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COLORADO
Department of Public Health & Environment

February 18, 2024

Mr. Toby Wright
Wright Environmental Services, Inc.
226 Peterson Street
Fort Collins, CO 50252

Re: Quality Assurance Project Plan for the Phase I Risk Assessment, Rev. 0; Lincoln Park Superfund Site OU1/OU2/OU3 Canon City, Fremont County, Colorado EPA ID No. COD042167858

Dear Mr. Wright:

The Environmental Protection Agency (EPA) and Colorado Department of Public Health (CDPHE) have reviewed the Phase I Risk Assessment Quality Assurance Project Plan (QAPP) resubmitted December 23, 2024 with subsequent Appendices A and B submitted January 27, 2025. The Agencies have conducted a thorough back-check of the resubmitted QAPP and note significant improvement in the quality of the deliverable and appreciate Cotter's responsiveness to Agency comments. A small number of specific follow-up comments remain to be resolved. Therefore, the Agencies disapprove of the resubmission and request Cotter modify the QAPP to address the remaining comments identified in the enclosed attachments.

As outlined in the Administrative Settlement Agreement and Order on Consent Paragraph 46, a period of 30 days is provided for revision and resubmission of this document.

The Agencies also acknowledge several public comment responses pertaining to institutional controls that were deferred to the Agencies. Information collected during the remedial investigation will inform an evaluation of whether unacceptable risks exist at the site that would require institutional controls, to be documented in the Proposed Plan and Record of Decision. Community input will be essential to selecting and monitoring institutional controls that are the best fit for the community and the protectiveness of the public's health and the environment. The community will continue to be involved in the remedial investigation and remedy selection process.

If you have any questions or would like to schedule a meeting to discuss, please contact Paul Stoick at Stoick.Paul@epa.gov and Alex Hedgepath at Alex.Hedgepath@state.co.us.

Sincerely,

PAUL STOICK

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Date: 2025.02.17 18:55:31 -07'00'

Paul Stoick, P.E.
Remedial Project Manager
Superfund and Emergency Management Division, Section A
U.S. Environmental Protection Agency, Region 8

Alex Hedgepath Digitally signed by Alex Hedgepath
Date: 2025.02.18 07:18:08 -07'00'

Alex Hedgepath
State Remedial Project Manager
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and Environment

Attachments:

1) EPA and CDPHE Quality Assurance Project Plan Technical Review Crosswalk
2) EPA Region 8 Quality Assurance Project Plan QA Review Crosswalk

Cc:

Craig Bartels – Cotter Corporation (N.S.L.), Officer
April Lafferty – Wright Environmental Services, Inc., Environmental Coordinator
Richard Murphy –Arcadis, Quality Assurance Manager
Mary Goldade – EPA, Region 8, Regional Quality Assurance Manager
Shiya Wang- CDPHE, Uranium and TENORM Lead
Jim Harrington - Colorado Legacy Land, LLC

Attachment 1:
EPA and CDPHE Quality Assurance Project Plan Technical Review Crosswalk

Combined Agency Comments on Phase I Risk Assessment UFP-QAPP

Summary of Comments

General Comments

The agencies have conducted a thorough review and backcheck of the resubmitted QAPP and note significant improvement in quality and appreciate Cotter's responsiveness to agency comments. A small number of specific follow-up comments have been provided under "Agency Response" remain to be resolved.

Please include a total estimated cost of work for financial assurance purposes as part of the Final QAPP submission. A detailed cost estimate supporting the total cost may be sent under seperate cover.

Please return the full QAPP with signatures and compile the document and attachments, including Appendix C (All equipment manuals: Solinst, YSI, Ludlum, etc.) into a single PDF, along with the completed crosswalks. Please also note the annual Quality Management Plan (QMP) update must be approved prior to the Phase 1 Risk Assessment QAPP approval.

Radiation Requirements

Specific comments have been provided in response to the newly submitted Radiation Protection Plan.

General Comment on the SOPs

There are site-specific considerations that are established by the QAPP that should override the general procedures described in the SOPs. This is important to acknowledge in the QAPP if samples will be collected that are relevant to HHRA and ERA.

Specific comments to be addressed are included in the following:

Comment Number	PDF Page	Reference/ Location	Agency Comment	Cotter Response	Agency Response
			Introduction, Worksheet 0		
1	0	Radiation Requirements	The Agencies do not believe that Cotter has adequately implemented substantive requirements related to radiation safety or handling. Relevant requirements have been identified by the CDPHE Radiation Control Program have been documented in a table below. The Agencies require that Cotter update the Risk Assessment Quality Assurance Project Plan to address required radiation safety and handling requirements.	A Radiation Protection Plan has been prepared and submitted to the Agencies with this revision.	Specific comments have been provided in response to the newly submitted Radiation Protection Plan.
2	8	Abbreviations	CERCLA abbreviation is missing the word Comprehensive	The abbreviation has been modified to add compensation	Resolved. No further comment.
3	8	Abbreviations	COPC abbreviation should say "Concern" rather than "Interest" and "Contaminant" rather than "Constituent".	Abbreviation revised as requested	Resolved. No further comment.
4	8	Abbreviations	Add in "Agencies" as a combination of EPA and CDPHE.	Abbreviation added as requested	Resolved. No further comment.
5	10	References	"EPA. February 2024...." is not in alphabetical order. Additionally, EPA references should be updated after moving 2024 reference, to match nomenclature.	The comment is understood. The order of EPA references will not be revised but will be considered in future documents	Resolved. No further comment.
6	10	References	Adrian Brown "1989c" reference should be renamed to "1989b".	Reference revised as requested	Resolved. No further comment.
7	10	References	Cotter Corporation "1996b" reference should be renamed to "1996".	Reference revised as requested	Resolved. No further comment.
8	11	References	EPA is defined twice in references, remove 2nd definition.	References revised as requested	Resolved. No further comment.
9	12	References	Hershey-Wooderson references should be updated from "1977b" to "1977"	Reference revised as requested	Resolved. No further comment.
10	13	References	USGS is defined three times, remove redundant definitions.	References revised as requested	Resolved. No further comment.
11	13	References	Wahler is defined three times, remove redundant definitions.	References revised as requested	Resolved. No further comment.
12	13	References	Wahler references should be updated as follows: "1978b" renamed to "1978a", "1978c" renamed to "1978b", and "1981b" renamed to "1981".	References revised as requested	Resolved. No further comment.
13	13	References	WESI is defined twice, remove redundant definition.	Reference revised as requested	Resolved. No further comment.
				Additional revisions were made to this worksheet to ensure consistency with the other revised worksheets in this QAPP.	Resolved. No further comment.
			Title and Approval Page, Worksheet 1 & 2		
14	1	Document Title	Document title is wrong and should be updated based on Cover Sheet.	Text revised as requested	Resolved. No further comment.
15	1	Site name/project name	Site name/project name should be updated to "Lincoln Park Superfund Site" or "Lincoln Park Superfund Site, Remedial Investigation".	Text revised as requested	Resolved. No further comment.
				During revision of the QAPP, it was noted that the date of one of the scoping meetings was missing from this worksheet. The May 28, 2024 meeting has been added and meeting minutes added to Worksheet 9. Other revisions were made to this worksheet in response to EPA Region 8 QA Comments.	Resolved. No further comment.
			Project Organization and QAPP Distribution, Worksheet 3 & 5		

16	1	Organization chart	Major contractors should be identified beyond just H3 on the Organization Chart. If Eurofins is the analytical laboratory as shown in Worksheet #6, they should be identified here. If Contractor is unknown, expected contract tasks should be identified (analytical laboratory, surveyor, driller, risk assessor, etc) or refer to Worksheet #4.	The organization chart has been revised as suggested.	Resolved. No further comment.
17	1	Footnote	"Every position on this chart will receive a copy of the QAPP". Does this include analytical laboratory staff, field staff and the procurement specialist? If not, use an asterisk to indicate who received a copy of the QAPP.	A footnote that state **will receive a copy of the QAPP* has been added to the worksheet.	Resolved. No further comment.
				Other revisions were made to this worksheet in response to EPA Region 8 QA Comments.	Resolved. No further comment.
Personnel Qualifications and Sign-off Sheet, Worksheet 4, 7, & 8					
18	2	Specialized Trainings/Certs	Note (*) should be added to say that if a staff member has not yet been identified, those are the minimum trainings/certifications that will be required. Additionally, a row should be added for "field staff" with required trainings/certifications listed.	Footnote was added to specify minimum trainings/certifications that will be required for field staff.	Resolved. No further comment.
Communication Pathways, Worksheet 6					
19	1	Project Level Comms	Organization and Procedures do not match. Procedures for Groundwater, Surface Water/Sediment, and Air, Soil, and Radiological Sampling describe communications with organizations not listed under "Organization". For example, the "Groundwater" row describes communication with both WESI and H3, although only communication between Cotter/HRS is listed. Other similar issues are noted other "Communication Driver" listings.	Worksheet 6 has been revised in response to this comment and in response to EPA Region 8 QA Comments.	Resolved. No further comment.
20	1	Communication Driver	What is listed here are types of communication rather than communication drivers. Communication drivers are those activities that necessitate communication between different responsible entities. These drivers can include, but are not limited to: • Approval of amendments to the QAPP • Initiation, notification and/or approval of real time modifications • Notification of delays or changes to field work • Recommendations to stop work and initiation of corrective action • Reporting of issues related to analytical data quality, including, but not limited to, ability to meet reporting limits Please refer to Section 2.4.2 of the EPA QAPP Manual. In the 2nd row, "Deviations from QA Documents" is noted, but this is a communication driver. The column should instead describe the communication pathway (e.g., how things are communicated, communication steps, and documentation).	Worksheet 6 has been revised in response to this comment and in response to EPA Region 8 QA Comments.	Resolved. No further comment.
21	6	Analytical Corrective Actions	Procedure is blank and needs to be described. Does communication go H3, WESI, or Cotter?	Worksheet 6 has been revised in response to this comment and in response to EPA Region 8 QA Comments.	Resolved. No further comment.
Project Planning Session Summary, Worksheet 9					
22	4	Organization chart	Katelyn Laverich is listed as CDPHE, but should be listed as EPA and "Laverich" should be "Stocksdale".	It is understood that Katelyn Laverich changed her name in February 2024. This organization chart is for a meeting in November 2023. The organization has been updated to EPA	Resolved. No further comment.
23	5	Meeting Notes	PDF pages have "DRAFT" watermark, which should be removed.	Revised meeting minutes are included	Resolved. No further comment.
24	8	Organization chart	Katelyn Laverich is listed as CDPHE, but should be listed as EPA and "Laverich" should be "Stocksdale".	Text revised as requested.	Resolved. No further comment.
25	9	Meeting Notes	PDF pages have "DRAFT" watermark, which should be removed.	Revised meeting minutes are included	Resolved. No further comment.
26	10	Notes	EPA noted that using ISM prevents "wildly" ranging concentrations and when it comes time to compute EPCs it is best to compare the same data type. It is expected that EPCs will be computed based on ISM sampling and not discrete sampling.	It is agreed that ISM sampling will be used to complete EPCs for the risk assessment. No changes are proposed for the notes of Worksheet 9. These meeting notes were sent to the Agencies for review before they were determined to be final.	Resolved. No further comment.
27	1, 2, 8, 9	Participants tables	Change "Syracuse Research Corp." to "SRC."	Text revised as requested.	Resolved. No further comment.
				It was noted that minutes from the May 28, 2024 meeting were inadvertently not included in Worksheet 9. These minutes were added.	Resolved. No further comment.
Conceptual Site Model, Worksheet 10					
28	1	Introduction	2nd Paragraph. Text should better identify and explain the Radioactive Materials License since "licensed operations", "licensee", and "license" are used throughout worksheet.	Text has been added to Section 10.1 to discuss the RML.	Resolved. No further comment.

