Bay Area Air Quality Management District

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Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT
SIGNIFICANT REVISION

for

Allied Waste Industries, Inc.
Facility #A4618

Facility Address:
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Pittsburg, CA 94565

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Site Engineer: Carol Allen

Application: 13196

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STATEMENT OF BASIS

Allied Waste Industries, Inc.; PLANT # 4618

APPLICATION # 13196

A. BACKGROUND

Site Description:

Allied Waste Industries, Inc. owns and operates the Keller Canyon Landfill Facility (Site # A4618) in Pittsburg, CA. This facility includes an active Class II MSW landfill (S-1). The landfill is currently permitted to accept a maximum 3500 tons/day of refuse and is permitted to dispose of 38.4 million tons of decomposable waste in the landfill. As of June 30, 2005, the landfill contained 7.28 million tons of decomposable waste. In addition to MSW, this site is allowed to accept designated wastes including petroleum-contaminated soils.

Keller Canyon Landfill is equipped with an active landfill gas collection system. All collected landfill gas is currently routed to the A-1 Landfill Gas Flare for abatement. This site has also been issued an Authority to Construct for a second flare (A-2 Landfill Gas Flare), which has not been installed yet. The two flares combined have maximum permitted heat input rates of 3569 MM BTU/day and 1,302,612 MM BTU/year and can process about 5000 scfm of landfill gas. For July 2004 through June 2005, the A-1 Landfill Gas Flare actually burned an average of 1087 scfm of landfill gas.

This facility also includes a Wipe Cleaning Operation (S-2) that is permitted to use up to 100 gallons/year of mineral spirits and a Yard and Green Waste Stockpile (S-3) that is permitted to accept up to 70,200 tons/year of waste material for recycling.

Significant Revision (NSR Application # 13178 and Title V Application # 13196):

On August 11, 2005, Allied Waste Industries submitted a permit application package to request alternative wellhead standards for several landfill gas collection wells. Specifically, Allied Waste Industries requested to increase the wellhead oxygen limit at five collection wells from the Regulation 8-34-305.4 standard of 5% O_2 by volume to a proposed wellhead limit of 15% O_2 by volume. This request constitutes the establishment of a site-specific standard, which requires a significant revision of the Title V permit for this facility in addition to the standard District permit condition revisions. Application # 13178 contains the standard District permit condition revision request, while Application # 13196 contains the significant revision request for the Title V permit.

The District has determined that the requested revision to the wellhead oxygen standard is acceptable, provided that the facility demonstrates by additional monitoring that the impacted wells are functioning properly and collecting sufficient landfill gas to prevent excesses of the surface leak limit. The District has identified permit condition revisions that are necessary to ensure compliance with the proposed new wellhead oxygen limit and other existing requirements. The District's Engineering Evaluation for Application # 13178 is attached in Appendix A.

This Statement of Basis for Application # 13196 identifies and explains all changes in applicable requirements and compliance monitoring requirements that are necessary in order to establish the proposed alternative wellhead standards in addition to the District's proposed permit condition revisions.

B. EMISSIONS

As discussed in the Engineering Evaluation for Application # 13178, high wellhead oxygen levels and high wellhead temperature are indicators of subsurface conditions that could lead to a subsurface fire. The Regulation 8-34-305.2 and 305.4 wellhead temperature and oxygen limits are intended to prevent subsurface fires and are not directly related to emissions from the landfill. Some wells – especially wells located in shallow refuse, on slopes, or at the perimeter of the refuse – may experience higher oxygen levels without a corresponding increase in landfill gas temperature. For such cases, subsurface fires are unlikely, and the establishment of alternative wellhead oxygen standards is appropriate. In these circumstances, the establishment of alternative wellhead oxygen standards does not result in any emission increases at the landfill.

For this facility, Allied Waste Industries has requested to increase the wellhead oxygen standard to 15% O_2 for five wells located near slopes or near the refuse perimeter. The District has proposed additional monitoring to ensure that the surface areas near these wells do not have surface emission leaks above the Regulation 8-34-303 limit. Therefore, the District expects no emission increases due to the establishment of this alternative wellhead oxygen standard.

C. PROPOSED MFR PERMIT MODIFICATIONS

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 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 by BAAQMD Regulation 2-6-204. The Standards of Performance for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart WWW) require the owner or operator of a landfill that is subject to this part and that has a design capacity of greater than or equal to 2.5 million megagrams and 2.5 million cubic meters to obtain an operating permit pursuant to Part 70. This facility is subject to this NSPS because it commenced construction after May 30, 1991 and has design capacities that are larger than 2.5 million Mg and larger than 2.5 million m^3. Therefore, this facility is required to have an MFR permit pursuant to Regulation 2-6-304.

In addition, maximum permitted carbon monoxide (CO) emissions from this facility exceed 100 tons per year. Therefore, this facility is now a major facility as defined in Regulation 2-6-212.1, and it is also required to have an MFR permit pursuant Regulation 2-6-301.

