SWCAA
Southwest Clean Air Agency

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January 23, 2018

Ron Williams
Solid Waste Manager
Cowlitz County Department of Public Works
1600 Thirteenth Avenue South
Kelso, WA 98626

Subject: Final Approval for Increase in Landfill Gas Flow and Associated Emission Limits

Dear Mr. Williams:

The public comment period for the preliminary determination to issue Air Discharge Permit 15-3157R1 in response to Air Discharge Permit Application CO-977 concluded on September 24, 2017. The Southwest Clean Air Agency (SWCAA) did not receive any adverse comment from the public relative to the preliminary determination. Therefore, a final determination to issue Air Discharge Permit 15-3157R1 has been made pursuant to Section 400-110(4) of SWCAA's General Regulations for Air Pollution Sources. Electronic copies of Air Discharge Permit 15-3157R1 and the associated Technical Support Document are available for public review in the permit section of SWCAA's internet home page (http://www.swcleanair.org/permits/adpfinal.asp). Original copies are enclosed for your files.

This Air Discharge Permit may be appealed directly to the Pollution Control Hearings Board (PCHB) at P.O. Box 40903, Olympia, Washington 98504-0903 within 30 days of receipt as provided in RCW 43.21B.

If you have any comments, or desire additional information, please contact me or Clint Lamoreaux at (360) 574-3058, extension 131.

Sincerely,

Uri Papish
Executive Director

cc: Air Permits Section AWT-150
Environmental Protection Agency
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

UP: cl
Enclosures

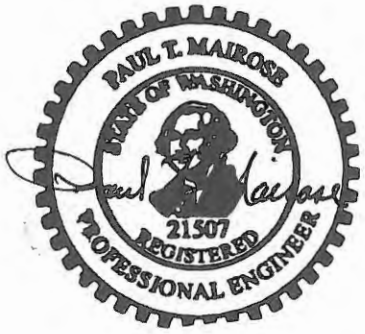
SOUTHWEST CLEAN AIR AGENCY

AIR DISCHARGE PERMIT
SWCAA 15-3157R1

Issued: January 23, 2018

Facility Name: Cowlitz County Headquarters Landfill
Physical Location: 3434 South Silver Lake Road, Castle Rock, WA

SWCAA ID: 2121



REVIEWED BY: _____
Paul T. Mairose, Chief Engineer

APPROVED BY: _____
Uri Papish, Executive Director

TABLE OF CONTENTS

1. Equipment/Activity Identification

ID No.	Generating Equipment/Activity	# of Units	Control Measure/Equipment	# of Units
1	Landfill (active and closed areas) – 30 MMBtu/hr enclosed flare (Flare #1)	1	H_2S Scrubber (as necessary), enclosed flare	1
2	Landfill (active and closed areas) – 30 MMBtu/hr enclosed flare (Flare #2)	1	H_2S Scrubber (as necessary), enclosed flare	1
3	Emergency Generator Engine (303 bhp Cummins / QSB7-G5 NR3)	1	Ultra low sulfur diesel (≤ 0.0015% S) Limited operation - (≤ 100 hr/yr + emergency usage) EPA Tier 3 design	N/A
4	Leachate Ponds	2	Aerators or air diffusers	N/A

2. Approval Conditions

The following tables detail the specific terms and conditions of this permit. In addition to the requirements listed below, equipment at this facility may be subject to additional federal, state, and local regulations. The permit term or requirement number is identified in the left hand column. The permit term or requirement is contained in the middle column. The emission unit, equipment, or activity to which the permit term or condition applies is listed in the right hand column.

Air Discharge Permit 15-3157 is superseded in its entirety by this Air Discharge Permit.

2.1 Emission Limits

No.	Emission Limits	Equipment/ Activity
1.	Facilitywide emissions from the landfill (including the flares) must not exceed the following: Pollutant — Annual Limit tons per year Volatile Organic Compounds as hexane — 45.60 Fugitive volatile organic compound (VOC) emissions must be calculated assuming a landfill gas capture efficiency of 75% and a 98% destruction efficiency in the flare(s) unless a higher capture or control efficiency has been demonstrated to SWCAA's satisfaction. Fugitive VOC emissions must be determined from the most recent measurement of VOCs in the landfill gas sent to the flare and the assumption that all uncaptured volatile organic compounds are emitted fugitively.	1, 2

No.	Emission Limits	Equipment/ Activity
2.	Total emissions from each enclosed Landfill Gas Flare must not exceed the following:	1, 2

Pollutant	Short Term Limit (1-hour average)	Annual Limit (tons per year)
Nitrogen Oxides	0.06 lb/MMBtu	7.65
Carbon Monoxide	0.10 lb/MMBtu	12.75
Volatile Organic Compounds[2]	1.47 lb/hr	6.44
Sulfur Dioxide	4.44 lb/hr	19.44
Hydrogen Chloride	0.42 lb/hr	1.84