29	1	General	This should include a section on data gaps and uncertainties associated with the CSM.	Section 10.11 was added to summarize existing data gaps, which were identified in the Draft RI Report (Ensero, 2022). Additionally, text was added to the introduction of the CSM to: (1) acknowledge the existence of data gaps for the Site and reference the Draft RI Report for details and (2) acknowledge that the CSM is preliminary and will be refined as additional data are collected.	As noted in the added text, the data gaps added to Section 10.11 are based on the Draft RI which primarily focuses on identifying data gaps related to nature and extent. At a minimum, a statement should be added to note that existing data were determined inadequate for use in the risk assessments (i.e., everything remains a data gap for the risk assessments).
30	1	Introduction	Fourth paragraph, first sentence: the words "operating units" should be corrected to "operable units".	Text revised as requested	Further revision needed. The revised text now reads "(EPA) organized the Site into three operating OUs s identified". Please delete "operating".
31	2	Section 10.1	Term "old mill" is used multiple times. Recommend either defining "old mill" vs "mill" (Worksheet 0 Abbreviations), or replace with the term "mill" throughout.	Text revised in Worksheets 0 and 10.	Resolved. No further comment.
32	2	Section 10.1	3rd Paragraph sentence, "These ores may have contained metals and other radionuclides as well.", should be updated to include raffinates.	Text revised as requested	Resolved. No further comment.
33	2	Section 10.1	4th Paragraph. First use of "OPA" should be defined.	Text revised as requested	Resolved. No further comment.
34	2	Section 10.1	5th Paragraph. First use of the term "newer mill". Does not appear that the "old mill" vs "new mill" time periods/distinctions have been identified in the report. Term "new mill" is defined on page 3.	See response to comment 30	Resolved. No further comment.
35	2	Section 10.1	5th Paragraph. Text should identify when/why the impoundments were created. Text answers these questions on PDF Page 3, recommend moving last sentence of 5th paragraph to after information regarding the impoundments.	Text revised as requested	Resolved. No further comment.
36	3	Section 10.1	First paragraph, first sentence: it says that "In 1977, permission was requested by the licensee..." Change the words "licensee" to "Cotter" to be more specific.	Licensee is better defined earlier in this section.	Resolved. No further comment.
37	3	Section 10.1	Second paragraph: it says that uranium, vanadium, and molybdenum were produced, but there is only description on how uranium and vanadium were processed. Add description on how molybdenum was processed.	Text has been revised as requested.	Resolved. No further comment.
38	3	Section 10.1	The text states "The organic solvent trichloroethene (TCE) was used in the grind and leach building as an industrial degreaser. PCBs and TCE are likely only present in the subsurface soil at the Mill because of the extensive surface disturbances that occurred during the decommissioning of Mill structures" Comment: This sentence appears to be trying to make the distinction that PCBs and TCE are likely only present in subsurface soil as opposed to surface soil, but elimination of COPCs/COPECs based on assumptions is not an appropriate practice in CERCLA risk assessments. Either additional supporting evidence for excluding PCBs and TCE as COIs in surface soil should be provided, or these contaminants should be included as COIs in surface soil.	These contaminants are COI in surface soil as identified in worksheet 18. This sentence has been deleted.	Resolved. No further comment.
39	4	Section 10.1	First paragraph on this page: it says that "The remaining process-related structures were demolished in 2013". It should be in 2012.	Text revised as requested.	Resolved. No further comment.
40	4	Section 10.1	Second paragraph on this page, first sentence: CCD is one element of the milling circuit. Change the words "from the counter current decantation circuit" to "from the milling circuit".	Text revised to state *liquids and solids from milling processes.*	Resolved. No further comment.
41	4	Section 10.1	Second paragraph on this page, second sentence: Change "Points of air emissions" to "Point sources of air emissions" to be more accurate.	Text revised as requested	Resolved. No further comment.
42	4	Section 10.3.1	First paragraph, second sentence: it says that air stations in and around OU1 have been continuously monitored since 1979 under the RML program. Verify if this is a correct statement because in the Scribe database which hosts all historical data, the earliest data for boundary air monitoring stations are dated in 2002.	The Draft RI (Ensero, 2022) identifies air monitoring starting in 1979. License 369-01 Amendment 11, Condition 21A identifies environmental air sampling at several locations. The 1981 RAP Annual Reports provide air sampler results from 1980. Text has been revised to state *since 1980* .	Resolved. No further comment.
43	5	Section 10.3.2	3rd Paragraph. Multiple uses of Old Ponds Area should be shortened to "OPA".	A decision was made to limit abbreviations to make this document more readable. This stylistic comment is understood and will be considered in future documents.	Resolved. No further comment.
44	5	Section 10.3.2	OU3 Heading. Brief explanations should be made regarding known OU3 areas. Descriptions can be brief or related to OU1/OU2 discussions.	Text revised to briefly discuss topography in OU3 subareas.	Resolved. No further comment.
45	5	Section 10.3.2	Reference to generalized land use should at a minimum acknowledge specific residential areas (Wolf Park, Dawson Ranch, Town of Brookside). Specific surface water features including ditches, ponds and lakes should also be identified (e.g., Willow Lakes).	A reference to Willow Lakes was included in Section 10.3.3; other specific waterbodies are already addressed.	Resolved. Revised text includes Willow Lakes and mentions mixed residential and commercial properties within OU3. No further comment.
				Section 10.6 was added to the CSM to address land use.	Resolved. No further comment.

46	6	Section 10.3.3	3rd Paragraph sentence regarding Figure 10-5 should be clarified as to whether the groundwater is potentially within 5' of ground surface or whether groundwater is potentially discharging to surface water. It appears that Figure 10-5 shows areas where groundwater is potentially within 5' of ground surface, which isn't the same as the text statement about groundwater potentially discharging to surface water.	The text was revised for clarity.	Resolved. No further comment.
47	6	Section 10.3.3	3rd Paragraph. Text stating "although this may need to be confirmed with additional field study", should be replaced with "although this will be confirmed during the [insert expected report title here]".	Text has been revised in response to this comment *The preliminary CSM will be validated with further investigation to identify areas of potential groundwater discharge to surface water which will be proposed in the forthcoming OU2/OU3 QAPP.*	CSMs remain dynamic. "Validated" is not the preferred term to use. Suggest using "verified" instead.
48	6	Section 10.3.3	Text regarding Spring locations should be field compared with the 11 seeps and springs that the Lincoln Park Community Advisory Group has identified.	Text has been revised to state *Lincoln Park contains three ponds that are fed by the DeWeese Dye Ditch. Other surface water bodies and springs occur in Lincoln Park including near the area where Sand Creek has perennial flow. A survey to identify surface water bodies and seeps and springs in OU1 and Lincoln Park and determine if these features a groundwater fed will be conducted as part of the OU1 Remedial Investigation and the OU2/OU3 RI.* Seep and spring investigations are more related to nature and extent. This Phase I Risk Assessment QAPP is looking for maximum concentrations to identify COPC and COPEC.	Minor editorial revision: "…to identify surface water bodies and seeps and springs in OU1 and Lincoln Park and determine if these features are groundwater fed…"
49	6	Section 10.3.3	4th Paragraph. Add in brief descriptions on where key sampling locations are relative to the Site or community feature (ex. Location XX is approximately X-miles upstream of XX).	The text has been revised to include brief descriptions on where key Arkansas River sampling stations are located.	Resolved. No further comment.
50	6	Section 10.3.3	4th Paragraph. Include impact of Wet Mountains on the Arkansas River and/or ditches.	Text has been included to Section 10.3.2 under OU3 to address the Wet Mountains. Text has been added to Section 10.3.3 to discuss the DeWeese Reservoir in the Wet Mountain Valley and how this reservoir feeds the DeWeese Dye Ditch in OU2/Lincoln Park.	Resolved. No further comment.
51	6	Section 10.3.3	4th Paragraph. Text should describe where the Benton Group is in proximity to the Site or reference a geological map.	This text has been removed as it is not relevant.	Resolved. No further comment.
52	6	Section 10.3.3	4th Paragraph. Replace the "somewhat" in "Sand Creek results are somewhat high" with a more descriptive term.	Text has been revised in response to this comment to *Concentrations of uranium and molybdenum reported in samples collected from Sand Creek are frequently double to an order of magnitude higher than concentrations in the Arkansas River (Ensero, 2024; EPA, 2024a)*	Resolved. No further comment.
53	6	Section 10.3.3	5th Paragraph. 1st sentence should be revised to include rationale or basis for these statements. Sentence implies that some evaluation/assessment has occurred or there is a technical basis for the statement. The following sentence discusses no-impacts through sampling, but the lack of contamination from sampling does not provide direct evidence that the locations are not hydraulically connected or that groundwater doesn't discharge into the lakes.	The Draft RI (Ensero, 2022) is the basis for this conceptual model. Text has been revised to more completely reference the Draft RI.	Resolved. No further comment.
54	6	Section 10.3.3	The text states "There is no noted groundwater discharge to surface water in OU2 with the exception of the small eastern area near the confluence of Sand Creek and the Arkansas River. Local ponds in OU2 are believed to be developed from surface water impoundment rather than groundwater recharge, although this may need to be confirmed with additional field study." Additional evidence is necessary to support this statement.	See response to comment 47.	Resolved. No further comment.
55	6	Section 10.3.3	The text states "There is no groundwater recharge to surface water further upstream in ephemeral portions of Sand Creek or in the irrigation ditches." This statement requires more supporting evidence. Also, "recharge" should be "discharge".	The text was revised to note that the CSM is preliminary and additional investigation will be proposed in the OU2/OU3 QAPP to identify areas of potential groundwater discharge.	Resolved. No further comment.
56	6 and 7	Section 10.3.3	The text states "There is also no evidence that groundwater discharges to surface water in the Willow Lakes area and these lakes do not appear to have a hydraulic connection to the Site. The Draft RI (CLL, 2022) concluded that based on previous sampling these lakes have not been impacted by the operations at the Former Cañon City Mill." This statement requires more supporting evidence. A discussion of the information provided in the Draft RI used to draw this conclusion should be included.	The referenced text was removed from the QAPP and direct passages have been quoted from the Draft RI. Additionally, these lakes will be included in the surface water survey in the OU2 /OU3 QAPP.	Resolved. No further comment.
57	6	Section 10.3.3	Add reference to Figure 10-2 in sentence, "Quarterly locations include Stations 904 (downstream in the Arkansas River), 907 (upstream in the Arkansas River) and 008 in Sand Creek."	Text revised to reference Figure 10-6.	Resolved. No further comment.
58	6	Section 10.3.3	Identify irrigation ditches.	Irrigation ditches are discussed in Sections 10.3.2 and 10.3.3.	Resolved. No further comment.
59	6	Section 10.3.3	Indicate the frequency of sampling in Sand Creek (i.e. Location 506 in Sand Creek near the Arkansas River is sampled *annually .)* .	Text revised as requested	Resolved. No further comment.

