

Supplemental Fact Sheet for NPDES Permit WA0991024

Solvay Chemicals, Inc.

January 27, 2020

Purpose of this supplemental fact sheet

This supplemental fact sheet explains and documents the decisions the Department of Ecology (Ecology) made in drafting the proposed National Pollutant Discharge Elimination System (NPDES) permit modification for Solvay Chemicals, Inc. (Solvay) in Longview, Washington.

Ecology makes the draft permit modification and supplemental fact sheet available for public review and comment at least thirty (30) days before issuing the final permit modification.

Copies of the supplemental fact sheet and draft permit modification for Solvay, NPDES permit WA0991024, are available for public review and comment from January 29, 2020 until March 2, 2020. For more details on preparing and filing comments about these documents, please see **Appendix A - Public Involvement Information**.

After the public comment period closes, Ecology will summarize substantive comments and provide responses to them. Ecology will include the summary and responses to comments in this supplemental fact sheet as **Appendix B - Response to Comments**, and publish it when issuing the final NPDES permit modification. Ecology generally will not revise the rest of the supplemental fact sheet. The full document will become part of the legal history contained in the facility's permit file.

Summary

In a letter dated November 7, 2019 Solvay requested a modification to NPDES Permit No. WA0991024 to increase the daily maximum flow rate limit for Outfall 001A. Solvay discharges process wastewater from Outfall 001A to Three Rivers Regional Wastewater Authority's (TRRWA) Wastewater Treatment Plant via the City of Longview's (City) collection system. According to the letter, Solvay met with the City and TRRWA on August 28, 2019. During the meeting it was proposed that the daily maximum flow rate limit from Outfall 001A be increased.

The current daily maximum flow rate limit was determined from the expected flow rate from Outfall 002 and the average daily flow rate included in the Engineering Report submitted by Solvay (76,250 gallons per day). The proposed daily maximum flow rate is the sum of the expected daily flow rate from Outfall 002 and the maximum month average daily flow rate included in the Engineering Report (143,000 gallons per day). The increase in biochemical oxygen demand (BOD)/carbonaceous biochemical oxygen demand (CBOD) loading from the increase in flow would be 64 pounds per day (lbs/day) and the increase in total suspended solids (TSS) loading would be 22 lbs/day.

An updated loading capacity review was completed for the increased daily maximum flow rate from Solvay to TRRWA's Wastewater Treatment Plant. Table 1 below shows the combined flow rates, BOD/CBOD loading, and TSS loading using the increased daily maximum flow rate. The combined hydraulic, organic, and solids loadings are below the design criteria for the TRRWA Wastewater Treatment Plant. Table 2 below shows the design criteria for TRRWA's Wastewater Treatment plant. More information on this review is included in Appendix D of the Fact Sheet issued August 23, 2019.

Table 1: Loading Capacity Review

Percentile	Combined Flow (Million Gallons per Day)	Combined CBOD/BOD (pounds per day)	Combined TSS (pounds per day)
99 th	22.15	16,181	31,629
95 th	16.75	12,555	18,582
90 th	14.43	11,403	15,831

Table 2: Design Criteria for TRRWA's Wastewater Treatment Plant

Parameter	Design Criteria
Average Flow for the Maximum Month	26.0 Million Gallons per Day (MGD)
5-day Biochemical Oxygen Demand (BOD ₅) Loading for Maximum Month	31,200 pounds per day (lbs/day)
Total Suspended Solids (TSS) Loading for Maximum Month	32,100 lbs/day

Proposed Permit Changes

1. The daily maximum flow rate limit for Outfall 001A has been increased from 287,000 gallons per day (gpd) to 353,190 gpd.
2. Administrative updates in formatting resulted in changes to page numbers and tables.

Appendix A--Public Involvement Information

Ecology proposes to issue a permit modification to Solvay. The permit modification includes wastewater discharge limits. This supplemental fact sheet describes Ecology's reasons for modifying the permit.

Ecology will place a Public Notice of Draft on January 29, 2020 on its webpage to inform the public and to invite comment on the proposed draft National Pollutant Discharge Elimination System (NPDES) permit modification and supplemental fact sheet.

The notice:

- Tells where copies of the draft Permit Modification and Supplemental Fact Sheet are available for public evaluation (a local public library, the closest Regional or Field Office, posted on our website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Urges people to submit their comments, in writing, before the end of the comment period.
- Tells how to request a public hearing of comments about the proposed NPDES permit modification.
- Explains the next step(s) in the permitting process.

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

You may obtain further information from Ecology by telephone, (360) 407-6916, or by writing to the address listed below.

Water Quality Permit Coordinator
Department of Ecology
Industrial Section
P.O. Box 47600
Olympia, WA 98504-7600

The primary author of this permit modification and supplemental fact sheet is Kelsey Holbrook.

Appendix B--Response to Comments

Ecology provided an opportunity to comment on the draft modification to NPDES Permit No. WA0991024 January 29 to March 3, 2020. The proposed modification increases the daily maximum flow rate limit for Outfall 001A to Three Rivers Regional Wastewater Authority's Wastewater Treatment Plant. Ecology received one comment during the comment period.

