



Response to Comments on the  
December 9, 2016 Revised Feasibility Study  
Received on December 15, 2016  
Groundwater and Sediment Remediation  
Occidental Chemical Corporation, Tacoma, WA

- 1 Page 2: highlighted 'approved' with respect to the CSM Report.

Comment: 'conditionally'

Response: On April 10, 2014, the Agencies conditionally approved the Revised Draft Conceptual Site Model (CSM) Report submitted on March 24, 2014. OCC incorporated the Agency comments associated with the conditional approval and submitted the Final CSM Report on April 16, 2014. Therefore, OCC believes that it is appropriate to consider the Final CSM Report to have been approved.<sup>1</sup>

- 2 Page 12: highlighted 'CB/NT site SQOs.' with respect to the 2016 Anchor QEA Data Summary Report that concluded no exceedances of CB/NT site SQOs were observed.

Comment: 'also needs to site [sic] the MTCA SMS'

Response: The CB/NT site SQO's were developed in consideration of the MTCA SMS. Therefore, the following text was added to the end of the first sentence - ', which were developed in consideration of the MTCA Sediment Management Standards (SMS).'

- 3 Page 12: highlighted 'in the Hylebos is not necessary and' with respect to developing remedial alternatives for sediments.

Comment: 'Delete "not necessary."'

Response: Replaced the sentence with the following sentences - 'Therefore, based on the results presented in the 2016 Anchor QEA Data Summary Report for sediment and porewater, there is no need to develop an FS or remedial alternatives for sediments at this time. It should be noted that it has been over 10 years since dredging was completed and re-contamination of the sediments has not occurred based on the 2016 data. Additionally, there is evidence from data collected in the Hylebos that natural recovery is occurring as predicted for the CB/NT site. Some future monitoring of COC concentrations in sediments may be appropriate to ensure that existing conditions of sediment quality do not change over time, however unlikely this may be.'

---

<sup>1</sup> The FS is unrevised in response to the comment.

- 4 Page 13: highlighted 'significant' with respect to a potential porewater migration pathway associated the Site.

Comment: 'at this time'

Response: Replaced the last sentence with the following sentences - 'Therefore, this migration pathway is not considered significant at this time. Based on the fact that the remedy for the Site will include containment, it is unlikely that future impacts will occur. Some future monitoring of COC concentrations in porewater may be appropriate to ensure that existing conditions of porewater quality do not change over time, however unlikely this may be.'

- 5 Page 13: highlighted 'The vapor intrusion (VI) investigation'.

Comment: 'Reference Ecology memos on VI and note that the Agencies do not agree with this section.'

Response: OCC is not aware of Ecology memos on VI that are referenced and therefore cannot reference said memos. Therefore, OCC does not understand what the disagreement is with this Subsection.<sup>1</sup>

- 6 Page 19: highlighted 'This' with respect to the sentence 'This has been confirmed by the findings of the 2016 Anchor QEA porewater investigation, which found no exceedances of AWQC near the mudline in these areas (see Subsection 2.4.6).'

Comment: 'Remove this last sentence.'

Response: This statement is appropriate based on the data presented in the 2016 Anchor QEA Data Summary Report.<sup>1</sup>

- 7 Page 19: highlighted heading 'Migration to Ambient and Indoor (Potentially) Air'.

Comment: 'Section needs to reference Ecology VI memos and monitoring needs to be identified. Revise per comments on Section 2.4.7.'

Response: OCC is not aware of Ecology memos on VI that are referenced and therefore cannot reference said memos. Additionally, this Subsection is part of the Contaminant Fate and Transport subsection of the Conceptual Site Model section and therefore discussing potential future monitoring is not appropriate at this location in the FS Report. VI monitoring is identified in Subsections 2.4.7 and 4.2.3.<sup>1</sup>

- 8 Page 22: highlighted 'Therefore, there are no unacceptable risks associated with sediment.'

Comment: 'Delete this sentence. Add reference to MTCA SMS.'

Response: Deleted sentence. Added the following to the end of the previous sentence - ', which were developed in consideration of the MTCA SMS.' (See response to Comment 2).

- 9 Page 23: highlighted 'Therefore, there are no unacceptable risks associated with sediment.'

Comment: 'Delete sentence.'

Response: Agree.

- 10 Page 23: highlighted 'Therefore, there are no unacceptable risks associated with the porewater, which represents ecological exposure pathways at the Site related to the potential for discharge of impacted groundwater to the Waterway.'