The initial MFR Permit for this facility was issued on September 20, 2001 and was revised on December 17, 2003 and March 16, 2006. In this current proposed action, the District is proposing to establish alternative wellhead standards. Pursuant to Regulation 2-6-226.5, the establishment of or change to a case-by-case determination of any emission limit or other standard constitutes a significant revision. In accordance with Regulation 2-6-412, this significant revision requires a 30-day public comment period in addition to the standard 45-day EPA review period. The District is proposing to conduct these review periods simultaneously. The proposed MFR permit revisions for this proposed action are described below.

Sections I-III:

The District is not proposing any changes to these sections.

Section IV:

As discussed in the Engineering Evaluation for Application # 13178, Regulation 8-34-305 states: " ... each wellhead in the gas collection system shall meet the requirements of Sections 8-34-305.1 and 305.2 and either 305.3 or 305.4, unless the operator has discovered the excess and has satisfied all of the requirements of Section 8-34-414; or the operator has received permit conditions containing alternative operating levels [emphasis added]." The underlined section is referring to the establishment of alternative wellhead limits such as the alternative wellhead oxygen standard discussed in this proposed action. The alternative standard will be identified in Condition # 17309, Part 20c. These condition changes will be identified in Table IV-A, as indicated below. Since most wells will continue to be subject to Regulation 8-34-305 standards, these standards will remain in Table IV-A. However, the District is also proposing to add text to the Regulation 8-34-305 citation in order to clarify that an alternative wellhead oxygen standard applies to some wells.

In a like manner to District requirements, the federal NSPS requirements for MSW Landfills require subject landfill operators to comply with either oxygen or nitrogen wellhead standards but allow for the establishment of site-specific alternative operating values. The pertinent standard is 40 CFR 60.753(c), which states:

> Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well [emphasis added]. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

Since elevated temperatures do not accompany the elevated oxygen concentrations at the five wells, the evidence suggests that elevated oxygen levels at these wells will not cause fires. Since landfill gas is continuing to be generated in the area of these five wells, the evidence suggests that elevated oxygen levels will not inhibit anaerobic decomposition. Therefore, the establishment of the higher oxygen level of 15% O_2 by volume is allowed pursuant to 40 CFR 60.753(c). The alternative oxygen limit will be identified in Condition # 17309, Part 20c. The District is proposing to add text to the 40 CFR 60.753(c) citation in order to clarify that an alternative wellhead oxygen standard applies to some wells.

The proposed revisions for Table IV-A and shown below in strikeout and underline formatting.

Table IV – A
Source-Specific Applicable Requirements
S-1 KELLER CANYON LANDFILL,
A-1 LANDFILL GAS FLARE, AND A-2 LANDFILL GAS FLARE

Applicable Requirement	Regulation Title or Description of Requirement	Federally Enforceable (Y/N)	Future Effective Date
•••			
BAAQMD Regulation 8, Rule 34	**Organic Compounds – Solid Waste Disposal Sites (6/15/05)**		
•••			
8-34-305	Wellhead Requirements	Y	
8-34-305.1	Operate Under Vacuum	Y	
8-34-305.2	Temperature < 55 °C	Y	
8-34-305.3	Nitrogen < 20% or	Y	
8-34-305.4	Oxygen < 5% (except for wells identified in Condition # 17309, Part 20c(i))	Y	
•••			
40 CFR Part 60, Subpart WWW	**Standards of Performance for New Stationary Sources – Standards of Performance for Municipal Solid Waste Landfills (10/17/00)**		
•••			
60.753(c)	Operate each wellhead at < 55 °C, and either < 20% N_2 or < than 5% O_2 (or other approved alternative levels for wells identified in Condition # 17309, Part 20c(i))	Y	
60.753(c)(1)	N_2 determined by Method 3C	Y	
60.753(c)(2)	O_2 determined by 3A and as described in (2)(i-v)	Y	
•••			
BAAQMD Condition #17309			
•••			
Part 20	Well Installation and Design Parameters including Alternative Wellhead Limits and Associated Monitoring Requirements (Regulations 8-34-303, 8-34-304, and 8-34-305 and 40 CFR 60.755(a) and 60.759)	Y	
•••			

Section V:

The District is not proposing any changes to this section.

Section VI:

The District is proposing to modify Condition # 17309 by adding Part 20c. Part 20c identifies the alternative wellhead oxygen limit, lists the specific wells that are subject to this limit, clarifies that wellhead repair schedules will continue to apply to wells subject to an alternative oxygen limit, and describes the additional monitoring that is required in order to ensure that the alternative wellhead oxygen limits will not result in surface emission leaks in the surrounding area. The specific proposed revisions to Condition # 17309, Part 20 are shown below in strikeout and underline formatting.

Condition # 17309
For S-1 KELLER CANYON LANDFILL, A-1 LANDFILL GAS FLARE, AND A-2 LANDFILL GAS FLARE:

(no changes to Parts 1 through 19)

20. Well Installation and Design Parameters:
The Permit Holder shall apply for and receive an Authority to Construct before modifying the landfill gas collection system described in subsection a below. Increasing or decreasing the number of wells or collectors or significantly changing the locations, depths or lengths of wells or collectors are all considered to be modifications that are subject to the Authority to Construct requirement.

a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths of associated piping are as described in detail in Permit Application # 12155. The authorized number of landfill gas collection system components is the baseline count listed below plus any components added pursuant to Part 1b as evidenced by start-up notification letters submitted to the District.

