

2025-07-22_Gasco: IRAM LOE Feedback

Meeting Title:	Gasco: IRAM LOE Feedback
Date/Time:	July 22, 2025 / 9:00 - 10:30 am
Attendees:	AQ: Halah Voges, Matt Davis EE: Rob Ede DEQ: Wes Thomas, Heidi Nelson, Sarah Van Glubt, Amber Lutey, Dan Hafley
Location:	DEQ NW Region Office

Meeting Notes:

- IRAM Scope of Work
 - The LOE table (and the IRAM BODR) make references to NW Natural's agreed-upon scope of work, typically in the context of locking in the ISS prisms that were presented in the IRAM Concept letter. DEQ does not approve this concept, and we have consistently commented on it. Our IRAM Decision letter establishes the necessary IRAM scope of work.
 - EE acknowledges that NW Natural and DEQ do not share the same opinion about the IRM Scope. This may be a topic that NW Natural and DEQ agree to disagree on. EE states that NW Natural was firm about the IRAM scope, and that any additional work would be within the FS. That said, the intent of the LOE process was to try to address DEQ's concerns about the IRAM scope of work in a more practical way.
 - DEQ clarifies that we can agree to disagree as long as NW Natural does not include similar statements in future deliverables. DEQ will not approve deliverables that suggest the scope of the IRAM is fixed based on the prisms illustrated in the IRAM Concept letter.
- Risk Reduction
 - RAO 1 (SC/RAO #3) represents a core objective for the bulk ISS treatment portion of the IRAM. By definition:
 - DNAPL represents a highly mobile hot spot.
 - Hot spot treatment results in risk reduction.DEQ notes that future discussions about hot spot treatment and risk reduction are planned in the context of resolving DEQ's comments on the FS. DEQ proposes tabling further discussion of risk reduction until those meetings.
 - The LOE evaluation table does not provide adequate rationale supporting conclusions related to 'meaningful' risk reduction
 - EE states that the intent of the table was to develop a framework that linked ISS treatment cost with the benefit of treatment. Even if there needs to be discussions about risk reduction, EE believes that risk reduction is an important element of the LOE framework. Risk reduction is critical to evaluating the benefit of treatment. So we can't entirely defer risk reductions to the FS.
 - DEQ clarifies that the assessment of risk reduction in the LOE tables is largely based on the presence of the ISS barrier wall and HC&C system. We believe that concept is directly linked to the FS comment discussion. DEQ understands that we need to discuss that concept, but we only want to have the conversation once and make sure that all the necessary people are involved in the conversation.
- Cost Reasonableness
 - The LOE table provides no clear basis for determining whether ISS treatment of an observation is 'cost reasonable.' For some observations, costs exceeding \$3MM are considered reasonable. ISS costs of less than \$700 are considered unreasonable.
 - EE acknowledges the comment. The LOE table did not include a minimum cost threshold below which NW Natural would just treat without considering the other risk factors. A cost of \$700 would fit into that category. The LOE table focuses more on the benefit/risk reduction factors than the magnitude of the cost.
- LOE Methodology