60	6	Section 10.3.3	Correct "hydraulic" to "hydrologic" in the first sentence of the last paragraph.	The referenced text was removed from the QAPP.	Resolved. No further comment.
61	7	Section 10.3.4	The text states "The Poison Canyon and Raton Formations form a closed basin within the Chandler Syncline." This statement may be true on a regional scale, but this statement as written is presumptive. There is currently not enough information to declare with certainty that fractured bedrock or preferential pathways do not exist.	The referenced text was removed from the QAPP.	Resolved. No further comment.
			The text should be revised to acknowledge uncertainties associated with the hydrogeological conceptual site model.	Text was added to the introduction of Worksheet 10 to acknowledge that there are uncertainties and data gaps associated with this preliminary CSM and that it will be refined as additional data are collected.	Resolved. No further comment.
62	10	Section 10.3.6	3rd Paragraph. First use of "bgs", define.	Text revised as requested	Resolved. No further comment.
63	10	Section 10.3.6	3rd Paragraph. Add units to "...greater than 125 but shallows near...".	The unit ft has been added to this sentence	Resolved. No further comment.
64	10	Section 10.3.7	1st Paragraph. Revise "The undefined boundaries of OU3 frustrate complete description..." to "The currently undefined boundaries of OU3 complicate a complete description..."	Text revised as requested	Resolved. No further comment.
65	10	Section 10.3.7	2nd Paragraph. Remove or revise, "Iron oxyhydroxides and clays are present in varying amounts and likely contribute some attenuation to selected constituent transport.". Sentence is too vague/undefined to be useful without further details regarding the amounts of clays/oxyhydroxides, which type of attenuation, and which constituents/types transported.	The referenced text was removed.	Resolved. No further comment.
66	11	Section 10.5	Section needs to be expanded upon and include more than just information related to alluvium flow.	Section 10.5 has been revised to include more information on the underground coal mines.	Resolved. No further comment.
67	11	Section 10.5.1	Revise Section numbers. Two Section 10.5.1s are present, "Groundwater in OU1" and "Groundwater in OU2"	Section headings have been revised	Resolved. No further comment.
68	11	Section 10.5.1	1st Paragraph. Revise "The undefined boundaries of OU3 frustrate complete description..." to "The currently undefined boundaries of OU3 complicate a complete description..."...Poison Canyon Formation and in portions of the alluvium in the creek beds that vary in thickness across the Former Cañon City Mill..." to "...Poison Canyon Formation and in portions of the alluvium in the creek beds, which vary in thickness across the Former Cañon City Mill...".	This text in Sections 10.3.7 and 10.5.1 has been revised as requested	Resolved. No further comment.
69	12	Section 10.5.1	1st Paragraph. Revise/clarify last sentence of paragraph to explain/detail if limited water quality data is due to spatial, temporal, or quality data issues.	Text revised as requested	Change "existing data indicate that vertical transport of COIs..." to "existing data suggest that vertical transport of COIs.."
70	12	Section 10.5.1	3rd Paragraph. Revise 3rd sentence in the paragraph into more concise, smaller sentences. Additionally, "...geometry associated of the weathered zone..." should be revised to "...geometry associated with the weathered zone...".	The referenced text was removed.	Resolved. No further comment.
71	12	Section 10.5.1	4th Paragraph. Groundwater gradient is typically discussed in ft/ft, not percent grade. Convert to ft/ft, provide rationale for use of slope, or include both instead.	The hydraulic gradient was converted to ft/ft.	Resolved. No further comment.
72	12	Section 10.5.1	5th Paragraph. Clarify use of "current groundwater elevation" by further describing how long this current trend has existed, how it differs from past groundwater elevations, and/or cause (high vs low, seasonal, drought condition).	The referenced text was removed from the QAPP.	Resolved. No further comment.
73	12	Worksheet	No changes / overall comment. Many of the technical assessments and references made in this Worksheet will need to be verified during onsite investigations. It does not appear that all of the data (see Adrian Brown, 1989c) was evaluated as part of the DSTA and can therefore not be used for the basis of decision making. It is recommended that this worksheet (specifically Sections 10.3 onward) be updated to clarify/identify aquifer, geochemical, hydrological, geological, and other data use limitations.	As noted in the response to Comment 61, text was added to the introduction of Worksheet 10 to acknowledge that there are uncertainties and data gaps associated with this preliminary CSM and that it will be refined as additional data are collected. Also, it was noted that the purpose of this CSM is to inform planned data collection activities. The information presented in this CSM is not being used for quantitative analyses or decision making purposes. The majority of the text of this CSM is from the Draft RI.	Resolved. No further comment.
				Note: Adrian Brown, 1989b (formerly 1989c) was included in Table 2-1 of the DSTA.	Resolved. No further comment.
74	12	Section 10.5.1	1st Paragraph. Text should include information regarding OU1 mine shafts and potential impact on groundwater. Updated text should also be included in Section 10.6.1.	Text has been added in Section 10.5.1 and Section 10.7.1 to include information on the OU1 mine shafts and their potential impact on groundwater.	Resolved. No further comment.
75	13	Section 10.5.1	Groundwater in OU2 should be updated to include information regarding OU1 to OU2 Groundwater flow.	Text was added Section 10.5.2 to address groundwater flow from OU1 to OU2.	Resolved. No further comment.
76	13	Section 10.5.1	2nd Paragraph. Remove highlight.	Text revised as requested	Resolved. No further comment.

77	13	Section 10.5.1	2nd Paragraph. Replace uses of "very low" and "extremely low" permeability with a more relative measurement (for example: "order of magnitude lower than the alluvium") or quantitative estimate.	The use of these descriptive terms are quotes from the source documents and are necessary because no quantitative hydraulic conductivity data for these formations in OU2 are not currently available. The text was revised to clarify these points.	Resolved. No further comment.
78	13	Section 10.5.1	3rd Paragraph. Add reference or clarity regarding "leakage from the irrigation ditches". Do the ditches cause mounding, are losses tracked, or other basis for having a "substantial seasonal influence". Information should also be added to this section to describe what areas have lined ditches, when they were lined, are they effective at preventing this leakage, and other information regarding the ditches impact on groundwater, to the extent possible.	The observed water levels are the basis for interpretations of water leakage from the ditches to underlying alluvial groundwater; a citation to the Draft RI Report was added. A refined understanding of ditch segments that allow for leakage to groundwater and the resulting influence on alluvial groundwater levels will be included as part of the OU2/OU3 QAPP.	Resolved. No further comment.
79	13	Section 10.5.1	Are there reports that can be cited to support the hydrology details included in the text?	As stated in the first sentence of this worksheet the majority of the text in this CSM is from the Draft RI. Sections of the Draft RI were summarized in the CSM for brevity.	Resolved. No further comment.
80	14	Section 10.5.1	4th Paragraph. Identify the names of the two wells described. The use of information to describe alluvium aquifer properties from two wells screen across two aquifers is questionable without additional information/context being added as to why this is a valid comparison. If these two wells are not being used to describe the alluvium aquifer, then the first sentence of the paragraph should be revised for clarity.	As stated in the first sentence of this worksheet the majority of the text in this CSM is from the Draft RI. The wells (020) and (048) were included because it is the only information available for aquifer testing that includes the alluvium of Lincoln Park. This sentence does not further the discussion in this Phase I Risk Assessment CSM. The sentence has been deleted.	Resolved. No further comment.
81	14	Section 10.6	Unsure of the purpose of the 1st sentence. Sentence should either give an overview of what Section 10.6 is describing, include information regarding OU2 since OU1/OU3 are discussed, or be removed.	Text revised as requested	Resolved. No further comment.
82	14	Section 10.6.1	2nd Paragraph. Revise descriptions of contaminant concentrations to "likely", "believed", or "expected". The Remedial Investigation is being completed in part to determine where and at what concentrations contaminants exist at the Site. Uncertainty exists and needs to be addressed and accounted for.	As noted in the response to Comment 61, text was added to the introduction of Worksheet 10 to acknowledge that there are uncertainties and data gaps associated with this preliminary CSM and that it will be refined as additional data is collected. The text was revised to acknowledge that the stated uranium and molybdenum concentration distributions are based on existing information.	Resolved. No further comment. Resolved. No further comment.
83	14	Section 10.6.1	2nd Paragraph. Revise "The vertical distribution of groundwater contamination in OU1 is not yet well defined and warrants additional study." to "The vertical distribution of groundwater contamination in OU1 is not yet well defined and will be addressed as part of the [insert OU1 RI report title]". Additionally, insert reference to support "existing data indicate".	Text in Section 10.7.1 revised to state *The vertical distribution of groundwater contamination in OU1 is not yet well defined and will be evaluated in the OU1 RI.*	Resolved. No further comment.
84	14	Section 10.6.1	3rd Paragraph. Replace "...contamination above background in OU2 and OU3 is not yet well defined." with "...contamination above background at the Site is not yet defined."	Text in Section 10.7.1 revised as requested	Resolved. No further comment.
85	14	Section 10.6.1	3rd Paragraph. Replace "annual reports" with "RML annual Reports".	Text in Section 10.7.2 revised as requested	Resolved. No further comment.
86	15	Section 10.6.2	Section should briefly describe if impacts are expected in OU2 or OU3.	Brief description added in Section 10.7.2.	Resolved. No further comment.
87	15	Section 10.6.2	More discussion is needed here to support only evaluating metals and radionuclides in air. Other COIs cannot be excluded based on assumptions.	Metals and radionuclides occur together in both the material to be milled and the waste from the milling process from Former Cañon City Mill processes and are common in the soil in large areas of the Restricted Area of the Former Cañon City Mill. Other COI such as VOCs and PCBs were at the Former Cañon City Mill because of specific operations as discussed in the CSM in Worksheet 10. These constituents will be included in the nature and extent investigation in the OU1 RI. All air COI will be carried forward to the future RI/FS nature and extent investigations. Text has been added to Worksheet 17 and Section 10.7.2 in response to this comment.	The added text provides the additional rationale requested in the original comment. No further comment. The added text in Section 10.7.2 regarding source areas in OU2 is relevant with respect to understanding source attribution for the RI. However, the risk assessments should evaluate site COIs. Further, the additional text regarding vapor intrusion is incomplete. Additional discussion should be added here noting that evaluation of COI concentrations in groundwater and soil gas should be conducted and if the vapor intrusion pathway is determined to be complete, then indoor air sampling will be conducted. Indoor air sampling will be conducted based on the results of groundwater and soil gas sampling.
88	15	Section 10.6.3	Suggested edit: "Mill-dervied constituent impacts to surface soil in the other areas of OU1 are identified as remaining *to be investigated* .	Text in Section 10.7.3 revised as requested	Resolved. Please note minor editorial changes in the redline resulted in the following: 10.7.3, 2nd paragraph - add space "2002ROD" 10.8, 1st paragraph - add space "andOUs"

