Title V Permit Evaluation

Site Number: A3294
Site Name: Guadalupe Rubbish Disposal Co.
Site Address: 15999 Guadalupe Mines Road, San Jose, CA 95120

EMISSION LIMITS AND MONITORING REQUIREMENTS:

The following sources were found to have no periodic monitoring for an applicable emission limit, monitoring was added as noted:

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
WOOD CHIPPER/TUB GRINDER: S-3	BAAQMD Regulation 6-301 and BAAQMD Condition #6385 part 4	Ringelmann 1.0	Added Monitoring: BAAQMD Condition #6385, Part 5 Continuous Observation of Source in Operation
	BAAQMD Regulation 6-311	$E = 0.026(P)^{0.67}$ where: E = Allowable Emission Rate (lb/hr); and P = Process Weight Rate (lb/hr)	None Recommended
WOOD DEBRIS STOCKPILE: S-5	BAAQMD Regulation 6-301	Ringelmann 1.0	Added Monitoring: BAAQMD Condition #7649, Part 4 Observation of Operations
SHREDDED WOOD STORAGE STOCKPILES AND LOADOUT: S-6	BAAQMD Regulation 6-301	Ringelmann 1.0	Added Monitoring: BAAQMD Condition #7650, Part 4 Observation of Operations

PM Sources (continued)

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
TROMMEL SCREEN: S-11	BAAQMD Regulation 6-301 and BAAQMD Condition #12603 part 4	Ringelmann 1.0	Added Monitoring: BAAQMD Condition #12603, Part 6 Continuous Observation of Source in Operation
	BAAQMD Regulation 6-311	$E = 0.026(P)^{0.67}$ where: E = Allowable Emission Rate (lb/hr); and P = Process Weight Rate (lb/hr)	None Recommended
DIESEL IC ENGINE: S-17	BAAQMD Regulation 6-301	Ringelmann 1.0	Added Monitoring: BAAQMD Condition #16830, Part 4 Source Observation for Visible Smoke
	BAAQMD Regulation 6-310	0.15 gr/dscf	None Recommended

PM Discussion:

Visible Emissions

BAAQMD Regulation 6-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for a period or aggregate periods less than 3 minutes in any hour). In an effort to bring awareness to this limit, permit conditions were added to each of the above sources requiring the source operator to visually monitor the source for visible emissions while the source is in operation. While this approach does not guarantee compliance with Ringelmann 1.0, it does put the responsibility of monitoring for visible emissions on the person who is best able to correct a visible emissions problem, the source operator.

Particulate Weight Limitation

The Diesel I.C. Engine S-17 is subject to BAAQMD Regulation 6-310, limiting PM emissions to 0.15 gr/dscf. This compares to a PM10 emission factor of 0.31 lb/MMBTU (diesel fuel) from EPA AP-42 Table 3.3-2 “Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines”. If it is assumed that S-17 operates with exhaust gases containing 15% excess oxygen, the AP-42 factor can be compared to the Regulation 6-310 factor (0.15 gr/dscf @ 15% O_2) as follows:

From 40 CFR 60, Appendix A, Method 19, Table 19-1, a stoichiometric dry gas combustion factor of 9,190 dscf/MMBTU is given for distillate oil combustion. At 15% excess O_2, this factor becomes:

9,190 x [21%/(21% - 15%)] = 32,165 dscf (c.p.)/MMBTU

Therefore, the conversion of 0.15 gr/dscf @ 15% O_2 to lb/MMBTU is:

(32,165 dscf/MMBTU) x (0.15 gr/dscf) x (lb/7000 gr)
= 0.689 lb/MMBTU

Since this factor is well above the AP-42 factor of 0.31 lb/MMBTU (assumed to be average emissions for diesel engines), the addition of periodic monitoring to demonstrate compliance with this limit is not necessary.

Emissions Based on Process Weight Rate

The Wood Chipper/Tub Grinder S-3, and the Trommel Screen S-11 are subject to Regulation 6-311. This regulation limits mass emissions on a sliding scale based on the process weight rate. Since it would be virtually impossible to meaningfully monitor compliance with these limits due to variable operation rates and the fugitive nature of the particulate emissions, an attempt will be made to demonstrate ongoing compliance with this regulation using assumptions about material throughput and emission rates.

Wood Chipper/Tub Grinder: S-3

The BAAQMD has accepted an unabated particulate emission factor of 0.024 lb/ton (from AP-42 "log debarking") for wood chippers and tub grinders. The Tub Grinder S-3 has a maximum wood waste capacity of 30 tons/hr. If the accepted BAAQMD emissions factor of 0.024 lb/ton is applied, the highest unabated particulate emissions would be 0.72 lb/hr. At a process weight rate of 30 tons per hour, the Regulation 6-311 particulate emissions limit would be the maximum allowable emission rate of 40 lb/hr, well above the expected unabated emission rate. The same holds true for any process weight rate at which S-3 may be operating. The calculated emissions based on the AP-42 factor will always be well below the Regulation 6-311 allowable emission rate. Therefore, no monitoring is recommended for this standard.

