



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

July 30, 2015

Thomas Morin, President  
Environmental Partners, Inc.  
1180 NW Maple Street, Suite 310  
Issaquah, WA 98027

Re: Pasco Sanitary Landfill RTO Approval Order No. 14AQ-E571

Dear Mr. Morin:

The Department of Ecology Air Quality Program (AQP) has conditionally approved the Regenerative Thermal Oxidizer (RTO) for use in treating soil vapors extracted from the Pasco Sanitary Landfill. Ecology's approval is based on the application materials submitted in 2014 and 2015. The Preliminary Determination (PD) of approval, based on the NOC revisions, was made available to the public for the required 30 day period. Comments were received from Landau and Associates on behalf of the IWAG. Ecology has responded to the Landau comments in the response to comments, appended to the Technical Support Document (TSD), associated with this approval order. There were no other comments received. Enclosed please find the final order of approval for the Pasco Sanitary Landfill RTO and the TSD associated with that order. Please ensure that a copy of the approval is on-site with the RTO and readily available to equipment operators.

Ecology is committed to streamlining our permitting procedures and to maintaining a high level of staff responsiveness and assistance to permit applicants. To provide Ecology with feedback, please complete the short survey at [http://www.ecy.wa.gov/programs/air/permit\\_register/Permitting\\_Feedback.htm](http://www.ecy.wa.gov/programs/air/permit_register/Permitting_Feedback.htm). This will help us provide better service to you and our other clients.

If you have any questions, please contact me at [rkos461@ecy.wa.gov](mailto:rkos461@ecy.wa.gov) or at (509) 329-3493.

Sincerely,

Robert Koster, P.E.

Regional Air Quality Program  
Department of Ecology

RK:lc

Enclosures: Approval Order Number 14AQ-E571, Technical Support Document



**STATE OF WASHINGTON DEPARTMENT OF ECOLOGY  
NOTICE OF CONSTRUCTION**

IN THE MATTER OF APPROVING A NEW )  
CONTAMINANT SOURCE FOR ) Approval Order No. **14AQ-E571**.  
**PASCO LANDFILL ZONE A** )  
**INTERIM ACTION CLEANUP** )  
UNDER AGREED ORDER NO. DE 9240 )

TO: Thomas Morin, President  
Environmental Partners Inc.  
1180 NW Maple Street, Suite 310  
Issaquah, WA 98027

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

- 1- Gulf Coast Environmental (GCE) 2,300 SCFM 2-Canister Regenerative Thermal Oxidizer (RTO) with Thermal Condensate Treatment: GCE Model 20-92-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 modifications and changes, if operated as herein required, will provide all known, available, and reasonable methods of emission control.

**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 or vaporized condensate is no lower than

1600 degrees Fahrenheit. The RTO shall be equipped with an interlock with the SVE gas and vaporized condensate inlet fan, such that no SVE gas or condensate is introduced to the RTO unless the temperature in the bed is greater than 1600 degrees Fahrenheit.

- b. The maximum volume of soil vapor routed to the RTO shall not exceed 1000 standard cubic feet per minute.
- c. The maximum volume of dilution air delivered to the RTO shall not exceed 1300 standard cubic feet per minute.
- d. The maximum volume of condensate treated by the RTO shall not exceed twelve (12) gallons per hour (0.2 gallons per minute).
- e. There shall be no soil vapor or condensate introduced to the RTO unless the RTO bed temperature is at or above 1600 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.

### 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, the dilution air flow rate, and the condensate 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 6 months of issuance of this approval to determine compliance with emission 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 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 SW846 Method 8260.
  - 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 and dilution gas flow to the RTO (SCFM) and the condensate introduction rate (gallons per hour) 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) and the Condensate Treatment System (CT) 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, SVE and CT 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.
- e. Actions to be taken in the event of non-zero visible emission observations.

## 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, annual mass of volatile and semi-volatile organic compounds (estimated) collected by the SVE system and delivered to the RTO for treatment, the annual total volume of condensate treated in the RTO, and the estimated mass of condensate contaminants treated in the RTO.

