ENVIRONMENTAL PARTNERS INC
1990 - 2015

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SEPA ENVIRONMENTAL CHECKLIST

UPDATED 2014

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

***Instructions for applicants*:**

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the Supplemental Sheet for Nonproject Actions (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background

1. Name of proposed project, if applicable:

   Installation of a Regenerative Thermal Oxidizer (RTO) system at the Pasco Landfill NPL Site (Site) in Pasco, Washington

2. Name of applicant:

   Industrial Waste Area Generators – Group III (IWAG)

3. Address and phone number of applicant and contact person:

   APPLICANT:
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4. Date checklist prepared:

   June 8, 2015

5. Agency requesting checklist:

   Washington State Department of Ecology, Eastern Regional Office (Ecology).

6. Proposed timing or schedule (including phasing, if applicable):

   Work will commence upon Ecology issuance of an Approval Order for the work. The construction is expected to begin in the summer of 2015.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   No.

The proposed work comprises of installation of an RTO system including installation of a new concrete slab, natural gas supply line, communication line, electrical service and sub-panel. Modifications will be made to the existing SVE system effluent piping for both vapors and condensate to direct the flow from the SVE system equipment building to the RTO system.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

A large number of documents regarding past and proposed work related to Zone A of the Industrial Waste Area portion of the Site are on file with Ecology. Documents for the existing SVE system include: Volumes 1 through 3 of the *As-Built and Testing Reports with Operations and Maintenance Manual* published February 25, 2013; and quarterly and annual performance monitoring reports.

Documents submitted to Ecology related to the proposed RTO system installation include:

- *Final Draft Report: Soil Vapor Extraction Off-Gas Treatment Assessment, Pasco Landfill – Zone A, Pasco, Washington*, Landau, July 25, 2012
- *Notice of Construction (NOC) Application Supporting Information Report, Pasco Sanitary Landfill, Pasco, Washington*, (*NOC Application*) Landau Associates, July 24, 2014;
- *Report: Second-Tier Risk Analysis for Hydrogen Chloride Emissions, Pasco Sanitary Landfill, Pasco, Washington*, (*Second-Tier Analysis*) Landau Associates, August 25, 2014;
- *Revised Notice of Construction Application Supporting Information Report, Pasco Sanitary Landfill, Pasco, Washington*, (*Revised NOC Application*) Landau Associates, October 23, 2014;
- *Revised Report: Second-Tier Risk Analysis for Hydrogen Chloride Emissions, Pasco Sanitary Landfill, Pasco Washington*, (*Revised Second-Tier Analysis*) Landau Associates, October 23, 2014;
- *Technical Memorandum RE: Supplemental Exposure Assessment for Basin Disposal Inc., Second-Tier Health Impact Assessment, Pasco Sanitary Landfill, Pasco, Washington*, (*BDI Exposure Assessment*) Landau Associates, January 27, 2015;
- *Notification of RTO Minor Design Modification, Pasco Sanitary Landfill*, Environmental Partners, Inc., February 9, 2015; and
- *Preliminary Determination: In the Matter of Approving a New Contaminant Source for Pasco Landfill Zone A Interim Action Cleanup Under Agreed Order No. DE 9240* (*Preliminary Determination*), State of Washington Department of Ecology, February 27, 2015.

Ecology has posted several of the documents related to the proposed RTO system installation on the Pasco Landfill NPL Site webpage located at:

https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=1910

A comprehensive list of all publicly available documents regarding the Site may be found by contacting Ecology's Site Manager, Mr. Chuck Gruenenfelder at (509) 329-3439 or Ecology's Public Disclosure Coordinator, Kari Johnson, in Ecology's Eastern Region Office at:

E-mail: kari.johnson@ecy.wa.gov
Phone: 509-329-3415

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No.

10. List any government approvals or permits that will be needed for your proposal, if known.

1. Approval of this State Environmental Policy Act (SEPA) Environmental Checklist.

2. Final approval of Notice of Construction Permit by Ecology. A conditional preliminary determination of approval was issued by Ecology on February 27, 2015.

3. Final Approval Order for New Contaminant Source for Pasco Landfill Zone A Interim Action Cleanup.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description).

