

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY
PRELIMINARY DETERMINATION

IN THE MATTER OF APPROVING A NEW) Preliminary Determination for
CONTAMINANT SOURCE FOR) Approval Order No.16AQ-E031
PASCO LANDFILL ZONE A)
INTERIM ACTION CLEANUP)
UNDER AGREED ORDER NO. DE 9240)

TO: Mark Leece, Vice President
PBS Engineering and Environmental
400 Bradley Blvd, #300
Richland, WA 99301

Equipment evaluated for this determination of approval consists of the following:

- 1- Anguil Environmental Systems, Inc. (Anguil) 2,500 SCFM 2-Canister Regenerative Thermal Oxidizer (RTO): Anguil Model 25 RTO.

DETERMINATIONS

In relation to the above equipment and the evaluation outlined in the Technical Support Document associated with this Order, the Department of Ecology, State of Washington, pursuant to RCW 70.94.152, WAC 173-400-110, and WAC 173-460-040, makes the following determinations:

1. The proposed new source of air contaminants, if operated as herein required, will be in accordance with applicable rules and regulations, as set forth in Chapter 173-400 WAC and 173-460 WAC and the operation thereof, at the location proposed, will not result in ambient air quality standards being exceeded.
2. The proposed oxidation unit, if operated as herein required, will provide Best Available Control of the Soil Vapors extracted by the Pasco Landfill Zone A Soil Vapor Extraction (SVE) system.

THEREFORE, IT IS ORDERED that the project as described in the Notice of Construction application and more specifically detailed in plans, specifications, and other information submitted to Ecology is approved for construction and operation, provided the following conditions are satisfied:

APPROVAL CONDITIONS

1. REGENERATIVE THERMAL OXIDIZER OPERATIONAL LIMITATIONS

- a. The temperature set point of the RTO shall be set so that the minimum temperature when oxidizing soil vapor is no lower than 1650 degrees Fahrenheit. The RTO shall be equipped with an interlock with the SVE gas inlet fan, such that no SVE gas is introduced to the RTO unless the temperature in the bed is greater than 1650 degrees Fahrenheit.

- b. The maximum volume of soil vapor routed to the RTO shall not exceed 1000 standard cubic feet per minute.
- c. There shall be no condensate removed from the SVE gases and returned to be treated by the RTO.
- d. There shall be no soil vapor introduced to the RTO unless the RTO bed temperature is at or above 1650 degrees Fahrenheit.

2. REGENERATIVE THERMAL OXIDIZER EMISSION LIMITATIONS

- a. The opacity of the RTO exhaust shall not exceed 5 %, measured in accordance with Condition 4.d.i.
- b. Emissions of 1,1,1-Trichloroethane in the exhaust of the RTO shall not exceed 0.015 pounds per hour measured in accordance with Condition 4.d.vii.
- c. Emissions of 1,2,4-Trimethylbenzene in the exhaust of the RTO shall not exceed 0.008 pounds per hour measured in accordance with Condition 4.d.vii.
- d. Emissions of 2-Butanone (MEK) in the exhaust of the RTO shall not exceed 0.70 pounds per hour measured in accordance with Condition 4.d.vii.
- e. Emissions of 4-Methyl-2-pentanone (MIBK) in the exhaust of the RTO shall not exceed 0.083 pounds per hour measured in accordance with Condition 4.d.vii.
- f. Emissions of Ethanol in the exhaust of the RTO shall not exceed 0.530 pounds per hour measured in accordance with Condition 4.d.vii.
- g. Emissions of Ethylbenzene in the exhaust of the RTO shall not exceed 0.041 pounds per hour measured in accordance with Condition 4.d.vii.
- h. Emissions of Isopropylbenzene in the exhaust of the RTO shall not exceed 0.006 pounds per hour measured in accordance with Condition 4.d.vii.
- i. Emissions of Total Xylenes (o,m, and p) in the exhaust of the RTO shall not exceed 0.162 pounds per hour measured in accordance with Condition 4.d.vii.
- j. Emissions of Methylene chloride (dichloromethane) in the exhaust of the RTO shall not exceed 0.061 pounds per hour measured in accordance with Condition 4.d.vii.
- k. Emissions of n-Propylbenzene in the exhaust of the RTO shall not exceed 0.008 pounds per hour measured in accordance with Condition 4.d.vii.
- l. Emissions of Toluene in the exhaust of the RTO shall not exceed 0.720 pounds per hour measured in accordance with Condition 4.d.vii.
- m. Emissions of Trichloroethene in the exhaust of the RTO shall not exceed 0.038 pounds per hour measured in accordance with Condition 4.d.vii.
- n. Hydrochloric Acid (HCl) emissions in the exhaust of the RTO shall not exceed 4.92 pounds per hour, measured in accordance with Condition 4.d.vi.
- o. Hydrofluoric Acid (HF) emissions in the exhaust of the RTO shall not exceed 0.12 pounds per hour, measured in accordance with Condition 4.d.vi.

