Docket # 3754

PETITION FOR VARIANCE

BEFORE THE HEARING BOARD OF THE

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PETITIONER

Name: Redwood Landfill, Inc.

Check One: ___Sole Proprietor ___Partnership _X_Corporation

___Government ___Non-Profit (specify)_____

Mailing Address: 8950 Redwood Highway, Novato, CA 94948

Phone number: 415-408-9055

Email Address: See below.

Name, title, and phone number of person(s) authorized to receive notices (no more than two):

Tim Miller, Senior Counsel (WM - Environmental, Health and Safety), 832-707-1466, tmille32@wm.com

Malcolm Weiss, Attorney (Hunton Andrews Kurth LLP), 213-532-2130, mweiss@hunton.com

1. Briefly describe the type of business or organization/agency activity:

   Redwood Landfill and Recycling Center (the "Facility") is an essential public service Class III landfill that is permitted for and has received non-hazardous municipal solid waste (MSW) since 1958. The Facility covers 420 acres, with 222.5 acres dedicated to waste disposal. Relevant to this variance request, the Facility includes two flares (A-51 and A-60), two landfill gas treatment systems (S-71 and A-80) and two internal combustion (IC) engines (S-64 and S-65) operated at the onsite landfill gas-to-energy plant (the "energy plant").

2. Are you a Small Business as defined in Health and Safety Code Section 42352.5(b)?

   ___Yes _X_No

3. Are you a public agency providing an "essential public service" as defined in Health and Safety Code Section 42352?

   ___Yes _X_No *

   * While Petitioner is not a public agency, *it provides an "essential public service" within the meaning of HSC § 42352(a)(2)*, as the Facility includes a "landfill gas control or processing facility."

VARIANCE REQUEST

4. Type of Variance Requested:

If you are selecting Interim Variance, you must also select a Short or Regular Variance to follow.

_X_ Interim _X_ Short ___Regular ___ Emergency ___Product ___Group

5. Good Cause: (Required only for Emergency and Interim Variances Explain why this Petition was not filed in sufficient time to issue the required public notice.)

Summary

- For reasons that are beyond Petitioner's reasonable control, two engines at the energy plant have been taken out of service.
- Until they are repaired, Petitioner has had to make operational changes at the Facility that have caused non-compliance with certain sulfur-related permit conditions.
- Petitioner is also undertaking projects to increase the Facility's capacity to control sulfur in collected landfill gas (LFG) and anticipates that this work will result in periods of non-compliance with the permit conditions and regulations that are the subject of this variance request.
- Petitioner therefore requests an interim and a short variance.

Background

Petitioner operates the essential public service Facility under a BAAQMD Permit to Operate (PTO) which sets forth conditions for landfill operations, including operation of a landfill gas collection and control system (GCCS). *See* **Attachment A** (PTO; Plant #1179).

LFG collected in the Facility's GCCS is routed through one of two treatment systems (S-71 or A-80) to control total reduced sulfur (TRS) before the LFG is either routed to the energy plant engines S-64 and S-65, which supply power to the PG&E electrical grid, or to one of the Facility's two enclosed flares (A-51 and A-60).

Status

On August 22, 2024, the Facility initiated two-day scheduled source tests for engines S-64 and S-65. During the source test for S-64, the engine generator malfunctioned and could not maintain operation long enough to complete testing. Petitioner determined that bearings in the engine's generator had failed, causing significant damage to the rotating shaft inside the generator. These issues resulted in the engine shutting down in the middle of the test. The S-64 generator has been removed and sent to the East Coast for repairs. Consequently, S-64 will be offline for several weeks.

During the testing for S-65, there was a power outage, requiring the test to be cancelled. It was also discovered that there were issues with the urea injection system used for NOx control on the engine.

On August 27, 2024, it was determined that the S-65 NOx control system was compromised to the point that the engine had to be shut down to avoid non-compliance with engine-related permit conditions.

With both energy plant engines offline, it was necessary to partially open the valve upstream of Flare A-60 (the "east side valve"), which is normally kept closed during routine operations. Opening the valve was necessary to maintain a vacuum on the east side of the GCCS and to prevent fugitive LFG from being emitted. As Petitioner has previously explained to BAAQMD staff, the east side valve is only opened during unforeseen circumstances that threaten proper operation of the GCCS—such as this situation. The result of partially opening this valve is that both treated gas from the west side of the GCCS and untreated gas from the east side are being routed to control device A-60, causing flare inlet H_2S concentrations to increase to approximately 500 ppmv and potentially contributing to exceedances of the 350 ppmv annual average limit for TRS compounds (calculated as H_2S) in collected LFG as stated in PTO Condition 19867, Section 18.c. *See* **Attachment A** at p. 26. Further, the routing of untreated LFG to the flare violates the requirement in PTO Condition 25634, Section 5.a. to route all flared gas through A-80. *See id*. at p. 40 (providing that "[w]hen the owner/operator uses A-80 to absorb H_2S for SO2 control, the owner/operator shall route all of the [LFG] that goes to the flare through A-80").

On September 10, 2024, Petitioner had a technician from its NOx emission control system vendor, Johnson Matthey, onsite to evaluate S-65. It was determined that the engine's NOx emission control system could not be repaired immediately. Petitioner is currently awaiting a replacement catalyst and other components needed for full repair. S-65 is thus expected to be out of service for the next few weeks. Because there is no immediate way for Petitioner to operate the GCCS in compliance with the permit terms stated herein, variance coverage is requested.

The engine equipment failures were unforeseeable and occurred despite Petitioner's use of good operation and maintenance practices for both engines. Petitioner acted quickly to contact third party technical support to undertake repairs and is working diligently on a technical solution to the current GCCS operational issues as the engines are being repaired. Further, as the exigent circumstances described could not have been anticipated in sufficient time to issue public notice, good cause exists for an interim variance to be granted. *See* Cal. Health & Safety Code § 42351(b) (providing that the Hearing Board may grant an interim variance for good cause stated in the order granting such a variance).

Separately, for operational and emission control flexibility, Petitioner has initiated a project to increase the treatment capacity of A-80 and to re-configure the GCCS so that gas from both east and west sides of the system can be routed through A-80 for treatment (the "A-80 upgrade project"). The A-80 upgrade project entails the addition of four (4) 10,000-lb. treatment vessels containing activated carbon, resulting in a significant increase of the system's treatment capacity. It also requires upgrades and reconfiguration of GCCS piping. To allow additional operational flexibility and gas treatment options in the event of future engine breakdowns, Petitioner further plans to re-establish a pre-existing line to serve as a connection point between the S-71 treatment system and the east side of the GCCS. Once re-established, this line will allow Petitioner to move LFG from the east side of the GCCS through the carbon vessels at S-71 before flaring at control device A-60, in case the A-80 treatment system is temporarily unavailable for maintenance or other reasons in the future.

Conclusion

As explained further below, Petitioner requests an interim and a short variance to allow it to address current GCCS operational issues and to complete planned treatment and collection system upgrades without incurring penalties for non-compliance. Good cause exists to grant the requested variance due to the exigent circumstances at the Facility that have caused compliance to be beyond Petitioner's reasonable control and the need to undertake this work quickly.

OPERATION

6. Briefly describe the type of equipment or process that is the subject of this variance petition, and why it is necessary to your operation. Attach copies of the Permit(s) to Construct and/or Permit(s) to Operate for the subject equipment. For Title V facilities, attach only the relevant sections of the Facility Permit showing the equipment or process and conditions that are subject to this Petition. You must bring the entire Facility Permit to the hearing:

This Petition concerns the following equipment and processes at the Facility:

- **GCCS (Gas Collection)**. The GCCS currently consists of 95 vertical wells, 7 horizontal collectors, piping, a main header, and other components. The system collects LFG generated in the waste decomposition process and routes it to treatment and/or abatement devices for emission control purposes.

- **A-80 and S-71 (Gas Treatment Systems)**. Gas collected in the GCCS is sent through one of these two treatment systems to reduce TRS before it is routed either to the onsite energy plant for combustion in one or more of the energy plant engines (S-64 and S-65) or combusted in one of the facility's two enclosed flares (A-51 and A-60).

- **A-60 and A-51 (Flares)**. These enclosed flares are used as abatement devices for LFG generated by the waste decomposition process at the landfill.

- **S-64 and S-65 (Energy Plant Engines)**. These engines combust treated LFG routed through the S-71 treatment system. They are used to power the onsite energy plant, which supplies power to the PG&E electrical grid.

A copy of the PTO governing operation of this equipment is provided as **Attachment A**. The relevant portions of the Major Facility Review (MFR) Permit are included as **Attachment B** (MFR Facility #A1179 Excerpts).

REGULATORY REQUIREMENTS

7. List all District Regulations, rules, and permit conditions that are the subject of this variance request. Identify all applicable subsections:

Rule/Permit Condition	Explanation
PTO Condition 25634, Section 5.a.	Requires that when the facility uses A-80 to absorb H_2S for SO2 control, the owner/operator shall route all of the landfill gas that goes to the flare through A-80.
PTO Condition 19867, Section 18.c	Provides that TRS concentrations in collected LFG shall not exceed an annual average of 350 ppmv (calculated as H_2S).
PTO Condition 19867, Section 16	Provides that, upon construction of the energy plant, LFG may be diverted from the flares to the S-71 treatment system followed by combustion in one or more of the energy plant engines (S-64, S-65) but does not specify that LFG may be routed from the S-71 treatment system back to the flares.
Rule 2-1-307	Prohibits operation of equipment for which a PTO has been issued in violation of applicable permit conditions.

INFORMATION FOR VARIANCE FINDINGS

8. Is there a regular maintenance and/or inspection schedule for this equipment?

_X_Yes ___No

If yes, how often: Every two months, per manufacturer's recommendations.

Date of last maintenance and/or inspection:

9. Was there any indication of problems with the subject equipment?

___Yes _X_No

10. Were you issued any Notice(s) of Violation or Notice(s) to Comply concerning the equipment or activity that are the subject of this variance request within the past year?

___Yes _X_No

If yes, attach a copy of each notice.

11. Have you received any complaints from the public regarding the operation of the subject equipment or activity within the last six months?

___Yes _X_No

If yes, be prepared to present detailed testimony about the nature of these complaints at the hearing.

12. Has this matter been the subject of previous variance requests? No

If yes, provide date of hearing, type of variance, and Hearing Board decision:

N/A

13. Explain why it is beyond your reasonable control to comply with the regulations and permit conditions that will be the subject of this variance:

As described above in response to Section 5 (good cause), exigent circumstances attributable to failure of both energy plant engines precipitated this variance request, and these circumstances provide the basis for finding good cause for an interim variance. Because of the unanticipated engine failures—and expected timeframes for repair and bringing these engines back online—Redwood has no choice but to route some untreated LFG through the east side valve to control device A-60. Doing so is necessary to maintain vacuum on the east side of the GCCS and to prevent fugitive LFG from emitting to the atmosphere. Under the circumstances, and until Petitioner can bring the engines back into service or re-establish the pre-existing line to connect the S-71 treatment system and the east side of the GCCS, it is beyond Petitioner's reasonable control to comply with the regulations and permit conditions that are the subject of this variance request.

Additionally, Petitioner plans to undertake GCCS modifications to prevent these circumstances in the future and to improve the Facility's ability to treat all LFG collected from the east and west sides of the GCCS for H_2S before it is flared. Petitioner expects that the A-80 upgrade project will require approximately three (3) weeks to complete.

While engines S-64 and S-65 are being repaired, and while Petitioner undertakes the above-described modifications, it will be beyond Petitioner's reasonable control to comply with the following regulations and permit conditions:

- ***Requirement to Route All LFG through A-80***. Due to the exigent circumstances caused by the engine failures, and due to anticipated downtime of the A-80 treatment system while the A-80 upgrade project is being carried out, it is and will be beyond Petitioner's reasonable control to comply with PTO Condition 25634, Section 5.a., p. 40 (requiring that all LFG going to the flare be routed through A-80).

- ***Annual Average TRS Limit***. It is currently necessary to keep the east side valve partially open until the energy plant engines are operational again, to maintain appropriate vacuum in the GCCS. Because a mixture of treated and untreated LFG will be routed to the flares during this timeframe, it is and will be beyond Petitioner's reasonable control to comply with PTO Condition Section 18.c., p. 26 (establishing an annual average limit of 350 ppmv for TRS (calculated as H_2S) in collected LFG).[1]

- ***Equipment Description***. PTO Condition 19867, Section 16 (p. 23), currently provides that, upon construction of the energy plant, LFG may be diverted from the flares to the S-71 treatment system followed by combustion in one or more of the energy plant engines (S-64, S-65) but does not specify that LFG may be routed from the S-71 treatment system back to the GCCS and then to the flares. To ensure adequate treatment of LFG in the east side of the GCCS while the engines are being

[1] On June 1, 2016, Petitioner applied to BAAQMD for a Change of Condition (COC) to remove the 350 ppmv annual average limit in Condition 19867, Section 18c in favor of the Condition 25634, Section 3 actual calculated SO_2 emission limit. As explained in the application, the 350 ppmv limit in Section 18c is used as a means of keeping SO_2 emissions from exceeding major source thresholds. *See* Application 28019 (June 1, 2016) (prepared by SCS Engineers) at 1. Petitioner thus proposes to demonstrate compliance with the rolling 4-quarter SO_2 emission limit of 99 tpy in Condition 25634, Section 3 in lieu of the 350 ppmv annual average limit.

repaired, and to provide treatment flexibility once the A-80 upgrade project is complete (in the event that the A-80 system has to be taken out of service temporarily in the future for maintenance), Petitioner plans to re-establish a pre-existing line that would connect the S-71 treatment system and the east side of the GCCS. Once re-established, this line will allow Petitioner to move gas from the east side of the GCCS through treatment at S-71 before flaring at A-60. Petitioner has requested an accelerated permit modification to incorporate this equipment configuration into the description in PTO Condition 19867, Section 16. Until this permit modification request is granted, however, compliance with PTO Condition 19867, Section 16 as written will be beyond Petitioner's reasonable control.

- ***Rule 2-1-307***. For the reasons stated herein, it is beyond Petitioner's reasonable control to operate the above-listed equipment in compliance with applicable PTO conditions.

14. **If you are seeking a product variance**, briefly describe how you attempted to locate, research, or develop a product that is in compliance with District rules and regulations:

N/A

15. When and how did you first become aware that you are not (or will not be) in compliance with the regulations, rules and/or permit conditions?

On September 5, 2024, it was first communicated to Petitioner's environmental and operations staff that the east side valve had been partially opened on August 27, 2024 to maintain vacuum on the GCCS east side. At that time, Petitioner's environmental and operations staff reviewed applicable requirements for the GCCS and determined that Petitioner was not in compliance with the rules and permit conditions listed above.

