

**Comments and Responses**

Document:

Draft ABCA, 1021 & 1037 Baseline Street, Cornelius, OR, dated April 28 2025

Reviewer and Comment #	Comment	ERG Response
ODEQ General Comment 1	Despite terminology differences, specific deliverables referenced in the ABCA as part of selected remedial alternatives appear comparable to deliverables referenced in the Scope of Work (SOW) for the Prospective Purchaser Agreement (PPA) executed by DEQ and the City of Cornelius:	Language was added to section 1.2:  Additionally, this report introduces and includes specific documents and procedures designed to address certain environmental challenges associated with the Site. These include an Exposure Mitigation Plan, a Soil Management and Disposal Plan, and Activity and Use Limitations. These documents and procedures are similar in purpose to those described in the Scope of Work and the Prospective Purchaser Agreement between ODEQ and the City of Cornelius. If submitted to ODEQ in acceptable condition, these materials may satisfy the applicable requirements of the Prospective Purchaser Agreement.
	<b>A.</b> The Soil Management and Disposal Plan discussed in the ABCA appears to have similar content to the Contaminated Media Management Plan (CMMP) referenced in Exhibit C of the Consent Order (No. 25-02) for the PPA. The purpose of the CMMP is to establish procedures for identification, characterization, management, and disposition of contaminated media if encountered during future ground-penetrating work at the site.	Language was added to section 1.2:  Additionally, this report introduces and includes specific documents and procedures designed to address certain environmental challenges associated with the Site. These include an Exposure Mitigation Plan, a Soil Management and Disposal Plan, and Activity and Use Limitations. These documents and procedures are similar in purpose to those described in the Scope of Work and the Prospective Purchaser Agreement between ODEQ and the City of Cornelius. If submitted to ODEQ in acceptable condition, these materials may satisfy the applicable requirements of the Prospective Purchaser Agreement.
	<b>B.</b> The Exposure Mitigation Plan discussed in the ABCA, which references measures to control or limit exposures to contaminated soils, appears to have similar content to the Soil Cap Management Plan (SCMP) required by the SOW for the PPA if capping is to be utilized as a remedial technology. The purpose of the SCMP is to describe the cap materials and construction and establish requirements for inspection, maintenance and repair of the cap (i.e., repair being mandated in the event the cap is inadvertently or intentionally breached) to ensure it remains protective (i.e., prevents exposures to contaminated soil potentially posing human health risks).	Language was added to section 1.2:  Additionally, this report introduces and includes specific documents and procedures designed to address certain environmental challenges associated with the Site. These include an Exposure Mitigation Plan, a Soil Management and Disposal Plan, and Activity and Use Limitations. These documents and procedures are similar in purpose to those described in the Scope of Work and the Prospective Purchaser Agreement between ODEQ and the City of Cornelius. If submitted to ODEQ in acceptable condition, these materials may satisfy the applicable requirements of the Prospective Purchaser Agreement.
	<b>C.</b> The Activity Use Limitations (AULs) discussed in the ABCA appear comparable to the Easement and Equitable Servitudes (E&ES) executed by the City of Cornelius in January 2025 and recorded with Washington County as Exhibit C to the PPA Consent Order. Although the E&ES does not include a specific restriction on future residential use of the site, the E&ES includes, in part, prohibitions on construction of future buildings for human occupation without DEQ approval of development plans incorporating vapor mitigation engineering controls and extraction of groundwater for beneficial uses. These and other use restrictions in the E&ES are intended to mitigate unacceptable risks to future site occupants (i.e., occupational workers and/or residents) from selected exposure pathways.	Language was added to section 1.2:  Additionally, this report introduces and includes specific documents and procedures designed to address certain environmental challenges associated with the Site. These include an Exposure Mitigation Plan, a Soil Management and Disposal Plan, and Activity and Use Limitations. These documents and procedures are similar in purpose to those described in the Scope of Work and the Prospective Purchaser Agreement between ODEQ and the City of Cornelius. If submitted to ODEQ in acceptable condition, these materials may satisfy the applicable requirements of the Prospective Purchaser Agreement.
	<b>D.</b> Please consider adding discussion to the ABCA indicating the Soil Management and Disposal Plan, Exposure Mitigation Plan and AULs referenced in the ABCA may have content comparable to documents required of the City of Cornelius by the SOW for the PPA and if prepared to DEQ's satisfaction, could satisfy the relevant requirements of the PPA.	Language was added to section 1.2:  Additionally, this report introduces and includes specific documents and procedures designed to address certain environmental challenges associated with the Site. These include an Exposure Mitigation Plan, a Soil Management and Disposal Plan, and Activity and Use Limitations. These documents and procedures are similar in purpose to those described in the Scope of Work and the Prospective Purchaser Agreement between ODEQ and the City of Cornelius. If submitted to ODEQ in acceptable condition, these materials may satisfy the applicable requirements of the Prospective Purchaser Agreement.