- p. VOC emissions in the exhaust of the RTO shall not exceed 3.30 pounds per hour measured in accordance with Condition 4.b.viii.
- q. The VOC destruction efficiency shall be no lower than 98% or shall result in an exhaust concentration no greater than 20 ppmv as methane whichever is less stringent, measured in accordance with Condition 4.d.viii.
- r. The RTO destruction efficiency for the following compounds shall be 98% or the exhaust concentration shall be reduced to the greater of the compounds practical quantitation limit (PQL) or 3 ppmv (as the compound) measured in accordance with Condition 4.d.vii:
 - i. 1,1,1-Trichloroethane
 - ii. 1,2,4-Trimethylbenzene
 - iii. 2-Butanone (MEK)
 - iv. 4-Methyl-2-Pentanone (MIBK)
 - v. Ethanol
 - vi. Ethylbenzene
 - vii. Isopropylbenzene
 - viii. Total Xylenes (o,m,p)
 - ix. Methylene Chloride (dichloromethane)
 - x. N-Propylbenzene
 - xi. Toluene
 - xii. Trichloroethene

3. MONITORING REQUIREMENTS

- a. The temperature of the RTO ceramic beds shall be equipped with properly maintained and operated continuous- recording temperature measurement instruments and data loggers.
- b. The soil vapor flow rate, and the dilution air flow rate to the RTO shall be monitored continuously with properly operated and maintained flow measurement instrumentation and continuous data loggers.

4. TESTING REQUIREMENTS

- a. An initial performance test of the RTO shall be conducted within 2 months of startup of the Anguil RTO to determine compliance with emission and destruction efficiency limits in Condition 2.
- b. Following the initial performance test required in Condition 4.a., an annual test shall be conducted to determine compliance with the emission and destruction efficiency limits in Condition 2.
- c. Performance testing shall be performed at such times and frequencies specified in a condition of approval in this Order and at other times in accordance with WAC 173-400-105(4).
- d. Performance testing shall utilize the following test methods unless an alternative method is requested by the permittee and approved by Ecology in writing:

- i. Visual determination of the opacity emissions from stationary sources per Title 40 Code of Federal Regulations, Part 60, Appendix A, Method 9. (referenced as Method 9).
 - ii. Particulate Matter (PM) per Title 40 CFR 60, Appendix A, Method 5.
 - iii. PM10 per 40 CFR 60, Appendix A, Method 5 with 40 CFR 51, Appendix M, Method 202.
 - iv. Nitrogen Oxides (NOx) per 40 CFR 60, Appendix A, Method 7E.
 - v. Carbon Monoxide (CO) per 40 CFR 60, Appendix A, Method 10.
 - vi. HCl or HF per 40 CFR 60, Appendix A, Method 26 or 26A.
 - vii. Speciated VOC per EPA Compendium Method TO-15.
 - viii. Bulk VOC per 40 CFR 60, Appendix A, Method 25A.
- e. Testing Logistics - The permittee shall provide testable emission points, sampling ports, safe access to sampling points and ports, and utilities for sampling and testing.
- f. Number of Test Runs - Performance or compliance testing of each piece of pollution control equipment shall consist of three separate runs of at least 60-minutes each.
- g. Throughput during Testing - During testing, the process shall be operated at a minimum of ninety percent (90%) of rated capacity for equipment with less than 12 months operating history, or 90 to 110% of the maximum process rate recorded during the preceding 12 month period for equipment operated for 12 months or more. Operation of the process during testing outside of the specified range may be proposed, but may result in an operational restriction that will be amended to this Approval Order. The Pasco Landfill RTO testing may use the SVE gas flow to the RTO (SCFM) as the throughput to satisfy this requirement.
- h. Submittal of Performance Test Plan - A written test protocol that includes a description of the equipment to be tested, the process and control device operating information to be collected during the test, and the sampling and analytical method(s) proposed, shall be submitted to Ecology at least 30 calendar days prior to the start of any performance test. The test plan shall include a data quality assurance and data validation plan to ensure that all sampling and analytical procedures produce data that satisfies data quality objectives.
- i. Notification of Inability to Conduct Performance Test - If the permittee is unable to conduct any performance test as scheduled, Ecology shall be notified at least 24-hours before the test at the address under "Submittals", Condition 6, or via telephone at (509) 329-3400.
- j. Plant Operator during Testing - The plant process equipment shall be operated and controlled by normal plant operators during the period when the performance testers are on-site to conduct testing and during actual testing.
- k. Performance or Compliance Testing Results - The results of all initial performance testing and all other periodic performance testing shall be sent to the address at Approval Condition 6. One copy of the completed test report shall be submitted no later than 60-days after the last day of the testing.

5. OPERATION AND MAINTENANCE MANUALS

A site-specific O&M manual for the Regenerative Thermal Oxidizer (RTO) and the Soil Vapor Extraction System (SVE) shall be prepared and followed. The manual shall be prepared within 60 days of the issuance date of this approval.

