

Bay Area Air Quality Management District

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**Permit Evaluation
and
Statement of Basis
for
MINOR REVISION and RENEWAL of the
MAJOR FACILITY REVIEW PERMIT
for
Kirby Canyon Recycling and Disposal Facility
Facility #A1812**

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Application Numbers: 28217, 27674

January 2018

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**Title V Statement of Basis for:
Minor Revision and Renewal of Major Facility Review Permit for
Kirby Canyon Recycling and Disposal Facility, Site #A1812
Application #28217**

A. Background

Kirby Canyon Recycling & Disposal Facility (KCRDF), formerly known as Kirby Canyon Landfill, is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a designated facility as defined in BAAQMD Regulation 2-6-204. The Emission Guidelines for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart Cc) require the owner or operator of a landfill subject to this part and having a design capacity of 2.5 million megagrams and 2.5 million cubic meters or more to obtain a federal operating permit pursuant to Part 70. This facility is a designated facility because it meets the criteria listed in 40 CFR, Section 60.32c(c).

Major Facility Operating Permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6, Major Facility Review (MFR). The permits must contain all “applicable requirements” (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A1812.

This facility received its initial Title V permit on July 10, 2003. An application for a minor revision of this permit (Application # 27674) to incorporate NSR revisions approved pursuant to NSR Application # 27673 was received on December 23, 2015. However, the associated NSR revisions were not approved by the District until June 6, 2016. Application # 28217 is for a renewal of the Title V operating permit, and it was received on August 19, 2016. Although the current permit expired on March 1, 2017, it continues in force until the District takes final action on the permit renewal.

Pursuant to Regulation 2, Rule 6, section 416, the District has reviewed the terms and conditions of this Major Facility Review permit and determined that they are valid and correct. This review included an analysis of all applicability determinations for all sources. The review also included an assessment of the sufficiency of all monitoring for determination of compliance with applicable requirements. The statements of basis for permit revisions that have occurred through

the last revision of the Major Facility Review permit are hereby incorporated by reference and are available upon request. The proposed permit shows all changes to the permit since the last revision in strikeout/underline format. These changes are discussed in this Statement of Basis.

B. Facility Description

Kirby Canyon Recycling & Disposal Facility (KCRDF) is operated by Waste Management of California and includes the Kirby Canyon MSW Landfill, which is an active Class III municipal solid waste (MSW) landfill. The site is located 15 miles south of downtown San Jose, adjacent to US Highway 101 and opened in July 1986. The facility and accepts non-hazardous residential, commercial, industrial, and inert wastes. It has a total permitted area of 827 acres with a permitted waste disposal footprint of 311 acres and a design capacity of 36.4 million cubic yards (20.5 million tons). The site's estimated closure is 2065.

Landfills generate landfill gas due to the waste decomposition process. The landfill gas contains methane and carbon dioxide (which are greenhouse gases: GHG) and small amounts of non-methane organic compounds (NMOC) and sulfur compounds. Many of the NMOCs are precursor organic compounds (POC), and many NMOCs and also toxic air contaminants (TACs) and hazardous air pollutants (HAPs). Hydrogen sulfide, a TAC, makes up about 95% or more of the sulfur compounds. District and EPA regulations require that landfill gas from larger landfills be continuously collected and controlled to reduce emissions of NMOCs to the atmosphere. These collection and control requirements also reduce GHG, TAC, and HAP emissions.

In accordance with these requirements, Kirby Canyon MSW Landfill (S-1) is equipped with a landfill gas collection system and a landfill gas control system. Landfill gas collection systems are perforated pipes that are buried in the refuse at numerous locations. For active collection systems, the perforated pipes are connected to blowers by solid pipes (referred to as laterals and headers). The blowers maintain a vacuum in the buried refuse and draw landfill gas into the perforated pipes. The landfill is also equipped with a leachate collection system, which collects liquid leachate that is then injected into the landfill gas flare for destruction. The collection system currently includes 58 vertical gas collection wells and 1 leachate collection well.

The collected landfill gas is abated on-site by the A-12 Landfill Gas Flare. Combustion destroys most of the methane, NMOC, TAC, and HAP that are present in the landfill gas; however, landfill gas combustion also produces secondary emissions comprised of nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM), formaldehyde, and acid gases such as hydrogen chloride (HCl) and hydrogen fluoride (HF).

KCRDF also operates a portable diesel-fired IC Engine (S-8), which is used to operate a portable air compressor. This engine requires a District permit because it remains at the site for more than 12 months and is therefore not eligible for the statewide portable equipment registration program (PERP). The diesel engine emits combustion products including: GHG, NO_x, CO, SO₂, POC, PM, and diesel PM (a TAC).

The emissions for this facility, based on the 2016 operating data reported by Waste Management, have been summarized in Table 1, below.

Table 1
2016 Facility Emissions
Site #A1812, Kirby Canyon Recycling & Disposal Facility

Source Number/Description	Emissions (tons/year)				
	PM10	VOC	NOx	SO2	CO
S-1, Landfill with Gas Collection System	0	24.59	0.16	0	0
S-8, Portable Diesel IC Engine –Air Compressor	0	0	0.05	0	0
S-22, Waste and Cover Material Dumping	9.49	0	0	0	0
S-23, Excavating, Bulldozing, and Comp	4.75	0	0	0	0
S-24, Construction and Demolition Waste Stockpiles	0.02	0	0	0	0
S-25, Green and Wood Waste Stockpiles	0.01	0	0	0	0
A-12, Enclosed LFG Flare	1.55	0.38	11.55	4.38	17.16
Total Facility Emissions	15.8	25.0	11.8	4.4	17.2

S-22 and S-23 encompass all active landfilling activities (vehicle travel on roads, material handling, wind erosion, etc.) that generate or result in particulate emissions from the landfill. Some of these activities, such as disposal of contaminated soil and use of VOC laden soil as cover material, also generate volatile organic compound emissions due to aeration of VOCs that occur during movement of these VOC laden materials or during exposure of the materials to the atmosphere (in uncovered stockpiles or after placement as daily cover material). These VOC emissions are attributed to S-22.

