

# Draft Dangerous Waste Permit for Emerald Services, Inc.

The Washington State Department of Ecology (Ecology) is announcing its **draft permit** for dangerous waste management at the Emerald Service, Inc. (Emerald) Tacoma Facility. Ecology will make a final decision on re-issuing a final permit after we consider any public comments on the draft permit.

Ecology issued the initial permit to this facility on May 23, 1999. The facility has been operating under that initial permit for the past ten years.

The facility is located in the Tacoma tide flat area between the Hylebos and Blaire Waterways (see map at the end of the document).

The draft permit has detailed requirements for accepting, storing, recycling, and treating dangerous waste in containers, tanks and other equipment.

Ecology has determined that issuing this permit does not require preparation of an environmental impact statement (EIS) under the State Environmental Policy Act (SEPA).

This fact sheet summarizes:

- ✓ Activities at the dangerous waste management facility.
- ✓ Requirements in the draft permit for operating the facility including waste analysis, storage, recycling and treatment.
- ✓ Requirements for facility inspections, personnel training and emergency planning and response.
- ✓ Requirements for closing the facility when it ceases to operate.
- ✓ Ecology's process to make final decisions.

### Public Comments

The public comment period on the draft permit and State Environmental Policy Act (SEPA) determination runs from December 30, 2009, through February 15, 2010. **To be accepted, comments must be received or postmarked by February 15, 2010.**

You may review the information Ecology used to make our tentative decision to issue the permit at:

Department of Ecology  
Hazardous Waste and Toxics  
Reduction Program  
300 Desmond Drive  
Lacey WA 98503  
Tel: (360) 407-6700

Appointments are available  
9 a.m. to 4:30 p.m.

Or contact:

Citizens for a Healthy Bay  
917 Pacific Avenue, Suite 100  
Tacoma, WA 98402  
Tel: (253) 383-2429

Please submit your comments to:

Martin Werner  
Hazardous Waste and Toxics  
Reduction Program  
Department of Ecology  
PO Box 47600  
Olympia, WA, 98504-7600  
mwer461@ecy.wa.gov

For more information or a copy of the draft permit and fact sheet contact Martin Werner above, or visit Ecology's website:

<http://www.ecy.wa.gov/program/s/hwtr/foia/index.html>

### A. Facility History and Overview

Emerald operates a dangerous waste management facility at 1825 Alexander Avenue, Tacoma between the Blair and Hylebos Waterways of the Commencement Bay Nearshore Tideflat area. The area is zoned for heavy industrial activities. This dangerous waste permit is being re-issued for operations at that facility.

Ecology first issued a dangerous waste permit for this location and operation on May 23, 1999 to Sol-Pro. Sol-Pro had been doing solvent recycling and fuel blending of dangerous wastes at the facility since 1987. In 2000, Emerald purchased the facility and the dangerous waste permit that had been issued to Sol-Pro was transferred to Emerald.

Emerald Services, Inc. is a privately held company established in 1999 in Seattle, Washington when four pre-existing family-owned companies merged into one. The owners have a lengthy history of managing different types of solid and dangerous wastes.

Emerald stores dangerous wastes in containers and tanks. They recycle waste solvents in one of two distillation systems:<sup>1</sup> thin film evaporation or low boiler distillation. These systems produce clean reusable solvents Emerald returns to commerce.

Emerald recycles used glycol in a third distillation system, which is then sold and reused as antifreeze. They blend contaminated oils, paint-related wastes, ink formulations, and other organic wastes into fuels for energy recovery. Emerald ships the blended fuels out-of-state to a permitted hazardous waste industrial facility, which destroys the waste and uses the energy produced for industrial processes.

Emerald also accepts a limited amount of dangerous waste not processed at the Tacoma facility. They store these wastes in containers and then ship them to another facility for processing or disposal.

Ecology requires a facility to submit a detailed application for permit re-issuance six months before their permit expires. The permit application provides design and operating information about the facility. Emerald's previous permit expired May 23, 2009.

Emerald complied with this requirement and Ecology has been working with the company to ensure the application addresses all of the current dangerous waste regulations. After careful review, Ecology determined Emerald's permit application is adequate and prepared this draft permit for public notice and review. The permit incorporates enforceable requirements on Emerald operations. Ecology is clear about which sections of the application are part of the formal permit.

The permit allows Emerald to continue and expand their operations. They will continue to accept and manage the same types of wastes as they have been for the past ten years. They will be allowed to store 70 percent more waste in containers and 180 percent more in tanks than under the past permit.

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<sup>1</sup> Emerald's distillation systems apply heat to boil solvents from waste mixtures. The solvents boil off and condense to a usable liquid while the remaining concentrated waste materials are managed as dangerous waste.

### B. Procedures for Reaching Final Decision

The public may review and comment on this draft permit. Ecology will consider all public comments before deciding whether to issue a final permit. WAC 173-303-840(3) through (9) describe the public review process.

Ecology is also issuing a determination of non-significance (DNS) under the State Environmental Policy Act (SEPA; Chapter 197-11 WAC). After review of the completed environmental checklist, permit application, and other information on file with the agency, Ecology determined this proposal does not require an environmental impact statement (EIS). The proposal does not have a probable significant adverse effect on the environment. This determination is also open for public review and comment.

