

Fact Sheet for Dangerous Waste Delisting and Treatment Variance Petitions

Emerald Kalama Chemical, LLC and Fire Mountain Farms, Inc.

November 7, 2019

Purpose of this Fact Sheet

This fact sheet explains and documents the evaluation the Department of Ecology (Ecology) performed in making a tentative decision to grant three delisting petitions and three treatment variance petitions jointly submitted by Emerald Kalama Chemical, LLC (Emerald) and Fire Mountain Farms, Inc. (FMF).

Ecology is providing written notice of its tentative decision to grant the delisting petitions and treatment variance petitions submitted by Emerald and FMF for public review and comment at least thirty (30) days before making the final decision on the petitions. Copies of the delisting petitions, treatment variance petitions, and this fact sheet are available for public review and comment from November 12, 2019 through December 12, 2019. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement Information**.

Upon the written request of any interested person, Ecology may, at its discretion, hold a conference to consider oral comments on the action proposed in the petition. A person requesting a conference must state the issues to be raised and explain why written comments would not suffice to communicate the person's views.

After evaluating all public comments, Ecology will make a final decision to grant or deny the delisting and treatment variances petitions. The approval or denial of the petitions will be by letter from Ecology. Ecology will summarize substantive comments and provide responses to them. Ecology will include the summary and responses to comments in this fact sheet as **Appendix B - Response to Comments**, and make it available with the final decision to approve or deny the delisting and treatment variance petitions. Ecology generally will not revise the rest of the fact sheet. The full document will become part of the administrative record contained in the two facilities' regulatory files.

Summary

Emerald Kalama Chemical, LLC (Emerald) is an organic chemical manufacturing plant located in Kalama, Washington. Emerald generates industrial wastewater biological solids (IWBS) that state and federal law consider to be a listed dangerous waste. Fire Mountain Farms, Inc. (FMF) operates facilities in Lewis County, Washington that receive, store, and land apply wastewater treatment plant solids (WTPS) from municipal, industrial, and private wastewater treatment facilities. FMF mixed Emerald's IWBS with WTPS, creating new listed dangerous wastes. Emerald and FMF tested the mixed wastes and have data showing that the wastes do not contain chemicals at harmful levels and should not be considered dangerous.

Emerald and FMF jointly submitted petitions to Ecology and the Environmental Protection Agency (EPA) to exclude (or "delist") a one-time amount up to 20,100 cubic yards of benzene and toluene mixed material from the list of federal hazardous wastes. Emerald and FMF also submitted petitions for a variance from the land disposal treatment standards. The exclusion and variance apply only to mixed waste associated with the closure of hazardous waste management units at three facilities owned and operated by FMF.

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Ecology is proposing to grant these petitions. This approval will allow Emerald and FMF to manage the mixed material as solid waste instead of dangerous waste. This means they would be allowed to dispose the mixed IWBS/WTPS wastes in a solid waste landfill.

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I. Background

Table 1 General Facility Information

Applicant Information	Emerald Kalama Chemical, LLC	Fire Mountain Farms, Inc.
Address	1296 Third Street NW Kalama, Washington 98625	856 Burnt Ridge Road Onalaska, Washington 98570
Contact at Facility	Name: Chris Wrobel Telephone #: (360) 213-6876	Name: Robert Thode Telephone #: (360) 266-0695
Responsible Official	Name: Chris Lorge Title: Site Director Address: 1296 Third Street NW Kalama, Washington 98625 Telephone #: (360) 673-2550	Name: Robert Thode Title: Owner Address: 856 Burnt Ridge Road Onalaska, Washington 98570 Telephone #: (360) 266-0695
Facility Location (NAD83/WGS84 reference datum)	Latitude: 46.02097 Longitude: -122.85675	Latitude: 46.59620 Longitude: -122.59270
Locations of Dangerous Waste Storage Areas	None	<u>Burnt Ridge</u> Latitude: 46.59541 Longitude: -122.59214 <u>Newaukum Prairie</u> Latitude: 46.58060 Longitude: -122.86401 <u>Big Hanaford</u> Latitude: 46.75318 Longitude: -122.91562

A. Facility and Dangerous Waste Descriptions

Emerald is a chemical manufacturing facility in Kalama, Washington that uses toluene as a raw material to produce chemicals used in food, beverage, paint, and pharmaceutical industries to make flavorings, fragrances, preservatives, plasticizers, and other products. Unused benzene and toluene commercial chemical products at Emerald’s facility become listed dangerous waste (U019 (benzene), U220 (toluene), respectively) when they are discarded (such as a spill) (WAC 173-303-081). There is also potential for acetaldehyde to enter Emerald’s wastewater treatment plant if pure product acetaldehyde is spilled during loading and unloading operations.

