PG&E Responses to Comments on the Draft Soil Human Health and Ecological Risk Assessment Addendum (i.e., Post-NTCRA HHERA)

PG&E Topock Compressor Station, Needles, California

*Note: The title of the Draft Soil Human Health and Ecological Risk Assessment Addendum will be updated to "**Post-Soil Non Time Critical Removal Action Human Health and Ecological Risk Assessment Report (Post-NTCRA HHERA)** based on comment DTSC HERO-1 and is referred to as such throughout responses this Response to Comments Table.*

Item	Comment Number	Section/ Page	Reference Text	Comment	PG&E Response to Comment	DTSC Response to Comment	DOI Response to Comment	Tribes Response to Comment	Final Comment Resolution[1]
1	WB-1 (2/25/25)	Page ES-6, Section ES.3 HHRA Results, Paragraph 4, Point 1	NA	The Report concludes that the incremental lifetime cancer risks (ICLRs) and hazard indexes (HIs) for the campers, hikers and OHV riders were at or slightly above 1X10-6 and 1, respectively, for the potential exposure areas evaluated under post- NTCRA conditions when contribution of background arsenic risks are excluded and therefore, the AOCs potential exposure areas are safe and protective of all potential recreational receptors evaluated. While the Regional Water Board understands that most of the ICLRs for arsenic are attributed to arsenic background concentrations in soil and that these were already calculated or accounted for in the 2019 HHERA, and that depth/area-weighted values are being used to account for bias. Regional Water Board staff recommend that an evaluation and update of the ICLRs and HIs be done to include the arsenic concentration in the backfill material during the NTCRA activities at the applicable AOCs. This would provide a better understanding of potential exposure under post-NTCRA conditions in relation to all contaminants of potential concern (COPCs).	The exposure point concentrations (EPCs) for arsenic were not updated in this Addendum (referred to in these responses as the Post-Soil Non Time Critical Removal Action Human Health and Ecological Risk Assessment Report [Post-NTCRA HHERA], as requested by DTSC in comment DTSC-HERO-1), as arsenic was not identified as a risk driver in the 2019 Soil HHERA. Backfill material was not included in the EPC calculations. See also response to comment QUECHAN-1c. Furthermore, as stated in the NTCRA Completion Report (Jacobs 2025), DOI-approved clean onsite fill material and imported AB material were used as backfill. The backfill material conformed to the Topock Groundwater Remedy Soil Management Plan (SMP including updates to Table 2.4-1 [Reference List of Potentially Applicable Analytes and Associated Screening Levels Management Protocol for Handling and Disposition of Displaced Material], Jacobs 2022a) reuse criteria approved by DTSC (2022). Additionally, arsenic in backfill material used during the NCTRA activities is below the site-specific background threshold. Inclusion of backfill in the EPC calculations would not materially change the conclusions of the Post-NTCRA HHERA.				No additional revision to the document is required based on this comment. Response is complete.
2	WB-2 (2/25/25)	Table 5-4 HHRA Cancer Risk Estimate Summary	NA	The table shows various values in bold that are not explained in the table notes section. Provide an explanation of the meaning of bold values.	The values above the risk threshold value of 1 x 10^{-6} are bolded in Table 5-4. A footnote will be added to the table.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
3	WB-3 (2/25/25)	Section 5.4.1.2 Noncarcinogenic Health Effects, First paragraph	NA	The first paragraph is in point format but does not appear to be part of a list. Revise as applicable.	The point format will be removed from the first paragraph in Section 5.4.1.2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
4	WB-4a (2/25/25)	Table 5-5 HHRA Noncancer Hazard Estimate Summary.	NA	The Regional Water Board recommends that the title of Table 5-5 be revised to "HHRA Noncancer Hazard Index Estimate Summary" as the table presents HI values. Additionally, while Regional Water Board staff understand that scientific notation is typically used in hazard and risk assessments, the Regional Water Board recommends the data in Table 5-5 to be provided in decimal numbers given the low number of exponents, to aid in the comprehension of the data presented, and the comparison of the estimated values to the hazard indexes. In addition, the Hiker Shallow HI value for AOC 10 for 2 ft-scouring row shows a value in bold that is not explained in the table notes. Provide an explanation of the meaning of the bold value.	Table 5-5 will be revised to update the title. The HI values above 1 are bolded in the table. A footnote will be added to the table.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
4	WB-4b (2/25/25)	Table 5-5 HHRA Noncancer Hazard Estimate Summary.	NA	Additionally, while Regional Water Board staff understand that scientific notation is typically used in hazard and risk assessments, the Regional Water Board recommends the data in Table 5-5 to be provided in decimal numbers given the low number of exponents, to aid in the comprehension of the data presented, and the comparison of the estimated values to the hazard indexes.	Table 5-5 will be revised to change the HI values to decimal format.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
4	WB-4c (2/25/25)	Table 5-5 HHRA Noncancer Hazard Estimate Summary.	NA	In addition, the Hiker Shallow HI value for AOC 10 for 2 ft-scouring row shows a value in bold that is not explained in the table notes. Provide an explanation of the meaning of the bold value.	The HI values above 1 are bolded in the table. A footnote will be added to the table.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
5	WB-5 (2/25/25)	Exhibit 5-13 Baseline Scenario Estimated Cumulative Incremental Lifetime Cancer Risk and Hazard Index for the AOC 27 Potential Exposure Area Table – Document Page 68.	NA	The Regional Water Board recommends that the column margins of the title row be revised to properly line up with the item columns.	The column margins of the title row in Exhibit 5-13 will be revised to properly line up with the item columns.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
6	QUECHAN- 1a (2/28/25)		NA	The convoluted path that the soil risk assessment process has taken has made a thorough review and complete understanding of the risk assessment addendum a difficult task. Reviewing this addendum requires referencing several previous risk assessment documents, as well as documents related to the DOI NTCRA action. Furthermore, one of the key documents referenced in this addendum, the NTCRA completion report, was not finalized during the risk assessment review period and had no stakeholder review prior to finalization, resulting in an insufficient Tribal review/familiarization of the NTCRA document. Given that the risk assessment addendum frequently references the NTCRA completion report, the Tribes request sufficient time to review the NTCRA completion report before the risk assessment addendum is finalized. From the tribal perspective this is just one of many examples of a lack of coordination between lead agencies during the soil remediation activities at the site. The Tribes are challenged to understand why the agencies have not better coordinated efforts throughout the soil remediation in a more coherent manner that would reduce potential impact and honor the sanctity of this site.	Comment noted. See also response to comment QUECHAN-3.				Comment noted, no revision to the document is required. Response is complete.
6	QUECHAN- 1b (2/28/25)		NA	Due to the difficulty encountered in this review the Tribes are left with numerous general risk questions that they would like explained in greater detail. In addition, due to redundancy that is present within this risk assessment addendum (e.g. similar text used for each AOC risk appendix) many of the tribal comments on the document are repeated. In most cases even though a tribal comment is made to a specific section of the report, the comment should be understood as applicable to other sections/appendices of the addendum.	Comment noted. Resolutions to comments will be applied throughout the revised Post-NTCRA HHERA where applicable.				Comment noted, no revision to the document is required. Response is complete.

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6	QUECHAN- 1c (2/28/25)		NA	The Tribes request a summary be provided of how the new EPC calculations consider the clean fill material that was imported as part of the NTCRA. For example, are any of the AOC surface areas that include clean material included in EPC calculations? The Tribes request a clear explanation of how reporting limits are used in NTCRA confirmation sampling compared to reporting limits associated with pre-2019 soil samples. Are non-detect soil samples determined in NTCRA sampling included in the new risk data set?	Backfill material was not included in the EPC calculations. As described in Section 3.1 of the Post-NTCRA HHERA, in-place native soil samples (i.e., NTCRA confirmation samples and remaining historical samples) were used to update EPCs for the risk-driving COPCs. Depth-weighted EPCs were calculated with data from in-place native soil samples using the same depth-weighting approach used in the 2019 Soil HHERA and as described in Section 4.2 of the Post-NTCRA HHERA. Using this process, COPC concentrations in native samples present below backfill are conservatively assumed to extend up to the new ground surface. This approach is consistent with the depth weighting and EPC calculation approach Agencies- approved in the Soil Risk Assessment Work Plan (RAWP) documents (Arcadis 2008, 2009, 2015), DTSC-issued directive letter (DTSC 2017), and used in the Agencies- approved 2019 Soil HHERA (Arcadis 2019, 2020; DOI and DTSC 2020). The same depth-weighting and EPC calculation approach was summarized in the Proposed Approach to Update the Human Health and Ecological Risk Assessment after Completion of the 2023 Non-Time Critical Removal Action (Work Plan Technical Memo) (Arcadis 2024), submitted to DOI and DTSC on January 26, 2024, and was presented to the Tribes in the April 29, 2024 webinar. Additional discussion as detailed below will be included in the revised Post-NTCRA HHERA. "Note that future engineering or institutional controls are not included in the Post-NTCRA HHERA. As such, the estimated risks are likely overestimated. Furthermore, as stated in the NTCRA Completion Report (Jacobs 2025), DOI-approved clean onsite fill material and imported AB material were used as backfill. The backfill material conformed to the Topock Groundwater Remedy Soil Management Plan (SMP, including updates to Table 2.4-1 [Reference List of Potentially Applicable Analytes and Associated Screening Levels Management Protocol for Handling and Disposition of Displaced Material], Jacobs 2022a) reuse criteria approved by DTSC (2022). Additionally, arsenic concentrations in the fill material are below site-specific background thresholds. As such, inclusion of backfill material in the EPC calculations would not materially change the conclusions of the Post-NTCRA HHERA. For non-detects, reporting limits for historical and NTCRA confirmation samples are handled in the same manner consistent with the Agencies-approved RAWP documents (Arcadis 2008, 2009, 2015; DOI 2009a,b, DOI 2015, DTSC 2009, DTSC 2015), DTSC-issued directive letter (DTSC 2017), and Agencies-approved 2019 Soil HHERA (Arcadis 2019, 2020; DOI and DTSC 2020). A value of ½ the reporting limit (RL) was used for non-detects in the depth-weighting process and the resulting depth-weighted data for in-place native soil sample locations are used in ProUCL to calculate a representative 95UCL as the EPC."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
6	QUECHAN- 1d (2/28/25)		NA	In addition, the Tribes request a summary for each AOC regarding how many pre 2019 soil sample locations were removed during the NTCRA action and how many new NTCRA confirmation samples were added to the risk assessment data set.	To provide clarity on the number of soil sample locations from each depth interval that changed between the 2019 Soil HHERA and Post-NTCRA HHERA, Table AOC-1.1 in each AOC appendix will be updated to include the full dataset evaluated for the 0 to 10 ft bgs interval in the 2019 HHERA. The original and current sample depths, excavation status, and backfill depth will be provided in this table. See also response to comment QUECHAN-15.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
7	QUECHAN-2 (2/28/25)		NA	During the meetings prior to the initiation of the NTCRA action the Department of Fish and Wildlife (February 12 ,2021, Topock Soil EE/CA Response to Comment Consultation Meeting Agenda) committed to using a 10^{-5} cancer level threshold for cleanup of subsurface soils. This approach appears within the NTCRA completion report, however, is not mentioned within the addendum. The Tribes would like to see language added to the report which documents and references this NTCRA approach implemented by Fish and Wildlife.	The risk threshold of 10^{-5} cancer risk level was used in the EE/CA and presented in the NTCRA Completion Report for selecting the numerical remedial action goal for hexavalent chromium in subsurface soils from 2 feet below ground surface to 10 feet below ground surface. This clarification of the risk threshold used in the EE/CA for risk management will be provided in the revised Post-NTCRA HHERA. As stated in Section 5.4.1.1 of the Post- NTCRA HHERA, "Cal EPA's point of departure for excess ILCR for all receptor groups (i.e., residential populations) is 1 x 10^{-6}, and risk-management decisions may raise this criterion depending on site-specific conditions."			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
8	QUECHAN-3 (2/28/25)	ES-1	Soil Non-Time-Critical Removal Action Completion Report (Jacobs 2024)	Many of the documents reference information taken from the Soil Non-Time-Critical Removal Action Completion Report. Topock Compressor Station, Needles, California. September. Draft in progress. The document wasn't finalized in time, so Tribes didn't have enough review period for the NTCRA document. This is concerning because the HHERA addendum relies on a draft document for its assumptions. The Tribes believe that this is an example of an out-of-phase approach to the cleanup. Since the NTCRA action has altered the understanding of the site condition, the Tribes request sufficient time to review the finalized NTCRA documents before completing the review of the risk assessment addendum.	Comment noted. The Post-NTCRA HHERA was submitted on December 13, 2024. DTSC transmitted the Post-NTCRA HHERA for stakeholder review on December 17, 2024. The NTCRA Completion Report (Jacobs 2025) was submitted on February 3, 2025 and Stakeholders were notified by DTSC that it was available to access and view on the Topock Remediation website on February 3, 2025. DTSC extended the review period for the Post-NTCRA HHERA from Jan 30 to Feb 28, 2025. See also response to comment QUECHAN-1a.				Comment noted, no revision to the document is required. Response is complete.
9	QUECHAN-4 (2/28/25)		This H H E R A Addendum evaluates current conditions to confirm the effectiveness of the NT C R A and updates the risk characterization presented in the 2019 Soil Human Health and Ecological Risk Assessment Report (2019 H H E R A; Arcadis U.S., Inc. [Arcadis] 2019).	It is our understanding that the HHERA addendum was drafted to recalculate risk levels based on the current soil conditions at the site and not to confirm effectiveness of the NTCRA. As currently stated, in the HHERA addendum it would suggest that the NTCRA and risk assessment process were a coordinated effort. This statement should be revised to accurately depict why there was a need for a risk assessment addendum (i.e. the lead agencies have divided the soil clean up approach in a manner that has led to significant changes to the site resulting in the need for a secondary risk assessment).	As described in Section 2.2 of the Post-NTCRA HHERA, soil NTCRA activities were intended to remove contaminants exceeding the numerical RAGs and debris within 10 feet of the ground surface to achieve the RAOs. However, soil exceeding the numerical RAGs or debris remains in a few places associated with Soil NTCRA removals as well as a few isolated locations outside of the Soil NTCRA removal areas due to safety, cultural, or structural integrity concerns. As outlined in the Agency-approved NTCRA Work Plan (Jacobs 2022b, DOI 2022), the Post-NTCRA HHERA was necessary to document conditions in the NTCRA areas following completion of the work and to determine whether or not the NTCRA RAOs were accomplished, specifically RAO 1: Reduce human and ecological risk related to the COCs in soil up to 10 ft bgs on or adjacent to federal land by removing soil at locations identified as driving risk in the HHERA. The NTCRA Work Plan (Table 1-1; Jacobs 2022b) states that "Following the Soil NTCRA, risk will be recalculated for the relevant exposure areas and compared to numerical RAGs, specifically RBRGs defined in the HHERA. Risk calculations will be performed during implementation of the removal action and will include existing soil concentration data for sample locations not removed in the Soil NTCRA and new data from confirmation samples. RAO 1 will be met when the residual 95UCL of the mean concentration for the potential exposure area is less than or equal to the RBRG." As noted by DOI (2021), the NTCRA may not be the final remedy for the AOCs/SWMUs. The Post-NTCRA HHERA also provides risk characterization that allows for determination as to whether there is potential for unacceptable risk to human health and the environment based on potential exposures to current soil conditions in the areas where NTCRA removals were conducted and whether additional remediation may be warranted as part of the final remedy. The wording of the Post-NTCRA HHERA objective will be updated throughout to be consistent with the objectives stated in the NTCRA WP, which is to state that the " The objectives of this Post-NTCRA HHERA are to: (1) Document that the NTCRA RAO 1 was achieved, specifically by presenting exposure area specific EPCs for comparison to the numerical RAGs (e.g. RBRGs) in areas outside of the TCS fence line where N T C R A removals were conducted; and (2) Provide updated risk estimates for human health and the environment based on potential exposures to current soil conditions in the NTCRA areas." Furthermore, the title of the risk assessment document will be revised to "Post-Soil Non-Time Critical Removal Action (NTCRA) Human Health and Ecological Risk Assessment (HHERA) Report", as requested by DTSC in comment DTSC HERO-1. See also responses to comments QUECHAN-12 and QUECHAN-13, DTSC HERO-1, DOI-1, and DOI-2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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10	QUECHAN-5 (2/28/25)	ES-2	Thus, two different datasets were used to calculate EPCs for the HHRA:	A significant effort was put into discussions during the development of the original HHERA work plan which allowed for the Tribes to understand how the soil dataset was developed and used in EPC calculation. A similar level of effort, however, was not conducted preventing a thorough understanding of how the new soil data (NTCRA confirmation sampling) was to be concatenated with existing soil data (pre 2019 soil data). Specifically, the HHERA addendum work plan only provided a high-level summary, and no comprehensive presentations were made to allow tribal understanding or questioning. This unnecessary complexity makes it extremely difficult to obtain a clean understanding of exactly what data were included in the updated EPCs (a result of a soil removal post HHERA finalization).	Sections 1.0 and 3.0 of the Post-NTCRA HHERA stated the EPC calculation process implemented in the Post-NTCRA HHERA was the same as in the Agencies-approved 2019 Soil HHERA (Arcadis 2019, 2020; DOI and DTSC 2020) and conducted using methods from the Agencies-approved RAWP documents (Arcadis 2008, 2009, 2015; DOI 2009a,b, DOI 2015, DTSC 2009, DTSC 2015) and DTSC-issued directive letter (DTSC 2017), using samples collected from in-place native soil to derive the EPCs. This process was presented to the Tribes in an April 29, 2024 webinar. The webinar and the Post-NTCRA HHERA stress that consistency in the EPC approach (and other risk assessment methods) was maintained between the 2019 Soil HHERA and Post-NTCRA HHERA so that the results are directly comparable. Tables documenting the historical samples removed during the NTCRA, and historical and NTCRA samples remaining in place and used for EPC calculation will be added to each AOC-specific appendix in the Post-NTCRA HHERA. See also response to comment QUECHAN-1d.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
11	QUECHAN-6 (2/28/25)	ES-2	Depth-weighted EPCs and area-weighted EPCs	Please discuss if EPCs calculated using the updated soil data are more appropriately reflected using area- weighted or depth-weighted criteria. It would appear from the soil sample location maps that there are far fewer sample locations within the NTCRA action areas than in other areas of the AOC. If this is true, wouldn't the EPC value be disproportionately weighted towards impacted soils rather than reflecting the presence of clean fill used in the NTCRA areas?	As noted by DTSC (Comment DTSC HERO-4), risk estimates calculated using depth-weighted or area- weighted EPCs produce similar results. Uncertainties associated with the biased sampling designs and NTCRA confirmation sampling are discussed in Section 5.5.1.1.1 of the Post-NTCRA HHERA and are common in remedial investigations targeting known source areas. Outside of the NTCRA action areas, soil COPC concentrations are below the RAGs and are not considered impacted based on potential effects to human health or the environment. See also response to comment QUECHAN-1c. Use of remaining native soil samples (not accounting for backfill) in the EPC calculations is expected to result in conservative exposure estimates. Furthermore, the inclusion of backfill material in the EPC calculations would not materially change the conclusions of the Post-NTCRA HHERA.			Backfill material was not included in the EPC calculations. Use of remaining native soil samples (not accounting for backfill) in the EPC calculations is expected to result in overly conservative unrealistic exposure estimates.	The Post-NTCRA HHERA was updated asto include additional discussion of the uncertainties associated with the treatment of backfill in the EPC calculations
12	QUECHAN-7 (2/28/25)	ES-2	Although DTSC (DTSC 2017) required evaluation of these A O C-specific exposure areas due to NTCRA activities, the conclusions and recommendations for the HHRA were based on the risks estimated for the O C S potential exposure area, which is consistent with the 2019 H H E R A (Arcadis 2019). The O C S exposure area encompasses multiple A O C- specific exposure areas, including areas where N T C R A removals were conducted and areas where no N T C R A removals were conducted.	The omission of a risk assessment conducted on the entire OCS (outside compressor station area) is a glaring omission in this addendum and prevents it from aligning with the previous risk assessment finalized for the site. As stated, numerous times in both the finalized risk assessment and the draft addendum, human activities at the site will not occur in a single AOC but would be distributed across the landscape. The Tribes have repeatedly voiced concern regarding risk communications that are based on overly conservative assumptions. This is of relevance as the risk assessment addendum is to be used in risk management decisions. It is imperative that quantitative risk values for the realistic OCS exposure area be provided for consistency with the finalized risk assessment. The Tribes request an update to the HHERA addendum that includes the risk calculations for the entire OCS as was done in the initial risk assessment.	As outlined in the Work Plan Technical Memo (Arcadis 2024) that summarized methods approved by the Agencies in the RAWP documents (Arcadis 2008, 2009, 2015; DOI 2009a,b, DOI 2015, DTSC 2009, DTSC 2015), DTSC-issued directive letter (DTSC 2017), and 2019 Soil RA (Arcadis 2019, 2020; DOI and DTSC 2020), the risks for the six exposure areas where NCTRA activities were completed were updated in this Post-NTCRA HHERA. This process is consistent with the objectives of the Post- NTCRA HHERA as stated in the Agency-approved NTCRA Work Plan (Jacobs 2022b, DOI 2022) and response to comment QUECHAN-4. Although 2019 Soil HHERA concluded that the overall risks for all human receptors for the OCS exposure area were within acceptable risk levels, the remedial action objectives presented in the EE/CA were implemented on an individual AOC/SWMU basis. Although numerical risk calculations for the OCS exposure area were not updated in this Post-NTCRA HHERA, the updated risks for OCS exposure area are inferred based on the reduction of risks for the six individual exposure areas evaluated in the Post-NTCRA HHERA. As stated in Section ES.3, "due to NTCRA soil removal, the potential post-NTCRA soil risks for the OCS are likely lower than estimated in the 2019 HHERA." Therefore, updated risk estimates for the OCS exposure area are not necessary as an updated OCS exposure area risk estimates would not materially change the 2019 Soil HHERA conclusions for the OCS exposure area; i.e., that the overall risks for all human receptors for the OCS exposure area were within acceptable risk levels.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
13	QUECHAN-8 (2/28/25)	ES-2	For risk characterization in the HHRA, incremental lifetime cancer risks and noncancer hazard indices (H I s) for exposures to constituents in soil were estimated using standard calculation approaches required in regulatory guidance. To draw risk conclusions, DTSC's target excess risk level of one in one million (1 x 10-6) and target H I of 1 were used, along with consideration of the National Oil and Hazardous Substances Pollution Contingency Plan acceptable cancer risk management range (40 Code of Federal Regulations 300) of one in one million (1 x 10-6) to one hundred in a million (1 x 10-4).	Please update this text to include decisions implemented by Fish and Wildlife to use a cleanup level to 10-5 cancer risk level for areas below 2 feet. (February 12, 2021, Topock Soil EE/CA Response to Comment Consultation Meeting Agenda).	Although the numeric remedial goals for soil below 2 feet below ground surface presented in the Topock Soil EE/CA were based on a cancer risk of 10^{-5} for identifying areas and depths for remediation, the conclusions for the Post- NTCRA HHERA for human receptors are described based on the EPA risk management range of 10^{-6} to 10^{-4} and DTSC risk point of departure of 10^{-6}. This clarification of the risk threshold used in the EE/CA for risk management will be provided in the revised Post-NTCRA HHERA. See also response to comment QUECHAN-2.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
14	QUECHAN-9 (2/28/25)	ES-3	In accordance with the 2019 H H E R A (Arcadis 2019), the conclusions and recommendations for the HHRA presented in this addendum were based on the risks estimated for the O C S potential exposure area. As requested by DTSC (DTSC 2017), the risks/hazards estimated in this addendum for individual A O C/SWMU/undesignat ed area potential exposure areas outside the fence line were based on the assumption that lifetime soil contact for these potential receptors would be limited to that single specific area. It is highly unlikely that activities of the recreational users would be limited to such a small area. Therefore, the risks/hazards estimated in the 2019 HHERA and in this addendum for the O C S potential exposure area are believed to provide a more appropriate representation of the potential exposures for the human populations that could be present in the areas outside the TCS.	This statement would lead the reader to believe that risk calculations within the addendum include risk values for the post NTCRA OCS exposure area. However nowhere in the addendum are risk calculations presented for the OCS exposure area. Please provide an updated addendum that includes quantitative risk calculations for the current soil at the site for risk management decisions. This is particularly relevant as the main text repeatedly makes statements regarding OCS risk without providing OCS risk calculations	The Post-NTCRA HHERA text will be updated to clarify that numerical risk calculations for the OCS exposure area were not updated consistent with the approach outlined in the Agency-approved NTCRA WP (Jacobs 2022b, DOI 2022) and Work Plan Technical Memo (Arcadis 2024). Rather, the updated risks for OCS exposure area are inferred based on the reduction of risks for the six individual exposure areas evaluated in the Post-NTCRA HHERA. See also responses to comments QUECHAN-7 and QUECHAN-11 that addressed this topic.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
15	QUECHAN-10 (2/28/25)	ES-4	under the assumed set of current and reasonable future land-use scenarios described in the 2019 H H E R A (Arcadis 2019)	Are land use scenarios applicable to ecological receptors?	Land use scenarios, as described in Section 2.6 of the Post-NTCRA HHERA, are applicable for human receptors and were not considered when evaluating ecological receptors in areas outside the TCS. The text in Section ES-4 will be revised to clarify that those areas (i.e., areas outside the TCS) are suitable habitat for the ecological receptors and were evaluated as potential ecological exposure areas as described in Sections 3.3.2 and 6 of the Post-NTCRA HHERA. See also response to comment FMIT-9.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
16	QUECHAN-11 (2/28/25)		The updated risk characterization provided in this H H E R A Addendum evaluates potential human and ecological exposures to current conditions in the potential exposure areas outside of the TCS fence line following completion of the N T C R A activities using the same methodology as used in the 2019 H H E R A, including the same potential exposure areas, exposure assumptions, effects assumptions and risk characterization methods.	This statement would lead the reader to believe that risk calculations were made for the post NTCRA OCS exposure area as was done in the 2019 HHERA. However nowhere in the addendum are risk calculations presented for the OCS exposure area. Please provide an entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future.	The Post-NTCRA HHERA text will be updated to clarify that numerical risk calculations for the OCS exposure area were not updated, consistent with Agency-approved NTCRA Work Plan (Jacobs 2022b, DOI 2022) and as outlined in the Work Plan Technical Memo (Arcadis 2024). Rather the updated risks for OCS exposure area are inferred based on the reduction of risks for the six individual exposure areas evaluated in the Post-NTCRA HHERA. See also response to comment QUECHAN-7 that addressed this topic			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.