## 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 remainder 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:** You may file your appeal in person at the street address(es) below, or by mail at the mailing address(es) below:

**STREET ADDRESSES**

**MAILING ADDRESSES**

**Pollution Control Hearings Board  
1111 Israel Road SW, Suite 301  
Tumwater, WA 98501**

**Pollution Control Hearings Board  
P.O. Box 40903  
Olympia, WA 98504-0903**

**The Department of Ecology  
Attn: Appeals Processing Desk  
300 Desmond Drive SE  
Lacey, WA 98503**

**The Department of Ecology  
Attn: Appeals Processing Desk  
P.O. Box 47608  
Olympia, WA 98504-7608**

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>*



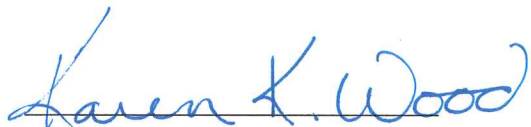
DATED at Spokane, Washington this 30th day of July, 2015.

PREPARED BY:

  
Robert W. Kostler, P.E.  
Air Quality Program  
Department of Ecology



APPROVED BY:

  
Karen K. Wood, Manager  
Air Quality Program  
Department of Ecology

**State of Washington**  
**Department of Ecology**  
Technical Support Document (TSD)

## **Source Background and Description**

<b>Source Name:</b>	<b>Pasco Sanitary Landfill</b> <b>1901 Dietrich Road, Pasco, WA</b>
<b>Source Location:</b>	<b>SW ¼ of the NW1/4 of Section 22, Range 30, Township 9, WM</b>
<b>County:</b>	<b>Franklin</b>
<b>Approval Order No.:</b>	<b>14AQ-E571</b>
<b>Permit Engineer:</b>	<b>Robert Koster</b>

## **Introduction**

The Washington State Clean Air Act and its supporting regulation, the General Regulation for Air Pollution Sources requires all new or modified sources of air pollution to submit notice before constructing and operating any new source of air pollution except single family and duplex dwellings or de minimis sources. This process is referred to as NSR. NSR includes a verification that the new or modified source will not cause or contribute to a violation of any ambient air quality standard, employ Best Available Control Technology (BACT), and comply with all federal and state rules. After the analysis, an order of approval is issued that sets forth requirements and conditions to ensure those requirements are met.

## **History**

On August 18, 2014, the Industrial Waste Area Generators Group (IWAG) responsible for the clean-up of Zone A (the 40,000 drum hazardous waste deposit at the Pasco Sanitary Landfill) submitted a Notice of Construction (NOC) application for the rerouting of Zone A gas from the flare combusting both municipal waste generated gas and the Zone A gas to a regenerative thermal oxidizer (RTO) dedicated to the Zone A soil vapor extraction (SVE) system. The SVE system is currently operated as part of an interim compliance strategy for the IWAG to prevent the spread of subsurface contaminants from Zone A under Agreed Order No. 9240. Historically the Ecology Air Quality Program did not require NOC approval for a Model Toxics Control ACT (MTCA) project such as this. In late 2013 it was determined that this could jeopardize Ecology's ability to implement federal air quality permitting requirements in Washington. As per guidance on the application of the permit exemption for MTCA projects, Ecology's air quality program agreed to issue approval for criteria pollutant emissions from this SVE/RTO project. Following that agreement, it was determined that the toxic air contaminant health impact evaluation would be most efficiently performed by Ecology's AQP toxicologists and that the determinations resulting should be incorporated into the criteria air pollutant approval.

### **Permitted Emission Units and Pollution Control Equipment**

The AQP has not issued a permit for the Zone A clean up. It was the program's historic belief that the MCTA permit exemption applied and that AQP interests were served by TCP implementing substantive and mandatory AQ requirements. So, rather than issuing separate AQ approval, the AQP assisted the Toxics Clean-up Program (TCP) to implement necessary AQ requirements. In accordance with Ecology guidance issued in late 2013, the AQP will now issue an approval for this RTO project. The approval will include any specific air toxics limitations as an efficient way to use the AQ toxicology and modeling expertise.

### **Unpermitted Emission Units and Pollution Control Equipment**

There are no unpermitted facilities operated by this source during this review process.

### **New Emission Units and Pollution Control Equipment**

The proposed RTO will replace the use of the flare to dispose of the gases drawn from the area (Zone A) with drums of hazardous waste. The RTO is designed to combust 1000 scfm of the contaminated soil vapor extracted from Zone A with 1300 scfm of dilution air. In addition, seven gallons per hour of condensate will be introduced to the RTO for disposal. The application indicates that the overall VOC destruction and removal efficiency will be greater than 98%.