Well Station	Number of Wells
A	12
E	12
K	12
L	6
M	9
N	16
P	8

b. The Permit Holder has been issued an Authority to Construct to allow for the landfill gas collection system modifications described below as of June 9, 2005. Well and collector locations, depths, and lengths are as described in detail in Permit Application # 12155.

- Install a minimum of 15 up to a maximum of 20 vertical gas collection wells.
- Install 2 wellhead stations that will provide flow rate control and monitoring points for the above wells.

c. Each landfill gas collection system component listed in Part 20a shall be operated in compliance with the wellhead limits of Regulation 8-34-305, unless an alternative wellhead limit has been approved for that component, as identified in subpart c(i), and the Permit Holder complies with all of the additional requirements for that component, as identified in subparts c(ii-vii).

i. The nitrogen and oxygen concentration limits in Regulation 8-34-305.3 and 8-34-305.4 shall not apply to the landfill gas collection wells listed below, provided that the oxygen concentration in each of the following wells does not exceed 15% by volume.
EW-M005, EW-M008, EW-M009, EW-O005, EW-O015

ii. The Permit Holder shall demonstrate compliance with the alternative wellhead oxygen limit in subpart c(i) by monitoring each wellhead for oxygen on a monthly basis, in accordance with the provisions of Regulations 8-34-505 and 8-34-604.

iii. All test dates, wellhead oxygen concentration data, any deviations from the subpart c(i) limit, repair actions, repair dates, re-monitoring dates and results, and compliance restoration dates shall be recorded in a District approved log and made available to District staff upon request in accordance with Regulations 8-34-34-501.4, 8-34-501.9, and 8-34-414.

iv. To demonstrate that the alternative wellhead oxygen limit in subpart c(i) will not cause surface emission leaks, the Permit Holder shall conduct additional surface emission monitoring in the vicinity of each component listed in subpart c(i). For each component in subpart c(i), the Permit Holder shall maintain a map showing the location of the buried collection component and identifying the approximate radius of influence for the component. For each component in subpart c(i), the Permit Holder shall monitor for landfill surface emissions – in accordance with Regulations 8-34-506 and 8-34-607 – at three representative points on the landfill surface that are within the radius of influence of the component and that are not more than 15 meters from the surface location of the component. This additional surface emission monitoring shall be conducted on a monthly basis for a period of at least six consecutive months.

v. If no excesses of the Regulation 8-34-303 surface emission limit are detected in the vicinity of a component for six consecutive months, the Permit Holder may discontinue the additional monthly surface emission monitoring in the vicinity of that component and shall continue with the

routine quarterly surface emission monitoring requirements in the vicinity of that component.

vi. If one or more excesses of the Regulation 8-34-303 surface emission limit are detected in the vicinity of a component during a six consecutive month period, the Permit Holder shall follow all applicable requirements for recording and reporting the excess and shall follow the Regulation 8-34-415 repair schedule for landfill surface leak excesses. The additional monthly surface emission monitoring in the vicinity of that component shall continue until either the no surface excess requirements of subpart c(v) have been achieved or the repair and compliance restoration requirements of subpart c(vii) have been satisfied.

vii. If excesses of the Regulation 8-34-303 surface emission limit are detected in the vicinity of a component for three or more monitoring events during a six consecutive month period, the subpart c(i) alternative wellhead oxygen limit shall be revoked for that component. The Permit Holder shall conduct all necessary repairs to the landfill gas collection well, to any piping associated with the well or the remote wellhead monitoring system, to valves, flanges, or other connectors, and to any test ports or other openings that are necessary to eliminate air intrusion into the well or the monitoring point, to prevent impairment of vacuum application or vacuum adjustment at the collection well, and to restore the collection well and associated monitoring point to proper function. The Permit Holder shall complete all of the above repairs and any necessary landfill surface and shall restore compliance with the Regulation 8-34-303 surface emission limit (in the vicinity of that component) and the Regulation 8-34-305.4 wellhead oxygen concentration limit by the earlier of the following dates: (a) within 120 days of the date that the first excess was discovered if the three excess events are discovered within a single quarterly period pursuant to the re-monitoring requirements of 8-34-415 or (b) within 60 days of detection of the third excess.

(Basis: Regulations 8-34-303, 8-34-304, 8-34-305, 40 CFR 60.755(a) and 60.759)

(no changes to Parts 21 through 37)

Section VII:

As discussed for Section VI above, the District is proposing to add an alternative wellhead oxygen standard to Condition # 17309, Part 20c(i). Part 20c(ii-iii) describe how compliance with this new limit shall be demonstrated using existing wellhead oxygen monitoring procedures and record keeping requirements.

In addition to these requirements, the District is proposing to add additional landfill surface monitoring requirements in the vicinity of the wells that are meeting an alternative oxygen limit in order to ensure that these wells are functioning properly and are continuing to collect sufficient landfill gas to prevent surface emission leaks. These additional monitoring requirements are identified in Part 20c(iv-vi). If excessive surface emission leaks are discovered, subpart 20c(vii) revokes the alternative wellhead oxygen limit and requires the operator to repair or replace the improperly operating well.