One NSR application has been processed since the last minor revision of this permit. Application #27673 allowed for replacement, addition, and decommission of landfill gas vertical and horizontal wells in existing and new areas of the landfill. The resulting changes in permit conditions from this application has been shown in the proposed permit in strikeout/underline format. The permit evaluation for this NSR application has been included in Appendix B for reference.

In addition, the Applicant requested to include additional landfill gas collection system components in the Condition # 1437, Part 17 list of components that can operate at higher operating values. Since this permit condition change has no impact on emissions and is not subject to new source review, the District is incorporating this request into this Title V permit renewal.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit. Routine changes to the standard permit text in Sections I “Standard Conditions”, III “Generally Applicable Requirements”, and X “Glossary” are not considered part

of the Title V permit renewal process, but may be made at the discretion of the District during the term of this permit.

Changes to the Permit, Title Page:

- The District is correcting the District's address and telephone number.
- Per the Applicant's request, the District is changing the Responsible Official and the contact telephone numbers for this facility.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. This permit does not include Title IV or accidental release provisions.

Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Changes to the Permit, Section I:

- The District is updating the dates of adoption and approval of rules in Standard Condition I.A.
- The District is removing SIP Regulation 2, Rule 1 and SIP Regulation 2, Rule 2 as the regulations are now SIP approved.
- The District will update the issuance date, expiration date, and renewal permit due dates in Section I.B. upon issuance of this permit.
- In Section I.F., the District is adding an email address and correcting the District mailing address.
- In Section I.G., the District is adding an EPA email address and correcting the EPA mailing address.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S-24). Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302. Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403. The permitted sources are listed in Table II-A.

Significant sources are those sources that have a potential to emit of more than 2 tons per year of a “regulated air pollutant” (as defined in BAAQMD Rule 2-6-222) or 400 pounds per year of a “hazardous air pollutant” (as defined in BAAQMD Rule 2-6-210). No significant sources have been reported at this facility. Note that the following sources, which are exempt from District permit requirements, have been reported by the facility, but are not identified as significant sources:

- Diesel Storage Tank, 10,000 gallon capacity; exempt per Regulation 2-1-123.3.4
- Waste Oil Storage Tank, 550 gallon capacity; exempt per Regulation 2-1-123.3.3
- 3 Storage Tanks for Transmission Fluid, Hydraulic Oil, Motor Oil, 480 gallon capacity each; exempt per Regulation 2-1-123.3.3
- 3 Grease/Gear Oil Storage Tanks, 55 gallon capacity each; exempt per Regulation 2-1-123.1
- Waste Antifreeze Storage Tank, 20 gallon capacity; exempt per Regulation 2-1-123.1
- Leachate and Flare LFG Condensate Storage Tanks; exempt per Regulation 2-1-123.2

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an “A” and a number (e.g., A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an “S” number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or “A”) device. If the primary function of a device is a non-control function, the device is considered to be a source (or “S”).

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Changes to the Permit, Section II:

- The District is updating the landfill gas and leachate collection system component counts in Table II-A.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility, including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V

permit if they are considered “significant sources” as defined in BAAQMD Rule 2-6-239. This facility does not have any significant sources that do not have District permits.

Changes to the Permit, Section III:

- The District is updating the dates of adoption or approval of several rules and their “federal enforceability” status in Table III.

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are “federally enforceable” and a “Y” (yes) indication will appear in the “Federally Enforceable” column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the “Federally Enforceable” column will have a “Y” for “yes”. If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District or EPA websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Changes to the Permit, Section IV:

- No changes to Section IV.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division has conducted a review of the compliance record of this facility and has determined that Kirby Canyon Recycling and Disposal Facility has been in intermittent compliance during the previous 5 years. The Compliance and Enforcement Division has noted no evidence of on-going non-compliance and no recurring pattern of violations that would warrant consideration of a compliance schedule.

Changes to the Permit, Section V:

- No changes to Section V.

VI. Permit Conditions

Each permit condition is identified with a unique numerical identifier, up to five digits. The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.

- **Cumulative Increase:** This term is used for a condition imposed by the APCO that limits a source's operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- **Offsets:** This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- **PSD:** This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.
- **TRMP:** This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy. This policy was replaced by Regulation 2, Rule 5 in 2005.

During the initial Title V permit development, the District reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting requirements have been added to the permit. No changes have occurred to the facility operations since the last revision of the Title V permit, but the District is incorporating changes that the District has made to the descriptions of these existing operations. The permit conditions have been reviewed again for this permit renewal and proposed changes to the permit conditions are summarized below.

Changes to the Permit, Section VI:

- In Condition #1437 Part 6, the District is updating the description of the landfill gas collection system to reflect the alterations of the landfill gas collection system completed since the last permit renewal and the additional alterations authorized pursuant to District Application # 27673.
- In Condition #1437 Part 17a, the District is including additional components in the list of wells approved for higher operating temperature values.

All changes to existing permit conditions are clearly shown in "strike-out/underline" format in the proposed permit. When the permit is issued, all "strike-out" language will be deleted and all "underline" language will be retained, subject to consideration of comments received.

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

Monitoring decisions are typically the result of balancing several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such

as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements. It follows that, although Title V calls for a re-examination of all monitoring, there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation. Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring requirements only when it can support a conclusion that existing monitoring is inadequate.

The tables below list only the emission limits for which there is no monitoring in the applicable requirements. For each emission limit without corresponding monitoring, the analysis of the individual source compliance status has been documented. If a determination of inadequate monitoring was found, additional monitoring would be proposed through this permit renewal. However, in the cases identified below, no additional monitoring is being recommended for the reasons identified. The District has examined the monitoring for all other emission limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance.

Table 2
SO₂/H₂S Emission Limits with No Associated Monitoring
Site #A1812, Kirby Canyon Recycling & Disposal Facility

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-12 Enclosed Landfill Gas Flare	BAAQMD 9-1-301	Ground Level Concentrations of SO ₂ : ≤ 0.5 ppm for 3 consecutive minutes AND ≤ 0.25 ppm averaged over 60 consecutive minutes AND ≤ 0.05 ppm averaged over 24 hours	Not Recommended
S-1 Kirby Canyon MSW Landfill – Waste Decomposition Process and A-12 Enclosed Landfill Gas Flare	BAAQMD 9-2-301	Property Line Ground Level Limits of H ₂ S ≤ 0.06 ppm Averaged over 3 minutes AND ≤ 0.03 ppm Averaged over 60 minutes	Not Recommended

SO₂ Discussion:

Burning of fuel that contains sulfur compounds will result in emissions of sulfur dioxide (SO₂) as a product of that combustion. The landfill gas burned at the flare at this facility contains small levels of sulfur compounds which will contribute to ground level concentrations of SO₂, as well as combustion of diesel fuel in the portable engine.