89	15	Section 10.6.3	The text states "The potential OU3 areas identified for potential maximum constituent concentrations are the former ore transfer stations (Team Track, NONAC, and Fourth Street Depot), and the yard of the former Berta Trucking Company (Old Berta Yard)." This QAPP should provide a rationale for identifying any parts of OU3 that are not associated with the identified sub areas that may have received contamination for windblown deposition and/or erosional transport pathways.	The objective of the investigation described in this QAPP is to identify maximum COI concentrations to develop the list of COPCs and COPECs. Investigation of areas in OU3 that may have been affected by windblown deposition or erosional transport pathways is a matter of nature and extent. Separately, a plan to characterize the nature and extent of impacts will be established in the forthcoming OU1 QAPP and OU2/OU3 QAPP.	The COIs for the identified OU3 ore transfer stations and Old Berta Yard are limited to radionuclides and metals associated with uranium ore. Although this may be reasonable for these areas, other OU3 areas are still undetermined. The COI list for other areas of OU3 should consider the full COI list. The screening level risk assessments to identify COPCs and COPECs cannot be completed until data for all COIs are available. The most transparent and complete approach is to use the same COI list for the entire site. Data are needed to exclude COIs evaluated in OU1 from evaluation in OU2 and OU3; exclusion of contaminants from the COI list based on historical anecdotal information and/or assumptions need confirmation based on empirical evidence. Assumptions based on lack of evidence to exclude specific COIs need further verification.
90	16	Section 10.6.3	5th Paragraph. Remove "or rumor that any" from 5th sentence.	Section 10.7.3 revised as requested	Resolved. No further comment.
91	16	Section 10.6.3	6th Paragraph. Define the implied subject in the first sentence regarding "...Arkansas River was selected for inclusion because..." (Inclusion into what; highest concentration or as a potential receptor assessment?).	The referenced text was removed from the QAPP.	Resolved. No further comment.
92	16	Section 10.6.4	1st Paragraph. Define the implied subject in the first sentence regarding "...Arkansas River was selected for inclusion because..." (Inclusion into what; highest concentration or as a potential receptor assessment?).	Text in Section 10.7.4 was revised to state *The Arkansas River was selected for inclusion in this Phase I Risk Assessment because ...*	Resolved. No further comment.
93	16	Section 10.6.4	2nd Paragraph. Areas of potential reception, or complete pathway, should be identified or described.	Text regarding surface water in OU1 has been added to Section 10.3.3 and text regarding potential points of reception has been added to Section 10.7.4 (formerly 10.6.4)	Resolved. No further comment.
94	16	Section 10.7	COI is defined as constituent of interest in the Abbreviations Section. Use of Constituent, Chemical, or Contaminant should be assessed and corrected throughout. 1st sentence of 1st paragraph defines COI as a constituent, while Section title defines it as chemical. COI should be defined as Contaminant of Interest throughout document.	Text revised as requested	Resolved. No further comment.
95	16	Section 10.6.3	The final paragraph "The Arkansas River was selected...for ecological receptors (Ensero, 2024)" is repeated below. Is this paragraph intended to reflect soil (bank) contamination along the Arkansas River? If so, then this should be clearly stated.	Text deleted as it was erroneously included in this section	Resolved. No further comment.
96	17	Section 10.7	4th Paragraph. Include or reference table of COIs that may be associated with the Site, or the list of constituents to be sampled. The CAG has identified additional chemicals related to onsite operations should be assessed within this Section (zinc, sulfate, fluoride, acids, selenium, nitrate/nitrite, ammonia, etc) in a CAG Data Gaps letter from November 2nd, 2015.	A reference to Table 17-1 has been included. Fluoride, selenium and zinc were present in Table 17-1. Nitrate-nitrite, ammonia, and sulfate have been added as COI in Table 17-1.	Resolved. No further comment.
97	17	Section 10.7	4th Paragraph. Revise "...distal portions of OU1 and in OU2 may be necessary to adequately delineate the nature and extent of these COI." to "distal portions of OU1 and in OU2 will be delineated to determine the nature and extent of these COI during the [insert appropriate planning document]."	The referenced text was removed from the QAPP.	Resolved. No further comment.
98	17	Section 10.7	5th Paragraph. Adequate assessment has not been completed to make some of the statements in this paragraph. Additionally, this is the first use of the phrase "complete contaminant transport mechanism", and should therefore be better explained. Section is predominately focused on exposure pathways and complete pathways, so the use of "complete" with regards to transport mechanisms is unclear. Transport mechanisms should have been described and defined in Section 10.6, not in the conclusions of Section 10.7.	Text has been revised in this section to say that soils were remediated rather than eliminated as a part of the ROD (USEPA 2002). In addition, text has been added to support the definition of the perennial portion of Sand Creek. The term complete transport mechanism has been changed to *potential complete contaminant release/transport mechanism* to be consistent with the terminology used on figures and elsewhere in the QAPP.	Resolved. No further comment.
99	17	Section 10.7	7th Paragraph. uses the term "contaminants of interest" when COI should be used.	Text has been revised	Resolved. No further comment.
100	17	Section 10.7	7th Paragraph. Text uses the term "secondary transport mechanism" without describing the difference between that and a primary transport mechanism.	The term transport has been revised to release/transport to be consistent with the definitions provided for complete exposure pathways (per Comment 97). Text has been added to Section 10.8 (formerly 10.7) to clarify the difference between primary and secondary release mechanisms.	Resolved. No further comment.

101	17	Section 10.7	Section wide. Section should be better organized and split up by OUs or media. Text is hard to follow since it jumps between OUs and Media without clear delineation.	Text has been revised to address exposure media by operable unit. Text regarding exposure pathways has been removed since these are described specifically for human and ecological receptors in the subsequent sections. Section 10.9.3 has been revised to clarify exposures by operable unit, human receptors, and media.	Resolved. No further comment.
102	17	Section 10.7	Fourth Street Depot needs to be added to Figure 10-23.	A footnote was added to Figure 10-24 to clarify that potential pathways to the Arkansas River from the 4th Street depot are addressed on Figure 10-23.	Fourth Street Depot has been added to Figure 10-23 of the QAPP. Historical runoff/erosion should show a direct pathway to surface water and two-way transport between surface water and sediment. Surface water may also be an ongoing exposure for ecological receptors, as contaminated sediment can be resuspended and/or contaminants become dissolved in surface water. The footnote on Figure 10-24 does not indicate whether all contaminated soil has been removed or capped. If any contaminated soil has been left in place, it will need to be evaluated for remaining risk.
103	17	Section 10.7	ATSDR policy and guidance are not pertinent to CERCLA remedial investigations. Reference to ATSDR policy should be removed.	References to ATSDR have been removed as requested.	Resolved. No further comment.
104	17	Section 10.7	Aerial releases of radionuclide particulates (as described in section 10.6.2) should be included in the paragraph about milling contaminant.	The requested text has been added to this sentence in Section 10.8.	Resolved. No further comment.
105	18	Section 10.8	ATSDR policy and guidance are not pertinent to CERCLA remedial investigations. Reference to ATSDR policy should be removed.	References to ATSDR have been removed as requested.	Resolved. No further comment.
106	18	Section 10.8	2nd Paragraph. Last sentence should clarify the use of Site. Conceptually, "Site" is where the contamination is since the Site does not have complete characterization or a Record of Decision (ROD). Recommend revising use of "site" to "receptor" or other term.	This paragraph in what is now Section 10.9 has been removed and the definition of the complete exposure pathway is included in the previous Section 10.8.	Resolved. No further comment.
107	18	Section 10.8.1.1	2nd Paragraph. Clarify why OU1 is anticipated to be managed under authority of the DOE. Remedial Investigation cannot presume a remedy will occur, but given the complexities of the site being dual regulated under both CERCLA and an RML, a sentence should be included regarding how RML/DOE manages this type of project. Sentence should be reworded from "anticipated" to "reasonably anticipated", or other similar text.	The text has been revised to address this comment.	Resolved. No further comment.
108	18	Section 10.8	Suggested addition to the purpose and objective statement: "To the extent possible, data should be generated that can be used in both the screening-level assessments and baseline risk assessments. Sampling considerations should be made to gather data that best represent chronic exposures but also capture maximum contaminant concentrations."	The paragraph cited has been deleted from this section (now Section 10.9). However text has been revised in Section 10.8, *To the extent possible, chronic data should be generated that can be used in both the screening-level assessments and baseline risk assessments.*	Added text "To the extent possible, chronic data should be generated that can be used in both the screening-level assessments and baseline risk assessments. In doing so, some COI may be eliminated from further investigation during the risk assessment process." should be revised. "Chronic data" is not defined and it is not understood what is meant by this term. Definitive data are needed for the risk assessment. Phase 1 data should be evaluated for usability within the baseline risk
109	18	Section 10.8	As noted earlier, ATSDR text should be removed.	ATSDR references have been removed.	Resolved. No further comment.
110	19	Section 10.8.1.3	1st Paragraph. Last two sentences of paragraph should be removed. Work occurring under the direction of the CDPHE is not the basis to not assess current or future construction worker risk at the Site. Risk still needs to be assessed under CERCLA. Additionally, OU2 is not discussed or addressed in this Section.	Section 10.9.1.3, the text and associated CSM figures have been updated to note that current and future construction workers are potential receptors in OU1, OU2, and OU3.	Resolved. No further comment.
111	19	Section 10.8.1.3	Clarify what population the following claim is being compared to: "Although a construction worker may experience a shorter exposure duration... are expected to be greater by comparison."	Section 10.9.1.3, the text has been revised to clarify that the construction worker will be selected as the most health protective surrogate receptor for people who may be involved in soil excavation activities at the Site (e.g., utility workers).	A utility worker would be exposed to shallower depth for a longer exposure duration (assume ED of multiple years versus assuming an ED of 1 year for a construction worker). The construction worker may not be protective of a utility worker if concentrations in the shallower depths are significantly higher than concentrations in deeper soils whereby the EPCs for a utility worker would be higher. This can be evaluated if subsurface soil data are generated that allow for evaluation of concentrations at 0-3 feet and at 0-10 ft.
112	19	Section 10.8.1.4	Resident recreator should be assumed. Change section title to reflect.	Section 10.9.1.4, title remains as "Recreator"; In Section 10.9.1.1, text has been added to clarify that the resident exposure scenario includes local residents that live at the Site currently or may live there in the future and may also recreate at the Site. In Section 10.9.1.4, text has been added to identify that the recreator scenario differs from the resident scenario in that the recreator is not assumed to be exposed to COIs in groundwater, indoor air, or crops (the recreator is defined as a receptor that does not reside within the operable units).	Added text under resident in this section and text for sediment and surface water exposure pathways under Section 10.9 provide the information to support evaluation of a resident that also recreates. Change the last sentence in this section as recommended in comment 113, "Accordingly, the resident that also recreates will be the highest exposed receptor."