#### Public Comment Period

December 30, 2009 through February 15, 2010 is the public comment period on Ecology's tentative decision to issue a dangerous waste management facility permit and DNS. See page 1 for information on submitting comments and reviewing documents.

#### Public Hearing

Ecology will conduct a public hearing on this tentative decision if any member of the public requests one. To request a hearing, contact Martin Werner by phone, letter, or e-mail by January 27, 2010. If no one requests a public hearing, then Ecology will cancel the hearing. To find out if the public hearing will be held, contact Martin Werner after February 2, 2010. If held, the public hearing will begin at 7 pm on February 11, 2010, at Ecology's Lacey address that is listed above.

#### How to Participate

You may request, review, and comment on the draft permit and supporting documents. Information Ecology used to make their decision is available to you. See page 1 for locations and hours of availability. You must deliver or mail your comments by February 15, 2010, for Ecology to consider them.

The most effective comments are those that:

- ✓ Provide specific information describing what condition he or she believes is inappropriate.
- ✓ Provide factual and regulatory support for the comment.
- ✓ Suggest changes to fix the problem.
- ✓ Include supporting material, unless Ecology already has the material. (For example, if the comment references a regulation on managing dangerous waste, Ecology already has it. If the comment references a report or letter that is not part of the application or the agency files on Emerald or is not a commonly available reference, then Ecology likely does not have it. In such cases, the person commenting should provide a copy of the reference.)

WAC 173-303-840(6) provides details on raising issues and providing information during the public comment period.

### Decision-making Process

#### Public Comments and Testimony

Ecology will consider and respond to written comments the public submits. Ecology will also consider and respond to public testimony from the public hearing.

#### Final Decisions

After considering public comments and testimony, Ecology will make a final permit decision or a new tentative decision. In addition, Ecology will allow the Determination of Nonsignificance (DNS) under the State Environmental Policy Act (SEPA) to stand, amend, or withdraw it based on public comments.

If Ecology re-issues a final permit to Emerald, it will be valid for ten years from its effective date. However, Emerald or Ecology can modify the permit at any time during that period. Permit modifications are subject to public review. WAC 173-303-830 has procedures for modifying a permit and presents the types of permit changes that are subject to public review and comment.

Ecology will inform the facility and all people who comment during the public comment period of the final permit decision.

#### Effective Date of Decisions

Normally, a permit is effective 30 days after Ecology gives notice of their final decision. However, if there are no comments on the draft permit, Ecology may specify an earlier effective date for the final permit.

If Ecology makes a new tentative decision on this permit, there will be a new comment period. If the DNS is withdrawn due to public comment, Ecology will begin an Environmental Impact Statement (EIS) or mitigated DNS.

#### Appealing the *Final* Permit Decisions

Ecology will make a final decision after considering and responding to comments from the public and the facility on the draft permit. People can challenge that final decision or any individual permit condition by appealing to the Pollution Control Hearings Board. Appeal procedures are in WAC 173-303-845 and Chapter 43.21B Revised Code of Washington (RCW).

### Ecology's Authorities and Responsibilities

Ecology regulates dangerous waste in Washington State. The Washington State Hazardous Waste Management Act, Chapter 70.105 Revised Code of Washington (RCW), and the Dangerous Waste Rules, Chapter 173-303 WAC, regulate the management of dangerous waste. WAC 173-303-800 specifies that facilities such as Emerald, that store and treat dangerous waste, must obtain a permit.

The U.S. Environmental Protection Agency (EPA) also has regulations for facilities that manage hazardous waste. The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), and the regulations in Title 40 of the Code of Federal Regulations (CFR), regulate hazardous waste nationwide. EPA authorizes Ecology to implement these federal regulations in Washington.

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The State of Washington's dangerous waste management program received authorization to implement the state dangerous waste regulations in lieu of the federal hazardous waste regulations on January 31, 1986. The State's program also received approval for revisions to the federal program. The last approval became effective on December 29, 2006. Currently, Ecology's program is authorized for all aspects of the federal hazardous waste regulatory program that apply to Emerald's dangerous waste management permit.

### C. State Environmental Policy Act (SEPA)

Regulations at WAC 197-11-800(13) categorically exempt the re-issuance of a permit from SEPA consideration if there are no material changes from the past permit. In that case, a checklist would not have been required.

Emerald will continue to use existing structures and the same basic operations for waste management as they have under the previous permit. However, Emerald is allowed to increase their container and tank storage capacities under the re-issued permit. Therefore, Ecology determined that re-issuing the permit does not qualify for the categorical exemption.

Ecology reviewed Emerald's SEPA environmental checklist (checklist) and determined that the changes at the facility are limited and re-issuing a permit does not have probable significant adverse effects on the environment. The re-issued permit is very specific about how Emerald must safely meet regulatory requirements. Therefore, the proposal does not require an Environmental Impact Statement (EIS) under SEPA.

### D. Facility Descriptions and Permit Requirements

This dangerous waste management facility permit regulates all activities for receiving, storing, and treating dangerous waste at the facility.

The permit does not apply to some operations at the facility. For example, although used oil operations are regulated by Ecology they are not addressed in this permit. This permit does not address all aspects of moderate risk waste operation or wastewater management at the facility. Emerald has a solid waste permit and a water discharge permit that address those activities.

#### Facility Description and Operation

Emerald operates the dangerous waste management facility at 1825 Alexander Avenue, Tacoma between the Blair and Hylebos Waterways of the Commencement Bay Nearshore Tidelat area. They accept and manage dangerous wastes from off-site generators.

