



Oregon

Tina Kotek, Governor

Department of Environmental Quality

Northwest Region

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November 25 2025

via email delivery

Thierry Razat
Legacy Site Services, LLC
1201 Louisiana St., Suite 1800
Houston, TX 77002

Subject: *IRAM 1 ISS Amendment Mix Design*
Arkema Facility, ECSI No. 398

Dear Thierry Razat;

The Oregon Department of Environmental Quality received and reviewed the November 6, 2025 *IRAM 1 ISS Amendment Mix Design* memorandum (Memo), prepared by Environmental Resources Management, Inc. for Legacy Site Services LLC. The Memo presents the evaluation of bench scale treatability testing results to support implementation of an interim remedial action measure addressing the monochlorobenzene source area originating from the former acid plant area.

DEQ has the following comments.

1. **Phase II Testing.** DEQ does not necessarily agree that LEAD study results are biased low in the Control relative to in-situ conditions. However, DEQ does not believe this statement affects the ability to select a grout mix design or inform another phase of testing.
2. **USEPA Method 1315 Methodology.** DEQ does not necessarily agree with the last paragraph of this section, nor could we find a statement in the ITRC guidance that states that diffusive mass flux results are generally considered biased high. However, DEQ does not believe this statement affects the ability to select a grout mix design or inform another phase of testing.
3. **Permeability.** DEQ does not necessarily agree that the effective porosity of limestone is an appropriate surrogate for ISS-treated soils. Clay would be a more comparable soil texture. In addition, DEQ believes that the calculations presented in Attachment B are for illustrative purposes. DEQ does not necessarily agree with the assumptions used for the calculation, but DEQ does agree that ISS treatment will reduce permeability (or hydraulic conductivity) to meet the IRAM performance targets.
4. **Recommendations.** DEQ questions the need to include the “simulated post-ISS mix soils” material in the next phase of testing. Further, DEQ does not believe that the ISS work will homogenize 40 feet of soil within the treated column. DEQ believes that the “contaminated soils” and “some DNAPL contamination soils” will appropriately bracket the range of soils within the IRAM scope. DEQ recommends limiting the scope of additional testing to these two material types.

Arkema
November 25, 2025
Page 2

Please contact me at 503-860-3943 or by email at Katie.Daugherty@deq.oregon.gov if you have any questions.

Sincerely,

Katie DAUGHERTY

Katie Daugherty, R.G.
Project Manager
Cleanup Program, Northwest Region

ecc Brendan Robinson, ERM