Emissions of non-methane organic compounds from each flare must not exceed 20 ppmvd as hexane @ 3% O_2, 1-hour average or each flare must reduce non-methane organic compounds by 98 weight percent (1-hour average). [40 CFR 60.752(b)(2)(iii)]

Emissions of nitrogen oxides, carbon monoxide and volatile organic compounds must be calculated using the emission factors presented in the Technical Support Document for this Air Discharge Permit until source test data has been collected. Emissions of sulfur dioxide must be calculated using a mass balance with the assumption that all sulfur measured at the flare inlet during quarterly sampling or source emissions tests is converted to sulfur dioxide by the flare. Until source test data has been collected, emissions of hydrogen chloride must be calculated using the assumption that the landfill gas contains 74 ppm of chlorine and all chlorine is converted to hydrogen chloride by the flare.

[1] The landfill gas combustion system may consist of one or more of the approved flares in parallel.
[2] VOCs must be expressed as hexane.

<table>
<tr><th>No.</th><th>Emission Limits</th><th>Equipment/ Activity</th></tr>
<tr><td>3.</td><td>With the exception of the toxic air pollutants listed below, emissions of toxic air pollutants listed in WAC 173-460 (as in effect February 14, 1994) must not exceed the applicable small quantity emission rate listed in WAC 173-460.

Emissions from the landfill (flared and fugitive) must not exceed:

<table>
<tr><th>Pollutant</th><th>CAS #</th><th>Annual Limit (tons per year)</th><th>Daily Limit (lbs. per 24 hours)</th></tr>
<tr><td>Ethylene Dibromide</td><td>106-93-4</td><td>0.00065</td><td></td></tr>
<tr><td>Ethylene Dichloride</td><td>107-06-2</td><td>0.011</td><td></td></tr>
<tr><td>1,3-Butadiene</td><td>106-99-0</td><td>0.0065</td><td></td></tr>
<tr><td>Benzene</td><td>71-43-2</td><td>0.14</td><td></td></tr>
<tr><td>Methylene Chloride</td><td>75-09-2</td><td>0.38</td><td></td></tr>
<tr><td>Hydrogen Sulfide</td><td>7783-06-4</td><td>1.40</td><td>7.6</td></tr>
<tr><td>Trichloroethylene</td><td>79-01-6</td><td>0.079</td><td></td></tr>
<tr><td>Vinyl Chloride</td><td>75-01-4</td><td>0.064</td><td></td></tr>
<tr><td>Hydrogen Chloride</td><td>7647-01-0</td><td>3.68</td><td>20.2</td></tr>
</table>

Emissions must be calculated assuming a landfill gas capture efficiency of 75%, a 98% destruction efficiency in the flare(s) for organic compounds, and a 99% destruction efficiency in the flare(s) for hydrogen sulfide, unless a higher capture or control efficiency has been demonstrated to SWCAA's satisfaction. Emissions must be determined from the most recent measurement of each pollutant in the landfill gas sent to the flare(s) and the assumption that all uncaptured pollutant is emitted fugitively.</td><td>1, 2</td></tr>
<tr><td>4.</td><td>Visible emissions from the Landfill Gas Flares must not exceed zero percent opacity for more than 3 minutes in any one hour period as determined in accordance with SWCAA Method 9 (See Appendix A of SWCAA 400).</td><td>1, 2</td></tr>
<tr><td>5.</td><td>Emissions from the Emergency Generator Engine must not exceed the following:

<table>
<tr><th>Pollutant</th><th>Emission Limit</th></tr>
<tr><td>Nitrogen Oxides</td><td>0.31 tons per year</td></tr>
<tr><td>Carbon Monoxide</td><td>0.01 tons per year</td></tr>
</table>

Annual emissions must be calculated using the emission factors presented in the Technical Support Document for this Air Discharge Permit unless more recent source test data has been collected.</td><td>3</td></tr>
<tr><td>6.</td><td>Visible emissions from the Emergency Generator Engine must not exceed five percent opacity for more than 3 minutes in any one hour period as determined in accordance with SWCAA Method 9 (See Appendix A of SWCAA 400) except during startup. For the purposes of this requirement, the startup period ends when the earlier of the following operating events occurs:
(a) The engine has reached normal operating temperature; or
(b) The engine has been operating for 15 minutes.</td><td>3</td></tr>
</table>

No.	Emission Limits	Equipment/ Activity
7.	Visible emissions from operation of mobile equipment on the landfill or unpaved roads at the landfill must not exceed 10% opacity for more than 3 minutes in any one hour period as determined in accordance with SWCAA Method 9 (See Appendix A of SWCAA 400). Visible emissions beyond the landfill boundary must not exceed 0% opacity.	1, 2