Emerald treats dangerous waste in an on-site wastewater treatment facility. The sources of dangerous waste that Emerald treats in their wastewater treatment facility include

groundwater and stormwater contaminated from spills, process wastewater, and laboratory wastewater.

The dangerous waste regulations require that residues from treating listed dangerous waste are also listed dangerous waste [WAC 173-303-070(2)(a)]. Emerald generates industrial wastewater biological solids (IWBS) from their wastewater treatment facility. The IWBS are listed treatment residue dangerous wastes.

Fire Mountain Farms, Inc. (FMF), operates receiving, storage, and land application facilities in Lewis County, Washington for wastewater treatment plant solids (WTPS) from municipal, industrial, and private wastewater treatment facilities. Records show that Emerald contracted with FMF to land apply the IWBS beginning in October 1995. FMF mixed Emerald's IWBS with WTPS from other municipal and industrial facilities and land applied or stored the mixed IWBS/WTPS wastes at several FMF facilities. The dangerous waste rules require that listed dangerous wastes, when mixed with other materials, continue to be regulated as listed dangerous wastes [WAC 173-303-081(3)].

The mixed IWBS/WTPS wastes are currently stored at three FMF facilities: Burnt Ridge located at 856 Burnt Ridge Road, Onalaska, WA; Newaukum Prairie located at 349 State Route 508, Chehalis, WA; and Big Hanaford located at 307 Big Hanaford Road, Centralia, WA.

B. Delisting and Treatment Variance Petitions

Emerald and FMF submitted joint petitions to EPA and Ecology to exclude (or “delist”) a one-time amount up to 20,100 cubic yards of U019 and U220 mixed IWBS/WTPS wastes from the list of federal hazardous wastes. Emerald and FMF also submitted joint petitions for a site specific variance from the land disposal treatment standards for acetaldehyde in the mixed wastes. The delisting and treatment variance petitions apply only to the mixed wastes associated with the closure of the hazardous waste management units at Burnt Ridge, Newaukum Prairie, and Big Hanaford.

C. Delisting Regulations

Ecology regulates the management of dangerous waste in Washington State in accordance with the Washington State Hazardous Waste Management Act, Chapter 70.105 Revised Code of Washington (RCW) and the Dangerous Waste Regulations, Chapter 173-303 WAC.

EPA also regulates facilities that manage hazardous waste in accordance with 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). EPA has authorized Ecology to implement these federal regulations in Washington.

Both the federal hazardous waste regulations and state dangerous waste regulations include provisions that allow a facility to petition for exclusion (“delisting”) from the list of federal hazardous wastes. The state provisions for delisting petitions are found in WAC 173-303-910(1) and (3). The federal provisions for delisting petitions are found in 40 CFR 260.20 and 260.22.

While Ecology has received final authorization to implement most of its dangerous waste program regulations in lieu of the federal program, including the listing and identification of U019 and U220 wastes, it has not been authorized to implement its delisting regulations program in lieu of the federal program. As a result, Emerald and FMF must seek approval of their delisting petitions from both Washington State and EPA.

D. State-Only Criteria

The Washington State Dangerous Waste Regulations are more protective in some ways than the federal hazardous waste regulations. One area where the state regulations are more protective is determining what materials are regulated as dangerous waste. Washington has criteria for toxicity and persistence that the EPA does not. Materials not regulated as hazardous waste by the federal regulations must also be checked during the delisting evaluation process against the state criteria in WAC 173-303-100.