The facility receives dangerous wastes from off site in containers and bulk. They have a centrally located loading dock to unload dangerous waste containers. They conduct check-in procedures<sup>2</sup> in specified container staging areas. The dangerous wastes must be formally accepted into the facility and moved to processing or long-term storage areas within 24 hours.

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<sup>2</sup> For details on check-in procedures see section of this fact sheet on "Waste Analysis Requirements."

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The loading dock and all container storage and processing areas have sufficient secondary containment volume to hold up to ten percent of the waste stored in the area. In addition, an outdoor storage area has capacity to contain precipitation from a maximum 25-year storm of 24-hour duration. Emerald must remove any spilled wastes from any secondary containment system as soon as it is discovered, and they must remove precipitation during the work shift during which it accumulates.

Emerald inspects containers daily to ensure they are properly labeled, properly stacked, in good shape, and not leaking.<sup>3</sup> They must maintain container management areas so they have impervious surfaces with no cracks. The maximum amount of containerized dangerous waste Emerald can store on site at any one time is 40,810 gallons.

Emerald unloads tanker trucks for solvent recycling or fuel blending at one location. They unload used glycol at another location. The permit addresses secondary containment and spill prevention requirements for these offloading activities. For bulk loads, Emerald completes formal check-in procedures before the wastes are offloaded.<sup>2</sup> Emerald offloads most of the bulk dangerous wastes to tanks. However, they unload some dangerous waste for fuel blending directly to railcars.

Emerald stores and/or processes dangerous waste in eleven existing permitted tanks at the facility. They plan to bring six more tanks online for dangerous waste service in the near future through a permit modification. Each existing tank has been certified for use by an independent professional engineer. At a minimum, the tanks must be recertified every five years. The permit authorizes a maximum of 143,966 gallons of dangerous waste in tanks at the facility. Planned tanks will have to be certified before they can be put into service. The permit includes requirements for a comprehensive inspection program for tank systems.<sup>3</sup>

All tanks have secondary containment systems with sufficient capacity to hold wastes from the largest tank in its area. Outdoor areas can also hold precipitation from a maximum 25-year storm of 24-hour duration. Like for container areas, Emerald must maintain tank secondary containment areas to have impervious surfaces with no cracks.

On the east side of the facility, Emerald has a permitted dangerous waste secondary containment area large enough to accommodate two railcars and to contain all of the waste if a railcar has a catastrophic failure. This is the only location permitted for holding and transferring dangerous waste into or out of railcars, (there are five other railcars slots at the facility, which are not permitted to have dangerous waste). Emerald accumulates blended dangerous waste fuels in railcars at the permitted location or they may accept a railcar of waste antifreeze there for offloading. When a railcar is full of blended fuels, it is securely closed and shipped off site within 10 days. Every railcar used by Emerald is designed and constructed to hold flammable liquids. The railcars are certified for structural integrity on a periodic basis as required by the United States Department of Transportation (USDOT) to ensure they are in acceptable condition for service.

Emerald generates dangerous waste during its recycling and fuel blending operations. Waste streams from these processes include process wastewater, tank still bottoms, filter debris, activated carbon, spill residues and absorbents, contaminated personal protective equipment, and other contaminated debris such

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<sup>3</sup> For additional information, see section of this fact sheet on "Inspections."

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as floor sweepings. Emerald manages the dangerous waste they generate in permitted locations under operating conditions in the permit. If wastewater does not designate as a dangerous waste, Emerald accumulates and treats it in a series of tanks that are not permitted for dangerous waste service. Emerald discharges the treated water to the City of Tacoma publically owned treatment works (POTW) under conditions of a wastewater discharge permit. Wastewater that does designate as dangerous waste cannot be treated in those tanks.

The permit has requirements for air emission control from dangerous waste containers, tanks, equipment, and process systems. All dangerous waste containers at the Emerald facility meet the container specifications of the USDOT. Emerald must inspect dangerous waste containers when they first arrive at the facility to ensure they are securely closed to prevent unnecessary emissions. To minimize air emissions during sampling, Emerald must ensure a container is open only when it is actively sampled and then promptly closed. Each container is also kept closed during staging or processing unless dangerous waste is actively being added or removed. The container must be closed if addition or removal of wastes will not occur within 15 minutes, if the person performing the operation leaves the immediate vicinity of the container, or if the container is full.

Emerald keeps a nitrogen blanket on dangerous waste tanks except those that manage only used antifreeze. This helps to control emissions and reduce fire danger. Tanks have conservation vents to allow pressures within the tanks to equilibrate to outside pressures when wastes are added or removed or when ambient temperatures change. Emerald must inspect these vents annually to ensure seals are intact and not leaking.

Emerald uses natural gas to maintain a hot and stable flame at an on-site flare. Solvent emissions from the thin film evaporator, the high boiler distillation unit, and a fuel blending dispersion system are directed to the flare where they are destroyed. The permit specifies design, operation, and monitoring requirements for the flare to ensure safe and adequate emission control.