ODEQ General Comment 2	DEQ generally concurs with the basis for the recommendations of the ABCA. Specifically, DEQ understands that information suggesting a high density of subsurface utilities in the western portion of the property, coupled the potential to undermine nearby structures if underground storage tanks (USTs) are decommissioned by removal, may make removal of petroleum-contaminated soil in proximity to the USTs infeasible (i.e., scoring low for ease of implementation). However, surface soils impacted by metals may be generally collocated with product piping that must be removed (and confirmation samples collected) as part of the UST decommissioning work. The ABCA should consider the practicality of performing over-excavation of shallow metal-impacted soils in conjunction with removal of tank infrastructure. Pairing this work may affect the scoring of remedial alternatives S1 and S2 regarding ease of implementation and sustainability.	With regards to this ABCA, the UST decommissioning is not considered part of the cleanup and as such, it should not be considered as part of Metal Soil cleanup sections. The ease of implementation comparison within this section only compares the alternatives S1 to S2 and does not consider the impact of UST decommission on the ease of implementation for soils cleanup. However, a note was included in Section 6.1.2 to acknowledge this.
ODEQ General Comment 3	DEQ questions whether the recommendation to restrict future residential use of the site in an AUL is necessary. Regarding metals in soil, arsenic would be cleaned up to background, which does not distinguish between residential or occupational worker scenarios. Lead was detected in one of 12 soil samples at a concentration only slightly above the residential risk-based concentration (RBC) for direct contact and thallium is not a listed hazardous substance in Oregon cleanup regulations. Lastly, the City of Cornelius has not ruled out future mixed-use development and mitigating vapor intrusion risks to be protective of residential receptors is not significantly more difficult to implement than mitigating to be protective of only occupational worker receptors. The need for the prohibition on future residential use of the site should be revisited as the City's development plans take shape and more information regarding site conditions becomes available from the Site-Specific Assessment (SSA) planned by DEQ.	With regards to metals in soils, the ABCA does not recommend AULs with the alternatives proposed. The AULs mentioned in the ABCA refer to petroleum-related groundwater and soil vapor contamination. Although both Alternatives V1 and V2 aim to address petroleum contamination such that residential site use restrictions would hopefully not be necessary, the timing for redevelopment of the Site is unknown, and AULs could provide a near term solution that would allow redevelopment to progress while confirmation of groundwater and soil vapor below RBCs may still be in progress. Additionally, the AULs for residential use refer to first floor residential use restrictions as the Site currently stands. If the ODEQ SSA and cleanup actions reveal that such AULs are not warranted at that time then the need for residential prohibition should be revisited. Both bullets related to AULs in Section 4.2.2 and 4.2.3 were caveated with the statement "If necessary, ".
ODEQ Specific Comment 1	Section 3.2 Exposure Scenarios and Pathways.  DEQ has not established generic or site-specific RBCs for the Adult and Child Site Visitor, Trespasser, or Recreational Scenarios (Current and Future). DEQ does not routinely evaluate these exposure scenarios for sites where construction of a commercial or mixed-use building is anticipated; such risks are anticipated to be low in the absence of special circumstances regarding development (e.g., construction of a park or extensive playground area). Please add language indicating cleanup to residential RBCs is assumed to adequately address such risks for this site.	<b>Language was added to Section 3.2 under the exposure scenario section:</b> It is important to note that ODEQ has not developed generic or site-specific RBCs for the Adult and Child Site Visitor, Trespasser, or Recreational scenarios, whether current or future. In addition, ODEQ typically does not evaluate these exposure scenarios for sites where commercial or mixed use development is planned, as the associated risks are generally considered low unless there are specific circumstances related to the development, such as the inclusion of a park or a large playground.
ODEQ Specific Comment 2	Section 4.2.1 Alternative V1 – In Situ Injections, Vapor Intrusion Mitigation, and Groundwater AULs.  To clarify, DEQ's preference is that engineering controls to mitigate vapor intrusion risks to occupants of future buildings would include a vapor barrier paired with an active or passive vapor mitigation system (e.g., sub-slab depressurization or sub-slab ventilation). Please remove language suggesting that implementation of a vapor barrier or vapor mitigation system would be acceptable to DEQ.	References to the installation of soil vapor barriers and/or sub-slab vapor extraction systems was changed to "soil vapor barriers and sub-slab vapor extraction systems".