E. Treatment Variance

The land disposal restrictions (LDRs) in the dangerous waste rules require dangerous wastes to meet certain treatment levels before being disposed in a landfill (WAC 173-303-140). Treatment levels are either concentration-based or technology-based standards. The state dangerous waste regulations include provisions that allow a facility to petition for a variance of the land disposal treatment standards. Ecology is authorized to make decisions independent of EPA on petitions requesting site specific variances of the land disposal treatment standards. Thus, Emerald and FMF only need to seek approval from Washington State for the treatment variance petitions. The state provisions for treatment variance petitions are found in WAC 173-303-140(2), which incorporates parts of 40 CFR 268.44 by reference.

II. Evaluation of Delisting and Treatment Variance Petitions

A. Delisting Petitions

Emerald and FMF's delisting petitions include data showing that there are no harmful levels of chemicals in their wastes and the wastes do not meet the criteria for which they were listed. Ecology and EPA performed an extensive review of the waste information and data provided in the delisting petitions. The agencies evaluated the risk of delisting the waste using EPA's Delisting Risk Assessment Software (DRAS). This software predicts the concentration of hazardous waste constituents that might be released from the wastes and if these concentrations would pose a threat to human health and the environment. More information regarding this analysis is provided in EPA's notice in the Federal Register for the proposed delisting at <https://www.federalregister.gov> (Docket #: EPA-R10-RCRA-2019-0662).

Ecology and EPA have concluded that the petitioned wastes are nonhazardous with respect to the original federal listing criteria and that there are no other factors (including additional constituents) other than those for which the waste was listed that would warrant retaining the waste as hazardous waste.

The proposed delisting of the mixed IWBS/WTPS wastes means the wastes are not federally regulated as hazardous waste. Ecology went on to determine if the wastes are regulated under state-only criteria.

Emerald performed fish bioassay testing on the IWBS in 2000 and 2014 and the percent mortality of the rainbow trout was zero for both tests. This means the IWBS did not designate as dangerous waste for the state toxicity criteria in 2000 and 2014. Emerald also performed an extensive book designation on the mixed IWBS/WTPS wastes and determined that the waste did not designate for the toxicity criteria.

According to the delisting petitions, the Emerald facility does not use halogenated organic chemicals or polycyclic aromatic hydrocarbons in their manufacturing processes and these chemicals would not be generated in the wastewater treatment plant. Therefore, the IWBS would not contain persistent chemicals. Consequently, the IWBS would not designate as dangerous waste under the persistence criteria. Emerald and FMF also tested the mixed IWBS/WTPS wastes for persistent chemicals and determined that the mixed IWBS/WTPS wastes did not designate as dangerous waste under the persistence criteria.

Emerald and FMF provided data and information demonstrating that the mixed IWBS/WTPS wastes are not regulated by the state criteria. Ecology agreed with this demonstration.

B. Treatment Variance Petitions

The LDR treatment level for dangerous waste U001 (acetaldehyde) entering Emerald's wastewater treatment system requires a technology-based standard of high temperature organic destruction, such as combustion. Because dangerous waste U001 (acetaldehyde) is a potential source to the mixed IWBS/WTPS wastes, these wastes also have the same technology-based LDR treatment requirement.

Emerald and FMF submitted treatment variance petitions to Ecology concurrently with the delisting petitions. Approval of the treatment variance petitions would exempt Emerald and FMF from meeting the technology-based standard of combustion for dangerous waste U001 (acetaldehyde). Emerald and FMF provided information in the treatment variance petitions to show why the combustion treatment standard is not appropriate for the mixed IWBS/WTPS wastes. Ecology has the authority to implement 40 CFR 268.44(h)-(m), which allows Ecology to approve a site-specific variance from an applicable treatment standard if:

- 1) *It is not physically possible to treat the waste by the method specified as the treatment standard.*

Ecology believes Emerald and FMF could send the mixed IWBS/WTPS wastes to a hazardous waste incinerator for combustion. Therefore, this option does not allow Ecology to approve the site-specific treatment variances.

- 2) *It is inappropriate to require the waste to be treated by the method specified as the treatment standard, even though the treatment is technically possible. To show that this is the case, the treatment by the specified method must be technically inappropriate (for example, resulting in combustion of large amounts of mildly contaminated environmental media).*

Ecology believes the combustion treatment standard for the mixed IWBS/WTPS wastes is technically inappropriate because the wastes are mainly water. Also, the potential environmental impact of transporting the wastes to an incinerator would be significant based on truck/train emissions.