Emerald uses two systems to help homogenize dangerous wastes to blended fuels. Both will have air emission controls. First, they blend semi-solid wastes through a hopper, chute, and mix tank in the dispersion system. As stated above, emissions from that system are directed to the flare. Second, they use a shredder system to reduce the size of some solid wastes. Emerald is developing an air emission control system that includes an enclosed chamber with closed ducts vented to a series of carbon bends. The permit has a compliance schedule for when the air control system needs to be completed and operational. (This system is expected to be operational within one year, but that depends on review time and design changes required by Ecology for the project).

The permit requires Emerald to control vapors from the glycol distillation unit by directing its emissions through a series of activated carbon beds. Like for the flare, the permit specifies design, operation, and monitoring requirements for the carbon adsorption system.

Emerald must also monitor equipment such as pumps, valves, and flanges to ensure they do not have or develop air emission leaks. The permit includes monitoring schedules ranging from weekly to annually depending on the type of equipment and the types of wastes it contacts.

During review of the permit application, Ecology ensured the design of all areas, structures, and

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equipment used to manage dangerous waste met dangerous waste facility standards. The permit is specific about how Emerald must comply with environmental standards and includes detailed conditions on how management areas must be used, inspected, and maintained. If Emerald needs to change equipment or procedures for their waste management operation, they must first modify the permit. The permit and regulations prescribe the process for permit modifications and includes notification of changes to the public and Ecology approval.

The permit requires the facility to properly operate and maintain all systems of waste management to achieve compliance with the dangerous waste regulations and specific conditions of the permit. Emerald must ensure adequate funding, staffing, personnel training, and process controls to maintain compliance. Emerald must tell Ecology if they are out of compliance with any of the permit requirements.

During their review of the permit application, Ecology ensured the design of all areas used for waste management met dangerous waste facility standards. The permit includes detailed conditions on how the areas are used, inspected, and maintained.

### Waste Analysis Requirements

Requirements for waste analysis are complex and critical for safe operation of the facility. WAC 173-303-300 requires facilities to have comprehensive and accurate information about the composition of all dangerous waste they manage. Emerald's waste analysis plan (WAP) has detailed procedures to meet this requirement. These include characterizing wastes before shipment to the facility and verifying the identity of wastes when they enter the facility.

Emerald conducts recycling of solvents and antifreeze, fuel blending, and dangerous waste storage at the Tacoma facility. They accept a variety of organic wastes to recycle or to blend into fuels. They recycle waste solvents for reuse in one of two distillation systems. They recycle waste antifreeze in a third distillation system. They accept contaminated oils, paint-related wastes, ink formulations, and other organic wastes to blend into fuels. Emerald ships the blended fuels out-of-state to a permitted hazardous waste industrial facility, which destroys the waste and uses the energy produced for their industrial process.

Emerald accepts a limited amount of dangerous waste not processed at the Tacoma facility. They store these in containers and then ship them to another facility for processing or disposal. Emerald is not allowed to accept dangerous wastes that are explosive, reactive, strong oxidizers, radioactive, or infectious.

### Key Terms and Definitions

The WAP has definitions of key terms to ensure a clear understanding of requirements for waste analysis. Ecology defines and describes a couple of these critical terms below to facilitate the later discussion on WAP requirements.

*Waste stream* is dangerous waste from a single generator that is specific and unique to the waste generation process. For example, two otherwise identical dangerous wastes generated from identical processes by two different generators are different "waste streams" in the WAP. Also, two wastes generated by the same person using slightly different processes are different "waste streams" in the WAP. "Waste stream" is a critical concept in the WAP. All requirements in the WAP are keyed to the individual "waste stream."

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*Waste profile questionnaire (or WPQ)* is a document provided by the waste generator, which meets the initial information needs for a “waste stream.” It includes a detailed and comprehensive physical, chemical, and regulatory description of a “waste stream” to assist Emerald in determining whether that waste can be safely managed in compliance with the Permit.

*Profile* is a detailed and comprehensive physical, chemical, and regulatory description of a waste stream. Emerald can use information in the generator’s “WPQ” to develop the “profile,” but in many cases Emerald must supplement the generator’s information to develop the “profile.” Emerald is responsible for ensuring an adequate and accurate “profile” for every “waste stream” they accept.

*Confirmation* is checking that the generator’s information is accurate and complete before approving the “waste stream” for shipment to the facility. Emerald takes whatever steps are necessary to supplement generator information to develop an adequate and accurate “profile” during the confirmation process.

*Verification* is a set of procedures with criteria for determining the “waste stream” received at Emerald is the same as that described on the manifest and “profile.” This includes visual inspection and screening analysis for every “waste stream” that is shipped to the facility. (There are a few exceptions discussed in the “verification” subsection).

*Process limits* means equipment and treatment limits at the Tacoma facility. Emerald’s treatment and storage structures and equipment must be operated within specified safe limits. These limits are stated in the permit. Wastes having properties outside these “process limits” must not be managed at the facility because they could damage the equipment or create other hazards.

### Waste Characterization/Waste Profile System

Under the permit, Emerald must obtain reliable information on the composition of every “waste stream” before they allow the generator to ship it to their Tacoma facility. The permit allows both acceptable knowledge about the dangerous wastes and laboratory analyses to characterize a “waste stream” and develop its “profile.” The WAP has procedures for determining when laboratory analyses are needed. However, Emerald ultimately makes the decision and has the responsibility of determining the extent of laboratory analyses required for each waste stream. Emerald must evaluate, supplement when necessary, and document the information and their decision. If they use knowledge about the waste stream from the generator, Emerald must document how they determined that it was acceptable.