The manual shall be reviewed no less frequently than annually, and updated as necessary. Manufacturers' operating instructions and design specifications for the RTO and SVE systems may be included in the manual.

The O&M manual shall be updated to reflect any modifications of the equipment or operating or maintenance or monitoring procedures. Emissions that result from failure to follow the operating procedures contained in the O&M manual or manufacturer's operating instructions may be considered proof that the equipment was not properly installed, operated, and/or maintained. The O&M manual shall at a minimum include:

- a. Normal equipment operating parameters and design specifications.
- b. Maintenance schedules.
- c. Monitoring procedures and schedules.
- d. Actions to be taken in the event of a RTO temperature excursion below 1650 degrees Fahrenheit.
- e. Actions to be taken in the event of visible emission observations greater than 5% opacity.

6. SUBMITTALS

All notifications, reports, and other submittals shall be sent to:

Washington State Department of Ecology
Air Quality Program
4601 N. Monroe Street
Spokane, WA 99205-1295

7. REPORTING

- a. Written notification that the O&M manual has been developed and completed shall be submitted to Ecology at the address in Condition 6 above within 60 days of the date of issuance of this Order.

The following information will be submitted to the AQP at the address in Condition 6 above, by January 31 of each calendar year.

- b. Annual summary of air contaminant emissions, annual total of RTO fuel consumed, annual total volume of soil vapor delivered to the RTO inlet, and the annual mass of volatile and semi-volatile organic compounds (estimated) collected by the SVE system and delivered to the RTO for treatment.

8. GENERAL CONDITIONS

- a. **Commencing/Discontinuing Construction and/or Operations:** This approval shall become void if the construction or operation of this facility is discontinued for a period of eighteen (18) months, unless prior written notification is received by Ecology at the address in Condition 6 above.
- b. **Compliance Assurance Access:** Access to the source by representatives of Ecology or the EPA shall be permitted upon request. Failure to allow such access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act, and may result in revocation of this Approval Order.
- c. **Availability of Order and O&M Manual:** Legible copies of this Order and the O&M manual shall be available to employees in direct operation of the SVE and RTO equipment, and be available for review upon request by Ecology.
- d. **Equipment Operation:** Operation of the SVE and RTO equipment shall be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with the O&M manual, unless otherwise approved in writing by Ecology.
- e. **Modifications:** Any modification to the project, contrary to information in the NOC application, shall be reported to Ecology at least 60 days before such modification. Such modification may require a new or amended NOC Approval Order.
- f. **Activities Inconsistent with the NOC Application and this Approval Order:** Any activity undertaken by the permittee or others, in a manner that is inconsistent with the NOC application and this determination, shall be subject to Ecology enforcement under applicable regulations.
- g. **Obligations under Other Laws or Regulations:** Nothing in this Approval Order shall be construed to relieve the permittee of its obligations under any local, state or federal laws or regulations.
- h. **Fees:** Per WAC 173-400-116, this Preliminary Determination and related regulatory requirements have a fee associated for review and issuance.

All plans, specifications, and other information submitted to the Department of Ecology relative to this project and further documents and any authorizations or approvals or denials in relation thereto shall be kept at the Eastern Regional Office of the Department of Ecology in the "Air Quality Controlled Sources" files, and by such action shall be incorporated herein and made a part thereof.

Nothing in this approval shall be construed as obviating compliance with any requirement of law other than those imposed pursuant to the Washington Clean Air Act and rules and regulations thereunder.

A one-month testing and break-in period is allowed, after any part or portion of this project becomes operational, to make any changes or adjustments required to comply with applicable rules and regulations pertaining to air quality and conditions of operation

imposed herein. Thereafter, any violation of such rules and regulations or of the terms of this approval shall be subject to the sanctions provided in Chapter 70.94RCW.

Authorization may be modified, suspended or revoked in whole or part for cause including, but not limited to the following:

- a. Violation of any terms or conditions of this authorization;
- b. Obtaining this authorization by misrepresentation or failure to disclose fully all relevant fact.

The provisions of this authorization are severable and, if any provision of this authorization, or application of any provisions of their circumstances, and the reminder of this authorization, shall not be affected thereby.

YOUR RIGHT TO APPEAL:

You have a right to appeal this Approval Order to the Environmental and Land Use Hearing Office, Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Approval Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B .001 (2).

To appeal you must do the following within 30 days of the date of receipt of this Approval Order:

- File your appeal and a copy of this Approval Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Approval Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
<p>Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503</p>	<p>Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608</p>
<p>Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501</p>	<p>Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903</p>

And send a copy of your appeal to:

Karen K. Wood, Section Manager
Department of Ecology, Air Quality Section
Eastern Regional Office
4601 N. Monroe Street
Spokane, WA 99205-1295

*For additional information visit the Environmental Hearings Office
Website: <http://www.eho.wa.gov>*

*To find laws and agency rules visit the Washington State Legislature Website:
<http://www1.leg.wa.gov/CodeReviser>*

DATED at Spokane, Washington this day of, 2016.

PREPARED BY:

APPROVED BY:

Robert Koster, P.E.
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