Washington Environmental Council

Hi Kerry – Attached are our comments on the draft feasibility study. Let me know if you have any questions.

Thanks!
Mindy

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Kerry Graber, Site Manager
Washington State Department of Ecology, Toxics Cleanup Program
PO Box 47775
Olympia, WA 98504-7775

Subject: Occidental Chemical Corporation Feasibility Study Comments (Facility Site ID #1212)

Ms. Graber:

Thank you for the opportunity to comment on the Draft Feasibility Study to inform cleanup plans for the Occidental Chemical Corporation site on the Hylebos Waterway in Tacoma, Washington. Public participation has always been a critical element of the Model Toxics Control Act, a voter-initiated law that has successfully cleaned up 6,000 toxic waste sites across our state over the past three decades.

For over 50 years, the Washington Environmental Council (WEC) has advocated for clean air, clean water, and clean energy for all Washingtonians. WEC was directly involved with developing the Model Toxics Control Act, and we continue to defend its purpose and its implementation throughout the state. We proudly represent over 20,000 members. While we rarely comment on individual cleanup actions, the Occidental Chemical Corporation site in Tacoma is regionally significant.

WEC does not support Occidental Chemical Corporation's preferred alternative as a final action. While cheaper for Occidental Chemical, requiring only its preferred cleanup elements would leave well over half of the chlorinated volatile organic chemicals to contaminate land, air, and water; would not address the caustic, high pH water that is dissolving silica; would leave the site essentially unusable in an important industrial redevelopment zone in the Tacoma Tideflats; and would leave too much uncertainty that an anticipated 100-year cleanup period would reduce ecological and human health risk factors sufficiently.

Ecology's mission is to protect, preserve and enhance Washington's land, air and water for current and future generations. Occidental Chemical's preferred cleanup alternative would jeopardize land, air, and water for many generations to come, and therefore does not meet Ecology's mission nor the intent of the Model Toxics Control Act.

Occidental Chemical Corporation is one of largest petrochemical companies in the country. When Occidental Chemical Corporation purchased Hooker Chemical Company in 1968, it assumed responsibility not only for the assets but also the liabilities, including the tremendous environmental harm at its sites such as Tacoma. Hooker Chemical Company was responsible for the infamous Love Canal site, where it dumped toxic waste for years that later caused reproductive health effects in residents who were unaware of the legacy of toxic contamination.

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Outrage over Hooker Chemical Company actions contributed to the rallying cry for the federal Superfund program so that future generations would not be harmed by the actions of previous generations and companies.

As the Draft Feasibility Study and other documents describe in more detail, Hooker Chemical Company manufactured industrial chemicals in Tacoma. Initially, Hooker Chemical produced ammonia, chlorine, caustic soda (sodium hydroxide), and other chemicals for pulp and paper mills throughout the northwest. The site was later used to produce solvents used by dry cleaners and other clients. A variety of pollutants have been found on the site, including metals and PCBs.

These two industrial product lines resulted in distinct contaminated groundwater plumes. The deeper chlorinated VOC plume lies 200 ft below sea level, where an estimated 1,000,000 pounds of solvents including perchloroethylene were dumped. The deep plume also contains heavy metal contaminants. Perchloroethylene degrades to vinyl chloride, a carcinogenic gas. The shallower plume, containing water so caustic that it is dissolving the silica in the soils, extends 100 ft below the water and land surface. Both plumes have spread to adjoining properties and waters, well beyond the parcel boundary. The plumes extend underneath the site of the planned Puget Sound Energy liquid natural gas (LNG) plant, the Hylebos Waterway, and Commencement Bay. Occidental Chemical Corporation has funded pump and treat facilities at the site for over 20 years, yet they have not been able to stop vertical and off-site migration of the plumes.

Occidental Chemical Corporation's preferred alternative would cost $54 million and would only address 330,000 pounds of solvent. Occidental Chemical Corporation proposes a barrier wall to slow groundwater movement and nine groundwater extraction wells with treatment. The preferred alternative would do nothing to address extremely high-pH groundwater or dissolving silica. While the current Draft Feasibility Study represents the third iteration of cleanup alternatives, the study does not go far enough in identifying alternatives to evaluate durable solutions. The preferred alternative is strongly tied to the Disproportionate Cost Analysis (DCA), yet the DCA is strongly impacted by the lack of reasonable alternatives.

The Draft Feasibility Study is supposed to evaluate remedial alternatives for the upland areas. WEC is concerned that Occidental Chemical Corporation's consultant could only identify cleanup alternatives that would treat at most 23% of the caustic groundwater, then ruled out cleanup alternatives as more expensive with fewer benefits than the No Action Alternative for the high-pH plume. This appears to be circular logic – Occidental Chemical Corporation does not identify consequential alternatives, and because it did not identify alternatives, Occidental Chemical Corporation prefers the No Action Alternative because they did not identify alternatives. Further work is needed to address reasonable alternatives that address the chlorinated VOC plume as well.