2.2 Operating Limits and Requirements

No.	Operating Limits and Requirements	Equipment/ Activity
8.	The enclosed flare(s) must be used to burn all collected landfill gas except that a shrouded flare may be utilized as a backup if a malfunction renders the enclosed flare(s) inoperable. In the event of a malfunction, the enclosed flare(s) must be returned to service as soon as practical.	1, 2
9.	All of the collected landfill gas must be combusted in the flare system. The flare system must be operated at all times when the collected gas is routed to the system. In the event the collection or flare system is inoperable, the gas mover system must be shut down and all valves in the collection and landfill system contributing to venting of the gas to the atmosphere must be closed as soon as possible but no later than 1 hour after the gas collection or control system becomes inoperable. [40 CFR 60.753(e) & (f)]	1, 2
10.	The landfill gas collection and control system must be operated at all times except as necessary to perform required maintenance or safety checks. To the extent practical, maintenance activities that result in temporary shutdown of control equipment must not be conducted during stagnant wind conditions.	1, 2
11.	The permittee must operate the landfill gas collection and control system to comply with the operation and maintenance requirements of 40 CFR 63.6(e). 40 CFR 63.6(e) includes provisions for operating in accordance with good air pollution control practice and provisions for a startup, shutdown, and malfunction plan. [40 CFR 63.6(e), 40 CFR 63.1955, 40 CFR 63.1960 and Table 1 to Subpart AAAA of 40 CFR 63]	1, 2
12.	With the exception of soils contaminated with diesel range hydrocarbons or less volatile petroleum products (e.g. lube oil), petroleum contaminated soils must not be stored on-site for more than 48 hours prior to placement in the landfill or use as daily cover.	1, 2

No.	Operating Limits and Requirements	Equipment/ Activity
13.	Unless otherwise approved by SWCAA, the active landfill gas collection system must utilize bottom-liner horizontal collectors and interim horizontal collectors to be installed before and during waste placement respectively. These collectors must be used to draw landfill gas to the flare(s) as soon as the waste depth is sufficient above the collector to prevent air infiltration into the landfill. The criteria found in 40 CFR 60.753(c) must be used to determine if air infiltration is occurring. The horizontal and vertical spacing of these collectors will be determined by the permittee. For each area, cell, or group of cells, in no case shall the landfill gas collection system approved in accordance with 40 CFR 60.752(b)(2)(i) be installed and operated later than: (a) 5 years or more after initial solid waste placement if active; or (b) 2 years or more after initial solid waste placement if closed or at final grade. [40 CFR 60.752(b)(2)(ii)(A)(2), 60.753(a)]	1, 2
14.	The landfill gas collection system must: (a) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control system equipment. [40 CFR 60.752(b)(2)(ii)(A)(1)] Compliance must be determined using the procedure identified in 40 CFR 60.755(a)(1). (b) Collect gas at a sufficient extraction rate. [40 CFR 60.752(b)(2)(ii)(A)(3)] (c) Be designed to minimize off-site migration of subsurface gas. [40 CFR 60.752(b)(2)(ii)(A)(4)]	1, 2
15.	For purposes of compliance with 40 CFR 60.753(a), the permittee must place each well or design component as specified in the approved design plan as provided in 40 CFR 60.752(b)(2)(i). Each well must be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of: (a) 5 years or more if active; (b) 2 years or more if closed or at final grade. [40 CFR 60.755(b)]	1, 2
16.	The permittee must implement a program to monitor for final cover integrity and implement cover repairs as necessary on a monthly basis. [40 CFR 60.755(c)(5)]	1, 2
17.	The permittee must 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 permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration must show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens. Nitrogen and/or oxygen concentrations must be determined as identified in 40 CFR 60.753(c). [40 CFR 60.753(c)]	1, 2

No.	Operating Limits and Requirements	Equipment/ Activity
18.	The permittee must operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the permittee must conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan must be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [40 CFR 60.753(d)]	1, 2
19.	The permittee must operate the landfill gas collection system with negative pressure at each wellhead except under the following conditions: (a) A fire or increased well temperature. The owner or operator must record instances when positive pressure occurs in efforts to avoid a fire. These records must be submitted with the annual reports as provided in §60.757(f)(1); (b) Use of a geomembrane or synthetic cover. The owner or operator must develop acceptable pressure limits in the design plan; or (c) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes must be approved by SWCAA. [40 CFR 60.753(b)]	1, 2
20.	Prior to the initial source emissions test, each flare must be operated at a minimum of 1,400°F (1-hour average). Thereafter, each flare must be operated within the range of operating temperatures (1-hour average) at which compliance with the permitted emission limits was demonstrated during the most recent source emissions test. [40 CFR 60.752(b)(2)(iii)(B)(2)]	1, 2
21.	The caustic scrubber may be used to scrub all, or specific portions of, the landfill gas in order to achieve the permitted emission levels. The caustic scrubber must reduce the concentration of hydrogen sulfide vented to it by 80% (1-hour average) when operating at the maximum landfill gas treatment rate unless an alternative control efficiency is approved by SWCAA. SWCAA may approve an alternative control efficiency requirement if the Permittee adequately demonstrates in a written analysis to SWCAA that the alternative control efficiency meets the requirements of Best Available Control Technology. SWCAA may approve the discontinuation of hydrogen sulfide scrubbing if the Permittee adequately demonstrates in a written analysis to SWCAA that the sulfur dioxide emission limits will continue to be met.	1, 2
22.	The caustic scrubber must be operated so that the flow and pH of the scrubbing liquor does not fall below the levels at which 80% removal of hydrogen sulfide has been demonstrated during the most recent testing. If continuous or multiple samples are taken, these limitations apply on a one-hour average basis.	1, 2