Emerald uses the following general steps to ensure they have sufficient and reliable information on every new “waste stream” before it is shipped to their facility.

1. Obtain information on the waste stream from the generator. The generator provides the information in a “WPQ.”
2. Confirm information on the “WPQ.” During the confirmation process, Emerald determines what they need to do to substantiate and supplement information from the generator to ensure it is sufficient and reliable to meet performance requirements in the permit. They may need to visit the generator site, collect documentation to support the generators information, do additional laboratory analyses of the wastes, or take other steps.

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3. Compile and evaluate all information on the “waste stream.” Emerald’s trained staff review and evaluate waste analysis information for each “waste stream.” Process specialists review the information to ensure Emerald can manage it safely within “process limits” in the permit for their equipment. Regulatory specialists review the information to ensure Emerald can legally accept and manage the waste at the facility. Field staff may conduct a site audit of the generator site to substantiate generator information. (Although the WAP has minimum requirements for when a site visit is required, Ecology understands Emerald also conducts audits for other generators.) During these reviews Emerald determines whether additional information is needed about the “waste stream.” If so, Emerald is responsible for collecting that information. They make sure they have accurate and sufficient information to be in compliance with “process limits,” ensure proper waste codes, ensure proper shipping names, and meet other requirements in the permit. The compiled information is Emerald’s “profile” for that specific “waste stream.”
4. Document information and decision. Emerald documents all of the information in the WPQ, additional laboratory analyses, process information, results of site audit, and communication with the generator to support their decisions on the adequacy of the “profile” information and acceptability of the “waste stream” at the Tacoma facility. Emerald must keep this information for each “waste stream” until closure of the facility.
5. Re-evaluate information. If Emerald continues to accept the same waste stream from a generator, they must repeat steps 1 through 4 when:
  - The generator significantly changes the process or operation producing the waste. (For example, when the generator modifies their manufacturing process or changes chemical ingredients.)
  - Emerald determines the waste does not match its profile when they do “verification analysis.” (This fact sheet discusses “verification analysis” in a later section).
  - Two years elapses since the last time Emerald evaluated information using steps 1 through 4.

The permit stresses that Emerald is responsible for obtaining accurate and complete information for every “waste stream” it plans to manage. Deficient or defective information from the generator is not an acceptable defense for receiving unacceptable wastes or mismanaging waste at the Tacoma facility.

### Waste Verification

Emerald must verify each waste stream in every waste shipment received at the Tacoma facility. Verification consists of a series of observations and screening tests to ensure that characteristics of the waste stream received are consistent with the information included on the waste’s profile and within Emerald’s process limits. For waste containers, Emerald uses the following sequential steps to verify each waste stream.

1. **Visual check of shipment.** This check is done while the containers are still on the truck. It determines whether there are obvious discrepancies between the description on the waste manifest and the actual waste shipment.
2. **Accept or reject waste shipment.** Emerald notes any obvious discrepancies on the manifest and either accepts the waste shipment by signing the manifest or rejects it. By signing the manifest Emerald formally accepts the waste into the facility.
3. **Unload transport vehicle.** While unloading the vehicle, Emerald carefully counts containers, checks for proper container labeling, and checks that each waste container is in good condition and properly closed. A different number of containers than on the manifest is a discrepancy which Emerald must resolve

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(described below). If necessary, Emerald fixes container-labeling problems, replaces or overpacks waste containers that are in substandard condition, and tightens any openings that are not secured.

4. **Sample for verification screening analysis.** Emerald is required to sample at least one container of every waste stream in every waste shipment or ten percent of the containers of a single waste stream (whichever is more). They randomly select the containers to sample.
5. **Conduct screening analysis.** Emerald conducts the following analyses on the waste sample: physical description (all wastes), specific gravity (liquid waste except antifreeze), pH (aqueous and solid wastes), water reactive screen (all waste except antifreeze), ignitability screen (all wastes), compatibility screen (waste that will be consolidated with other wastes except antifreeze), radiation screen (waste from industries that use radioactive materials), and sulfide screen (waste from industries that generate sulfides).
6. **Record results of testing and whether each waste stream passed verification screening.** If a waste stream does not pass verification testing, it is isolated from other wastes and subject to the manifest discrepancy procedures described below.

Emerald also samples and verifies the waste identity in every bulk waste shipment arriving in a tanker truck. In this case, they sample and conduct the screening analyses (steps 4 and 5) before they sign the manifest and offload the vehicle. Before they pump the arriving waste stream into one of their tanks, they conduct the compatibility test to ensure the mixture will not cause an unexpected reaction.

The permit specifies how long Emerald has to complete these verification steps. They must sign the waste manifest while the transport driver is still on site. Then they will unload the waste shipment during the work shift in which it arrived. They are required to complete verification testing and place the wastes into a specified storage or processing area within 24 hours of unloading the truck. There are two exceptions to these requirements:

1. If Emerald receives a waste shipment on a day before a weekend or Holiday, they may delay beginning their acceptance procedures until the day they return to work (or within 72 hours whichever is less).
2. If waste stream in a container does not pass verification analysis (waste discrepancy), Emerald must place that container in an isolated part of the facility instead of in a storage or processing area. Then they must work with the generator and conduct additional analyses if necessary to resolve the discrepancy. After they resolve the discrepancy, Emerald may process the waste if it meets their process limits or ship it back to the generator or to another permitted facility. They must report the discrepancy to Ecology if Emerald cannot resolve it within 15 days. In either case, Emerald must document all of their analyses, communications, and determinations in their operating record.

