Draft Statement of Basis for
King County Solid Waste Division – Cedar Hills Regional Landfill
AOP 10138 Renewal 1
<issuance date TBD>

1 Applicant

The applicant for this project is King County Solid Waste Division. The applicant's Primary Responsible Official's name and mailing address are: Mr. Pat D. McLaughlin, Division Director, King County Solid Waste Division, 201 S. Jackson Steet, Suite 5701, Seattle, Washington 98104.

2 Facility Location

The applicant owns and operates the existing Cedar Hills Regional Landfill (CHRLF), which is located in King County at 16645 228th Avenue SE, Maple Valley, WA 98038.

Aerial View of Cedar Hills Landfill – 2022

3 Purpose of this Statement of Basis

This document summarizes the legal and factual bases for the permit conditions in the Title V air operating permit (AOP) for the King County Solid Waste Division's Cedar Hills Regional Landfill (**Permittee**) to be issued under the authority of the Washington Clean Air Act, Chapter 70.94, Revised Code of Washington (RCW), Chapter 173-401 of the Washington Administrative Code (WAC) and Puget Sound Clean Air Agency (PSCAA) Regulation I, Article 7. Unlike the permit, this document is not legally enforceable. It includes references to the applicable statutory or regulatory provisions that relate to the Permittee's emissions to the atmosphere. In addition, this Statement of Basis provides a description of the Permittee's activities and a compliance history.

4 Why Cedar Hills Regional Landfill is an Air Operating Permit Source

The Permittee is required to have an air operating permit because the new construction of Area 5 made 40 CFR 60, Subpart WWW applicable to the facility. That subpart required that an application be submitted for a Title V air operating permit. Following further expansions subsequent to July 17, 2014 (Area 8), the facility became subject to regulation pursuant to 40 CFR 60, Subpart XXX – Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014. By EPA designation, facilities subject to this regulation must operate under the authority of a Title V air operating permit regardless of potential emissions of criteria and/or hazardous air pollutants. However, the landfill collection and control system at this facility emits greater than the Title V major source level of 100 tons per year of carbon monoxide (CO), nitrogen oxides (NO_X), sulfur dioxide (SO_2), and volatile organic compounds (VOC). In addition, landfills subject to regulation pursuant to 40 CFR 60, Subpart XXX, that emit greater than 34 megagrams per year of nonmethane organic compounds (NMOC) have the potential to emit greater than the Title V major source levels of 10 tons of a single HAP and/or 25 tons of all HAPs. Sources that have the potential to emit pollutants in quantities greater than the Title V major source levels are required by 40 CFR 70 to operate under the authority of a Title V air operation permit.

5 Source Description

The King County Solid Waste Division handles 100% of the municipal solid waste generated in King County, exclusive of that generated within the Cities of Seattle and Milton. The landfill is located 20 miles southeast of Seattle and is owned and operated by the King County Solid Waste Division. In 1960, the King County Board of Commissioners issued the Cedar Hills Special Permit authorizing the landfill.

The Cedar Hills Regional Landfill (CHRLF) is an engineered facility that is specifically constructed for the purpose of safely and permanently disposing of municipal solid waste. It is constructed in cells or sections isolated from other parts of the landfill by soil or other noncombustible cover material. Older sections have clay-based or flexible membrane caps. New sections are required to have caps and double liners under the landfill to prevent groundwater contamination. Monofil asbestos waste containing trenches are created in each lift. The location of each lift's asbestos trench is recorded as per federal regulation. The landfill is required to manage leachate, collect and control methane gas emissions, and prevent soil erosion.

CHRLF is one of the largest municipal solid waste landfills in the Pacific Northwest with 920 acres in area, approximately 406 acres of which is available for municipal solid waste (refuse) disposal and support functions, and the rest is buffer zone. CHRLF serves a population of 1.3 million in 37 of the 39 cities located in King County. It has been in operation since the 1960's.

There are currently ten disposal areas at the site (see Table below). Three pre-1986 disposal areas are unlined, while the post-1989 areas are all lined. Six of the disposal areas are closed with final covers and two of the disposal areas are partially closed with interim cover, leaving one active area for daily refuse disposal.

LANDFILL CAPACITY – CHRLF Annual Report, April 2022		
Landfill Area	**Area Specific Information**	
Main Hill	Status	Closed
	Exposed Surface Area	84.4 acres
	Volume in Place	18,300,000 cubic yards
South Solid Waste Area	Waste was removed from this area and relocated to Area 7.	
Southeast Pit	Status	Closed
	Exposed Surface Area	9.6 acres
	Volume in Place	405,000 cubic yards
Central Pit	Status	Closed
	Exposed Surface Area	9.6 acres
	Volume in Place	4,000,000 cubic yards
Area 2/3	Status	Closed
	Exposed Surface Area	22.2 acres
	Volume in Place	9,150,000 cubic yards
Area 4	Status	Closed
	Exposed Surface Area	22.2 acres
	Volume in Place	10,200,000 cubic yards
Area 5	Status	Interim closure
	Final Cover Surface Area	9.2 acres
	Top Deck Interim Cover Area	31.4 acres
	Volume in Place	8,400,000 cubic yards
	Potential Future Top Deck Filling	940,000 to 1,360,000 cubic yards
	Potential additional Filling	2026-2028
Area 6	Status	Interim closure
	Final Cover Surface Area	25.2 acres
	Top Deck Interim Cover Area	30.1 acres
	Volume in Place	6,800,000 cubic yards
	Potential Future Top Deck Filling	970,000 to 1,840,000 cubic yards
	Potential additional Filling	2026-2028
Area 7	Status	Final Closure (Pending)
	Final Cover Surface Area	9.1 acres
	Top Deck Area	17.4 acres
	Volume in Place	8,070,000 cubic yards
Area 8	Status	Active
	Liner Footprint Area	31.4 acres
	Permitted Capacity	7,840,000 cubic yards
	Volume in Place (as of Oct. 19, 2021)	2,313,360 cubic yards
	Remaining Capacity	5,528,664 cubic yards
	Projected Closure	2026-2027