Trommel Screen: S-11

The Trommel S-11 rotates yard waste and chipped wood in a drum shaped screen to remove dirt and small debris. The following continuous drop material handling equation from AP-42 Chapter 13.2.4 "Aggregate Handling And Storage Piles" may be useful in estimating particulate emissions from trommel screens because of the similarities of the operations:

$$E = k(0.0032) \times \frac{(U/5)^{1.3}}{(M/2)^{1.4}} \quad \text{(lb/ton)}$$

where:

E = emission factor (lb/ton)
k = particle size multiplier (dimensionless)
U = mean wind speed (miles per hour)
M = material moisture content (%)

For the Trommel S-11, the following variables will be used:

k = 0.74 (to include all particulate < 30 microns in diameter)
U = 15 mph (conservative estimate at the upper boundary of the equation limit)
M = 2 % (midrange estimate)

The trommel emission factor is then estimated to be 0.01 lb/ton. Therefore, the highest expected emissions from the Trommel S-11 is as follows:

S-11: (65 tons/hr)(0.01 lb/ton) = 0.65 lb/hr

The maximum capacity emission rate is well below the maximum allowable Regulation 6-311 rate of 40 lb/hour. Furthermore, emissions from S-11 based on the AP-42 factor will be well below the Regulation 6-311 allowable emission rate at any process weight rate. Therefore, no monitoring is recommended for this standard.

TOC Source

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
LANDFILL WITH GAS COLLECTION SYSTEM: S-9	BAAQMD 8-34-303a and SIP 8-34-303	1000 ppmv as methane at 3 inches above surface	None Recommended

TOC Discussion:

Surface leaks of total organic compounds (TOC) from the Guadalupe Landfill S-9 are currently limited to 1000 ppmv as methane. This limit will expire on 7/1/02 and be replaced by a more stringent limit of 500 ppmv as methane. New quarterly surface emissions monitoring and monthly cover integrity monitoring requirements will become effective on 7/1/02, in conjunction with the change to the surface leak limit. Implementation of the surface emission and cover monitoring plans requires a long lead time for preparing monitoring plans, obtaining District approval, purchasing equipment and/or engaging in contracts with testing companies. This facility is currently preparing a monitoring plan as part of their Collection and Control System Design Plan. Because of the long lead time issues discussed above, the surface emissions and cover integrity monitoring plans could not be implemented any sooner than the scheduled effective date of 7/1/02. Therefore, no monitoring is recommended for the interim TOC surface emission limit of 1000 ppmv as methane.

H2S Source

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
LANDFILL WITH GAS COLLECTION SYSTEM: S-9	BAAQMD 9-2-301	Property Line ground level limits ≤ 0.06 ppm Averaged over 3 minutes and ≤ 0.03 ppm Averaged over 60 minutes	None Recommended

H2S Discussion:

Area Monitoring for the H2S limits of Regulation 9-2-301 is required only if required by the APCO. Since any H2S emitted from the Landfill S-9 would be fugitive in nature and would be a constituent of leaking landfill gas, it can be assumed that if the landfill gas surface leak and component leak limits set forth in this permit are met, H2S emissions will be minimized. Additional monitoring for ground level H2S emissions is not recommended.

SO2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
DIESEL I.C. ENGINE FOR TUB GRINDER: S-17	BAAQMD Regulation 9-1-301	Ground Level Concentrations: 0.5 ppm for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, 0.05 ppm averaged over 24 hours	None Recommended

SO2 Discussion:

Area monitoring to demonstrate compliance with the ground level SO2 concentration requirements of Regulation 9-1-301 is at the discretion of the APCO and is not recommended in this case. The I.C. Engine S-17 is required by Regulation 9-1-304 and Permit Condition #16830 to be fired exclusively with low sulfur fuel, so excessive ground level concentrations of SO2 are not expected.

PERMIT SHIELD:

No permit shields were requested by the applicant.

ALTERNATE OPERATING SCENARIO:

No alternate operating scenario has been requested for this facility.

COMPLIANCE STATUS:

Guadalupe Rubbish Disposal Company has stated that they are in full compliance with all applicable local, state, and federal air quality requirements. The District believes this statement to be accurate.

ALIGNMENT OF INFORMATION IN APPLICATION AND PROPOSED PERMIT:

There are no significant discrepancies in the information provided in the application and that to be used in the proposed Title V Permit.