No.	Operating Limits and Requirements	Equipment/ Activity
23.	The permittee must use recognized good practice and procedures to reduce odors to a reasonable minimum.	Facilitywide
24.	The gas collection and control system must be managed in accordance with good air pollution control practice for minimizing emissions from the landfill. For example, the amount of landfill gas collected and burned must be maximized to the greatest extent practicable without affecting safe operation of the system.	1, 2
25.	The following wastes must not be accepted for placement in the landfill: (a) Regulated asbestos-containing materials as defined in 40 CFR 61 Subpart M. (b) Gypsum except as incidental amounts accepted within demolition debris. Incidental amounts are intended to be no greater than approximately 10% of the demolition debris in any given load delivered for disposal. A visual inspection of construction and demolition debris loads is sufficient to determine if most drywall has been removed. Small pieces of drywall adhering to structural members would be an example of "incidental" gypsum in a load. The owner or operator must maintain written procedures within its landfill Plan of Operations to implement this requirement. The Plan must be available on-site for inspection and must be provided to SWCAA upon request. (c) Feathers and/or poultry wastes containing significant feathers. (d) Other wastes determined by SWCAA to be the cause of excess emissions or significant nuisance odors if excess emissions or significant nuisance odors cannot be corrected without ceasing the acceptance of such waste. For the purposes of this requirement, "significant nuisance odors" means odors significantly in excess of what would be normal for a municipal solid waste landfill and interfering with the use and enjoyment of private property by the owners of the private property.	1, 2
26.	Before landfilling more than 8,000 tons of paper mill sludges in any calendar month, the permittee must: (a) Provide pre-notification to SWCAA. (b) Submit a management, monitoring and contingency plan to SWCAA for review and approval. The plan must include, at a minimum, the following elements: 1. A description on how the waste will be managed to minimize the generation of hydrogen sulfide gas. 2. A plan to monitor for the presence of increased levels of hydrogen sulfide gas in the affected area of the landfill. 3. A contingency plan to be implemented in the event hydrogen sulfide gas generation causes an exceedance of any permitted emission limit or creates nuisance odors off-site. The amount of paper mill sludges placed in the landfill must not exceed 8,000 tons in any calendar month until written approval of the plan is provided by SWCAA.	1, 2

No.	Operating Limits and Requirements	Equipment/ Activity
27.	For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(3), the owner or operator must measure gauge pressure in the gas collection header at each individual well monthly. If a positive pressure exists, action must be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under §60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system must be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure must not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to SWCAA for approval. [40 CFR 60.755(a)(3), 40 CFR 60.756(a)(1)]	1, 2
28.	For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator must monitor each well monthly for temperature and nitrogen or oxygen as provided in §60.753(c). If a well exceeds one of these operating parameters, action must be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system must be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure must not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval. [40 CFR 60.755(a)(5), 40 CFR 60.756(a)(2 & 3)]	1, 2
29.	The enclosed landfill gas flares must exhaust at a height of at least 40 feet above grade. The minimum stack height may be modified upon demonstration by the permittee that the modification will not cause a potential exceedance of the ASIL for any toxic air pollutant or the state or federal ambient air quality standards for any criteria air pollutant. If the permittee demonstrates to SWCAA's satisfaction that an alternative configuration will not cause an exceedance of any applicable standard, the minimum stack parameters used in the modeling demonstration may replace the minimum stack height listed above.	1, 2
30.	Operation of the Emergency Generator Engine must be limited to maintenance checks, readiness testing, and as necessary to provide emergency electricity.	3
31.	The Emergency Generator Engine must only be fired on #2 fuel oil (diesel) or better. The sulfur content of the fuel fired in the engine must not exceed 0.0015% (15 ppm) by weight. A fuel certification from the fuel supplier may be used to demonstrate compliance with this requirement.	3
32.	Operation of the emergency generator engine for maintenance checks and readiness testing must not exceed 100 hours per year. Emergency operation of the emergency generator engine is not limited. A nonresettable time totalizer must be installed and used to measure hours of operation.	3
33.	The exhaust from the Emergency Generator Engine must be exhausted vertically. Any rain cap that interferes with vertical dispersion is prohibited.	3

No.	Operating Limits and Requirements	Equipment/ Activity
34.	The leachate holding pond must be maintained aerobic to minimize the generation of odorous emissions. The concentration of dissolved oxygen in the leachate holding pond must be at least 1.5 parts per million (mg/L) (1-hour average).	4
35.	The equipment specified in ADP Application CO-977 and this Permit must be maintained and operated in total and continuous conformity with the conditions identified in this Permit. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this Permit, including directing the facility to cease operations until corrective action can be completed.	Facilitywide