PG&E Responses to Comments on the Draft Soil Human Health and Ecological Risk Assessment Addendum (i.e., Post-NTCRA HHERA)

PG&E Topock Compressor Station, Needles, California

*Note: The title of the Draft Soil Human Health and Ecological Risk Assessment Addendum will be updated to "**Post-Soil Non Time Critical Removal Action Human Health and Ecological Risk Assessment Report (Post-NTCRA HHERA)** based on comment DTSC HERO-1 and is referred to as such throughout responses this Response to Comments Table.*

Item	Comment Number	Section/ Page	Reference Text	Comment	PG&E Response to Comment	DTSC Response to Comment	DOI Response to Comment	Tribes Response to Comment	Final Comment Resolution[1]
17	QUECHAN- 12 (2/28/25)		The objectives of this H H E R A Addendum are to: (1) Provide risk characterization that updates the 2019 H H E R A (Arcadis 2019) in areas outside of the TCS fence line where N T C R A removals were conducted; and (2) Determine whether there is potential for unacceptable risk to human health and the environment based on potential exposures to current soil conditions in these areas.	The previous stated objective was indicated as "to evaluate the effectiveness and protectiveness of the N T C R A." This section states a different objective. Consistent language as to the need for and objective of the HHERA addendum should be used throughout the document.	The objectives of the Post-NTCRA HHERA report will be stated consistently throughout the report, as described in the response to comment QUECHAN-4. See also response to comments QUECHAN-37a, DOI-1, and DOI-2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
18	QUECHAN- 13 (2/28/25)	2.2.2.2	RBRGs were developed in the 2019 H H E R A (Arcadis 2019) to help guide remediation actions onsite including the N T C R A. RBRGs are concentrations of C O P C s/C O P E C s that do not present unacceptable risk to human health and ecological receptors. An RBRG is a proposed health-protective target cleanup concentration that can be used, in combination with other factors such as background concentrations, as a starting point for making risk-management decisions. RBRGs were calculated for risk-driving constituents in soil for a given potential receptor where the findings of the 2019 H H E R A (Arcadis 2019) suggested some form of risk management or remediation may be warranted. RBRGs protective of human health and the environment were back-calculated using the most refined exposure and effects assumptions evaluated in the 2019 H H E R A.	Please update the addendum text to align with the finalized risk assessment (2019) and include something which states: Consistent with the HHERA approach RBRGs are applied based on the potential exposure area of interest (i.e. *the 95UCL for the exposure area should be less than or equal to the RBRG*). It is very important to the Tribes that the RBRGs are used correctly. Specifically, these values were developed based on 95th UCL. The addendum text must include language from the original risk assessment which states *the 95UCL for the exposure area should be less than or equal to the RBRG.*	The Post-NTCRA HHERA text will be updated in Sections 2.2.2.2, and 6.6 to state that "Consistent with the HHERA approach, RBRGs are applied based on the potential exposure area of interest (i.e., the 95UCL for the potential exposure area should be less than or equal to the RBRG).				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
19	QUECHAN- 14 (2/28/25)	2.5	NA	As a result of the NTCRA, is there any new information or perspectives acquired regarding the subsurface distribution of chromium and other contaminants at the site. Can any information from the NTCRA sampling be used to update contaminant transport model, conceptual site model or exposure models? In section 2.5 of the report, the conceptual site model is presented as a static entity, unchanged since 2019. Should the conceptual model be adjusted using new data and observations from the NTCRA? What observations were made during the NTCRA in this context, and how and where were they documented?	CSMs for AOC 10 and AOC 11 were updated in the Final RFI/RI Vol 3 (Jacobs 2024) based on NTCRA findings. No other changes to CSMs were made in the RFI/RI because NTCRA was still ongoing at that time. Following completion of the NTCRA, the CSMs for SMWU1/AOC1, AOC10, and AOC 11 were updated per data and observations from the NTCRA, as presented in the Final NTCRA Completion Report (Jacobs 2025). Based on NTCRA findings, no CSM changes were needed for AOC 9, AOC 14, AOC 16, and AOC 27. Section 2.5 of the Post-NTCRA HHERA will be reviewed and updated as necessary for consistency with the CSMs presented in the Final NTCRA Completion Report (Jacobs 2025).				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
20	QUECHAN- 15 (2/28/25)	3.1.1	Data Included for Evaluation of Post-N T C R A Conditions	This description is very brief and does not provide insight into how the number of soil sample locations from each depth changed between the pre-2019 site condition and the post-NTCRA site condition. In addition, the soil risk assessment addendum should provide some discussion on the COPC/COPEC concentrations that were present in the NTCRA confirmation sampling and left in place.	To provide clarity on the number of soil sample locations from each depth interval between the 2019 Soil HHERA and Post-NTCRA HHERA, Table AOC-1.1 in each AOC appendix was expanded to include the full dataset for 0 to 10 ft in the 2019 HHERA. The original and current sample depths, excavation status, and backfill depth are provided in this table. See also response to comment QUECHAN-1d. COPC/COPEC concentrations in remaining in place samples are summarized in the exposure area-specific appendix tables (e.g., Table AOC-3.1) and are presented visually in the area-weighted figure attachments (Attachment A3) to each exposure-area specific appendix. A summary of sampling and COPC concentrations in each NTCRA TAA in relation to the RAGs is provided in Section 1.2 of the exposure area-specific appendices to the Post-NTCRA HHERA. Details of the COPC/COPEC concentrations that were present in the NTCRA confirmation sampling can be found in the NTCRA Completion Report (Jacobs 2025). Text will be added to the Post-NTCRA HHERA referencing the appropriate sections of the NTCRA Completion Report (Jacobs 2025) so that the reader can easily locate this information.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
21	QUECHAN- 16 (2/28/25)	3.1.1	Data Included for Evaluation of Post-N T C R A Conditions	How is clean fill material included in EPC calculations?	Clean fill was not incorporated into the EPC calculations. For example, if soil at a sample location was excavated and backfilled in the top 2 feet, the samples within the top 0 to 2 foot depth interval are considered no longer present (i.e., not included in EPC) and a backfill concentration was not used to replace the original sample concentration that was excavated. A sample concentration collected at 2.5 ft bgs would be assumed to extend up through the 0 to 2 ft bgs interval. This process is consistent with the depth-weighting approach used in the Agencies-approved 2019 HHERA (Arcadis 2019, 2020; DOI and DTSC 2020) and RAWP documents (Arcadis 2008, 2009, 2015; DOI 2009a,b, DOI 2015, DTSC 2009, DTSC 2015), including the DTSC-issued directive letter (DTSC 2017), and summarized in the Work Plan Technical Memo (Arcadis 2024). See also response to comment QUECHAN-1c.			Backfill material was not included in the EPC calculations. Use of remaining native soil samples (not accounting for backfill) in the EPC calculations is expected to result in overly conservative unrealistic exposure estimates.	The Post-NTCRA HHERA was updated asto include additional discussion of the uncertainties associated with the treatment of backfill in the EPC calculations
22	QUECHAN- 17 (2/28/25)	3.3	Larger areas based on combined potential exposure areas were not evaluated for potential human receptors or large home-range wildlife in this H H E R A Addendum because no unacceptable risk was identified in these scenarios in the 2019 H H E R A (Arcadis 2019) prior to completion of the N T C R A.	The Tribes request that risk values be calculated for the OCS exposure scenario as this information will be informative to risk management decisions and give insight into the risk associated with realistic land use scenarios.	Please see response to comment QUECHAN-7 that addressed this topic. See also responses to comments QUECHAN-9 and QUECHAN-11 that addressed this topic.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
23	QUECHAN- 18 (2/28/25)	4	For this H H E R A Addendum, depth- weighted EPCs and area-weighted EPCs were used to estimate potential risk to recreator receptors and desert shrew.	Discuss how the areas covered in clean fill dirt are incorporated into the EPC calculation. If fill dirt is not included in EPC calculations the Tribes would like to understand if this omission in site characterization is better captured by a depth-weighted or area-weighted EPC value.	Clean fill was not incorporated into the EPC calculations. See also responses to comments QUECHAN-1c, QUECHAN-6, and QUECHAN-16 that addressed this topic. As noted by DTSC (Comment DTSC HERO-4), risk estimates calculated using depth-weighted or area-weighted EPCs produce similar results.			Backfill material was not included in the EPC calculations. Use of remaining native soil samples (not accounting for backfill) in the EPC calculations is expected to result in overly conservative unrealistic exposure estimates.	The Post-NTCRA HHERA was updated asto include additional discussion of the uncertainties associated with the treatment of backfill in the EPC calculations
24	QUECHAN- 19 (2/28/25)	4.2.1	Section addressing depth weighted EPCs	A subsection specific to area-weighted EPCs should be included. Why was this omitted	Area-weighted EPCs are described in Section 4.2.2.2 of the main Post-NTCRA HHERA report. Depth-weighted concentrations (as described in Section 4.2.1) were calculated for each location prior to the area-weighting.				No additional revision to the document is required based on this comment. Response is complete.