The proposed revisions to Table VII-A are shown below in strikeout and underline formatting. These revisions are necessary to identify the alternative wellhead oxygen limit and to identify the associated monitoring citations. The District is also proposing to clarify that some wells are subject to an alternative oxygen limit by adding text to the District and federal wellhead limit citations.

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 KELLER CANYON LANDFILL;
A-1 LANDFILL GAS FLARE; AND A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
…							
Gas Concen-trations at Wellhead	BAAQMD 8-34-305.3 or 305.4	Y		N_2 < 20% OR O_2 < 5% (Applies to all wells except for wells identified in Condition # 17309, Part 20c(i))	BAAQMD 8-34-414, 501.9 and 505.3 or 505.4	P/M	Monthly Inspection and Records
Gas Concen-trations at Wellhead	40 CFR 60.753(c)	Y		N_2 < 20% OR O_2 < 5% (Applies to all wells except for wells identified in Condition # 17309, Part 20c(i))	40 CFR 60.755(a)(5), 60.756(a)(2), and 60.758(c) and (e)	P/M	Monthly Inspection and Records

Table VII – A
Applicable Limits and Compliance Monitoring Requirements
S-1 KELLER CANYON LANDFILL;
A-1 LANDFILL GAS FLARE; AND A-2 LANDFILL GAS FLARE

Type of Limit	Citation of Limit	FE Y/N	Future Effective Date	Limit	Monitoring Requirement Citation	Monitoring Frequency (P/C/N)	Monitoring Type
Gas Concen-trations at Wellhead	BAAQMD Condition # 17309, Part 20c(i)	Y		O_2 < 15% (Applies only to wells identified in Condition # 17309, Part 20c(i))	BAAQMD Condition # 17309, Part 20c(ii and iii)	P/M	Monthly Inspection and Records
...							
TOC	BAAQMD 8-34-303 and Condition # 17309, Part 20c(iv)	Y		Surface Leak Limit: < 500 ppmv as methane at 2 inches above surface (Applies to surface vicinity near wells identified in Condition # 17309, Part 20c(i) that are complying with an alternative wellhead oxygen standard instead of the 8-34-305.4 limit)	Condition # 17309, Part 20c(iv-vi)	P/M	Monthly Inspection with OVA of Surface (3 points within 15 m of well), Various Reinspection Times for Leaking Areas, and Records
...							

Section VIII:

The proposed new wellhead oxygen and surface leak monitoring requirements discussed in Sections VI and VII above will use existing monitoring procedures. These monitoring procedures will be cited in Table VIII as indicated below.

Table VIII
Test Methods

Applicable Requirement	Description of Requirement	Acceptable Test Methods
…		
BAAQMD Condition # 17309, Part 20c(i)	Wellhead Oxygen	EPA Reference Method 3C, Determination of Carbon Dioxide, Methane, Nitrogen, and Oxygen from Stationary Sources
BAAQMD Condition # 17309, Part 20c(iv)	Landfill Surface Requirements	EPA Reference Method 21, Determination of Volatile Organic Compound Leaks
…		

Section IX:

The District is not proposing any changes to this section.

Section X:

The proposed revisions presented above to Sections IV, VI, VII, and VIII will be summarized in the revision history section, as shown below for Application # 13196. In addition, the District is proposing to make an administrative correction to Section X by adding the final issuance date to the significant revision citation associated with Application # 11385.

X. REVISION HISTORY

Title V Permit Issuance (Application # 17348): September 20, 2001

…

Significant Revision (Application # 11385): ~~[insert approval data]~~March 16, 2006

…

Significant Revision (Application # 13196): [insert approval data]

- Add an alternative wellhead oxygen standard to Condition # 17309, Part 20c(i) and Table VII-A.
- Identify wells that are subject to this alternative oxygen standard in Table IV-A, Table VII-A, and Condition # 17309, Part 20c(i).

- Add monitoring and record keeping requirements and procedures for wells subject to the alternative wellhead oxygen standard and the surface vicinity near these wells to Table VII-A, Table VIII, and Condition # 17309, Part 20c(ii-vi).
- Identify criteria for revoking the alternative wellhead oxygen standard for a particular well and state corrective measures to be taken in such situations in Condition # 17309, Part 20c(vii).
- In Section X, correct a date citation and update the revision history to include this proposed revision.

Sections XI-XII:

The District is not proposing any changes to these sections.

D. SUMMARY OF PROPOSED ACTIONS

The District recommends approval of a proposed significant revision of the MFR Permit for Site # A4618 that will:

- Establish an alternative wellhead oxygen limit of 15% O_2 by volume.
- Add applicability criteria for this alternative wellhead oxygen limit.
- Identify monitoring and record keeping requirements and procedures for wells that are subject to this alternative wellhead oxygen limit.
- Add additional monitoring requirements for surface emissions in the vicinity of wells that are subject to the alternative wellhead oxygen limit.
- Make an administrative correction to Section X.

The District recommends issuance of a public notice for this proposed significant revision of the MFR Permit for Site # A4618.

