

July 16, 2025

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Re: NW Natural's Topics for Discussion to Resolve DEQ Comments on the Gasco OU – Feasibility Study Report

Dear Wes,

NW Natural received DEQ's Comments on the Gasco OU - Feasibility Study dated June 5, 2025. We have identified a number of key topics that we would like to resolve with DEQ as soon as possible prior to development and resubmittal of the revised FS. DEQ's comments include 13 general comments and 87 specific comments over 31 pages. We plan to prepare a comment and response matrix for the entire set of comments, however, based on the discussion we have had with you so far, we believe that additional discussion and clarification of DEQ's comments will help avoid misinterpretation and facilitate revision of the FS. The key topics we have identified below typically relate to multiple DEQ comments that warrant additional discussion. These topics include those with which we disagree and seek a path forward and those which require clarification.

Disagreements for Discussion

1. Interim Removal Action Measure design and implementation schedule

Page 3, first paragraph: "DEQ will not approve the IRAM final design or IRAM implementation without a Gasco OU FS that identifies and recommends a RAA that removes and/or treats hot spots to the extent feasible."

The barrier wall included in the IRAM is an integral part of the in-water remedy for EPA. The purpose of the IRAM is to expedite the barrier wall design so it can be incorporated into the interim sediment remedy design. DEQ has not provided a technical basis for linking the IRAM approval to receipt of an acceptable FS, and making the IRAM contingent on the FS will likely lead to delays in the sediment project, even with good faith efforts to complete the upland FS.

2. Consideration of IRAM and other early removal actions in the FS

General Comment (1)(b): "The Gasco OU FS shall not assume that hot spot treatment does not result in risk reduction due to the presence of the ISS barrier wall."

General Comment (1)(g): "DEQ disagrees that the IRAM protects the beneficial use of groundwater. The protectiveness of the IRAM requires removal and/or treatment of upland hot spots [to] the extent feasible."

Specific Comment 35(c): "Planned or existing source control measures shall not limit or constrain implementation of additional remedial action."

DEQ's comments suggest that it will not consider the effectiveness of interim removal actions in evaluating the effectiveness of additional measures as part of a final remedy. Removal actions are consistent with, and part of, the final remedy. We cannot disregard a portion of the final remedy when evaluating additional measures, and all RAAs within the FS include all elements of the IRAM. DEQ must meaningfully consider the extent to which the IRAM and other source control measures effectively manage risk and protect beneficial uses.

3. Hot Spots of Contamination

DEQ has numerous comments on our hot spot approach.

First, DEQ requires NW Natural to "assume that risk reduction scales proportionally to the quantity of hot spot removed and/or treated." (General Comment 1(b)). In other words, DEQ appears to adopt mass/volume as a surrogate for risk. This is inconsistent with the hot spot statute and rule, which define hot spots based on risk (due to chemical concentrations or the potential for increased chemical mobility). Oregon's Hot Spot Rule requires treatment or excavation and off-site disposal of hot spots, to the extent feasible, as part of a selected remedial action. The "extent feasible" is determined "based upon a balancing of the remedy selection factors set forth in OAR 340-122-0090" and an application of the higher threshold for evaluating reasonableness of the cost of treatment or removal. Cost reasonableness considers the degree to which the costs are proportionate to risk reduction benefits to human health and environment (i.e., cost effectiveness). NW Natural disagrees that mass removal achieves the same risk reduction per unit volume of treatment across the site. We also believe that hot spot location relative to contaminant exposure pathways or receptors must be considered.

Second, DEQ comments indicate that all hot spots must be quantified and evaluated on both a sitewide and localized basis "with the objective of achieving the most risk reduction possible." Our interpretation of this comment is that it requires the comparative evaluation of the cost-effectiveness of treatment or removal of hot spots on a small scale without considering the benefits of hot spot treatment in other areas of the site (including the IRAM), which would prevent an accurate

assessment of site-wide risk reduction. This is particularly important for contamination in subareas that is otherwise addressed by remedial measures planned in proximate or surrounding portions of the OU.

4. Protection vs. restoration of beneficial uses;

General Comment (1) (g): "DEQ disagrees that the IRAM protects the beneficial use of groundwater. The protectiveness of the IRAM requires removal and/or treatment of upland hot spots to the extent feasible. The Gasco OU FS must evaluate and select technologies that restore the groundwater beneficial uses to the extent feasible".