2.3 Monitoring and Recordkeeping Requirements

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
36.	The following procedures must be used for compliance with the surface methane operational standard as provided in 40 CFR 60.753(d). (a) After installation of the collection system, the owner or operator must monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in 40 CFR 60.755(d). [40 CFR 60.755(c)(1)] Areas with steep slopes or other dangerous areas may be excluded from the surface testing. [40 CFR 60.753(d)] (b) The background concentration must be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. [40 CFR 60.755(c)(2)] (c) Surface emission monitoring must be performed in accordance with section 4.3.1 of Method 21 of appendix A of 40 CFR 60, except that the probe inlet must be placed within 5 to 10 centimeters of the ground. Monitoring must be performed during typical meteorological conditions. [40 CFR 60.755(c)(3)] (d) Any reading of 500 parts per million or more above background at any location must be recorded as a monitored exceedance and the actions specified below must be taken. As long as the following actions are taken, the exceedance is not a violation of the operational requirements of 40 CFR 60.753(d). [40 CFR 60.755(c)(4)] 1. The location of each monitored exceedance must be marked and the location recorded. 2. Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance must be made and the location must be re-monitored within 10 calendar days of detecting the exceedance. 3. If the re-monitoring of the location shows a second exceedance, additional corrective action must be taken and the location must be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (d)(4)	1, 2

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
	below must be taken, and no further monitoring of that location is required until the action specified in paragraph (d)(4) below has been taken. 4. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (d)(2) or (d)(3) must be re-monitored 1 month from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in paragraph (c)(4) (iii) or (v) of 40 CFR 60.755 must be taken. 5. For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device must be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to SWCAA for approval.	

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
37.	The following monitoring and recordkeeping must be conducted in accordance with 40 CFR 60 Subpart WWW, and the following results and records must be readily available on-site for inspection: (a) The temperature of each enclosed flare must be continuously monitored and recorded with a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. [40 CFR 60.756(b)(1), 40 CFR 60.758(c)]; (b) The landfill gas flow to the flare(s) must be continuously monitored and recorded. [40 CFR 60.756(b)(2)(i) or (c)(2)(i), 40 CFR 60.758(c)(2)]; (c) The gage pressure at each wellhead must be measured and recorded monthly. [40 CFR 60.756(a)(1)]; (d) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator must monitor each well monthly for temperature and nitrogen or oxygen as provided in §60.753(c). [40 CFR 60.756(a)(2)]; (e) Identification of all 3-hour periods of operation during which the average enclosed flare combustion temperature was more than 28°C below the average combustion temperature during the most recent performance test at which compliance with 40 CFR 60.752(b)(2)(iii) was determined. [40 CFR 60.758(c)(1)(i)] (f) If a shrouded flare is being used, up-to-date, continuous records of the flame or flare pilot flame monitoring specified under 40 CFR 60.756(c), and up-to-date, records of all periods of operation in which the flame or flare pilot flame was absent. [40 CFR 60.758(c)(4)]; (g) Except as provided in 40 CFR 60.752(b)(2)(i)(B), an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector. [40 CFR 60.758(d)]; (h) Up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under 40 CFR 60.755(b). [40 CFR 60.758(d)(1)]; (i) Documentation of the nature, date of deposition, amount, and location of nondegradable waste excluded from collection as provided in 40 CFR 60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii). [40 CFR 60.758(d)(2)]; and (j) Except as provided in §60.752(b)(2)(i)(B), up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in 40 CFR 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. [40 CFR 60.758(e)]	1, 2
38.	A flare alarm system must be installed and operated continuously to provide an alarm to operators if at any time combustion by a flare ceases and the flare does not automatically re-light. If operators are not on-site, the system must notify an off-site operator.	1, 2