APPENDIX A

ENGINEERING EVALUATION

APPLICATION # 13178

ENGINEERING EVALUATION

Allied Waste Industries, Inc.; Site # A4618

APPLICATION # 13178

A. BACKGROUND

Site Description:

Keller Canyon Landfill Company (KCLC), a subsidiary of Allied Waste Industries, Inc., owns and operates the Keller Canyon Landfill Facility (Facility # A4618) in Pittsburg, CA. This facility includes an active Class II MSW landfill (S-1), which is equipped with a landfill gas collection system. The landfill is currently permitted to accept a maximum 3500 tons/day of refuse and is permitted to dispose of 38.4 million tons of decomposable waste in the landfill. As of June 30, 2004, the landfill contained 6.15 MM tons of decomposable waste. In addition to MSW, this site is allowed to accept designated wastes including petroleum-contaminated soils.

The A-1 Landfill Gas Flare is currently controlling all collected landfill gas for the Keller Canyon Landfill. This flare has maximum permitted capacities of 1744.8 MM BTU/day and 636,852 MM BTU/year and can process about 2438 scfm of landfill gas. For July 2003-June 2004, KCLC reported that A-1 burned an average of 881 scfm of landfill gas. The District has issued an Authority to Construct for a second enclosed flare (A-2) with maximum capacities of 76 MM BTU/hour and 2500 cfm of landfill gas. This second flare is necessary to ensure that the landfill gas control system has adequate capacity to handle the maximum projected landfill gas generation rate for the next ten to fifteen years.

This facility also includes a Wipe Cleaning Operation (S-2) that is permitted to use up to 100 gallons/year of mineral spirits and a Yard and Green Waste Stockpile (S-3) that is permitted to accept up to 70,200 of waste material for recycling. Last year, actual throughput rates were 0 gallons/year of mineral spirits at S-2 and 35,073 tons/year of yard waste materials at S-3.

Current Project:

KCLC submitted Application # 13178 to request a Change of Conditions that would allow alternative standards to the Regulation 8-34-305 wellhead limits. Specifically, KCLC has requested to increase the oxygen content limit for five landfill gas collection wells (EW-M005, EW-M008, EW-M009, EW-O005, and EW-O015) from 5% by volume (8-34-305.4) to 15% by volume. This proposal is discussed in more detail in the Emissions and Statement of Compliance sections of this report.

KCLC also requested condition changes that would allow an alternative demonstration of compliance with respect to the negative pressure standard (8-34-305.1), if approved by the Administrator (EPA). However, no EPA approvals, supporting data, or specific alternative proposed limits or designs were submitted to justify an alternative to the negative pressure standard. Therefore, the District is taking no action on this request for an alternative to the negative pressure standard. Any future requests concerning this issue will require a new application.

As a point of interest, it is the District's policy to require negative pressure at each wellhead that is required to be part of a continuously operating active landfill gas collection system to prevent surface emission leaks. For active sites, District testing has often found surface emission leaks above the Regulation 8-34-303 surface leak standard in the vicinity of wells that have had positive pressures for more than five consecutive days. Based on this experience, District staff concludes that establishing an alternative to the negative pressure requirement would likely result in surface emission leaks and would also create a conflict with respect to Regulations 8-34-219 and 8-34-301.1. By the continuous operation definition in Regulation 8-34-219, wells that are operating under positive pressure are not operating continuously and would be in violation of Regulation 8-34-301.1, unless the facility has received APCO approval to operate specific wells on a less than continuous basis. Pursuant to Regulation 8-34-404, a facility may request to operate specific wells on a less than continuous basis. However, less than continuous operation is typically only granted for redundant wells or wells located in older refuse areas. For example, some sites have secondary collection systems, which are designed to prevent offsite gas migration. These redundant wells are typically located outside of refuse and are only activated if methane is detected. Some sites have very old inactive or closed refuse areas where methane gas generation has decreased to such an extent that continuous collection of landfill gas from that area is no longer possible. The applicant provided no data to suggest that the request for an alternative to the negative pressure standard was for any situation that would be a good candidate for a less than continuous operation petition. Since a less than continuous operation petition has not been approved for this site, establishing an alternative to the negative pressure standard would create a conflict of regulations and would likely result in violations of other standards. Therefore, this request does not appear to be approvable for this site at this time.

KCLC requested that any alternative standards be listed "outside of the Title V permit". The District's procedure for granting alternative wellhead standards is to propose permit condition changes that would establish the alternative limits for specifically listed wells. All permit conditions are contained within the Title V permit. In fact, a significant revision of the Title V permit is required before any alternative wellhead standards approved by the APCO could become effective. Therefore, it is not possible to establish alternative standards "outside of the Title V permit".

The remainder of this report concerns KCLC's request for an alternative oxygen limit of 15% for five wells.