A two-canister RTO system will be installed within the existing fenced SVE system equipment compound on the landfill property. The system will be installed on a newly poured concrete slab along with necessary communication, electrical, and natural gas supply lines. Piping will be installed to deliver extracted vapors and condensate from the existing SVE system equipment building to the RTO.

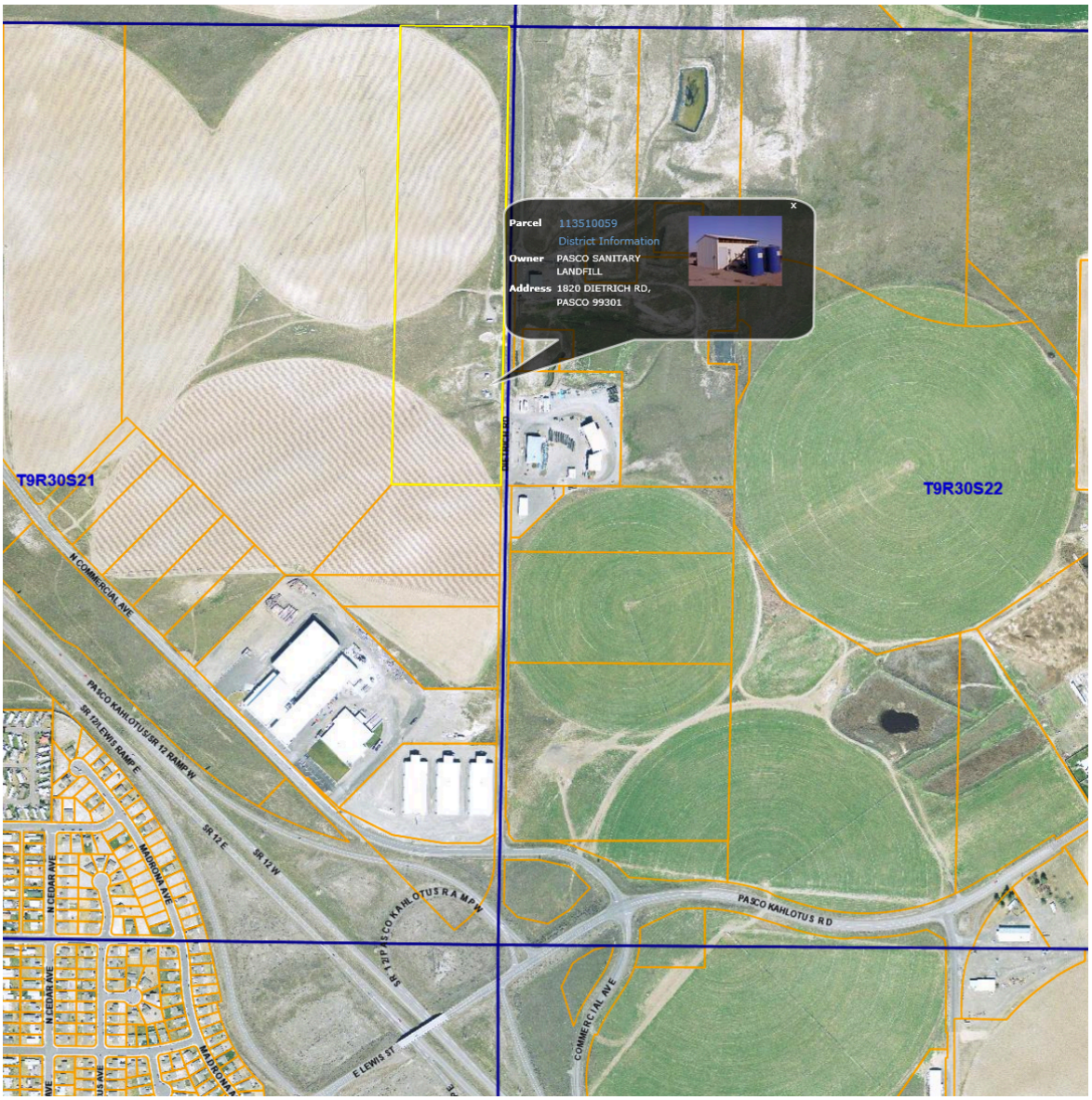
The RTO system includes installation of combustion chambers, heat exchangers, fans, motors, compressor, control panel, 20-foot tall vertical exhaust stack, and associated equipment. The equipment footprint is expected to be approximately 143 square feet.