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25	QUECHAN-20 (2/28/25)	5.2.1	NA	We presume that the potentially exposed population groups in section 5.2.1, where no mention of Tribes or tribal members is made, were developed rationally and vetted with the Tribes. On numbered page 70 of the main narrative of the 2019 HHERA is the following. *Section 5.3.1.3. Tribal Users* *The FMIT requested that tribal users be included in the HHRA for soil. As such, tribal users were evaluated for areas outside the TCS including BCW and other investigation areas for current and potential future land use. In their exposure scenario memorandum (FMIT 2012), during the September 2013 RA Workshop, and in the follow up letter from FMIT (2013), the Tribes indicated that the tribal use of the land in the area of the site is limited to the following:* *• Tribal Group Activities - Several times during the year, tribal members may meet at the site for group prayer and reflection.* *• Tribal Education Activities - As part of the education of tribal students and young people, school classes or other youth classes may come to the area to learn about its importance and spiritual significance. These visits may last for up to 2 hours and could occur several times during an individual's time as a student.* *• Tribal Member Individual Visits - Individual tribal members may go to various specific locations (e.g., the Topock Maze) within the Mojave Valley on a regular but infrequent basis for quiet time and reflection. These activities are part of the practice of their religion and culture, to pay homage to the area, and to honor their ancestors.* *None of these activities include intrusive soil activities or direct contact with soil. Direct exposures (ingestion and dermal contact) to surface soil (0 to 0.5 foot bgs) and shallow soil (0 to 3 feet bgs) for the tribal user are considered incomplete and thus were not evaluated in the HHRA. As agreed in the approved RAWP Addendum 2 (Arcadis 2015), potential exposure for a tribal user is limited to indirect exposures resulting from the inhalation of particulates from surface soil (0 to 0.5 foot bgs) and shallow soil (0 to 3 feet bgs), and VOCs present in subsurface 2 soil (0 to 10 feet bgs).* Why is there no such consideration for Tribal members or groups in the 2024 HHERA Addendum?	As outlined in the Work Plan Technical Memo (Arcadis 2024), risks were updated for risk-driving receptors and chemicals. As concluded in the Agencies-approved 2019 Soil HHERA (Arcadis 2019, 2020; DOI and DTSC 2020), the overall risks for the Tribal User receptors evaluated were well below EPA risk management range of 10-6 to 10-4 and DTSC risk point of departure of 10-6 as well as acceptable hazard index of 1. As such, risk drivers were not identified for Tribal User receptors and risks for the Tribal User receptors were not updated for the six exposure areas evaluated in this Post-NTCRA HHERA. An update would only result in lower risk estimates. Therefore, the estimated risks would remain *de minimis* for the Tribal User receptors. The 2019 Soil HHERA conclusion that levels of COPCs in soils are safe and protective for the Tribal User receptors in the OCS exposure areas as well as individual AOC/SMWU exposure areas do not change with the completion of the NCTRA activities.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
26	QUECHAN-21 (2/28/25)	5.3.1	In these cases, surrogate chemicals were chosen based on structural similarity to avoid underestimating potential carcinogenic hazards	How were surrogates selected?	Surrogate chemicals were chosen as stated and are based on structural similarities such as chemicals in the same suite of compounds with similar carbon chain structures (e.g., aromatic carbon rings) and/or group of molecules				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional
27	QUECHAN-22 (2/28/25)	5.3.2	In such cases, surrogate chemicals were chosen based on structural similarity to avoid underestimating potential noncarcinogenic hazards:	How were surrogates selected?	Surrogate chemicals were chosen as stated and are based on structural similarities such as chemicals in the same suite of compounds with similar carbon chain structures (e.g., aromatic carbon rings) and/or group of molecules attached (e.g., methyl group), however may differ in type of carbon bond (e.g., single or double bond) or position of the group of molecules attached. For example, acenaphthene was chosen as a surrogate for acenaphthylene. Both compounds are considered semi-volatile organic compounds and PAHs with three carbon rings. Acenaphthene (C12H10) has two aromatic rings (i.e., carbon ring with double bonds) and one non-aromatic ring (i.e., single bonds only carbon ring) and acenaphthylene (C12H8) has three aromatic rings. The surrogate chemicals selected in the Post-NTCRA HHERA are the same surrogate chemicals selected in the 2019 Soil HHERA. See also response to comment QUECHAN-39.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional 19
28	QUECHAN-23 (2/28/25)	5.4.1	H I = Hazard index; the sum of the constituent- specific HQs, which represents the cumulative potential for predicted exposures to result in noncarcinogenic effects (unitless)	HQ is defined as the "The ratio of the potential exposure to a substance and the level at which no adverse effects are expected (calculated as the exposure divided by the appropriate chronic or acute value)" and HI as the "The sum of hazard quotients for toxics that affect the same target organ or organ system. Please indicate if any effort was made in summing up HQs based on organ systems. If this was not done in the risk assessment, then please include a discussion of how the HI summed up without regard to organ systems is conservative. This additional text should be included in the uncertainty section.	No HIs (excluding the contribution of background arsenic) were above 1. As such, target-organ specific HIs were not calculated. As stated in Section 5.5 of the Post-NTCRA HHERA, "Many of the generic and site-specific uncertainties discussed in the 2019 HHERA (Arcadis 2019) also apply to this Post-NTCRA HHERA. Uncertainties that have been previously discussed in the 2019 HHERA are not repeated here. Additional uncertainties applicable to this HHRA that evaluates post-NTCRA conditions at the site are discussed in this section." The uncertainties associated with the effects of summing up HIs without regards to organ systems are discussed in Section 5.6.5 of the 2019 HHRA and not repeated in the Post-NTCRA HHERA.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as to include a more robust uncertainty discussion, as indicated in the Tribes Response to Comments.
29	QUECHAN-24 (2/28/25)	5.5 and 6.7	NA	Sections 5.5 and 6.7 of the Addendum are entitled Uncertainty Analysis. While these sections include subsections that each address sources of uncertainty, generally qualitatively, there does not appear to be any uncertainly analysis completed as part of the section or as part of work referenced in either section. Are we to believe that this approach represents the state of the practice in human health and ecological risk assessment as concerns uncertainty analysis? If so, and this may indeed represent the state of the practice, the report narrative should provide at least some background information documenting this – particularly for those outside of the complex human health and ecological risk assessment specialty.	As stated in Section 5.5 and 6.7 of the Post-NTCRA HHERA, "Many of the generic and site-specific uncertainties discussed in the 2019 HHERA (Arcadis 2019) also apply to this Post-NTCRA HHERA. Uncertainties that have been previously discussed in the 2019 HHERA are not repeated here. Additional uncertainties applicable to this HHRA that evaluates post-NTCRA conditions at the site are discussed in this section." Although specific uncertainties may be quantified, most are unquantifiable and are therefore discussed qualitatively. This clarification will be added to Section 5.6 and 6.7 of the Post-NTCRA HHERA.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as to include a more robust uncertainty discussion, as indicated in the Tribes Response to Comments.
30	QUECHAN-25 (2/28/25)		As a point of reference, note that the NCP (40 CFR 300) indicates that lifetime incremental cancer risks posed by a site are compared to a range of one in one million (1 x 10-6) to one hundred in a million (1 x 10-4). As indicated in the NCP (40 CFR Part 300), cancer risks between one in a million and one hundred in a million probability of occurrence (1 x 10-6 and 1 x 10-4) fall within a risk-management range. This is generally referred to as the acceptable risk range. Within this estimated cancer risk range, there is flexibility for risk managers in deciding what action, if any, is necessary and appropriate for the protection of human health. Cal E P A's point of departure for excess ILCR for all receptor groups (i.e., residential populations) is 1 x 106 , and risk-management decisions may raise this criterion depending on site-specific conditions.	This section should include some discussion regarding F&W decision to use a risk management decision of 10-5 cancer risk level for subsurface cleanup within the NTCRA action.	Although the numeric remedial goals for soil below 2 feet below ground surface presented in the Topock Soil EE/CA were based on a cancer risk of 10^{-5} for identifying areas and depths for remediation, the conclusions for the Post-NTCRA HHERA for human receptors are based on the EPA risk management range of 10^{-6} to 10^{-4} and DTSC risk point of departure of 10^{-6}. See also responses to comments QUECHAN-2, and QUECHAN-8 that addressed this topic.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
31	QUECHAN-26 (2/28/25)	5.5.3	Uncertainties in the Exposure Assessment	The Tribes believe that a robust description of how background concentrations significantly contribute to the risk estimates should be included in the uncertainty section.	A discussion on the contribution of arsenic background to the risk estimates is included in each AOC-specific risk discussion section where applicable and will be included in the uncertainties section.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as to include a more robust uncertainty discussion, as indicated in the Tribes Response to Comments.

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32	QUECHAN-27	5.5.2	Uncertainties in the Exposure Assessment	A robust discussion on the uncertainty in the scouring scenario should be included. Specifically, numerous high flow events have been recorded during the remediation timeline providing sufficient field data to evaluate the accuracy of the 2ft and 5ft scouring scenario as included in the risk assessment.	Discussion related to scouring (observed/not observed) and effects on the ground surface is presented in Appendix BCW (Section 5.4.2.1) and Appendix AOC10 (Section 5.4.2.3) and summarized in the main Post-NTCRA HHERA (Section 3.3.1). Recent observations indicate that vertical scouring has not been observed at the Site. Lateral scouring has been observed in BCW and AOC 10 is primarily depositional. Additional discussion on the relevance of scouring scenarios evaluated in the Post-NTCRA HHERA for BCW and AOC 10 will be included in the uncertainty sections (Sections 5.5 and 6.7.3)			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	The Post-NTCRA HHERA was updated as indicated in the PG&E response.
33	QUECHAN-28 (2/28/25)	5.5.2.1	Therefore, the health risks estimated for recreational users may be overestimated and lower than presented in the HHRA.	Please change language to state "Therefore, the health risks estimated for recreational users may be *are likely* overestimated and lower than presented in the HHRA."	The suggested change will be incorporated into the Post-NTCRA HHERA where applicable.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
34	QUECHAN-29 (2/28/25)	5.5.3.2	Given the reduction in overall estimated cumulative risks and hazards under post- N T C R A conditions in these potential exposure areas which were identified with elevated concentrations of risk-driver COPCs in the 2019 H H E R A (Arcadis 2019), estimated cumulative risks and hazards for recreational users, camper, hikers, and OHV riders for the O C S potential exposure area under post- N T C R A conditions are likely lower than estimated in the 2019 H H E R A (Arcadis 2019) and likely at or slightly above at 1 x 10-6 and well within the within the risk-management range of 1 x 10-6 and 1 x 10-4	The risk values for OCS exposure should be quantitatively calculated and presented in the HHERA addendum.	Please see response to comment QUECHAN-7 which addressed this topic. See also responses to comments QUECHAN-9, QUECHAN-11, and QUECHAN-17.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
35	QUECHAN-30 (2/28/25)	6.1 Purpose and Objectives	NA	The objectives stated here do not align with objectives stated in the ES.	The objectives of the Post-NTCRA HHERA report will be stated consistently throughout the report, as described in the response to comment QUECHAN-4. See also response to comments QUECHAN-12, QUECHAN-37a, DOI-1, and DOI-2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
36	QUECHAN-31 (2/28/25)	6.2	This E R A is consistent with the approved R A W P documents (Arcadis 2008a, 2009a, 2015), 2019 H H E R A (Arcadis 2019) and follows regulatory guidance including:	Why is the HHERA addendum workplan not included on this list?	The Proposed Approach to Update the Human Health and Ecological Risk Assessment after Completion of the 2023 Non-Time Critical Removal Action (Work Plan Technical Memo, Arcadis 2024) will be added as a reference to Section 6.2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
37	QUECHAN-32 (2/28/25)	6.3.2 Assessment and Measureme nt Endpoints	basis of the E C s (maximum vs 95UCL), confidence in the toxicity values	The acronym EC is not defined in the text	The acronym 'EC' will be revised to 'EPC' (exposure point concentration) in Section 6.3.2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
38	QUECHAN-33 (2/28/25)	6.6.1	Because protection at the individual level is not warranted for desert shrew, N O A E L-based HQs greater than 1 were not further evaluated using a W O E approach.	For clarity this sentence should state, NOAEL-based HQs greater than 1 *but LOAEL based HQ were less than 1* were not further evaluated using a W O E approach.	The text will be updated as suggested to state: "Because protection at the individual level is not warranted for desert shrew, COPECs with NOAEL-based HQs greater than 1 and LOAEL-based HQs less than 1 were not further evaluated using a WOE approach."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
39	QUECHAN-34 (2/28/25)	6.7.2.1	There is significant uncertainty in the application of mammal T E Fs to soil data in the dietary models and dioxin T E Q HQs for these receptors may not be predictive of actual risk.	This section should clearly indicate that the uncertainty in the application of mammal T E Fs to soil data in the dietary models and dioxin T E Q HQs for these receptors will likely result in an overestimation of calculated risk.	Text in Section 6.7.2.1 will be revised as follows: "There is significant uncertainty in the application of mammal T E Fs to soil data in the dietary models and dioxin T E Q HQs for these receptors ~~may not be predictive of actual risk~~. are likely to overestimate risk."			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	The Post-NTCRA HHERA was updated as indicated in the PG&E response.
40	QUECHAN-35 (2/28/25)	6.7.3.1	Exposure estimates calculated herein assume that measured concentrations of C O P E C s in soil are 100% bioaccessible via dietary uptake (dermal absorption via the gut)	It is our understanding that absorption following oral exposure is not considered dermal absorption. This should be rewritten to correctly reflect that most COPECs have limited oral bioavailability in addition to very limited dermal absorption.	The text in Section 6.7.3.1 will be revised as follows: "Exposure estimates calculated herein assume that measured concentrations of C O P E C s in soil are 100% bioaccessible via dietary uptake (dermal gut absorption)."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
41	QUECHAN-36 (2/28/25)	6.7.3.2.1 Dietary Composition	NA	This section should also include text that clearly addresses the fact that the surrogate species (shrew) have the highest metabolic rates of any mammals (with pulses as high as 800 beats per minute). They spend most of their time searching for food, as they can survive only a few hours without eating. Therefore, the dose calculated for this small mammal species is certain to be overly conservative when applied to other small mammal species that are present at the site. This is particularly relevant as no desert shrew has been observed at the site and the use of a small mammal species together with selecting one with the highest metabolic rate will overestimate risk for small mammal species that are present at the site.	Section 6.7.3.2 will be revised as follows: "The selected exposure parameters are likely to accurately represent or overestimate, but not underestimate potential exposure to actual wildlife present at the site, as the exposure parameters were selected to be more protective (i.e., high IRs, low body weights, exposure to the upper bound of concentrations, diet consisting of a single prey item). Specifically, shrew have not been observed at the site. The selection of shrew as a representative receptor for other small invertivorous mammals that may be present other small invertivorous mammals that may be present at the site is likely to overestimate exposure and risk due to the high metabolic rate, food ingestion rate, and small body weight for this species."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
42	QUECHAN- 37a (2/28/25)	7	The effectiveness of the N T C R A was evaluated based on updated risk characterization for areas where N T C R A removals were conducted and determination of whether there is potential for unacceptable risk to human health and the environment based on potential exposures to current soil conditions in these areas. The risk estimates are expected to be overestimated rather than underestimated and risk conclusions presented in this section may overstate the potential for unacceptable risk to human and ecological receptors at the site.	The Tribes are under the impression that the NTCRA action was taken to remove potential impacts to HNWR land downgradient, not to reduce risk in current AOCs. If this is correct the language in the report should be updated to reflect the correct reason for the DOI NTCRA action.	The rationale for the NTCRA action was defined by DOI (2021) (i.e., to remove potential impacts to HNWR land downgradient) and the associated NTCRA RAOs included removing soil with constituent concentrations above numerical RAGs (Jacobs 2022b). The rationale for the NTCRA and NTCRA RAOs are stated in Section 2.2.3.2 of the Post-NTCRA HHERA. The objectives of the Post-NTCRA HHERA report will be stated consistently throughout the report, as described in the response to comment QUECHAN-4. See also responses to comments QUECHAN-12, QUECHAN-30, DOI-1, and DOI-2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
42	QUECHAN- 37b (2/28/25)	7	The effectiveness of the N T C R A was evaluated based on updated risk characterization for areas where N T C R A removals were conducted and determination of whether there is potential for unacceptable risk to human health and the environment based on potential exposures to current soil conditions in these areas. The risk estimates are expected to be overestimated rather than underestimated and risk conclusions presented in this section may overstate the potential for unacceptable risk to human and ecological receptors at the site.	Language should be updated to state "risk conclusions presented in this section likely overstate".	The suggested language will be incorporated where applicable.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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PG&E Topock Compressor Station, Needles, California