The comment and Ecology's response to the comment is presented below. Comments appear in regular text, followed by Ecology's response in italicized text. No changes were made to the permit based on the comment received, as discussed in the response below.

Ecology will send a copy of this response to comments to each individual who provided comments. A copy of the final permit will be sent to all interested parties upon issuance and posted on the Industrial Section website at <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Industrial-facilities-permits>.

Comment Received from Kyleigh Boval, Ariya Hajari, Max Kaplan, and Erica Salas:

Solvay Chemicals runs a hydrogen peroxide manufacturing plant located in Longview, WA along the Columbia River. It currently discharges its wastewater to the Three Rivers Wastewater treatment plant and Nippon Dynawave pulp paper mill for treatment. Both of which empty into the Columbia River. The Department of Ecology for the State of Washington is proposing to modify Solvay's current permit to allow an increase in the daily maximum flow rate limit to the Three Rivers Regional Wastewater Authority (TRRWA). Solvay is currently permitted to discharge 287,000 gallons each day to Three Rivers through outfall 001. Solvay is asking for approval to increase the maximum flow rate limit to 353,190 gallons each day. The Department of Ecology has verified that the treatment system has the capacity to facilitate the increase and the pollutants associated with it. It is our opinion that Solvay should be granted the permit to increase its maximum flow rate because of their compliance history and effective wastewater treatment plan. The following comments will address the concerns we have on increasing the infrastructure of Longview's drinking water system, CDID ditch #5, providing impact assessments on surrounding waters and including all pollutants in these assessments and permits and, finally, concerns about what chemicals are used to clean the membrane of the RO system.

Compliance History of Solvay:

Solvay has consistently complied with the discharge limits and all of the permit conditions throughout the duration of the permit that was originally issued in 2014. The only two exceptions are when they conducted a late analysis of effluent characterization and submitting a late permit renewal application. Other than those two incidents, Solvay has demonstrated their ability to comply with permit regulations. Solvay must also meet the State Environmental Policy Act (ACT) compliance requirements.

In April of 2019, Solvay filed a SEPA checklist for their new discharge, and Ecology then issued a determination of non-significance for the project in August of 2019. It should be noted that having only two minor errors in their compliance with their permit is more of a positive than a negative; both of the issues were simply because they were late, and not because of exceeding their effluent limits of pH. Solvay has consistently complied with their limits and regulations as outlined in their permit, and give no indication that they would not continue to do so in the future. Because of their strong positive history of compliance and general concern for their environmental impact, Solvay can construct a strong case for their request to increase their daily maximum flow rate limit.

Permit Requirements and Applied Laws:

The Department of Ecology has drafted National Pollutant Discharge Elimination System (NPDES) permits for Solvay Chemicals Inc. that aim to control the discharge of total suspended solids (TSS) into the water. Solvay attempts to comply with Section 173-220-060 of the Washington Administrative Code (WAC) and their NPDES permits that include State Water Discharge (SWD). Under the Federal Clean Water Act, the EPA has given the state of Washington the ability to manage their state's NPDES permit program, as enforced by the Department of Ecology under 90.48 RCW (Revised Code of Washington). Such permits are required for Solvay, and any other industrial owner or operator, prior to the discharging of wastewater in state waters. These permits help set and define the limits on discharge allowance, while also setting performance requirements for Solvay to follow.

As Solvay is a hydrogen peroxide manufacturer, they produce chemicals and therefore discharge pollutants into the water near the Columbia River. These NPDES permits help regulate and record the pollutants that are released into the water, as well as the concentration of these pollutants and the maximum allowed values of each pollutant. However, Ecology has not provided a TMDL for the specific CDID Ditch #5 site, and Solvay has not provided reports on the possible impairments their discharged water would have on the DO of the surrounding water, although Ecology has proposed that they do so. Included in these permits is a General Permit for Water Treatment Plant discharges under the NPDES that was developed specifically for discharges coming from municipal water treatment plants. This permit has developed technology-based limits for Solvay to comply with, aiming to target the amount of TSS', as one of the main sources of discharge from Solvay's plant is filter backwash (Solvay 2020). These "Technology-Based Effluent Limits" proposed by Ecology require Solvay to follow certain criteria that makes them provide all "known, available, and reasonable methods of prevention, control, and treatment (AKART)" (Solvay 2020).

Health Concerns:

In order to ensure the safety of the environment and human health, Solvay must comply with all the criteria presented. The Washington State Surface water quality standards newly adopted criteria is designed to protect humans from exposure to pollutants linked to cancer and other diseases that can be ingested from eating fish and drinking contaminated water. All waste discharge permits require that it meets the surface water quality standards.

Numerical water quality criteria specify the maximum levels of pollutants allowed in receiving water to protect aquatic life and recreation in the water. While narrative criteria limit the toxic and radioactive material concentrations that the facility is allowed to discharge. If Solvay follows all of these guidelines and criteria strictly then they should be granted the permit to increase their daily maximum flow. The only matter of concern is ensuring that the City of Longview's drinking water system is equipped to increase its infrastructure to supply enough process water to Solvay. Overall, Washington's Department of Ecology evaluated the discharges that are going into the Columbia River for potential chemicals of concern to human health. They determined that the discharge has no reasonable potential to violate water quality for human health criteria.