The average thickness of refuse areas ranges from 140 to 240 feet, leaving more than 200 feet of buffer zone between the floors of refuse areas and the regional groundwater beneath the site. Each day, approximately 2,500 tons of refuse is delivered to CHRLF for disposal with an in-situ density of nearly 1,600 pounds per cubic yards (Lbs/CY). At the incoming refuse rate and recycling trends in 2016, CHRLF was expected to reach its final capacity in 2040. Depending upon compaction rates and KCSWD's intention to develop remaining areas to a maximum final height of 788 to 830 feet above mean sea level, depending on the area. At the current rate of incoming

refuse, the current maximum permitted capacity could be reached as early as 2028, however, planning for future refuse areas is underway with an anticipated capacity through 2038.

Landfill gas generated from the decomposition of buried organic wastes is extracted from the landfill and is either combusted through landfill gas combustors (flares) or delivered to the nearby Bio Energy Washington landfill gas conditioning plant for conversion to pipeline-quality natural gas.

The permitted facility consists of:

- A truck weigh station for recording the amount of waste coming to the facility.
- A "working face" cell that is constructed to accept waste.
- A compactor to compact the waste as it is being received.
- A "borrow area" where soil or other cover material is being stored for use at the landfill.
- Other closed cells that are capped to prevent rainwater from soaking in and graded and planted to prevent erosion.
- Methane gas flares.
- A wastewater collection, conveyance, and pretreatment system.
- An office and equipment complex.
- Gasoline dispensing facilities.

6 Process Overview

6.1. Landfill Operations

Tractor trailers transport refuse to the landfill where it is deposited on the “working face” of the active refuse cell. As the day progresses, self-propelled machinery compacts the waste at the working face and deposits soil on top that is then compacted to form a daily cover. The purpose of the daily cover is to reduce vectors (birds, rats and their predators), litter, and odors from the new refuse. As the cell is filled, additional compacted soil is applied to exposed perimeter slopes. As seasonally appropriate, the soil is hydroseeded for erosion control purposes.

A final cover system is placed on the finished outside surfaces of a refuse cell when final refuse grades have been achieved. The final cover system, designed and constructed to comply with state and federal regulations (not covered in the air operating permit), encloses the refuse to limit fugitive emissions to the maximum extent practicable so that the landfill gas collection system can operate efficiently and minimize fugitive odors.

6.2. Landfill Gas Management

Landfill gas collection is accomplished by a network of vertical wells and horizontal collection trenches installed in both the closed and active areas of the landfill. When vacuum is applied to these wells and trenches, the system is said to be under “active extraction.” In contrast, a collection system that relies on gas flowing only as a result of internal, natural pressure gradients in the landfill is said to be a “passive” collection system. Only active collection systems are used at the Cedar Hills Landfill. In addition, many leachate system pipes, cleanouts, maintenance holes, and other facilities where gas can be generated or conveyed have been connected to the gas manifolds and header piping systems, where gas is conveyed under vacuum to a control facility.

This landfill has been designed and built to be capable of treating 100% of the collected landfill gas by thermal oxidation in seven flares, including both open elevated flares and enclosed ground flares. Gas is conveyed from most of the closed refuse areas and all active refuse areas to an integrated landfill gas control station located at the north end of the landfill. This facility, known as the North Flare Station, consists of five enclosed ground flares, one open flare, vacuum exhausters (also known as blowers), and instrumentation for control of both operations.

Landfill gas is sometimes found in leachate piping, and the leachate itself can be odor producing. For this reason, the leachate maintenance holes and pump stations are designed with watertight covers and fittings to prevent the escape of gas and odors. Several of these

facilities and leachate cleanouts are connected to the landfill gas collection system to reduce the potential for fugitive emissions.

The Permittee may sell as much of its landfill gas production as possible to outside public or private corporations, for the purpose of converting the gas to energy. It is expected, however, that some treatment/control of waste landfill gas would still take place due to the low BTU value of gas recovered from the perimeter gas capture and leachate-gas separation systems. If the BTU value of this gas is very low and does not support combustion, gas control methods may include carbon adsorption, biofiltration, or chemical scrubbing.

Currently, approximately 7,500 standard cubic feet per minute (SCFM) of high-quality LFG is collected from ten refuse disposal areas and conveyed to the Bio Energy Washington (BEW) plant, a KCSWD tenant at CHRLF. On average, BEW converts LFG to approximately 4,500 million British Thermal Units (MMBTUs) per day pipeline-quality natural gas. This has significantly decreased CHRLF's greenhouse gas emissions, as part of KCSWD's strategic commitment to attenuate the global warming effect. During routine operation and maintenance plans or inadvertent power outages, LFG is conveyed to CHRLF's North Flare Station for combustion. Additionally, approximately 830 SCFM of low-quality LFG is also conveyed to the North Flare Station for a continuous combustion in Flare 7. Up to an additional 1,500 SCFM of low-quality LFG will be routed to flare 8 from 115 wells located in aging cells of the landfill.

6.3. Vehicle and Landfill Maintenance Activities

Support facilities at the Cedar Hills Landfill include a central maintenance shop building; several additional structures; an outdoor truck wash facility; fueling stations for gasoline-, diesel-, and propane-powered vehicles; a storage area for 55-gallon drums of oil, grease, and kerosene; and an outside storage yard for spare materials. The gasoline station has CARB-compliant Stage 1 and Stage 2 vapor recovery systems.