The RTO system is designed to control emissions from and destroy volatile organic compounds (VOCs) and certain semi-volatile organic compounds (SVOCs) removed from the Zone A Landfill by the SVE system. The SVE system, and the proposed RTO, will be operated as a component of cleanup activities in compliance with requirements of Ecology Agreed Order No. DE 9240.

The RTO system is designed to accommodate 1,000 standard cubic foot per minute (scfm) of SVE system process vapor, 1,300 scfm of dilution air, and 12 gallons per hour of condensate. The minimum temperature of the RTO when oxidizing soil vapor or vaporized condensate will be no lower than 1,600°F. The destruction and removal efficiency of the RTO is expected to be 98 percent or less than or equal to 20 parts per million by volume (ppmv).

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Site is located at 1820 Dietrich Road in Pasco, Washington. The RTO will be installed in the existing equipment compound on the west side of Dietrich Road approximately 0.5 miles north of the intersection of Dietrich Road and North Commercial Avenue. The equipment compound is on Franklin County Washington Parcel Number 113510059. The legal description of the parcel is: E 600' of NE4 of 21-9-30, EXC 30' RD. The approximate coordinates are latitude 46.249715, longitude -119.055428. See map from Franklin County Mapsifter website below.



B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site
(circle one): Flat, rolling, hilly, steep slopes, mountainous,
other _____

Flat

b. What is the steepest slope on the site (approximate percent slope)?

The construction area within the fenced equipment compound is level.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

The surface soils at the project area are generally a sandy loam topsoil. The uppermost soil unit is an eolian layer consisting of silt and fine sand deposits.

Touchet Beds, are generally encountered at or near the surface immediately beneath the topsoil cover. The Touchet Bed soils are typically gray-brown, poorly graded, fine- to medium-grained sands that can be locally silty and gravelly.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Minor grading activities will be conducted to prepare the area for installation of a concrete slab.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion as a result of this project is unlikely. Average rainfall is approximately 8 inches a year. To limit potential erosion during construction, temporary erosion controls will be installed during construction as necessary.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

An area of approximately 11 by 13 feet will be covered by a concrete slab on which the RTO system will be installed. This is less than 1/2% of the total area of the site.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Please see response to question B.1.f., above.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction phase:

Construction and installation of the RTO system will include pouring of a concrete slab in a nearly level area within a fenced gravel-covered equipment compound. Site grading and equipment movement will be minimal. The RTO components will be assembled and installed upon the concrete slab. Piping will be installed between the SVE equipment building and the newly installed RTO system. After the RTO system has been tested and verified to be functioning in an acceptable manner, the existing conveyance line between the SVE building and MSW Landfill flare will be capped.

Operations and Maintenance phase:

Estimates of emission rates and quantities for the functioning RTO system were calculated and presented in Tables 1, 2 and 3 of the *Revised Notice of Construction Application* referenced in the document section above. Emissions are anticipated to include particulate matter, nitrogen oxides, carbon monoxide, HCl or HF, and VOCs.

The *Preliminary Determination* contains the following proposed emission limitations:

Type or Compound	Limit (in lbs/hr unless otherwise indicated)
Opacity	5 %
1,1,1-Trichloroethane	0.015
1,2,4-Trimethylbenzene	0.008
2-Butanone (MEK)	0.70
4-Methyl-2-pentanone	0.083
Ethanol	0.530
Ethylbenzene	0.041
Isopropylbenzene	0.006
Total Xylenes (o, m and p)	0.162
Methylene chloride	0.061
n-Propylbenzene	0.008
Toluene	0.720
Trichloroethene	0.038
Hydrochloric Acid (HCl)	4.92
Hydrofluoric Acid (HF)	0.12
VOCs	3.30

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No. There are small quantities of temporary and variable odors from the BDI transfer station across Dietrich Road to the east that should not affect the proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Any airborne dust produced during construction will be managed through the use of standard dust control techniques such as application of water.