Technological and Scientific Concerns:

We have a few concerns regarding CDID Ditch #5, particularly that the Department of Ecology has not developed a Total Maximum Daily Load for this discharge point. Regardless of whether there is no expectation that additional discharge will not affect oxygen depletion in CDID Ditch #5, it is still concerning that no predictor model has been developed before the filing of this permit. Surely if Solvay is intending to increase its discharge, an environmental assessment should have already been conducted to determine future water conditions in CDID Ditch #5. If there is an environmental impact on oxygen depletion in CDID Ditch #5 because of Solvay's proposed increases in discharge, how will Solvay correct this oversight? We recommend that Solvay assess the current levels of dissolved oxygen in CDID Ditch #5, create a prediction model of the levels of DO with the increase in discharge in mind, and then continue to test water quality after the implementation of the permit.

We also must question the reverse osmosis treatment unit, specifically how Solvay plans to combat clogging and buildup in the membrane. Membrane fouling and scaling is a common issue shared in all RO systems, and Solvay has said that it currently does and will continue to use chemicals to prevent bacterial growth in the membrane. However, it is concerning that the public is unaware of what chemicals Solvay is using to clean the RO system. How is the public to know if these chemicals follow AKART requirements if they aren't specified, and why hasn't Solvay specified what chemicals they are using? We ask that Solvay be more specific of what they're using to clean the membrane. We have no further concerns about the effectiveness of the RO system and whether it has the capacity to filter and discharge the proposed amount of water.

Conclusion:

Overall, we propose that there needs to be more specific design plans and assessments done to create a more holistic and specific picture of the Solvay permit plan. This includes adding all discharged pollutants that are to be dumped into the waterways into a collective list, regardless of the ones already reported in the permit. We also raise questions about the effectiveness of the Reverse Osmosis program, what it entails and how it will be designed, as there are not many specifics laid out in the report.

However, we still find that the permit should be granted with the plethora of information that has been laid out in the permit document. Given their compliance history and collective concerns over public health and applications of each permit regulation and rule, Solvay should be allowed to increase their daily maximum flow rate limit.

Ecology Response:

As discussed in Chapter 2, Section 4 of Ecology's Water Quality Program Permit Writer's Manual (available on Ecology's website), and in accordance with 40 CFR 122.62 and 124.5(c)(2), the portions of the permit that are being modified are the only portions that are open for comment. Many of the comments and questions included are outside of the scope of the proposed permit modification. As noted in Paragraph 1 and the Conclusion section of the comments the commenters concur with the proposed modification of increasing the allowed flow rate to Three Rivers. As such, no changes were made to the permit based on the comments received.

The following responses are provided as a courtesy.

The commenters note a concern about the capacity of the City of Longview's drinking water system and the ability to provide additional process water to Solvay. Solvay does not receive process water from the City of Longview. Solvay operates a reverse osmosis (RO) system which is fed by onsite wells to treat groundwater for use as process water. Ecology also notes that the NPDES permit does not grant any water rights and the facility is required to comply with any other applicable permits or requirements, including applicable water rights or water use agreements.

The comment included questions on the RO system and what chemicals are used within the RO system. Solvay provided safety data sheets (SDS) for the chemicals to be used within the RO system in the permit application submitted April 5, 2019. Permit application materials are available on Ecology's Permitting and Reporting Information System (PARIS) at the following website: <https://apps.ecology.wa.gov/paris/PermitLookup.aspx>. The permit application materials were submitted under the inactive State Waste Discharge (SWD) Permit Number ST0006070.

The commenters provided questions and comments related to the 303(d) listing for CDID Ditch #5 for dissolved oxygen (DO). Ecology notes that this modification allows an increase in Solvay's discharge to the Three Rivers Regional Authority's Wastewater Treatment Plant. This permitting action does not relate to the discharge from Outfall 002 to CDID Ditch #5. As mentioned in the Fact Sheet for NPDES Permit No. WA0991024 (August 23, 2019), a total maximum daily load (TMDL) has not been established at this time for CDID Ditch #5. The CDID ditch system has two segments listed for DO impairments. These listings are based on data from 1992. Receiving water studies are required in the CDID Ditch system to collect sample data which is more representative of the current conditions in the receiving waters.

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The commenters requested that a list of all pollutants to be discharged be included. The Fact Sheet for NPDES Permit No. WA0991024 (August 23, 2019) includes a list of the pollutants which are expected to be in each of the discharges from Solvay. Any discharge of pollutants which were not reported in the permit application is not authorized by NPDES Permit No. WA0991024.

As mentioned in the first paragraph of this response, Solvay operates the RO system to treat groundwater for use as process water. The RO system is not used to treat wastewater prior to discharging. Therefore, the proper operation of the RO system is not under the purview of the NPDES Program.