B. EMISSIONS

In accordance with Regulation 8-34-305, the District may establish alternatives to the wellhead standards listed in Regulation 8-34-305.1-4. The wellhead temperature (8-34-305.2), nitrogen (8-34-305.3) and oxygen (8-34-305.4) standards are intended to prevent subsurface fires and are not expected to influence surface emission leaks from the landfill. The alternative standards are intended to give additional leeway in determining the proper operating levels for an adequately functioning well. The proper operating levels for temperature, nitrogen and oxygen may vary considerably from site to site and even well to well, depending of ambient conditions, age and depth of the refuse, compaction density, cover practices, moisture content, porosity and many other factors. However, the District has found that very high oxygen levels (above 15% by volume) are often found at wellheads that have positive pressure and/or inadequate landfill gas flow from the well. These latter conditions do tend to result in excess surface emission leaks from areas near the affected well, because the well is not functioning properly. In other words,

very high oxygen levels are another symptom of a poorly functioning well. Therefore, the District has in the past limited the oxygen content at wells with alternative oxygen limits to no more than 15% O_2 by volume to ensure that wells with alternative oxygen limits are continuing to function properly.

Keller Canyon Landfill Company has requested an alternative oxygen standard of 15% O_2 by volume for the following five wells: EW-M005, EW-M008, EW-M009, EW-O005, and EW-O015. Increasing the oxygen content limit from 5% to 15% is not expected to result in any emission increases.

C. STATEMENT OF COMPLIANCE

Regulation 2, Rule 1:

This application is for a change of permit conditions at the S-1 Keller Canyon Landfill that will not require any physical changes and that will not result in any emission increases at this facility. Therefore, this change of permit conditions is categorically exempt from CEQA review pursuant to Regulation 2-1-312.1 and 2-1-312.2, and no further CEQA review is required.

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

Regulation 2, Rule 2:

Since this project will not result in any increases of maximum permitted emissions from S-1, this project is not subject to New Source Review or the requirements of Regulation 2, Rule 2.

New Source Review for Toxic Air Contaminants:

Since this project will not result in any increases of maximum permitted emissions from S-1, this project is not subject to New Source Review for Toxic Air Contaminants.

Regulation 2, Rule 6:

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 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 by BAAQMD Regulation 2-6-204. The NSPS for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart WWW) requires the owner or operator of a landfill that is subject to this part and that has a design capacity of greater than or equal to 2.5 million megagrams and 2.5 million cubic meters to obtain an operating permit pursuant to Part 70. This facility is subject to this NSPS and meets the designated facility criteria listed in 40 CFR § 60.32c(c). Therefore, a Title V permit is required pursuant to Regulation 2-6-304.

In addition to being a designated facility, the maximum permitted CO emission rate for this site exceeds 100 tons/year of CO. Therefore, a Title V permit is required pursuant to Regulation 2-6-301 as well as Regulation 2-6-304.

The initial MFR Permit for this facility was issued on September 20, 2001 and was revised on December 17, 2003. The District proposed a significant revision of this MFR permit on

December 15, 2005. This revision is currently under public comment and EPA review. This application will require a significant revision of the current MFR permit to incorporate the proposed permit condition revisions. The proposed MFR permit revisions related to this application are discussed in the Statement of Basis for Application # 13196.

Regulation 8, Rule 34:

Regulation 8-34-305 states:

> **8-34-305** **Wellhead Requirements:** Effective July 1, 2002 and except as provided in Sections 8-34-119 or 120, each wellhead in the gas collection system shall meet the requirements of Sections 8-34-305.1 and 305.2 and either 305.3 or 305.4, unless the operator has discovered the excess and has satisfied all of the requirements of Section 8-34-414; or the operator has received permit conditions containing alternative operating levels:
>
> 305.1 Each wellhead shall operate under a vacuum (negative pressure); and
>
> 305.2 The landfill gas temperature in each wellhead shall be less than 55° C (131° F); and either
>
> 305.3 The nitrogen concentration in each wellhead shall be less than 20% by volume; or
>
> 305.4 The oxygen concentration in each wellhead shall be less than 5% by volume.

While Regulation 8-34-305.4 establishes a default wellhead oxygen (O_2) limit of 5% by volume, the preamble states that compliance with this limit may be demonstrated by meeting permit conditions containing alternative operating levels. The proposed permit conditions will establish an alternative operating level of 15% O_2 by volume for five wells. This elevated oxygen level is not expected to cause fires or to inhibit anaerobic decomposition. The permit holder will be required to demonstrate compliance with this alternative standard in accordance with Regulation 8-34-505, which requires monthly monitoring of all landfill gas wells for gauge pressure, temperature, and oxygen content.

Regulation 8-34-414 identifies a repair schedule that should be followed if an excess of a Regulation 8-34-305 wellhead limit is discovered. Permit conditions will clarify that this repair schedule should also be followed if an excess of the alternative oxygen concentration limit is discovered. However, the District notes that a potential conflict exists in the language of Sections 414.3 and 414.4. Section 414.3 states that the gas collection system shall be expanded, if the wellhead excess cannot be repaired within 15 days of the date that the excess was first discovered. In some cases, a landfill gas collection system expansion is not the appropriate way to bring collection system wells back into compliance with applicable wellhead standards. This is especially true for excesses of temperature limits or oxygen concentration limits. If fire is the suspected cause of a temperature excess, the appropriate response would be to temporarily disconnected the well from vacuum and extinguish the fire. For some wellheads that have excess of the oxygen concentration limit, expanding the gas collection system could introduce more air into the wells and could exacerbate the problem. For many cases of wellhead oxygen concentration excesses, the appropriate corrective action is to repair or replace the particular well, monitoring point, or landfill surface near this well/monitoring point. Such corrective actions could return the well to compliant status, but would not constitute an “expansion” of the gas collection system. Due to the logistics of the necessary repair or replacement activities, it may not be possible to complete all necessary corrective actions within 15 days. For wells subject to alternative wellhead oxygen limits that require a corrective action pursuant to Section 414.3, the

landfill gas collection system does not need to be "expanded" to correct the wellhead excess, if other corrective actions can be completed within the time period allowed pursuant to Section 414.4.