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Item	Comment Number	Section/ Page	Reference Text	Comment	PG&E Response to Comment	DTSC Response to Comment	DOI Response to Comment	Tribes Response to Comment	Final Comment Resolution[1]
43	QUECHAN- 38 (2/28/25)	7.1.2 Outside the Compressor Station	NA	The report needs to provide quantitative risk calculations for OCS. The omission of these risk calculations prevents this document from aligning with the final HHERA and compromises the ability of risk managers to understand risk at the site under realistic site use scenarios.	The Soil Post-NTCRA HHERA text will be updated to clarify that numerical risk calculations for the OCS exposure area were not updated as outline in the Work Plan Technical Memo (Arcadis 2024), rather the updated risks for OCS exposure area are inferred based on the reduction of risks for the six individual exposure areas evaluated in the Post-NTCRA HHERA. See also responses to comments QUECHAN-7, QUECHAN-9, QUECHAN-11, QUECHAN-17, and QUECHAN-29 that addressed this topic.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
44	QUECHAN- 39 (2/28/25)	Table 5-3 Carcinogeni c and Noncarcino genic Toxicity Values for C O P Cs in Soil	NA	Table (or footnote to table) should be expanded to show what chemical analog identification tool was used to select the surrogate, along with the confidence level of the surrogate match.	The footnote for the surrogates will be expanded to include the basis for the selection. See also responses to QUECHAN-21 and QUECHAN-22.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional 19
45	QUECHAN- 40 (2/28/25)	Table 5-4	NA	The Y axis labeling on this table is difficult to interpret. As it is unclear what background risk level is in each AOC.	The arsenic background risks presented in Table 5-4 are associated with the background levels in the agency-approved background dataset for the Topock Site and are not AOC-specific. However, the arsenic background risks are receptor-specific because of the differences in exposure assumptions for each receptor.				No additional revision to the document is required based on this comment. Response is complete.
46	QUECHAN- 41 (2/28/25)	Table 6-1 Exposure Parameters for Terrestrial Wildlife Receptors	NA	This table should specify the wildlife receptor presented.	The title of Table 6-1 will be revised to: Exposure Parameters for Terrestrial Wildlife Receptor (Desert Shrew).				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
47	QUECHAN- 42 (2/28/25)	Table 6-4 Toxicity Reference Values for Wildlife	NA	This table should indicate what test species are used for the report NOAEL/LOAEL values presented in the table and include body weight of the test species.	The test species and body weights will be added to Table 6-4.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
48	QUECHAN- 43 (2/28/25)	Figure 5-1	NA	This figure seems to indicate that areas such as AOC 9, AOC 11 etc. have no human receptors present. Please update the map to more clearly indicate which receptors are present at each AOC.	Exposure areas outside of the Compressor Station are indicated in Legend note a. The Outside of the Compressor Station receptors (i.e., maintenance worker, tribal users, and recreational users) are indicated in Figure 5-1.				No additional revision to the document is required based on this comment. Response is complete.
49	QUECHAN- 44 (2/28/25)	Appendix BCW. Section 1.2 Summary of N T C R A in Bat Cave Wash	As summarized in the N T C R A Completion Report (Jacobs 2024a), the	Text should clearly indicate that this is a draft document and was not completed during review of the HHERA addendum	Comment noted. Please see the responses to prior comments QUECHAN-1a and QUECHAN 3 that addressed this topic.				Comment noted, no revision to the document is required. Response is complete.
50	QUECHAN- 45 (2/28/25)	Appendix BCW. Section 1.2 Summary of N T C R A in Bat Cave Wash	As summarized in the N T C R A Completion Report (Jacobs 2024a), the D O I selected a removal action of excavation of contaminated soil and debris at target action areas (TAAs) within the site, located in Needles, California (D O I 2021). PG&E commenced the N T C R A soil removal action on July 25, 2022, according to the D O I-approved Soil N T C R A Work Plan (Jacobs 2022), which incorporated comments from stakeholders, including D O I, U.S. Bureau of Land Management, and tribal stakeholders.	For the record it is important to state that the Tribes strongly disagreed with the need for the NTCRA.	Comment noted.				No additional revision to the document is required based on this comment. Response is complete.
51	QUECHAN- 46 (2/28/25)	Appendix BCW. Section 2	Consistent with the approach detailed in the January 30, 2024 Technical Memo (Arcadis 2024), the	Why is Arcadis 2024 considered a tech memo and not a work plan? If not a work plan why was no work plan distributed for review of the proposed approach?	The Post-NTCRA HHERA followed the same approach as the Agencies-approved 2019 HHERA (Arcadis 2019, 2020; DOI and DTSC 2020), Agencies-approved RAWP (Arcadis 2008, 2009, 2015; DOI 2009a,b, DOI 2015, DTSC 2009, DTSC 2015), and DTSC-issued directive letter (DTSC 2017), and, therefore, a full workplan for the Post-NTCRA HHERA was not provided. The Work Plan Technical Memo (Arcadis 2024) presents a summary of the methods, following the previously approved approach.				No additional revision to the document is required based on this comment. Response is complete.
52	QUECHAN- 47 (2/28/25)	Appendix BCW. Section 2.1	N T C R A are presented in the N T C R A Completion Report (Jacobs 2024a); details of the soil sampling and analysis for the remaining samples are described in the R A W P documents (Arcadis 2008, 2009, 2015) and 2019 H H E R A (Arcadis 2019).	Splitting descriptions of the soil data that is used within the final risk assessment between the risk assessment documents (e.g. 2019 HHERA) and the NTCRA completion document (2025) is confusing and puts an unnecessary burden on the reviewer to validate the approach used for COPC/COPEC analysis. This is particularly relevant as the risk assessment and the NTCRA actions are under the direction of two different lead agencies and are not well aligned. Please provide an appendix to the risk assessment addendum that compiles all soil data details that are included in the updated risk assessment.	To improve ease of review, data tables in each exposure-area specific appendix (e.g. Table BCW-1.1) were expanded to include the full dataset for 0 to 10 ft in the 2019 HHERA. The original and current sample depths, excavation status, and backfill depth are provided in these tables. For risk-driving COPCs, EPC calculations for the post-NTCRA conditions are provided in Attachments A1 though A3 of each exposure area specific appendix. EPCs for non-risk driving COPCs are the same as presented in the 2019 HHERA and EPC calculations are not repeated in the Post-NTCRA HHERA report. See also response to comments QUECHAN-1d and QUECHAN-15.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
53	QUECHAN- 48 (2/28/25)	Appendix BCW. Section 4.6 Human Health Risk Characteriz ation	NA	This section should include some discussion within the document regarding Fish and Wildlife agreement to use a 10-5 cancer risk as a risk threshold for subsurface remediation within the NTCRA action.	See responses to prior comments QUECHAN-2 and QUECHAN-8 that addressed this topic.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
54	QUECHAN- 49 (2/28/25)	Appendix BCW: Table BCW- 5.4, Table BCW- 5.5, Table BCW- 5.6	NA	Where are HQ calculations that use congener specific exposure concentrations? The footnotes include BAF (what is BAF?) but it is not clear where alternative BAF calculations are presented in the table. This should be made clearer in the tables.	Table BCW-5.3 presents the congener-specific bioaccumulation factors (BAFs), as discussed in Section 6.4.3.2 of the main Post-NTCRA HHERA report. HQs are summarized in Table BCW-5.6 and calculations are presented in Appendix Table BCW-C.2.				No additional revision to the document is required based on this comment. Response is complete.
55	QUECHAN- 50a (2/28/25)	Appendix BCW. Figures BCW-A3.1 through A3.5	NA	1) It is not clear how the concentration buckets in the table were established and this should be clearly communicated, and	The concentration bins for the Thiessen Polygons for Area Weighting figures (Attachment A3 of each AOC Appendix) will be revised to use background and applicable NTCRA Removal Action Goals for each constituent. If additional bins are used in the figures, the basis of additional concentration bins will be explained in the text and figures. Note that the previous concentration bins were based on natural breaks in the datasets. See also response to comment QUECHAN-51.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
55	QUECHAN- 50b (2/28/25)	Appendix BCW. Figures BCW-A3.1 through A3.5	NA	2) in some cases the background threshold value and COPC concentration are in different units. Please update the report to clarify.	The legend on each area-weighted figure will be updated to reflect the same units for background and constituent concentrations. The units for metals are milligrams per kilogram (mg/kg) and the units for TEQ Mammals are nanograms per kilogram (ng/kg).				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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56	QUECHAN-51 (2/28/25)	Appendix AOC 10	NA	There was difficulty during the document review in determining what sample locations are above RBRGs. The only information in this regard are the polygon maps but it appears that the colors in the polygon maps are based on exceedance of background threshold not RBRGs. Please include maps for each AOC that presents this information. This was presented in the final risk assessment in Figures titled "Combined risk Driving locations for the HHERA". Please include similar figures in the addendum report.	New figures will be added to Section 2.2.3.2 showing the location of any soil samples in each exposure area (if any) remaining above the numerical RAGs. Additionally, the concentration bins for the Thiessen Polygons for Area Weighting figures (Attachment A3 of each AOC Appendix) will be revised to use background and applicable NTCRA Removal Action Goals for each constituent to more clearly present locations exceeding the RAGs. See also response to comment QUECHAN-50a.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
57	QUECHAN-52 (2/28/25)	Appendix AOC 10. OVERALL SUMMARY	As summarized above, the depth- weighted 2-foot scouring and 5-foot scouring ILCRs for the camper, hiker, and O H V rider are slightly As summarized above, the depth-weighted 2-foot scouring and 5-foot scouring ILCRs for the camper, hiker, and O H V rider are slightly higher for shallow soil than the depth-weighted baseline ILCRs for surface soil, which suggests that the impacts for the risk drivers (arsenic, hexavalent chromium, and dioxin T E Q) are primarily within the 2 to 5 feet bgs interval for the A O C 10 potential exposure area. As summarized in Section 1.1, although A O C 10 includes steep slopes along the ravine, scouring has not been observed. As noted, the subareas of concern are primarily depositional. During recent high runoff conditions that occurred with rainstorm events on August 24 and September 11, 2022, and March 15, 2023, flooding and sediment deposition was observed in the subareas rather than scouring. Therefore, risk estimates presented in the HHRA for the hypothetical 2-foot scouring and 5-foot scouring scenarios are not representative of actual exposure to soil in A O C 10 for the camper, hiker, and O H V rider.	The referenced conclusion needs specific soil sample locations to support it. For example, if the higher concentrations are located on side walls it could be carried down and become surface soils. However, if the higher concentrations are buried in depositional areas, it would not become exposed.	Specific soil sample locations and depths will be added to the subject discussion in Appendix AOC10 to support the stated conclusions.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
58	QUECHAN- 53 (2/28/25)	Appendix AOC 10. Section 2.1	The H H E R A Addendum dataset for A O C 10 includes results for in-place samples evaluated in the 2019 H H E R A (Arcadis 2019) and inplace N T C R A confirmation samples.... Details of the soil sampling and analysis conducted as part of the N T C R A are presented in the N T C R A Completion Report (Jacobs 2024a); details of the soil sampling and analysis for the remaining samples are described in the R A W P documents (Arcadis 2008, 2009, 2015) and 2019 H H E R A (Arcadis 2019).	While this comment is specific to the text in section 2.1 it is applicable to the main report and all appendixes. Requiring the reader to cross reference the NTCRA report (which is drafted following guidance from another lead agency) to understand what NTCRA conformation samples consist of (e.g. RL analytical method etc.) creates a report that is unnecessarily difficult to review. An appendix should be included in the addendum report that compiles all data used in the risk assessment in one place and allows a reviewer to understand what NTCRA-derived data set is included in the risk calculations.	Expanded tables presenting the compiled sample information will be added to each exposure-area specific appendix, as previously described in the response to comment QUECHAN-1d. See also responses to comments QUECHAN-15 and QUECHAN-47.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
59	QUECHAN-54 (2/28/25)	Appendix AOC 10. Section 4.6	Estimated cumulative ILCRs (i.e., sum of chemical specific ILCRs for each exposure depth for a scenario) were calculated and compared to the DTSC point of departure for a risk management decision of 1 × 10–6. It should be noted that risk management decisions may increase this criterion depending on site-specific conditions	This would be one of the many places throughout the addendum risk assessment that the decisions implemented by Fish and Wildlife to use a cleanup level to 10^{-5} for areas below 2 feet (February 12, 2021, Topock Soil EE/CA Response to Comment Consultation Meeting Agenda) should be mentioned.	See responses to prior comments QUECHAN-2 and QUECHAN-8 that addressed this topic.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
60	QUECHAN-55 (2/28/25)	Appendix AOC 10. Section 4.6.2	Exhibit A O C 10-4.2 2-Foot Scouring Depth-Weighted Estimated Cumulative Incremental Lifetime Cancer Risk and Hazard Index for the A O C 10 Potential Exposure Area for Recreational Users	How is the elevated risk associated with TEQ possible if the NTCRA removed COPCs above the RBRGs? Please explain this in the text and provide maps that show the soil sample locations associated with this risk.	As discussed in the NCTRA Completion Report, and the response to comment QUECHAN-4, not all samples above RBRGs were removed due to inaccessibility, safety, or cultural concerns. For example, sample AOC10a3 at 0-1 ft bgs was located within the access road, next to a high voltage line, and hence, was not part of the removal. A discussion of remaining samples with risk-driving COPCs above RBRGs will be included in AOC-specific appendices where appliable. Additionally, new figures will be added to Section 2.2.3.2 of the Post-NTCRA HHERA report showing the location of any soil samples in each exposure area (if any) remaining above the numerical RAGs. See also response to comment QUECHAN-51.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
61	QUECHAN-56 (2/28/25)	Appendix AOC 27. Section 5.6.1 and 5.6.2	NA	The inclusion of tables to summarize the HQ values (like tables in the human health section) would allow the	A summary table with HQs for the ERA will be included in Section 5.6.4 of each exposure area-specific Appendix.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
62	QUECHAN-57 (2/28/25)	Appendix AOC 27. Section 2.1	Details of the soil sampling and analysis conducted as part of the N T C R A are presented in the forthcoming N T C R A Completion Report (Jacobs 2024a);	This is the most accurate description of the NTCRA completion report presented in any of the appendices or main report. Nowhere else is it indicated that the final NTCRA completion report is forthcoming. As stated previously, the Tribes opinion is that a document that contains a significant amount of data that is referenced and used in the risk assessment should have been finalized during the period allocated to the review of the risk assessment addendum. Furthermore, the Tribes were not provided the opportunity to review the NTCRA document to ensure that conclusions drawn in this referenced document align with Tribal perspective.	Comment noted. Please see the responses to prior comments QUECHAN-1a and QUECHAN 3 that addressed this topic.				Comment noted, no revision to the document is required. Response is complete.
63	QUECHAN-58 (2/28/25)	Appendix AOC 27. 6.2 Uncertainti es in the Risk Assessment	NA	This section should also address how realistic it is that AOC 27 being used for camping, OHV riding and hiking as modeled in the human exposure use scenario.	A description of the topography of AOC 27 and its suitability for recreational use will be included in Section 6.2 of Appendix AOC27.				The Post-NTCRA HHERA was updated as indicated in the PG&E response.
64	QUECHAN-59 (2/28/25)	Appendix AOC 27. Dataset and Exposure Point Concentrati on Calculations for the A O C 27 H H E R A	NA	The figures state, "Reporting limit used for display color of non-detect results". It is not clear what this means. It is also not clear why the polygons are displayed in reference to background concentration. Wouldn't it be more useful if polygons communicated some risk level instead?	The footnote applies to Thiessen polygons that represent concentrations detected below the laboratory reporting limit (i.e., presented as a color with the 'Not Detected' pattern as indicated in the legend). The footnote will be revised to state: "Thiessen polygons with a non-detect concentration are represented by the reporting limit". The concentration bins for the Thiessen Polygons for Area Weighting figures (Attachment A3 of each AOC Appendix) will be revised to use background and applicable NTCRA Removal Action Goals for each constituent. See also responses to comments QUECHAN-50a and QUECHAN-51.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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65	QUECHAN-60 (2/28/25)	Appendix AOC 9. Section 4.6.3 Uncertainti es in the Risk Assessment	NA	Include a discussion in this section that clearly presents the exposure durations for the hiker, OHV rider, and discusses how the topography of AOC 9 is favorable/unfavorable for these activities, the size of AOC9 and how realistic these use scenarios are within this area.	A description of the topography of AOC9 and its suitability for recreational use will be included in Section 4.6.3 of Appendix AOC9.				The Post-NTCRA HHERA was updated as indicated in the PG&E response.
66	QUECHAN-61 (2/28/25)	Appendix AOC 11. Section 4.6.3 Uncertainti es in the Risk Assessment	NA	Include a discussion in this section that clearly presents the exposure durations for the hiker, OHV rider, and discusses how the topography of AOC 11 is favorable/unfavorable for these activities, the size of AOC11 and how realistic these use scenarios are within this area.	A description of the topography of AOC11 and its suitability for recreational use will be included in Section 4.6.3 of Appendix AOC11.				The Post-NTCRA HHERA was updated as indicated in the PG&E response.
67	FMIT-1a (2/27/2025)		NA	The Fort Mojave Indian Tribe (FMIT) finds the soil risk assessment addendum difficult to evaluate due to its complex structure and reliance on numerous prior documents, including the NTCRA completion report. The Tribe requests additional time to review the finalized NTCRA completion report, which was not available for stakeholder review during the addendum evaluation period, before the addendum is finalized. This situation highlights a broader concern regarding insufficient interagency coordination throughout the site's soil remediation activities. Due to the complexity of the risk assessment addendum, the FMIT has numerous general risk questions requiring detailed clarification.	Comment noted. See response to prior comment QUECHAN-1a that addressed this topic. See also the response to comment QUECHAN-3.				Comment noted, no revision to the document is required. Response is complete.
67	FMIT-1b (2/27/2025)		NA	Furthermore, the document's repetitive structure (e.g., similar text across AOC risk appendices) results in redundant tribal comments. It should be understood that comments made regarding a specific section or appendix are generally applicable to other sections of the addendum. Specifically, the FMIT requests the following clarifications: • EPC Calculations and Clean Fill: A summary detailing how the new Exposure Point Concentration (EPC) calculations account for clean fill material imported during the NTCRA. For example, are AOC surface areas containing clean fill included in EPC calculations? • Reporting Limits: A clear comparison of reporting limits used in NTCRA confirmation sampling versus pre-2019 soil samples. • Non-Detect Samples: Confirmation of whether non-detect soil samples from NTCRA sampling are included in the new risk data set. • Sample Location Changes: A summary for each AOC outlining the number of pre-2019 soil sample locations removed during the NTCRA action and the number of new NTCRA confirmation samples added to the risk assessment data set.	Comment noted. See responses to prior comments that address the same bullet topics: •EPC Calculations and Clean Fill: comment QUECHAN-1c •Reporting Limits: comment QUECHAN-1c • Non-Detect Samples: comment QUECHAN-1c • Sample Location Changes: comments QUECHAN-1d and QUECHAN-15				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
67	FMIT-1c (2/27/2025)		NA	To ensure consistency across project documentation, FMIT requests that the risk assessment addendum includes the 10^{-5}cancer level threshold for subsurface soil cleanup. This threshold, committed to by the Department of Fish and Wildlife in pre-NTCRA action meetings (February 12, 2021 Topock Soil EE/CA Response to Comment Consultation Meeting Agenda) and utilized in the NTCRA completion report, is currently absent from the addendum.	See response to prior comment QUECHAN-2 that addressed this topic. See also the response to comment QUECHAN-8.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
68	FMIT-2 (2/27/2025)	ES-1	Soil Non-Time-Critical Removal Action Completion Report (Jacobs 2024)	FMIT is concerned that the HHERA addendum relies on a draft Soil Non-Time-Critical Removal Action (NTCRA) Completion Report, which they did not have adequate time to review. This out-of-phase approach, where a draft document informs a subsequent assessment, is problematic. Given the NTCRA action's impact on site conditions, FMIT requests sufficient time to review the finalized NTCRA Completion Report before concluding their review of the HHERA addendum.	Comment noted. See response to prior comment QUECHAN-3 that addressed this topic. See also the response to comment QUECHAN-1a.				Comment noted, no revision to the document is required. Response is complete.
69	FMIT-3 (2/27/2025)		This H H E R A Addendum evaluates current conditions to confirm the effectiveness of the NT C R A and updates the risk characterization presented in the 2019 Soil Human Health and Ecological Risk Assessment Report (2019 H H E R A; Arcadis U.S., Inc. [Arcadis] 2019).	It is our understanding that the HHERA addendum was drafted to recalculate risk levels based on the current soil conditions at the site and not to confirm effectiveness of the NTCRA. As currently stated, in the HHERA addendum it would suggest that the NTCRA and risk assessment process were a coordinated effort. This statement should be revised to accurately depict why there was a need for a risk assessment addendum (i.e. the lead agencies have divided the soil clean up approach in a manner that has led to significant changes to the site resulting in the need for a secondary risk assessment).	See response to prior comment QUECHAN-4 that addressed this topic. See also responses to comments QUECHAN-12, QUECHAN-13, QUECHAN-30, QUECHAN-37a, DOI-1, and DOI-2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
70	FMIT-4 (2/27/2025)	ES-2	Thus, two different datasets were used to calculate EPCs for the HHRA:	While significant effort was invested in the original HHERA work plan to ensure tribal understanding of soil dataset development and EPC calculations, this level of engagement was lacking in the HHERA addendum work plan. The addendum provided only a high-level summary, preventing a thorough understanding of how NTCRA confirmation sampling data was integrated with pre-2019 data. This lack of detailed explanation has created unnecessary complexity, making it difficult to determine the precise data included in the updated EPCs.	Comment noted. See response to prior comment QUECHAN-5 that addressed this topic. See also responses to comments QUECHAN-1d and QUECHAN-15.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
71	FMIT-5 (2/27/2025)	ES-2	Depth-weighted EPCs and area-weighted EPCs	Regarding Exposure Point Concentrations (EPCs) calculated using updated soil data, please clarify whether area-weighted or depth- weighted criteria are more appropriate. Given the apparent disparity in sample location density within NTCRA action areas compared to other AOCs, wouldn't area-weighted EPCs disproportionately reflect impacted soils, rather than the presence of clean fill?	See response to prior comment QUECHAN-6 that addressed this topic. See also response to comment QUECHAN-1c.			Backfill material was not included in the EPC calculations. Use of remaining native soil samples (not accounting for backfill) in the EPC calculations is expected to result in overly conservative unrealistic exposure estimates.	The Post-NTCRA HHERA was updated asto include additional discussion of the uncertainties associated with the treatment of backfill in the EPC calculations
72	FMIT-6 (2/27/2025)	ES-2	Although DTSC (DTSC 2017) required evaluation of these A O C-specific exposure areas due to NTCRA activities, the conclusions and recommendations for the HHRA were based on the risks estimated for the O C S potential exposure area, which is consistent with the 2019 H H E R A (Arcadis 2019). The O C S exposure area encompasses multiple A O C-specific exposure areas, including areas where N T C R A removals were conducted and areas where no N T C R A removals were conducted.	Furthermore, the absence of a risk assessment for the entire Outside Compressor Station (OCS) area is a significant omission, contradicting the site's finalized risk assessment. As human activities will occur across the landscape, not within single AOCs, it is crucial to provide realistic quantitative risk values for the OCS. FMIT requests an update to the HHERA addendum that includes risk calculations for the entire OCS, consistent with the initial risk assessment.	See response to prior comment QUECHAN-7 that addressed this topic. See also responses to comments QUECHAN-9, QUECHAN-11, QUECHAN-17, QUECHAN-29, and QUECHAN-38.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.