BAAQMD Regulation 9-1-301

Area monitoring to demonstrate compliance with the ground level SO₂ concentration limitations of Regulation 9-1-301 is required at the discretion of the APCO (per BAAQMD Regulation 9-1-501). Since the ground level monitoring is expensive, such monitoring is not required if the expected levels of SO₂ emissions are low, resulting in a large expected margin of compliance with the emission limit.

Modeling analyses performed for other landfill sites has shown that compliance with the Regulation 9-1-302 limit of 300 ppmv of SO₂ in the flare stack exhaust results in ground level concentrations that are less than the BAAQMD Regulation 9-1-301 limits. An annual source test is required to demonstrate the flare complies with the 300 ppmv of SO₂ in Regulation 9-1-302, and the margin of compliance with this SO₂ outlet concentration limit has been high. Therefore, area monitoring of SO₂ has not been required at this facility and is not justifiable given the very low probability of non-compliance.

H₂S Discussion:

BAAQMD Regulation 9-2-301

Area monitoring to demonstrate compliance with the ground level H₂S concentration limitations of Regulation 9-1-301 is required at the discretion of the APCO (per BAAQMD Regulation 9-1-501). The H₂S emissions near this site are a result of fugitive emissions from the landfill. Hydrogen sulfide can be detected by its odor at concentrations as low as 0.0005 ppmv and is generally identified by its characteristic rotten egg smell a concentration of 0.005 ppmv or less. Therefore, hydrogen sulfide emissions are typically discovered by smell well before the concentration approaches the lowest 9-2-301 emission limit of 0.03 ppmv.

The District rarely ever receives complaints about hydrogen sulfide odors from Bay Area landfills and has never received any complaints about hydrogen sulfide odors from this facility. Since hydrogen sulfide odors have not been detected at this facility, the concentration of hydrogen sulfide at the property line is expected to be well below the Regulation 9-1-301 limits. Therefore, although this regulation is generally applicable, the landfill is expected to have insignificant H₂S emissions and will not be required to perform ground level H₂S monitoring.

Table 3
PM Emission Limits with No Associated Monitoring
Site #A1812, Kirby Canyon Recycling & Disposal Facility

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-12 Enclosed Landfill Gas Flare	BAAQMD Regulation 6-1-301, SIP Regulation 6-301	Ringelmann 1.0 for 3 minutes in any hour	Not Recommended
A-12 Enclosed Landfill Gas Flare	BAAQMD Regulation 6-1-310, SIP Regulation 6-310	≤ 0.15 gr/dscf	Not Recommended

PM Discussion:

BAAQMD Regulation 6, Rule 1 “Particulate Matter – General Requirements”

SIP Regulation 6, “Particulate Matter and Visible Emissions”

BAAQMD Regulation 6-1-301 and SIP Regulation 6-301 limit visible emissions to no darker than 1.0 on the Ringelmann Chart, except for periods or aggregate periods less than 3 minutes in any hour. Visible emissions are normally not associated with proper combustion of gaseous fuels, such as landfill gas. Since A-12 burns only landfill gas, no monitoring is required to assure compliance with this limit.

BAAQMD Regulation 6-1-310 and SIP Regulation 6-301 limit filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using EPA’s AP-42 emission factor for landfill gas combustion (48 lbs/MM dscf methane), the worst methane content (45%), and the worst case landfill gas flue gas factor (4.395 dscf flue gas/scf LFG), the particulate emission rate from the flare is expected to be 0.0344 gr/dscf at 0% oxygen, which is far less than the Regulation 6-1-310 limit. Therefore no monitoring is required to assure compliance with this limit.

Changes to the Permit, Section VII:

- No changes to Section VII.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not “applicable requirements” as defined by Regulation 2-6-202.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to the Permit, Section VIII:

- No changes to Section VIII.

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's "White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program." The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has one permit shield for Regulation 8-2-601.

Changes to the Permit, Section IX:

- No changes to Section IX.

X. Revision History

Changes to the Permit, Section X:

- The District is updating the revision history to include the proposed minor revision and Title V permit renewal changes discussed above.

XI. Glossary

Changes to the Permit, Section XI:

- No changes to Section XI.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Differences Between the Application and the Proposed Permit:

The application for renewal of this Title V permit was originally submitted on August 19, 2016. The changes requested by the applicant are all reflected in the proposed permit. The Applicant requested additional changes to Condition # 1437, Part 17 on November 16, 2017. These changes are also included in this proposed permit.

APPENDIX A

GLOSSARY

ACT

Federal Clean Air Act

APCO

Air Pollution Control Officer

ARB

Air Resources Board

ATCM

Airborne Toxic Control Measure

BAAQMD

Bay Area Air Quality Management District

BACT

Best Available Control Technology

Basis

The underlying authority that allows the District to impose requirements.

CAA

The federal Clean Air Act

CAAQS

California Ambient Air Quality Standards

CARB

California Air Resources Board (same as ARB)

CCR

The California Code of Regulations

CEM

A “continuous emission monitor” is a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NO_x concentration) in an exhaust stream.

CEQA

California Environmental Quality Act

CFR

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CI

Compression Ignition

CO

Carbon Monoxide

CO₂

Carbon Dioxide

Cumulative Increase

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

District

The Bay Area Air Quality Management District

E6, E9, E12

Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53E6 equals $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$. Scientific notation is used to express large or small numbers without writing out long strings of zeros.

EPA

The federal Environmental Protection Agency.

Excluded

Not subject to any District regulations.

Federally Enforceable, FE

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60, (NSPS), Part 61, (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

FR

Federal Register

Grains

1/7000 of a pound

GRS

Gas Recovery Systems, Inc.