The Permittee operates and maintains a fleet of support vehicles used at the landfill. Routine maintenance and mechanical repairs of the vehicles, equipment, and refuse trailers are performed at the central maintenance shop building. When required, some of these activities are performed at the location of the damaged vehicle elsewhere on the landfill property. In the course of such work, waste fluids such as antifreeze, oil, grease, and fuel are collected and stored. A degreasing (i.e., Safety Clean) station is used to clean vehicle parts. Some welding and roller/brush painting activities are done as needed.

6.4. Miscellaneous Activities

The offices of the operations manager occupy four small structures at the south end of the landfill. The buildings also contain an employee lunchroom area with sanitary and shower facilities, as well as office space for the environmental monitoring and engineering support staffs. Staff and county vehicles are present on the landfill property day and night. Unpaved roads are watered, and paved roads are swept for dust control. Small machines and equipment used to maintain the landfill property include mowers, weed-eaters, air compressors, portable generators, hand-held augers, plastic pipe welders, and portable pumps. The various buildings on the site are ventilated via the heating and air conditioning systems. These include the vehicle maintenance shop heaters which combust less than one-half million BTU per hour of waste vehicle lubricating oil.

7 Permitting History

7.1. New Source Review Permitting for the Facility

#	NOC #	Issue Date	Description
1	2906	7/6/87	N/A, Equipment removed.
2	2942	11/5/87	Temporary Flare. Expired 1/1/89. Equipment removed.
3	3271	8/7/89	3 - new 4,000 cfm (each) blowers, 2 - 120 MMBH LFG burners (flares) with propane pilot at 78,000 cfm exhaust (each), 1,400°F. 3,000 cfm landfill gas capacity. Flares 1 & 2.

#	NOC #	Issue Date	Description
4	4109	2/5/92	Cancelled. Replaced by NOC 6002.
5	4520	7/24/92	Temporary Flare, 1,000 cfm. Equipment Removed.
6	6002	6/1/95	2 - new 4,000 cfm (each) blowers, 1 – new 3,000 cfm flare. Upgrade/replacement for Flare 3.
7	6454	5/16/96	Portable 1,200 cfm Skid-mounted flare. Flare 7
8	7096	9/9/97	Passive flare upgrade. (No longer in use)
9	7076	9/10/97	3,850 cfm flare. Flare 4.
10	7290	2/18/98	Cancelled. Replaced by NOC 7836. Flare 7
11	7676	9/22/99	Area 4 closure, area 5 collection system expansion.
12	7942	10/6/99	Stage 1 & 2 vapor recovery, 2 – 4,000-gal gasoline storage tanks.
13	7836	10/20/99	Portable 1,200 cfm Skid-mounted flare. Replaced NOC 7290. Flare 7
14	8062	2/18/00	3,850 cfm flare. Flare 5.
15	8642	5/16/02	Area 5 closure, area 6 collection expansion.
16	9760	8/22/08	Area 7 collection expansion. By 8/15/09, shall provide gas to reclamation system authorized in NOC 9815 for Bio Energy WA.
17	10532	9/11/12	1,000 cfm flare for permitter migration control. Flare 6.
18	11307	7/13/19	Area 8 collection system expansion. Modification triggered subjection to 40 CFR 60, Subpart XXX.
19	11625	8/29/18	Exemption to replace 5 existing gas blowers.
20	12127	11/17/21	The addition of one mobile Byers dry vapor-phase system and small diesel generator to control refuse odor nuisance around the landfill active face of Area 8. This unit shall be used to implement odor control when and where the area 8 landfill is actively being filled and compressed. Permit expired 12/31/22.
21	12216	3/30/22	Exemption. Equipment removed.
22	12168	4/18/23	1,500 scfm low quality landfill gas candlestick flare.
23	12302	Pending	Mobile odor control systems (to replace expired NOC 12127).

7.2. Regulatory Orders Issued to the Facility

No regulatory orders have been issued to the facility.

7.3. Air Operating Permit Issuance and Renewal

7.3.1 Issuance of Original Air Operating Permit

The Puget Sound Clean Air Agency received the original air operating permit application on June 7, 1995. King County Solid Waste Division submitted revisions and addenda to the original application that were received by the Puget Sound Clean Air Agency on August 1, 1995, and September 1, 1995. The Puget Sound Clean Air Agency acknowledged that the application was complete in a September 1, 1995, letter to King County Solid Waste Division. The final permit was issued on January 4, 2001.

7.3.2 Renewal 1

On December 27, 2004, King County Solid Waste submitted an air operating permit renewal application. This was received on time with more than one year remaining on the active permit, which expired on January 4, 2006. On July 19, 2005, the Agency sent a letter to King County Solid Waste indicating that the renewal application had been found to be complete. In accordance with WAC 173-401-640, Cedar Hills Landfill operated under the authority of their permit shield from January 4, 2006, until the Agency issued this renewal of the air operating permit.

7.3.3 Administrative Amendments

On October 5, 2019, the Agency received a request from King County Solid Waste to change the Responsible Official listed on the AOP to Pat McLaughlin. To make this change,

Administrative Amendment 3 was issued on November 14, 2019. Administrative Amendments 1 and 2 (presumably also for changes to Responsible Official) were issued on November 1, 2002, and March 25, 2004, respectively.

8 Compliance History

Compliance actions over the previous five years consist of the following:

8.1. *Inspections*

Onsite inspections for the Cedar Hills Landfill in the last five years were conducted on the following dates:

- July 13, 2018
- August 29, 2019
- February 24, 2022
- May 23, 2022

Additional inspections of the facility were conducted via telephone and/or email, due to the COVID-19 measures to protect agency and Cedar Hills staff. These occurred on:

- August 13, 2020
- July 21, 2021

8.2. *Complaints*

There have been numerous complaints received about the permitted facility in the past five years. Most of the complaints were for objectionable odors. Many of those complaints included reference to a neighboring composting facility, lacking sufficient information to determine from which facility the odors originated. PSCAA continues to follow up on incoming complaints and is exploring possibilities for enhanced odor detection and mitigation by the permittee to be implemented through upcoming permitting actions, which will establish applicable requirements for future AOPs.