<p>ODEQ Specific Comment 3</p>	<p>Section 4.4 Alternatives Considered but Not Carried Forward to Detailed Analysis.</p> <p>DEQ notes the general predominance of fine-grained site soils may also limit the effectiveness of in-situ injections to address vapor intrusion risks from petroleum hydrocarbons and associated volatile constituents (Alternative V1). Detailed information regarding the presence, distribution and extent of soil heterogeneities (i.e., more permeable layers where the bulk of the contaminant mass tends to accumulate) for the site is limited. The lack of such information, typically obtained using high resolution site characterization methods, may result in ineffective delivery of remediation agents to source areas and more rapid rebound behavior. In evaluating the in-situ injections, this or other sections of the ABCA (e.g., Sections 5.2.3 and 6.2.4) should acknowledge/discuss rebound as a factor potentially impacting long-term reliability of in-situ injections.</p>	<p><b>Language was added to Section 5.2.3:</b></p> <p>Although in-situ injection technologies can be effective at reducing petroleum hydrocarbon concentrations in the short term, the potential for contaminant rebound presents a key consideration in evaluating the long-term reliability of this remedy. Rebound may occur as residual contamination in low-permeability zones or sorbed phases diffuses back into the treated groundwater plume after amendment concentrations decline. To address this, the injection design should incorporate considerations of subsurface heterogeneity and includes monitoring wells positioned to detect potential rebound. The performance monitoring plan should include groundwater sampling following injection to assess whether contaminant concentrations remain below cleanup levels. If rebound is observed, the Site may require additional injection events, transition to a different remedial strategy, or the implementation of contingency measures.</p> <p><b>Language was added to Section 6.2.4:</b></p> <p>Although in-situ injection technologies can be effective at reducing petroleum hydrocarbon concentrations in the short term, the potential for contaminant rebound presents a key consideration in evaluating the long-term reliability of this remedy.</p>
	<p>Section 5.2.3 Detailed Analysis of Alternative V1 – In Situ Injections, Vapor Intrusion Mitigation, and AULs .</p> <p>a . Under “Sustainability, Long-Term Effectiveness, and Resiliency”, DEQ agrees that emissions and energy use associated with Alternative V1 are relatively less when compared to Alternative V2. However, if an active vapor mitigation measure is necessary and modeling indicates unacceptable discharges to air such that effluent treatment is necessary, air pollutant emissions could be higher in the short term. In addition, effluent treatment (i.e., if required) could result in increased energy use and emissions associated with transportation, deployment and replacement of treatment equipment (e.g., activated carbon vessels) as needed. Although revisions to Tables B-1 and B-2 in the Environmental Footprint Analysis (Appendix B) are not warranted at this time (i.e., the ABCA may be revised based on information obtained from the planned SSA by DEQ), the ABCA should acknowledge these factors as potential contributors to the environmental footprint. Comment also applies to Section 5.2.4.</p>	<p><b>Language was added to Section 5.2.3:</b></p> <p>It is important to consider that if the in-situ treatments do not achieve the intended reduction in contamination, even when combined with the proposed vapor mitigation, and if results suggest that active vapor treatment such as air stripping or thermal methods is required, there is potential for continued greenhouse gas emissions. This scenario was not included in the original Environmental Footprint Analysis. However, if future sampling provides new Site-specific information, the analysis should be revisited and updated accordingly.</p> <p><b>Language was added to section 5.2.4:</b></p> <p>It is important to consider that if soil removals do not achieve the intended reduction in contamination, even when combined with the proposed vapor mitigation, and if results suggest that active vapor treatment such as air stripping or thermal methods is required, there is potential for continued greenhouse gas emissions. This scenario was not included in the original Environmental Footprint Analysis. However, if future sampling provides new Site-specific information, the analysis should be revisited and updated accordingly.</p>
	<p><b>Section 5.2.3 Detailed Analysis of Alternative V1 – In Situ Injections, Vapor Intrusion Mitigation, and AULs.</b></p> <p>b . In evaluating the long-term effectiveness of Alternative V1, the ABCA should consider/discuss the potential for rebound (i.e., as revealed by groundwater monitoring and performance soil gas monitoring), which is a common occurrence when remediation products are injected into the subsurface and may have the potential to reduce long-term effectiveness. Comment also applies to Table 2 under Section 6.2.5.</p>	<p>This has been addressed in section 5.2.3 and 6.2.4. See ODEQ Specific Comment 3 within this comment matrix.</p>