113	19	Section 10.8.1.4	Additional information should be added to the end of this paragraph. Suggested edit "These activities will be assessed for OU1 (outside the restricted area), OU2, and OU3. These exposures will be assumed to be most frequent for resident recreators. Accordingly, the resident recreator will be the highest exposed receptor and will be used for this assessment."	Section 10.9.1.4, text has been added to clarify that the recreational visitor scenario includes recreators who do not reside in the immediate area. Local residents that also recreate in the operable units are evaluated under the resident exposure scenario (now Section 10.9.1.1).	See response to comment 112. No further comment for the recreator.
114	20	Section 10.8.2	Vapor intrusion should be included in this Section. Vapor intrusion is not addressed in the same manner as the air or groundwater pathways, but instead is addressed via the soil pathway (Section 10.8.2.1).	In Section 10.9.2, the text has been updated to include a discussion of the vapor intrusion pathway.	Resolved. No further comment.
115	21	Section 10.8.2.1	Section does not address the potential for OU2 soil exposures through the groundwater to soil contamination pathway. The potential pathway should still be discussed in this section regardless of if sampling is planned to be completed or dependent on the results of the OU2 investigation.	Section 10.8 (previously 10.7) of the text was revised to indicate that surface soil in OU2 is an exposure medium of interest due to the potential for contaminated groundwater to impact surface soil in OU2 through the use of groundwater for irrigation purposes. Section 10.9.2.1 discusses potential exposures to soil through incidental ingestion, dermal contact, and inhalation of particulates in all operable units, independent of how the surface soil was impacted.	Resolved. No further comment.
116	21	Section 10.8.2.1	2nd Paragraph. Text discussion regarding COPC should be replaced with COI or text clarified as to why it is for COPCs rather than COIs.	Text in Section 10.9.2 has been revised to replace COPC with COI to be consistent with the description of COI and COPC in the first paragraph of Section 10.8. In other places throughout the document the term COPC has also been replaced with COI. See responses to comments 119, 121, and 123.	Resolved. No further comment.
117	21	Section 10.8.2.1	Specify what fine particles will be accessed. Suggested edit: "Even though few people intentionally ingest soil, people who have direct contact with surface soil ingest small amounts *of fine particles (i.e. <150 µm particle size fraction)* that adhere to their hands during outdoor activities."	The suggested text has been added to Section 10.9.2.1.	Resolved. No further comment.
118	22	Section 10.8.2.3	1st Paragraph. Reference to the completion of a comprehensive water use survey would be appropriate in this Section since it is discussing ingestion and dermal contact with groundwater.	The suggested text has been added to Section 10.9.2.3.	Resolved. No further comment.
119	22	Section 10.8.2.3	2nd Paragraph. Text discussion regarding COPC should be replaced with COI or text clarified as to why it is for COPCs rather than COIs.	The requested edit has been added to Section 10.9.2.3.	Resolved. No further comment.
120	23	Section 10.8.2.4	1st Paragraph and 2nd Paragraph. Sections should also include discussion regarding construction workers and whether a recreational receptor is a conservative evaluation metric for them.	Based on anticipated activities of the construction worker receptor, exposure to sediment and surface water is unlikely.	Resolved. No further comment.
121	23	Section 10.8.2.4	2nd Paragraph. Text discussion regarding COPC should be replaced with COI or text clarified as to why it is for COPCs rather than COIs.	Requested edit made in Section 10.9.2.4	Resolved. No further comment.
122	23	Section 10.8.2.5	1st Paragraph and 2nd Paragraph. Sections should also include discussion regarding construction workers and whether a recreational receptor is a conservative evaluation metric for them.	Based on anticipated activities of the construction worker receptor, exposure to sediment and surface water is unlikely.	Resolved. No further comment.
123	23	Section 10.8.2.5	2nd Paragraph. Text discussion regarding COPC should be replaced with COI or text clarified as to why it is for COPCs rather than COIs.	Requested edit made in Section 10.9.2.5	Resolved. No further comment.
124	23	Section 10.8.2.4	Specify what fine particles will be accessed. Suggested edit: "Although it is not expected that people intentionally ingest sediment, these recreational activities may result in the incidental ingestion of small amounts of *fine particles (i.e. <250 µm particle size fraction) from* surface sediment."	Requested edit made in Section 10.9.2.4	Resolved. No further comment.
125	24	Section 10.8.2.6	1st Paragraph. Since residents are present on portions of OU1, there should be some assessment of ingestion of produce at OU1.	Requested edit made in Section 10.9.2.6. Text revised to state that *Current and future residents may grow their own garden vegetables or fruit in contaminated soil or soil irrigated with contaminated water (OU2), in residential areas outside of the restricted area of OU1, and potentially in the NONAC subarea of OU3.*	Resolved. No further comment.
126	24	Section 10.8.2.6	2nd Paragraph. Text should be revised to state during what investigation/phase additional information will be collected to better understand water body use.	The text was revised in Section 10.9.2.6 to note that *A desktop evaluation and field reconnaissance will be conducted as part of the OU2/OU3 RI.*	Resolved. No further comment.
127	24	Section 10.8.2.6	3rd Paragraph. Text should not be bound/limited to elk/deer populations. Text should also be revised to include possible ingestion of surface water (primary impoundment).	Text revised as requested. Section 10.9.2.6 (previously 10.8.2.6) now states that *Game animals that inhabit the Site may take up contaminants from direct ingestion of Site soil while feeding or eating vegetation grown in contaminated soil and direct ingestion of surface water.*	Resolved. No further comment.
128	24	Section 10.8.2.6	Suggested edit "Contamination can be taken up into *and be adhered onto the surface of* the vegetables or fruit tissues."	Requested edit made in Section 10.9.2.6.	Resolved. No further comment.
129	25	Section 10.8.3	7th Bullet. Remove "(during indoor use)". Residents can also contact groundwater during irrigation.	The text was revised to acknowledge potential exposure during irrigation as well as indoor use.	Resolved. No further comment.

130	25	Section 10.8.3	Since different receptors and exposure pathways will be evaluated for each OU, this list should be seperated by OU for clarity.	The bullets in Section 10.9.3 have been revised and details have been added to clarify the specific operable unit and specific receptor that will be evaluated for each exposure pathway.	Resolved. No further comment.
131	25	Section 10.8.2.7	The last paragraph of this section indicates that a potential pathway of exposure to radionuclides is direct ingestion of soil. This should be incidental ingestion.	Requested edit made in Section 10.9.2.7.	Resolved. No further comment.
132	25	Section 10.8.2.7	Last paragraph of this section: change "inhalation of fugitive dusts" to "inhalation of radioactive airborne particulates and radon" to be most specific.	Requested edit made in Section 10.9.2.7.	Resolved. No further comment.
133	26	Section 10.9.1	1st Paragraph. The 1998 ERA is 26-years old and should evaluated to determine if the assumptions made in the report are still accurate or if additional assessment needs to be completed. Additionally, the DSTA did not assess the 1998 ERA; the 2007 ERA by Stoller and Shafer was assessed, but received "poorly" and "partially" evaluations.	Text has been added to Section 10.9.1 to clarify that the report was considered in CSM development but were not used to eliminate any potential exposure pathways.	Resolved. Please note a minor editorial change in the redline resulted in the following: 10.10.1, 3rd paragraph - typo "oerable"
134	26	Section 10.9	Delete "be" before "based on screening..." in the sentence, "The purpose and objective of this Phase I Risk Assessment QAPP are to identify COPEC in various media at the Lincoln Park Superfund Site be based on screening the maximum concentrations."	This paragraph has been removed and the purpose and objectives of the QAPP are included in Section 10.8 (formerly 10.7)	The word "chronic" should be removed from the first paragraph of 10.8. Section 10.8 refers to Section 10.10 for the ecological CSM. Section 10.10 refers to ecological receptors for the BERA, but this is Phase I sampling for the SLERA. Either way, the receptors of concern should be the same; however, it is probably better to just refer to the ERA instead of the BERA, replace BERA with ERA throughout this section, and remove statements regarding evaluation in the BERA. This section should just discuss ecological receptors and potentially complete exposure pathways at the site. Also, in section 10.10.2 there is a statement, "For the purposes of the BERA, aquatic and terrestrial receptors are defined as lower trophic level receptors with limited mobility, such that their exposure comes exclusively from aquatic or terrestrial environments, respectively." Not all terrestrial receptors have low mobility, but plants and invertebrates do. Please revise this statement and Section 10.2.2 accordingly. Wildlife are terrestrial (i.e., live and breed on land) but can be aquatic-dependent and have aquatic exposures when they feed on aquatic life or drink.
135	26	Section 10.9	ATSDR does not establish guidance for CERCLA sites. Remove the reference to ATSDR in this paragraph.	ATSDR references have been removed.	Resolved. No further comment.
136	26	Section 10.9	"The purpose and objective of this Phase I Risk Assessment QAPP are to identify COPEC in various media at the Lincoln Park Superfund Site be based on screening the maximum concentrations." This is the objective of the Phase I Risk Assessment, not the QAPP. The objective of the QAPP is to identify the data needs. Please revise this statement.	This paragraph has been removed and the purpose and objectives of the QAPP are included in section 10.8 (formerly 10.7)	See response to Comment #134.
137	26	Section 10.8.3	The exposure pathways should also include the internal radiation exposure pathways describe in the last paragraph of Section 10.8.2.7 for all receptors.	Requested edit made to Section 10.9.3. A note was added to the first paragraph to note that the internal pathways that are described in the bullets apply to both radionuclides and non-radionuclides.	Resolved. No further comment.
138	27	Section 10.9.3	1st Paragraph. Revise "(i.e., known with certainty to occur)" with "or high likelihood of being complete". A complete pathway, known with certainty to occur, is too limiting unless thorough and comprehensive surveying is completed. The current text does not include the assessment of a surface water body unless there is documentation that receptors use that water body. Very few locations likely have certainty that they are used by receptors, but it can be assumed that it is very likely that they are/could be.	Requested edit made to Section 10.10.3.	Resolved. No further comment.
139	28	Section 10.9.3.1	Suggested revision, "Ingestion of soil by terrestrial invertebrates is a complete exposure pathway, *however, there is limited toxicity data available to evaluate this pathway quantitatively.* " Replace "but is expected to be minor compared to exposure by diet" with the italicized text.	Requested edit made to Section 10.10.3.1	Resolved. No further comment.
140	28	Section 10.9.3.2	Section header should state, "Direct Contact with Sediment by Aquatic Invertebrates, Plants, and Fish". Delete the final sentence of this section, "Toxicity information (beyond screening levels) for evaluating this exposure pathway is typically not available." This is an incorrect statement.	Requested edit made to Section 10.10.3.2	Resolved. No further comment.

141	29	Section 10.9.3.4	A summary of complete exposure pathways for ecological receptors, similar to Section 10.8.3, should be added.	A summary showing complete pathways by operable unit is provided in new Section 10.10.3.5	Change COPCs to COPECs. COPCs refers to contaminants of potential concern for human health receptors; COPECs refers to contaminants of potential ecological concern. Remove reference to semi-aquatic birds and mammals ingesting surface water. All birds and mammals ingest surface water, not just those that are aquatic feeding. Also, change "Direct contact *with* plants and terrestrial invertebrates" to "Direct contact *by* plants and terrestrial invertebrates". Add OU3 to "COPCs in soil" direct contact and incidental ingestion bullets, "COPCs in Surface Water and Sediment" Ingestion by terrestrial birds and mammals bullet, and "COPCs in Biotic Tissues" Ingestion of terrestrial plants and invertebrates bullet.
142	29	Section 10.9.3.4	A discussion of exposure of ecological receptors to radionuclides should be added.	The COI being evaluated are discussed in Section 10.7 (formerly 10.6). The CSM is not COI-specific and the pathways evaluated are the same for radionuclides as those for other COI.	No further comment. Please note, some forms of radiation may also present an external exposure hazard. In addition to ingestion and direct contact with contaminated media, there may be external exposures.
143	31	Table 10-1	The date for "Decommissioning/reclamation of Mill begins" is incorrect. Last date on timeline is "July 4, 1905".	This row was removed as the previous row discusses mill building demolition.	Resolved. No further comment.
144	31	Table 10-1	Change the item "2007-2011 Mill is on Standby Status" to "2006-2011 Mill is on Stand-down Status".	The table has been revised as requested.	Resolved. No further comment.
145	32	Table 10-2	1993-1999: The cleanup standard for radium and thorium is based on human health risk. This should be clarified, and sediment should be added to OU2 for ecological receptors, if available.	Text has been added to clarify that the clean up standard was a human health risk-based clean up standard.	Resolved. No further comment.
146	32	Table 10-2	Clarify that the OU column is the OU in which the action occurred.	Footnote modified as requested	Resolved. No further comment.
147	34	Table 10-3	Column should be added to the table that describes/identifies main types/compounds/constituents of the reagents/chemicals. Table should also include a reference(s) of documented use (or a report documenting use).	This table is from the approved Draft RI (Ensero, 2022), reference added. No additional information is available. If more information is located, the CSM will be updated in future RI/FS Documents.	Resolved. No further comment.
148	35	Table 10-3	Table has mistaken rows on Page 35 that should be removed/corrected.	Formatting of table has been adjusted	Resolved. No further comment.
149	35	Table 10-3	The title of this table should be changed from "Table 10-1: Process Reagents...." to "Table 10-3: Process Reagents...". Correct Table number to 10-3.	Title revised as requested	Resolved. No further comment.
150	1 through 35	Throughout	Editorial corrections:		
			Page 1, 3rd paragraph: Add a closing parentheses to the sentence, "The Site is in a semi-arid high desert (approximately 5,000 feet above mean sea level."	Text revised as requested	Resolved. No further comment.
			Page 3, 3rd paragraph: "disturbances" is misspelled.	The referenced text was deleted per another comment.	Resolved. No further comment.
			Page 7, 2nd paragraph, first sentence: change again to against in the sentence, "The Chandler Syncline is comprised of steeply dipping sedimentary formations abutting again the Precambrian crystalline rocks to the southwest."	Text revised as requested	Resolved. No further comment.
			Page 9, section 10.3.5: Reconcile whether the spelling is Fluor Daniel or Flour Daniel	Fluor Daniel has been revised	Resolved. No further comment.
			Page 10, section 10.3.6: Add "ft" to sentence, "Further to the north and northeast, depth to bedrock can be greater than 125 but shallows near the Arkansas River near where the Pierre Shale is exposed along the Arkansas River (WESI, 2012b)."	Text revised as requested	Resolved. No further comment.
			Page 11, section 10.4: Add space between "This" and "loam" in the sentence, "This loam covers approximately 55 percent of the area of OU2."	Text revised as requested	Resolved. No further comment.
			Page 16, section 10.6.3: Depot is misspelled in the sentence, "Although excavation occurred at Team Track, NONAC, and Fourth Street Depot, and some backfill occurred at Fourth Street Deport and NONAC, remedial investigations have not been completed."	Text revised as requested	Resolved. No further comment.
151	Figures, pg. 2	Figure 10-2	The OU3 boundary lines are misleading. OU3 has not yet been fully defined. This should be made clear on this figure. This comment applies to all figures with this OU3 boundary identification.	RML surface water sample locations were removed from this figure. Former facility buildings and PRTW were added to this figure. The SCS Dam features are labeled in the figure and therefore are not in the legend. OU3 Subarea has been clarified on the legend.	Resolved. No further comment.
			Remove RML surface water sample locations, as they are not Site Features.		Resolved. No further comment.
			Figure should include SCS Dam, former facility, PRTW, and other related features.		Resolved. No further comment.
152	Figures, pg. 4	Figure 10-4	Identify or note where Arkansas River is on the generalized geologic cross section.	A label was added to the cross section showing the location of the Arkansas River.	Resolved. No further comment.