Comment: 'Delete this sentence. Add sentence noting that ongoing monitoring will be necessary to insure [sic] that existing conditions do not change over time with remedy implementation.'

Response: Deleted sentence. Added the following sentence - 'Based on the fact that the remedy for the Site will include containment, it is unlikely that future impacts will occur. Some future monitoring of COC concentrations in sediment and porewater may be appropriate to ensure that existing conditions of sediment and porewater quality do not change over time, however unlikely this may be.'

- 11 Page 23: highlighted 'based upon evaluations of site-specific risk accomplished by OCC and by the Agencies working with a contractor (Ridolfi Environmental), and ' with respect to media-specific RAGs for the Site developed cooperatively with the Agencies.

Comment: 'Delete. Take this back to what it was previously. Keep sediments separate.'

Response: This statement is factual with respect to the media-specific RAGs for the Site developed cooperatively with the Agencies. There is no need for a separate FS for sediments nor developing remedial alternatives for sediments at this time based on the 2016 Anchor QEA Data Summary Report. Previously, sediments were not included in this FS because the current conditions of the sediments were unknown. It is appropriate to include these current data in the FS report. Also, see response to Comment 3.<sup>1</sup>

- 12 Page 23: highlighted ', except for sediment that will be included in a separate document specifically associated with potential sediment remedial alternatives, if needed:' with respect to presenting media-specific RAGs for the Site in a table.

Comment: 'Restore this phrasing. Remove sediment from table.'

Response: See responses to Comments 3 and 11.<sup>1</sup>

- 13 Page 24: highlighted Sediment Remedial Action Goals (RAGs) in Table 3.1.

Comment: 'Remove.'

Response: See responses to Comments 3 and 11.<sup>1</sup>

- 14 Page 25: highlighted 'sediment, for which the area and volume is zero (0) since reducing risk is not required based on the 2016 Anchor QEA investigation).' with respect to calculating areas and volumes of media to which treatment might be applied.

Comment: 'Restore to previous version.'

Response: See responses to Comments 3 and 11.<sup>1</sup>

- 15 Page 27: highlighted 'containment' with respect to the No Action alternative that excludes the presented Common Elements to the Remedial Alternatives.
- Comment: 'Delete.'
- Response: Agree.
- 16 Page 27: highlighted 'containment' with respect to the No Action alternative that excludes the presented Common Elements to the Remedial Alternatives.
- Comment: 'Delete.'
- Response: Agree.
- 17 Page 29: highlighted 'Increasing concentrations over time might indicate vapor migration from soil and/or groundwater that could affect indoor air concentrations negatively (i.e., higher indoor air concentrations), which might require reassessment of potential mitigation for a building. Decreasing or constant concentrations over time would indicate that reassessment is unnecessary.' with respect to a soil vapor monitoring program.
- Comment: 'Delete.'
- Response: The two sentences were deleted.
- 18 Page 30: highlighted 'Containment' with respect to the No Action alternative for Containment Alternatives.
- Comment: 'Delete.'
- Response: Agree.
- 19 Page 32: highlighted 'following collection of additional data in the summer of 2016.' with respect to the sentence; 'As noted in Subsection 2.4.5, sediment areas outside (i.e., east) of the vertical barrier wall are not part of this FS and will be addressed in a separate document following collection of additional data in the summer of 2016.'
- Comment: 'Restore this sentence but delete this last phrase.'
- Response: See responses to Comments 3 and 11.<sup>1</sup>
- 20 Page 33: highlighted ' and subsequent discussions among the Agencies and OCC's team.' with respect to determination of VOC Mass Removal/Reduction Alternatives.
- Comment: 'Add reference to Agencies' preferred remedy memo.'
- Response: The Agencies' 'preferred remedy memo' was a one page attachment issued with an email dated October 11, 2016. The one page attachment was described as a 'Remedy description for tomorrow's call' and included a heading of 'Occidental Feasibility Study For discussion conference call on 10/12/16'. Therefore referencing subsequent discussions is appropriate since it encompasses the discussions regarding the October 11, 2016 email and all the other discussions

that have occurred since January 5, 2016 when the Agencies' comments on the 2015 FS report were issued.<sup>1</sup>

- 21 Page 35: highlighted 'No Action VOC' with respect to No Action alternative for VOC Mass Removal/Reduction Alternatives.

Comment: 'Make this the "No Additional VOC Mass Removal/Reduction" Alternative. Change paragraph to reflect this. '

Response: Added 'Additional' between 'No' and 'Action' here and other places in the document that reference this alternative.