Emerald has a lot of information and control of some of the waste streams they manage. For example, some steady customers buy specific solvents Emerald has recycled, the customer uses the solvent as directed, the customer ships the used solvent back to Emerald, and Emerald recycles it for the same original use (closed-loop recycling). Ecology has agreed to three limited exceptions to verification steps 4 and 5 for three waste types.

1. Emerald 150 solvent. When Emerald provides this specific clean solvent to a customer, the customer uses the solvent as intended which is substantiated during Emerald's confirmation process, the customer ships the same used solvent back to Emerald, and Emerald recycles it for the same original use, then Emerald may consolidate up to 350 gallons of the used solvent from different customers. Then Emerald conducts verification sampling and analysis on this consolidated volume of waste. This consolidated waste does not meet the definition of a "waste stream" because it is derived from more

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than one generator. However, because of the control Emerald has over the solvent throughout its use the permit allows for reduced verification analysis.

2. Emerald wash/thinner. When Emerald provides this specific clean solvent to a customer, the customer uses it only as a paint gun wash solvent, the customer ships the same used solvent back to Emerald, and Emerald recycles it for reuse as a paint gun wash solvent, then Emerald may composite samples of up to 10 customers received during a single day if they are from the same size containers. Again, Emerald conducts verification sampling and analysis on this consolidated volume of waste.
3. Spent antifreeze. Emerald collects spent antifreeze from various customers before their collection vehicle goes to the Tacoma facility. Emerald conducts verification analyses on antifreeze already consolidated in the transport vehicle. Emerald staff collects the antifreeze and are trained to identify questionable practices by customers, which could result in other wastes being mixed with the spent antifreeze.

### Procedures for Waste Discrepancies

The permit has established procedures when waste verification identifies a problem or inconsistency between the actual waste stream and its profile information (including shipping documentation). The waste stream must be isolated until Emerald determines its actual identity. Emerald generally must contact the generator to resolve the inconsistency. If the facility establishes an accurate identity of the waste stream, they correct its profile, labeling, and other records. Emerald documents how they resolved the discrepancy and places that information in their operating record. Emerald must notify Ecology by letter if the correct identity of the waste cannot be established within 15 days.

Emerald must reject a waste stream if they cannot properly and legally manage it under the conditions and constraints of their permit. If that occurs, Emerald and the generator determine whether to send the waste to another facility that can manage it or return it to the generator. If they send any waste back to the generator, Emerald will notify Ecology.

The permit also includes procedures for damaged waste shipments that pose a threat to human health or the environment. These include steps to make the shipment secure, clean up any released materials, and notify Ecology and other agencies of the problem.

### Data Quality Assurance

The permit specifies methods for sampling and analyzing waste streams. Emerald operates a laboratory at the facility to do the required screening analysis. That laboratory must follow quality assurance and quality control (QA/QC) measures included in the permit.

Emerald uses off-site laboratories for more detailed analyses. They must use a laboratory certified by the State of Washington for the analysis Emerald is requesting. The laboratory must also follow QA/QC procedures for the approved method.

### Waste Tracking

Emerald must accurately track every dangerous waste from the time it enters the facility until it is reclaimed into a useful commercial product or manifested as a waste off site.

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### Waste Generated by Emerald

Emerald generates new waste streams as they process wastes they receive from off site. Examples are still bottoms from their distillation systems, process residues, sludges from their storage and treatment tanks, wastewater, and used personal protection equipment. Emerald is required to properly characterize and designate these wastes before they are placed into storage at their facility or manifested off site for disposal.

### Security

Emerald maintains a six-foot chain-linked fence capped with three strains of barbed wire around the Tacoma facility. Their staff ensure access gates are closed except when they are in active use. A security company monitors the facility during non-operating hours and notifies Emerald of any suspicious activities, and the security system used by Emerald allows for remote inspections by the security company on non-operational days when facility inspectors are unavailable. If this remote inspection detects problems such as catastrophic failures of waste tanks or containers, tipping of containers in container areas, and flashing alarms, the security company will immediately report the non-conformance to Emerald as a potential problem at the facility.

### Inspections

Trained Emerald staff must conduct comprehensive periodic inspections of the facility. These inspections detect and prevent malfunctions, deterioration, operator error, or discharges from the unit that could cause harm to human health or the environment.

These are a few examples of required inspections:

- Daily inspections for leaks and spills, substandard container conditions, and unsecured facility gates.
- Weekly inspections for evidence of cracks or other forms of deterioration in secondary containment, weaknesses in the perimeter fence, and low supplies of emergency control or personal protection equipment.
- Monthly inspection for inadequate water pressure for fire suppression, low facility lighting, and inadequate maintenance of air monitoring equipment.
- Detailed semiannual technical evaluation for problems with the integrity or need of maintenance of all concrete containment.
- Annual inspections by a professional familiar with the International Fire Code to determine whether corrections are needed in ignitable waste storage areas.
- At least every five years, a comprehensive tank integrity assessment by an independent qualified professional engineer to determine if the tanks need repair, additional operating limitations, or replacement.