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PG&E Topock Compressor Station, Needles, California

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73	FMIT-7 (2/27/2025)	ES-2	For risk characterization in the HHRA, incremental lifetime cancer risks and noncancer hazard indices (H I s) for exposures to constituents in soil were estimated using standard calculation approaches required in regulatory guidance. To draw risk conclusions, DTSC's target excess risk level of one in one million (1 x 10-6) and target H I of 1 were used, along with consideration of the National Oil and Hazardous Substances Pollution Contingency Plan acceptable cancer risk management range (40 Code of Federal Regulations 300) of one in one million (1 x 10-6) to one hundred in a million (1 x 10-4).	Please update this text to include decisions implemented by Fish and Wildlife to use a cleanup level to 10-5 cancer risk level for areas below 2 feet. (February 12, 2021 Topock Soil EE/CA Response to Comment Consultation Meeting Agenda)	See response to prior comment QUECHAN-8 that addressed this topic. See also response to comment QUECHAN-2.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
74	FMIT-8 (2/27/2025)	ES-3	In accordance with the 2019 H H E R A (Arcadis 2019), the conclusions and recommendations for the HHRA presented in this addendum were based on the risks estimated for the O C S potential exposure area. As requested by DTSC (DTSC 2017), the risks/hazards estimated in this addendum for individual A O C/SWMU/undesignat ed area potential exposure areas outside the fence line were based on the assumption that lifetime soil contact for these potential receptors would be limited to that single specific area. It is highly unlikely that activities of the recreational users would be limited to such a small area. Therefore, the risks/hazards estimated in the 2019 HHERA and in this addendum for the O C S potential exposure area are believed to provide a more appropriate representation of the potential exposures for the human populations that could be present in the areas outside the TCS.	The addendum implies risk calculations for the post- NTCRA OCS exposure area, yet no such calculations are presented. This contradiction requires correction. Please provide an updated addendum with quantitative risk calculations for the current OCS soil, essential for informed risk management decisions. The main text's repeated references to OCS risk without providing corresponding calculations exacerbates this issue.	See response to prior comment QUECHAN-9 that addressed this topic. See also responses to comments QUECHAN-7, QUECHAN-11, QUECHAN-17, QUECHAN-29, QUECHAN-38, and FMIT-6.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
75	FMIT-9 (2/27/2025)	ES-4	under the assumed set of current and reasonable future land-use scenarios described in the 2019 H H E R A (Arcadis 2019)	Are land use scenarios applicable to ecological receptors?	See response to prior comment QUECHAN-10 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
76	FMIT-10 (2/27/2025)		The updated risk characterization provided in this H H E R A Addendum evaluates potential human and ecological exposures to current conditions in the potential exposure areas outside of the TCS fence line following completion of the N T C R A activities using the same methodology as used in the 2019 H H E R A, including the same potential exposure areas, exposure assumptions, effects assumptions and risk characterization methods.	This statement implies risk calculations for the post- NTCRA OCS exposure area, mirroring the approach in the 2019 HHERA. However, the addendum lacks these calculations. Please provide an updated addendum with quantitative risk calculations for the current OCS soil, essential for risk management.	See response to prior comment QUECHAN-11 that addressed this topic. See also responses to comments QUECHAN-7, QUECHAN-9, QUECHAN-17, QUECHAN-29, QUECHAN-38, FMIT-6, and FMIT-8.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
77	FMIT-11 (2/27/2025)		The objectives of this H H E R A Addendum are to: (1) Provide risk characterization that updates the 2019 H H E R A (Arcadis 2019) in areas outside of the TCS fence line where N T C R A removals were conducted; and (2)Determine whether there is potential for unacceptable risk to human health and the environment based on potential exposures to current soil conditions in these areas.	The previous stated objective was indicated as "to evaluate the effectiveness and protectiveness of the N T C R A." This section states a different objective. Consistent language as to the need for and objective of the HHERA addendum should be used throughout the document.	See response to prior comment QUECHAN-12 that addressed this topic. See also responses to comments QUECHAN-4, QUECHAN-12, QUECHAN-30, QUECHAN-37a, DOI-1, DOI-2, and FMIT-3.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
78	FMIT-12 (2/27/2025)	2.2.2.2	RBRGs were developed in the 2019 H H E R A (Arcadis 2019) to help guide remediation actions onsite including the N T C R A. RBRGs are concentrations of C O P C s/C O P E C s that do not present unacceptable risk to human health and ecological receptors. An RBRG is a proposed health-protective target cleanup concentration that can be used, in combination with other factors such as background concentrations, as a starting point for making risk-management decisions. RBRGs were calculated for risk-driving constituents in soil for a given potential receptor where the findings of the 2019 H H E R A (Arcadis 2019) suggested some form of risk management or remediation may be warranted. RBRGs protective of human health and the environment were back-calculated using the most refined exposure and effects assumptions evaluated in the 2019 H H E R A.	Please update the addendum text to align with the finalized risk assessment (2019) and include something which states: Consistent with the HHERA approach RBRGs are applied based on the potential exposure area of interest (i.e. the 95UCL for the exposure area should be less than or equal to the RBRG). It is very important to the FMIT that the RBRGs are used correctly. Specifically, these values were developed based on 95th UCL. The addendum text must include language from the original risk assessment which states the 95UCL for the exposure area should be less than or equal to the RBRG.	See response to prior comment QUECHAN-13 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
79	FMIT-13 (2/27/2025)	2.5	NA	As a result of the NTCRA, is there any new information or perspectives acquired regarding the subsurface distribution of chromium and other contaminants at the site. Can any information from the NTCRA sampling be used to update contaminant transport model, conceptual site model or exposure models? In section 2.5 of the report, the conceptual site model is presented as a static entity, unchanged since 2019. Should the conceptual model be adjusted using new data and observations from the NTCRA? What observations were made during the NTCRA in this context, and how and where were they documented?	See response to prior comment QUECHAN-14 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
80	FMIT-14 (2/27/2025)	3.1.1	Data Included for Evaluation of Post-N T C R A Conditions	This description is very brief and does not provide insight into how the number of soil sample locations from each depth changed between the pre-2019 site condition and the post-NTCRA site condition. In addition, the soil risk assessment addendum should provide some discussion on the COPC/COPEC concentrations that were present in the NTCRA confirmation sampling and left in place.	See response to prior comment QUECHAN-15 that addressed this topic. See also response to comment QUECHAN-1d.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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81	FMIT-15 (2/27/2025)	3.1.1	Data Included for Evaluation of Post-N T C R A Conditions	How is clean fill material included in EPC calculations?	See response to prior comment QUECHAN-16 that addressed this topic. See also response to comment QUECHAN-1c.			Backfill material was not included in the EPC calculations. Use of remaining native soil samples (not accounting for backfill) in the EPC calculations is expected to result in overly conservative unrealistic exposure estimates.	The Post-NTCRA HHERA was updated asto include additional discussion of the uncertainties associated with the treatment of backfill in the EPC calculations
82	FMIT-16 (2/27/2025)	3.3	Larger areas based on combined potential exposure areas were not evaluated for potential human receptors or large home-range wildlife in this H H E R A Addendum because no unacceptable risk was identified in these scenarios in the 2019 H H E R A (Arcadis 2019) prior to completion of the N T C R A.	FMIT requests that risk values be calculated for the OCS exposure scenario as this information will be informative to risk management decisions and give insight into the risk associated with realistic land use scenarios.	See response to prior comment QUECHAN-17 that addressed this topic. See also responses to comments QUECHAN-7, QUECHAN-9, QUECHAN-11, QUECHAN-29, QUECHAN-38, FMIT-6, FMIT-8, and FMIT-10.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
83	FMIT-17 (2/27/2025)	4	For this H H E R A Addendum, depth- weighted EPCs and area-weighted EPCs were used to estimate potential risk to recreator receptors and desert shrew.	Discuss how the areas covered in clean fill dirt are incorporated into the EPC calculation. If fill dirt is not included in EPC calculations the FMIT would like to understand if this omission in site characterization is better captured by a depth-weighted or area-weighted EPC value.	See response to prior comment QUECHAN-18 that addressed this topic. See also responses to comments QUECHAN-1c, QUECHAN-6, and QUECHAN-16			Backfill material was not included in the EPC calculations. Use of remaining native soil samples (not accounting for backfill) in the EPC calculations is expected to result in overly conservative unrealistic exposure	The Post-NTCRA HHERA was updated asto include additional discussion of the uncertainties associated with the treatment of backfill in the EPC calculations
84	FMIT-18 (2/27/2025)	4.2.1	Section addressing depth weighted EPCs	A subsection specific to area-weighted EPCs should be included. Why was this omitted	See response to prior comment QUECHAN-19 that addressed this topic.				No additional revision to the document is required based on this comment. Response is complete.
85	FMIT-19 (2/27/2025)	5.2.1	NA	The FMIT notes the absence of FMIT and tribal members in the potentially exposed population groups listed in section 5.2.1. The FMIT had operated under the presumption that these groups were developed rationally and through consultation with the Tribe, a presumption based on statements found on page 70 of the 2019 HHERA: *Section 5.3.1.3. Tribal Users* *The FMIT requested that tribal users be included in the HHRA for soil. As such, tribal users were evaluated for areas outside the TCS including BCW and other investigation areas for current and potential future land use. In their exposure scenario memorandum (FMIT 2012), during the September 2013 RA Workshop, and in the follow up letter from FMIT (2013), the Tribes indicated that the tribal use of the land in the area of the site is limited to the following:* *•Tribal Group Activities - Several times during the year, tribal members may meet at the site for group prayer and reflection.* *•Tribal Education Activities - As part of the education of tribal students and young people, school classes or other youth classes may come to the area to learn about its importance and spiritual significance. These visits may last for up to 2 hours and could occur several times during an individual's time as a student.* *•Tribal Member Individual Visits - Individual tribal members may go to various specific locations (e.g., the Topock Maze) within the Mojave Valley on a regular but infrequent basis for quiet time and reflection. These activities are part of the practice of their religion and culture, to pay homage to the area, and to honor their ancestors.* None of these activities include intrusive soil activities or direct contact with soil. Direct exposures (ingestion and dermal contact) to surface soil (0 to 0.5 foot bgs) and shallow soil (0 to 3 feet bgs) for the tribal user are considered incomplete and thus were not evaluated in the HHRA. As agreed in the approved RAWP Addendum 2 (Arcadis 2015), potential exposure for a tribal user is limited to indirect exposures resulting from the inhalation of particulates from surface soil (0 to 0.5 foot bgs) and shallow soil (0 to 3 feet bgs), and VOCs present in subsurface 2 soil (0 to 10 feet bgs). Why is there no such consideration for Tribal members or groups in the 2024 HHERA Addendum?	See response to prior comment QUECHAN-20 that addressed this topic.				Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
86	FMIT-20 (2/27/2025)	5.3.1	In these cases, surrogate chemicals were chosen based on structural similarity to avoid underestimating potential carcinogenic hazards	How were surrogates selected?	See response to prior comment QUECHAN-21 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional 19
87	FMIT-21 (2/27/2025)	5.3.2	In such cases, surrogate chemicals were chosen based on structural similarity to avoid underestimating potential noncarcinogenic hazards:	How were surrogates selected?	See response to prior comment QUECHAN-21 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional 19
88	FMIT-22 (2/27/2025)	5.4.1	H I = Hazard index; the sum of the constituent-specific HQs, which represents the cumulative potential for predicted exposures to result in noncarcinogenic effects (unitless)	HQ is defined as the "The ratio of the potential exposure to a substance and the level at which no adverse effects are expected (calculated as the exposure divided by the appropriate chronic or acute value)" and HI as the "The sum of hazard quotients for toxics that affect the same target organ or organ system. Please indicate if any effort was made in summing up HQs based on organ systems. If this was not done in the risk assessment, then please include a discussion of how the HI summed up without regard to organ systems is conservative. This additional text should be included in the uncertainty section.	See response to prior comment QUECHAN-23 that addressed this topic.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as to include a more robust uncertainty discussion, as indicated in the Tribes Response to Comments.
89	FMIT-23 (2/27/2025)	5.5 and 6.7	NA	Sections 5.5 and 6.7 of the Addendum are entitled Uncertainty Analysis. While these sections include subsections that each address sources of uncertainty, generally qualitatively, there does not appear to be any uncertainly analysis completed as part of the section or as part of work referenced in either section. Are we to believe that this approach represents the state of the practice in human health and ecological risk assessment as concerns uncertainty analysis? If so, and this may indeed represent the state of the practice, the report narrative should provide at least some background information documenting this – particularly for those outside of the complex human health and ecological risk assessment specialty.	See response to prior comment QUECHAN-24 that addressed this topic.				Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as to include a more robust uncertainty discussion, as indicated in the Tribes Response to Comments.

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90	FMIT-24 (2/27/2025)		As a point of reference, note that the NCP (40 CFR 300) indicates that lifetime incremental cancer risks posed by a site are compared to a range of one in one million (1 x 10-6) to one hundred in a million (1 x 10-4). As indicated in the NCP (40 CFR Part 300), cancer risks between one in a million and one hundred in a million probability of occurrence (1 x 10-6 and 1 x 10-4) fall within a risk- management range. This is generally referred to as the acceptable risk range. Within this estimated cancer risk range, there is flexibility for risk managers in deciding what action, if any, is necessary and appropriate for the protection of human health. Cal E P A's point of departure for excess ILCR for all receptor groups (i.e., residential populations) is 1 x 10-6 , and risk-management decisions may raise this criterion depending on site-specific conditions.	This section should include some discussion regarding F&W decision to use a risk management decision of 10-5 cancer risk level for subsurface cleanup within the NTCRA action.	See response to prior comment QUECHAN-25 that addressed this topic.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
91	FMIT-25 (2/27/2025)	5.5.3	Uncertainties in the Exposure Assessment	FMIT believes that a robust description of how background concentrations significantly contribute to the risk estimates should be included in the uncertainty section.	See response to prior comment QUECHAN-26 that addressed this topic.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as to include a more robust uncertainty discussion, as indicated in the Tribes Response to Comments.
92	FMIT-26 (2/27/2025)	5.5.2	Uncertainties in the Exposure Assessment	A robust discussion on the uncertainty in the scouring scenario should be included. Specifically, numerous high flow events have been recorded during the remediation timeline providing sufficient field data to evaluate the accuracy of the 2ft and 5ft scouring scenario as included in the risk assessment.	See response to prior comment QUECHAN-27 that addressed this topic.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	The Post-NTCRA HHERA was updated as indicated in the PG&E response.
93	FMIT-27 (2/27/2025)	5.5.2.1	Therefore, the health risks estimated for recreational users may be overestimated and lower than presented in the HHRA.	Please change language to state "Therefore, the health risks estimated for recreational users ~~may be~~ *are likely* overestimated and lower than presented in the HHRA."	See response to prior comment QUECHAN-28 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
94	FMIT-28 (2/27/2025)	5.5.3.2	Given the reduction in overall estimated cumulative risks and hazards under post- N T C R A conditions in these potential exposure areas which were identified with elevated concentrations of risk-driver COPCs in the 2019 H H E R A (Arcadis 2019), estimated cumulative risks and hazards for recreational users, camper, hikers, and OHV riders for the O C S potential exposure area under post- N T C R A conditions are likely lower than estimated in the 2019 H H E R A (Arcadis 2019) and likely at or slightly above at 1 x 10-6 and well within the within the risk-management range of 1 x 10-6 and 1 x 10-4	The risk values for OCS exposure should be quantitatively calculated and presented in the HHERA addendum.	See response to prior comment QUECHAN-29 that addressed this topic. See also responses to comments QUECHAN-7, QUECHAN-9, QUECHAN-11, QUECHAN-17, QUECHAN-38, FMIT-6, FMIT-8, FMIT-10 and FMIT-16.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
95	FMIT-29 (2/27/2025)	6.1 Purpose and Objectives	NA	The objectives stated here do not align with objectives stated in the ES.	See response to prior comment QUECHAN-30 that addressed this topic. See also responses to comments QUECHAN-4, QUECHAN-12, QUECHAN-13, QUECHAN-37a, DOI-1, DOI-2, and FMIT-3.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
96	FMIT-30 (2/27/2025)	6.2	This E R A is consistent with the approved R A W P documents (Arcadis 2008a, 2009a, 2015), 2019 H H E R A (Arcadis 2019) and follows regulatory guidance including:	Why is the HHERA addendum workplan not included on this list?	See response to prior comment QUECHAN-31 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
97	FMIT-31 (2/27/2025)	6.3.2 Assessment and Measurement Endpoints	basis of the E C s (maximum vs 95UCL), confidence in the toxicity values	The acronym EC is not defined in the text	See response to prior comment QUECHAN-32 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
98	FMIT-32 (2/27/2025)	6.6.1	Because protection at the individual level is not warranted for desert shrew, N O A E L-based HQs greater than 1 were not further evaluated using a W O E approach.	For clarity this sentence should state, NOAEL-based HQs greater than 1 *but LOAEL based HQ were less than 1* were not further evaluated using a W O E approach.	See response to prior comment QUECHAN-33 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
99	FMIT-33 (2/27/2025)	6.7.2.1	There is significant uncertainty in the application of mammal T E Fs to soil data in the dietary models and dioxin T E Q HQs for these receptors may not be predictive of actual risk.	This section should clearly indicate that the uncertainty in the application of mammal T E Fs to soil data in the dietary models and dioxin T E Q HQs for these receptors will likely result in an overestimate of calculated risk.	See response to prior comment QUECHAN-34 that addressed this topic.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	The Post-NTCRA HHERA was updated as indicated in the PG&E response.
100	FMIT-34 (2/27/2025)	6.7.3.1	Exposure estimates calculated herein assume that measured concentrations of C O P E C s in soil are 100% bioaccessible via dietary uptake (dermal absorption via the gut)	It is our understanding that absorption following oral exposure is not considered dermal absorption. This should be rewritten to correctly reflect that most COPECs have limited oral bioavailability in addition to very limited dermal absorption.	See response to prior comment QUECHAN-35 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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101	FMIT-35 (2/27/2025)	6.7.3.2.1 Dietary Composition	NA	This section should also include text that clearly addresses the fact that the surrogate species (shrew) have the highest metabolic rates of any mammals (with pulses as high as 800 beats per minute). They spend most of their time searching for food, as they can survive only a few hours without eating. Therefore, the dose calculated for this small mammal species is certain to be overly conservative when applied to other small mammal species that are present at the site. This is particularly relevant as no desert shrew has been observed at the site and the use of a small mammal species together with selecting one with the highest metabolic rate will overestimate risk for small mammal species that are present at the site.	See response to prior comment QUECHAN-36 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
102	FMIT-36 (2/27/2025)	7	The effectiveness of the N T C R A was evaluated based on updated risk characterization for areas where N T C R A removals were conducted and determination of whether there is potential for unacceptable risk to human health and the environment based on potential exposures to current soil conditions in these areas.	FMIT is under the impression that the NTCRA action was taken to remove potential impacts to HNWR land downgradient, not to reduce risk in current AOCs. If this is correct the language in the report should be updated to reflect the correct reason for the DOI NTCRA action.	See response to prior comment QUECHAN-37a that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
103	FMIT-37 (2/27/2025)	7	risk estimates are expected to be overestimated rather than underestimated and risk conclusions presented in this section may overstate the potential for unacceptable risk to human and ecological receptors at the site.	Language should be updated to state "risk conclusions presented in this section likely overstate".	See response to prior comment QUECHAN-37b that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
104	FMIT-38 (2/27/2025)	7.1.2 Outside the Compressor Station	NA	The report needs to provide quantitative risk calculations for OCS. The omission of these risk calculations prevents this document from aligning with the final HHERA and compromises the ability of risk managers to understand risk at the site under realistic site use scenarios.	See response to prior comment QUECHAN-38 that addressed this topic. See also responses to comments QUECHAN-9, QUECHAN-11, QUECHAN-17, QUECHAN-29, FMIT-6, FMIT-8, FMIT-10, FMIT-16, and FMIT-28.			Tribes request clear quantifiable risk levels be presented for exposure for the entire OCS (outside the compressor station). This calculation will allow direct comparison to the earlier risk assessment and provide a realistic threshold for risk management discussions which will occur in the future	Based on Stakeholder discussion, the Post-NTCRA HHERA was updated as indicated based on the PG&E response.
105	FMIT-39 (2/27/2025)	Table 5-3 Carcinogenic and Noncarcinogenic Toxicity Values for C O P Cs in Soil	NA	Table (or footnote to table) should be expanded to show what chemical analog identification tool was used to select the surrogate, along with the confidence level of the surrogate match.	See response to prior comment QUECHAN-39 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional 19
106	FMIT-40 (2/27/2025)	Table 5-4	NA	The Y axis labeling on this table is difficult to interpret. As it is unclear what background risk level is in each AOC.	See response to prior comment QUECHAN-40 that addressed this topic.				No additional revision to the document is required based on this comment. Response is complete.
107	FMIT-41 (2/27/2025)	Table 6-1 Exposure Parameters for Terrestrial Wildlife Receptors	NA	This table should specify the wildlife receptor presented.	See response to prior comment QUECHAN-41 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
108	FMIT-42 (2/27/2025)	Table 6-4 Toxicity Reference Values for Wildlife	NA	This table should indicate what test species are used for the report NOAEL/LOAEL values presented in the table and include body weight of the test species.	See response to prior comment QUECHAN-42 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
109	FMIT-43 (2/27/2025)	Figure 5-1	NA	This figure seems to indicate that areas such as AOC 9, AOC 11 etc. have no human receptors present. Please update the map to more clearly indicate which receptors are present at each AOC.	See response to prior comment QUECHAN-43 that addressed this topic.				No additional revision to the document is required based on this comment. Response is complete.
110	FMIT-44 (2/27/2025)	Appendix BCW. Section 1.2 Summary of N T C R A in Bat Cave Wash	As summarized in the N T C R A Completion Report (Jacobs 2024a), the	Text should clearly indicate that this is a draft document and was not completed during review of the HHERA addendum	See response to prior comment QUECHAN-44 that addressed this topic.				Comment noted, no revision to the document is required. Response is complete.
111	FMIT-45 (2/27/2025)	Appendix BCW. Section 1.2 Summary of N T C R A in Bat Cave Wash	As summarized in the N T C R A Completion Report (Jacobs 2024a), the D O I selected a removal action of excavation of contaminated soil and debris at target action areas (TAAs) within the site, located in Needles, California (D O I 2021). PG&E commenced the N T C R A soil removal action on July 25, 2022, according to the D O I-approved Soil N T C R A Work Plan (Jacobs 2022), which incorporated comments from stakeholders, including D O I, U.S. Bureau of Land Management, and tribal stakeholders.	For the record, FMIT strongly disagreed with the need for the NTCRA.	Comment noted.				No additional revision to the document is required based on this comment. Response is complete.
112	FMIT-46 (2/27/2025)	Appendix BCW. Section 2	Consistent with the approach detailed in the January 30, 2024 Technical Memo (Arcadis 2024), the	Why is Arcadis 2024 considered a tech memo and not a work plan? If not a work plan why was no work plan distributed for review of the proposed approach?	See response to prior comment QUECHAN-46 that addressed this topic.				No additional revision to the document is required based on this comment. Response is complete.
113	FMIT-47 (2/27/2025)	Appendix BCW. Section 2.1	N T C R A are presented in the N T C R A Completion Report (Jacobs 2024a); details of the soil sampling and analysis for the remaining samples are described in the R A W P documents (Arcadis 2008, 2009, 2015) and 2019 H H E R A (Arcadis 2019).	The separation of soil data descriptions across the 2019 HHERA, the 2025 NTCRA completion report, and other risk assessment documents is problematic. This disjointed approach, coupled with the lack of alignment between the risk assessment and NTCRA actions due to separate lead agencies, hinders validation of the COPC/COPEC analysis. To address this, an appendix that consolidates all soil data details used in the updated risk assessment is requested.	See response to prior comment QUECHAN-47 that addressed this topic. See also responses to comments QUECHAN-1d and. QUECHAN-15.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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PG&E Topock Compressor Station, Needles, California