The source consists of the following new facility/unit:

- (a) One two-canister RTO, Gulf Coast Environmental (GCE) Model 20-92-RTO,

### **Existing Approval Orders**

None

### **Stack Summary**

There is one stack for the RTO which has been evaluated for this project. In the past, the SVE gases were co-fired in the flare that combusted gases generated in the municipal solid waste part of the landfill. The municipal solid waste gases will be isolated from the SVE gases and will continue to be combusted in the flare.

### **Enforcement Issue(s)**

There are no air quality enforcement actions pending for this source.

### **Recommendation**

Staff recommends that the construction and operation of the RTO facility be approved. This recommendation is based on the following facts and conditions:

Information used in this review was derived from the revised application and Second Tier Health Impact Assessment (received October 24, 2014).

A complete application for the purposes of this review was received on October 24, 2014.

### **Emission Calculations**

*See appendix A for emission estimates.*

### **Actual Emissions**

No previous emission data has been received by the air quality program from the source.

### **Limited Potential to Emit**

The source shall limit total VOC emissions to a maximum of 3.3 lb/hr at the outlet of the RTO. The source must also demonstrate and continue to demonstrate that the emissions from the RTO will be equal to or lower than 98% destruction/removal efficiency of the maximum levels of contaminants being removed from the contaminated vadose zone by the SVE system.

### **County Attainment Status**

<b>Pollutant</b>	<b>Status</b>
PM10	attainment
SO2	attainment
NO2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

### **Part 70 Permit Determination**

The landfill SVE facility is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) Each criteria pollutant is less than one hundred (100) tons per year;
- (b) A single hazardous air pollutant (HAP) is less than ten (10) tons per year, and;
- (c) Any combination of HAPs is less than twenty-five (25) tons per year.

### **State and Federal Rule Applicability**

The proposed facility is subject to the requirements of WAC 173-400-110, New Source Review (NSR), and WAC 173-455-120, NSR Fees.

1.1. WAC 173-400-113, Requirements for new sources in attainment or unclassifiable areas, is the State regulation that defines the evaluations of the air quality project at this landfill.

The subsections of WAC 173-400-113 require the following:

- 1.1.1. WAC 173-400-113(1): "The proposed new source will comply with all applicable new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAP)...".

- 1.1.1.1. Ecology is not aware of any NSPS or NESHAP that apply to the Pasco Landfill operations.
- 1.1.2. WAC 173-400-113(2): “The proposed new source or modification will employ BACT for all pollutants not previously emitted or whose emissions would increase as a result of the new source or modification”.
  - 1.1.2.1. Pasco Landfill proposes that the RTO, resulting in 98% control of the VOC removed from the vadose zone by the SVE system, and its exhaust containing a maximum of 3.3 pounds per hour VOC represents BACT and t-BACT. Ecology agrees although we note that there is no economic analyses provided supporting this determination. The control proposed requires that the active oxidation bed in the RTO be maintained at a temperature at or higher than 1600 degrees Fahrenheit, and that the flow of SVE gas and condensate and dilution air are accurately and precisely monitored.
- 1.1.3. WAC 173-400-113(5): “If the proposed new source or the proposed modification will emit any toxic air pollutants regulated under chapter 173-460 WAC, the source meets all applicable requirements of that program. The RTO will reduce and emit several pollutants regulated under WAC 173-460. Because this project is being done under an agreed clean up order under MTCA, normal air quality program jurisdiction does not apply. However, Ecology’s Toxic Cleanup Program does not have the toxicology or air pollution engineering expertise required for this project so AQ and TCP agreed that AQ would process the RTO application in accordance with AQ NSR rules.
- 1.2. WAC 173-460, Controls for New Sources of Toxic Air Pollutants, is the State regulation that addresses the risk to the public from routine releases of toxic air contaminants from new and modified sources.
  - 1.2.1. WAC 173-460-050: The applicant must quantify the facility’s emissions of toxic air contaminants. The applicant has done this in its application. The toxics emission point will be the exhaust stack of the RTO.
  - 1.2.2. WAC 173-460-060: The applicant must install and operate t-BACT on each emission point for which there is an increase in a toxic air pollutant. The Approval Order based on the analyses described in this technical support document contains emission limitations that reflect t-BACT for a hazardous waste clean-up project like this one.
  - 1.2.3. WAC 173-460-070: This section of the regulation requires that impacts of emissions of toxic air pollutants be demonstrated to be sufficiently low to protect human health and safety. This was accomplished by modeling the dispersion of any TAP emitted at a rate greater than the WAC 173-460 small quantity emission rates to determine the concentration of that pollutant at the property boundary. The RTO while reducing the halogenated organics in the SVE stream, produces acid gases as a result. HF and HCl are the two acid gases of greatest concern and HCl will be emitted at a rate sufficient to exceed the acceptable source impact level (ASIL) at the property boundary. This impact triggers a Health Impact Assessment (HIA), referred to as a