The permit also requires the facility to conduct a series of air emission monitoring inspections on weekly, monthly, semiannually, and annually bases. Emerald must ensure that there are no unacceptable emission leaks from their equipment, tanks, or containers. They must also continuously monitor their flare to ensure it is operating correctly. (Emerald uses the flare to destroy organic emissions collected from their solvent distillation and fuel blending dispersion systems.)

The permit requires Emerald to correct substandard conditions discovered during the various inspections. The permit specifies schedules for repairs and reporting requirements that depend on the type of problem

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discovered and how soon they are corrected.

Emerald must properly operate and maintain the facility to achieve compliance with permit requirements. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls. Frequent inspections and timely correcting of problems detected are essential for achieving this compliance.

Emerald must document results of all required inspections and actions taken to address the problems they discover. These records must be kept for at least five years.

### Emergency Planning

The permit includes a formal “contingency plan” Emerald will follow in the case of an emergency at the facility. That “plan” describes specific procedures Emerald will follow when responding to emergencies at the facility such as natural disasters, explosions, fires, spills, or releases. The “plan” also addresses procedures if an incident requires evacuation of the facility or area.

Several outside parties have agreements with Emerald to assist in an emergency, if needed. These parties are sent up-to-date copies of the facility contingency plan so they are familiar with the facility emergency response capabilities and procedures. Agreements with outside parties include:

- Tacoma Fire Department;
- Pierce County Health Department
- National Response Corporation (NRC) Environmental

Ecology’s Spills Program may also be called for assistance. Emerald has provided their contingency plan to the Tacoma Police Department, local hospitals, and Tacoma Beltline Railway. Those groups may also be called for emergency assistance.

The permit lists emergency response supplies and equipment Emerald must have at the facility. Emerald must regularly inspect and maintain these. They must train all facility employees on the contingency plan. They require employees to take refresher training every three months, and they conduct an emergency response drill once a year. The permit requires these measures to help ensure the facility is always prepared for an emergency event.

The permit clearly specifies criteria for incidents that Emerald must immediately report to Ecology. It also specifies criteria for incidents that require full use of “contingency plan” procedures. If the facility needs to implement the “contingency plan”, Emerald must provide a written report to Ecology within 15 days. The report describes the incident, explains its causes, discusses emergency responses, assesses environmental damage, and describes steps taken to prevent a recurrence. If necessary, Emerald will modify their emergency procedures or equipment based on “lessons learned” while responding to an incident.

Emerald must also notify Ecology of incidents of noncompliance with the permit. If the noncompliance could threaten human health or the environment, the facility must notify Ecology immediately. For other noncompliance, the facility must notify Ecology in their next monitoring report and no later than six months after the incident.

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The permit identifies a trained emergency coordinator (EC) who directs emergency response procedures. The EC is fully trained and very knowledgeable of facility's operations. The EC is authorized to use Emerald funds needed to respond to any emergency. The permit also specifies two alternate ECs to assume emergency response duties and responsibilities in case the primary EC is not available at the time of an incident.

Emerald must submit a permit modification if they wish to change emergency procedures, replace or remove emergency response supplies or equipment, or change the primary or alternative EC.

### Training

The permit requires Emerald to conduct comprehensive training for employees responsible for dangerous waste management at the Tacoma facility. Training requirements include staff who work at the facility and off-site personnel whose work helps fulfill requirements in the permit (including sales representatives who help obtain waste analysis information from waste generators).

Effective training is essential for competent and safe operation of the facility in compliance with regulatory requirements, including the dangerous waste permit. The training includes:

- Health and safety.
- Emergency procedures, including implementation of the facility contingency plan.
- Facility operations.
- Permit and other regulatory requirements.
- Job-specific training.

Job-specific training is a very important element of Emerald's required training program. Each facility employee is assigned to job title(s), and every job title has required training courses or modules. The employee must take the required training modules before they are allowed to perform their work without supervision. Additionally, employees must take annual refresher courses on almost every training module.<sup>4</sup>

A person knowledgeable in dangerous waste management procedures must direct the facility's training plan. Emerald has assigned its Environmental Manager as the Training Program Director. The Training Program Director ensures a qualified instructor, knowledgeable on the subject matter, conducts each training module, that every employee is current on their training requirements, and that the training program is effective. Training will be modified or a new training module added if the training is ineffective.

The permit requires Emerald to keep thorough records on their training program. These includes records of all training taken by each current employee, records of most recent three years of training for previous employees, qualifications of each training instructor, name of each employee assigned to each job position, and the curriculum for each training module.

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<sup>4</sup> Of Emerald's 27 training modules, three do not require an annual refresher. Instead, one of those requires quarterly refreshers, one a refresher every two years, and the other a refresher every three years.

### Corrective Action and Closure

#### Corrective Action

Ecology requires environmental cleanup at dangerous waste management facilities that have unacceptable levels of contamination in environmental media, such as soil, ground water, or surface water. This is called “corrective action.” It is addressed in a dangerous waste permit.

“Corrective action” follows similar administrative procedures and has the same objectives as other Ecology and EPA cleanup programs. Ecology uses the state cleanup law, the Model Toxics Control Act (MTCA), to conduct all environmental cleanups, including “corrective action.”

Corrective action for the Emerald facility currently includes monitoring and reporting on groundwater. Additional remediation will be required if new information indicates it is needed.