8.3. *Written Warnings*

The following written warnings were issued to the permitted facility in the past five years:

NOV #	Violation Type	Violation Date	Penalty Assessed	Violation	Corrective Action
2-A000054	Other: Reg I 6.03 (b)	2/25/2022	No	Installed 3 gas nozzles without proper permit.	A written report describing actions taken to correct the violation was required to be submitted within 10 days of receiving the Notice of Violation
2-A000062	Visible Emission: AOP #10138 Sec. II.A.2(d), Requirement #EA 1.20	10/25/2020	No	Operated Flare # 4 for 12 hours below minimum permitted temperature. Low temperature not corrected at shift change.	Corrective action was taken to address this issue. No further action was required.

NOV #	Violation Type	Violation Date	Penalty Assessed	Violation	Corrective Action
2-A000061	Other: AOP #10138 Sec. II.A.2(d), Requirement #EA 1.20	9/7/2020	No	Operated Flare # 1 for 6.5 hours below minimum permitted temperature due to a faulty temperature sensor. Flare was placed on standby until a new temperature controller was installed, then returned to normal service.	Corrective action was taken to address this issue. No further action was required.
2-A000002	Other: Reg I 9.13(b)	8/17/2020	No	Based on the performance claim of the product manufacturer, the chemicals used with the OdorBoss spray equipment are masking agents. OdorBoss states on their website, referring to their product, "It doesn't just mask, it neutralizes."	Information and/or documentation to demonstrate how the OdorBoss chemicals in use at the facility meet the requirements of Reg I 9.13(b) was required to be submitted within ten days of receiving the Notice of Violation.

8.4. *Notice of Violations*

The following violations were issued to the permitted facility in the past five years:

NOV #	Violation Type	Violation Date	Penalty Assessed	Violation	Corrective Action
3-A000467	Other: Reg I 5.03(a)(8)(K) ; Reg I 5.12(a)	2/7/2022	No	Operated rock crushing equipment without proper permitting.	A written report describing actions taken to correct the violation was required to be submitted within 10 days of receiving the Notice of Violation.
3-010402	Other: AOP #10138 Section E 1.19	8/19/2019	No	This Notice of Violation was closed without taking further enforcement action.	The Facility took corrective action on the day the violation occurred. No further corrective action was required.

NOV #	Violation Type	Violation Date	Penalty Assessed	Violation	Corrective Action
3-010400	Other: AOP #10138 Section E 1.19	8/19/2019	No	This Notice of Violation was closed without taking further enforcement action.	The Facility took corrective action on the day the violation occurred. No further corrective action was required.

9 Emissions Inventory

The table below summarizes Cedar Hills Landfill's primary air emissions for the most recent available 5 years. Emission inventories are estimates of actual emissions from the facility developed by the permittee and submitted to the Agency annually. Emissions at this facility come primarily from the operation of the landfill gas flares. Emissions will vary from year to year depending on the quantity of landfill gas produced by the landfill and collected through the gas collection system, as well as the percentage of gas that gets routed to Bio Energy Washington for conversion to pipeline-quality natural gas rather than flaring on-site.

Table 1. Emission Inventory Summary (tons per year)

Pollutant	2017	2018	2019	2020	2021
Carbon Monoxide (CO)	0.4	0.4	0.3	0.3	0.3
Nitrogen Oxides (NO_X)	8.7	4.9	4.9	3.0	3.2
Volatile Organic Compounds (VOC)	0.4	0.3	0.1	0.3	0.3
Particulate Matter (less than 10 microns in diameter) (PM_{10})	0.0	0.0	0.0	0.0	0.0
Sulfur Oxides (SO_X)	4.5	2.5	2.7	1.8	1.9
HAP	1.0	0.8	0.8	0.8	0.7

10 Explanation of Applicable Requirements and Compliance Methods

Applicable requirements are listed in several sections of the air operating permit as outlined below. The permit only lists the requirements that PSCAA has determined to be within the scope of the definition of "applicable requirements" under the air operating permit program. The Permittee is legally responsible for complying with all applicable requirements of the air operating permit as well as other requirements that do not fit the definition of "applicable requirements" found in Chapter 173-401 Washington Administrative Code (WAC). Some of the applicable requirements contain terms or monitoring, maintenance and recordkeeping conditions for which an explanation is included in this statement of basis. The specific requirements are listed below, along with any necessary explanations in monitoring, maintenance, and recordkeeping conditions.

Applicable requirements from federal rules and agency issued permits that are not ongoing, such as initial testing requirements, initial reporting requirements, etc., are not included in the permit because they are not in effect during the term of the permit and are considered obsolete.

11 Federal Applicable Requirements Review

11.1 NSPS Applicability

As part of the renewal process, the Agency reviewed federal New Source Performance Standards (NSPS) that might apply to this facility to determine applicability. A summary of NSPS reviews is included below:

11.1.1 40 CFR 60, Subpart A – General Provisions

Emissions units subject to specified Subparts within 40 CFR 60 are also subject to the General Provisions in Subpart A, as referenced by the specific Subparts. Where similar requirements within individual Subparts are different than the General provisions, the requirements within the individual Subparts supersede those in Subpart A.

11.1.2 40 CFR Part 60, Subpart XXX - Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification After July 17, 2014

NSPS Subpart XXX applies to Municipal Solid Waste landfills that constructed, reconstructed, or were modified after July 17, 2014. This facility was previously subject to regulation pursuant to 40 CFR 60, Subpart WWW - Standards of Performance for Municipal Solid Waste Landfills That Commenced Construction, Reconstruction, or Modification on or After May 30, 1991, but Before July 18, 2014. At the time of the lateral expansion authorized and constructed subsequent to July 17, 2014, this facility became subject to regulation pursuant to the requirements of 40 CFR 60, Subpart XXX, and is no longer regulated pursuant to 40 CFR 60, Subpart WWW. The permit contains applicable requirements from Subpart XXX in Section 3, Subsections A & B. References to Subpart WWW that were contained on the previous permit have been removed during this current permitting action.