16. List the date(s) and action(s) you have taken since that time to achieve compliance:

- ***September 9, 2024***: Petitioner mobilized Facility staff and third-party personnel to initiate the A-80 upgrade project.

- ***September 10, 2024***: A third-party technician visited the Facility to evaluate repair needs for engine S-65. This evaluation identified the need to conduct repairs on the engine's NOx control system and other engine components. The technician estimated that the repairs will take two to three weeks.

- ***September 11, 2024***: Petitioner submitted to BAAQMD Compliance and Enforcement staff the 10-day report of non-compliance required under MFR Section I.F.

- ***September 13, 2024***: Petitioner submitted this variance request.

17. What would be the harm to your business, agency or organization if the variance is not granted?

Economic losses: See below

Number of employees laid off, if any:__N/A____

Provide detailed information regarding economic losses, if any (anticipated business closure, breach of contracts, hardship on customers, employees or the public, and/or similar impacts):

If the requested variance is not granted, harm to the business identified so far would include penalties imposed by BAAQMD for violations of the permit conditions and regulations that are the subject of this variance. Because it provides an essential public service, the Facility must continue operating to meet obligations for managing MSW.

18. Can you curtail or terminate any operations in lieu of seeking a variance?

___Yes (provide brief explanation)

_X__No

19. Will any emissions occurring during the variance period result in odor, dust or smoke? Potentially.

If yes, identify the type and amount of these emissions; what you can do to monitor and mitigate those emissions; and, the likely impact on the surrounding community.

Petitioner does not expect that emissions during the variance period will result in odor, dust, or smoke or a public nuisance. Maintaining vacuum on the east side of the GCCS as proposed will avoid likely odors.

20. Will any emissions occurring during the variance period result in excess opacity (total opacity above __%)?

No.

If yes, identify the type and amount of these emissions; the likely duration of the excess opacity during the variance period; and, what you can do to monitor and mitigate those emissions.

21. Estimate all other excess emissions that will occur on a daily basis during the variance period. Excess emissions are those that exceed rule and permit condition limits.

Pollutant	Total Estimated Excess Emissions (lbs/day)	Reduction Due to Mitigation (lbs/day)	Net Emissions after Mitigation (lbs/day)
SO_2	81.23 (average)	0	81.23 (average)

Show calculations used to estimate quantities of excess emissions or explain why there will be no excess emissions:

Daily LFG flow rates to flare A-60 were multiplied by the H_2S concentration at the flare inlet (500 ppm), measured after the east valve was opened. This resulted in an estimated daily H_2S emission rate, which was converted to a TRS rate. The allowed TRS emission rates (based upon the annual average permit limit of 350 ppmv) were then subtracted from this figure. As a final step, the differences between estimated and allowed emissions rates were used to calculate an approximate daily average for excess SO_2 emissions.

22. Briefly describe the measures that will be taken to mitigate excess emissions to the maximum extent feasible during the variance period, or explain why mitigation measures are not feasible:

Petitioner has taken steps to minimize H_2S fugitive emissions by maintaining vacuum on the east side of the GCCS. As maintenance of the east side vacuum is essential, sulfur oxide emissions cannot be mitigated during the variance term. Sulfur oxide emissions will be reduced once the A-80 upgrade project is complete and all LFG is routed through A-80 for treatment prior to combustion in A-60 or A-51.

23. How do you plan to monitor or quantify emissions levels from the equipment or operations during the variance period?

PTO Condition 19867, Section 31b requires Petitioner to sample LFG drawn from the main LFG header and to analyze collected samples for H_2S on a weekly basis using a Draeger tube. *See* **Attachment A** at p. 31. Petitioner is required to maintain records of Draeger tube test dates and results, and to summarize average H_2S concentrations and calculated TRS content of the LFG on a quarterly basis. *Id*. These results must be compared to the peak TRS limit stated in Section 18c. *Id*. Petitioner is also required to determine the annual average TRS content on a rolling quarterly basis for comparison to the annual average limit in Section 18c. *Id*. Section 31a of this PTO condition further requires Petitioner to characterize LFG on a quarterly basis using samples drawn from the main LFG header using laboratory analysis and to report results to the BAAQMD Compliance and Enforcement and Source Test sections within 60 days of the test date. *See* **Attachment A** at pp. 29 – 31. Petitioner will continue to monitor TRS concentrations in the LFG in accordance with these permit requirements. Petitioner further is collecting two Draeger tube samples a week to confirm TRS levels.

24. Will you provide information regarding emissions during the variance period in a manner and frequency as requested by the District?

_X_ Yes ___ No

COMPLIANCE

How do you intend to achieve compliance with the regulations and permit conditions that are the subject of the variance? Briefly describe any necessary process changes; equipment to be installed; or modifications to equipment or your facility. Identify whether authority to construct or a permit amendment will be necessary. Include dates by which you estimate actions will be completed and an estimate of total costs.

Petitioner will achieve compliance by completing the A-80 upgrade project, or by restoring engines S-64 and S-65 to service. In addition, the A-80 upgrade project will significantly improve the ability to treat collected LFG for H_2S and will allow the treatment system to draw gas from both the east and west sides of the GCCS. In the short term, before the A-80 upgrade project is completed, Petitioner will achieve compliance by re-instating the line between the S-71 treatment system and the east side of the GCCS, which will allow gas to be treated in S-71 before being routed to flare A-60. Completion of these activities will depend upon prompt action by BAAQMD permitting staff to process the application that Petitioner will be submitting, requesting accelerated permitting (1) to allow Petitioner to undertake modifications to the A-80 treatment system; and (2) to modify the current equipment description in PTO Condition PTO Condition 19867, Section 16, as described above.

Assuming expeditious permitting by BAAQMD staff, Petitioner estimates that these actions will be completed within the 90-day short variance period.

List any operating conditions or increments of progress, if any, that you propose to include in the variance order. If the variance is to extend beyond one year, you must propose increments of progress:

Petitioner proposes to continue the activities noted in response to Item # 23, above.

State the date you are requesting the variance to begin: September 13, 2024.

State the date on which you will achieve final compliance: December 12, 2024 or upon approval and commissioning of the A-80 upgrade project, whichever is sooner.

List the names of any District staff with whom you or any of your staff or representatives have had contact concerning this variance petition or any related Notice of Violation or Notice to Comply. Include name, title and phone number:

Misha Nishiki
BAAQMD Assistant Counsel
(415) 749-4773

If this Petition was completed by someone other than the petitioner, provide their name and title:

Malcolm C. Weiss and M. Clare Ellis, attorneys (Hunton Andrew Kurth LLP)

The following verification must be signed by the owner, manager, director, or other responsible party of the plant, business, factory, agency or organization requesting the variance:

I, the undersigned, hereby declare under penalty of perjury, under the laws of the State of California, that I have read the foregoing Petition, including attachments, and that their contents are true and correct.

Dated: 9-13-24, at (location) RENO, NEVADA WASHOE COUNTY.

Print name: Scott Tignac

Signature:

Title: Director of Disposal Operations

ATTACHMENT A

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT TO OPERATE

This document does not permit the holder to violate any BAAQMD regulation or any other law.

PERMIT EXPIRATION DATE
MAY 1, 2024

PLANT# 1179

Ramin Khany, District Manager
Redwood Landfill Inc
P O Box 793
Novato, CA 94948

ORIGINAL SENT TO:

Redwood Landfill Inc
8950 Redwood Hwy
Novato, CA 94945

Location: 8950 Redwood Hwy
Novato, CA 94945

S#	DESCRIPTION	[Schedule]	PAID
2	Misc CHEM, Sewage sludge, 3.65 dry tons/hr max Sewage Sludge Storage, (Main Pond)	[F]	591
5	CHEM> Landfill with gas collection system, Multi-material Redwood Landfill - Waste Decomposition Process Abated by: A51 Flare A60 Flare Emissions at: P55 Stack P60 Stack	[K]	4223
34	MISC> Composting, aerated static piles, Green waste CASP Composting Operation Abated by: A69 Unclassified Abatement Device A18 Water Spray System	[G1]	3626
39	MINERL> Screening, 80 tons/hr max Trommel Screening Processes, Powered by Either Electric Motors or Exempt Diesel Engines Abated by: A18 Water Spray System	[F]	591
41	MISC-HDLG> Storage, Wood - other/not spec Temporary Stockpiles for Yard and Green Waste Shredding Operations	[F]	591
42	MISC-HDLG> Storage, Soil contaminated, organics Soil and Cover material stockpiles	[F]	591

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT TO OPERATE

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PERMIT EXPIRATION DATE
MAY 1, 2024

PLANT# 1179

S#	DESCRIPTION	[Schedule]	PAID
55	Service Station G8573, 1 gasoline nozzles, Vehicle GDF# 8573	[D]	136
58	MISC> Wastewater, industrial storage ponds Aerated Leachate Pond	[G1]	3296
61	Portable Diesel engine, 125 hp, EPA# 8JDXL06.8105 Portable Diesel Engine for Waste Tipper Abated by: A61 Catalyzed Diesel Particulate Filter Emissions at: P61 Stack	[B]	299
62	Portable Diesel engine, 125 hp, EPA# 8JDXL06.8105 Portable Diesel Engine for Power Screen Abated by: A62 Catalyzed Diesel Particulate Filter Emissions at: P62 Stack	[B]	299
64	Reciprocating engine, 2739 hp, Caterpillar, 5266 cu in Internal Combustion Engine #1 Abated by: A64 Oxidation Catalyst A74 Selective Catalytic Reduction (SCR) Emissions at: P64 Stack	[B]	938
65	Reciprocating engine, 2739 hp, Caterpillar, 5266 cu in Internal Combustion Engine #2 Abated by: A65 Oxidation Catalyst A75 Selective Catalytic Reduction (SCR) Emissions at: P65 Stack	[B]	938
71	CHEM> Separating, Landfill gas, 174 thou cubic feet/hr max Landfill Gas Treatment System-Desorption Process Abated by: A51 Flare A60 Flare Emissions at: P55 Stack P60 Stack	[F]	591
76	MISC> Landfill dumping, Multi-material Redwood Landfill - Waste and Cover Material Dumping Abated by: A18 Water Spray System	[K]	1919

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

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PERMIT EXPIRATION DATE
MAY 1, 2024

PLANT# 1179

S#	DESCRIPTION	[Schedule]	PAID
77	MISC> Landfill bulldozing, compacting, etc		1919
	Redwood Landfill - Excavating, Bulldozing, and Compacting Activities	[K]	
	Abated by: A18 Water Spray System		
78	Standby Diesel engine, 229 hp, EPA# MPKXL07.0PW1		95
	Emergency Standby Diesel Generator Set	[B,105 days]	
	Emissions at: P78 Stack		
A60	Industrial Flare - Other (not refinery), 90MM BTU/hr max		0
	Landfill Gas Enclosed Flare	[exempt]	
	Emissions at: P60 Stack		
A51	Industrial Flare - Other (not refinery), 90MM BTU/hr max		0
	Landfill Gas Flare	[exempt]	
	Emissions at: P55 Stack		

16 Permitted Sources, 2 Exempt Sources

*** See attached Permit Conditions ***

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT TO OPERATE

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PERMIT EXPIRATION DATE
MAY 1, 2024

PLANT# 1179

*** PERMIT CONDITIONS ***

Source#	Subject to Condition Numbers
2	96
5	19867, 25634
34	13123
39	13123
41	19865
42	19866
55	14098, 16516
58	23052
61	24527
62	24527
64	25634, 25635
65	25634, 25635
71	25636, 25634
76	19867
77	19867
78	22850
A60	19867, 25634
A51	19867, 25634

The operating parameters described above are based on information supplied by permit holder and may differ from the limits set forth in the attached conditions of the Permit to Operate. The limits of operation in the permit conditions are not to be exceeded. Exceeding these limits is considered a violation of District regulations subject to enforcement action.

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

PERMIT TO OPERATE

This document does not permit the holder to violate any BAAQMD regulation or any other law.

PERMIT EXPIRATION DATE
MAY 1, 2024

PLANT# 1179

*** PERMIT CONDITIONS ***

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COND# 96 *applies to S# 2*

For: S-2 Sewage Sludge Storage, Main Pond

*1. If any odor complaints are verified and found to have emanated from this pond, the pond shall be immediately chemically treated to abate the problem. (Basis: Regulation 1-301)

COND# 13123 *applies to S#'s 34, 39*

For: S-34 Compost Facility Operations: Covered Aerated Static Pile (CASP) Process for Active Composting Phase and Open Windrows for Curing Phase; abated by A-69 Compost Cover or Biofilter for Active Composting Phase; custom design; and abated by A-18 Water Sprays; and
S-39 Trommel Screening Processes; abated by A-18 Water Sprays

1. The total amount of material composted at this facility shall not exceed 160,368 tons during any consecutive rolling 12-month period. (Basis: Cumulative Increase)

2. Active composting at this facility shall be performed only by the covered aerated static pile (CASP) method using perforated pipes and a blower system to provide positive or negative pile aeration. Negative aeration operations (drawing air through the pile) shall include a condensate trap upstream and an active biofilter device (A-69) downstream of the blower. Positively aerated active static piles shall be covered with at least a 6-inch layer of finished compost (A-69). Uncontrolled open windrows may continue to be used only for the curing phase of the compost operations. (Basis: Cumulative Increase)

3. The CASP composting operation shall be designed and operated to maintain a target 80% reduction of precursor organic compounds (POC) and ammonia (NH3) for the active composting phase as compared to uncontrolled windrow style composting. The emission factors indicative of 80% control of the active compost phase

*** PERMIT CONDITIONS ***

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and no control of the curing phase are as follows:
POC: 1.60 lb/wet ton (active composting + curing)
NH3: 0.19 lb/wet ton (active composting + curing)
Best management practices shall be implemented to ensure that the CASP composting systems are operating as designed and to prevent negative impacts on air quality. Examples of best management practices include, but are not limited to the following: regular monitoring of temperature, moisture content, and oxygen levels within the pile; and ongoing maintenance of piping, blowers, traps, biofilters, and cover material. Records shall be kept of all monitoring and maintenance activities conducted on CASP systems and shall be made available for inspection by District staff upon request. (Basis: Cumulative Increase)

4. In order to demonstrate compliance with Part 1, the Permit Holder shall keep a dated record of the material throughput in a District approved logbook. Material throughput shall be totaled on a monthly basis, and shall be made available for inspection by District staff upon request. (Basis: Cumulative Increase)

5. The material handling operations associated with S-34 and S-39 - such as loading, unloading, stockpiling, mixing, turning, and screening - shall be abated by water sprays (A-18), as necessary to comply with Part 6. Dry, dusty material shall be wetted down before unloading from truck beds, as necessary to comply with Part 7. (Basis: Regulations 1-301 and 6-1-305)

6. All roadways associated with this facility shall be maintained in a clean or wetted condition, as necessary to comply with Part 6.
(Basis: Regulations 1-301 and 6-1-305)

7. Visible dust emissions from any operation of this facility shall not exceed Ringelmann 1.0 or result in fallout on adjacent property in such quantities as to cause a public nuisance per Regulation 1-301. To ensure compliance with this part, the Permit Holder shall visually observe all material handling operations and roadways associated with these sources and shall immediately initiate corrective actions, if any visible

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dust emissions are detected that persist for longer than 3 minutes in an hour.
(Basis: Regulations 1-301, 6-1-301 and 6-1-305)

*8. During normal operations, the yard waste material shall be processed within 72 hours of receipt so that it does not decompose in the storage piles and generate odor on-site. In the event of an equipment breakdown or other unforeseeable circumstance that would prevent the processing of yard waste within 72 hours, yard waste may be stored for no more than 7 days. If any stockpile that has been stored for longer than 72 hours is deemed to be odorous by a District inspector, then the allowable stockpile storage time shall be reduced from 7 days back to 72 hours. Any stockpile that is deemed to be odorous by a District inspector shall be removed within 24 hours. (Basis: Regulation 1-301)

*9. If the plant receives two or more Violation Notices from the District for "Public Nuisance" in any consecutive 12 month period, the Permit Holder for these sources shall implement the following control measures, as applicable, or any other measures that the District deems necessary and appropriate within the time period specified by the District. If requested by the District, the Permit Holder shall submit to the District an application to modify the Permit to Operate and/or these permit conditions within 30 days of notification. (Basis: Regulation 1-301)

a. Enclose nuisance operations in a warehouse-like building.
b. Pave roadways associated with the nuisance operation.
c. Use chemical suppressants to control fugitive dust emissions from roadways associated with the nuisance operation.
d. Apply odor inhibitor solutions to odorous operations.
e. Install an odor abatement system.
f. Reduce the stockpile time allowed by Part 8.
g. Reduce the throughput rates allowed by Part 1.
h. Discontinue odorous co-composting operations (no use of sewage sludge) during the ozone season or

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other appropriate time period.