No.	Monitoring and Recordkeeping Requirements	Equipment/ Activity
39.	The following information must be collected, recorded at the intervals specified below, and readily available on-site for inspection: (a) Maintenance activities that may affect emissions to the ambient air, including disruptions or shutdowns of the landfill gas control system, must be logged for each occurrence. Disruptions do not include brief outages associated with power outages in which the backup generator responds as designed or switches back to utility power when the flare and scrubber restart as designed; (b) The total amount of landfill gas, in units of standard cubic feet, burned in the flare(s) must be recorded for each calendar month; (c) The hydrogen sulfide and total reduced sulfur concentration of the landfill gas at the inlet to the flare(s) must be determined and recorded at least once per calendar quarter using ASTM Method D5504, or an alternative method approved in advance in writing by SWCAA; (d) The methane, carbon dioxide, nitrogen, and oxygen content of the landfill gas at the inlet to the flare(s) must be determined and recorded at least once per calendar quarter using EPA Method 3C or an alternative approved in advance in writing by SWCAA; (e) The scrubbing liquor flow rate must be monitored continuously and recorded at least once per day; (f) If recycled scrubbing liquor is utilized, the pH of the recycled scrubbing liquor must be determined at least once per calendar week; (g) The concentration of hydrogen sulfide in the landfill gas immediately upstream and downstream of the caustic scrubber must be determined at least once each calendar month. A colorimetric detector tube may be used to measure hydrogen sulfide concentrations. Other measurement methods may be used with pre-approval from SWCAA; (h) The total number of hours the Emergency Generator Engine is operated must be recorded for each calendar year; (i) Fuel certifications from the supplier or other analyses documenting the sulfur content of the diesel fuel purchased for the Emergency Generator Engine must be retained for each purchase; (j) The oxygen concentration (mg/L) in the leachate holding pond must be measured from a representative location and the results recorded in the site Operating Record at least once per week. (k) Upset conditions that cause excess emissions must be recorded for each occurrence; and (l) All air quality related complaints, including odor complaints, received by the permittee and the results of any subsequent investigation or corrective action must be recorded for each occurrence.	Facilitywide
40.	With the exception of data logged by a computerized data acquisition system, each record required by this Air Discharge Permit must include the date and the name of the person making the record entry.	Facilitywide
41.	All records required by this Air Discharge Permit must be readily available on-site for a minimum period of no less than five years and must be available for inspection by SWCAA representatives.	Facilitywide

2.4 Emission Monitoring and Testing Requirements

No.	Emission Monitoring and Testing Requirements	Equipment/ Activity
42.	Source emissions testing of the enclosed flare system must be conducted in accordance with Appendix A of this Permit. [40 CFR 60.752(b)(2)(iii)(B) requires an initial test within 180 days of startup]	1, 2

2.5 Reporting Requirements

No.	Reporting Requirements	Equipment/ Activity
43.	The Permittee must submit a collection and control system design plan prepared by a professional engineer to SWCAA within 1 year of initial placement of municipal solid waste in the landfill as required by 40 CFR 60.752(b)(2)(i). [40 CFR 60.752(b)(2)(i), 40 CFR 60.757(c)]	1, 2
44.	The Permittee must submit periodic startup, shutdown, and malfunction reports for the landfill gas collection and control system in accordance with 40 CFR 63.10(d)(5)(i). For the purposes of this requirement, each calendar half (January – June and July – December) is a separate reporting period. If a startup or shutdown occurred during the reporting period that caused, or may have caused, the short-term NMOC concentration emission limit to be exceeded, or a malfunction occurred with the landfill gas collection and control system during the reporting period, a report must be submitted to SWCAA no later than 30 days after the end of the reporting period. If the response to the startup, shutdown, or malfunction was not in accordance with the startup, shutdown and malfunction plan, then a report must be submitted within 2 working days after commencing actions inconsistent with the startup, shutdown and malfunction plan followed by a letter within 7 working days after the end of the event. [40 CFR 63.10(d)(5)]	1, 2

No.	Reporting Requirements	Equipment/ Activity
45.	The following information must be reported to SWCAA by March 15th for the previous calendar year: (a) The parameter value and the length of time the following deviations from allowable values exist: [40 CFR 60.757(f)(1)] (1) Positive gage pressure measured at any wellhead or landfill gas collection header; (2) A nitrogen concentration in the landfill gas at or above 20% or an oxygen concentration in the landfill gas at or above 5% by volume unless an alternative standard has been approved for a specific wellhead in accordance with 60.753(c); (3) A landfill gas temperature measured at a wellhead at or above 55°C; and (4) An enclosed flare temperature outside of the operating range allowed by this Air Discharge Permit. Until the initial source emissions test is conducted, the flare temperature must be at least 1,400°F (1-hour average); (b) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under 40 CFR 60.756; [40 CFR 60.757(f)(2)] (c) The date, beginning time, duration and reason for all periods when the flare system was not operating; [40 CFR 60.757(f)(3)] (d) All periods when the landfill gas collection system was not operating and the reason for the outage; [40 CFR 60.757(f)(4)] (e) The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month; and [40 CFR 60.757(f)(5)] (f) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of 40 CFR 60.755. [40 CFR 60.757(f)(6)]	1, 2
46.	Excess emissions that represent a potential threat to human health or safety must be reported as soon as possible, but no later than 12 hours after discovery. Excess emissions which the owner or operator wishes to be considered as unavoidable, must be reported to the Agency as soon as possible, but no later than 48 hours after discovery.	Facilitywide
47.	Deviations from permit conditions must be reported no later than 30 days after the end of the month during which the deviation is discovered.	Facilitywide
48.	All air quality related complaints received by the permittee regarding activities controlled by the permittee and the results of any subsequent investigation or corrective action must be recorded for each occurrence and reported to SWCAA within three days of receipt. The report must include the results of any subsequent investigation or corrective action related to the complaint.	Facilitywide