Tier II toxics review, to determine if the impacts can be approved at concentrations determined to be higher than the ASIL. The applicant provided a HIA to the Ecology modelers and toxicologists for this Tier II review. The toxicologists have provided the Tier II recommendation in Appendix B to this technical support document. As part of the Tier I review, Ecology questioned whether dioxins might also be formed by this control device. After review of documents referenced by the applicant, Ecology found no evidence that dioxins are a concern great enough to establish permit limits or require emission testing. The important features of this control device that support that determination are the requirement that the unit be maintained at 1600 degrees Fahrenheit and the fact that the heat recovery bed quenches the exhaust stream to below dioxin-favorable temperatures almost immediately. The unit will emit very low levels of particulate matter to serve as necessary nucleation sites for the formation process.

- 1.2.4. There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) applicable to this source.

### **Conclusion**

Ecology has determined the applicant, Environmental Partners, Inc., has satisfied all of the requirements of New Source Review for its proposal to establish an air pollution control device on the soil vapor extraction system at the Pasco Landfill MTCA cleanup site. The construction and operation of this pollution control device (the RTO) shall be subject to the conditions of the attached proposed Approval Order no. 14AQ-E571.

### Pasco Sanitary Landfill Interim Clean-up RTO Approval Response to Comments

Ecology provided the public a preliminary determination of approval for a regenerative thermal oxidizer (RTO) for the hazardous waste interim clean-up at the Pasco Sanitary Landfill. The public comment period ran for 30 days ending on March 31, 2015. No comments were received from the public. The applicant's consultant, however, did provide comments received on March 23, 2015, by the Department of Ecology. The following addresses each comment in turn, providing the comment verbatim, and Ecology's response:

#### Comment 1:

##### ITEMIZED COMMENTS BY PAGE

"Page 1, Approval Conditions 2.c and 2.k

Approval Conditions 2.c and 2.k specify emission limits for 1,2,4-trimethylbenzene (CAS No. 95-63-6) and n-propylbenzene (CAS No. 98-82-8). We acknowledge that these compounds are volatile organic compounds (VOCs) that contribute to the "total VOCs" that are regulated and subject to the VOC emission limit and compliance stack testing. However, individually these compounds are not regulated toxic air pollutants in Washington State under Washington Administrative Code (WAC) 173-460-150. Therefore, we request that the emission limits for these compounds be removed from the Approval Order."

Ecology's Response:

The compounds referenced in this first comment have been determined to be present in the soil gas being treated at the Pasco Sanitary landfill. They are included in the performance guarantees submitted in the application and are compounds that will be quantified with the analytical method required for compliance evaluations. Ecology declines to make this change in the Approval Order.

Comment 2:

“Approval Condition 4.b

Approval Condition 4.b requires compliance emission testing be conducted annually. With a permit limit of only 14 tons per year of VOCs (and anticipated actual emissions only a small fraction of that), the proposed RTO is a small emission source surrounded mainly by vacant agricultural land. To our knowledge, this frequency for conducting stack tests is unprecedented in Washington State for such a small emission source, including other sources that underwent a second-tier review for toxic air pollutant emissions. The maximum air pollutant emission rates that were used as the basis for the emission limits in the Preliminary Determination were calculated based on very conservative worst-case assumptions, including the highest-ever measured VOC concentrations in soil vapor (which are expected to decrease significantly over time) and assuming emissions based on these concentrations for 24 hours per day, 365 days per year at maximum influent flow capacity. Even with these ultra worst-case assumptions, the human health impact assessment demonstrated that adverse health impacts resulting from the project are highly unlikely. We request that Ecology reconsider the proposed testing frequency based on the following:

- The proposed testing frequency is burdensome and disproportionate to the testing requirements for other small sources in the eastern region.
- There is a low potential that actual emissions from the proposed RTO could exceed the permitted emission limits due to the ultra worst-case assumptions used in developing the emission limits.
- Even in a very unlikely scenario where emission rates approach the emission limits, the human health impact assessment for the project demonstrated that adverse health impacts are unlikely.