COND# 14098 *applies to S# 55*

Pursuant to BAAQMD Toxic Section Policy, this facility's annual gasoline throughput shall not exceed 940,000 gallons in any consecutive 12 month period.

COND# 16516 *applies to S# 55*

The owner/operator of the facility shall conduct and pass a Static Pressure Performance Test (Leak Test) CARB TP 206.3 at least once in each twelve-consecutive month period after the date of successful completion of the startup Static Pressure Performance Test.

The owner/operator shall:

- ≥ Notify Source Test by email (gdfnotice@baaqmd.gov) or Fax (510-758-3087), at least 48 hours prior to any required testing.
- ≥ Submit test results in a District-approved format within thirty (30) days of testing.
- ≥ For start-up tests results, cover sheet shall include the facility number (Facility ID) and application number of the Authority to Construct permit.
- ≥ For annual test results, cover sheet shall include the facility number (Facility ID) and identified as 'Annual' in lieu of the application number.
- ≥ Test results shall be emailed(gdfresults@baaqmd.gov) or mailed to the District's main office.

COND# 19865 *applies to S# 41*

For: S-41 Temporary Stockpiles for Yard and Green Waste Shredding Operations and A-18 Water Sprays

1. The total amount of waste material processed at the S-41 Temporary Stockpiles for Yard and Green Waste Shredding Operations shall not exceed 820 tons per day and shall not exceed 200,000 tons per year. (Basis: Cumulative Increase)

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2. In order to demonstrate compliance with Part 1, the Permit Holder shall maintain daily records, summarized on a monthly and annual basis, of the total amount of waste material processed at S-41. All records shall be maintained in an APCO approved log book, retained on site for a minimum of five years from the date of entry, and made available to District staff upon request. (Basis: Cumulative Increase)

3. Particulate emissions from the waste material unloading operations, waste material stockpiles, and shredded material stockpiles shall be abated by water sprays from water trucks (A-18) as necessary to prevent visible emissions and to prevent exceedance of the Regulation 6-1-301 Ringelmann 1.0 limit. (Basis: Regulations 6-1-301 and 6-1-305)

4. In order to demonstrate compliance with Part 3 and Regulations 6-1-301 and 6-1-305, the Permit Holder shall observe all material loading or unloading operations. If visible emissions are detected that persist for longer than 3 minutes in an hour, the operator of this source shall take the necessary corrective action to stop the emissions. (Basis: Regulations 2-1-403, 6-1-301, and 6-1-305)

COND# 19866 *applies to S# 42*

For: S-42 Soil and Cover Material Stockpiles; and
A-18 Water Sprays

1. The total amount material received at the S-42 Soil and Cover Material Stockpiles shall not exceed 1160 tons per day and shall not exceed 105,500 tons per year. (Basis: Cumulative Increase)

2. In order to demonstrate compliance with Part 1, the Permit Holder shall maintain daily records, summarized on a monthly and annual basis, of the total amount of material received at S-42. All records shall be maintained in an APCO approved log book, retained on site for a minimum of five years from the date of entry, and made available to District staff upon request.

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(Basis: Cumulative Increase)

3. Particulate emissions from the stockpiles and the material loading and unloading operations shall be abated by water sprays (A-18) as necessary to prevent visible emissions and to prevent exceedance of the Regulation 6-1-301 Ringelmann 1.0 limit. (Basis: Regulations 6-1-301 and 6-1-305)

4. In order to demonstrate compliance with Part 3 and Regulations 6-1-301 and 6-1-305, the Permit Holder shall observe all material loading or unloading operations. If visible emissions are detected that persist for longer than 3 minutes in an hour, the operator of this source shall take the necessary corrective action to stop the emissions. (Basis: Regulations 2-1-403, 6-1-301, and 6-1-305)

COND# 19867 *applies to S#'s 5, 76, 77, A60, A51*

For: S-5 Redwood Landfill - Waste Decomposition Process; abated by A-51 and A-60 Landfill Gas Flares, and A-80, Activated Carbon Treatment System;
S-76 Redwood Landfill - Waste and Cover Material Dumping; abated by A-18 Water Sprays; and
S-77 Redwood Landfill - Excavating, Bulldozing, and Compacting Activities; abated by A-18 Water Sprays

1. The maximum design capacity of the landfill (total volume of all wastes and cover materials placed in the landfill, excluding final cover) shall not exceed 25.0 million cubic yards, unless the Permit Holder can demonstrate that an increase of this design capacity limit will not result in any increases in the maximum permitted emission rates for the S-5 Redwood Landfill, A-51 Landfill Gas Flare, and A-60 Landfill Gas Flare, which are identified in the Engineering Evaluations for Applications #19098, #20607, and #24495. (Basis: Regulation 2-1-301)

2. The total cumulative amount of all decomposable materials placed in the landfill (total weight of all

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decomposable wastes and all decomposable cover materials placed in the landfill, excluding final cover) shall not exceed 541,140 tons per calendar year and shall not exceed 23.185 million tons, unless the Permit Holder can demonstrate that increases of these limits will not result in increases in waste decomposition related emissions. The maximum permitted fugitive precursor organic compound (POC) emission rate is 26.380 tons per year of POC from the S-5 Redwood Landfill. The maximum permitted residual POC emission rate is 7.716 tons per year from the flares (A-51 and A-60). Any changes in waste acceptance rates, types of waste accepted, or other practices that will result in an increase in the maximum permitted POC, NPOC, or toxic air contaminant emission rates for S-5 or A-51 or A-60, which are identified in the Engineering Evaluations for Applications #19098, #20607, and #24495 shall be considered a modification of S-5, A-51, or A-60 pursuant to Regulation 2-1-234. (Basis: Regulations 2-1-301 and 2-5-302, Cumulative Increase, and Offsets)

3. Total particulate emissions from the S-5 Redwood Landfill and the associated waste and cover material delivery, placement, and compaction operations shall not exceed 992.5 pounds of PM10 per day and shall not exceed 154.25 tons of PM10 per year. Compliance with these emission limits shall be demonstrated by meeting the requirements of Parts 3-11. The total amount of all materials accepted at the landfill (total waste for disposal, total materials for composting, total materials for recycling, and total decomposable cover materials, but excluding non-decomposable cover materials and construction materials, which are also excluded from the equivalent limit in the SWFP) shall not exceed 2310 tons per day (except during temporary emergency situations approved by the Local Enforcement Agency) and shall not exceed 718,410 tons per calendar year. The total amount of sewage sludge accepted at the landfill shall not exceed 310 wet tons per day (except during temporary emergency situations approved by the Local Enforcement Agency) and shall not exceed 96,410 wet tons per calendar year. (Basis: Regulation 2-1-301)

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

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4. The total amount of all cover materials (excluding final cover) placed in the landfill shall not exceed 1160 tons per day, with no more than 350 tons per day to consist of decomposable cover materials, and shall not exceed 360,760 tons per calendar year, with no more than 108,850 tons per calendar year from decomposable cover materials. (Basis: Regulation 2-1-301)

5. In order to demonstrate compliance with Parts 1-4 above, the Permit Holder shall maintain the following records in an APCO approved log book: a. Record on a daily basis the type and amount of all materials received at the landfill. b. For each type of material received at the landfill, clearly identify how the material will be used at this site (i.e. disposed of in the landfill directly, used as daily cover material, used as intermediate cover material, used in composting operations, sent to yard and green waste recycling operations, sent to other recycling operations, used for on-site road construction or surfacing, used for other construction purposes, sent to on-site stockpiles for later use, etc.). For material types that may be used for multiple purposes at this site, identify the amount of material used for each purpose. c. For each type of material received at the landfill, clearly identify whether the material is decomposable or inert. Inert materials are defined by Regulation 8-34-203. For the purposes of this condition, soils containing more than 50 ppm by weight of volatile organic compounds (VOC) or "contaminated soil" as defined in Regulation 8-40-205 are decomposable materials. Soils containing 50 ppm by weight VOC or less are inert materials. d. If cover materials are taken from on-site stockpiles, record on a daily basis the amount of material removed from the stockpiles and used as cover material (for each type of material). e. Summarize on a monthly basis: the total amount of all wastes accepted, the total amount of sewage sludge accepted, the total amount of accepted materials that were directly used as cover material, the amount of cover materials that were removed from on-site stockpiles, the total amount of materials used for cover, the total amount of decomposable cover materials, the total amount of decomposable wastes placed in the landfill, the total amount of non-decomposable wastes

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disposed of in the landfill, the total amount of decomposable materials placed in the landfill, and the total amount of all materials placed in the landfill. The Permit Holder shall begin maintaining the above records by no later than December 1, 2002. These records shall be kept at site for at least 5 years from the date the data is entered and shall be made available to the District staff for inspection. (Basis: Regulations 2-1-301, 8-34-501, and 40 CFR 60.758)

6. The mean vehicle fleet weight for all off-site vehicles traveling on paved roads shall not exceed 15.31 tons. The mean vehicle fleet weight for all off-site vehicles traveling on gravel or dirt roads shall not exceed 16.63 tons. (Basis: Regulation 2-1-301)

7. The mean vehicle fleet weight for all on-site landfilling and construction related vehicles (bulldozers, scrapers, back hoes, compactors, road graders, loaders, dump trucks, soil trucks, water trucks, fuel trucks, or maintenance vehicles, etc.) shall not exceed 28.37 tons. (Basis: Regulation 2-1-301)

8. The total vehicle miles traveled (VMT) by the off-site vehicle fleet shall not exceed the following limits:
   a. 280 VMT per day on gravel roads
   b. 639 VMT per day on dirt roads
   c. 662 VMT per day on paved roads
   d. 87,080 VMT per calendar year on gravel roads e. 198,650 VMT per calendar year on dirt roads f. 205,880 VMT per calendar year on paved roads (Basis: Regulation 2-1-301)

9. The total vehicle miles traveled (VMT) by the on-site vehicle fleet shall not exceed the following limits: a. 61 VMT per day (all travel is assumed to occur on dirt roads) b. 19,080 VMT per calendar year (all travel is assumed to occur on dirt roads) (Basis: Regulation 2-1-301)

10. In order to demonstrate compliance with Parts 6-9, the Permit Holder shall maintain the following records in an APCO approved log book: a. For each type of vehicle

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fleet (off-site vehicles and on-site construction equipment) maintain a list of all the types of vehicles in the fleet. For each vehicle type, record the empty vehicle weight, maximum load weight, and average vehicle weight (average of full and empty weights). This list shall be reviewed annually and updated whenever necessary to ensure that the list accurately reflects the types of vehicles that may be present at the landfill during any calendar year. b. For the off-site vehicle fleet, record on a daily basis and summarize on a monthly basis: the number of vehicle trips (round trips to/from the landfill) for each type of vehicle in the fleet. c. For the on-site vehicle fleet, record on a daily basis and summarize on a monthly basis: the number of vehicle trips for each type of vehicle in the fleet. For construction vehicles like bulldozers or compactors that have no set travel route but instead make many small trips across the active face, the number of vehicle trips can be estimated from operating times and procedures or odometer readings and the maximum round trip travel distance (see subpart f. below). If no data is available for estimating vehicle trips, the vehicle trips shall be recorded as 1 vehicle trip per day per vehicle used during that day. d. At least once per calendar year, the Permit Holder shall calculate and record the mean vehicle fleet weight for each type of vehicle fleet. For each vehicle fleet, the mean vehicle fleet weight shall be calculated using the vehicle trip data for: (i) the day with the highest number of vehicle trips during the previous calendar year; and (ii) the day with the highest total amount of waste accepted during the previous calendar year. Mean vehicle fleet weights shall also be recalculated whenever new vehicle types are added to a vehicle fleet. The mean vehicle fleet weight (MVFW) is a weighted average calculated by multiplying the average vehicle weight for each vehicle type (AVWi) times the number of vehicle trips per day for that vehicle type (DVTi), summing AVWi*DVTi for all vehicle types, and dividing the resulting sum by the total number of vehicle trips for that day (DVT). e. For the off-site vehicle fleet, the Permit Holder shall determine (using odometer measurements, maps, or other appropriate means) the maximum round trip distance traveled on-site by each vehicle type in the fleet on

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gravel roads, dirt roads, and paved roads (VMT per round trip per vehicle type per road type). Alternatively, the Permit Holder may determine a maximum round trip distance per road type for one or more groups of vehicle types, if all vehicle types in the group travel essentially the same roads and distances. This distance shall be determined at least once per calendar year and whenever significant changes to on-site travel routes have occurred. f. For the on-site vehicle fleet, the Permit Holder shall determine (using odometer measurements, maps, or other appropriate means) the maximum round trip distance traveled by each vehicle type in the fleet on dirt roads (VMT per round trip per vehicle type). Alternatively, the Permit Holder may determine a maximum round trip distance per road type for one or more groups of vehicle types, if all vehicle types in the group travel essentially the same roads and distances. This distance shall be determined at least once per calendar year and whenever significant changes to travel routes have occurred. g. For each vehicle fleet type, the Permit Holder shall calculate and record the total vehicle miles traveled (VMT) per day on each type of road (dirt, gravel, and paved for off-site vehicles and dirt only for on-site vehicles) using the data recorded pursuant to subparts b., c., d., and f. The daily VMT per road type shall be summarized for each calendar month and for each calendar year. The Permit Holder shall begin maintaining the above records by no later than December 1, 2002. These records shall be kept at site for at least 5 years from the date the data is entered and shall be made available to the District staff for inspection. (Basis: Regulations 2-1-301, 8-34-501, and 40 CFR 60.758)

11. Particulate emissions from any operation of the landfill shall be abated by A-18 Water Sprays in such a manner that visible dust emissions shall not exceed Ringelmann 1.0 or result in fallout on adjacent property in such quantities as to cause a public nuisance per Regulation 1-301. The Permit Holder shall meet the following minimum watering requirements: a. On any dry operating days, water shall be applied to unpaved roads and parking areas at a rate of 0.5 gallons per square yard or more. b. On any dry operating days, water shall be

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applied to unpaved roads at a frequency of at least once every three hours of operation. c. On any dry operating days, water shall be applied to unpaved parking areas or infrequently traveled unpaved roads at least twice per day or at least once per every 150 vehicle trips (whichever is more frequent). d. On any dry operating days, water shall be applied to the active landfill face, the active area of stockpiles, composting operations, or other dust prone areas at least twice per day. e. On any operating day when rain fall is not sufficient to prevent visible emissions, additional water shall be applied to any road, parking area, active face, stockpile, or dusty area as frequently as necessary to prevent visible emissions that persist for longer than 3 minutes in an hour.