Emissions from operation of the RTO system once installed will be controlled through proper engineering and design in order to meet the requirements listed in the Preliminary Determination. Preliminary requirements include the operation of the RTO at the temperature and flows listed in the answer to question A.11. above. The temperature and flow rates will be continuously monitored and logged. Performance testing will be performed within 6 months and annually thereafter. Adjustments will be made in the operation of the RTO as necessary to meet operational requirements.

The RTO system is being installed to reduce and control effluent/emissions from the SVE system and to replace its current destruction method, which comprises of the MSW Landfill flare located north of Zone A and the MSW Landfill. The RTO is anticipated to have a 98% destruction and removal efficiency.

The existing flare is currently used to treat effluent vapor generated during Interim Action cleanup activities. A reduction in methane produced at the MSW Landfill, along with wellhead temperature and LEL restrictions currently limit the maximum effluent flow from the SVE system to the flare. After SVE vapors are directed to the RTO, the flare is expected to continue to be used to treat landfill gas generated exclusively by the MSW Landfill.

Although the extraction rate for the SVE system may still be limited by other controlling factors such as temperature and %LEL, extraction of contaminants from soil within and beneath the Zone A landfill and treatment of those contaminants will be increased significantly with installation of the RTO system. The RTO will reduce emissions from treatment of effluent vapor and decrease the quantity of condensate produced during cleanup activity at Zone A that will require off-site treatment or disposal.

3. **Water**

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

No surface water bodies are located on the subject or adjacent parcels. There are no wetlands or surface water bodies located within at least 1,000 feet.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Not applicable.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

Not applicable.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No.

b. Groundwater:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No. Neither the proposed RTO system installation or operation will use or discharge to groundwater.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material will be discharged into the ground.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Stormwater runoff is not likely since the average rainfall at the Site is approximately 8 inches per year. The RTO system and piping from the SVE equipment building to the RTO will have level indicators, alarms, and emergency shutoff features as well as secondary containment for spill control purposes. The containment structure will be constructed with sufficient capacity to accommodate potential rainfall.

2) Could waste materials enter ground or surface waters? If so, generally describe.

The RTO system and piping will be located within secondary containment. No waste water will be produced since the RTO system will recirculate liquid condensate through an Aqueous Injection System.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No. The addition of an 11 x 13 foot impermeable footprint should have very limited impact on drainage especially since, as indicated above, there is very little annual rainfall at the Site.

d. Proposed measures to reduce or control surface water, groundwater, and runoff water, and drainage pattern impacts, if any:

Not applicable. See answers above.

4. **Plants**

a. Check the types of vegetation found on the site:

_____ deciduous tree: alder, maple, aspen, other
_____ evergreen tree: fir, cedar, pine, other
__x__ shrubs
__x__ grass
_____ pasture
_____ crop or grain
_____ orchards, vineyards or other permanent crops
_____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
_____ water plants: water lily, eelgrass, milfoil, other
_____ other types of vegetation

There is no vegetation located in the construction area within the equipment compound.

b. What kind and amount of vegetation will be removed or altered?

No vegetation exists or will be removed from the construction area within the fenced SVE system equipment compound.

c. List threatened and endangered species known to be on or near the site.

None.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Not applicable.

e. List all noxious weeds and invasive species known to be on or near the site.

None.

5. **Animals**

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include:

birds: Hawk, songbird, Canadian geese, chucker, and owl
mammals: Coyote, ground squirrel, and rabbit/hare
fish: None

b. List any threatened and endangered species known to be on or near the site.

EPI procured and analyzed habitat and species GIS data from the Washington Department of Fish and Wildlife (WDFW) to determine if there are any endangered species known to be on or near the project area. The data reviewed included the Wildlife Survey Data Management, Priority Habitats and Species Areas, Washington Lakes and Rivers Information System, and Marine Environment GIS datasets. No threatened or endangered species are known to occur on or within 1/2 mile of the project area.

c. Is the site part of a migration route? If so, explain.

The project area is in the Pacific Flyway, but does not have habitat to support migratory birds.

d. Proposed measures to preserve or enhance wildlife, if any:

None.

e. List any invasive animal species known to be on or near the site.

None.