We believe a testing frequency similar to what Ecology proposes for other small emission sources would be sufficient to confirm that the RTO is operating in compliance with the Approval Order (for example, testing every 3 years or every year until compliance is demonstrated for 2 consecutive tests, after which the frequency drops to every 5 years).”

Ecology's Response:

Ecology establishes source testing requirements on a case-by-case basis considering the toxicity of the emission source, the public health and environmental consequences if the permit limits are exceeded, and the certainty of the data used to develop those limits. The testing frequency required in this approval is considerably less than that of the server farms' emergency engines first used as an example of how 'unprecedented' it was: the RTO will be tested approximately 60 times less frequently than the emergency engines on a run-time basis. This source is one of a very few in the

state that have toxic emissions high enough to require a Tier 2 analysis under WAC 173-460. Comparing this to other sources without toxic emissions as is done in this comment is a mistake. Ecology declines to alter this frequency, although we point out that all our regulated sources have opportunity to request modifications to their approval orders. In this case, that might be favorably considered after collection of data supporting this comment and the claims in the application materials for this project.

Comment 3:

“Approval Conditions 4.d.ii through v

Testing requirements outlined in Approval Conditions 4.d.ii through v require measuring particulate matter (PM), PM10, nitrogen oxides (NO<sub>x</sub>), and carbon monoxide (CO). However, there are no emission limits for these compounds in Approval Condition 2 and emission rates are expected to be negligible based on the proposed treatment technology. We suspect that these testing requirements were inadvertently included and request they be removed for clarification.

However, if these tests (PM, PM10, NO<sub>x</sub>, and CO) are required, we request the rationale for their inclusion since a) there are no emission limits for these compounds, and b) the maximum emission rates are expected to be negligible even using estimates based on higher than anticipated natural gas usage.”

Ecology’s Response:

Comment 3 is the result of a misreading of Conditions 4.d.ii through v. There is nothing in this Approval Order requiring testing of these pollutants, instead the methods are stated should the testing be required. Ecology declines to make the requested change.

Comment 4:

“Approval Condition 4.g

Approval Condition 4.g specifies throughput requirements during compliance testing and indicates that if the throughput range is not met during performance testing, then Ecology could impose operating restrictions on the RTO. However, the metric to be used for defining throughput is not specified. We request the Preliminary Determination specify the flow rate, in standard cubic feet per minute (SCFM), from the soil vapor extraction (SVE) system to the inlet of the RTO as the metric for defining system throughput. ...”

Ecology’s Response:

Normally, throughput requirements for a source test are proposed and confirmed in a source test plan. This allows the permit holder some flexibility in determining what will work best. However, Ecology will revise this condition to define throughput more specifically as the SVE system gas flow and the condensate introduction rate.



Comment 5:

“Approval Condition 7.a

Approval Condition 7.a specifies annual reporting requirements. It requires annual reporting of the annual mass of semi volatile organic compounds (SVOCs) collected by the SVE system and delivered to the RTO for treatment. Based on the results of previous testing of soil within Zone A of the Site, SVOC concentrations are low. Groundwater monitoring at the Site has not indicated that SVOCs are present in groundwater, and SVOCs have not been identified as contaminants of concern or indicator hazardous substances for the Site. Considering the low potential for SVOCs to be measured above negligible levels in the influent to the RTO, we request that the requirement to report the mass of SVOCs extracted by the SVE system be removed from the Preliminary Determination. Moreover, the level of testing required to measure potential low-level SVOCs in the extracted vapors is overly burdensome and provides no discernible benefit.”

Ecology’s Response:

This comment suggests there are historical data showing SVOCs are very low. These data should be used to fulfill this annual reporting requirement (assuming they are accurate). The contribution of SVOCs in the condensate must be considered. Again this comment appears to result from misinterpretation of this condition: there is no requirement in this approval order to measure these emissions. Ecology declines to make this change.