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114	FMIT-48 (2/27/2025)	Appendix BCW. Section 4.6 Human Health Risk Characterization	NA	This section should include some discussion within the document regarding Fish and Wildlife agreement to use a 10-5 cancer risk as a risk threshold for subsurface remediation within the NTCRA action.	See responses to prior comments QUECHAN-2 and QUECHAN-8 that addressed this topic.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
115	FMIT-49 (2/27/2025)	Appendix BCW. Table BCW-5.4, Table BCW-5.5, Table BCW-5.6	NA	Where are HQ calculations that use congener specific exposure concentrations? The footnotes include BAF (what is BAF?) but it is not clear where alternative BAF calculations are presented in the table. This should be made clearer in the tables.	See response to prior comment QUECHAN-49 that addressed this topic.				No additional revision to the document is required based on this comment. Response is complete.
116	FMIT-50a (2/27/2025)	Appendix BCW. Figures BCW-A3.1 through A3.5	NA	1) It is not clear how the concentration buckets in the table were established and this should be clearly communicated	See response to prior comment QUECHAN-50a that addressed this topic. See also response to comment QUECHAN-51.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
116	FMIT-50b (2/27/2025)	Appendix BCW. Figures BCW-A3.1 through A3.5	NA	2) in some cases the background threshold value and COPC concentration are in different units. Please update the report to clarify.	See response to prior comment QUECHAN-50b that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
117	FMIT-51 (2/27/2025)	Appendix AOC 10	NA	There was difficulty during the document review in determining what sample locations are above RBRGs. The only information in this regard are the polygon maps but it appears that the colors in the polygon maps are based on exceedance of background threshold not RBRGs. Please include maps for each AOC that presents this information. This was presented in the final risk assessment in Figures titled "Combined risk Driving locations for the HHERA". Please include similar figures in the addendum report.	See response to prior comment QUECHAN-51 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
118	FMIT-52 (2/27/2025)	Appendix AOC 10. OVERALL SUMMARY	As summarized above, the depth-weighted 2-foot scouring and 5-foot scouring ILCRs for the camper, hiker, and O H V rider are slightly higher for shallow soil than the depth-weighted baseline ILCRs for surface soil, which suggests that the impacts for the risk drivers (arsenic, hexavalent chromium, and dioxin T E Q) are primarily within the 2 to 5 feet bgs interval for the A O C 10 potential exposure area. As summarized in Section 1.1, although A O C 10 includes steep slopes along the ravine, scouring has not been observed. As noted, the subareas of concern are primarily depositional. During recent high runoff conditions that occurred with rainstorm events on August 24 and September 11, 2022, and March 15, 2023, flooding and sediment deposition was observed in the subareas rather than scouring. Therefore, risk estimates presented in the HHRA for the hypothetical 2-foot scouring and 5-foot scouring scenarios are not representative of actual exposure to soil in A O C 10 for the camper, hiker, and O H V rider.	The referenced conclusion needs specific soil sample locations to support it. For example, if the higher concentrations are located on side walls it could be carried down and become surface soils. However, if the higher concentrations are buried in depositional areas, it would not become exposed.	See response to prior comment QUECHAN-52 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
119	FMIT-53 (2/27/2025)	Appendix AOC 10. Section 2.1	The H H E R A Addendum dataset for A O C 10 includes results for in-place samples evaluated in the 2019 H H E R A (Arcadis 2019) and inplace N T C R A confirmation samples.... Details of the soil sampling and analysis conducted as part of the N T C R A are presented in the N T C R A Completion Report (Jacobs 2024a); details of the soil sampling and analysis for the remaining samples are described in the R A W P documents (Arcadis 2008, 2009, 2015) and 2019 H H E R A (Arcadis 2019).	While this comment is specific to the text in section 2.1 it is applicable to the main report and all appendixes. Requiring the reader to cross reference the NTCRA report (which is drafted following guidance from another lead agency) to understand what NTCRA confirmation samples consist of (e.g. RL analytical method etc.) creates a report that is unnecessarily difficult to review. An appendix should be included in the addendum report that compiles all data used in the risk assessment in one place and allows a reviewer to understand what NTCRA-derived data set is included in the risk calculations.	See response to prior comment QUECHAN-53 that addressed this topic. See also responses to comments QUECHAN-1d, QUECHAN-15, and QUECHAN-47.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
120	FMIT-54 (2/27/2025)	Appendix AOC 10. Section 4.6	Estimated cumulative ILCRs (i.e., sum of chemical specific ILCRs for each exposure depth for a scenario) were calculated and compared to the DTSC point of departure for a risk management decision of 1 × 10–6. It should be noted that risk management decisions may increase this criterion depending on site-specific conditions	This would be one of the many places throughout the addendum risk assessment that the decisions implemented by Fish and Wildlife to use a cleanup level to 10-5 for areas below 2 feet (February 12, 2021, Topock Soil EE/CA Response to Comment Consultation Meeting Agenda) should be mentioned.	See response to prior comment QUECHAN-54 that addressed this topic. See also responses to prior comments QUECHAN-2 and QUECHAN-8.			The Fish and Wildlife commitment to the Tribes to use 10-5 as a risk threshold should be included in the risk evaluations and discussed in the HHERA document. It is my opinion that the 10-5 risk threshold and referenced to the F&W statement should be stated within the report	The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
121	FMIT-55 (2/27/2025)	Appendix AOC 10. Section 4.6.2	Exhibit A O C 10-4.2 2-Foot Scouring Depth-Weighted Estimated Cumulative Incremental Lifetime Cancer Risk and Hazard Index for the A O C 10 Potential Exposure Area for Recreational Users	How is the elevated risk associated with TEQ possible if the NTCRA removed COPCs above the RBRGs? Please explain this in the text and provide maps that show the soil sample locations associated with this risk.	See response to prior comment QUECHAN-55 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
122	FMIT-56 (2/27/2025)	Appendix AOC 10. Section 5.6.1 and 5.6.2	NA	The inclusion of tables to summarize the HQ values (like tables in the human health section) would allow the reader to easily understand the different risk values for the different scenarios.	See response to prior comment QUECHAN-56 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
123	FMIT-57 (2/27/2025)	Appendix AOC 27. Section 2.1	Details of the soil sampling and analysis conducted as part of the N T C R A are presented in the forthcoming N T C R A Completion Report (Jacobs 2024a);	This appendix provides the most accurate description of the NTCRA completion report within the entire document. Elsewhere, the report's pending finalization is not indicated. As previously stated, the FMIT believes the NTCRA completion report, a critical reference document, should have been finalized during the risk assessment addendum review period. Furthermore, the FMIT was denied the opportunity to review the NTCRA document to ensure alignment with tribal perspectives.	See response to prior comment QUECHAN-57 that addressed this topic.				Comment noted, no revision to the document is required. Response is complete.

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124	FMIT-58 (2/27/2025)	Appendix AOC 27. Section 6.2 Uncertainties in the Risk Assessment	NA	This section should also address how realistic it is that AOC27 being used for camping, OHV riding and hiking as modeled in the human exposure use scenario.	See response to prior comment QUECHAN-58 that addressed this topic.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	The Post-NTCRA HHERA was updated as indicated in the PG&E response.
125	FMIT-59 (2/27/2025)	Appendix AOC 27. Dataset and Exposure Point Concentration Calculations for the A O C 27 H H E R A	NA	The figures state, "Reporting limit used for display color of non-detect results". It is not clear what this means. It is also not clear why the polygons are displayed in reference to background concentration. Wouldn't it be more useful if polygons communicated some risk level instead?	See response to prior comment QUECHAN-59 that addressed this topic. See also responses to comments QUECHAN-50a and QUECHAN-51.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
126	FMIT-60 (2/27/2025)	Appendix AOC 9. Section 4.6.3 Uncertainties in the Risk Assessment	NA	Include a discussion in this section that clearly presents the exposure durations for the hiker, OHV rider, and discusses how the topography of AOC 9 is favorable/unfavorable for these activities, the size of AOC9 and how realistic these use scenarios are within this area.	See response to prior comment QUECHAN-60 that addressed this topic.			The HHERA addendum needs a much more robust discussion of uncertainties. This should cover many of the topics addressed by the tribe specific to the HHERA in addition to clearly restating uncertainties addressed in the previous risk assessment documents	The Post-NTCRA HHERA was updated as indicated in the PG&E response.
127	FMIT-61 (2/27/2025)	Appendix AOC 11. Section 4.6.3 Uncertainties in the Risk Assessment	NA	Include a discussion in this section that clearly presents the exposure durations for the hiker, OHV rider, and discusses how the topography of AOC 11 is favorable/unfavorable for these activities, the size of AOC11 and how realistic these use scenarios are within this area.	See response to prior comment QUECHAN-61 that addressed this topic.				The Post-NTCRA HHERA was updated as indicated in the PG&E response.
128	DTSC HERO-1 (3/11/2025)	Title of report	NA	Title of report: Since only the cumulative cancer risks and non-cancer hazards for risk driving chemicals were updated in the report to incorporate data from confirmation samples and using data left in place, HERO recommends revising the title of the report from "Soil Human Health and Ecological Risk Assessment Addendum Report" to "Post-Non-Time Critical Removal Action (NTCRA) Human Health and Ecological Risk Assessment (HHERA) Report".	The title of the report will be updated as suggested. See also response to comment QUECHAN-4.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
129	DTSC HERO-2 (3/11/2025)		NA	Human Receptors evaluated in the report: According to the report, only "risk driving receptors" were evaluated in this HHRA addendum, which did not include long- and short-term workers or tribal users. Per the 2019 HHERA, for SWMU 1, the non-cancer hazard for the long-term worker was above one (HI of 3) using the depth-weighted averaging approach. Also, the estimated cumulative cancer risks were above 10-6 for the long-term and short-term maintenance workers at AOC 10. Based on this information HERO recommends presenting the cumulative risks and hazards to all receptors for the AOCs where NTCRA was conducted in the HHRA addendum.	As stated in the 2019 Soil HHERA, SWMU1 exposure area was evaluated separately from the BCW exposure area per the request of DTSC although SWMU1 exposure area is within the BCW exposure area. HIs for the long-term worker for the BCW exposure area were below 1. In accordance with the RAWP (Arcadis 2008, 2009, 2015), the conclusions and recommendations for the 2019 HHRA were based on the risks estimated for the ICS and OCS potential exposure areas. The ICS is located inside the TCS fenceline and is part of a currently active industrial facility with access limited to commercial and maintenance workers. The potential risks/hazards for outside the fenceline are evaluated assuming the broader range of potential uses including maintenance workers, recreational users, and tribal users. As requested by DTSC (DTSC 2017) the risks/hazards estimated for individual AOCs/SWMU/UA potential exposure areas outside the fenceline are based on the assumption that lifetime soil contact for these potential receptors would be limited to that single specific area. It is highly unlikely that activities of the maintenance workers, recreational users, or tribal users would be limited to such a small area. Therefore, the risks/hazards estimated for the OCS potential exposure area are believed to provide a more appropriate representation of the potential exposures for the human populations that could be present in the areas outside the TCS. As concluded in the 2019 HHRA, the levels of COPCs in OCS soil are safe and protective of the short-term and long-term maintenance worker because both workers are part of the active facility operations at TCS. Current use of health and safety protocols, required by PG&E as part of routine work practices inside and outside the TCS, limit worker exposure to soil, and provide an added level of protection, above and beyond what is necessary, to ensure full protection of the health of all PG&E workers and subcontractors working at the TCS and in surrounding outside areas. Therefore, the estimated ILCRs for the short-term and long-term maintenance workers were overestimated in the 2019 HHRA and actual risks are likely below 1 x 10-5 and well within the risk management range of 1 × 10-6 and 1 × 10-4. As such short-term and long-term maintenance workers were not identified in the 2019 HHRA as "risk-driving receptors" and updated risk estimates in the Post-NTCRA HHERA are not necessary.				No change to the document is required based on this comment. The response is complete.
130	DTSC HERO-3 (3/11/2025)		NA	Confirmation samples: Per the report, only exposure point concentrations (EPCs) for "risk driving" contaminants which included hexavalent chromium, total chromium, dioxins/furans, and copper were updated in this HHRA addendum to evaluate the effectiveness of the NTCRA. For all the other COPCs detected at the site, EPCs estimated in the 2019 HHERA were used in the cumulative risk and hazard calculations. Please provide discussions as to whether other chemicals were analyzed in the confirmation samples, besides the four risk driving chemicals.	As directed by DOI (2021), soil NTCRA activities were intended to remove contaminants exceeding the numerical RAG s and debris within 10 feet of the ground surface to achieve the RAO s. Therefore, chemical analysis of confirmation samples was conducted for those constituents above the numerical RAGs. The specific list of constituents differs slightly in each area targeted for NTCRA removals but generally consists of select metals and dioxins. Besides the four risk-driving COPCs, constituents analyzed in confirmation samples in some areas include lead, mercury, molybdenum, and zinc. Discussion of these constituents and a quantitative evaluation of post-NTCRA concentrations relative to the 2019 EPC datasets are presented in Section 2.3 (Evaluation of Additional Data) of each exposure area specific appendix to the Post-NTCRA HHERA Report. The evaluations indicate that EPCs for lead, mercury, molybdenum, and zinc in the Post-NTCRA HHERA based on values calculated from the 2019 HHERA dataset (Arcadis 2019) are likely a conservative estimate of current post-NTCRA exposures in the individual exposure areas. Exclusion of the in-place NTCRA confirmation samples for these constituents is not expected to materially change the risk estimates or conclusions of the Post-NTCRA HHERA.				No change to the document is required based on this comment. The response is complete.
131	DTSC HERO-4 (3/11/2025)		NA	Depth and Area-weighted Exposure Point Concentrations (EPCs): According to the report, risks and hazards estimated for the potential receptors were conducted on an AOC by AOC basis. The EPCs were first estimated using depth weighted approach. Area-weighted EPCs for the HHRA were evaluated only if depth-weighted EPCs suggested that cumulative cancer risks and/or noncancer hazards may be significant for any given HHRA exposure scenario (i.e., cumulative cancer risks exceed a 1 x 10-6 cancer risk level and/or the noncancer H I exceeds one). HERO notes that the results of the HHERA addendum indicate that cumulative cancer risks and non-cancer hazards are similar under both approaches.	Comment noted. No revision to the Post-NTCRA HHERA is needed based on this comment.				No change to the document is required based on this comment. The response is complete.