HAP

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

H₂S

Hydrogen Sulfide

H&SC

Health and Safety Code

Hg

Mercury

LFG

Landfill gas

Major Facility

A facility with potential emissions of: (1) at least 100 tons per year of any regulated air pollutant, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

Max

Maximum

MFR

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

Min

Minimum

MOP

The District's Manual of Procedures.

NA

Not Applicable

NAAQS

National Ambient Air Quality Standards

NESHAPS

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63

NMHC

Non-methane Hydrocarbons

NMOC

Non-methane Organic Compounds (same as NMHC)

NO₂

Nitrogen Dioxide

NO_x

Oxides of nitrogen.

NSPS

Standards of Performance for New Stationary Sources are federal standards for emissions from new stationary sources that are mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR

New Source Review is a federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

O₂

Oxygen

Offset Requirement

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

Phase II Acid Rain Facility

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC

Precursor Organic Compounds

PM

Particulate Matter

PM10

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns.

PSD

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

SIP

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO2

Sulfur dioxide

TAC

Toxic Air Contaminant

TBACT

Best Available Control Technology for Toxics

THC

Total Hydrocarbons include all non-methane hydrocarbons plus methane and are the same as TOC.

Title V

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC

Total Organic Compounds include all non-methane organic compounds plus methane and are the same as THC.

TRMP

Toxic Risk Management Policy. The District's TRMP was replaced by Regulation 2, Rule 5 in 2005.

TRS

Total Reduced Sulfur, which is a measure of the amount of sulfur-containing compounds in a gas stream, typically a fuel gas stream, including, but not limited to, hydrogen sulfide. The TRS content of a fuel gas determines the concentration of SO₂ that will be present in the combusted fuel gas, since sulfur compounds are converted to SO₂ by the combustion process.

TSP

Total Suspended Particulate

TVP

True Vapor Pressure

VOC

Volatile Organic Compounds

Symbols:

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to

Units of Measure:

atm	=	atmospheres
bhp	=	brake-horsepower
btu or BTU	=	British Thermal Unit
°C	=	degrees Centigrade
cfm	=	cubic feet per minute
dscf	=	dry standard cubic feet
°F	=	degrees Fahrenheit
ft ³	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grains
hp	=	horsepower
hr	=	hour
in	=	inches
kW	=	kilowatt
lb	=	pound
max	=	maximum
m ²	=	square meter
m ³	=	cubic meter
min	=	minute
mm	=	millimeter
MM	=	million
MMBtu	=	million Btu
MW	=	megawatts
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scf	=	standard cubic feet
scfm	=	standard cubic feet per minute
sdcf	=	standard dry cubic feet
sdcfm	=	standard dry cubic feet per minute
yd ³	=	cubic yards
yr	=	year

APPENDIX B

NSR Permit Evaluation Application No: 27673

Engineering Evaluation Report

Kirby Canyon Recycling and Disposal Facility, Plant #1812
910 Coyote Creek, Golf Drive, Morgan Hill, CA
Application #27673

BACKGROUND

Kirby Canyon Recycling and Disposal Facility, ("Applicant") operates an active Municipal Solid Waste (MSW) landfill, located at 910 Coyote Creek, Golf Drive, in Morgan Hill (Plant #1812). The Applicant has requested an Authority to Construct permit to replace, add, and decommission landfill gas (LFG) vertical and horizontal wells in existing and new areas of the landfill.

The collected landfill gas is vented to a landfill gas fired flare (A-12) which has a capacity of 4,080 scfm.

The Authority to Construct permit issued in application #23446 authorized the replacement of 103 vertical wells, installation of 50 new vertical wells and 5 horizontal wells, and 8 leachate cleanout risers, and the decommissioning of 40 existing vertical wells and 2 horizontal collectors and 8 cleanout risers. Not all of the modifications authorized in application #23446 were performed. On September 1, 2015, the applicant notified the District that one vertical well and one cleanout riser were decommissioned with a balance total of 61 vertical LFG collection wells and 3 leachate collection wells in the GCCS.

TABLE 1
Summary of Notifications Received for Application # 23446

Date	Decommission
September 1, 2015	- 1 vertical well - 1 cleanout riser

With the decommissioning of the wells in the September 1, 2015 letter, the Authority to Construct permit issued in application #23446 still allows for the replacement of 101 wells, installation of 31 vertical wells, installation of 4 horizontal collectors, installation of 12 leachate cleanout risers, decommissioning of 24 vertical wells, decommissioning of 1 horizontal collectors and 6 leachate cleanout risers.

The applicant has submitted this application for additional GCCS modifications to allow for additional capacity to install and decommission wells. The applicant is requesting replacement of 103 wells, installation of 50 vertical wells, installation of 5 horizontal collectors, installation of 15 leachate cleanout risers, decommissioning of 40 vertical wells, decommissioning of 5 horizontal collectors and 8 leachate cleanout risers.

Existing wells may be replaced or decommissioned and new wells installed, as needed. The number of wells at any given time could deviate from the current

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count. The District will be notified of each change and will be provided an updated well count.

The modifications proposed in this application are intended to ensure that the LFG extraction wells are appropriate in number, density, and location to meet the requirements of 40 CFR 60 Subparts WWW and Cc.

The total LFG control device capacity is 4,080 scfm. As the total throughput of the modified GCCS will not increase above the current control device capacity, no additional emissions from the control device is expected. The applicant estimates LFG flow from each new well of approximately 25 scfm. The decrease from decommissioned wells is expected to be negligible as well decommissioning occurs mostly on low flowing wells. The current application will allow modifications to the GCCS that will be required to meet the collection system requirements for the next two years.

The District is proposing to issue a Change of Conditions to identify the collection system alterations that have been completed to date and to authorize additional gas collection system alterations for S-1.

STATEMENT OF COMPLIANCE

Regulation 8, Rule 34, "Organic Compounds – Solid Waste Disposal Sites"

Regulation 8, Rule 34 contains operational requirements that apply to landfill gas collection systems as well as requirements that apply to the landfill operation and the landfill as emission control system. As only the gas collection system and leachate collection system will be affected in this application, only the collection system requirements are discussed below.

