toxic Com-pound Concen-tration Limits for Waste-water	BAAQMD Condition # 20922, Part 3	N		Compound ≤ ppbw Benzene 80 Chloroform 470 1,4 Dichlorobenzene ~~230~~ 1020 Methylene Chloride 2530 Naphthalene 3590 Perchloroethylene 430 Trichloroethylene 1290 Vinyl Chloride 30	BAAQMD Condition # 20922, Parts 4-5	P/Q	Quarterly VOC Content Analyses and Records

Section VIII:

The acceptable test methods for demonstrating compliance with the applicable limits for S-140 and S-141 are listed below. No changes to these test methods are necessary.

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
…		
BAAQMD 8-2-301	Organic Compound Emission Limitation for Miscellaneous Operations	Manual of Procedures, Volume IV, ST-7, Organic Compounds; or EPA Reference Method 25 or 25A
…		
BAAQMD Condition # 20922, Parts 1-3	Organic Compound Concentrations in Wastewater	EPA Method 8260B
…		

Section IX:

No changes are proposed to this section.

Section X:

These above revisions are summarized in the revision history section as shown below.

X. Revision History

Title V Permit Issuance (Application # 25828): December 1, 2003

Significant Revision (Application # 8324): February 5, 2004

- Modify Permit Condition # 19237, Parts 4, 9, 10, and 11 to revise monitoring procedures for the internal combustion engines (S-23 and S-24).
- Revise Tables IV-D, VII-D, and VIII to reflect revisions to Condition # 19237.
- Make minor corrections to requirements in Tables III, IV-A, IV-B, IV-D, and IV-E.

Minor Revision (Application # 9326): [December __, 2004]

- Revise minimum combustion chamber discharge temperature in Permit Condition # 18773, Part 9 and in Table VII-B.

Significant Revision (Application # 8583): **[December __, 2004]**

- In Table II-A, add maximum firing capacity to the equipment descriptions for the S-6 and S-7 Gas Turbines.
- In accordance with the July 2004 amendments of 40 CFR Part 60, Subpart GG, delete the Custom Schedule of Compliance in Section V.B. Update citation references, monitoring requirements, and test methods in Tables IV-B, VII-B, and VIII.
- Amend the turbine NOx and CO emission limits in Section VI, Condition # 18773, Parts 1 and 2 and in Table VII-B. Revise the basis for Parts 1 and 2 in Table IV-B.
- Delete the turbine NMOC concentration limit from Section VI, Condition # 18773, Part 3 and from Tables IV-B and VII-B.
- Add daily and annual heat input limits for the turbines to Section VI, Condition # 18773, Part 8, and to Table IV-B and VII-B.
- Add the BACT fuel sulfur content limit for the turbines to Section VI, Condition # 18773, Part 10 and to Tables IV-B and VII-B.
- Clarify turbine source testing requirements and calculation procedures in Section VI, Condition # 18773, Part 11, and in Tables VII-B and VIII.
- Correct citations in Tables IV-A, IV-B, IV-D, VII-A, VII-B, and VII-D.
- Change the Responsible Official to Mr. Ken Lewis pursuant to a July 20, 2004 petition from the facility.
- Update Section X, Revision History.

Minor Revision (Application # 10013): **[December __, 2004]**

- For the S-23 and S-24 IC Engines, revise the maximum CO concentration (when measured using a portable analyzer) and the CO/NMOC correlation ratio in Condition # 19237, Parts 9 and 10g and in Table VII-D based on recent source test data, which showed compliance with the NMOC outlet concentration limit at a higher CO concentration and a higher correlation ratio.

Revise monitoring procedures in Parts 9a-c by requiring daily monitoring for a longer period of time and adding restrictions on when monitoring may be reduced to weekly or monthly frequency.

- Delete the S-25 and S-26 LNG Plants from Table II, delete all of Tables IV-E and VII-E, delete Condition # 19238, and remove related test methods from Table VIII, because the LNG Plants were never installed and the Authority to Construct has expired.
- Revise Condition # 19235, Parts 2 and 16 and Condition # 19237, Part 1 to reflect the deletion of S-25 and S-26 from this permit but continue to allow for the possibility of landfill gas treatment in an off-site LNG Plant with on-site combustion of LNG Plant waste gas.
- Renumber Tables IV-F-J and VII-F-J as Tables IV-E-I and VII-E-I.
- Update Section X, Revision History.

Minor Revision (Application # 10514 and 10515): [insert approval date]

- Revise wastewater throughput limits for S-140 and S-141 in Tables II-A and VII-F and in Condition # 20922, Parts 1 and 2.
- Increase the inlet VOC concentration limit for S-140 and S-141 in Condition # 20922, Parts 1 and 2 and in Table VII-F.
- Change the VOC concentration limit in Condition # 20922, Part 2 and Table VII-F from an annual average limit to a peak weighted average limit and modify the associated record keeping requirements in Condition # 20922, Parts 5b and 5c.
- Increase the inlet 1,4 dichlorobenzene concentration limit for S-140 and S-141 in Table VII-F and Condition # 20922, Part 3.
- Revise basis for Condition # 20922, Parts 1, 2, 4, and 5 and update Table IV-F accordingly.
- Update Table III to reflect federal SIP adoptions and rule amendments and to add two new California ATCMs related to asbestos.
- Add the term, ATCM, to the Glossary.
- Update Section X, Revision History.

Section XI:

Add the following term to the glossary:

ATCM
Air Toxic Control Measure

Section XII:

No changes are proposed to this section.

E. RECOMMENDATION

Issue a Change of Permit Conditions for the following equipment:

S-140 SBR 1 (aerated biological reactor)
S-141 SBR 2 (aerated biological reactor)

signed by Carol S. Allen — November 23, 2004
By: Carol S. Allen — Date
Senior Air Quality Engineer

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