In order to demonstrate compliance with this requirement, the Permit Holder shall maintain the following information in an APCO approved log book: f. Accurate maps of the facility showing the locations of all roads and parking areas at the facility (dirt, gravel, and paved roads shall be clearly distinguished), stockpiles, and active filling areas. The current travel routes for both off-site and on-site vehicle traffic and the water spray trucks shall be clearly indicated on the maps. g. Record the frequency of water spray applications (on gravel roads, dirt roads, stockpiles, the active face, and any other dust prone areas) for each operating day.
(Basis: Regulations 1-301, 2-1-301, and 6-1-301)

*12. If the plant receives two or more violation notices from the District for "Public Nuisance" in any consecutive 12 month period, the Permit Holder shall implement the following control measures, as applicable, or any other measures that the District deems necessary and/or appropriate, within the time period specified by the District. If requested by the District, the Permit Holder shall submit to the District a permit application to modify the Permit to Operate and/or these permit conditions, within 30 days of notification. (Basis: Regulation 1-301) a. Pave main haul roads and parking areas associated with the nuisance operation such as roads for landfilling, composting, recycling, or sludge handling operations. b. Add gravel or other aggregate based surfacing to dirt roads and parking areas that are associated with the nuisance

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operation. c. Use chemical suppressants on unpaved roads and unpaved parking areas that are associated with the nuisance operation. d. Increase the frequency of water application on unpaved roads, parking areas, the active face of the landfill, stockpiles, or any other dust prone areas that are associated with the nuisance operation. e. Use frequent sweeping and/or water flushing, during the dry season, on paved areas that are associated with the nuisance operation.

*13. The Permit Holder may use non-hazardous contaminated materials containing no more than 50 ppm by weight of Volatile Organic Compounds (VOC) as daily or interim cover material, provided that these materials are properly handled and disposed of in accordance with this part and any other applicable requirements. a. Any metal laden materials (materials that have been contaminated with arsenic, asbestos, beryllium, cadmium, hexavalent chromium, nickel, copper, lead, mercury, selenium, or zinc) shall be properly handled at all times and shall be abated by appropriate dust mitigation measures including: the use of covers during on-site transport, the use of frequent water sprays during active handling (loading, unloading, spreading, etc.) of these materials, and the use of water sprays, covers, or chemical dust suppressants on inactive storage areas. b. If metal laden materials are used as interim cover, the metal laden material shall be covered with a non-contaminated material such as clean soil or compacted green waste prior to subjecting the area to frequent vehicle or construction equipment traffic. c. Metal laden materials shall not be used in the construction of unpaved roadways or parking lots. (Basis: Regulation 2-5-302)

14. This part applies to the acceptance, handling, storage, and on-site reuse of VOC-laden soil. VOC-laden soil is any soil that contains volatile organic compounds, as defined in Regulation 8-40-213, other than contaminated soil. As defined in Regulation 8-40-205, contaminated soil contains more than 50 ppmw of VOC or has a surface concentration greater than 50 ppmv of VOC as C1, and contaminated soil is subject to Part 15 below instead of this part. Materials containing only non-volatile hydrocarbons and materials meeting the requirements of Regulation 8-40-113 are not subject to this part. For each lot of VOC-laden soil accepted at this site, the Permit Holder shall comply with

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the daily limits identified in either subpart a or subpart b below and shall comply with the annual emissions limit identified in subpart c below. To demonstration compliance with the daily and annual emission limits, the Permit Holder shall comply with the monitoring procedures listed in subpart a(i-v). If the Permit Holder opts to comply with the daily concentration limit in subpart b rather than the daily emission limit in subpart a, then the Permit Holder shall also comply with the soil screening procedures listed in subpart b(i-v). a. Unless the Permit Holder demonstrates compliance with Regulation 8-2-301 in accordance with subpart b below, the Permit Holder shall limit the quantity of VOC laden soil handled per day such that no more than 15 pounds of total carbon could be emitted to the atmosphere per day. In order to demonstrate compliance with this subpart and the annual emissions limit specified in subpart c, the Permit Holder shall maintain the following records in a District approved log for all VOC-laden soil accepted at the landfill. i. Record on a daily basis the amount of VOC laden soil accepted for each truckload or each soil lot, as appropriate. This amount (in units of pounds per day) is Q in the equation in subpart a(iii) below. ii. Record on a daily basis the VOC content for each truckload or each soil lot, as appropriate. This VOC Content (C in the equation below) should be expressed as parts per million by weight as total carbon (or C1). iii. Calculate and record on a daily basis the VOC Emission Rate (E) using the following equation: E = Q * C / 1E6 This equation may be applied to each truckload or to each soil lot received per day depending on the amount of soil that is represented by the VOC Content data. If the equation is applied to multiple loads per day, the VOC Emission Rate shall be totaled for all loads received each day. iv. Summarize all daily emission rates on a monthly and calendar year basis. v. All records shall be maintained on site or shall be made readily available to District staff upon request for at least 5 years from the date of entry. b. Unless the Permit Holder demonstrates compliance with Regulation 8-2-301 in accordance with subpart a above, the Permit Holder shall screen each lot of VOC laden soil accepted per day for VOC surface emissions to show that each lot of VOC laden soil is not contaminated soil. i. The Permit Holder shall use the testing procedures outlined in Regulation 8-40-604. ii. The screening test shall be representative of the entire lot of

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VOC-laden soil. The soil surface shall be disturbed prior to screening to ensure that the screening is representative of the entire load. iii. The Permit Holder shall maintain records of all testing conducted to satisfy this subpart and shall record the amount of VOC-laden soil accepted and the highest surface concentration measured pursuant to this subpart. These records shall be maintained for each truckload or each soil lot accepted, as appropriate, provided that the records are made or summarized on at least a daily basis. iv. Summarize the daily waste acceptance rates and the weighted average of the surface concentration records on a monthly basis and for each calendar year. v. All records shall be maintained on site or shall be made readily available to District staff upon request for at least 5 years from the date of entry. c. The Permit Holder shall limit the quantity of VOC laden soil handled per year such that annual VOC emissions due to on-site handling, storage, disposal, or reuse of VOC laden soil shall not exceed 10,530 pounds per calendar year. The Permit Holder shall comply with the monitoring procedures in subpart a(i-v) above to demonstrate compliance with this annual emissions limit. (Basis: Offsets and Regulation 8-2-301)

15. Handling Procedures for Soil Containing Volatile Organic Compounds: a. The procedures listed below in subparts b-l do not apply if the following criteria are satisfied. However, the record keeping requirements in subpart m below are applicable. i. The Permit Holder has appropriate documentation demonstrating that either the organic content of the soil or the organic concentration above the soil is below the "contaminated" level (as defined in Regulation 8, Rule 40, Sections 205, 207, and 211). The handling of soil containing VOCs in concentrations below the "contaminated" level is subject to Part 14 above. ii. The Permit Holder has no documentation to prove that soil is not contaminated, but source of the soil is known and there is no reason to suspect that the soil might contain organic compounds. b. The Permit Holder shall provide notification to the Compliance and Enforcement Division of the Permit Holder's intention to accept contaminated soil at the facility at least 24 hours in advance of receiving the contaminated soil. The Permit Holder shall provide an estimate of the amount of contaminated soil to be received, the degree of contamination (range and average VOC Content), and the type

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or source of contamination. c. Any soil received at the facility that is known or suspected to contain volatile organic compounds (VOCs) shall be handled as if the soil were contaminated, unless the Permit Holder receives test results proving that the soil is not contaminated. To prove that the soil is not contaminated, the Permit Holder shall collect soil samples in accordance with Regulation 8-40-601 within 24 hours of receipt of the soil by the facility. The organic content of the collected soil samples shall be determined in accordance with Regulation 8-40-602. i. If these test results indicate that the soil is still contaminated or if the soil was not sampled within 24 hours of receipt by the facility, the Permit Holder must continue to handle the soil in accordance with the procedures subparts d-1 below, until the soil has completed treatment or has been placed in a final disposal location and adequately covered. Storing soil in a temporary stockpile or pit is not considered treatment. Co-mingling, blending, or mixing of soil lots is not considered treatment. ii. If these test results indicate that the soil - as received at the facility - has an organic content of 50 ppmw or less, then the soil may be considered to be not contaminated and need not be handled in accordance with the procedures listed in subparts d-1 below, but shall be handled in accordance with Part 14 above. d. Any contaminated soil received at the facility shall be clearly identified as contaminated soil, shall be handled in accordance with subparts e-1 below, and shall be segregated from non-contaminated soil. Contaminated soil lots may not be co-mingled, blended, or otherwise mixed with non-contaminated soil lots prior to treatment, reuse, or disposal. Mixing soil lots in an attempt to reduce the overall concentration of the contaminated soil or to circumvent any requirements or limits is strictly prohibited. e. On-site handling of contaminated soil shall be limited to no more than 2 on-site transfers per soil lot. For instance, unloading soil from off-site transport vehicles into a temporary storage pile is considered one transfer. Moving soil from a temporary storage to a staging area is considered one transfer. Moving soil from a temporary storage pile to a final disposal site is one transfer. Moving soil from a staging area to a final disposal site is one transfer. Therefore, unloading soil from off-site transport into a temporary storage pile and then moving the soil from that temporary storage pile to the

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final disposal site is allowed. Unloading soil from off-site transport into a staging area and then moving the soil from that staging area to the final disposal site is allowed. However, unloading soil from off-site transport to a temporary storage pile, moving this soil to a staging area, and then moving the soil again to a final disposal site is 3 on-site transfers and is not allowed. f. All contaminated soil shall be either treated, deposited in a final disposal site, or transported off-site for treatment, within 90 days of receipt at the facility. g. The total amount of contaminated soil disposed of at this site shall not exceed 6240 tons during any calendar year. The Permit Holder shall apply for a change of conditions before accepting any soil containing more than 100 ppm by weight of VOC. (Basis: Offsets) h. All active storage piles shall meet the requirements of Regulation 8-40-304 by using water sprays, vapor suppressants or approved coverings to minimize emissions. The exposed surface area of any active storage pile (including the active face at a landfill) shall be limited to 6000 ft2. The types of storage piles that may become subject to these provisions include (but are not limited to) truck unloading areas, staging areas, temporary stockpiles, soil on conveyors, bulldozers or trucks, the active face of a landfill, or other permanent storage pile at the final disposal location. i. All inactive storage piles shall meet the requirements of Regulation 8-40-305 including the requirement to cover contaminated soil during periods of inactivity longer than one hour. The types of storage piles that may become subject to these provisions include (but are not limited to) soil on trucks or other on-site equipment, staging areas, temporary stockpiles, and the permanent storage pile at the final disposal location. District approved coverings for inactive storage piles include continuous heavy-duty plastic sheeting (in good condition, joined at the seams, and securely anchored) or encapsulating vapor suppressants (with re-treatment as necessary to prevent emissions). j. The Permit Holder must: i. Keep contaminated soil covered with continuous heavy-duty plastic sheeting (in good condition, joined at the seams, and securely anchored) whenever soil is to be stored in temporary stockpiles or during on-site transport in trucks. Soil in trucks shall not be left uncovered for more than 1 hour. ii. Establish a tipping area for contaminated soils near the active face that is isolated from the tipping area

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for other wastes. iii. Spray contaminated soil with water or vapor suppressant immediately after dumping the soil from a truck at the tipping area. iv. Ensure that all contaminated soil is transferred from the tipping area to the active face immediately after spraying with water or vapor suppressant. v. Ensure that contaminated soil in the tipping area is not disturbed by subsequent trucks. Trucks shall not drive over contaminated soil in the tipping area or track contaminated soil out of the tipping area on their wheels. vi. Spray contaminated soil on the active face with water or vapor suppressant (to keep the soil visibly moist) until the soil can be covered with an approved covering. vii. Limit the area of exposed soil on the active face to no more than 6000 ft2. viii. Ensure that contaminated soil spread on the active face is completely covered on all sides with one of the following approved coverings: at least 6 inches of clean compacted soil, at least 12 inches of compacted garbage, or at least 12 inches of compacted green waste. ix. Ensure that covering of soil on the active face is completed within one hour of the time that the soil was first dumped from a truck at the tipping area. k. Contaminated soil shall not be used as daily, intermediate, or final cover material for landfill waste operations unless the requirements of Regulation 8, Rule 40, Sections 116 or 117 have been satisfied. l. Contaminated soil is considered to be a decomposable solid waste pursuant to Regulation 8, Rule 34. All contaminated soil disposed of at a site shall be included in any calculations of the amount of decomposable waste in place for annual reporting requirements or for purposes of Regulation 8-34-111 or 8-34-304. m. The Permit Holder shall keep the following records for each lot of soil received, in order to demonstrate on-going compliance with the applicable provisions of Regulation 8, Rule 40 and this part. i. For all soil received by the facility (including soil with no known contamination), record the arrival date at the facility, the soil lot number, the amount of soil in the lot, the organic content or organic concentration of the lot (if known), the type of contamination (if any), and keep copies of any test data or other information that documents whether the soil is contaminated (as defined in 8-40-205) or not contaminated, with what, and by how much. ii. If the soil is tested for organic content after receipt by the facility, a report with the sampling date, test results, and the date results were received. iii. For all on-site