6. **Energy and natural resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity and natural gas will be used to power components of the RTO system. Natural gas will provide fuel for the incineration process. Electricity will be used to power the control panel and motors.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The expected operating temperature of the RTO system is 1,600 to 1,800°F. Ceramic heat recovery units will be used to regeneratively heat and cool the influent and effluent materials. A maximum of 95% heat recovery efficiency is possible through this regenerating and reversal flow process.

7. **Environmental health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste that could occur as a result of this proposal? If so, describe.

Environmental health hazards were evaluated in the *Second-Tier Risk Analysis* and *Supplemental Exposure Assessment*. Exposure to emissions generated by the RTO system have been determined to be within permissible limits.

There is a potential for fire or explosion during the extension of the natural gas line to the RTO. Representatives of Cascade Natural Gas have been and will be consulted during the design process and will be on Site during the critical construction periods to assist with safe hookup.

Hazardous vapors and liquid condensate will be piped into the RTO system for thermal oxidation destruction. Piping is designed with maximum continuous runs and air and watertight joints and welds. The control system will monitor pressure and flow within each line. Bypass and emergency shutoff components are also present within the system. Secondary containment is added around any potential points of release.

1) Describe any known or possible contamination at the site from present or past uses.

The proposed location of the RTO system is within the SVE system equipment area of the Pasco Landfill NPL Site. The equipment area is located adjacent to the closed Zone A industrial waste landfill. The SVE system is being operated as an interim action at the Site to remove hazardous substances from within, beneath, and downgradient of the Zone A landfill. Groundwater contaminants have been detected in samples collected from wells located in the SVE equipment area. Upgrades made to the SVE system in 2012 have resulted in reduced concentrations and detections of chemicals of concern in groundwater samples collected from wells located within and downgradient of the equipment compound. There is no known soil contamination within the equipment compound.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

An evaluation of hazardous compounds and their effects on system design has been performed. Results of the analysis are included in the *Second-Tier Risk Analysis* and *Notice of Construction Application*. Design considerations and modifications have been made to address the hazardous nature of the RTO system influent, health and environmental effects of the RTO system effluent, acid gas production, the effects of corrosive compounds on various components of the system, and other concerns. Testing of all system components will occur before startup to ensure that the system operates properly within design specifications.

A high-pressure natural gas main pipeline runs diagonally across the subject parcel from the southeast to the northwest. The gas line is located approximately 12 feet northeast of the northeastern corner of the fenced SVE equipment compound and approximately 100 feet from the RTO system construction area. The gas main will not affect installation of the RTO system.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

As discussed above, the SVE system produces soil vapors and condensate that will be processed by the RTO system. During the SVE vapor recovery process condensate accumulates within four underground moisture separators and three secondary water knockout tanks upstream of the blowers within the SVE Operations Building. The condensate is pumped into an oil-water separator to remove light non-aqueous phase liquids (LNAPL), which then drain into a holding tank for temporary storage. Based on historical condensate and LNAPL analysis, the LNAPL will likely contain toxic and/or hazardous compounds. Further information on specific compounds contained within these vapors and condensate and their historical concentrations is included in the *Notice of Construction Application* and *Second-Tier Analysis*.

4) Describe special emergency services that might be required.

Work and operations at the Site are currently performed under the *Health and Safety Plan – Soil Vapor Extraction System Operations and Maintenance and Groundwater Monitoring, Pasco Sanitary Landfill Site, Pasco, Washington* (*Health and Safety Plan*) dated February 2014. The Health and Safety Plan contains Site specific emergency procedures, lines of authority, project-specific requirements, risk analysis and control, Site control and communications, decontamination procedures, health and safety training, requirements for personal protection equipment, air monitoring, Site hazards, and medical surveillance. The Health and Safety Plan will be addended or updated as necessary in the RTO installation work plan and as part of revisions to the SVE System As-Built and Operations and Maintenance documents required by Ecology.

5) Proposed measures to reduce or control environmental health hazards, if any:

Measures to reduce health hazards are evaluated in the Notice of Construction Application and Second-Tier Analysis.