Although KCLC has requested an alternative wellhead oxygen concentration limit of 15% by volume for five wells, the data submitted with this permit application shows that these wells have had numerous instances of oxygen concentrations measuring above 15% O_2. Because of these very high oxygen readings, the District is concerned that these wells or the associated piping and monitoring equipment have vacuum system leaks that may be impairing the proper functioning of these wells and that may lead to surface emission excesses. To ensure that approving elevated oxygen levels at these wells will not result in emission increases, the District recommends that surface emission monitoring frequency be increased in the vicinity of these wells. The specific proposed surface emission monitoring procedures for these five wells are described in detail in the Permit Conditions section of this report.

Federal Requirements:

NSPS for MSW Landfills: In the BAAQMD, compliance with Regulation 8, Rule 34 will ensure compliance with all applicable requirements of 40 CFR, Part 60, Subpart WWW. Specific applicable NSPS requirements are listed in the existing MFR Permit. The pertinent standard is 40 CFR 60.753(c), which states:

> Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

As with Regulation 8-34-305, the NSPS allows for the establishment of alternative wellhead standards. These alternative standards must be approved by the administrator, which in this case is the District, prior to implementation. The MFR Permit review and approval process constitutes approval by the administrator of an alternative standard for 40 CFR 60.753(c). EPA will also have the opportunity to review the District's proposed alternative standards pursuant to the MFR Permit review process. KCLC is expected to continue to comply with all applicable NSPS monitoring and record keeping requirements for the five affected wellheads including: 40 CFR 60.755(a)(5), 60.756(a)(2), and 60.758(e).

NESHAPs for MSW Landfills: Any landfills that are subject to the landfill gas collection and control requirements of either the NSPS for MSW Landfills or the EG for MSW Landfills are also subject to the NESHAPs for MSW Landfills (40 CFR, Part 63, Subpart AAAA). This NESHAP requires that subject facilities prepare and implement startup, shutdown, malfunction plans (SSM Plans) and additional reporting requirements. All applicable requirements are contained in the existing MFR permit. This facility is expected to continue to comply with these requirements.

D. PERMIT CONDITION REVISIONS

The District is proposing to modify Condition # 17309, Part 20 by adding subpart c, as indicated below. Part 20, subpart c identifies the applicable regulation for wellhead limits and authorizes

an alternative oxygen concentration limit for five collection wells in subpart c(i). Subparts c(ii) and c(iii) describe the monitoring and record keeping requirements that should be used to demonstrate compliance with this alternative wellhead oxygen concentration limit. These requirements are the same as the monitoring and record keeping requirements that apply to all wellheads. Subpart c(iii) also indicates that the Regulation 8-34-414 repair schedule for wellhead excess may be used, if an excess of the alternative wellhead oxygen concentration limit is discovered. The Statement of Compliance Section contains additional discussion about appropriate corrective actions that may be taken in conjunction with the use of this repair schedule.

As discussed in the Statement of Compliance Section, the District is concerned that some of the five wells that will be subject to an alternative wellhead oxygen concentration limit may have vacuum leaks within the remote piping that leads to the monitoring and vacuum adjustment points. These vacuum leaks may be severe enough to impair the proper functioning of these wells. Allowing a higher oxygen concentration limit for these wells could mask this problem and potentially lead to surface emission excesses. To ensure that allowing a 15% O_2 limit at these wells will not result in surface emission excesses, the District is recommending that the facility conduct additional surface emission monitoring in the vicinity of the five wells with this alternative oxygen limit. This additional surface emission monitoring is only required, if the facility opts to use the Part 20c(i) alternative wellhead oxygen concentration limit instead of Regulation 8-34-305.4. Part 20c(iv) describes the locations, frequency, duration, and testing procedures for this proposed additional surface emission monitoring requirement. Subpart c(v) identifies the criteria that must be satisfied in order to discontinue this additional surface emission monitoring. Subparts c(vi) and c(vii) describe procedures that should be followed, if surface emission excesses are detected in the vicinity of the wells that are subject to the alternative oxygen limit. Subpart c(vii) also describes the criteria under which the alternative oxygen limit will be revoked and identifies the appropriate corrective actions that should be taken to bring this facility back into compliance with the Regulations 8-34-303 surface emission limit and the Regulation 8-34-305.4 wellhead oxygen concentration limit.