ODEQ Specific Comment 4	<p>Section 5.2.3 Detailed Analysis of Alternative V1 – In Situ Injections, Vapor Intrusion Mitigation, and AULs.</p> <p>c. This section states that in-situ injections will be performed within an approximate 7,500 square-foot area "...within the footprint of the UST basin". Assuming that most of the USTs will be decommissioned in place, it is not clear if the work will result in one continuous UST basin or multiple smaller excavations not laterally contiguous. As a result, locations with elevated contaminant levels identified during the investigation (e.g., soil boring BH8, monitoring well MW-6 and soil vapor sampling points VP-3 and VP-5) may lie outside the UST basin footprint. Please revise the figure attached to the to show the footprint of the assumed 7,500 square-foot UST basin area where in-situ injections are proposed.</p>	<p>Language in section 5.2.3 and more specifically in the Cost subsection was changed from:</p> <p>"In-situ injections would be completed within the footprint of the UST basin (approximately 7,500 square feet)".</p> <p>And changed to:</p> <p>"In-situ injections would be completed within and around the UST basin (calculated to be approximately 7,500 square feet based on lateral PCS)".</p> <p>I believe this is simply a misunderstanding of this section and injection area. This section does not reference an excavation, and language was added to clarify that the 7,500-sf area is the injection area and not the excavation area. Figure 1 shows the footprint of the 7,500-sf injection area along with the PCS removal extents in the area of the USTs and the metal soil removal areas. The injection area covers MW-6 to BH13 and includes VP-3 and VP-5. No changes were made to the figure.</p>
	<p><b>Section 5.2.3 Detailed Analysis of Alternative V1 – In Situ Injections, Vapor Intrusion Mitigation, and AULs.</b></p> <p>d. This section states that 15 field days for three field staff are assumed to complete the in-situ injections. However, it is not clear if the 15 days of field time would be expended in one mobilization or multiple mobilizations. For example, if three field staff mobilize concurrently for five days, this would suggest planning for one injection event and follow-up events are not anticipated. Please confirm the anticipated number of staff for oversight of the injection event and the number of injection events covered by the cost estimate. See also Specific Comment: <i>Matter of Style</i>.</p>	<p>Language in section 5.2.3 and more specifically in the Cost subsection was changed from:</p> <p>"It will take three field staff 15 field days to complete the injections."</p> <p>And changed to:</p> <p>"It is estimated the injections will commence with a single mobilization will take three field staff (or field staff pay equivalent) approximately 15 field days to complete the injections. This injection event is considered single event".</p> <p>The ABCA serves as a conservative cleanup alternatives plan designed to secure funding and provide insight into next steps, and it is not a comprehensive outline of all steps and procedures for each cleanup alternative presented. The level of detailed requested typically is forthcoming in a remedial work plan or CAP.</p>
	<p>Section 5.2.3 Detailed Analysis of Alternative V1 – In Situ Injections, Vapor Intrusion Mitigation, and AULs.</p> <p>e. DEQ's understands the City of Cornelius has not yet formulated a development plan (or even a conceptual vision) for the property, although the possibility of mixed-use development has been mentioned in previous discussions with the DEQ project team. If upon completion of the SSA it is determined that additional funding beyond DEQ's State Response Grant is needed, DEQ anticipates revising the ABCA to consider site conditions as understood at that time.</p>	<p>The proposed future use of the Site under section 3.1.2 was derived from the City's TBA application. Agreed that depending on ODEQ's SSA, the ABCA should be advised accordingly. No update to the report was made.</p>
ODEQ Specific Comment 5	<p><b>Appendix A Cost Estimates for Site Cleanup of Soil Vapor:</b></p> <p>Although it is stated in Section 5.2.3 of the ABCA that the estimate is scalable, the estimated cost for installation and testing of a DEQ-approved vapor barrier AND active or passive sub-slab mitigation system for a 1,500 square-foot building seems low. DEQ acknowledges this estimate may be revised as additional information regarding development plans and subsurface conditions becomes available based on the findings of the SSA planned by DEQ.</p>	<p>The cost estimate here considers a vapor barrier, sub-slab piping, inline exhaust fan, and a stack. These numbers are consistent with this type of system installation. No changes were made to the cost estimate.</p>
ODEQ Specific Comment 6	<p><b>Appendix B Environmental Footprint Analysis:</b></p> <p>Section B.1.3 Vapor Intrusion. It is unclear from the discussion provided if the in-situ injections estimated to be completed over 15 days, and assuming 150 equipment hours for a direct-push drill rig, represent one injection event or multiple events. See also comments related to the potential for rebound (Specific Comments 3 and 4b).</p>	<p>This represents a single event. Clarifying language was added to section B.1.3.</p>
ODEQ Specific Comment 7	<p><b>Matter of Style:</b></p> <p>Remedial alternatives associated with petroleum COCs in soil vapor are referred to as V1 and V2 in the ABCA and as both V1/V2 and V11/V12 in the Environmental Footprint and associated tables (Appendix B). The naming convention should be made consistent between the documents.</p>	<p>The Environmental Footprint Analysis and Appendix B were updated to show V1 and V2.</p>