Appropriate personal protective equipment (PPE) will be worn during project activities. Expected PPE use will include hard hats, work boots, appropriate gloves, and protective eyewear and ear protection, as necessary. The Site Health and Safety Officer may make variations of PPE use dependent on work activity and approval.

b. **Noise**

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Intermittent short-term noise will be generated by RTO installation activities during daylight hours.

Long-term noise generated by the RTO system will be controlled with noise suppression features. Long-term noise will continue to be generated within the SVE equipment building located on-site as a result of an operating regenerative blower and associated motors and other equipment.

Noise from the RTO system components will be below allowable City of Pasco noise limitations at the property line as established in Pasco Municipal Code PMC 9.61.030 and 9.61.040.

3) Proposed measures to reduce or control noise impacts, if any:

Equipment will be required to have functional mufflers or other noise-reducing appurtenances, as appropriate. Equipment not in use will be shut off.

All project area workers will be required to wear ear protection if exposed to noise levels above permissible exposure limits (PELs).

8. Land and shoreline use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The subject parcel is currently used as an equipment compound for the Zone A SVE system, hazardous and non-hazardous waste storage area, and work trailer/office for cleanup workers.

The current uses of parcels adjacent to the subject parcel (project area) are:

- North: Agricultural use – Department of Natural Resources.
- East of the northern three-fourths of the subject parcel: Closed landfills/Superfund Cleanup Site.
- East of the southern quarter of the subject parcel: Basin Disposal Inc. transfer station and recycling facility.
- South: Oxarc, Inc. lime slurry evaporation lagoon and hydrogen production facility.
- West: Agricultural use.

The proposed is not expected to affect land use of adjacent parcels. Air quality impacts associated with the proposed project were evaluated and reported in the *Revised NOC Application*, *Revised Second-Tier Risk Analysis*, and *BDI Exposure Assessment*. Exposure concentrations calculated for receptor locations were compared to relevant non-cancer risk-based toxilogical values. The hazard index was calculated to be less than 1, indicating that non-cancer effects are not likely to result from acute or chronic exposure to cumulative toxic air pollutant (TAP) impacts at nearby residential, commercial/industrial, sensitive/institutional or maximum impacted boundary receptors. The project-related health risks are estimated to be less than the limits permissible under WAC 173-460-090.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No agricultural or forest land will be converted as a result of this proposal. The proposed RTO system will be installed within a fenced equipment compound that has been used to house the SVE system and other remedial equipment since at least May 1997.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

The proposed RTO system installation will not affect or be affected by farm operations such as oversize equipment access, the application of pesticides, tilling, and harvesting.

A literature review was conducted to determine the potential impacts of HCl emissions to a generic agricultural crop. Information on the direct influences of HCl emissions to crop growth is limited; however, some studies, relevant to test firing of rocket engines (which release extremely high levels of HCl to the atmosphere) have examined some effects to agriculture.

In 2013, Mendenhall studied the influences of rocket motor test-fire emissions deposition on corn and alfalfa (Mendenhall 2013). Mendenhall investigated the impacts of contaminant deposition (with HCl as a significant component) from rocket test emissions on residential rooftops and livestock crop foliage and soil. It was demonstrated that crop germination and growth was inhibited by the salt stress induced as HCl was neutralized to chloride in the soil. The study showed that the deposition of

test-fire emissions on soil increased chloride concentrations from approximately 50 to 120 milligrams per kilogram (mg/kg) to a range of 35,900 to 69,100 mg/kg. This resulted in dehydration, and increased the accumulation of metals in the corn and alfalfa biomass, likely due to a compensative biochemical measure to improve water uptake (calcium and potassium were the only metals of elevated levels of concern for livestock feed). These temporary HCl emission deposition influences on crop hydration, germination, and growth were mitigated by frequent rain or watering events (that rinsed foliage).

The impacts of HCl deposition on crops evaluated in the Mendenhall study were a result of HCl emissions that are several orders of magnitude greater than the anticipated emissions from the proposed RTO. For example, as described in the Mendenhall study, approximately 236,000 pounds of HCl was released into the atmosphere during the test firing of one solid rocket engine. The proposed maximum hourly HCl emission rate (4.9 lbs/hour) for the project is less than 0.002 percent of the HCl quantity that was released during the rocket test evaluated in the Mendenhall study. Even at the emission levels reported in the Mendenhall study, the suggested mitigation strategy for the rocket test firing was to simply increase irrigation of the exposed crop. Based on the results of the Mendenhall study and the conservatively high maximum emission rates calculated for the proposed RTO, impacts to nearby agricultural fields near the RTO are not anticipated.