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handling of contaminated soil, use a checklist or other approved method to demonstrate that appropriate procedures were followed during all on-site handling activities. One checklist shall be completed for each day and for each soil lot (if multiple lots are handled per day). iv. For soil aerated in accordance with 8-40-116 or 117 record the soil lot number, the amount of soil in the lot, the organic content, the final placement date, the final placement location, and describe how the soil was handled or used on-site. v. For final disposal at a landfill, record on a daily basis the soil lot number, the amount of soil placed in the landfill, the disposal date, and the disposal location. vi. Summarize the total amount of contaminated soil disposed of at this site on a monthly and calendar year basis to demonstrate compliance with subpart g.
All records shall be retained for at least 5 years from the date of entry and shall be made available for District inspection upon request. (Basis: Offsets and Regulation 8-40-301, 8-40-304 and 8-40-305)

16. During all times that the landfill gas collection system is operating, all collected landfill gas shall be vented to one of the following control system configurations: A-51 Landfill Gas Flare operating alone, A-60 Landfill Gas Flare operating alone, or A-51 and A-60 operating concurrently. In order to Assure compliance with this condition, A-51 and A-60 shall be equipped with local and remote alarms and auto restart capabilities. Upon completion of construction of the energy plant, landfill gas may be diverted from the flares to the landfill gas treatment system (S-71) followed by combustion in one or more of the energy plant engines (S-64, S-65, S-66, and S-67), provided this diversion does not result in any significant decrease in the overall landfill gas collection rate for the site. At least one flare (A-51 or A-60) shall continue to operate at all times during diversion of landfill gas to the treatment system and energy plant to control generated landfill gas that exceeds the capacity of the operational engines and to abate the emissions from the desorption cycle at S-71. (Basis: 8-34-301.1, 8-34-301.3, and 40 CFR 60.752(b)(2)(iii))

17. The landfill gas collection system described in subpart a below shall be operated continuously as defined in

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Regulation 8-34-219. Wells, collectors, and adjustment valves shall not be shut off, disconnected, or removed from operation without written authorization from the District, unless the Permit Holder complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118. The Permit Holder shall apply for and receive a Change of Conditions before altering the landfill gas collection system described in subpart a below. Increasing or decreasing the number of wells or collectors, or significantly changing the length of collectors or the locations of wells or collectors are alterations that are subject to this requirement. Adding or altering risers, laterals, or header pipes is not subject to this requirement. The authorized number of landfill gas collection system components is the baseline count listed below plus any components added and minus any components decommissioned pursuant to Part 17b as evidenced by start-up/shut-down notification letters submitted to the District. a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below, which includes all start-up/shut-down notifications submitted through July 12, 2019. Well and collector locations, depths, and lengths are as described in detail in Permit Application #30065.
Required Compon
ents
Total Number of Vertical Wells: 101
Total Number of Horizontal Collectors: 9 b. The Permit Holder has been authorized to make the following alterations to the landfill gas collection system components listed below. Specific well and collector locations, depths, and lengths of associated piping are as described in detail in Permit Application #30065.
Minimum Maximum
Install New Vertical Wells: 0 100
Decommission Vertical Wells: 0 50
Install New Horizontal Collectors 0
50
Decommission Horizontal Collectors 0
15Replace Vertical Wells * 0 unlimited
one-for-one well replacement at new optimal locations Wells installed or shutdown pursuant to subpart b shall be added to or removed from subpart a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415.

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The Permit Holder shall maintain records of the decommissioning date for each well that is shut down and the initial operation date for each new well.
(Basis: Regulations 2-1-301, 8-34-301.1, 8-34-304, 8-34-305, and 2-6-413)

18. The concentrations of non-methane organic compounds (NMOC), toxic air contaminants (TAC), and total reduced sulfur (TRS) compounds in landfill gas collected from the S-5 Redwood Landfill shall not exceed the limits listed below.
a. Total Non-Methane Organic Compounds: 360 ppmv (calculated as hexane equivalent)
(Basis: Cumulative Increase and Offsets)
*b. For toxic air contaminants (TACs):

Compound	Concentration
Acrylonitrile	300 ppbv
Benzene	1,500 ppbv
Benzyl Chloride	500 ppbv
Carbon Tetrachloride	200 ppbv
Chlorobenzene	200 ppbv
Chloroethane	500 ppbv
Chloroform	200 ppbv
1,4 Dichlorobenzene	1,000 ppbv
Ethyl Benzene	4,000 ppbv
Ethylene Dibromide	200 ppbv
Ethylene Dichloride	200 ppbv
Ethylidene Dichloride	500 ppbv
Hexane	2,000 ppbv
Isopropyl Alcohol	10,000 ppbv
Methyl Alcohol	300,000 ppbv
Methyl Ethyl Ketone	15,000 ppbv
Methylene Chloride	1,000 ppbv
Methyl tert-Butyl Ether	500 ppbv
Perchloroethylene	1,000 ppbv
Styrene	500 ppbv
1,1,2,2 Tetrachloroethane	200 ppbv
Toluene	20,000 ppbv
1,1,1 Trichloroethane	200 ppbv
Trichloroethylene	500 ppbv
Vinyl Chloride	2,000 ppbv
Vinylidene Chloride	500 ppbv
Xylenes	20,000 ppbv

(Basis: Regulation 2-5-302) c. The concentration of total reduced sulfur compounds (TRS) in collected landfill gas

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shall not exceed an annual average of 350 ppmv (calculated as H2S) and shall not exceed the following peak limits (calculated as H2S) during any single test:
505 ppmv of TRS, during 2011-2014;
450 ppmv of TRS, during 2015-2018;
410 ppmv of TRS, during 2019-2022;
370 ppmv of TRS, during 2023 and later. The peak and annual average TRS concentrations shall be measured and calculated in accordance with Parts 31a and 31b. (Basis: Cumulative Increase, RACT, AB-2588 Air Toxics Hot Spots Act, and Regulations 2-5-302.3, 9-1-302, and 9-2-301)

19. The A-51 and A-60 Landfill Gas Flares shall be fired on landfill gas. Upon completion of construction of the S-71 Gas Treatment System, waste gas from the desorption cycle o S-71 may be delivered to either flare (A-51 or A-60) for control. During any time that desorption cycle waste gases are being vented to a flare, a sufficient amount of landfill gas shall be burned as fuel in the flare to ensure that the flare continues to meet all temperature and emission limits specified in Parts 22-27 below. (Basis: RACT and Regulation 2-2-112)

20. The throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day. The throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day. The total throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 and A-60 Flares combined shall not exceed 2625 million scf during and consecutive 12 month period. In order to demonstrate compliance with this condition, the A-51 and A-60 Flares shall each be equipped with one or more properly operating continuous gas flow meters.
(Basis: Cumulative Increase, 40 CFR 60.756(b)(2)(i))

21. [deleted]

22. The temperature in the combustion zone of each flare shall be maintained at the minimum temperature listed below, averaged over any 3-hour period. In order to demonstrate compliance with this condition, A-51 and A-60 shall each be equipped with a continuous temperature monitor and recorder.

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The A-60 Flare shall be equipped with a continuous temperature monitor in each operating zone of the stack (Zone A and Zone B). The temperature recorder for A-60 shall continuously record either the Zone A or Zone B temperature, compatible with the zone the flare is operating in. If a source test demonstrates compliance with all Applicable requirements at a different temperature, the APCO may revise these temperature limits, in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature is not less than 1400 degrees F. (Basis: Regulations 2-5-302, 8-34-301.3 and 8-34-501.3, and 40 CFR 60.756(b)(1)) a. The minimum combustion zone temperature for A-51 is 1400 degrees F, averaged over any 3-hour period. b. The minimum combustion zone temperature for each stack zone at A-60 (Zone A and Zone B) is 1400 degrees F, averaged over any 3-hour period.

23. The A-51 and A-60 Landfill Gas Flares shall comply with the NMOC emission limit in Regulation 8-34-301.3. (Basis: Cumulative Increase, 8-34-301.3, and 40 CFR 60.752(b)(2)(iii)(B))

*24. [deleted]

25. Nitrogen oxides (NOx) emissions from each enclosed flare (A-51 and A-60) shall not exceed 0.06 pounds of NOx, calculated as NO2, per million BTU. Compliance with this emission limit may be demonstrated by not exceeding the following flue gas concentration limit:
15 ppmv of NOx, corrected to 15% oxygen, dry basis.
(Basis: RACT and Offsets)

26. Carbon monoxide (CO) emissions from each enclosed flare (A-51 and A-60) shall not exceed 0.20 pounds of CO per million BTU. Compliance with this emission limit may be demonstrated by not exceeding the following flue gas concentration limit: 82 ppmv of CO, corrected to 15% oxygen, dry basis.
(Basis: RACT and Cumulative Increase)

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27. Sulfur dioxide (SO2) emissions from each enclosed flare (A-51 and A-60) shall not exceed 1.69 pounds of SO2 per million BTU and shall not exceed the Regulation 9-1-302 flue gas concentration limit of 300 ppmv of SO2. (Basis: RACT, Cumulative Increase, and Regulation 9-1-302)

28. [deleted]

29. The Permit Holder shall maintain records of all planned and unanticipated shut downs of the A-51 and A-60 Flares and of any temperature excursions. The records shall include the date, time, duration, and reason for any shut down or excursion. Any unanticipated shut downs or temperature excursions shall be reported to the Enforcement Division immediately. All inspection and maintenance records, records of shut downs and excursions, gas flow records, temperature records, analytical results, source test results, and any other records required to demonstrate compliance with the above permit conditions, Regulation 8 Rule 34, or 40 CFR Part 60 Subpart WWW shall be retained on site for a minimum of five years and shall be made available to District staff upon request. (Basis: 2-6-501, 8-34-501, 40 CFR 60.758)

30. In order to demonstrate compliance with Parts 22, 23, 25, 26, and 27 above, Regulations 8-34-301.3, 8-34-412, 9-1-302, and 40 CFR 60.8 and 60.752(b)(2)(iii)(B), the Permit Holder shall ensure that a District approved source test is conducted annually on the A-51 Landfill Gas Flare and the A-60 Landfill Gas Flare. Within 90 days of initial start-up of he gas treatment system (S-71), the owner/operator shall conduct an initial compliance demonstration test on a flare during a desorption cycle event when waste gas from the gas treatment system is being vented to the flare for control. In addition to Parts 30(a-g) below, the owner/operator shall also determine Parts 30(h-k) while the flare is controlling desorption cycle waste gases. Each annual source test shall determine the following: a. landfill gas flow rate to the flare (dry basis); b. concentrations (dry basis) of carbon dioxide (CO2), nitrogen (N2), oxygen (O2), methane (CH4), and total non-methane organic compounds (NMOC) in the landfill gas; c. stack gas flow rate from the flare (dry basis); d. concentrations (dry basis) of NOx, CO, NMOC, and O2 in the flare stack gas; e. NMOC destruction efficiency achieved by the flare; f. NOx and CO emission rates from the

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flare in units of pounds per million BTU, g. average combustion zone temperature in the flare during the test period.
Upon completion of construction of the gas treatment system and energy plant, the owner/operator shall determine the following during initial and annual source tests. h. desorption cycle waste gas flow rate to the flare (dry basis) i. concentrations of NMOC (expressed as CH4) and total sulfur (expressed as H2S) in the desorption cycle waste gas. During the initial compliance demonstration test for this new process, the operator shall take sufficient readings during the entire desorption cycle to capture both the peak and average MOC and sulfur concentrations over the entire cycle. j. concentration of sulfur dioxide (SO2) in the flare stack gas; k. SO2 emission rate in units of pounds per million BTU.
Annual source tests shall be conducted no later than 12 months after the previous test. The annual source test at A-60 may be conducted while it is operating in either zone, provided that each operating zone is tested at least once every five years. The Source Test Section of the District shall be contacted to obtain approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date.
(Basis: Cumulative Increase, RACT, Offsets, Regulations 2-5-501, 8-34-301.3, 8-34-412, 40 CFR 60.8 and 40 CFR 60.752(b)(2)(iii)(B))

31. Landfill Gas Testing:
    a. The Permit Holder shall conduct a characterization of the landfill gas on a quarterly basis with one test concurrent with one of the annual source tests required by Part 30 above. The landfill gas sample shall be drawn from the main landfill gas header. Each quarterly landfill gas sample shall be analyzed for the sulfur compounds listed below. Once per year (concurrent with a Part 30 annual source test) the landfill gas shall be analyzed for all the organic and sulfur compounds listed below. All concentrations shall be reported on a dry basis. The

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laboratory analysis report for the annual organic and sulfur compound gas characterization test shall be included with the Part 30 source test report and shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date. (Basis: AB-2588 Air Toxics Hot Spots Act, Cumulative Increase, and Regulations 2-5-302, 8-34-412, 9-1-302, and 9-2-301)

Sulfur Compounds
carbon disulfide
carbonyl sulfide
dimethyl sulfide
ethyl mercaptan
hydrogen sulfide
methyl mercaptan

Organic Compounds
acrylonitrile
benzene
benzyl chloride
carbon tetrachloride
chlorobenzene
chloroethane
chloroform
1,1 dichloroethane
1,1 dichlorethene
1,2 dichlorethane
1,4 dichlorobenzene
ethylbenzene
ethylene dibromide
hexane
isopropyl alcohol
methyl alcohol
methyl ethyl ketone
methylene chloride
methyl tert-butyl ether
perchloroethylene
styrene
toluene
1,1,2,2 tetrachloroethane
1,1,1 trichloroethane
trichloroethylene
vinyl chloride

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xylenes

b. Once per week, beginning no later than March 31, 2005, the Permit Holder shall analyze the landfill gas for hydrogen sulfide (H2S) concentration using a Draeger tube to further demonstrate compliance with Part 18c and Regulation 9-1-302. The landfill gas sample shall be drawn from the main landfill gas header. The Permit Holder shall follow the manufacturer's procedures for using the Draeger tube and interpreting the results. The total reduced sulfur (TRS) content of the landfill gas shall be calculated using the average ratio of TRS/H2S for this site according to the following equation: TRS = 1.015 * H2S measured by Draeger tube. The Permit Holder shall maintain records of all Draeger tube test dates and test results and shall summarize the average H2S concentrations and the calculated TRS content of the landfill gas on a quarterly basis. Each Draeger tube test result (after conversion to TRS content) and the quarterly laboratory analysis in Part 31a shall be compared to the Peak TRS Limit in Part 18c. On a rolling quarterly basis, the Permit Holder shall determine the annual average TRS content for comparison to the Annual Average TRS Limit in Part 18c. (Basis: Cumulative Increase, RACT, and Regulations 9-1-302 and 9-2-301).

32. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting period for the first increment of the Regulation 8-34-411 annual report that is submitted subsequent to the issuance of the MFR Permit for this site shall be from December 1, 2003 through April 30, 2004. This first increment report shall be submitted by May 31, 2004. The reporting periods and report submittal due dates for all subsequent increments of the Regulation 8-34-411 report shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F of the MFR Permit for this site. A single report may be submitted to satisfy the requirements of Section I.F, Regulation 8-34-411, and 40 CFR Part 63.1980(a), provided that all items

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required by each applicable reporting requirement are included in the single report. (Basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))

33. Within 3 months of approval of the permit condition changes pursuant to Application # 20607, the Permit Holder shall submit a proposal for monitoring ground level hydrogen sulfide concentrations at or near the fence line or property boundary for this facility and a proposal that identifies all feasible hydrogen sulfide emission reduction measures that could be implemented at this site if necessary. The Permit Holder shall initiate hydrogen sulfide monitoring within 3 months of receiving District approval for the monitoring protocol. If a measured hydrogen sulfide concentration at the fence line or property boundary exceeds a concentration limit in Regulation 9-2-301 (0.03 ppmv averaged over 60 minutes or 0.06 ppmv averaged over 3 minutes), the Permit Holder shall notify the District of the excess and shall implement any hydrogen sulfide emission reduction measures required by the District at that time. Ground level hydrogen sulfide monitoring may be discontinued five years after this facility ceases waste disposal activities or when the TRS content in the collected landfill gas (measured pursuant to Part 31b) is less than 110 ppmv of TRS for at least 8 consecutive quarters, whichever occurs sooner. (Basis: Regulation 9-2-301)

COND# 22850 *applies to S# 78*

1. The owner/operator shall not exceed 50 hours per year per engine for reliability-related testing.
   [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

2. The owner/operator shall operate each emergency standby engine only for the following purposes: to mitigate emergency conditions, for emission testing to demonstrate compliance with a District, State or Federal emission limit, or for reliability-related activities (maintenance and other testing, but excluding emission

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testing). Operating while mitigating emergency conditions or while emission testing to show compliance with District, State or Federal emission limits is not limited.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

3. The owner/operator shall operate each emergency standby engine only when a non-resettable totalizing meter (with a minimum display capability of 9,999 hours) that measures the hours of operation for the engine is installed, operated and properly maintained.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

4. Records: The owner/operator shall maintain the following monthly records in a District-approved log for at least 36 months from the date of entry (60 months if the facility has been issued a Title V Major Facility Review Permit or a Synthetic Minor Operating Permit). Log entries shall be retained on-site, either at a central location or at the engine's location, and made immediately available to the District staff upon request.
   a. Hours of operation for reliability-related activities (maintenance and testing).
   b. Hours of operation for emission testing to show compliance with emission limits.
   c. Hours of operation (emergency).
   d. For each emergency, the nature of the emergency condition.
   e. Fuel usage for each engine(s).
   [Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

5. At School and Near-School Operation:
If the emergency standby engine is located on school grounds or within 500 feet of any school grounds, the following requirements shall

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apply:

The owner/operator shall not operate each stationary emergency standby diesel-fueled engine for non-emergency use, including maintenance and testing, during the following periods:

a. Whenever there is a school sponsored activity (if the engine is located on school grounds)
b. Between 7:30 a.m. and 3:30 p.m. on days when school is in session.

"School" or "School Grounds" means any public or private school used for the purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in a private home(s). "School" or "School Grounds" includes any building or structure, athletic field, or other areas of school property but does not include unimproved school property.
[Basis: Title 17, California Code of Regulations, section 93115, ATCM for Stationary CI Engines]

COND# 23052 *applies to S# 58*

For: S-58 Aerated Leachate Pond

1. The total leachate influent rate to the S-58 Aerated Leachate Pond, excluding non-contact storm water runoff, shall not exceed 39.42 million gallons during any consecutive 12-month period. (Basis: POC Offsets and NSR for TAC)

2. The average concentration of POC in the leachate influent to S-58 shall not exceed 500 ppb by weight. (Basis: POC Offsets)

3. The average concentrations of specified toxic air

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contaminants in the leachate influent to S-58 shall not exceed the limits identified in subparts a-c below. (Basis: NSR for TAC)

a. no more than 19 ppb by weight of benzene
b. no more than 48 ppb by weight of 1,4-dichlorobenzene
c. no more than 7 ppb by weight of vinyl chloride

4. To demonstrate compliance with Parts 2 and 3 above, the Permit Holder shall conduct annual analyses on the leachate influent to the S-58 Aerated Leachate Pond in accordance with the following procedures. (Basis: POC Offsets and NSR for TAC)

a. Leachate samples shall be collected from at least two leachate wells per year on a rotating basis in accordance with Waste Discharge Requirement Order Number 95-110.
b. Each leachate sample shall be analyzed for the concentration by weight of critical organic compounds (COC), benzene, 1,4-dichlorobenzene, and vinyl chloride. These concentrations shall be determined using Regional Water Quality Control Board methods that measure wastewater for the concentration of each organic compound having a carbon number of C-14 or less using gas chromatography. The COC concentration is equal to the sum of all detected concentrations minus the concentration of any compound excluded from COC pursuant to Regulation 8-8-210. Alternatively, COC concentration may be determined in accordance with Regulation 8-8-601.
c. For each sample analyzed, the concentration of POC shall be calculated by subtracting the detected concentration for any non-precursor organic compounds (NPOC) from the total COC concentration determined above. NPOC are defined in Regulation 2-1-207 and include but are not limited to: acetone, methylene chloride, perchloroethylene, 1,1,1 trichloroethane, many chlorofluorocarbons, and most perfluorocarbons compounds.
d. For each annual wastewater testing event, the Permit Holder shall calculate and record the average concentrations (in ppb by weight) of POC, benzene, 1,4-dichlorobenzene, and vinyl chloride

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for all of the samples analyzed pursuant to subpart a. If a concentration is reported as non-detect for a compound, the detection limit for that compound shall be used for this average concentration computation.

e. The Permit Holder shall retain all analytical results, calculations, and records required by this part for at least five years from the date of entry. All records shall be kept on site or made available to District staff upon request.

5. To demonstrate compliance with Part 1, the Permit Holder shall calculate and record the total leachate flow rate to S-58 for each month (gallons per month) and the total cumulative flow rate to S-58 for each rolling 12-month period (millions of gallons per year). The monthly leachate flow rate records shall clearly identify each leachate pump station that contributed to the total monthly flow rate, the procedures used to calculate the monthly leachate flow rate to S-58, and any records necessary to verify these calculated flow rates. These records shall be retained for at least five years from the date of entry. All records shall be kept on site or made available to District staff upon request. (Basis: POC Offsets and NSR for TAC)

COND# 24527 *applies to S#'s 61, 62*

For: S-61 Portable Diesel Engine for Waste Tipper and S-62 Portable Diesel Engine for Power Screens

1. The owner/operator of the S-61 and S-62 Portable Diesel Engines has been issued permits for portable sources (also known as nonroad engines by federal definitions) that are subject to Regulation 2-1-220 and the CARB ATCM for diesel PM from portable engines. Based on these portable source and nonroad engine determinations, these engines are not subject to the CARB ATCM for stationary compression ignition engines, the federal NSPS requirements for stationary compression

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ignition engines (40 CFR Part 60, Subpart IIII), or the federal NESHAP requirements for stationary reciprocating internal combustion engines (40 CFR, Part 63, Subpart ZZZZ). To retain these portable source and nonroad engine determinations, the owner/operator shall not operate any of these engines in one on-site location for more than 12 consecutive months. Any backup or standby engine that replaces one of these engines at the same on-site location and is intended to perform the same function will be counted toward this time limitation. The owner/operator shall not move equipment and then return it to the same location in an attempt to circumvent the portable equipment time requirement. (Basis: Regulations 2-1-220.1-3, 2-1-220.10, CCR ¶93116.2(a)(28), and 40 CFR 1068.30)

2. The owner/operator shall fire the S-61 and S-62 Portable Diesel Engines exclusively with CARB diesel fuel. (Basis: Cumulative Increase, TBACT, Regulation 2-5-302, and CCR ¶93116.3(a))

3. The total combined operating time for S-61 and S-62 shall not exceed 4,992 hours during any consecutive 12-month period. (Basis: Regulation 2-5-302, Cumulative Increase, and Offsets)

4. The owner/operator shall equip each engine (S-61 and S-62) with either a non-resettable totalizing meter that measures hours of operation for each engine or a non-resettable fuel usage meter that uses the maximum hourly fuel usage rate for each engine to convert fuel usage rate per engine into hours of operation per engine. (Basis: Cumulative Increase and Offsets)

5. To demonstrate compliance with the above conditions, the owner/operator shall maintain the following records in a District approved

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log and shall make these records available to District staff upon request. All records shall be retained for at least five years from the date of entry. These record-keeping requirements shall not replace the record-keeping requirements contained in any applicable District or state regulations. (Basis: Cumulative Increase, Offsets, Regulations 2-1-220 and 2-5-302, CCR §93116.2(a)(28), and 40 CFR 1068.30)

a. On a monthly basis, record the hours of operation per calendar month for each engine and the total operating hours per calendar month for both engines.

b. If the engines are using fuel usage meters instead of operating time meters, record the fuel usage rate per engine on a monthly basis in addition to the calculated hours of operation for subpart a.

c. Summarize the total 12-month operating time for S-61 and S-62 after the first 12 consecutive months of operation. Thereafter, on a monthly basis, maintain a summary of the total 12-month operating time for the two engines combined for each subsequent consecutive rolling 12-month period.

d. The owner/operator shall maintain annual records of engine operating locations, waste placement locations, power screen operating procedures, or other documentation, which demonstrates to the APCO's satisfaction that S-61 and S-62 have satisfied the portability criteria in Part 1.

COND# 25634 *applies to S#'s 5, 64, 65, 71, A60, A51*

For All Landfill Gas Fired Combustion Equipment at Plant #1179

1. The total landfill gas throughput to the landfill gas

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combustion equipment located at Plant # 1179 shall not exceed 2625 million scf of landfill gas during any consecutive rolling 4 quarter period. For the purposes of this condition, landfill gas fired combustion equipment includes the following devices: A-51, A-60, S-64, and S-65. (Basis: Regulation 2-1-403 and Cumulative Increase)

2. Total carbon monoxide (CO) emissions from all landfill gas fired combustion equipment located at Plant # 1179 shall not exceed 237.5 tons of CO during any consecutive rolling 4 quarter period. (Basis: Regulation 2-1-403, Cumulative Increase, Not Trigger PSD)
3. Total sulfur dioxide (SO2) emissions from all landfill gas fired combustion equipment located at Plant # 1179 shall not exceed 99.0 tons of SO2 during any consecutive rolling 4 quarter period. (Basis: Regulation 2-1-403, Cumulative Increase, Not Trigger SO2 Offsets)
4. To demonstrate compliance with Parts 1-3, the owner/operator of Plant # 1179 shall comply with the following record keeping procedures. (Basis: Regulation 2-1-403 and Cumulative Increase)
   a. On a quarterly basis, the owner/operator shall calculate and record the combined total landfill gas flow rate to: A-51, A-60, S-64, and S-65 based on gas flow meter data for each of these devices, and the owner/operator shall summarize this quarterly total landfill gas throughput rate for each rolling 4 quarter period.
   b. On a quarterly basis, the owner/operator shall calculate and record the CO and SO2 emissions (tons per quarter) from each landfill gas fired combustion device located at this site (A-51, A-60, S-64, and S-65). The CO and SO2 emissions shall be calculated using District approved procedures based on flow meter data, portable analyzer readings, source test data, conversion factors, and operating records for each type of device.
   c. The owner/operator shall calculate and record the total CO emissions and total SO2 emissions from all landfill combustion devices for each quarter, and the owner/operator shall summarize the total CO and SO2 emissions for each rolling 4 quarter period.
   d. The owner/operator shall keep all records on site or

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have them readily available to District staff upon request.

e. The owner/operator shall retain all records for at least five years from the date of entry.

5. The owner/operator may use A-80, Activated Carbon Treatment System, for control of SO2 in accordance with the conditions below:
   a. When the owner/operator uses A-80 to absorb H2S for SO2 control, the owner/operator shall route all of the landfill gas that goes to the flare through A-80.
   b. The owner/operator shall ensure that all combustion devices comply with Regulation 9, Rule 1, during use of S-80.
   c. The owner/operator shall measure the H2S content of the landfill gas before and after commencing use of A-80 to comply with part 4b of this condition. The owner/operator shall continue to monitor H2S in accordance with Condition 19867, part 31b, during operation of A-80.
   d. The owner/operator shall measure the H2S content of the landfill gas after shutting down use of A-80 to comply with part 4b of this condition.
   e. The owner/operator shall keep the following records and make them available to District staff upon request:
      i. Disposal records including dates of disposal and volumes or weight of media disposed.
   f. The owner/operator shall dispose of the spent media for A-80 in the landfill or shall return the spent media to the media vendor.
   g. The owner/operator shall not desorb the spent media for A-80 on-site. (Basis: 2-1-320, 9-1-302)

COND# 25635 *applies to S#'s 64, 65, A75, A74, A65, A64*

For: LFG-Fired Lean-Burn Internal Combustion Engines (S-64 and S-65); Oxidation Catalysts (A-64 and A-65); and Selective Catalytic Reduction Systems (A-74 and A-75)

1. The owner/operator shall fire the energy plant engines (S-64 and S-65) exclusively on treated landfill gas.

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Treated landfill gas means landfill gas that has been processed at the S-71 Landfill Gas Treatment System to remove water, particulate matter, siloxanes, and organic and sulfur contaminants and that has been conditioned to meet engine operating requirements. (Basis: BACT)

2. The owner/operator shall ensure that the heat input to each energy plant engine (S-64 and S-65) does not exceed 189,300 million BTU (HHV) during any consecutive rolling 4-quarter period. (Basis: Cumulative Increase)

3. The owner/operator shall ensure that emissions from each energy plant engine (S-64 and S-65) are vented to a properly operating and properly maintained oxidation catalyst (A-64 and A-65, respectively) to control carbon monoxide (CO) and organic compound emissions. The owner/operator shall ensure that emissions from the oxidation catalysts are subsequently vented to a properly operating and properly maintained selective catalytic reduction system (A-74 and A-75, respectively) to control nitrogen oxide (NOx) emissions. (Basis: BACT and Regulation 2-5-302)

4. Nitrogen oxide (NOx) emissions from each engine shall not exceed an emission rate of 0.15 grams of NOx (calculated as NO2) per brake-horsepower-hour, averaged over the test period. When using a portable analyzer to demonstrate compliance with this limit, the owner/operator shall ensure that NOx emissions from each engine do not exceed the equivalent outlet concentration limit of 10 ppmv of NOx, corrected to 15% oxygen, dry basis, averaged over a 24-hour period. These limits do not apply during periods of startup or shutdown, provided the startup period does not exceed 2 hours and the shutdown period does not exceed 1 hour. (Basis: BACT)