The following requirements apply to the gas collection and leachate collection systems:

- Section 8-34-301.2 limits component leaks to no more than 1000 ppmv, as methane, unless the leak has been discovered by the operator, recorded pursuant to Section 8-34-501, and repaired within 7 days. Quarterly leak testing is required by Section 8-34-503.
- Section 8-34-304 specifies when gas collection wells must be installed within the landfill.
- Section 8-34-501 requires records of all monitoring and testing dates, collection system downtime, and all repairs to the gas collection system.
- Section 8-34-505 requires monthly monitoring of wells for compliance with operational limits.

Since the measured gas collection rate is adequate and any leaks comply with the requirements of this rule, the gas collection system is functioning properly. The applicant is expected to continue to comply with the requirements of this rule.

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PERMIT CONDITIONS

The following permit condition revisions are necessary to reflect the landfill gas collection system alterations that have been completed to date.

Condition # 25301

For: S-1 Kirby Canyon MSW Landfill – Waste Decomposition Process; Equipped with Landfill Gas Collection System; abated by A-12, Enclosed Landfill Gas Flare with Condensate Injection System; S-22 Kirby Canyon MSW Landfill - Waste and Cover Material Dumping; and S-23 Kirby Canyon MSW Landfill - Excavating, Bulldozing, and Compacting Activities

1. The owner/operator shall comply with the following waste acceptance and disposal limits and shall obtain the appropriate New Source Review permit, if one of the following limits is exceeded:
 - a. Except for temporary emergency situations approved by the Local Enforcement Agency, the total waste accepted and placed at the landfill shall not exceed 2600 tons in any day. (Basis: Regulation 2-1-301)
 - b. The total cumulative amount of all decomposable materials placed in the landfill shall not exceed 19.84 million tons. Exceedance of the cumulative tonnage limit is not a violation of the permit and does not trigger the requirement to obtain a New Source review permit, if the operator can, within 30 days of the date of discovery of the exceedance, provide documentation to the District demonstrating, in accordance with BAAQMD Regulation 2-1-234.3, that the limit should be higher. (Basis: Regulation 2-1-234.3)
 - c. The maximum design capacity of the landfill (total volume of all wastes placed in the landfill) shall not exceed 36.40 million cubic yards. (Basis: Regulation 2-1-301)
2. Handling Procedures for Soil Containing Volatile Organic Compounds
 - a. The procedures listed below in subparts b-i do not apply if the following criteria are satisfied. However, the record keeping requirements in subpart m, below, are applicable.
 - i. The owner/operator 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 3 below.
 - ii. The owner/operator 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 owner/operator shall provide verbal notification to the Compliance and Enforcement Division of the owner/operator's intention to accept contaminated soil at the facility at least 24 hours in advance of receiving the contaminated soil. The owner/operator 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 or source of contamination.

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- 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 owner/operator receives test results proving that the soil is not contaminated. To prove that the soil is not contaminated, the owner/operator 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 owner/operator must continue to handle the soil in accordance with the procedures set forth in subparts e-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 is no longer contaminated and shall be handled in accordance with the procedures in Part 3 instead of Part 2, subparts e-l.
- d. Any contaminated soil received at the facility shall be clearly identified as contaminated soil, shall be handled in accordance with subparts e-l. 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 1 transfer. Moving soil from a temporary storage to a staging area is 1 transfer. Moving soil from a temporary storage pile to a final disposal site is 1 transfer. Moving soil from a staging area to a final disposal site is 1 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 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. If the contaminated soil has an organic content of less than 500 ppmw, the contaminated soil shall be treated, deposited in a final disposal site, or transported off-site for treatment within 90 days of receipt at the facility.
- g. If the contaminated soil has an organic content 500 ppmw or more, the contaminated soil shall be treated, deposited in a final disposal site, or transported off-site for treatment within 45 days of receipt at the facility.
- 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

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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 owner/operator 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 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.

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I. 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 that are necessary for annual reporting requirements or for purposes of 8-34-111 or 8-34-304.

m. The owner/operator 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.

- 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, record the sampling date, test results, and the date that these results were received.
- iii. For all on-site 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.

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: Regulations 8-40-301, 8-40-304 and 8-40-305)

3. Low VOC soil (soil that contains 50 ppmw or less of VOC) is not considered to be "contaminated soil" and may be used as daily, intermediate, or final cover material for landfill waste operations if the organic concentration above the soil does not exceed 50 ppmv (expressed as methane, C1). To demonstrate compliance with this requirement, each lot of soil to be used as cover material shall be randomly screened for VOC surface emissions (in such a manner as to be representative of the entire lot) using the testing procedures outlined in Regulation 8-40-604. The owner/operator shall keep the following records for each lot of soil subject to this requirement:

- a. The soil lot number as established in part 2m. i. (above).
- b. The time and date of the soil screening.
- c. The name and affiliation of the person performing the monitoring.
- d. The results of the screening and an acknowledgement that the procedures outlined in Regulation 8-40-604 were used.

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Soil presumed to be low VOC soil that is found to have a surface VOC concentration greater than 50 ppmv as described above shall be considered contaminated soil and will be subject to the requirements of part 2 of these conditions. (basis: Regulations 2-1-403, 8-40-205, 8-40-604)

4. Water and/or dust suppressants shall be applied to all unpaved roadways, active soil removal, and fill areas as necessary to prevent visible particulate emissions. Paved roadways shall be kept sufficiently clear of dirt and debris to prevent visible particulate emissions from vehicle traffic or wind. (basis: Regulations 2-1-403, 6-1-301, and 6-1-305)

5. All collected landfill gas shall be vented to properly operating Landfill Gas Flare (A-12). Raw landfill gas shall not be vented to the atmosphere, except for unavoidable landfill gas emissions that occur during collection system installation, maintenance, or repair that is performed in compliance with Regulation 8, Rule 34, Sections 113, 116, 117, or 118 and for component or surface leaks that do not exceed the limits specified in 8-34-301.2 or 8-34-303. (basis: Regulation 8-34-301)

6. The owner/operator shall apply for and receive a Change of Conditions from the District before altering the landfill gas collection system described in Parts 6a-b below. Increasing or decreasing the number of wells or collectors, changing the length of collectors, or changing the locations of wells or collectors are alterations that are subject to this requirement. The authorized number of landfill gas collection system and leachate collection system components is the baseline count listed below, plus any components added and minus any components decommissioned pursuant to Part 6b, as evidenced by start-up/shutdown notification letters submitted to the District.

a. The owner/operator has been issued a Permit to Operate for the landfill gas collection system and leachate collection system components listed below.