153	Figures, pg. 5	Figure 10-5	Proposed sample locations should be removed from figure and moved to figures associated with sample planning.	The RML sample locations have been removed from this figure.	Resolved. No further comment.
154	Figures, pg. 6	Figure 10-6	NRSC overlay should be updated if newer version is available.	A newer version of the NRCS overlay was added to this figure. Renumbered to Figure 10-7 because a new Figure 10-6 was added.	Resolved. No further comment.
155	Figures, pg. 7	Figure 10-7	SCS Dam polygon overlays should be included in the Legend. All drainages should be identified.	The SCS Dam features are labeled in the figure and therefore are not in the legend. Neither the National Hydrologic Dataset nor the Cañon City 24K topographic map (USGS, 2022) name the drainages in the Willow Creek or Fawn Hollow drainage basins. Renumbered to Figure 10-8 because a new Figure 10-6 was added.	Resolved. No further comment.
156	Figures, pg. 8	Figure 10-8	Reference should be included on how/where the bedrock contact information came from.	This figure has been deleted as it is not directly related to this section.	Resolved. No further comment.
157	Figures, pg. 9	Figure 10-9	How did Cotter modify Ensero's uranium contours? Explanation should be given on figure.	The contours were not modified from the Ensero document. The note was updated on this figure to reflect that the contours were from Ensero, 2024.	Resolved. No further comment.
			SCS Dam polygon overlays should be included in the Legend.	The SCS dams are identified on the figures and not added to the legend.	Resolved. No further comment.
158	Figures, pg. 10	Figure 10-10	How did Cotter modify Ensero's molybdenum contours? Explanation should be given on figure.	The contours were not modified from the Ensero document. The note was updated on this figure to reflect that the contours were from Ensero, 2024.	Resolved. No further comment.
			SCS Dam polygon overlays should be included in the Legend.	The SCS dams are identified on the figures and not added to the legend.	Resolved. No further comment.
159	Figures, pg. 11	Figure 10-11	All TCE concentrations should be included on the Figure.	TCE concentrations from CLL, 2019a have been added.	Resolved. No further comment.
			Recommend boxes or some sort of contrast between Well ID and Concentrations.	Well label and concentration changed as requested.	Resolved. No further comment.
160	Figures, pg. 12	Figure 10-12	Clarify which report maps were taken-from and how the figures were modified for use.	Figures were not modified. The source was CDPHE - Uranium Plumes Over Time. Note on figure revised.	Resolved. No further comment.
161	Figures, pg. 13	Figure 10-13	O pathway evaluation note should be clarified on if the use of the term "future" is in reference to future use or future evaluation.	Clarification has been added. Figure renamed to Figure 10-14 (formerly 10-13).	Resolved. No further comment.
162	Figures, pg. 13	Figure 10-13	Incidental Ingestion of Groundwater should be changed from a "O" to a filled in circle based on current Site use for maintenance operations onsite.	The commercial worker in OU1 Restricted Area is a maintenance worker that is performing daily checks of the groundwater monitoring stations located within OU1 to ensure that the SCS Pumpback system is functioning properly. Therefore, it is assumed that the incidental ingestion, dermal contact, and external exposure routes are complete. Figure renamed to Figure 10-14 (formerly 10-13).	Resolved. No further comment.
163	Figures, pg. 13	Figure 10-13	Section 10.8.2.2 says that Construction Work -> Vapor Intrusion is a complete pathway. Figure should be updated from an "X" to "O".	This section was updated to clarify that vapors may accumulate within excavations/trenches from the subsurface and Figure 10-14 (was Figure 10-13) was updated to note that this is a complete pathway for the construction worker. Vapor Intrusion (indoor air) is not a complete pathway for this receptor. Figure renamed to Figure 10-14 (formerly 10-13).	Resolved. No further comment.
164	Figures, pg. 13	Figure 10-13	As commented regarding Section 10.8.2.5, Construction work -> Surface Water / Sediment should be updated from "X" to "O" or "O" with a dot.	Based on anticipated activities of the construction worker receptor, exposure to sediment and surface water is unlikely. No change made to the Figure or Section 10.9.2.5. Figure renamed to Figure 10-14 (formerly Figure 10-13).	Resolved. No further comment.
165	Figures, pg. 14	Figure 10-14	Section 10.8.2.2 says that Construction Work -> Vapor Intrusion is a complete pathway. Figure should be updated from an "X" to a filled in circle.	As noted in the response to comment 163, vapor Intrusion (indoor air) is not a complete pathway for this receptor. Figure 10-14 (was Figure 10-13) was updated to note that exposures to vapors within trench/ excavations is a complete pathway for the construction worker. Figure renamed to Figure 10-15 (formerly Figure 10-14).	Resolved. No further comment.
166	Figures, pg. 14	Figure 10-14	As commented regarding Section 10.8.2.5, Construction work -> Surface Water / Sediment should be updated from "X" to "O" or "O" with a dot.	Based on anticipated activities of the Construction Worker receptor, exposure to sediment and surface water is unlikely. No change made to the Figure or Section 10.9.2.5. Figure renamed to Figure 10-15 (formerly 10-14).	Resolved. No further comment.
167	Figures, pg. 14	Figure 10-14	Assuming resident recreator is maximally exposed recreator to be assessed in the HHRA, then crop ingestion and indoor air should be the same for both recreator and resident receptors.	Revised the CSM figure and text in Section 10.9.1.1 to indicate that a local resident may also recreate in other areas of the operable unit. The recreator will be evaluated as a recreator that does not live in the local area. Therefore, crop ingestion and inhalation of indoor air are not complete pathways for the recreator. Figure renamed to Figure 10-15 (formerly Figure 10-14).	Resolved. No further comment.
168	Figures, pg. 15	Figure 10-15	Remove Note #4 in OU2 CSM Table. Although it is not believed that any Lincoln Park residents use domestic wells for drinking water, this cannot be confirmed without a comprehensive well survey.	Original Note #4 was removed. A new Note #4 was added in response to Comment 170. Figure renamed to Figure 10-16 (formerly Figure 10-15).	Resolved. No further comment.
169	Figures, pg. 15	Figure 10-15	Surface water arrow should be point to it's own evaluation rather than Dust Inhalation -> Recreator (adolescent)	Revised to show surface water exposure routes separately. Figure renamed to Figure 10-16 (formerly Figure 10-15).	Resolved. No further comment.

170	Figures, pg. 15	Figure 10-15	Note should be added to the table that construction/commercial works are shown on the table since the residential pathway assessment will be conservative enough to cover construction/commercial receptors.	A new Note #4 was added to the figure to indicate that Commercial Workers and Construction Workers are not shown on the figure because the residential pathway assessment will be more conservative than the Commercial and Construction Workers. Figure renamed to Figure 10-16 (formerly Figure 10-15).	Resolved. No further comment.
171	Figures, pg. 15	Figure 10-15	Recreator pathways for dust inhalation and external should be complete pathways. Surface water should include incidental ingestion. Dermal contact and external for potential exposure routes should have an X for residents and circle with dot for recreator. Water supply for residents would be open circles. Also, although adolescents may be more likely to recreate in this area, it is possible that young children may also recreate and should be considered.	Figure layout and content updated to account for:	Resolved. No further comment.
				- Resident exposure to groundwater (potable use), vapor intrusion from groundwater, biota uptake from groundwater and surface soil with subsequent ingestion, surface soil contact, and surface water contact (recreational use of nearby surface water).	Resolved. No further comment.
				- Recreator exposure to surface soil (only for properties where groundwater was used for irrigation) and surface water. An adult and child recreator will be evaluated. Figure renamed to Figure 10-16 (formerly Figure 10-15).	Resolved. No further comment.
172	Figures, pg. 16	Figure 10-16	Note #3 references a 2017 ROD, when it should reference the 2002 ROD.	Figure revised as requested. Figure renamed to Figure 10-17 (formerly Figure 10-16).	Resolved. No further comment.
173	Figures, pg. 16	Figure 10-16	Formatting issue with Biota Uptake arrow, which should be removed.	The arrow was fixed and retained, as fish ingestion is a potentially complete exposure pathway. Figure renamed to Figure 10-17 (formerly Figure 10-16).	Resolved. No further comment.
174	Figures, pg. 18	Figure 10-18	Currently the primary impoundment and multiple other areas within the restricted area are open surface water bodies. These exposures should be assessed as part of the ERA. Although the CDPHE through the RML is managing the Site, exposures related to onsite wastes need to still be evaluated.	A complete pathway from sediment/surface water to aquatic food items, to each of the identified receptor groups (aquatic invertebrates, plants and wildlife) via ingestion has been added. Note that fish have been eliminated as a receptor for OU1 as no fish are present in these water bodies. Figure renamed to Figure 10-19 (formerly Figure 10-18).	Resolved. No further comment.
175	Figures, pg. 18	Figure 10-18	Note #1 is incorrect; there are multiple year-long surface water exposure within the restricted area.	This footnote was revised as follows: *1) Applies to any surface water bodies that persist long enough to result in chronic exposure to ecological receptors.* Figure renamed to Figure 10-19 (formerly Figure 10-18).	Resolved. No further comment.
176	Figures, pg. 18	Figure 10-18	Semi-aquatic wildlife may feed on terrestrial food items. The ingestion pathway for Semi-Aquatic Wildlife should be shown as complete, quantitative evaluation. The Semi-Aquatic Wildlife Incidental ingestion of sediment and surface water pathway should also be shown as complete.	Figure revised to include a complete pathway between terrestrial food items and semi-aquatic birds and mammals via ingestion. A complete pathway for incidental ingestion of sediment and surface water and semi-aquatic wildlife was also added. Figure renamed to Figure 10-19 (formerly 10-18).	Fish are not included as either an aquatic receptor or as a prey item; they are both. There should be a direct line from sediment to incidental ingestion. There should be a direct line from surface water to ingestion (not incidental). Aquatic Food Items are an Exposure Medium, not a Secondary Release Mechanism.
				Fish removed as a receptor from this figure renamed to Figure 10-19 (formerly Figure 10-18).	
177	Figures, pg. 19	Figure 10-19	CSM table does not appear to take into account the primary impoundments or other onsite features.	Figure 10-19 is specific to terrestrial receptors. The potential exposure of semi-aquatic receptors to impoundments is addressed in Figure 10-18. Figure renamed to Figure 10-20 (formerly Figure 10-19).	Resolved. No further comment.
178	Figures, pg. 19	Figure 10-19	Note #1 is incorrect; there are multiple year-long surface water exposure within the restricted area.	This footnote was revised as follows: *1) Applies to any surface water bodies that persist long enough to result in chronic exposure to ecological receptors.* Figure renamed to Figure 10-20 (formerly Figure 10-19).	Resolved. No further comment.
179	Figures, pg. 19	Figure 10-19	Ingestion of surface water should be shown as complete, quantitative evaluation for terrestrial wildlife.	A pathway for ingestion of surface water for wildlife was added. Figure renamed to Figure 10-20 (formerly Figure 10-19).	There should be a direct line from sediment to incidental ingestion. There should be a direct line from surface water to ingestion (not incidental). Groundwater Discharge is a Secondary Release Mechanism, not an Exposure Medium. Change X to pathway "incomplete and/or not evaluated" and have all X for exposure to sediment and aquatic food items, including for wildlife. Only ingestion of surface water should be included.
180	Figures, pg. 20	Figure 10-20	Semi-aquatic wildlife "X"s should be "O". If irrigation caused secondary contamination, wildlife interacting with the soil/vegetation would be a complete, but minor pathway.	Figure revised to show direct contact by semi-aquatic wildlife with soil as hypothetically complete but minor. The pathway between food items such as vegetation is shown as complete based on comment 181. Figure renamed to Figure 10-21 (formerly Figure 10-20).	Resolved. No further comment.
181	Figures, pg. 20	Figure 10-20	Ingestion of terrestrial food items, incidental ingestion of surface water, and incidental ingestion of soil should all be shown as complete pathways for semi-aquatic wildlife.	Requested edit made. Figure renamed to Figure 10-21 (formerly Figure 10-20).	This figure is for aquatic and aquatic-feeding receptors; Terrestrial Food Items should be changed to Aquatic Food Items, and there should be a direct line for uptake from surface water and sediment. Change X to pathway "incomplete and/or not evaluated" and have all X for exposure to soil.
182	Figures, pg. 21	Figure 10-21	Ingestion of surface water should be shown as complete, quantitative evaluation for terrestrial wildlife.	This figure has been revised accordingly. Figure renamed to Figure 10-22 (formerly Figure 10-21).	Change X to pathway "incomplete and/or not evaluated" to be consistent with other figures.
183	Figures, pg. 22	Figure 10-22	Show direct contact with surface water as hypothetically complete for wildlife receptors.	This figure has been revised accordingly. Figure renamed to Figure 10-23 (formerly 1 Figure 0-22).	Change X to pathway "incomplete and/or not evaluated" to be consistent with other figures.