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132	DTSC HERO-5 (3/11/2025)		NA	Fill material: Please include Information on the fill material used to backfill excavated areas and whether the material was analyzed to ensure that it was clean per DTSC's Advisory on Clean Imported Fill Material (2001).	Fill material sources and testing were described in Section 2.7.1 of the NTCRA Completion Report as follows: "DOI was notified of the proposed type of backfill material to be used. Clean onsite fill material conforming to the Topock Groundwater Remedy Soil Management Plan (SMP including updates to Table 2.4-1 (Reference List of Potentially Applicable Analytes and Associated Screening Levels Management Protocol for Handling and Disposition of Displaced Material; Jacobs 2022a) reuse criteria approved by DTSC and DOI (DTSC 2019, 2022; DOI 2018). When clean onsite material sources were depleted, in consultation with the Tribes, DOI approved the import of clean AB material from the Campbell quarry in Lake Havasu City, Arizona. DOI also approved the import of riprap from the Rio quarry in Mohave Valley, Arizona; however, the approval was later rescinded at the request of FMIT, and riprap was then imported from the McCrossan Quarry in Kingman, Arizona. Clean screened rock material from onsite mechanical separation operations was also used to backfill AOC1 TAA2, SWMU1 TAA1, and SWMU1 TAA2 excavations." The backfill material conformed to the Topock Groundwater Remedy Soil Management Plan (SMP, Jacobs 2022a) reuse criteria approved by DTSC (2022). This information was added to Section 2.2.3.2 (2023 Non-Time Critical Removal Action) of the Post-NTCRA HHERA.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
133	DTSC HERO-6 (3/11/2025)		NA	Toxicity values: Since 2019, the toxicity values of several chemicals have been updated, including arsenic and hexavalent chromium. The oral Cancer Slope Factor (CSFo) for arsenic has recently been updated by USEPA (32 (mg/kg/d)-1) as published on the Integrated Risk Information System (IRIS) and will be adopted by DTSC per the Toxicity Criteria Rule. This is a more stringent value compared to the CSFo that is currently listed in HHRA Note 10 (9.5 (mg/kg/d)-1), that was developed by Office of Environmental Health Hazard Assessment (OEHHA). The oral reference dose (RfDo) and inhalation reference concentration (RfC) for hexavalent chromium has also been updated on USEPA's IRIS from 3.0x10-3 mg/kg/d (RfDo) and 1.0x10-1 ug/m3 (RfC) to more stringent values of 9.0 x10-4 mg/kg/d (RfDo) and 3.0x10-2 ug/m3 (RfC). Other chemicals with updated toxicity values include cis-1,2-dichloroethylene, trans-1,2- dichloroethylene, 1,1 dichloroethylene, formaldehyde and toluene. Please include a comprehensive list of all chemicals with updated toxicity values and discuss how it has impacted the cancer risk and non-cancer hazard estimates and the overall conclusions of the HHERA, for the AOCs that were evaluated in the HHERA addendum. DTSC is in the process of incorporating these toxicity values into the latest HHRA Note 3.	The toxicity values for COPCs were updated in the Post-NTCRA HHERA to the most current DTSC HERO HHRA Note 10 recommended toxicity values at the time the Draft Post-NTCRA HHERA was submitted to DTSC on December 14, 2024. A comprehensive list of applicable Site chemicals with updated toxicity values, as recommended in April 2025 DTSC HERO HHRA Note 10, will be included in the Post-NTCRA HHERA. A discussion will be added in the uncertainty section regarding how the updated toxicity values have impacted the cancer risk and non-cancer hazard estimates and the overall conclusions of the HHERA, for the AOCs that were evaluated in the Post-NTCRA HHERA.			[from email on 10/13/2025] Finally, the tribal request should include a desire for clarity regarding DTSC comment #133 which would allow the tribes to understand which toxicity values from the 2019 risk report were updated and used in the HHERA addendum risk calculations.	See response to Comment #140 for list of chemicals with updated toxicity values that were used in the HHERA addendum risk calculations. Additional discussion on how applying these new values might impact risk conclusions will be included in the uncertainty discussions of the revised report. Comment #140 was provided by FMIT on 10/13/2025 in tandem with the Tribal response to PG&E's response to Comment #133.
134	DTSC HERO-7 (3/11/2025)		NA	Polycyclic Aromatic Hydrocarbons (PAHs): Please note that, per DTSC's Human Health Risk Assessment (HHRA) Note 4, HERO no longer recommends evaluating risks for carcinogenic PAHs using the benzo(a)pyrene equivalence (B(a)P equivalence) approach, since the toxicity values recommended by DTSC for some of the PAHs (such as dibenz(a,h)anthracene) are different from those recommended by the USEPA. Instead, each of the PAHs should be evaluated separately and the risks incorporated into the cumulative risk estimate. This is not expected to change the overall conclusions of the report.	Comment noted. No revision to the Post-NTCRA HHERA is needed based on this comment.				Comment noted. No revision to the Post-NTCRA HHERA is needed based on this comment.
135	DTSC HERO-8 (3/11/2025)		NA	Leadspread 9: HERO notes that the version of Leadspread used in the HHRA addendum was Leadspread 8. The current version is Leadspread 9 where some of the input parameters such as soil ingestion rates have changed. This should not affect the overall conclusions of the report.	Comment noted. No revision to the Post-NTCRA HHERA is needed based on this comment.				Comment noted. No revision to the Post-NTCRA HHERA is needed based on this comment.
136	DTSC ERAS-1 (5/7/2025)		NA	ERAS believes that the use of the alternate BAFs is a weak line of evidence (LOE) and should not be used in isolation. ERAS has concerns regarding the application of the alternate BAFs for dioxin TEQs as proposed in the HHERA Addendum and does not consider the information provided to be robust.	Comment noted. Please see responses to DTSC ERAS-2a through 2e.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
137	DTSC ERAS-2a (5/7/2025)	6.4.3.2.1 Alternate Dioxin TEQ BAFs	NA	ERAS has concerns about the use of alternative bioconcentration factors (BAFs) and believes that stronger support is needed on this matter, despite previous discussions. ERAS is particularly concerned that the alternative soil-to-invertebrate BAFs for dioxin toxicity equivalents (TEQs) should not be used alone as evidence. The report refers to a single study (Fagervold et al., 2010) to support the alternative BAFs. However, ERAS points out that this study does not provide a sufficient foundation to be deemed a strong piece of evidence on its own. The conclusion regarding the insignificant risk associated with these BAFs is highly uncertain. This uncertainty arises mainly from referencing a single study, as a single study does not show variation, has a small sample size (n = 4), and focuses on non-representative soil types, particularly wetland soils. As a result, ERAS does not recommend using hazard quotients derived solely from the alternative BAFs for making management decisions. Further discussion is requested to support the use of alternative BAFs and uncertainties that arise when considering alternative BAFs. This supporting information should include:	In addition to the alternate dioxin BAFs derived from Fagervold et al. (2010), the Post-NTCRA HHERA provides multiple additional lines of evidence to support the conclusion that post-NTCRA conditions at the site do not pose an unacceptable risk to ecological receptors. These lines of evidence are summarized in Section 7.2.1 and presented in more detail in the following sections: · Sections 6.4.3.2.1 and 6.7.4.1: o Additional alternate congener-specific BAFs from USEPA (1999); o Site-specific uptake data that predicts lower uptake relative to uptake predicted using a generic TCDD BAF · Section 5.6.1 of Exposure-Area Specific Appendices: o Shrew dietary assumption (100% earthworm diet) is likely to overestimate dioxin exposure as earthworms are unlikely to be present at the site and other terrestrial invertebrates likely to be present have lower potential dioxin uptake o Infrequent and spatially dispersed nature of remaining dioxin TEQ concentrations significantly (10x) above background (i.e., BTV) indicating that few individual shrews would be substantially exposed to concentrations significantly above the BTV. · Section 5.6.3 of Exposure-Area Specific Appendices: o LOAEL HQs are less than 1 using both sets of congener-specific BAFs · Conclusion no unacceptable risk in the 2019 HHERA (pre-NTCRA conditions) for all ecological receptors except desert shrew. · As noted by ERAS (M. Eichelberger comments and A. phone comments on 2025), shrew have not been observed at the site and are unlikely to be present. In response to this comment, the supporting lines of evidence listed above will be presented together in the report in sections where conclusions for dioxin TEQ and shrew are discussed (e.g., Sections 6.6.2 and 7.2.1 of the main report; Section 5.6.3 of Exposure-Area Specific Appendices) to make it clear that many lines of evidence support the conclusion of no unacceptable risk to shrew.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
137	DTSC ERAS-2b (5/7/2025)	6.4.3.2.1 Alternate Dioxin TEQ BAFs	NA	(a) ERAS recommends that priority be placed on information from reference studies utilizing Southern California desert soils, or at least studies in which BAFs were developed in soils with characteristics similar to those found in Southern California desert soils. The previously provided study provides comparable organic carbon content for one soil treatment; however, it does not include other essential soil chemistry details needed to evaluate the suitability of the BAFs for Southern California desert soil.	The two sets of congener-specific BAFs utilized in the Agencies-approved 2019 HHERA (Arcadis 2019, 2020; DOI and DTSC 2020) were developed from information available at the time of report preparation. Uncertainties associated with the BAFs (both the TCDD-based BAF and two sets of congener-specific BAFs) were discussed and evaluated in Section 6.7.4.2 of the 2019 HHERA. These congener-specific BAFs were used to develop ecological RBRGs for dioxin TEQ, which have been approved for use at the Site by DTSC (2019, 2020, 2022) and DOI (2018, 2020). For consistency with the previous evaluations, the Post-Soil NTCRA HHERA utilizes the same congener-specific BAFs. Additionally, soil characteristics in the studies relied upon in the Post-NTCRA HHERA (i.e., Fagervold et al. 2010 and USEPA 1999) will be discussed in relation to the suitability of the BAFs for soils at the Topock site. This information will be added to Section 6.7.4.1. of the Post-Soil NTCRA HHERA. Note that for Fagervold et al. 2010, much of this information was previously provided in the 2019 HHERA and will be added to the Post-NTCRA HHERA report in response to this comment.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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Item	Comment Number	Section/ Page	Reference Text	Comment	PG&E Response to Comment	DTSC Response to Comment	DOI Response to Comment	Tribes Response to Comment	Final Comment Resolution[1]
137	DTSC ERAS-2c (5/7/2025)	6.4.3.2.1 Alternate Dioxin TEQ BAFs	NA	(b) The supporting discussion should also prioritize studies with a robust sample size and statistical evaluation. Currently, the cited study consists of a limited sample size, which is not considered robust by ERAS. Additional studies should be cited that were conducted with a larger sample size to ensure reliability.	There is limited availability of dioxin uptake data for invertebrates in the published literature. The 2019 HHERA relied upon the information available at the time of report preparation. Uncertainties related to the selected studies used to derive congener-specific BAFs will be added to the Post-NTCRA HHERA report (e.g., soil characteristics, sample size, appropriate statistical evaluation). Please see also response to comment DTSC ERAS-2b.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
137	DTSC ERAS-2d (5/7/2025)	6.4.3.2.1 Alternate Dioxin TEQ BAFs	NA	(c) The supporting discussion should include multiple studies and provide a range of BAFs. It is important for the supporting information to cite several relevant studies to provide a more comprehensive understanding of the range of BAFs found in the literature to better inform risk-management decision making.	Note that the Post-NTCRA HHERA report relied upon two different sets of congener-specific dioxin BAFs (from Fagervold et al. 2010 and USEPA 1999) in addition to estimating dioxin TEQ uptake based on a BAF for a single congener (2,3,7,8-TCDD). Also see response to comment DTSC ERAS-2c above.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
137	DTSC ERAS-2e (5/7/2025)	6.4.3.2.1 Alternate Dioxin TEQ BAFs	NA	(d) An uncertainty evaluation is also recommended. If more representative and robust studies are unavailable, for example, an evaluation of uncertainty should be included to explain how different soil characteristics may influence the BAFs. This assessment is crucial for accurately understanding the implications of using alternative BAFs.	Uncertainties related to the alternative BAFs are discussed in Section 6.7.4.1. This discussion will be expanded to include the effect of soil characteristics on the BAFs. See also responses to DTSC ERAS-2b through DTSC ERAS-2d.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
138	DOI-1 (5/12/2025)	ES-1	NA	I thought the point of the HHERA addendum was to recalculate risk levels based on the current soil conditions at the site and not to confirm effectiveness of the NTCRA.	The objectives of the Post-NTCRA HHERA will be stated clearly and consistently throughout the report as described in the response to comment QUECHAN-4.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
139	DOI-2 (5/12/2025)	ES-4	NA	Inconsistency – Previous statement indicates that the addendum was to evaluate effectiveness of NTCRA. Here - "The objectives of this HHERA Addendum are to: Provide risk characterization that updates the 2019 HHERA (Arcadis 2019) in areas outside of the TCS fence line where NTCRA removals were conducted; and Determine whether there is potential for unacceptable risk to human health and the environment based on potential exposures to current soil conditions in these areas."	The objectives of the Post-NTCRA HHERA will be stated clearly and consistently throughout the report as described in the response to comment QUECHAN-4.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
140	FMIT-62 (10/13/2025)		NA	Initially, we misunderstood DTSC's request as asking for the updated toxicity values to be incorporated into the revised risk calculations. Upon closer review, however, it seems that DTSC is only seeking a discussion about how applying these new values might impact risk conclusions. We didn't see an issue with this approach. However, PGE's drafted response suggests that some risk values may have changed between the final 2019 risk assessment and the current addendum, but this point remains unclear. If any values were updated, this change should be explicitly noted. We would be concerned if updated risk values since 2019 were used in the addendum's calculations, as the original risk assessment was finalized in 2019 and the addendum was prompted solely by changes in site characterization. Any inclusion of new toxicity values should have been made more transparent. It is important to ask this question and receive clarification.	The approach for updating toxicity values and list of chemicals with updated toxicity values at the time of the preparation of the Post-NTCRA HHERA are stated in the post-NTCRA Soil HHERA. As stated in Section 5.3 of the post-NTCRA Soil HHERA, "The hierarchy of sources for the toxicity criteria that is used in this H H E R A Addendum have been updated from the 2019 H H E R A (Arcadis 2019) and is compliant with the September 4, 2018, "Toxicity Criteria for Human Health Risk Assessments, Screening Levels, and Remediation Goals" ("Toxicity Criteria Rule", Title 22, California Code of Regulations, Sections 68400.5, 69020-69022) and is discussed in more detail in this section." As stated in Section 5.3.1 of the post-NTCRA Soil HHERA, "The CSFs and/or U R Fs for six COPCs (i.e., arsenic, methylene chloride, 1-methylnaphthalene, alpha-chlordane, gamma-chlordane, and total PCBs) evaluated in this HHRA are updated from the values used in the 2019 H H E R A (Arcadis 2019)." As stated in Section 5.3.2 of the post-NTCRA Soil HHERA, "The RfDs and/or RfCs for ten COPCs (i.e., antimony, total chromium, manganese, phosphate, acetone, chloroform, toluene, 4,4-dichlorodiphenyldichloroethylene, total petroleum hydrocarbons as diesel, and total petroleum hydrocarbons as motor oil) evaluated in this HHRA are updated from the values used in the 2019 H H E R A (Arcadis 2019)."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
141	Quechan - Additional 1 (02/27/2026)	ES.2	These methods are expected to result in conservative exposure estimates that overestimate risk but would not materially change the conclusions of this Post-N T C R A H H E R A.	If the conservative exposure estimates are so conservative, then the expectation would be that the risk conclusions are overestimated. If one were to use site specific exposure assumptions, the result would be lower risk values. Please provide some justification why the use of conservative exposure estimate would not materially change risk conclusion or remove this sentence.	Site-specific exposure parameters were used in some cases. While inclusion of additional site-specific assumptions may reduce the quantitative risk estimates, the overall conclusions of the report (i.e., that there is no unacceptable risk remaining in the NTCRA areas) will not change. The report text (ES.2, ES.6, and throughout main report where relevant: 5.5.3) was updated to state "These methods are expected to result in conservative exposure estimates that overestimate risk but would not materially change the conclusions of this Post-N T C R A H H E R A that there is no unacceptable risk to human or ecological receptors in the N T C R A areas."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
142	Quechan - Additional 2 (02/27/2026)	ES.3	The following text was deleted and should be put back in: "The O C S potential exposure area is considered the most representative baseline scenario for potential human exposures and associated risks for soil contact outside the TCS. Human populations that could be present at the site would more likely be exposed randomly, over the course of a lifetime, to soil present in all areas located outside the TCS, rather than have a lifetime of contact limited to a single A O C/SWMU/undesignated area. For the post-N T C R A HHRA, no unacceptable risk to human recreator receptors (camper, hiker, and O H V rider) was identified at the site potential exposure areas evaluated in this H H E R A Addendum. Given the reduction in overall estimated cumulative risks and hazards under post-N T C R A conditions in these potential exposure areas, which were identified with elevated concentrations of risk-driver C O P C s in the 2019 H H E R A (Arcadis 2019), estimated cumulative risks and hazards for recreational users, camper, hikers, and O H V riders for the O C S potential exposure area under post-N T C R A conditions are likely lower than estimated in the 2019 H H E R A (Arcadis 2019) "	The O C S expsoure area is relevant as it best represents area-wide expsoure. Please re-instate this text into the document.	The specified text was reinstated in ES and associated OCS-related discussions were reinstated in Sections 7.1 and 7.1.3. Additionally, clarification on the representativeness of the OCS exposure area was added to Sections 5.4.2 and 5.5.3.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
143	Quechan - Additional 3 (02/27/2026)	ES.5	Additionally, inclusion of backfill material in the EPC calculations would not materially change the conclusions of this Post-N T C R A H H E R A as stated above.	What evidence is this based on? It is the Tribe's professional opinion that inclusion of backfill material in the EPC calculations would significantly decrease the EPC and subsequently would show lower risk. If this sentence is to remain, please support the statement with some insight into how it was concluded.	See response to Quechan - Additional 1. While inclusion of the backfill is likely to lower the EPC for some constituents (i.e., those that have significantly lower concentrations in the backfill AND have a significant volume of backfill within the AOC) and may reduce the quantitative risk estimates, the overall conclusions of the report (i.e., that there is no unacceptable risk remaining in the NTCRA areas) will not change. Additional information regarding the amount and type of backfill used in each NTCRA area and a discussion of uncertainties related to backfill was added to the report in Section 5.5.4.1.3.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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144	Quechan - Additional 4 (02/27/2026)	2.3.3.1	Soil N T C R A activities were intended to remove contaminants exceeding the numerical R A G s and debris within 10 feet of the ground surface to achieve the R A O s. However, as shown on Figure 2-4 and listed in Table 2-1, soil with concentrations exceeding the numerical R A G s or debris remain in a few places associated with soil N T C R A removals as well as in a few isolated locations outside of the soil N T C R A removal areas	Please explain how the removal of single point exceedances aligns with the statement from section 2.3.2.2 which states: "Consistent with the H H E R A approach, RBRGs were applied based on the potential exposure area of interest (i.e., the 95UCL for the potential exposure area should be less than or equal to the RBRG)." It appears that 1) contaminants are removed at point locations due to exceedance of RAG but RBRGs are based on exposure areas. This seems inconsistent.	The NTCRA was conducted according to the DOI-approved NTCRA Work Plan, which specified removal of soil at individual locations exceeding the RBRG/RAG. The NTCRA process is a separate process from risk assessment, which evaluates exposure based on 95UCL EPCs for the exposure area. In this post-NTCRA HHERA, 95UCL EPCs were used to estimate exposure according to the methods in the Agencies-approved Risk Assessment Work Plan documents such that cumulative risks are estimated associated with all COPCs/COPECs to make the determination of whether there are health risks above acceptable thresholds. As noted in Section of the HHERA, material containing COPC/COPEC concentrations above the RBRG/RAGs was not removed during the NTCRA; the HHERA calculations based on 95UCL EPCs allow for risk estimation for the current conditions following completion of the NTCRA. No changes to the Post-NTCRA HHERA report were made in response to this comment.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
145	Quechan - Additional 5 (02/27/2026)	3.1	that engineering controls, such as the placement of backfill, or future institutional controls are not included in this Post-N T C R A H H E R A. As such, the estimated risks are likely overestimated. The EPC calculation methods are consistent with those used in the 2019 H H E R A (Arcadis 2019) and provide a relevant comparison to the 2019 exposure and risk estimates. Furthermore, as stated in the N T C R A Completion Report (Jacobs 2025), D O I-approved clean onsite fill material and imported AB material were used as backfill. The backfill material conformed to the Topock Groundwater Remedy Soil Management Plan reuse criteria approved by DTSC (2022) (including updates to Table 2.4-1 [Reference List of Potentially Applicable Analytes and Associated Screening Levels Management Protocol for Handling and Disposition of Displaced Material]; Jacobs 2022b).	This added text was indicated to resolve Quechan -1c which states: The Tribe requests a summary be provided of how the new EPC calculations consider the clean fill material that was imported as part of the NTCRA. For example, are any of the AOC surface areas that include clean material included in EPC calculations? The Tribe requests a clear explanation of how reporting limits are used in NTCRA confirmation sampling compared to reporting limits associated with pre-2019 soil samples. Are non-detect soil samples determined in NTCRA sampling included in the new risk data set?	Handling of reporting limits is discussed in Section 4.2, which states: "For non-detects, reporting limits for historical and NTCRA confirmation samples are handled in the same manner consistent with the Agencies-approved RAWP documents (Arcadis 2008, 2009, 2015; DOI 2009a,b, DOI 2015, DTSC 2009, DTSC 2015), DTSC-issued directive letter (DTSC 2017), and Agencies-approved 2019 Soil HHERA (Arcadis 2019, 2020; DOI and DTSC 2020). A value of ½ the reporting limit (RL) was used for non-detects in the depth-weighting process and the resulting depth-weighted data for in-place native soil sample locations are used in ProUCL to calculate a representative 95UCL as the EPC." A reference to Section 4.2 for treatment of non-detect results and to Section 4.0 for treatment of backfill in the EPC calculations was added to Section 3.1.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
146	Quechan - Additional 6 (02/27/2026)	4	For this Post-N T C R A H H E R A, depth-weighted EPCs and area-weighted EPCs were used to estimate potential risk to recreator receptors and desert shrew. Comparable to the results of the 2019 H H E R A (Arcadis 2019), the depth-weighted EPCs and area-weighted EPCs were similar.	How does this address Quechan-6 which states: Please discuss if EPCs calculated using the updated soil data are more appropriately reflected using area- weighted or depth-weighted criteria. It would appear from the soil sample location maps that there are far fewer sample locations within the NTCRA action areas than in other areas of the AOC. If this is true, wouldn't the EPC value be disproportionately weighted towards impacted soils rather than reflecting the presence of clean fill used in the NTCRA areas?	The following language was added to Section 4 and Section 5.5.3.4: "The area-weighting procedure can correct for uneven spatial coverage. In that regard, the area-weighted EPCs (which are both depth- and area-weighted) theoretically provide a better exposure estimate than the depth-weighted EPCs (which are only depth-weighted). However, both sets of EPCs (area-weighted and depth-weighted) are similar."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
147	Quechan - Additional 7 (02/27/2026)	5.3.2	Surrogate chemicals were chosen based on structural similarities such as chemicals in the same suite of compounds with similar carbon chain structures (e.g., aromatic carbon rings) and/or group of molecules attached (e.g., methyl group); however, they may differ in type of carbon bond (e.g., single or double bond) or position of the group of molecules attached. For example, acenaphthene was chosen as a surrogate for acenaphthylene because both compounds are considered semi-volatile organic compounds and P A H s with three carbon rings. However, acenaphthene (C12H10) has two aromatic rings (i.e., carbon ring with double bonds) and one non-aromatic ring (i.e., carbon ring with single bonds only), and acenaphthylene (C12H8) has three aromatic rings.	Was this based on professional judgement or was an actual analog modeling tool used? I used the US Comptox dashboard with a similarity threshold of 0.8 and did not find the analogs that are being used	Comment noted. Surrogates were based on professional judgement and included consideration of both structural similarly and chemical suite as stated in the Section 5.3.2. Note that the surrogate were selected from same suite of chemicals; (i.e., PAHs, chlordanes,) which would share a similar mode of action for chemicals in that same suite. The surrogates were the same as selected in the 2019 Soil HHERA and were maintained for consistency.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional 19
148	Quechan - Additional 8 (02/27/2026)	5.4.1.1	Cal E P A's point of departure for excess ILCR for all receptor groups (i.e., residential populations) is 1 x 10-6, and risk-management decisions may raise this criterion depending on site-specific conditions.	Remove the section of this sentence that states "1 x 10-6, and risk-management decisions may raise this criterion depending on site-specific conditions." This is for risk managers to decide and is not needed in this document. Unless this is setting the stage for the use of the most conservative risk values for future activities at the site.	The text ", and risk-management decisions may raise this criterion depending on site-specific conditions." was removed from Section 5.5.4.1.				The Post-NTCRA HHERA was updated as indicated based on the Tribes Response. Reference to the Fish and Wildlife 10-5 threshold was added throughout the Post-NTCRA HHERA.
149	Quechan - Additional 9 (02/27/2026)	5.5.1.4		This section needs a more robust discussion on the uncertainty associated with the absence of any clean fill material data included in the EPC calculation. This updated discussion should present the areas of the AOC compared to the areas within the AOC that are now comprised of clean material.	The excavated areas are presented on Figure 2-3 and new Figure 5-2, which presents the excavation areas and backfill areas. Clean fill volumes are presented in the NTCRA Completion Report and summarized in new Table 5-6. These volumes include all placed materials (soil, cobbles, riprap). Note that potential for human exposure to these larger materials differs greatly than for soil exposures. Additional discussion related to uncertainties associated with the effect of backfill on the EPCs and risk estimates was added to new Section 5.5.1.4.3.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
150	Quechan - Additional 10 (02/27/2026)	5.5	Uncertainty Analysis	The uncertainty section needs to include a robust quantitative discussion of the risk associated with background arsenic and what percentage of the calculated risk is based on background rather than site related activities.	As discussion of incremental site-related risks associated with arsenic in soil is provides in Section 5.5.4 as well as a discussion of percent contribution of background arsenic to estimated total risks from arsenic in soil is provided in the overall summary risk sections for AOC 9, AOC 10 , and AOC 11 in Sections 5.4.2.2 through 5.4.2.4, respectively.				The Post-NTCRA HHERA was updated as indicated in the PG&E response.
151	Quechan - Additional 11 (02/27/2026)	5.5.3	Additionally, arsenic concentrations in the fill material are below site-specific background thresholds. Inclusion of backfill material in the EPC calculations would not materially change the conclusions of this Post-N T C R A H H E R A.	What evidence is this based on? It is the Tribe's professional opinion that inclusion of backfill material would significantly decrease EPC calculation and would show lower risk. If this sentence is to remain, please support the statement with some insight into how it was concluded.	Arsenic is not a risk-driver for the NTCRA and NTCRA removals did not address arsenic at the site. See response to Quechan - Additional 1. While inclusion of the backfill is likely to lower the EPC for some constituents (i.e., those that have significantly lower concentrations in the backfill AND have a significant volume of backfill within the AOC) and may reduce the quantitative risk estimates, the overall conclusions of the report (i.e., that there is no unacceptable risk remaining in the NTCRA areas) will not change. Additional information regarding the amount and type of backfill used in each NTCRA area and a discussion of uncertainties related to backfill was added to the report in Section 5.5.4.1.3. See also response to Quechan - Additional 10.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response