Well and collector locations, depths, and lengths are as described in detail in Permit Applications #2232, #7835, #11730, #17016, #21786, and #23446.

	Current
Total Number of Vertical Landfill Gas Extraction Wells:	53 <u>61</u>
Total Number of Horizontal Landfill Gas Trench Collectors:	0
Total Number of Leachate Collection Wells:	<u>4</u> <u>3</u>

b. The owner/operator is authorized to make the landfill gas collection system and leachate collection system component alterations listed below. Specific details regarding well alterations are described in Permit Application #23446 #27673.

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	Minimum	Maximum
Install new Vertical Gas Extraction Wells:	0	50
Replace Vertical Gas Extraction Wells:	0	103
Decommission Vertical Gas Extraction Wells:	0	40
Install new Horizontal Trench Collectors	0	<u>5</u> <u>2</u>
Decommission Horizontal Trench Collectors	0	<u>2</u> <u>5</u>
Install new Leachate Cleanout Risers	0	15
Decommission Leachate Cleanout Risers	0	8

Wells installed, relocated, replaced, or shutdown pursuant to Part 6b shall be added to or removed from Part 6a in accordance with the procedures identified in Regulations 2-6-414 or 2-6-415. The owner/operator shall maintain records of the decommissioning date for each well that is shutdown and the initial operation date for each new or relocated well. (basis: Regulations 2-1-301, 8-34-301.1, 8-34-303, 8-34-304, 8-34-305)

7. The landfill gas collection system described in Part 6a shall be operated continuously as defined in Regulation 8-34-219, except for leachate collection wells that are specifically allowed to operate less than continuously pursuant to Part 19. Wells shall not be shut off, disconnected or removed from operation without written authorization from the APCO, unless the owner/operator complies with all applicable requirements of Regulation 8, Rule 34, Sections 113, 116, 117, and 118 and Condition #1437, Part 19. (basis: Regulation 8-34-301.1)

8. The owner/operator shall ensure that the heat input to the A-12 Landfill Gas Flare does not exceed 2,980 million Btu per day and does not exceed 1,087,700 million Btu per year. In order to demonstrate compliance with this part, the owner/operator shall calculate and record, on a monthly basis, the maximum daily and total monthly heat input to the flare based on: (a) the landfill gas flow rate recorded pursuant to part 15h, (b) the average methane concentration in the landfill gas measured in most recent source test, and (c) a high heating value for methane of 1013 BTU per cubic foot at 60 degrees F. (basis: Regulation 2-1 - 301)

9. The minimum combustion zone temperature of the Flare A-12 shall be determined by the results of the most recent source test in which compliance with all applicable requirements was demonstrated. The minimum combustion zone temperature shall be 1428 degrees F, which was determined from the average temperature measured during the complying source test on 1/20/09 minus 50 degrees F. Once the minimum temperature has been established, it shall be maintained during all periods of flare operation. Compliance with the temperature limit shall be based on a 3-hour averaging period. Under no circumstances shall the minimum flare temperature be less than 1,400 degrees F. Based on the results of required source testing of the flare, the APCO may add an explicit temperature limit to the conditions for the Flare A-12 in accordance with the procedures identified in Regulation 2-6-414 or 2-6-415. (Basis: Regulations 2-5-302 and 8-34-301.3)

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10. The owner/operator shall ensure that emissions of Nitrogen Oxides (NO_x) from the Flare A-12 do not exceed 0.06 pounds per million BTU (calculated as NO₂). (basis: RACT)

11. The owner/operator shall ensure that emissions of Carbon Monoxide (CO) from the Flare A-12 do not exceed 0.3 pounds per million BTU. (basis: RACT).

12. To demonstrate compliance with Regulation 8, Rule 34, Sections 301.3 and 412, and the above requirements, the owner/operator shall ensure that a District approved source test is conducted on the Landfill Gas Flare (A-12) within 90 days of startup, followed by annual source tests thereafter. The owner/operator shall obtain prior approval from the Source Test Manager for the location of sampling ports and source testing procedures. The startup and annual source tests 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 nitrogen oxides (NO_x), carbon monoxide (CO), CH₄, NMOC, SO₂, and O₂ in the flare stack gas;
 - e. the NMOC destruction efficiency achieved by the flare; and
 - f. the average combustion temperature in the flare during the test period.
- Annual source tests shall be conducted no later than 12 months after the previous source test. 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 to the Source Test Section within 60 days of the test date. (basis: RACT, Regulations 2-1-301, 2-5-302, 8-34-301.3, 8-34-412, and 9-1-302)

13. The owner/operator shall conduct a characterization of the landfill gas concurrent with the annual source test required by part 12 above. The landfill gas sample shall be drawn from the main landfill gas header. In addition to the compounds listed in part 12b, the landfill gas shall be analyzed for all the compounds listed in the most recent version of EPA's AP-42 Table 2.4-1 excluding acetone, carbon monoxide, and mercury. All concentrations shall be reported on a dry basis. The test report shall be submitted to the Compliance and Enforcement Division within 60 days of the test date. After conducting three annual landfill gas characterization tests, the owner/operator may request to remove specific compounds from the list of compounds to be tested for if the compounds have not been detected, have no significant impact on the cancer risk determination for the site, and have no significant impact on the hazard index determination for the site. (basis: Regulations 2-5-302 and 8-34-412)

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*14. The landfill gas condensate injection rate into the flare shall not exceed 5 gallons per minute. Total landfill gas condensate injection throughput shall not exceed 2,000,000 gallons during any consecutive twelve-month period. The owner/operator may submit a written petition to the District to increase the landfill gas condensate injection rate subject to current District-approved source test results. (basis: Regulation 2-5-302)