No.	Reporting Requirements	Equipment/ Activity
49.	The following information must be reported to SWCAA by March 15th for the previous calendar year: (a) The total amount of landfill gas burned in the Landfill Gas Flares during each month of the calendar year; (b) The results of hydrogen sulfide, methane, carbon dioxide, nitrogen, and oxygen content monitoring of the landfill gas conducted during the calendar year; (c) The date, beginning time, duration and reason for each landfill gas control system disruption or shutdown that occurred during the calendar year; (d) The results of hydrogen sulfide concentration monitoring immediately upstream and downstream of the caustic scrubber for each measurement conducted during the calendar year; (e) The total number of hours the Emergency Generator Engine was operated; (f) The total amount of each type of waste placed in each landfill cell; and (g) Air emissions of criteria air pollutants, volatile organic compounds, and toxic air pollutants (TAPs).	Facilitywide
50.	The results of all source emission testing required by this Permit must be submitted to SWCAA within 45 days of test completion.	Facilitywide
51.	The Permittee must provide an analysis of the anticipated future landfill gas generation rate at least once every 10 years. The first analysis on this schedule is due no later than the end of December 2023. Each subsequent report must be submitted before the end of the year in which it is due (e.g. December 2033, December 2043, etc.).	Facilitywide

3. General Provisions

No.	General Provisions
A.	The equipment specified in ADP Application CO-977 and this Permit must be maintained and operated in total and continuous conformity with the conditions identified in this Permit. SWCAA reserves the right to take any and all appropriate action to maintain the conditions of this Permit, including directing the facility to cease operations until corrective action can be completed.
B.	For the purpose of ensuring compliance with this Permit, duly authorized representatives of the Southwest Clean Air Agency shall be permitted access to the permittee's premises and the facilities being constructed, owned, operated and/or maintained by the permittee for the purpose of inspecting said facilities. These inspections are required to determine the status of compliance with this Permit and applicable regulations and to perform or require such tests as may be deemed necessary.
C.	The provisions, terms and conditions of this Permit shall be deemed to bind the permittee, its officers, directors, agents, servants, employees, successors and assigns, and all persons, firms, and corporations acting under or for the permittee.
D.	The requirements of this Permit shall survive any transfer of ownership of the source or any portion thereof.
E.	This Permit shall be posted conspicuously at or be readily available near the source.

No.	General Provisions
F.	Approval to construct or modify specific equipment shall become invalid if construction is not commenced within eighteen months after the date of issuance of this Permit, if construction is discontinued for a period of eighteen months or more, or if construction is not completed within a reasonable time.
G.	This Permit does not supersede requirements of other Agencies with jurisdiction and further, this Permit does not relieve the permittee of any requirements of any other governmental Agency. In addition to this Permit, the permittee may be required to obtain permits or approvals from other agencies with jurisdiction.
H.	Compliance with the terms of this Permit does not relieve the permittee from the responsibility of compliance with SWCAA General Regulations for Air Pollution Sources, previously issued Regulatory Orders, RCW 70.94, Title 173 WAC or any other applicable emission control requirements, nor from the resulting liabilities and/or legal remedies for failure to comply.
I.	If any provision of this Permit is held to be invalid, all unaffected provisions of the Permit shall remain in effect and be enforceable.
J.	No change in this Permit shall be made or be effective except as may be specifically set forth by written order of the Southwest Clean Air Agency upon written application by the permittee for the relief sought.
K.	The Southwest Clean Air Agency may, in accordance with RCW 70.94 impose such conditions as are reasonably necessary to assure the maintenance of compliance with the terms of this Permit, the Washington Clean Air Act, and the applicable rules and regulations adopted under the Washington Clean Air Act.

Appendix A
Emission Testing Requirements
Landfill Gas Control System

1. Introduction:

a. The purpose of this testing is to quantify emissions from the landfill and flare.

2. Testing Requirements:

a. Initial source emissions testing of the landfill gas control system was conducted in June 2015. Initial source emissions testing of the second flare must be conducted within 60 days of startup. Subsequent testing of the landfill gas control system (including both flares) must be conducted no later than the end of June 2020 and no later than the end of June every 5 years thereafter. The use of an alternative test schedule or method must be pre-approved by SWCAA in writing.

b. A comprehensive test plan must be submitted to SWCAA for review and approval at least 10 business days prior to testing.

c. SWCAA must be notified of the test date at least 5 business days prior to testing.