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152	Quechan - Additional 12 (02/27/2026)	5.5.3	In sum, the risk assessment meets the regulatory requirement to address an upper bound for potential exposures for current and reasonably foreseeable future receptor populations; the actual exposures to soil at the site that could be incurred by recreators use would probably be much lower than has been estimated in the HHRA.	This should also include some indication that: "The O C S potential exposure area is considered the most representative baseline scenario for potential human exposures and associated risks for soil contact outside the TCS. Human populations that could be present at the site would more likely be exposed randomly, over the course of a lifetime, to soil present in all areas located outside the TCS, rather than have a lifetime of contact limited to a single A O C/SWMU/undesignated area. For the post-N T C R A HHRA, no unacceptable risk to human recreator receptors (camper, hiker, and O H V rider) was identified at the site potential exposure areas evaluated in this H H E R A Addendum. Given the reduction in overall estimated cumulative risks and hazards under post-N T C R A conditions in these potential exposure areas, which were identified with elevated concentrations of risk-driver C O P C s in the 2019 H H E R A (Arcadis 2019), estimated cumulative risks and hazards for recreational users, camper, hikers, and O H V riders for the O C S potential exposure area under post-N T C R A conditions are likely lower than estimated in the 2019 H H E R A (Arcadis 2019) "	See response to Quechan-Additional 2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
153	Quechan - Additional 13 (02/27/2026)	5.5.3.3	Studies support that certain organic compounds, particularly highly lipophilic compounds such as P A H s, tend to be tightly bound to soil (Kelsey et al. 1997). This phenomenon can substantially reduce the bioavailability of chemicals to people exposed to chemicals in soil. A reduction in the bioavailability of the chemicals adsorbed to soil would reduce the projected health risk associated with exposure to soil. Low bioavailability could substantially reduce estimated risks below levels calculated using the default assumption that all chemicals are 100% bioavailable.	Add a sentence stating " therefore risk presented herein for lipophilic compounds likely overestimates actual risk values"	The following language was added to Section 5.5.3.3: "Therefore, risk is likely overestimated for lipophilic chemicals assumed to be 100% bioavailable in this H H E R A. For the key risk-driving C O P C s, this assumption applies only to dioxin TEQ."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
154	Quechan - Additional 14 (02/27/2026)	7.1	As stated previously, this Post-N T C R A H H E R A provides updated risk estimates for human health and the environment based on potential exposures to current soil conditions in the N T C R A areas. Therefore, updated risk estimates were not performed for the O C S potential exposure area in this Post-N T C R A H H E R A. It should be noted that, due to N T C R A soil removal, the potential post-N T C R A soil C O P C concentrations and associated risks for the O C S exposure area are likely lower than estimated in the 2019 H H E R A. The HHRA results and conclusions of the 2019 H H E R A and of this Post- N T C R A H H E R A will be considered for making risk-management decisions for the site in the CMS/FS study to be conducted for the site.	This section should be updated to include discussion regarding the OCS and that the OCS potential exposure area is considered the most representative baseline scenario for potential human exposures and associated risks for soil contact outside the TCS	See response to Quechan-Additional 2.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
155	Quechan - Additional 15 (02/27/2026)	General Comment		Because the risk assessments provide the basis for risk management decision making, please list in a concise format the conclusions for the human health and ecological risk assessment, NTCRA human health and ecological risk assessment along with the major uncertainties. This is important for all regulatory agencies, Tribe and the public to have the information, beyond a risk value, in a summarized format. The identification of uncertainties is important for risk managers.	Based on discussion between PGE and Stakeholders on the March 25, 2026 RTC call, it was agreed that the forthcoming CMS/FS was the appropriate place to summarize risk assessment history for the TCS. It was agreed that a high-level summary of risk assessment history in the form of a bullet list would be included in the CMS/FS to document the relevant risk assessments and work plans. Additionally, DTSC noted that a site-wide post-remedial HHERA would be needed to confirm the site has been cleaned up to acceptable levels. Accordingly, the Post-NTCRA HHERA conclusion section was modified to note these details, as follows: "This section summarizes the conclusions of the HHRA and E R A conducted in this Post-N T C R A H H E R A . As described in this section based on the results presented herein, no additional remedial actions are warranted for the exposure areas evaluated in this Post-N T C R A H H E R A. The forthcoming CMS/FS will rely on the 2019 H H E R A , this Post-N T C R A H H E R A , and potential future risk calculations as needed to document potential for unacceptable risk to human and ecological receptors based on current soil conditions at and around the TCS and support remedial design, if needed, in the CMS/FS. A high-level summary of risk assessments conducted at the TCS will also be provided in the CMS/FS."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
156	DTSC - Additional 16 (04/06/2026)	Section 5.3		The text in section 5.3 was not updated to include references to the most recent toxicity values listed in DTSC's 2025 Human Health Risk Assessment (HHRA) Note 10, the corresponding screening levels (2025 HHRA Note 3) or the 2024 USEPA Regional Screening Level (RSL) tables. In addition, the revised NTCRA HHERA did not include a comprehensive list of toxicity values that have been updated since the 2019 HHERA. For example, while the update to the Unit Risk Factor (URF) for arsenic, is listed in Exhibit 5-14, the oral cancer slope factor (CSFo) is not. Hexavalent chromium is not listed at all in this table. Please update sections 5.3.1 and 5.3.2 on the cancer and noncancer toxicity assessment and provide a discussion on the updates. Also update Exhibit 5-14 and 5-15 where a comparison of toxicity values from 2019 and 2025 and listed. Please see HERO comment #6 (DTSC letter dated May 7, 2025), for other chemicals with updated toxicity values that should be included in the table.	The toxicity values for COPCs were updated in the Post-NTCRA HHERA to the most current DTSC HERO HHRA Note 10 (dated February 25, 2019) recommended toxicity values at the time the Draft Post-NTCRA HHERA was submitted to DTSC on December 14, 2024. The list of COPCs with updated toxicity values at the time of preparation of the Post-N T C R A H H E R A is presented in Section 5.3. In Section 5.5.4, Uncertainties in Toxicity Assessment, Exhibits 5-14 and 5-15 presents the COPCs with updated values at the time of preparation of and used in the Post-NTCRA HHRA risk calculations. The discussion in Section 5.5.4 on additional COPCs with updated toxicity values (e.g., arsenic) since the submittal of the Post-NTCRA HHERA on December 14, 2024 will be expanded to include updated COPC toxicity values referenced in the most recent toxicity values listed in DTSC's 2025 Human Health Risk Assessment (HHRA) Note 10, the corresponding screening levels (2025 HHRA Note 3) or the 2024 USEPA Regional Screening Level (RSL) tables.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
156	DTSC - Additional 17 (04/06/2026)	Section 5.3		On Page 80, Table 5-14, the Inhalation Unit Risk (IUR) for polychlorinated biphenyls (PCBs) have not changed and should still be 0.57 (mg/m3)-1, and not 0.1 (mg/m3)-1. Please revise the table accordingly.	See response to Comment DTSC - Additional 16. The current IUR for PCBs of 0.57 (mg/m3)-1 as referenced in the most recent toxicity values listed in DTSC's 2025 Human Health Risk Assessment (HHRA) Note 10 will be discussed in Section 5.5.4.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
157	DTSC - Additional 18 (04/06/2026)	Section 5.3			As indicated under surrogates in Table 5-3, total chromium was represented by chromium (III), as hexavalent chromum is evaluated separately in the Post-NTCRA HHRA. The RfC values for total chromium presented in Exhibit 5-15 in Section 5.5.4 is the current OEHHA RfC values for chromium (III) as referenced in the most recent 2024 USEPA Regional Screening Level (RSL) tables. No updates to Exhibit 5-15 is needed.				The Post-NTCRA HHERA was updated as indicated based on the PG&E response
158	DTSC - Additional 19 (04/06/2026)	Section 5.3		Section 5.3.2, discussion on acenaphthene vs. acenaphthylene: Text was added to this section that states "However, acenaphthene (C12H10) has two aromatic rings (i.e., carbon ring with double bonds) and one non-aromatic ring (i.e., carbon ring with single bonds only), and acenaphthylene (C12H8) has three aromatic rings". Both compounds are peri-fused tricyclic hydrocarbons with two aromatic rings, with the only difference being that acenaphthylene has a double bond between carbons 1 and 8. Please revise text accordingly.	Text has been revised to replace the text as suggested to state that "Both compounds are peri-fused tricyclic hydrocarbons with two aromatic rings, with the only difference being that acenaphthylene has a double bond between carbons 1 and 8."				The Post-NTCRA HHERA was updated as indicated based on the PG&E response to DTSC-Additional 19

PG&E Responses to Comments on the Draft Soil Human Health and Ecological Risk Assessment Addendum (i.e., Post-NTCRA HHERA)

PG&E Topock Compressor Station, Needles, California

*Note: The title of the Draft Soil Human Health and Ecological Risk Assessment Addendum will be updated to "**Post-Soil Non Time Critical Removal Action Human Health and Ecological Risk Assessment Report (Post-NTCRA HHERA)** based on comment DTSC HERO-1 and is referred to as such throughout responses this Response to Comments Table.*

Acronyms and Abbreviations

AOC	Area of Concern
BCW	Bat Cave Wash
BAF	Bioaccumulation Factor
BLM	U.S. Bureau of Land Management
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	U.S. Code of Federal Regulations
COPC	Constituent of Potential Concern
COPEC	Constituent of Potential Ecological Concern
CSF	Cancer Slope Factor
CSM	conceptual site model
Cr6 / Cr(VI)	hexavalent chromium
DOI	U.S. Department of the Interior
DTSC	California Department of Toxic Substances Control
EC	Exposure Concentration
EE/CA	Engineering Evaluation/Cost Analysis
EPC	Exposure Point Concentration
ERAS	Ecological Risk Assessment Section
ES	executive summary
FMIT	Fort Mojave Indian Tribe
HERO	Human and Ecological Risk Office
HI	Hazard Index
HQ	Hazard Quotient
HNWR	Havasu National Wildlife Refuge
HHERA	Human Health and Ecological Risk Assessment
ILCR	Incremental Lifetime Cancer Risks
LOAEL	Lowest Observable Adverse Effects Level
NOAEL	No Observable Adverse Effects Level
NTH	National Trails Highway
NTCRA	Non-Time Critical Removal Action
O&M	Operations and Maintenance
OCS	Outside the Compressor Station Area
OHV	Off-Highway Vehicle
PAH	Polycyclic Aromatic Hydrocarbons
PG&E	Pacific Gas and Electric Company
RBRG	Risk-Based Remedial Goal
RCRA	Resource Conservation and Recovery Act
RfC	Reference Concentration
RfD	Reference Dose
RTC	response to comments
SMP	Sampling and Monitoring Plan
SWMU	Solid Waste Management Unit
TCS	Topock Compressor Station
TEQ	Toxic Equivalents
TRC	Technical Review Committee
TWG	Technical Working Group
UCL	95% upper confidence limit on the mean
USBR	U.S. Bureau of Reclamation
WB	Colorado River Basin Regional Water Quality Control Board
WOE	Weight of Evidence

Notes:

1 Final Comment Resolution based on Stakeholder comment discussions over multiple dates (October 9, 2025, January 7, 2026, March 4, 2026, and March 25, 2026)

Some comments were highlighted by the DTSC to indicate correspondence with a particular portion of a response.

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