- 22 Page 35: highlighted 'required by CERCLA and the NCP and is' with respect to No Action alternative for VOC Mass Removal/Reduction Alternatives.

Comment: 'Delete.'

Response: Agree. Also deleted same reference in Subsection 4.5.1 with respect to pH No Additional Action alternative.

- 23 Page 35: highlighted 'captured' with respect to modeling VOC mass removal.

Comment: 'Replace with "removed."'

Response: Agree. Also changed in other locations for consistency.

- 24 Page 35: highlighted '780,000 lbs presented in Appendix C.' with respect to revised DNAPL mass estimates.

Comment: 'Incorporate caveats about mass removal rates. Note that estimated removal rates are from modeling and are uncertain.'

Response: Added the following sentences - **'Note that estimated mass removal rates were determined using the three-dimensional (3D) groundwater flow model that was specifically constructed and calibrated for the Site and are uncertain. However, the Site groundwater flow model provides a useful tool to evaluate the potential effectiveness of the groundwater mass reduction remedial alternatives that incorporate groundwater extraction.'**

- 25 Page 36: highlighted '(dissolved) or 698,995 lbs (dissolved, sorbed, and DNAPL phases), which represents 15 or 90 percent, respectively, of the estimated total DNAPL mass of 780,000 lbs presented in Appendix C.' with respect to estimated mass removal rates and revised DNAPL mass estimates.

Comment: 'Add caveats as noted above.'

Response: Redundant. See response to Comment 24.<sup>1</sup>

- 26 Page 36: highlighted '(dissolved) or 719,904 lbs (dissolved, sorbed, and DNAPL phases), which represents 16.4 or 92 percent, respectively,' with respect to estimated mass removal rates.

Comment: 'Add caveats.'

Response: Redundant. See response to Comment 24.<sup>1</sup>

- 27 Page 36: highlighted heading 'VOC Mass Reduction Alternative MSP (Mass Reduction by Strategic Groundwater Pumping)'.

Comment: 'Note that this is different from the preferred alternative provided by the Agencies.'

Response: Acknowledged.<sup>1</sup>

- 28 Page 43: highlighted heading 'No Action pH Reduction/Enhanced Containment Alternative'.

Comment: 'See comment under 4.4.1.'

Response: Added 'Additional' between 'No' and 'Action' here and other places in the document that reference this alternative. See response to Comment 21.

- 29 and 30. Page 52: highlighted heading '*Other Factors to Consider*'.

Comment: 'Note that the remedy is being implemented by Ecology under an Ecology order and the CERCLA permit exemption does not apply. EPA and Ecology are working together to determine if the exemption can be applied to some portion of the remedy.'

Response: This is a CERCLA Site and therefore CERCLA is an Applicable Federal Law. Page 48 of the SOW includes the following sentence: '*No local, state, or federal permits will be required or obtained for on-site response actions performed under this SOW however, the substantive conditions of such permits shall be met.*' Furthermore, WAC 173-340-710 discusses requirements for identifying applicable local, state, and federal laws. The requirements in WAC 173-340-710 "...are similar to the ARAR (applicable, relevant, and appropriate requirements) approach of the federal superfund law. Sites that are cleaned up under an order or decree may be exempt from obtaining a permit under certain laws but they must still meet the substantive requirements of these laws. (See WAC 173-340-710(9).)" [(WAC 173-340-700(6)(a))].<sup>1</sup>

- 30 Page 55: Blank comment beside 'Consideration of public concerns - 10%'

Comment: [blank].

Response: None.<sup>1</sup>

- 31 Page 71: Comment with respect to sentence, 'The public made no comments related to VOC mass removal/reduction in these correspondences.'

Comment: 'Please note that the public only reviewed the remedial investigation report and associated documents. The focus was on data, not on alternatives for remedial action. It is a misleading to imply that the lack of a public comment on mass removal means the public is not concerned, when we did not ask the public to comment on the prospect of mass removal.'

Response: Deleted sentence.

32 Page 85: Comment with respect to sentence, 'The public made no comments related to pH reduction/enhanced containment in these correspondences.'

Comment: 'Same comment as provided in subsection 5.2.4'

Response: Deleted sentence.

The FS is revised in response to Comments 2, 3, 4, 8, 9, 10, 15, 16, 17, 18, 21, 22, 23, 24, 28, 32, and 33.