184	Figures, pg. 23	Figure 10-23	Fourth Street Depot needs to be added to Figure 10-23. Worksheet 10 states that "the Arkansas River may have received sediment input due to historical erosion from Fourth Street Depot." Figure 10-23 should include pathways of exposure of aquatic organisms to sediment and surface water. Figure 10-23 should also include ingestion of aquatic organisms by wildlife receptors.	This pathway is addressed on Figure 10-23 (formerly Figure 10-22). Additional text added to footnote 1 on this figure (now Figure 10-24) to state this complete pathway is shown on Figure 10-23 (formerly Figure 10-22). Figure 10-23 shows complete pathways for ingestion of aquatic organisms by wildlife receptors as requested.	Resolved. No further comment.
185	Figures, pg. 16, 17	Figure 10-16 and Figure 10-17	Revise "Notes" to remove "released and" from note one. Are there any future development or utility work concerns or is this covered by a deed restriction or IC covering deeper soil?	Requested edit made on Figures 10-17 and 10-18. No information is known about the future development, utility work concerns, or deed restrictions of Fourth Street Depot.	Note 1 should be revised to clarify that recreators are exposed to surface water and sediment as shown by the figure.
186	Figures, pg. 9, 10	Figure 10-9, 10-10	Define the brown and lime green areas in the figure legend.	This stylistic comment is noted. These features are labeled in the figure. Figure not revised in response to comment	Resolved. No further comment.
			Project/Data Quality Objectives, Worksheet 11		
187	1	Section 1	1st Paragraph. COPC and COPEC should both be "contaminants", not "constituents".	The text was revised as requested.	Resolved. No further comment.
188	1	Section 1	2nd Paragraph. Revise "...systematic identification of all potential COI has not yet been completed." to "...systematic identification of all potential COI will be completed as part of this investigation.".	The suggested edit was addressed as follows: *Historical characterization of COI related to Former Cañon City Mill operations has included a limited subset of all potential constituents. However, systematic identification of all potential COI which screen in for additional analysis because they may cause risk to human and ecological receptors will be completed as part of this investigation.*	Resolved. No further comment.
189	1	Section 1	3rd Paragraph. Revise "appropriate" to "potential" in 2nd sentence of paragraph. "Potential" was already used to describe COI. If "appropriate" is a more appropriate adjective, then a sentence should be included to explain the difference uses.	The sentence in the comment was deleted because it is more related to nature and extent characterization, which is the subject of the forthcoming OU2/OU3 QAPP.	Resolved. No further comment.
190	1	Section 1	State the Problem, first paragraph, p.1. Maximum measured environmental media concentrations should be used for screening. Suggested revision "Per the Work Plan, *the maximum measured* environmental media concentrations in each Operable Unit (OU) are to be screened against protective human and ecological health action levels." Add the italicized text to the statement.	The text was revised as requested.	Resolved. No further comment.
191	2	Section 1	4th Paragraph. Revise "Colorado Department of Public Health and Safety (CDPHE; Remedial Project Manager)" to "Colorado Department of Public Health and Environment (CDPHE; Project Manager)".	The text was revised as requested.	Resolved. No further comment.
192	2	Section 1	5th Paragraph. COIs are not limited to those identified by the EPA in the Work Plan. As stated in the 3rd Paragraph, a systematic identification should also be completed to include any additional COI that have not been previously	The text was revised to the following: *Data required include soil, groundwater, surface water, sediment and air concentrations of the identified COI.*	Resolved. No further comment.
193	2	Section 2	Estimation Statement that Addresses the Study Questions. Previous applicable Gamma Studies should be included in the list of "anticipated historic maximum concentrations".	For clarity the text was revised to the following: *A biased sampling design was chosen, specifically targeting areas of known or suspected maximum concentrations of uranium, molybdenum, diesel, and/or trichloroethylene (TCE). As described further in Worksheet 17, sample locations are based on Former Cañon City Mill operations history, existing constituent sampling data, historical gamma surveys, and planned gamma surveys.*	Resolved. No further comment.
194	2	Section 1	State the Problem, third paragraph, p.2 . Maximum measured environmental media concentrations should be used for screening. Suggested revision "To ensure COI concentration screening does not unintentionally exclude constituents from further assessment, *the maximum measured* constituent concentrations in *environmental media* in each OU are needed." Revise the statement with the italicized text.	The text was revised as requested.	Resolved. No further comment.
195	2	Section 1	Colorado Department of Public Health and Environment needs to be added to Worksheets #3/#5 and Worksheets #4/#7/#8.	CDPHE is included on Worksheets #3/#5. Worksheets #4/#7/#8 is for Cotter personnel and subcontractors. CDPHE was not added to Worksheets #4/#7/#8.	Resolved. No further comment.
196	2	Section 2	Need a clear decision statement. Suggested statement: "If maximum measured concentrations of COIs in any exposure medium exceed project action levels, then those COI are identified as COPCs/COPECs for further evaluation of risk."	The text was revised as requested.	Resolved. No further comment.
197	2	Section 2	Last bullet: Add "and require further investigation" after "(all COI are considered either COPC or COPEC)"	The text was revised as requested.	Resolved. No further comment.
198	2	Section 2	"What is the set of COI related to site operations and releases into the environment?" is not a study question. This should be determined based on site operations and existing data. The study question is to identify COPCs and COPECs.	The bullet list was revised to the following: • What are the maximum concentrations of COI in the relevant media in each OU? • Which COI concentrations are higher than the relevant screening action levels in each medium in each OU? That is, which COI may be considered COPCs or COPECs?	Resolved. No further comment. Resolved. No further comment.

199	2	Section 2	The text states "What is the set of COI related to site operations and releases into the environment?" The statement should be revised to "...potentially related to site operations. as risk assessments are not intended to attribute contamination to a specific source.	The sentence in question was deleted in response to another comment.	Resolved. No further comment.
200	3	Section 3	1st Paragraph. Cotter may retain systems or process knowledge of the Site/operations, that should be assessed in the development of the list of COI. Include "Cotter operations history" to the list of information presented.	The text was revised as requested.	Resolved. No further comment.
201	3	Section 3	List the COI here: radionuclides, TAL metals, molybdenum, uranium, VOCs, SVOCs, PCBs and petroleum hydrocarbons	The COI list was added to end of the first paragraph in Section 3.	Resolved. No further comment.
202	3	Section 3	At the beginning of the second paragraph, add the statement, "Definitive, validated data are needed for risk assessment."	The text was revised as requested.	Resolved. No further comment.
203	3	Section 3	The site operational history should also be listed in the information used to develop the list of COI.	This edit was completed in the first paragraph of Section 3 in response to another comment.	Resolved. No further comment.
204	3	Section 3	Replace "EPA will also compare..." with "Comparison of..." This is part of the QAPP and SAP development.	This QAPP is outlining the methods and approach to collect the data that will ultimately be compared to PALs to determine COPC and COPEC. Thus, the QAPP/SAP itself cannot contain comparisons of the data to the PALs - this will occur in a subsequent document, presumably prepared by the USEPA because they are completing the risk assessment. To leave open the possibilities for where this comparison will take place, the sentence was revised to the following:	Resolved. No further comment.
				Analytical results will be compared to Project Action Levels to determine if COPC and COPEC are present and may require further investigation.	Resolved. No further comment.
205	3	Section 4.1	This section should identify classes of COIs that will be measured. Similar to section 4.2 which discusses soil.	The COI are listed in Section 3 and broadly apply to all the media. For consistency, the sentence discussing COI for soil in Section 4.2 was removed.	Resolved. No Further Comment.
206	4	Section 4.1	The date of the ROD mentioned in the OU2 bullet point should be included.	The ROD date (2002) and full reference were added to the text.	Resolved. No further comment.
207	4	Section 4.1	The final sentence on this page "The temporal boundaries... groundwater concentrations" is repeated in the next paragraph.	The repeated sentence was removed.	Resolved. No further comment.
208	5	Section 4.1	Timeframe & Scale for Decision-Making or Estimation. Text states/implies multiple times that data collection will only encompass 1-year period. Text should be revised/clarified about how this design addresses temporal, hydrological, or anomalous changes at the Site.	The following clarification was added to the text: *While one year of data may not capture potential year-to-year variability in groundwater, the objective of identifying maximum COI concentrations to determine the COPC and COPEC for further evaluation will be met. Characterization of the year-to-year variability in groundwater may be evaluated in the nature and extent sampling that will be outlined in the OU2/OU3 QAPP.*	Resolved. No further comment.
209	5	Section 4.2	Target Population & Sampling Unit, Operable Unit 1. Confirmation depth (0.5-2') samples & further assessment based upon shallow (0-0.5') concentrations should both be included. Due to the amount of earth moving activities that have occurred at the Site and it's long operational history, depth samples are required. Alternatively, text can state that subsurface will be characterized as part of N&E and the Risk Assessment will be updated and reevaluated as necessary.	Deep soil samples (0.5-2 feet and 2-10 feet) are proposed at soil borings 6001 and 6002 within OU1. The text in Section 4.2 was clarified to reflect this.	Resolved. No further comment.
210	5	Section 4.1	The last sentence of this paragraph "A single sampling...current conditions" refers to soils; however, this section is about groundwater. Move this sentence to section 4.2 Soil.	The sentence was deleted from Section 4.1 and this content was included in Section 4.2	Resolved. No further comment.
211	5	Section 4.2	Operable Unit 1 should be broken out into restricted area and non-restricted area.	The target population is the same in both the restricted and non-restricted areas. This note was added to the header for OU1.	Resolved. No further comment.
212	5	Section 4.2	Note that unsieved surface samples (0-6 inches) will be assessed for risk to ecological receptors.	Comment is noted and agreed.	Resolved. No further comment.
213	5	Section 4.2	Subsurface soil depths should be 0.5 - 2 ft instead of 0 - 2 ft. Clarify which COIs are included in "Uranium processing-related COI"	Soil collected from 0-6 inches will be used in the HHRA to represent surface soil exposure consistent with the definition of surface soil per USEPA guidance	0-6" is acceptable for unsieved (<2mm) soil samples intended to evaluate ecological risk and human health risk for VOCs, SVOCs, TPH,
214	5	Section 4.2	For HHRA, 0 -1 inch best represents surface soil exposure. Also, note that <150 µm particle size fraction for analysis is needed.	The text was revised as requested.	Please see response to comment 213.
215	5	Section 4.2	Correct "metal" to "metals."	Per another comment, the referenced text was removed since the COI list is identified in Section 3.	Resolved. No further comment.
216	5	Section 4.2	Worksheet #10 specifies petroleum hydrocarbons, including VOCs and SVOCs. These should also be included in the last bullet point. Additionally, mercury should be included in this list.	Per another comment, the referenced text was removed since the COI list is identified in Section 3.	Resolved. No further comment.
217	5	Section 4.2	The classes of the COIs should be listed.	See response to comment 216.	Resolved. No further comment.
218	5	Section 4.2	For HHRA, 0 -1 inch best represents surface soil exposure. Also, note that <150 µm particle size fraction for analysis is needed.	See Response to Comment 214	Please see response to comment 213.
219	5	Section 4.2	The classes of the COIs should be listed.	See response to comment 217.	Resolved. No further comment.