This requirement solely to "restore" is inconsistent with the Oregon Environmental Cleanup Law, which requires treatment or removal of hazardous substances in groundwater where "treatment is reasonably likely to restore or protect such beneficial use within a reasonable time." OAR 340-122-0090(3)(e) states "with respect to hot spots of contamination in water, the degree to which the costs of the remedial action are proportionate to the benefits created through restoration or protection of existing and reasonably likely beneficial uses of water." For example, contaminated water from the uplands at the site is treated and discharged to the Willamette River, which protects and provides beneficial surface water use.

Furthermore, DEQ's Guidance for Identification of Hot Spots states, "Restoration or protection of a beneficial water use also may utilize technologies which contain the contaminant plume. An example of a containment technology is a barrier wall which extends the contaminant's travel time and increases the residence time for intrinsic bioremediation. Another example is groundwater extraction, treatment and re-injection to control the hydraulic gradient. In these examples, the objective is to prevent contaminant migration and not necessarily to "clean up" the aquifer."

Clarifications

5. FS Alternative Assembly by Geographical Sub Area

General Comment 5(e): "The Gasco OU FS must assemble, compare, and evaluate RAAs on the GSA/RAU scale, before assembling site-wide RAAs."

Evaluating all remedial alternatives on a sub-area scale before evaluating them sitewide creates technical problems that impact decision making. One issue is that remedial measures being implemented in a geographically contiguous area on the same site are not considered in the context of whether the sitewide remedy achieves all cleanup requirements. This is particularly true when measures that add protectiveness to the entire site are located in one of the subareas. The draft FS evaluated technologies on an RAU basis but used a qualitative evaluation approach rather than numerical scoring. We need clarification from DEQ on how to overcome these technical challenges and conduct GSA-specific RAA evaluations that will satisfy DEQ's needs.

6. Demolition of Siltronic Fab 1

General comment 4.(b): "Since the draft Gasco OU FS was submitted, Siltronic has notified DEQ and NW Natural of their intention to demolish the Fab 1 building. Revise the draft Gasco OU FS to consider the Fab 1 building footprint accessible."

Siltronic has not provided a timeline for the demolition and is not obligated to remove Fab 1 prior to remedy implementation. NW Natural has no ability to control Siltronic's removal of the building.

DEQ's requirement to prepare an FS that assumes the Fab 1 building has been removed is complicated by the lack of data available for the area beneath the Fab 1 building. To rectify this would require significant effort and time and is fully beyond NW Natural's control. Remedial measures for the area beneath Fab 1 would need to be developed after Fab 1 is removed and there is access to collect the necessary data to support remedial alternatives analysis.

7. FS Revision Schedule

DEQ has asked for extensive revisions to the FS, essentially requiring a complete rewrite of Sections 8 through 16. The amount of rework is extensive including review of boring logs to refine DNAPL and MGP residual thickness calculations, revisions to raster maps, extensive revision of the groundwater modeling appendix, performance of GSA-specific RAA development and evaluation in addition to completely revising site-wide alternatives and the scoring approach. Modeling of alternatives cannot begin until site-wide RAAs are established, which cannot begin until the GSA-specific RAA evaluations are completed. Given these requests, at this time, we do not see how the FS can be revised by April 3, 2026. Our understanding is that the DEQ and NW Natural technical teams will hold workshops and meetings to resolve the comments and determine how to address them. Once the teams have a clear and shared understanding of exactly what work is needed to revise the FS we would like to discuss an appropriate and achievable date for FS resubmittal.

We understand and share DEQ's desire to move quickly toward remedy selection for the Gasco OU, but the Voluntary Agreement requires that modifications to the project schedule be made by agreement of the parties. We want to discuss with DEQ a reasonable schedule to complete all of the additional work needed to complete the FS.

8. Miscellaneous technical topics

- a. Balancing factor scoring approach
- b. MGP residual thickness calculations using boring log descriptions
- c. Dataset screening approach
- d. Use of the hot spot "priorities"

- e. Data screening against source control PRGs
- f. Screening individual PAHs against PRGs
- g. Estimating groundwater extraction rates based on potential beneficial use impairment
- h. Use of the dissolution model

We look forward to discussing these issues during an upcoming workshop with key representatives of DEQ and NW Natural.

Sincerely,



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Principal Engineer

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