11.1.3 40 CFR Part 60, Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

The provisions of NSPS Subpart IIII apply to owners or operators of stationary compression ignition (CI) internal combustion engines (ICE) that commence construction after July 11, 2005, where the stationary CI ICE are manufactured after April 1, 2006, and are not fire pump engines or are manufactured after July 1, 2006, and are certified fire pump engines.

The Permittee operates one diesel fuel-fired reciprocating internal combustion engine-driven emergency generator that commenced construction after July 11, 2005, and that was manufactured after July 1, 2006. And that is subject to the RICE NSPS. Applicable requirements for this engine are listed in Section 3.D. of the air operating permit.

11.1.4 40 CFR Part 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

NSPS Subpart JJJJ is not applicable at this facility because the Permittee does not operate any stationary spark ignition internal combustion engines at this site.

11.2 NESHAP Applicability

As part of the renewal process, the Agency reviewed federal National Emissions Standards for Hazardous Air Pollutants (NESHAPs) that might apply to this facility to determine applicability. A summary of NESHAP reviews is included below:

11.2.1. 40 CFR 63, Subpart A – General Provisions

Emissions units subject to specified Subparts within 40 CFR 63 are also subject to the General Provisions in Subpart A, as referenced by the specific Subparts. Where similar requirements within individual Subparts are different than then General provisions, the requirements within the individual Subparts supersede those in Subpart A.

11.2.2. 40 CFR 63, Subpart AAAA - National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

This facility is subject to the requirements of 40 CFR 63, Subpart AAAA because it is a major source as defined in 40 CFR 63.2 and/or because it is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m^3) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr.) NMOC as calculated according to 40 CFR 63.1959.

It should be noted that 40 CFR 63, Subpart AAAA allows facilities to comply with the well head temperature monitoring requirements established in 40 CFR 60, Subpart XXX as long as the temperatures are below those allowed by Subpart XXX. If at any time the well head temperatures exceed the levels allowed by Subpart XXX and the permittee fails to follow the prescribed corrective actions, notifications, and excess temperature approval process also

established in Subpart XXX, the facility will become subject to additional well head monitoring requirements established in 40 CFR 63, Subpart AAAA. From that point forward, the facility will remain subject to the more restrictive monitoring requirements established in Subpart AAAA and may never return to the less restrictive monitoring requirements of 40 CFR 60, Subpart XXX.

11.2.3. 40 CFR 63, Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63 Subpart ZZZZ)

The provisions of NESHAP Subpart ZZZZ apply to owners or operators of stationary compression ignition (CI) reciprocating internal combustion engines (RICE) with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions and all RICE located at an area source of HAP emissions that commenced construction prior to June 12, 2006.

The Permittee operates eight diesel fuel-fired reciprocating internal combustion engine-driven emergency generators that commenced construction prior to June 12, 2006, that are subject to the RICE NESHAP. Applicable requirements for these engines are listed in Section 3.C. of the air operating permit.

11.3 40 CFR 64 - Compliance Assurance Monitoring (CAM) Applicability

11.3.1. General Applicability.

The Compliance Assurance Monitoring (CAM) rule in 40 CFR 64 requires owners and operators to monitor the operation and maintenance of their control equipment, so they can evaluate the performance of their control devices to ensure they are working properly on a daily basis. If owners and operators of these facilities find that their control equipment is not working properly, the CAM rule requires them to take action to correct any malfunctions and to report such instances to the appropriate enforcement agency, PSCAA in this case. Additionally, the CAM rule provides some enforcement tools that allows environmental agencies to require facilities to respond appropriately to the monitoring results and ensure pollution control operations are as effective as represented by the facility. Except in the rare cases where the chosen monitoring approach utilizes an installed and properly certified continuous emissions monitor, CAM does not provide a direct measurement of actual emissions to be used to determine direct compliance with an emissions limitation or standard. However, excessive exceedances of an established monitoring parameter may constitute good reason to require additional compliance testing pursuant to the provisions of Regulation 1, Section 3.07, to determine compliance at the representative level of the monitoring parameter exceedance and/or to reestablish a more representative monitoring parameter.

The CAM rule applies at major sources with emission units that have control devices and emissions that could potentially exceed 100% of the Title V major source level for a particular pollutant from that individual emissions unit if the control device was not operated. In accordance with 40 CFR Part 64, any emission unit that meets all three of the following criteria, and is not exempt under the CAM rule, requires a CAM Plan:

- The unit is subject to an emission limitation or standard for the applicable regulated air pollutant. [40 CFR 64.2(a)(1)]
- The unit uses a control device to achieve compliance with any such emission limitation or standard. [40 CFR 64.2(a)(2)]
- The unit has potential pre-control device emissions of the applicable pollutant of at least 100% of the major source amount. [40 CFR 64.2(a)(3)].

11.3.2. CAM Applicability for This Facility

This facility is exempt from the requirements of 40 CFR 64 because individual emissions units do not have uncontrolled emissions greater than 100% of the major source amount, do

not use add-on control devices to meet emissions limits, and because the emissions units are exempted from the CAM rule due to being subject to a post-1991 federal standard for emissions limits (namely 40 CFR 60, Subpart XXX). More specifically:

- The emissions of PM, NO_X, CO, VOC and HAPs are not subject to CAM pursuant to 40 CFR 64.2(a)(1) because the emissions of these pollutants are not subject to emissions limiting standards.
- The emissions of SO_2 and H_2S are not subject to CAM pursuant to 40 CFR 64.2(a)(2) because the units do not use a control device to achieve compliance with the applicable emissions limitations or standards.
- The emissions of NMOC from the landfill gas control flares are subject to regulation pursuant to 40 CFR 60, Subpart XXX and 40 CFR 63, Subpart AAAA. Both of these regulations were proposed by the Administrator after November 15, 1990, pursuant to section 111 or 112 of the Act. Therefore, the flares are exempt from CAM pursuant to 40 CFR 64.2(b)(1)(i).