Ecology will require Emerald and FMF to sample for acetaldehyde instead of meeting the LDR treatment standards of combustion. For the mixed IWBS/WTPS wastes, Emerald and FMF must collect three representative grab samples from each storage unit for acetaldehyde before the waste is removed from the storage units. Ecology used the EPA's Delisting Risk Assessment Software (DRAS) to determine alternative treatment limits for allowable concentrations of acetaldehyde in the mixed IWBS/WTPS wastes. These concentrations must be met in order for Emerald and FMF to send the mixed IWBS/WTPS wastes to a permitted solid waste landfill.

The limits for acetaldehyde in the mixed IWBS/WTPS wastes from the DRAS model are 54.2 mg/L, 24.9 mg/L, and 51.1 mg/L for the Burnt Ridge, Newaukum Prairie, and Big Hanaford storage units, respectively. These limits are based on the Toxicity Characteristic Leaching Procedure (TCLP) analysis in the model. If the limits for acetaldehyde in the mixed IWBS/WTPS wastes are exceeded, Ecology may require Emerald and FMF to conduct additional sampling to better define the volume of waste that exceeds the alternative treatment limits for acetaldehyde. For mixed IWBS/WTPS wastes that exceed the alternative treatment limits for acetaldehyde, Ecology will require Emerald and FMF meet the original technology-based standard of high temperature organic destruction, such as combustion.

III. Proposed Decision

Ecology has reviewed all information submitted as part of the delisting and treatment variance petitions and has made a tentative decision to grant these petitions.

The delisting petitions request an exclusion ("delisting") of a one-time amount up to 20,100 cubic yards of U019 and U220 mixed IWBS/WTPS waste from the requirements of the state dangerous waste regulations and the federal hazardous waste regulations.

Ecology is proposing to grant the exclusion, pending approval by EPA after publication in the Federal Register and any subsequent revisions resulting from public comment. This approval is conditional. Emerald and FMF must meet delisting levels, conduct waste verification testing, and meet data submittal requirements and other conditions, as outlined in EPA's notice of proposed delisting. EPA's notice can be found at: <https://www.federalregister.gov>.

Emerald and FMF are required to submit closure plans in accordance with WAC 173-303-610(3)(a) for each of the three FMF storage units for Ecology's approval. The closure plans will require Emerald and FMF to remove the material from the three units, clean and inspect the units, and perform additional sampling if the inspection shows signs that dangerous wastes in the units reached the soil underneath the units. Emerald and FMF must dispose the mixed IWBS/WTPS waste in a Subtitle D permitted solid waste landfill.

Appendix A -- Public Involvement Information

Ecology proposes to approve the delisting and treatment variance petitions. If approved, Emerald and FMF would be allowed to handle the mixed IWBS/WTPS wastes as solid waste instead of dangerous waste. This means they would be allowed to dispose the mixed IWBS/WTPS wastes in a permitted solid waste landfill. This fact sheet describes the facilities and Ecology's reasons for proposing to approve the petitions.

Ecology will place a Public Notice on November 12, 2019 on Ecology's website to inform the public and to invite comment on the proposed approval of dangerous waste delisting and treatment variance petitions.

The notice:

- Tells where copies of the Fact Sheet are available for public evaluation
- Offers to provide the documents in an alternate format to accommodate special needs.
- Urges people to submit their comments, in writing, by the end of the comment period.
- Tells how to request a conference to consider accepting oral comments on the action proposed in the petition.

Ecology published a document titled *Frequently Asked Questions about Effective Public Commenting*. It is available on our website at <https://fortress.wa.gov/ecy/publications/SummaryPages/0307023.html>.

For more information, contact us by telephone, (360) 407-6934, or by writing to the address listed below.

Greg Gould
Department of Ecology
Industrial Section
PO Box 47600
Olympia, WA 98504-7600

The primary author of this fact sheet is Greg Gould.

Appendix B -- Response to Comments

Ecology provided notice of its tentative decision to grant Emerald and FMF's delisting and treatment variance petitions and made the notice and accompanying fact sheet available for public review and comment prior to making the final decision to approve or deny the petitions. The 30-day public comment period ran from November 12, 2019 through December 12, 2019.

Ecology will include a summary and response to any public comments here after the public comment period and upon making a final decision on the delisting and treatment variance petitions.