Effect of Deposition from Static Test Fires on Corn and Alfalfa. Master's Thesis. Mendenhall, S. 2013. Available at:

http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=2403&context=etd

Utah State University. Logan, Utah. Accessed July 10, 2014.

c. Describe any structures on the site.

The fenced SVE equipment compound contains the SVE system equipment building (15' x 20'), a concrete secondary containment structure containing waste water tanks (20' x 20'), and a storage shed (15' x 20'). The SVE building houses remediation equipment associated with the Zone A SVE system. A portable work trailer/office is located approximately 225 feet north of the fenced equipment compound on the subject parcel.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

Parcel Number 113-510-059 is currently zoned as 81 - Resource - Agriculture.

f. What is the current comprehensive plan designation of the site?

The Franklin County Comprehensive Plan has designated Parcel Number 113-510-059 to be zoned as 81 – Resource - Agriculture. The Pasco Landfill NPL Site, is currently being managed through Agreed and Enforcement Orders with the Washington State Department of Ecology and various potentially liable persons (PLPs). The Site is not proposed to undergo redevelopment.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No. The Benton-Franklin County Health District has acknowledged in a telephone conversation that the PSL and project area are not in an "environmentally sensitive" area.

i. Approximately how many people would reside or work in the completed project?

The Project is not residential and no employees will work on the completed RTO system full time.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Does not apply.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed scope of work is compatible with the current land use and plans for the PSL Site.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

Proposed measures to ensure compatibility with agricultural activity on the property and nearby include measures listed above and/or in the *Second–Tier Analysis* and *Notice on Construction Application* for reducing emissions from the RTO facility.

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

Does not apply.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

Does not apply

c. Proposed measures to reduce or control housing impacts, if any:

Does not apply.

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The RTO system will include a 20-foot stack.

b. What views in the immediate vicinity would be altered or obstructed?

Does not apply—there are no other structures surrounding the project area that would have views altered or obstructed.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Does not apply. The RTO system construction site is located in an area with light-industrial use adjacent to agricultural fields, undeveloped land, and a Superfund Site.

11. **Light and glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No light or glare will be produced.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

Not applicable.

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?

The property west of the project area is agricultural farmland and is used several times a year for goose hunting.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No, installation of the RTO system would not displace any recreational users.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

Does not apply.

13. **Historic and cultural preservation**

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe.

No. The property is a "Superfund" Site as it is listed on the National Priorities List. Landfill operations have been located on the Site since 1958. Historical aerial photographs dating back to 1941 show no development other than landfill operations and agricultural use at the Site.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

As mentioned above, historical aerial photographs dating back to 1941 show no development other than landfill operations and agricultural use at the Site.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Does not apply.

14. **Transportation**

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The construction area is accessed through locked gates along a private drive off of Dietrich Road.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Not applicable. The site is on private property and not intended to be accessible to the general public.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

The project will not create nor eliminate any parking spaces.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No road or transportation improvements are necessary.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The completed RTO system does not house any workers. The average vehicular traffic would be less than or equal to 1 vehicle per day.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

h. Proposed measures to reduce or control transportation impacts, if any:

There are no impacts to transportation anticipated with the proposed scope of work.

15. **Public services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Does not apply.

16. **Utilities**

a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

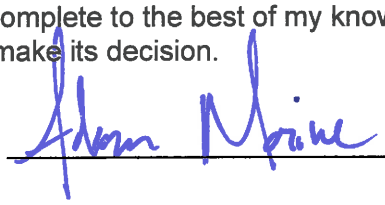
Electric and communication are the utilities currently at the Site.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Additional communication and electric connections are proposed as well as installation of a natural gas line.

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature:  Senior Engineer, EPI, 6/8/2015

Name of signee:

Position and Agency/Organization

Date Submitted:

D. Supplemental Sheet for Nonproject Actions

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

   Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

   Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

   Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.