We recommend that Ecology oversee a paid independent review of the Draft Feasibility Study before selecting alternatives for the cleanup plan next steps. Glen Springs Holdings, Inc. appears to be closely affiliated with Occidental Chemical Corporation. An unbiased assessment of the complex options could confirm that these are potential solutions for an interim action. Given the magnitude of the pollution, the importance of the cleanups, and the complexity of the site, a paid independent review will serve the process well.

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Several additional questions remain unanswered by the Draft Feasibility Study:

- How will the cleanup plan, which is expected to require 100 years, account for new technologies, innovation, and adaptive management? Ecology should not sign off on an incomplete plan that leaves unaddressed such severe pollution levels. The next steps could be an interim action, but not a final action, and must include specific adaptive management processes.
- Interim and final actions should address the full extents of the plumes, including into and under the waterway. The uplands and the waterways, including sediments, should be considered comprehensively.
- Containment alternatives all have the same elements and only varied the pumping rate. Why were no other containment alternatives considered?
- What technologies can address the caustic groundwater to the full depth of contamination?
- What are the impacts of the caustic groundwater plume on the benthic community in Hylebos Waterway? Without addressing these impacts, a Differential Cost Analysis would not capture the full range of benefits.
- The CVOC plume extends to the parcel with the planned LNG plant, and it is unclear whether the high-pH plume does as well. What is the impact of dissolving silica on LNG plant stability, if built?
- The groundwater model used to evaluate the alternatives represents a start but does not appear sufficiently developed to form a trusted basis for cleanup decisions. For example, the model "… assumes idealized mass transport controlled by advection and equilibrium sorption …." This assumption leads to significant uncertainty that the model sufficiently represents key processes that control advection and sorption. Can the model confidently evaluate the alternatives if it simplifies important transport processes?
- The groundwater model estimates also "… do not include potential effects of high pH potentially reaching extraction wells, … contributing to the uncertainty of the mass estimates." While the report claims that the same approach was used consistently across alternatives, lack of key processes or poor representation in the model would lead to consistently biased model results that could severely underestimate the removal effectiveness of all alternatives that depend on the model.
- How do the alternatives protect the public health of people who work in the Tideflats, are incarcerated in the Tideflats, or those who live nearby, such as vulnerable populations and residents of Northeast Tacoma? While an earlier indoor air study appeared to identify sources not associated with the legacy contamination, can you rule out the physical trapping of volatile daughter products that can accumulate inside buildings? Table 2.3 does not list nearby residents as a primary human receptor or

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exposure pathway, only workers, trespassers, recreational users, and fishers. The risk assessment apparently did not consider the Northwest Detention Center, where both workers and those incarcerated could be exposed to air toxics. Incarcerated people are exposed 24 hrs a day, far longer than workers. The indoor air Remedial Action Goal does include preventing human exposure to hazardous substances, pollutants, or contaminants from subsurface soil vapor at concentrations in excess of applicable standards and risk-based cleanup levels.

- Given the long duration of cleanup, the site is likely to face significant earthquake risk as well as sea level rise. How will risk of natural disasters like earthquakes, with subsequent liquefaction, affect the protectiveness of the alternatives presented? How will the site change as a result of sea level rise?

The Occidental Chemical Site sits in prime industrial land within the Tacoma Tideflats. The current contamination impedes economic development opportunities for both the Puyallup Tribe and the Port of Tacoma. As the Puget Sound region grows, we will continue to need industrial activities that comply with existing laws and sustain our communities. The Tideflats will remain an important hub, yet this site cannot be developed until the contamination is resolved.

Tacoma is rebounding from its legacy contamination. Pollution levels are decreasing in sediments in Commencement Bay as a result of pollution identification, cleanup, and prevention. More is needed to ensure that all people in the Tacoma and the Puget Sound region thrive into the future, including the Puyallup Tribe and communities of color most impacted by toxic pollution. Occidental Chemical Corporation, ranked 278 on the 2017 Fortune 500 list, can afford far more than an outdated cleanup attempt that is failing to address its legacy of contamination in Tacoma. We cannot afford to saddle future generations with the pollution of yesterday. Hundreds of millions of dollars have been invested to provide salmon refugia and to restore the Hylebos Waterway, the nearby Thea Foss Waterway, and other sites around Commencement Bay.

We urge you to ensure that future generations are protected from currently contaminated land, air, and water around the Occidental Chemical Corporation site by considering our comments in your next steps.

Sincerely,

Mindy Roberts

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Puget Sound Director