11.4 40 CFR 98 – Mandatory Greenhouse Gas Reporting

Pursuant to 40 CFR 98, Subpart HH, Municipal Waste Landfills are subject to annual greenhouse gas emissions reports, as specified in WAC 173-441 contained in Specific Condition 4.D.14. of the permit.

12 State and PSCAA Applicable Requirements Discussion

12.1 Facility-wide Applicable Requirements

The requirements in Section 2 of the permit apply facility wide, including to the specific emission units or activities in Section 3. Those conditions include the specific requirement and a compliance method. The compliance methods include monitoring, recordkeeping and reporting obligations the permittee must conduct to comply with the permit. The compliance methods are listed in the specific conditions listed under the "General Facility-wide Compliance Methods" subsection of this section. Complying with the specified monitoring method is an enforceable requirement of the permit. When appropriate, the "Reference Test Method" is also listed in the condition. This is the test method to be used when a source test is required to determine compliance. If a reference test method is not listed with the requirement, this means a test method is not applicable to the requirement.

Reference Test Methods included in the permit are listed in Section 4., Subsection E., of the permit and include the applicable averaging period. The regulatory citation for the "applicable requirement" and its effective date are included at the end of each condition. In some cases, the effective dates of the "Federally Enforceable" requirement and the "*State Only*" requirement are different because either the state (or local authority) has not submitted the regulation to the Environmental Protection Agency (EPA) for approval into the State Implementation Plan (SIP), or the state (or local authority) has submitted it and the EPA has not yet approved it. "*State Only*" effective dates are in *italicized font* and shall be understood to include the Washington Department of Ecology (Ecology) and the Puget Sound Clean Air Agency (PSCAA). When the EPA does approve the new requirement into the SIP, the old requirement will be automatically replaced and superseded by the new requirement. The new requirement will be enforceable by the EPA as well as PSCAA from the date that it is adopted into the SIP, and the old requirement will no longer be an applicable requirement. Inclusion of these requirements is in accordance with WAC 173-401-605(1) and WAC 173-401-615(1) and (2).

Pursuant to WAC 173-400-040(1)(a), all sources and emissions units are required to meet the emission standards of WAC 173-400. Where an emission standard listed in another chapter is applicable to a specific emissions unit, such standard takes precedence over a general emission standard listed in WAC 173-400. In the event of conflict or omission between the information contained in the specific condition and the actual statute or regulation cited at the end of the specific condition, the requirements and language of the actual statute or regulation

cited shall govern. For more information regarding any of the requirements cited in the Specific Conditions, refer to the actual requirements cited.

Compliance with the Facility-wide Conditions listed in Section 2., Subsection A. shall include facility-wide inspections and complaint responses as specified in Facility-wide Conditions **B.2**. & **B.3.** of Section 2., in addition to any requirement specifically stated within the individual conditions of Section 2., Subsection A. Also, pursuant to PSCAA Regulation I, Section 3.05(b), if at any time the Agency has reason to believe that the standard is not being met, a compliance test can be ordered on any unit in question.

12.1.1. Facility Wide Sulfur Dioxide (SO_2) Limit

Pursuant to PSCAA Reg I: 9.07, It shall be unlawful for any person to cause or allow the emission of sulfur dioxide from any source in excess of 1,000 parts per million by volume on a dry basis, 1- hour average (corrected to 7% oxygen for fuel burning equipment and refuse burning equipment). This emissions standard applies to all sources of emissions facility-wide, but most especially to the combustion sources, i.e., reciprocating internal combustion engines (RICE) that power the emergency and portable generators, and the flares.

Engines. The diesel fuel used in the generator engines contains less than 15 ppm of sulfur, so compliance with the 1,000 ppm SO_2 standard is assured. Therefore, no additional monitoring is required for diesel fuel combustion.

Flares. A recent stack test showed emissions of SO_2 from a representative landfill gas flare to be less than 22 ppm, corrected to 7% O_2. At this extremely low level of emissions, compliance with the facility wide standard of 1,000 ppm is assured. Therefore, no additional monitoring for compliance with the facility wide SO_2 limit is required for landfill gas combustion in the flares.

12.1.2. Facility Wide Hydrogen Chloride (HCl) Limit.

Pursuant to PSCAA Reg I: 9.10(a), It shall be unlawful for any person to cause or allow the emission of hydrochloric acid from any equipment in excess of 100 ppm on a dry basis, 1-hour average corrected to 7% oxygen for combustion sources.

This emissions standard applies to all sources of emissions facility-wide, but most especially to the combustion sources, i.e., reciprocating internal combustion engines (RICE) that power the emergency and portable generators, and the flares.

Engines. Emissions of HCl from the combustion of ultra-low sulfur diesel fuel are extremely low (~0.186 lb./1,000 gallons of fuel fired), so compliance with the facility wide HCl limit is assured. Therefore, no additional monitoring is required for demonstrating compliance with the HCl limit from the engines.

Flares. A recent stack test showed emissions of HCl from a representative landfill gas flare to be less than 2 ppm, corrected to 7% O_2. At this extremely low level of emissions, compliance with the facility wide HCL limit is assured. Therefore, no additional monitoring is required to demonstrate compliance with the 100 ppm HCl standard from the flares.