The previous Permittee at the facility, Sol-Pro, Inc., submitted a work plan for a RCRA facility investigation (“RFI”) in May 1993, and amendments to that work plan in June 1993. The RFI work plan was submitted as a requirement of a federal administrative order issued by EPA in November 1991. After Sol-Pro was issued a dangerous waste management permit with corrective action requirements, EPA rescinded the administrative order in December 2000.

In 1999, Ecology determined that the RFI work plan fulfilled the requirements for a state remedial investigation (“RI”) work plan. Sol-Pro completed a draft remedial investigation report in April 2000. Ecology approved the draft report as meeting the requirements of a remedial investigation (RI) in WAC 173-340-350 and the requirements of a RFI.

When Emerald assumed ownership of the facility in May 2000, they became subject to the corrective action requirements of WAC 173-303-646 to address releases, and potential releases, of dangerous wastes, including dangerous waste constituents, to the soils or groundwater at the Facility.

Based upon a review of the draft RI report and annual groundwater monitoring reports submitted by Emerald, Ecology has determined that it is not necessary to continue with a feasibility study (FS) or cleanup action plan (CAP) for the facility. Contamination in groundwater found in monitoring wells at the facility appears to have migrated from neighboring properties. Contaminants detected in groundwater include benzene above industrial cleanup levels and diesel range hydrocarbons above residential cleanup levels. Arsenic is also found in groundwater above cleanup levels. This groundwater contamination will be addressed under a separate order administered by Ecology’s Toxics Cleanup Program. Under this Permit, Emerald must monitor groundwater at the facility under a work plan approved by Ecology. Emerald must also notify Ecology and perform corrective action on newly-identified releases of contamination. A permit modification shall be used to require additional corrective action if Ecology determines that is necessary to fulfill corrective action requirements in the dangerous waste regulations.

Ecology’s files have detailed information on the types and extent of contamination in these areas. This information is available on request for public review.

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### Closure

Emerald must "close" the current dangerous waste facility when they stop using it to manage dangerous wastes. Closure involves removing all dangerous waste from the facility and decontaminating or removing any equipment, structures, and contaminated environmental media (for example, soil) that contacted wastes. If this cannot be accomplished, the location will be subject to additional corrective action.

The permit includes procedures Emerald must follow for closure. First, the facility will remove all waste from tank and container storage areas. Then they will use high-pressure steam and water spray to remove wastes from the tank and equipment surfaces. They will continue cleaning until they achieve a "clean debris surface."<sup>5</sup> If they cannot achieve a "clean debris surface" for any tank or equipment, then they will have to send it to another permitted facility for disposal as dangerous waste.

The facility will remove the top 0.6 cm of concrete to clean secondary containment surfaces. They will then inspect the surfaces to ensure they meet standards for a clean debris surface. They will analyze, treat, and dispose of dust they generate during this operation according to all regulatory requirements.

Emerald will take soil samples from beneath the facility to confirm contamination from facility operations have not entered the soil. They will compare results to the established standards for unrestricted site use (MTCAs cleanup standards). If results are below the cleanup standards, then the facility can qualify for clean closure. If results are above the cleanup standards, Emerald must cleanup the soils.

The permit includes general sampling and analytical procedures, minimum number of samples, criteria for selecting additional sampling locations, and minimum laboratory analyses.

Emerald must submit an updated Sampling and Analysis Plan at least 60 days before closure begins. Certain information needed to develop the final detailed sampling and analysis plan, including current analytical procedures and up-to-date facility operating history, will not be available until that time.

An independent qualified professional engineer will observe some of the closure activities. The engineer will write a report of observations and certify whether Emerald followed procedures in the permit while conducting closure.

Since Emerald proposes to fully close the dangerous waste storage unit, the permit does not include a plan for post-closure care.

### Financial Assurance

Emerald will have enough money set aside in a surety bond to cover the estimated cost of all closure activities. They will also have guarantee finances to cover cost for ground water sampling and analyses.

### Recordkeeping

The facility must maintain detailed operating records. These records document compliance with conditions of the permit and the Dangerous Waste Regulations. The facility must also maintain records of spills, releases, incidents of noncompliance, and emergency situations. These records must be kept for

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<sup>5</sup> "Clean debris surface" is defined in 40 CFR 268.48 Table 1. It is an established standard used to determine adequate contaminant removal from surfaces of various materials.

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time periods ranging from three years to when facility closure is completed, depending on the type. The permit lists specific recordkeeping requirements.

### Reporting

Emerald must report certain information to Ecology, for example:

- Waste shipments received that do not agree with the accompanying manifest or shipping paper, if the discrepancy cannot be resolved within 15 days.
- Incidents that cause the facility to implement its Contingency Plan.
- Noncompliance with permit.
- Annual reports on the facility's operation, including information on waste minimization efforts.

This list does not include all reports Emerald must submit to Ecology.

## E. Changes to RCRA/RCRA Rules Under the Hazardous and Solid Waste Amendments

In general, new or amended requirements in the Hazardous and Solid Waste Amendments of 1984 and related regulations will automatically apply to Emerald dangerous waste management activities. The exception is for new requirements that are less stringent than those in effect when Ecology issues the final permit.

## F. Conclusion

In its permit application, Emerald has demonstrated it is capable of safely operating its dangerous waste management facility under the conditions required for a final permit. Therefore, Ecology has made a tentative decision to re-issue a final status permit to the facility.

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