- DEQ does not believe there are algorithmic logic criteria that can be applied to individual borings to qualitatively or quantitatively assess risk reduction. At this point, DEQ does not believe additional effort spent trying to develop algorithmic logic to govern ISS prism decision making will be useful. Each DNAPL observation must be assessed in the context of the surrounding environment.
 - EE understands and acknowledges that a decision process governed entirely by algorithmic logic would work and that each boring would have unique circumstances. EE believes that the narrative column of the table provides more of the location-specific rationale.
- Observations Warranting Exclusion
 - False positives. Note that false positives must be evaluating using lines of evidence, and DEQ will not approve negative tau alone as a single definitive indicator of false positives.
 - AQ understands and notes that the DNAPL work plan will include work to confirm tau observations.
 - Isolated and de minimis DNAPL observations - which requires delineation.
- DEQ Conclusions
 - DEQ does not agree with the risk reduction assessment presented in the table
 - DEQ does not believe that an algorithmic approach that focuses entirely on single boring locations will provide the information necessary to exclude DNAPL observations.
 - More information is needed to confirm that negative tau reliably predicts false positives.
 - Some of the locations in the table may be isolated and de minimis, but additional data are needed to confirm.
 - DEQ recommends completing the DNAPL delineation as the next step, and revisiting the ISS prism development once those data are available.
 - EE understands DEQ has comments on the LOE table, but asks if there is a way for DEQ to acknowledge the LOE process.
 - DEQ believes that it depends on how the LOE approach is discussed in the work plan. We have identified portions of the LOE table related to risk reduction that we do not agree with. It will be important that the work plan presents the LOE approach in a manner that would allow for us to acknowledge it. How do they plan to discuss the LOE framework in a way they believe DEQ will approve?
 - AQ can present the DNAPL investigation scope of work in the work plan, and then state that they will use NW Natural's LOW approach as a preliminary screening tool to identify locations for further discussion with DEQ.
 - DEQ states that we have a lot of details to work out. But the LOE approach as a first pass or initial screening tool to identify DNAPL observations that warrant a more detailed evaluation might be acceptable.
 - DEQ notes that it would be great if the work plan can present the LOE process in the work plan in a way we can conceptual agree to. In many cases, the data will speak for themselves and it is more important to collect the new DNAPL data to move this forward. DEQ would like to make data supported decisions, and it is possible that once we have the data in-hand these decisions will become more clear.
 - EE believes that NW Natural will need some kind of LOE framework in the work plan, but they can capture the concept that every location will be unique and subject to surrounding concept. EE would like to avoid getting stuck and not being able to move the IRAM design forward.
 - AQ asks how NW Natural should plan to review updates to the ISS prisms with DEQ.
 - DEQ states that ultimately, we will approve the ISS prisms after they have been presented in a design deliverable. However, we are open to meeting to discuss the ISS prism refinement in a less formal setting before NW Natural presents the final version in a design deliverable. DEQ notes that recurring check-ins to discuss similar topics worked well at a nearby site that is also implementing an ISS-treatment IRAM.
- Examples
 - B-58: The model does not appear to match the boring log. This is a location that was shown as a "donut" previously. Given the boring log descriptions and the nearby DNAPL

observations, this location should be included in an ISS prism.

- TG-PW6-130: This location would benefit from tau confirmation and additional lateral delineation. There are very few nearby borings, particularly to the north that have been extended to similar elevations, and DEQ is unable to determine the areal extent of the potential DNAPL impact. The model suggests that NW Natural is already planning borings that could resolve the uncertainty if they were extended deeper. The proposed data could confirm that this observation is isolated.
- TG-PW5-85A: Identified as a false positive; however, adjacent boring shows much more significant TarGOST response at the same elevation. PW-01-80 is relatively close and screened at a similar elevation, with DNAPL entry. The FS DNAPL figures (25-50 ft below fill) indicate that the DNAPL in this area may be contiguous. Further, there are not a lot of data towards the upland, and the general extent of DNAPL is not well delineated at these elevations. DEQ believes additional delineation of the DNAPL near this locations is necessary.
- TMA3-2a: This is an elevated TarGOST response, and it is located at a similar elevation as other nearby DNAPL observations, including TMA3-1b (located to the south, included in the model), and TG-05 (located in the upland direction, not included in the model). There are very few other borings in the upland direction, and while 1 appears to be proposed, it should be extended to deeper elevations. It is likely that the DNAPL observation in this location is neither isolated nor de minimus.
- TG-10: There is a clear DNAPL body above and adjacent to the zone identified in the table, but a large spatial gap to the north or south. A single deeper ISS prism is planned around nearby boring TG-PW3-140x, but there are not a lot of data surrounding this observation. However, this is an older TarGOST boring, and it's not clear to what extent the observations are above the background threshold. DEQ recommends confirmation/delineation borings around this location. Proposed borings in the model to not extend to the necessary depths to confirm these observations.
- TMA-3-062216: <\$700. This location seems like a good opportunity to confirm that negative tau correctly predicts a false positive.