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

- a. The total amount of municipal solid waste received at S-1 recorded on a daily basis. A summary of the daily waste acceptance records for each calendar month.
- b. For each area or cell that is not controlled by a landfill gas collection system, a record of the date that waste was initially placed in the area or cell. The cumulative amount of waste placed in each uncontrolled area or cell recorded on a monthly basis.
- c. If the owner/operator plans to exclude an uncontrolled area or cell from the collection system requirement, the owner/operator shall also record the types and amounts of all non-decomposable waste placed in the area and the percentage (if any) of decomposable waste placed in the area.
- d. Low VOC soil screening data, pursuant to part 3.
- e. The dates, locations, and frequency per day of all watering activities on unpaved roads or active soil or fill areas. The dates, locations, and type of any dust suppressant applications. The dates and description of all paved roadway cleaning activities. All records shall be summarized monthly.
- f. The initial operation date for each new landfill gas well and collector.
- g. An accurate map of the landfill that indicates the locations of all refuse boundaries and the locations of all wells and collectors (using unique identifiers) that are required to be operating continuously pursuant to part 6a. Any areas containing only non-decomposable waste shall be clearly identified. This map shall be updated at least once a year to indicate changes in refuse boundaries and to include any newly installed wells and collectors.
- h. The operating times and the landfill gas flow rate to the A-12 Landfill Gas Flare recorded on a daily basis. A monthly summary of the heat input to A-12, pursuant to part 8 shall be calculated and recorded.
- i. Continuous records of the combustion zone temperature for the A-12 Landfill Gas Flare during all hours of operation.
- j. Records of all test dates and test results performed to maintain compliance with parts 12 and 13 above or any applicable rule or regulation.
- k. Records of landfill gas condensate injection throughput and the duration of the injection recorded daily.

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. These recordkeeping requirements do not replace the recordkeeping requirements contained in any applicable rules or regulations. (basis: Cumulative Increase, 2-1-301, 2-6-501, 6-1 - 301, 6-1-305, 8-2-301, 8-34-301, 8-34-304, 8-34-501, and 9-1-302)

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16. The annual report required by BAAQMD Regulation 8-34-411 shall be submitted in two semi-annual increments. The reporting periods and report submittal due dates for 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. (basis: Regulation 8-34-411 and 40 CFR Part 63.1980(a))

17. The gas collection system operating requirements listed below shall replace the well head requirements identified in Regulation 8-34-305.2 through 8-34-305.4 for the specified wells and collectors. All wells and collectors remain subject to the Regulation 8-34-305.1 requirement to maintain vacuum at each well head.

- a. The Regulation 8-34-305.2 temperature limit shall not apply to the Wells 36 through 39, 43 through 44, 45, 51, 52, 53, 56, 57, 58, 59, 60, 64, 65, 66, 74, 75, 76, 77, 78, 79, 80, 81, 86, 87, 98 and any other wells for which the District has approved a higher operating temperature value, provided that the landfill gas temperature at each of the identified wells (except Wells 56, 75, and 80) does not exceed 145 degrees F (63 degrees C) and that the temperature at Wells 56, 75, and 80 does not exceed 156 degrees F (69 degrees C).
- b. The owner/operator shall demonstrate compliance with the alternative wellhead landfill gas temperature limit in 17(a) above by monitoring the temperature of each wellhead on a monthly basis, in accordance with Regulation 8-34-505.
- c. All records to demonstrate compliance with Part 17(a) and all applicable sections of BAAQMD Regulation 8, Rule 34 shall be recorded in a District-approved log and made available to District staff upon request in accordance with Regulation 8-34-501.4, 501.9, and 414.
- d. If the temperatures measured at any of the Part 17(a) wells are found to exceed the temperature limit in Part 17(a), the owner/operator shall take all measures necessary to investigate the possibility of subsurface fires, including landfill gas testing for carbon monoxide (CO) on those landfill gas collection wells in Part 17(a) that exceed the operating temperature limit. If a fire is suspected, the owner/operator shall employ all means as appropriate to extinguish the fire, repair the well(s), and bring the well(s) back into service according to Section 8-34-414. (basis: Regulations 8-34-301.2, 8-34-303, and 8-34-305)

18. If any other well has a temperature of 131 degrees F or higher, the owner/operator may elect to add this component to the list of alternative temperature limit wells in Part 17 if all of the following requirements are met:

- a. The wellhead temperature does not exceed 145 degrees F.
- b. The carbon monoxide (CO) concentration in the wellhead gases does not exceed 500 ppmv.
- c. The component does not exceed any wellhead limit other than temperature and had no excesses of wellhead limits (other than temperature) during the past 120 days prior to adding this component to the list in this subpart, unless the excess is positive pressure at the well from the well

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vacuum being reduced to eliminate any potential over pull that could contribute to a landfill fire.

d. Prior to adding a component to the list in Part 17, the owner/operator shall monitor the gas in the wellhead for CO concentration at least two times, with no more than 15 days between tests. CO monitoring shall continue on a monthly basis, or more frequently if required below, until the owner/operator is allowed to discontinue CO monitoring per subpart e(ii)(3).

e. The owner/operator shall comply with all applicable monitoring and recordkeeping requirements below:

i. The owner/operator shall demonstrate compliance with the alternative wellhead temperature limit by monitoring and recording the temperature of the landfill gas in the wellhead on a monthly basis, in accordance with Regulations 8-34-501.4, 8-34-501.9, and 8-34-505.

ii. If the temperature of the landfill gas in the wellhead exceeds 140 degrees F, the owner/operator shall investigate the possibility of a subsurface fire at the wellhead by monitoring CO concentration in the wellhead gases and by searching for smoke, smoldering odors, combustion residues, and other fire indicators in the wellhead and in the landfill area near the wellhead. Within 5 days of triggering a fire investigation, the owner/operator shall measure the CO concentration in the landfill gas at the wellhead using a portable CO monitor, CO Draeger tube, or an EPA-approved test method. CO monitoring shall continue according to the frequency specified below:

1. If the CO concentration is greater than 500 ppmv, the owner/operator shall immediately take all steps necessary to prevent or extinguish the subsurface fire, including disconnecting the well from the vacuum system if necessary. If the well is not disconnected from the vacuum system or upon reconnecting the well to the vacuum system, the owner/operator shall monitor the well for CO concentration, wellhead temperature, and other fire indicators on at least a weekly basis until CO concentration drops to 500 ppmv or less.