Unless an alternative methodology has been approved in writing by SWCAA, testing for each constituent must consist of a minimum of three sampling runs using the test methods and durations listed in the tables below:

Outlet of Each Flare (operating at lowest flare operating temperature)

Constituent / Parameter	Test Method or Equivalent[1]	Minimum Test Run Duration
Stack gas velocity, flow rate	EPA Methods 1 and 2	N/A
O_2 and CO_2 concentrations	EPA Method 3A	60 minutes
Stack gas moisture content	EPA Method 4	60 minutes
NO_X	EPA Method 7E	60 minutes
CO	EPA Method 10	60 minutes
TAPs listed in Table 1 of EPA Compendium Method TO-15	EPA Compendium Method TO-15	Target ~60 minutes (integrated sample)
VOC	EPA Method 25A/18[2]	60 minutes
HCl	EPA Method 26	60 minutes
Opacity of Emissions	SWCAA Method 9	20 minutes
Visual Emissions	EPA Method 22	2 hours (total)[3]

Outlet of Each Flare (operating at highest flare operating temperature)

Constituent / Parameter	Test Method or Equivalent[1]	Minimum Test Run Duration
Stack gas velocity, flow rate	EPA Methods 1 and 2	N/A
O_2 and CO_2 concentrations	EPA Method 3A	20 minutes
Stack gas moisture content	EPA Method 4	20 minutes
NO_X	EPA Method 7E	20 minutes

Appendix A
Emission Testing Requirements
Landfill Gas Control System

2. Testing Requirements: (continued)

Inlet to Flare(s) and Outlet of Scrubber[6]

Constituent / Parameter	Test Method or Equivalent[1]	Minimum Test Run Duration
Landfill gas flow rate	EPA Methods 1 and 2, 2A, 2C, or 2D	N/A
Landfill gas composition (CO_2, CH_4, N_2, O_2)	EPA Method 3C	Target ~60 minutes (integrated sample)
Total sulfur compounds and H_2S	ASTM D5504	N/A

Scrubber Inlet (Applies to the flare inlet if no scrubber is in operation)

Constituent / Parameter	Test Method or Equivalent[1]	Minimum Test Run Duration
Landfill gas flow rate	EPA Methods 1 and 2, 2A, 2C, or 2D	N/A
Landfill gas composition (CO_2, CH_4, N_2, O_2)	EPA Method 3C	Target ~60 minutes (integrated sample)
TAPs listed in Table 1 of EPA Compendium Method TO-15	EPA Compendium Method TO-15	Target ~60 minutes (integrated sample)
NMOC	EPA Method 25C or 18	N/A
Ethane[4]	EPA Method 18	N/A
10 largest TICs[5]	EPA Method 18 (GC/MS)	N/A
Total sulfur compounds and H_2S	ASTM D5504	N/A

[1] The use of an alternate or equivalent test method must be pre-approved in writing by SWCAA.

[2] The use of Method 25A with a "methane cutter" is acceptable to determine the VOC concentration. Alternatively, methane and ethane concentrations measured by Method 18 may be subtracted from the total hydrocarbon concentration measured by Method 25A to determine the VOC concentration. When using Method 25A, results must be reported as hexane.

[3] A two-hour test period is required by 40 CFR 60.18(f)(1).

[4] This will be used to subtract from the NMOC value to provide an estimate of VOC content.

[5] Gas chromatography / mass spectroscopy must be used to determine the tentative identity, and approximate the concentration of, the ten organic compounds (other than CH_4) that, based on the analysis, appear to be in the greatest abundance in the sample.

[6] The inlet to the flare and the outlet of the scrubber are two different locations if less than 100% of the landfill gas is scrubbed.

Tests conducted more than three months before the required due date will not satisfy the periodic source emission testing requirement without prior written approval from SWCAA.

Appendix A
Emission Testing Requirements
Landfill Gas Control System

3. Source Operation:

a. A complete record of production related parameters applicable to the testing, including but not limited to the following must be kept during emissions testing to correlate operations with emissions and must be recorded in the final report of the test results:

1. Flare operating temperature
2. Identification of the landfill gas collection wells in service
3. Startups and shutdowns
4. Landfill gas flow rate to each flare
5. Scrubbing liquor flow rate
6. Scrubbing liquor pH

b. Source operations during emissions testing must be conducted at the most challenging of the intended operating conditions.

4. Reporting:

The results of all required testing must be submitted to SWCAA within 45 days of test completion. Unless otherwise directed by SWCAA, a single hard copy of the report and an electronic copy (e.g. portable document format (.pdf)) of the report must be submitted. Each report must include:

a. A description of the source including manufacturer, model number and design capacity of the equipment, and the location of the sample ports or test locations.
b. Time and date of the test and identification and qualifications of the personnel involved.
c. A summary of results, reported in units and averaging periods consistent with the applicable emission standard or limit. VOC, H_2S, and SO_2 emissions must be reported in units of lb/MMBtu and lb/hr. NMHC must be reported in ppmvd as hexane @ 3% O_2.
d. A summary of control system or equipment operating conditions.
e. A summary of production related parameters.
f. A description of the test methods or procedures used including all field data, quality assurance/quality control procedures and documentation.
g. A description of the analytical procedures used including all laboratory data, quality assurance/quality control procedures and documentation.
h. Copies of all field data and example calculations for all calculations performed.
i. Chain of custody information.
j. Calibration documentation.
k. Discussion of any abnormalities associated with the results.
l. A statement signed by the senior management official of the testing firm certifying the validity of the source test report.