Condition # 17309
For S-1 KELLER CANYON LANDFILL, A-1 LANDFILL GAS FLARE, AND A-2 LANDFILL GAS FLARE:

(no changes to Parts 1-19)

20. Well Installation and Design Parameters:
The Permit Holder shall apply for and receive an Authority to Construct before modifying the landfill gas collection system described in subsection a below. Increasing or decreasing the number of wells or collectors or significantly changing the locations, depths or lengths of wells or collectors are all considered to be modifications that are subject to the Authority to Construct requirement.
    a. The Permit Holder has been issued a Permit to Operate for the landfill gas collection system components listed below. Well and collector locations, depths, and lengths of associated piping are as described in detail in Permit Application # 12155. The authorized number of landfill gas collection system components is the

baseline count listed below plus any components added pursuant to Part 1b as evidenced by start-up notification letters submitted to the District.

Well Station	Number of Wells
A	12
E	12
K	12
L	6
M	9
N	16
P	8

b. The Permit Holder has been issued an Authority to Construct to allow for the landfill gas collection system modifications described below as of June 9, 2005. Well and collector locations, depths, and lengths are as described in detail in Permit Application # 12155.

- Install a minimum of 15 up to a maximum of 20 vertical gas collection wells.
- Install 2 wellhead stations that will provide flow rate control and monitoring points for the above wells.

c. Each landfill gas collection system component listed in Part 20a shall be operated in compliance with the wellhead limits of Regulation 8-34-305, unless an alternative wellhead limit has been approved for that component, as identified in subpart c(i), and the Permit Holder complies with all of the additional requirements for that component, as identified in subparts c(ii-vii).

i. The nitrogen and oxygen concentration limits in Regulation 8-34-305.3 and 8-34-305.4 shall not apply to the landfill gas collection wells listed below, provided that the oxygen concentration in each of the following wells does not exceed 15% by volume.
EW-M005, EW-M008, EW-M009, EW-O005, EW-O015

ii. The Permit Holder shall demonstrate compliance with the alternative wellhead oxygen limit in subpart c(i) by monitoring each wellhead for oxygen on a monthly basis, in accordance with the provisions of Regulations 8-34-505 and 8-34-604.

iii. All test dates, wellhead oxygen concentration data, any deviations from the subpart c(i) limit, repair actions, repair dates, re-monitoring dates and results, and compliance restoration dates shall be recorded in a District approved log and made available to District staff upon request in accordance with Regulations 8-34-34-501.4, 8-34-501.9, and 8-34-414.

iv. To demonstrate that the alternative wellhead oxygen limit in subpart c(i) will not cause surface emission leaks, the Permit Holder shall conduct additional surface emission

monitoring in the vicinity of each component listed in subpart c(i). For each component in subpart c(i), the Permit Holder shall maintain a map showing the location of the buried collection component and identifying the approximate radius of influence for the component. For each component in subpart c(i), the Permit Holder shall monitor for landfill surface emissions – in accordance with Regulations 8-34-506 and 8-34-607 – at three representative points on the landfill surface that are within the radius of influence of the component and that are not more than 15 meters from the surface location of the component. This additional surface emission monitoring shall be conducted on a monthly basis for a period of at least six consecutive months.

v. If no excesses of the Regulation 8-34-303 surface emission limit are detected in the vicinity of a component for six consecutive months, the Permit Holder may discontinue the additional monthly surface emission monitoring in the vicinity of that component and shall continue with the routine quarterly surface emission monitoring requirements in the vicinity of that component.

vi. If one or more excesses of the Regulation 8-34-303 surface emission limit are detected in the vicinity of a component during a six consecutive month period, the Permit Holder shall follow all applicable requirements for recording and reporting the excess and shall follow the Regulation 8-34-415 repair schedule for landfill surface leak excesses. The additional monthly surface emission monitoring in the vicinity of that component shall continue until either the no surface excess requirements of subpart c(v) have been achieved or the repair and compliance restoration requirements of subpart c(vii) have been satisfied.

vii. If excesses of the Regulation 8-34-303 surface emission limit are detected in the vicinity of a component for three or more monitoring events during a six consecutive month period, the subpart c(i) alternative wellhead oxygen limit shall be revoked for that component. The Permit Holder shall conduct all necessary repairs to the landfill gas collection well, to any piping associated with the well or the remote wellhead monitoring system, to valves, flanges, or other connectors, and to any test ports or other openings that are necessary to eliminate air intrusion into the well or the monitoring point, to prevent impairment of vacuum application or vacuum adjustment at the collection well, and to restore the collection well and associated monitoring point to proper function. The Permit Holder shall complete

all of the above repairs and any necessary landfill surface and shall restore compliance with the Regulation 8-34-303 surface emission limit (in the vicinity of that component) and the Regulation 8-34-305.4 wellhead oxygen concentration limit by the earlier of the following dates: (a) within 120 days of the date that the first excess was discovered if the three excess events are discovered within a single quarterly period pursuant to the re-monitoring requirements of 8-34-415 or (b) within 60 days of detection of the third excess.

(Basis: Regulations 8-34-303, 8-34-304, 8-34-305, 40 CFR 60.755(a) and 60.759)

(no changes to Parts 21-37)

E. RECOMMENDATION

Issue a Change of Permit Conditions for the following equipment:

S-1 Keller Canyon Landfill; abated by Flares (A-1 and A-2):

signed by Carol S. Allen — January 10, 2006

By: Carol S. Allen — Date

Senior Air Quality Engineer