5. Carbon monoxide (CO) emissions from each engine shall not exceed an emission rate of 1.8 grams of CO per brake-horsepower-hour, averaged over the test period. When using a portable analyzer to demonstrate compliance with this limit, the owner/operator shall ensure that CO emissions from each engine do not exceed the equivalent

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outlet concentration of 204 ppmv of CO, corrected to 15% oxygen, dry basis, averaged over a 24-hour period. These limits do not apply during periods of startup or shutdown, provided the startup period does not exceed 2 hours and the shutdown period does not exceed 1 hour. (Basis: BACT)

6. Precursor organic compound (POC) emissions from each engine shall not exceed an emission rate of 0.16 grams of POC (calculated as methane, CH4) per brake-horsepower-hour, averaged over a 3-hour source test period, or the equivalent outlet concentration limit of 32 ppmv of POC (expressed as CH4), corrected to 15% oxygen, dry basis, averaged over a 3-hour source test period. These limits do not apply during periods of startup or shutdown, provided the startup period does not exceed 2 hours and the shutdown period does not exceed 1 hour. The owner/operator shall calculate the measured POC emission rate using one of the assumptions below. (Basis: BACT)
a. Assume that NMOC measured pursuant to Part 13h is 100% POC. In this case, the calculated concentration of POC (CPOC, ppmv of POC, expressed as CH4 at 15% O2, dry basis) is equal to the corrected concentration of NMOC (CNMOC) measured pursuant to Part 13h: CPOC = CNMOC. Likewise, the calculated POC emission rate (EPOC, grams/bhp-hr) is equal to the NMOC emission rate (ENMOC, grams/bhp-hr) calculated pursuant to Part 13k: EPOC = ENMOC b. Assume that POC is equal to measured NMOC minus the sum of all measured NPOC, if NPOCs are detected during annual source testing. NPOC are defined in Regulation 2-1-207 and include; ethane and acetone as well as the compounds specifically listed in Regulation 2-1-207. For this case, the outlet concentrations of all measured NPOC shall be expressed as methane prior to summing the Total NPOC Concentration (Total CNPOC):

CPOC = CNMOC - Total CNPOC and
EPOC = ENMOC - Total ENPOC

7. Sulfur dioxide (SO2) emissions from each engine shall not exceed a daily average emission rate of 0.18 grams of SO2 per brake-horsepower-hour, or the equivalent outlet concentration of 9 ppmv of SO2, corrected to 15%

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oxygen, dry basis, on a daily average basis. (Basis: BACT)

8. Particulate matter (PM10) emissions from each engine shall not exceed an emission rate of 0.10 grams of PM10 per brake-horsepower-hour, or the equivalent outlet grain loading of 0.006 grains/sdcf, corrected to 15% oxygen, dry basis, averaged over the test period. (Basis: BACT)

9. Formaldehyde emissions from each engine shall not exceed an emission rate of 0.51 pounds per hour, averaged over the test period. (Basis: Regulation 2-5-302.3)

10. Ammonia (NH3) concentration in the exhaust from each engine shall not exceed 10 ppmv of NH3, corrected to 15% oxygen, dry basis, averaged over the test period. (Basis: Regulation 2-5-302)

11. To demonstrate compliance with Parts 4 and 5, the owner/operator shall comply with the following monitoring and record keeping requirements:
    a. Perform quarterly periodic testing as required by Regulation 9-8-503 and maintain records of all test dates and test results.
    b. During any quarter in which a source test is not performed, periodic testing shall be conducted using a portable analyzer following the procedures described in Regulation 9-8-503 and below.
        i. Conduct at least 3 test runs at evenly spaced intervals throughput a 24-hour period.
        ii. For each test run, NOx and CO concentrations shall be averaged over a consecutive 15 minute period and corrected to 15% oxygen, dry basis.
        iii. Calculate the average NOx and CO concentration for the total number of test runs conducted during the 24-hour period and compare this average to the 24-hour average outlet NOx and CO concentration limits in Parts 4 and 5.

(Basis: BACT, Cumulative Increase, Offsets, and Regulations

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2-1-403, 2-6-423.2, and 9-8-503)

12. To demonstrate compliance with Part 7, the owner/operator shall comply with the following fuel sulfur content limit and monitoring requirements. (BACT)
    a. The total sulfur content in the treated landfill gas fuel burned at the engines shall not exceed 150 ppmv of total sulfur, expressed as hydrogen sulfide (H2S), on a daily average basis.
    b. On a quarterly basis (during any quarter in which a Part 13 source test is not conducted), the owner/operator shall measure the total sulfur content in the treated landfill gas fuel delivered to the engines using either District approved laboratory analysis methods or a District approved portable hydrogen sulfide monitor. The owner/operator shall collect a minimum of three 30-minute samples at evenly spaced intervals throughout a 24 hour period and shall record the sampling dates and times and measurement results in a District approved log.
    i. If a laboratory analysis method is used, the total sulfur concentration in the treated landfill gas shall be calculated as the sum of the measured concentrations for the individual sulfur compounds, expressed as H2S. As a minimum, the owner/operator shall test for the following compounds: hydrogen sulfide, carbon disulfide, carbonyl sulfide, dimethyl sulfide, ethyl mercaptan, and methyl mercaptan.
    ii. If the portable H2S analysis method is used, the total sulfur concentration shall be calculated by multiplying the measured H2S concentration by 1.2 (Total Sulfur = 1.2 * H2S). iii. The owner/operator shall calculate and record the average of all the samples collected during a 24-hour period and shall compare this daily average sulfur content to the limits in Part 7 above.

13. In order to demonstrate compliance with Parts 4-10 above and Regulations 8-34-301.4, 9-1-302, 9-8-302.1, 9-8-302.3, and 40 CFR 60.4233(e), the owner/operator shall ensure that a District approved source test is conducted

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within 90 days of initial start-up of each engine and annually thereafter (with the exception of PM10 and formaldehyde emissions testing, which are subject to a testing frequency of one engine per year, in sequence, provided initial testing demonstrates compliance with the PM10 and formaldehyde limits). The initial source test shall be conducted while the engine is operating at or near the maximum operating rate. Each subsequent source test shall be conducted while the engine is operating under normal operating conditions and shall not include startup or shutdown periods. Each source test shall determine all items identified below, except as noted in Part 13(l) below. The Source Test Section of the District shall be contacted to obtain approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report for the initial compliance demonstration test shall be submitted to the Source Test Section and the Engineering Division within 60 days of the test date. Subsequent annual source test reports shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date. (Basis: BACT, Cumulative Increase, and Regulations 2-5-302, 8-34-301.4, 8-34-412, 9-1-302, 9-8-302.1, and 9-8-302.3) a. Actual gross electrical output (kW-hrs) from each engine during the test period and the calculated power output (bhp) from each engine determined using the following equation: bhp = 1.3932 * kW-hrs; b. Total flow rate (standard cubic feet per minute, dry basis, or sdcfm) of gaseous fuel to each engine; c. Concentrations (percent by volume or ppmv, dry basis) of: carbon dioxide (CO2); nitrogen (N2); oxygen (O2); methane (CH4); total non-methane organic compounds (NMOC), expressed as CH4; and total sulfur compounds in the gaseous fuel delivered to the engines. For total NMOC and (if measured) ethane, the exhaust concentrations shall be measured using three sampling periods of 1-hour each; d. Higher heating value (BTU/scf) for the gaseous fuel delivered to the engines; e. Heat input rate (BTU/hour) to each engine averaged over the test period; f. Exhaust gas flow rate (sdcfm) from each engine based on EPA Method 19; g. Concentrations (ppmv or percent by volume, dry basis) of

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NOx, CO, CH4, NMOC (expressed as CH4), SO2, NH3, formaldehyde, and O2 in the exhaust gas from each engine; h. Corrected concentrations (ppmv, corrected to 15% O2, dry basis) of NOx, CO, CH4, NMOC (expressed as CH4), SO2, and NH3 in the exhaust gas from each engine; i. Corrected concentration (ppmv, corrected to 3% O2, dry basis) of NMOC (expressed as CH4) in the exhaust gas from each engine; j. NMOC destruction efficiency (weight percent) achieved by each engine; k. Emission rates (grams/bhp-hour) of NOx (calculated as NO2), CO, NMOC (calculated as CH4), and SO2 from each engine; l. Emission rate of PM10 (grams/bhp-hr) from each engine and the PM10 grain loading rate (grains/dscf) from each engine. During the initial compliance demonstration test, PM testing shall be conducted on each engine. For subsequent years, the owner/operator may reduce PM testing to one engine per year, cycling through all of the engines. m. Emission rate for formaldehyde (pounds/hour) from each engine; n. Average temperature of the oxidation and SCR catalysts for each engine during the test period. o. During the initial compliance demonstration source test, the owner/operator shall also measure concentrations of NOx, CO, and O2 (ppmv) in the exhaust from each engine using the portable analyzer procedures described in Part 11b. The portable analyzer measurements of corrected NOx and CO concentrations shall be compared to the values measured pursuant to Part 13h.

14. The owner/operator shall measure and record the methane content of the treated landfill gas supplied to the engines on a quarterly basis (during any quarter in which a Part 13 annual source test is not conducted) using a District approved monitoring device or District approved source test procedures. The flow meter, recorder and, if applicable, methane monitor shall be installed and properly calibrated prior to any engine operation; this equipment shall be maintained in good working condition. (Basis: Cumulative Increase)

15. The owner/operator shall maintain the following plans and records on-site for a minimum of 5 years from the date of entry. The plans and records shall be made available to District staff upon request. (Basis:

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Cumulative Increase, Regulations 9-8-502.3 and 9-8-502.4, and 40 CFR 60.4243(b)(2)(ii)) a. Records of heat input to each engine for each quarter and for each rolling 4-quarter period. Heat input shall be calculated using District approved procedures based on measured landfill gas flow rate data and measured landfill gas methane concentration data. The calculated heat input rates shall be recorded in a data acquisition system or electronic spreadsheet. b. Records of all monitoring or source testing conducted pursuant to Parts 11-14, and as required by Regulation 8, Rule 34, Regulation 9, Rule 8, and 40 CFR 60.4243(b)(2)(ii). c. Records of all excursions identified under Parts 11-13 and records of the dates and results of all subsequent monitoring or source testing events. If any corrective actions are taken in response to detecting an excursion, identify the problem or suspected cause of the excursion, the corrective action taken, and the date and time that the corrective action was completed.

d.An engine maintenance plan that satisfies the requirements of 40 CFR 60.4243(b)(2)(ii).

e.Records of all maintenance conducted on each engine.

f.Records of start-ups, shut-downs, and malfunctions for each engine. For any malfunctions, the records shall include the cause of the malfunction, the actions taken to correct the malfunction, the date and time that the malfunction was corrected, and the actions taken to prevent such malfunctions in the future.

g.Records of all notifications required pursuant to Regulation 1 or 40 CFR Parts 60 or 63.

COND# 25636 *applies to S# 71*

For S-71 Gas Treatment System -Desorption Process:

1. All waste gas generated by the desorption cycle at S-71 shall be vented to either the A-51 Landfill Gas Flare or the A-60 Landfill Gas Flare. The desorption cycle waste gas shall be blended with a sufficient amount of landfill gas to ensure that the flare will meet the minimum temperature requirement specified in Condition # 19867, Part 22.

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(Basis: BACT)

2. Set NMOC limit for S-71 desorption cycle waste gas, as necessary to ensure that flares will meet the 8-34-301.3 NMOC outlet concentration limit during combustion of this waste gas. (Basis: BACT and Regulation 8-34-301.3)

3. Set total sulfur content limit for S-71 desorption cycle waste gas, as necessary to ensure that flares will meet the 9-1-302 SO2 outlet concentration limit during combustion of this waste gas. (Basis: RACT and Regulation 9-1-302)

4. The owner/operator of S-71 shall conduct a characterization of the desorption cycle waste gas on a quarterly basis with one test concurrent with one of the annual source tests required by Condition # 19867, Part 30. A waste gas sample shall be collected once every X hours during the S-71 desorption cycle. Each quarterly waste gas sample shall be analyzed for total non-methane organic compounds (expressed as CH4), total sulfur compounds (expressed as H2S) and the specific organic and sulfur compounds listed below. All concentrations shall be reported on a dry basis. The laboratory reports for these waste gas characterization tests shall be included with the source test report and shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date. The maximum measured NMOC and total sulfur concentrations shall be compared to the limits in Parts 2-3 above. Average concentrations of the toxic air contaminants will be compared to engineering evaluation report calculated concentration data to improve emission estimates and ensure that health risk determinations are valid. Upon completion of four quarters of testing, subsequent testing shall be conducted annually. (Basis: AB-2588 Air Toxics Hot

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Spots Act, Cumulative Increase, and Regulations 2-5-302, 8-34-412, 9-1-302, and 9-2-301)

Organic Compounds	Sulfur Compounds
acrylonitrile	carbon disulfide
benzene	carbonyl sulfide
carbon tetrachloride	dimethyl sulfide
chlorobenzene	ethyl mercaptan
benzyl chloride	hydrogen sulfide
chloroethane	methyl mercaptan
chloroform	
1,1 dichloroethane	
1,1 dichlorethene	
1,2 dichlorethane	
1,4 dichlorobenzene	
methyl alcohol	
MTBE	
ethylbenzene	
ethylene dibromide	
styrene	
hexane	
isopropyl alcohol	
methyl ethyl ketone	
methylene chloride	
perchloroethylene	
toluene	
1,1,1 trichloroethane	
1,1,2,2 tetrachloroethane	
trichloroethylene	
vinyl chloride	
xylenes	

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BAY AREA AIR QUALITY MANAGEMENT DISTRICT
375 BEALE STREET, SUITE 600
SAN FRANCISCO, CA 94105
(415) 771-6000 WWW.BAAQMD.GOV

Bay Area Air Quality Management District

** SOURCE EMISSIONS **

PLANT # 1179
Mar 29, 2023

S#	Source Description	Annual Average lbs/day PART	ORG	NOx	SO2	CO
2	Sewage Sludge Storage,	-	-	-	-	-
5	Redwood Landfill - Waste Decomposition Pro	-	94	1	-	-
34	CASP Composting Operation	22	530	-	-	-
39	Trommel Screening Processes, Powered by Ei	0	-	-	-	-
41	Temporary Stockpiles for Yard and Green Wa	0	-	-	-	-
42	Soil and Cover material stockpiles	0	-	-	-	-
55	GDF# 8573	-	0	-	-	-
58	Aerated Leachate Pond	-	0	-	-	-
61	Portable Diesel Engine for Waste Tipper	-	-	-	-	-
62	Portable Diesel Engine for Power Screen	-	-	-	-	-
64	Internal Combustion Engine #1	2	1	1.1	1	5
65	Internal Combustion Engine #2	2	1	1	1	3
71	Landfill Gas Treatment System-Desorption P	-	6	-	-	-
76	Redwood Landfill - Waste and Cover Materia	366	-	-	-	-
77	Redwood Landfill - Excavating, Bulldozing,	180	-	-	-	-
78	Emergency Standby Diesel Generator Set	-	-	.2	-	0
A60	Landfill Gas Enclosed Flare	5	4	46.4	90.7	152
A51	Landfill Gas Flare	0	0	.3	.8	1
	T O T A L S	577	637	49.9	93.5	161