2. If the CO concentration is less than or equal to 500 ppmv but greater than 100 ppmv, the owner/operator shall monitor for CO concentration at least twice per month (not less than once every 15 days) until the CO concentration drops to 100 ppmv or less. Wellhead temperature and other fire indicators shall be evaluated at each of these semi-monthly monitoring events.

3. If the CO concentration is less than or equal to 100 ppmv, the owner/operator shall monitor for CO concentration on a monthly basis. CO monitoring may be discontinued if three consecutive CO measurements are 100 ppmv or less and the wellhead temperature during each of these three monitoring events is 140 degrees F or less. If the component has three or more CO measurement of 100 ppmv or less but the wellhead temperature was greater than 140 degrees F, the owner/operator must receive written approval from the District before discontinuing the monthly CO monitoring at that component.

iii. The owner/operator shall record the dates and results of all monitoring events required by this subpart in a District-approved log. If subpart

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18e(ii) or 18e(ii)(1) applies, the owner/operator shall also record all actions taken to prevent or extinguish the fire.

f. Within 30 days of adding a component to the list in this subpart, the owner/operator shall notify the District in writing that the operator is requesting to add the component to the list of alternative temperature limit wells. This notification shall include the well ID number, a map of the collection system to identify the location of the well, and the dates and results of all monitoring conducted on the well to verify that the above requirements have been satisfied.

g. If the Regulation 8-34-414 repair schedule has been invoked for the wellhead temperature excess and the owner/operator has met the requirement in Sections 414.1 and 414.2, then compliance with the requirements of the subpart shall be deemed an acceptable resolution of the wellhead temperature excess in lieu of the collection system expansion specified in Section 414.3 and 414.4. (basis: Regulation 8-34-305)

19. The leachate collection system operating requirements listed below shall replace the operating requirements identified in Regulation 8-34-301.1, 8-34-305.1, 8-34-305.3, and 8-34-305.4 for the leachate collection risers (LCRs) LR-04 and any other LCRs for which the District has approved for inclusion in Part 19. All LCRs remain subject to the landfill gas temperature limit in Regulation 8-34-305.2.

a. The Regulation 8-34-305.3 and 8-34-305.4, the nitrogen and oxygen content limits, shall not apply, provided that each LCR is operated at an oxygen concentration not to exceed 15% by volume.

b. If compliance with Part 19(a) requires turning off the vacuum to a LCR, the Regulation 8-34-301.1 continuous operation and 8-34-305.1 negative pressure requirement shall not apply if the owner/operator ensures the pressure at the affected LCR does not exceed 0.5 inches water column. This allowance for less than continuous operation will expire on October 30, 2013, unless the owner/operator requests renewal of this provision pursuant to Regulation 8-34-404 and the District approves the request.

c. The owner/operator shall demonstrate compliance with the oxygen content limit in 19(a) alternative wellhead pressure limit in 19(b) by installing and maintaining a District-approved vacuum/pressure gauge at each LCR and by monitoring and recording the oxygen content and pressure at each affected LCR on a monthly basis, in accordance with Regulation 8-34-501 and 8-34-505.

d. The owner/operator may elect to add additional LCRs to these alternate operating conditions by notifying the District in writing of this request, with identification of the LCR ID number(s) and submittal of the information required by Regulation 8-34-404.

e. All records to demonstrate compliance with Part 19 and all applicable sections of BAAQMD Regulation 8, Rule 34 shall be recorded in a District-approved log and made available to District staff upon request for at least 5 years from date of entry. (basis: Regulations 8-34-305, 8-34-404, 8-34-414, 8-34-501.4, and 8-34-501.9)

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*20. Sulfur dioxide emissions from the A-12 Landfill Gas Flare shall not exceed the Regulation 9-1-302 exhaust concentration limit of 300 ppmv of SO₂ (dry basis) and sulfur dioxide emissions from A-12 shall not exceed 94.9 tons per year. The owner/operator shall demonstrate compliance with these limits by meeting the following requirements.

- a. Total reduced sulfur compounds in the collected landfill gas shall be monitored as a surrogate for monitoring the sulfur dioxide concentration in the exhaust from A-12. The concentration of total reduced sulfur compounds in the collected landfill gas shall not exceed 860 ppmv (dry basis) expressed as hydrogen sulfide.
- b. If the concentration of total reduced sulfur compounds in the collected landfill gas exceeds 210 ppmv (dry basis) expressed as hydrogen sulfide, the permit holder shall demonstrate that emissions from A-12 have not exceeded the annual sulfur dioxide emission limit specified above using a District approved emissions calculation procedure. If the concentration of total reduced sulfur compounds is 210 ppmv or less, no emission calculation demonstration is required.
- c. In order to demonstrate compliance with this part, the owner/operator shall test collected landfill gas on an annual basis. The landfill gas sample shall be taken from the main landfill gas header. The owner/operator shall either test the gas for total reduced sulfur compounds (carbon disulfide, carbonyl sulfide, dimethyl sulfide, hydrogen sulfide, ethyl mercaptan, and methyl mercaptan) using District approved methods (MOP, Volume III, Methods 5, 25, or 44) or test the gas for hydrogen sulfide using a draeger tube and following the manufacturer's recommended procedures for using the draeger tube and interpreting the results. If the draeger tube method is used, the measured hydrogen sulfide concentration shall be multiplied by 1.2 to obtain the total reduced sulfur concentration. (Basis: Regulation 9-1-302 and 2-1-403)

RECOMMENDATION

Issue a Change of Permit Conditions for the gas collection system described below subject to the revised Condition # 25301.

S-1 Kirby Canyon MSW Landfill – Waste Decomposition Process; Equipped with Landfill Gas Collection System; abated by A-12, Enclosed Landfill Gas Flare with Condensate Injection System; S-22 Kirby Canyon MSW Landfill - Waste and Cover Material Dumping; and S-23 Kirby Canyon MSW Landfill - Excavating, Bulldozing, and Compacting Activities

By: Stanley Tom, P.E.
Air Quality Engineer

6/3/16
Date