Thank you for the opportunity to provide comments on the draft Feasibility Study Report Addendum - Former Unocal Edmonds Bulk Fuel Terminal, Edmonds, WA 8/19/2024. Interim Actions for this site began in 2001 and have continued to the present. The following text is my understanding of what has taken place regarding the remediation of this MTCA cleanup site in Edmonds, Washington.

Interim actions have taken place in the lower yard of the Edmonds Bulk Fuel Terminal starting in 2001. Additional interim actions will be taking place in the near future per the final report (2024) of this draft Feasibility Study Report Addendum once it's approved.

These past interim actions have included excavation of contaminated soils, and removal of LNAPL floating on the groundwater. Treatment of the soils and groundwater has also taken place through a Dual- Phase Extraction System starting in 2017 to the present. The cleanup levels for soil and groundwater were based on commercial use of the land for a Ferry Terminal which Washington Department of Transportation (WDOT) wanted to relocate from the present Ferry Terminal to the lower yard on Chevron property. WDOT has decided not to move forward on this project and has given the City of Edmonds the rights of first refusal to purchase this property. The residents and the City of Edmonds were enthusiastic about the possibility of "daylighting" Willow Creek through a stream bed instead of a pipeline to Puget Sound. It is not known where this new steam bed will be located but it is most likely will be through the lower yard and above the WDOT stormwater line. This is also the location of the Dual-Phase Extraction System. Chevron has committed to conduct a soil sampling survey to determine the current status of the soil quality based on the new 2024 Cleanup levels (CULs).

I recommend that based on the results of this soil survey that the current Feasibility Study Addendum be revised based on the findings of this soil sampling survey. The following bullets are questions and comments that I would like Ecology or Chevron to address before moving with the next interim action.

- Ecology did change the cleanup (CULs) soil number from commercial use to "Open Space" use. Why weren't "Natural Environment" use numbers used since there may be a possibility that the Willow Creek may be routed within the lower yard and a connection of groundwater and surface water may take place? Will these Open Space CULs be as protective as the Natural Environment CULs? Also, it would be good to take a closer look as a potential future use of this property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound which should be evaluated in a revised feasibility study Addendum.

- The 2017 draft Final Feasibility Study gave a restoration time frame for Alternative 6 as five to six years, with an end date of 2023. Why was Alternative 6 chosen <u>again</u> in the new FS addendum report August 2024? What will be a new restoration time frame and what will be the basis for this time frame? It also appears after five years of operation the Dual-well extraction system only operated approximately 30% of the time (see 2022 GW Monitoring and Dual-Phase Extraction System Operation Report,

October 2023). Will the new optimization of the DPE system be operating in a continuous manner? What is the stated goal for the operation of Dual-Phase Extraction System?

- The WDOT stormwater line is located over the main area of the cleanup in the lower yard. This stormwater line is over 50 years old and it may need replacement or repair in the near future. Consideration should be made for replacement, repair or evaluation every five years. The last evaluation was 13 years ago. The cleanup of the lower yard is still undergoing interim action and if work is needed on this stormwater line it may be a good to conduct this work during this time period.

- Updated soil samples are needed, similar to what took place in 2018. This information or the collection of soil samples in 2018 near the DPE 1-14 extraction wells determined or gave insights to the effectiveness of the DPE system after one year of operation. The results of the soil samples revealed that at nine different locations concentrations exceeded (and in some cases doubled exceeded) the CULs. Four additional DPE 15-18 extraction well were installed to remediate the soils around four monitoring wells MW-101, MW-518, MW-129R and MW-E-R. Soil sample collection should also be collected within these four areas. Also, the 22-locations where the soil concentrations were above the new CULs and the PSVs should be included in the soil sample collection program. The soil sampling program by Arcadis in December 2018 was appropriate and a similar approach can be conducted in the near future (see Dual-Phase Extraction System as-built report addendum 12/2020). A direct push drilling method was used for this soil sampling collection. It is recommend that a Membrane Interphase Probe (MIP) be used with a PID detector along with the Direct Push Rig. This set up would be helpful with the selection for the collection of soil samples to the depth of 15-feet below ground surface (BGS).

- The soil sampling results are important and may have an impact on the re-evaluation of the cleanup alternatives in this feasibility study addendum. Alternative 4, complete excavation, may in fact, have a lower implementation cost compared to Alternative 6 (or even a hybrid between Alternative 4 and 6). I also understand that Tribal rights, climate change, and sea level rise may not have been included in cost-benefit calculations.

- The groundwater quality data may have some seasonality effects. I have only reviewed two groundwater quality data reports (2021 and 2022) that I have obtained from Ecology's website. It appears that for the TPH data there are more detections or concentrations above the CULs in the second and third quarter. It would be good to plot some trend plots (ie time vs concentration) for the monitoring wells of interest to see how the concentrations have changed through the year. Has Arcadis plotted concentration trends per monitoring well? Those would be useful charts. Concentration trends per monitoring well (or at least data from a selected group of monitoring wells) should be plotted time vs concentration per CULs.

- The discussions of both compliance and attainment groundwater monitoring is a bit confusing or not explained properly. Groundwater Compliance monitoring provides data on how effectively the remedy is operating by reducing the concentrations of the contaminants of concern, COCs. Once the COCs have met the cleanup levels, then the remedy can be shut down so the groundwater flow system can go back into equilibrium, and to see if the contaminant migration continues to desorb from the aquifer or the groundwater CULs have been met. Enough groundwater quality data must be collected from the monitoring wells after the DPE system has been shut off. Twelve independent sampling events must be used to show if attainment of the CULs has been achieved, using a statistical analysis method.

If you have any questions on the above comments, please contact me.

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