** PLANT TOTALS FOR EACH EMITTED TOXIC POLLUTANT **

Pollutant Name	Emissions lbs/day
Benzene	.38
Carbon tetrachloride	.09
Ethylene dichloride	.07
Formaldehyde	.11
Hexane	.59
Isopropyl alcohol	1.81
Methyl ethyl ketone (MEK)	3.27
Methyl alcohol	29.02
Perchloroethylene	.58
Styrene	.16
Toluene	6.03
Trichloroethylene	.25
Xylene	6.58
Ethylidene chloride	.15
Ethylbenzene	1.35
Acrylonitrile	.05
1,4-dioxane	.05
Vinylidene chloride	.15
Chloroform	.07
Methylene chloride	.41
Ethylene dibromide	.11
Ethyl chloride	.10
Benzyl chloride	.19
Vinyl chloride	.44
Chlorobenzene	.07
1,3-butadiene	.03
Dichlorobenzene	.46

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Pollutant Name	Emissions lbs/day
1,1,1 Trichloroethane	.09
Methyl tertiary-butyl ether	.13
1,1,2,2-tetrachloroethane	.10
Hydrogen Sulfide (H2S)	52.06
Ammonia (NH3) pollutant	62.97
Hydrogen Chloride (HCl)	.02

ATTACHMENT B

Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Final

MAJOR FACILITY REVIEW PERMIT

Issued To:

Redwood Landfill, Inc.
Facility #A1179

Facility Address:
8950 Redwood Highway
Novato CA 94948

Mailing Address:
P. O. Box 793
Novato CA 94948

Responsible Official	**Facility Contact**
Ramin Khany	Alisha McCutcheon
District Manager	Technical Manager
415-892-2851	415-408-9055

Type of Facility:	Landfill for Solid Waste Disposal	BAAQMD Engineering Division Contact:
Primary SIC:	4953	Carol S. Allen
Product:	Refuse and Sludge Disposal	

ISSUED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Signed by Jeff McKay for Jack P. Broadbent — December 19, 2014

Jack P. Broadbent, Executive Officer/Air Pollution Control Officer — Date

VI. Permit Conditions

Condition # 19867

FOR: S-5 REDWOOD LANDFILL – WASTE DECOMPOSITION PROCESS; EQUIPPED WITH GAS COLLECTION SYSTEM; ABATED BY A-51 LANDFILL GAS FLARE; AND A-60 LANDFILL GAS FLARE
S-76 REDWOOD LANDFILL – WASTE AND COVER MATERIAL DUMPING; ABATED BY A-18 WATER SPRAYS; AND
S-77 REDWOOD LANDFILL – EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES; ABATED BY A-18 WATER SPRAYS

c. The concentration of total reduced sulfur compounds (TRS) in collected landfill gas shall not exceed an annual average of 350 ppmv (calculated as H2S) and shall not exceed the following peak limits during any single test:
505 ppmv of TRS (calculated as H2S), during 2011-2014;
450 ppmv of TRS (calculated as H2S), during 2015-2018;
410 ppmv of TRS (calculated as H2S), during 2019-2022; and
370 ppmv of TRS (calculated as H2S), during 2023 and later.
The peak and annual average TRS concentrations shall be measured and calculated in accordance with Parts 31a and 31b. (Basis: Cumulative Increase, RACT, AB-2588 Air Toxics Hot Spots Act, and Regulations 2-5-302.3, 9-1-302, and 9-2-301)

19. The A-51 and A-60 Landfill Gas Flares shall be fired on landfill gas. (Basis: RACT and Regulation 2-2-112)

20. The throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day. The throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day. The total throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 and A-60 Flares combined shall not exceed 2,207,520,000 scf during any consecutive 12-month period. In order to demonstrate compliance with this condition, the A-51 and A-60 Flares shall each be equipped with ~~a~~ one or more properly operating continuous gas flow meters. (Basis: Cumulative Increase, 40 CFR 60.756(b)(2)(i))

21. [deleted]

VI. Permit Conditions

Condition # 19867

FOR: S-5 REDWOOD LANDFILL – WASTE DECOMPOSITION PROCESS; EQUIPPED WITH GAS COLLECTION SYSTEM; ABATED BY A-51 LANDFILL GAS FLARE; AND A-60 LANDFILL GAS FLARE
S-76 REDWOOD LANDFILL – WASTE AND COVER MATERIAL DUMPING; ABATED BY A-18 WATER SPRAYS; AND
S-77 REDWOOD LANDFILL – EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES; ABATED BY A-18 WATER SPRAYS

22. The temperature in the combustion zone of each flare shall be maintained at the minimum temperature listed below, averaged over any 3-hour period. In order to demonstrate compliance with this condition, A-51 and A-60 shall each be equipped with a continuous temperature monitor and recorder. The A-60 Flare shall be equipped with a continuous temperature monitor in each operating zone of the stack (Zone A and Zone B). The temperature recorder for A-60 shall continuously record either the Zone A or Zone B temperature, compatible with the zone the flare is operating in. If a source test demonstrates compliance with all applicable requirements at a different temperature, the APCO may revise these temperature limits, in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415, based on the following criteria. The minimum combustion zone temperature for the flare shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50 degrees F, provided that the minimum combustion zone temperature is not less than 1400 degrees F. (Basis: Regulations 2-5-302, 8-34-301.3 and 8-34-501.3, and 40 CFR 60.756(b)(1))
    a. The minimum combustion zone temperature for A-51 is 1400 degrees F, averaged over any 3-hour period.
    b. The minimum combustion zone temperature for each stack zone at A-60 (Zone A or Zone B) is 1400 degrees F, averaged over any 3-hour period.

23. The A-51 and A-60 Landfill Gas Flares shall comply with the NMOC emission limit in Regulation 8-34-301.3. (Basis: Cumulative Increase, 8-34-301.3, and 40 CFR 60.752(b)(2)(iii)(B))

*24. [deleted]

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FOR: S-5 REDWOOD LANDFILL – WASTE DECOMPOSITION PROCESS; EQUIPPED WITH GAS COLLECTION SYSTEM; ABATED BY A-51 LANDFILL GAS FLARE; AND A-60 LANDFILL GAS FLARE
S-76 REDWOOD LANDFILL – WASTE AND COVER MATERIAL DUMPING; ABATED BY A-18 WATER SPRAYS; AND
S-77 REDWOOD LANDFILL – EXCAVATING, BULLDOZING, AND COMPACTING ACTIVITIES; ABATED BY A-18 WATER SPRAYS

25. Nitrogen oxides (NO_x) emissions from each enclosed flare (A-51 and A-60) shall not exceed 0.06 pounds of NO_x, calculated as NO_2, per million BTU. Compliance with this emission limit may be demonstrated by not exceeding the following flue gas concentration limit: 15 ppmv of NO_x, corrected to 15% oxygen, dry basis. (Basis: RACT and Offsets)

26. Carbon monoxide (CO) emissions from each enclosed flare (A-51 and A-60) shall not exceed 0.20 pounds of CO per million BTU. Compliance with these emission limits may be demonstrated by not exceeding the following flue gas concentration limit: 82 ppmv of CO, corrected to 15% oxygen, dry basis. (Basis: RACT and Cumulative Increase)

27. [deleted]

28. [deleted]

29. The Permit Holder shall maintain records of all planned and unanticipated shut downs of the A-51 and A-60 Flares and of any temperature excursions. The records shall include the date, time, duration, and reason for any shut down or excursion. Any unanticipated shut downs or temperature excursions shall be reported to the Enforcement Division immediately. All inspection and maintenance records, records of shut downs and excursions, gas flow records, temperature records, analytical results, source test results, and any other records required to demonstrate compliance with the above permit conditions, Regulation 8 Rule 34, or 40 CFR Part 60 Subpart WWW shall be retained on site for a minimum of five years and shall be made available to District staff upon request. (Basis: 2-6-501, 8-34-501, 40 CFR 60.758)

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S-76 REDWOOD LANDFILL – WASTE AND COVER MATERIAL DUMPING; ABATED BY A-18 WATER SPRAYS; AND
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30. In order to demonstrate compliance with Parts 22, 23, 25, and 26 above, Regulation 8, Rule 34, Sections 301.3 and 412, and 40 CFR 60.8 and 60.752(b)(2)(iii)(B), the Permit Holder shall ensure that a District approved source test is conducted annually on the A-51 Landfill Gas Flare and the A-60 Landfill Gas Flare. Each annual source test shall determine the following:
    a. landfill gas flow rate to the flare (dry basis);
    b. concentrations (dry basis) of carbon dioxide (CO_2), nitrogen (N_2), oxygen (O_2), methane (CH_4), and total non-methane organic compounds (NMOC) in the landfill gas;
    c. stack gas flow rate from the flare (dry basis);
    d. concentrations (dry basis) of NO_x, CO, NMOC, and O_2 in the flare stack gas;
    e. NMOC destruction efficiency achieved by the flare;
    f. NO_x and CO emission rates from the flare in units of pounds per million BTU,
    g. average combustion zone temperature in the flare during the test period.

    Annual source tests shall be conducted no later than 12 months after the previous test. The annual source test at A-60 may be conducted while it is operating in either zone, provided that each operating zone is tested at least once every five years. The Source Test Section of the District shall be contacted to obtain approval of the source test procedures at least 14 days in advance of each source test. The Source Test Section shall be notified of the scheduled test date at least 7 days in advance of each source test. The source test report shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date. (Basis: Cumulative Increase, RACT, Offsets, Regulations 2-5-501, 8-34-301.3, 8-34-412, 40 CFR 60.8 and 40 CFR 60.752(b)(2)(iii)(B))

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S-76 REDWOOD LANDFILL – WASTE AND COVER MATERIAL DUMPING; ABATED BY A-18 WATER SPRAYS; AND
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31. Landfill Gas Testing:
    a. The Permit Holder shall conduct a characterization of the landfill gas on a quarterly basis with one test concurrent with one of the annual source tests required by Part 30 above. The landfill gas sample shall be drawn from the main landfill gas header. Each quarterly landfill gas sample shall be analyzed for the sulfur compounds listed below. Once per year (concurrent with a Part 30 annual source test) the landfill gas shall be analyzed for all the organic and sulfur compounds listed below. All concentrations shall be reported on a dry basis. The laboratory analysis report for the annual organic and sulfur compound gas characterization test shall be included with the Part 30 source test report and shall be submitted to the Compliance and Enforcement Division and the Source Test Section within 60 days of the test date. (Basis: AB-2588 Air Toxics Hot Spots Act, and Regulations 2-5-302, 8-34-412, 9-1-302, and 9-2-301)

Sulfur Compounds
carbon disulfide
carbonyl sulfide
dimethyl sulfide
ethyl mercaptan
hydrogen sulfide
methyl mercaptan

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S-76 REDWOOD LANDFILL – WASTE AND COVER MATERIAL DUMPING; ABATED BY A-18 WATER SPRAYS; AND
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Organic Compounds
acrylonitrile
benzene
benzyl chloride
carbon tetrachloride
chlorobenzene
chloroethane
chloroform
1,1 dichloroethane
1,1 dichlorethene
1,2 dichlorethane
1,4 dichlorobenzene
ethylbenzene
ethylene dibromide
hexane
isopropyl alcohol
methyl alcohol
methyl ethyl ketone
methylene chloride
methyl tert-butyl ether
perchloroethylene
styrene
toluene
1,1,2,2 tetrachloroethane
1,1,1 trichloroethane
trichloroethylene
vinyl chloride
xylenes

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b. Once per week, beginning no later than March 31, 2005, the Permit Holder shall analyze the landfill gas for hydrogen sulfide (H2S) concentration using a Draeger tube to further demonstrate compliance with Part 18c and Regulation 9-1-302. The landfill gas sample shall be drawn from the main landfill gas header. The Permit Holder shall follow the manufacturer's procedures for using the Draeger tube and interpreting the results. The total reduced sulfur (TRS) content of the landfill gas shall be calculated using the average ratio of TRS/H2S for this site according to the following equation: TRS = 1.015 * H2S measured by Draeger tube. The Permit Holder shall maintain records of all Draeger tube test dates and test results and shall summarize the average H2S concentrations and the calculated TRS content of the landfill gas on a quarterly basis. Each Draeger tube test result (after conversion to TRS content) and the quarterly laboratory analysis in Part 31a shall be compared to the Peak TRS Limit in Part 18c. On a rolling quarterly basis, the Permit Holder shall determine the annual average TRS content for comparison to the Annual Average TRS Limit in Part 18c. (Basis: Cumulative Increase, RACT, and Regulations 9-1-302 and 9-2-301).

32. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting period for the first increment of the Regulation 8-34-411 annual report that is submitted subsequent to the issuance of the MFR Permit for this site shall be from December 1, 2003 through April 30, 2004. This first increment report shall be submitted by May 31, 2004. The reporting periods and report submittal due dates for all subsequent increments of the Regulation 8-34-411 report shall be synchronized with the reporting periods and report submittal due dates for the semi-annual MFR Permit monitoring reports that are required by Section I.F of the MFR Permit for this site. A single report may be submitted to satisfy the requirements of Section I.F, Regulation 8-34-411, and 40 CFR Part 63.1980(a), provided that all items required by each applicable reporting requirement are included in the single report. (Basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))

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*33. Within 3 months of approval of the permit condition changes pursuant to Application # 20607, the Permit Holder shall submit a proposal for monitoring ground level hydrogen sulfide concentrations at or near the fence line or property boundary for this facility and a proposal that identifies all feasible hydrogen sulfide emission reduction measures that could be implemented at this site if necessary. The Permit Holder shall initiate hydrogen sulfide monitoring within 3 months of receiving District approval for the monitoring protocol. If a measured hydrogen sulfide concentration at the fence line or property boundary exceeds a concentration limit in Regulation 9-2-301 (0.03 ppmv averaged over 60 minutes or 0.06 ppmv averaged over 3 minutes), the Permit Holder shall notify the District of the excess and shall implement any hydrogen sulfide emission reduction measures required by the District at that time. Ground level hydrogen sulfide monitoring may be discontinued five years after this facility ceases waste disposal activities or when the TRS content in the collected landfill gas (measured pursuant to Part 31b) is less than 110 ppmv of TRS for at least 8 consecutive quarters, whichever occurs sooner. (Basis: Regulation 9-2-301)