12.2 Emissions Unit Specific Applicable Requirements

Applicable requirements unique to individual emissions units are contained in Specific Conditions within Section 3. of the permit. Compliance methods for unit-specific requirements listed in these Specific Conditions are shown in subsequent Specific Conditions within each unit's individual Subsection within Section 3. The compliance methods include monitoring, recordkeeping and reporting obligations specific to the requirement that will be used by the permittee in determining if they are in continuous or intermittent compliance. In some cases where the applicable requirement has little or no ongoing monitoring requirements, monitoring has been added. This is called "gap-filling" and is required under WAC 173-401-615(1)(b).

Whenever PSCAA uses a "gap-filling" monitoring method, we determine the monitoring frequency using criteria contained in EPA's April 30, 1999, Draft *Periodic Monitoring Technical Reference Document*. We consider "the five criteria" in determining how often the facility should perform a monitoring activity: hourly, once per shift, daily, weekly, monthly, quarterly, annually, or once per five-year permitting period. The five criteria are initial compliance, margin of compliance (monitoring method designed so source will identify potential problems early and take action before a violation occurs), variability of process and emissions, environmental impacts of problems, and other technical considerations.

In addition to the federal requirements listed above in Section 10, the facility is also subject to applicable requirements established through the issuance of several New Source Review Notice of Construction Orders of Approval, as listed above in Section 7.1. As appropriate, these applicable requirements have been added into the facility-wide requirements in Section 2. of the permit and into the unit specific applicable requirements in Section 3. of the permit.

With the extensive compliance requirements imposed by the federal landfill regulations, no additional gap-filling requirements are required for the emissions units addressed in this permit.

12.3 Generally Applicable Requirements

12.3.1 Standard Terms and Conditions

Some of the requirements that are more general in nature are included in Section 4., Subsection A., Standard Terms and Conditions. This section also contains the standard terms and conditions specifically listed in WAC 173-401-620. These terms have been updated to reflect the most recent rules and current agency permitting language.

12.3.2 General Permitting Requirements

Section 4., Subsection B., of the permit includes the requirements for renewing, revoking, reopening, amending, and modifying the air operating permit. It also includes the new source review requirements, both minor NSR and Prevention of Significant Deterioration requirements. This section has been edited to more accurately reflect the Air Operating Permit regulations.

12.3.3 General Compliance Requirements

General compliance requirements are included in Section 4., Subsection C., of the permit. These include certification and reporting requirements, requirements associated with inspections and investigations, and compliance testing requirements. Actions required for an affirmative defense for emergencies or excess emissions are also included in this Subsection. This Subsection was edited to require annual compliance certifications to cover a calendar year, which is more in line with Permittee's and other facilities' compliance certification requirements. Finally, this Subsection provides a table summarizing the effective date of the regulations in the permit at the time of permit issuance. Regulations that are approved into the Washington State Implementation Plan (SIP) are federally enforceable. In some cases, there are two versions of the regulation because the newer version has not been adopted into the SIP. In this case, the older version of the regulation would be federally enforceable, and the current rule would only be enforceable by the Agency (or State). The SIP is updated on a somewhat regular basis and what is contained in the SIP can change over time.

12.3.4 General Requirements

Some of the requirements that are generally applicable are included in Section 4., Subsection D., of the permit. This includes record retention, asbestos requirements, open burning requirements, stratospheric ozone and climate protection requirements, chemical accident prevention provisions in 40 CFR Part 68, concealment and masking, tampering, RACT requirements, annual emission reporting requirements, greenhouse gas reporting requirements and non-road engine notification requirements.

12.4 Insignificant Emission Units and Activities

Section 5. of the permit addresses requirements for insignificant emission units and activities and lists those that are required to be included in the permit. In accordance with WAC 173-401-530(1), determination of an emission unit or activity as insignificant does not exempt the unit or activity from any applicable requirement.

An emission unit or activity is insignificant based on one or more of the criteria identified in WAC 173-401-530. This includes categorical exemption, exemption based on emissions being below emission thresholds in WAC 173-401-530(4), or exemption based on size or production rate. Activities that generate only fugitive emissions which are subject to no applicable requirement other than generally applicable requirements can also be classified as insignificant. Categorically exempt units or activities do not need to be listed in the permit application, but all other types of Insignificant Activities must be included in the permit. Although not required to be listed in the permit application, the Permittee has identified the following Categorically Exempt Insignificant Activities that exist at the facility:

Description	Rule Citation
Mobile transport tanks on vehicles	WAC-173-401-532(4)
Lubricating Oil Storage and Handling	WAC-173-401-532(3), (4) and (69)
Glycol Storage and Handling	WAC-173-401-532(4)
Waste Oil Storage and Handling	WAC-173-401-532(4)
Pressurized storage of inert gases	WAC-173-401-532(5)
Vehicle exhaust from auto maintenance and repair shops	WAC-173-401-532(7) and (45)
Trucks, Forklifts, Autos, etc.	WAC 173-401-532(10)
Welding	WAC-173-401-532(12)
Plastic Pipe Welding	WAC-173-401-532(29)
Plant Upkeep/Painting	WAC 173-401-532(33)
Portable Drums and Totes	WAC-173-401-532(42)
Landscaping Activities	WAC 173-401-532(43)
Comfort Air Conditioning	WAC 173-401-532(46)
Natural Draft Hoods/Safety Valves	WAC 173-401-532(47)
Vents/Bathroom Facilities	WAC 173-401-532(48)
Office Activities	WAC 173-401-532(49)
Personal Care Activities	WAC 173-401-532(50)
Personal Cars	WAC 173-401-532(54)
Structural Changes	WAC-173-401-532(67)
Repair and Maintenance Activities	WAC 173-401-532(74)
Battery Banks	WAC 173-401-532(77)
Solid Waste Containers	WAC-173-401-532(79)
Air Compressors	WAC 173-401-532(88)
Process water storage	WAC 173-401-532(94)

Description	Rule Citation
Non-PCB oil filled transformers/equipment	WAC 173-401-532(118)
Conveyance infrastructure associated with wastewater treatment systems	WAC 173-401-532(120)

Monitoring requirements for insignificant emission units are detailed in Specific Condition **B.4.** of Section 2 of the permit. In essence, the Permittee will be required to use good industrial practices to maintain insignificant emission units, and to promptly repair defective equipment or shut down the unit until defective equipment can be repaired. The Permittee will not have to keep records of maintenance of insignificant emission units except when such equipment is inspected and a problem requiring prompt repair is discovered.

13 Changes to the AOP during the Renewal Process

As is required by Title V of the Clean Air Act Amendments of 1990, this renewed Title V AOP, which will be effective for the next five years, completely replaces the previous AOP issued to this facility on January 4, 2001. Upon the effective date of issuance of this AOP, the prior AOP and all associated Administrative Changes will become invalid.

Due to the passage of time since the prior permit was issued, nearly all the generally applicable requirements have been updated through the issuance of this permit to reflect the current versions of the Agency, State, and Federal rules. The permittee should treat this permit as a "new" permit rather than simply as a "renewed" permit. Some of the major changes are discussed below.

13.1 *Formatting Changes*

Most of the formatting throughout the permit has been revised to freshen the look and feel of the permit to reflect the current permitting style that better reflects the structure of the federal landfill regulations. A notable change is that where the previous permitting style utilized many tables to list the specific limiting conditions by including portions of the applicable regulatory text within the cells of the tables, the current permitting style includes the applicable language of each regulation in full sentence form within individual specific conditions. This change has been made with the intention of making the applicable requirements easier to read and understand. The current permitting style also better utilizes the available word processing tools to provide auto-numbered conditions allowing for the inclusion of interactive navigational hyperlinks and cross-references throughout the permit. When viewing the permit electronically, any text that displays as blue or blue with an underline is likely a hyperlink that will take the reader to the referenced location simply by clicking on the link. In addition, within specific conditions, cross-referenced specific condition numbers that are shown in bold text are also clickable shortcuts to the referenced condition. In addition, the renewed permit contains a navigational Table of Contents that jump the reader to the desired location with a click of the mouse. A hyper-link to return to the Table of Contents can be found at the end of each Subsection within the permit.

13.2 Updated Federal Landfill Rules

One major change to note throughout the permit is the replacement of the obsolete requirements from 40 CFR 60, Subpart WWW reflected in the prior permit with the currently applicable requirements from 40 CFR 60, Subpart XXX and 40 CFR 63, Subpart AAAA.

13.3 New Permitting Style

The new permitting style contains a comprehensive facility description, a summary of the regulated emissions units, a brief listing of the main applicable requirements, and a listing of common acronyms used throughout the permit, included in Section 1 of the permit.

13.4 Updated Facility-wide Conditions.

The previous Facility-wide conditions have been updated and are contained in Section 2, Subsections A. and B., of the permit. Two new facility-wide conditions have been added to remind the permittee that only units/activities properly permitted through the agency's Notice of

Construction process are allowed to be installed and operated on-site. Installation and/or operation of non-permitted equipment is subject to enforcement and applicable penalties pursuant to PSCAA Reg I, Section 6.10.

An additional Subsection C. has been added to the facility-wide section to reflect requirements from prior Orders of Approval applicable to emissions units that operate throughout the entire facility that were not thoroughly addressed in the previous AOP, as well as new requirements related to the operation of 3 portable Byers Dry Vapor Phase Systems for odor control that are being added pending issuance of NOC 12302.

It should be noted that if the portable (trailer-mounted) odor control units remain in one location for more than 12 consecutive months, the associated non-road diesel engine(s) will become subject to regulation as a stationary reciprocating internal combustion engine (RICE) pursuant to 40 CFR 60, Subpart IIII – Standards of Performance for Stationary Reciprocating Internal Combustion Engines. At such time, an AOP revision application shall be submitted to incorporate the engine into the permit as a regulated engine in Section 3, Subsection D.

13.5 Updated Unit Specific Requirements

Section 3 of the permit contains limitations and requirements specifically applicable to individual emissions units that are in addition to the facility-wide requirements.

13.5.1. The applicable requirements pertaining to the landfilling and landfill gas collection operations have been assigned to emissions unit identification number of EU-9. The specific conditions related to EU-9 are included in the permit as Section 3, Subsection A.

13.5.2. The applicable requirements pertaining to the landfill gas control/flaring operations are included in the permit as Section 3, Subsection B. The flares retain the previously assigned emissions unit numbers EU-1 thru EU-7. The new low quality gas flare authorized by NOC 12168 has been assigned EU-8.

13.5.3. The existing emergency generators have been included as specifically regulated emissions units EU-10 and EU-11 in Section 3, Subsection C., of the permit, to reflect the requirements for emergency reciprocating internal combustion engines (RICE) pursuant to 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ, as applicable.

13.5.4. The gasoline dispensing operations have been assigned emissions unit No. EU-12. The specific requirements applicable to EU-12 are contained in the permit as Section 3, Subsection D.

13.6 Specific conditions commonly applicable to all Title V major sources of air pollution permitted by PSCAA are contained in Sections 4.A. – 4.E. of the permit, as described in Section 12.3., above and as shown below:

4.A. Standard Terms and Conditions.
4.B. General Permitting Requirements.
4.C. General Compliance Requirements.
4.D. General Requirements.
4.E. Test Methods and Averaging Periods.

13.7 Insignificant emissions units and/or activities are addressed in Section 5. of the permit.

13.8 The following Enforceable Attachments are addressed in Section 6. of the permit.

Attachment 6-1. PSCAA Method 5 for Particulate (if/when required).

Attachment 6-2. Ecology Method 9A.

Attachment 6-3. CARB Executive Order·G-70-97-A (Stage 1)

Attachment 6-4. CARB Executive Order·G-70-52-AM (Stage 2)

14 Public Comments and Responses during renewal process

<include discussion after public comment period>

15 EPA Comment Period

<include discussion after EPA review>