220	5	Section 4.2	For HHRA, 0 -1 inch best represents surface soil exposure. Also, note that <150 µm particle size fraction for analysis is needed.	See response to comment 218.	Please see response to comment 213.
221	6	Section 4.2	This section should also include the size of the exposure units.	ISM decision units for OU2 irrigated soils will correspond to risk assessment exposure areas. These decision units/exposure areas cannot be defined until information about site use/site irrigation practices is collected on each of the parcels. Thus, the size of decision unit/exposure area is not currently known and cannot be included in Worksheet 11. Additional text was added to Worksheet 11 to describe the exposure unit determination. Worksheet 17 was revised to reflect the process by which decision units/exposure areas will be defined in consultation with the Agencies.	Resolved. No further comment.
222	6	Section 4.2	Correct section number to 4.3 for Surface Water and Sediment.	The text was revised as requested.	Resolved. No further comment.
223	7	Section 4.2	Surface Water and Sediment is titled as Section 4.2, but should be Section 4.3. Sections become off throughout rest of worksheet and should be corrected.	See response to comment 222.	Resolved. No further comment.
224	7	Section 4.2	Target Population & Sampling Unit. Surface water of the impoundment and other features should be included in the Risk Assessment. These features and not CERCLA implemented and have been present for long time periods; reasonable expectation is that these features will continue to exist for the time being and should therefore be included.	This QAPP has not excluded any features from the risk assessment; consistent with the objective, this QAPP has identified sample locations for determination of maximum COI concentrations. The QAPP notes that surface water samples will be collected from Sand Creek and surface water in the Primary Impoundment and the Water Distribution Pond as these are the surface water bodies in the Restricted Area which would likely contain maximum COI concentrations. Additional details were added to Worksheet 17 and Worksheet 18 to describe the proposed surface water and sediment sampling in OU1.	Resolved. No further comment.
225	7	Section 4.2	Target Population, Operable Unit 3. Either wrong punctuation or missing bullet points.	The text was corrected.	Resolved. No further comment.
226	7	Section 4.2	The text states "Surface water and sediment samples in the Arkansas River, and at locations where groundwater elevations indicate a seasonal elevation within five feet of ground surface elevation, indicating a potential seep (see Figure 17-23)." Provide rationale for why 5 feet bgs was selected as the criteria for indicating a potential seep.	The groundwater head would need to equal the ground surface elevation to express as seepage. To be conservative and account for uncertainty of projected groundwater elevations near discharge areas, the evaluation identified groundwater occurring within 5 feet of the ground surface as potentially discharging. This rationale was added to the text.	Please clarify in text that the groundwater level is being assessed based upon the highest measured groundwater level. Based upon a review of the groundwater elevation summary within the RML annual report, some wells have groundwater elevations that change by up to 7' in a year.
227	7	Section 4.2	Surface Water and Sediment Operable Unit 1, Operable Unit 2, and Operable Unit 3. The classes of the COIs should be listed.	Per other comments the COI list was included in Section 3 and the classes of COIs was removed in section 4.2 for consistency with the other sections.	Resolved. No further comment.
228	7	Section 4.2	Surface Water and Sediment - Sampling Unit - Operable Unit 1, Operable Unit 2, and Operable Unit 3. These bullet points need more information. Specify whether ICS or discrete samples. Specify the water type (disturbed, dissolved, or other). Also, note that <250 µm particle size fraction for analysis for sediment for HHRA.	Worksheet 11 outlines the DQOs and is not intended or required to include the full details of sampling each media. Worksheets 17 and 18 include the sampling design, rationale, locations, and methods. As noted in the introduction to Worksheet 11: *This worksheet describes the specific goals of the Phase I Risk Assessment QAPP for the Lincoln Park Superfund Site (Site) and the supporting investigation and analytical strategies. Additional details can be found in other worksheets, notably Worksheets #12 (Measurement Performance Criteria), #15 (Project Action Limits and Laboratory-Specific Detection/Quantitation Limits), and #17 (Sampling Design and Rationale).*	Resolved. No further comment.
229	7	Section 4.2	Surface Water and Sediment - Sampling Unit: Operable Unit 1. Note that unsieved surface samples (0-6 inches) will be assessed for risk to ecological receptors. Also note that total and filtered surface water samples will be assessed.	Text has been added in response to this comment.	Resolved. No further comment.
230	7	Section 4.2	Surface Water and Sediment - Sampling Unit: Operable Unit 3. Add more detail to the location along the Arkansas River. Suggested addition: "up and down stream of the Fourth Street Depot and the confluence of Sand Creek and the Arkansas River"	This additional detail was added to the text.	Resolved. No further comment.
231	7	Section 4.3	Correct section number to 4.4 for Air.	The text was corrected.	Resolved. No further comment.
232	8	Section 4.3	Clarification is needed regarding whether air monitoring or air sampling is being proposed.	Air sampling in OU1 is proposed as described in Section 4.4. References to air monitoring will be changed to air sampling in the text.	Resolved. No further comment.
233	8	Section 4.3	The text states "Air sampling is not identified in the Work Plan for OU2 or OU3 and no air quality data gaps are identified for OU2 and OU3 in the Draft RI (Ensero, 2022)." Additional explanation is needed. At a minimum, language should be included indicating OU1 air results will be used to determine necessity of step-outs in OU2/OU3 and addressed in baseline HHRA.	OU2/OU3 sampling will be described in an RI/FS QAPP. Added clarifying text in Section 4.4 of Worksheet 11.	Resolved. No further comment.

234	8	Section 5	Develop the Analytical Approach - Logic for Drawing Conclusions from Findings. There is no previous mention of ISM sampling. Earlier in the document, it specifies biased/targeted sampling. If ISM is going to be used, then it needs to be added throughout this worksheet.	The text in Section 4.2 and Section 5 was clarified to note where ISM sampling will be used (OU2 irrigated soils).	Resolved. No further comment.
235	9	Section 5	Develop the Analytical Approach - Logic for Drawing Conclusions from Findings. "Five replicates from each DU..." needs a citation or calculations justifying this number of replicates. Are these replicates or individual discrete samples? How will sample locations be determined?	The text was revised as follows to clarify replicate sampling: Consistent with ISM guidance (ITRC, 2020) at least three replicates will be collected from each DU to calculate the UCL. Replicates are independent ISM samples (composed of 30 or more increments) collected from the same DU. As addressed in response to Comment 221, ISM sample locations (i.e., decision units) will be determined following the evaluation of property use/irrigation practices information for each parcel.	Please correct or clarify. Section 11.5 states "The population parameter for making decisions or estimates will be the maximum concentration of each COI in each medium within each OU." However, further states "For soil data collected using ISM, the data comparison criterion will be the Upper Confidence Limit (UCL) on the mean..." The maximum concentration is used during the risk assessment screening step.
236	9	Section 5	Develop the Analytical Approach - Logic for Drawing Conclusions from Findings. This is the first mention of reference areas which is outside of the scope of this specific QAPP. Reference/background concentrations cannot be used to eliminate COI from further evaluation in the risk assessment. Comparison of targeted areas versus reference areas would require a much more detailed discussion. Further, the planned sampling that is based on biased sampling cannot be used in a defensible comparison to reference data.	The referenced sentence was deleted from Worksheet 11 and the topic is discussed in further detail in Worksheet 17. It is understood that the EPA will not consider reference areas (i.e., anthropogenic background) in selection of COPCs and COPECs from the COI list. However, anthropogenic background conditions representative of properties irrigated with non-site-impacted water will be important for the risk assessment process and should be characterized at the same time as site data collection. Collection of anthropogenic background data comparable to OU2 irrigated soils is discussed further in Worksheet 17.	Background information may be discussed in the Risk Characterization or Uncertainty sections of the risk assessment. Risk calculations, however, should <u>not</u> be based on the increment between background concentration and total concentration. CERCLA requires that EPA assess risk at the site, not risk attributable to any one individual source. Individual sources may be taken into consideration in the risk management phase of the site evaluation consistent with EPA's background policy (Role of Background in the CERCLA Cleanup Program, OSWER Directive 9285.6-07P, EPA 2002).
237	9	Section 5	Develop the Analytical Approach - Logic for Drawing Conclusions from Findings. The objective of this QAPP is not to compare data to reference parcels because reference/background concentrations cannot be used to eliminate COI from further evaluation in the risk assessment. Further, stating that UCLs will be calculated for reference parcels for comparison to site concentrations is not correct. To support risk management, UTLs (not UCLs) would be calculated on the reference parcels for comparison to site concentrations. Alternately, t-tests would be conducted between target and reference area data. Additionally, targeted/biased sampling results should not be compared to reference area data. The discussion as presents is inadequate and lacking details.	See response to comment 236.	See response to Comment #236.
238	9	Section 5	Develop the Analytical Approach - Logic for Drawing Conclusions from Findings - Estimator. The parenthetical references ISM data. Clarification is needed regarding where ISM is being used.	Worksheet 11 was revised to clarify where ISM is proposed to be used. Specifically, in Section 4.2, Sampling Unit, Operable Unit 2.	Resolved. No further comment.
239	9	Section 6	Specify Performance or Acceptance Criteria - Decision. Suggested edits: H0: "*The estimated maximum concentration* of a given COI is at or above its receptive Project Action Limit." For Ha, "*The estimated maximum concentration* of a given COI is below its respective Project Action Limit."	The text was revised as requested.	Resolved. No further comment.
240	9	Section 6	Specify Performance or Acceptance Criteria. A false decision acceptance error is described only in the context of groundwater. This applies to all media. Suggested revision: "A false decision acceptance error occurs when the presence of a given COI in *an environmental exposure medium* is deemed hazardous when it is not hazardous."	The text was revised as requested.	The second bullet still specifies "in groundwater" rather than "an environmental exposure medium"
241	10	References	References can be removed/combined with references from Table of Contents.	As requested, the references were removed from Worksheet 11. References cited within Worksheet 11 are included in the references list presented with the Table of Contents.	Resolved. No further comment.

242	10	Section 6	Specify Performance or Acceptance Criteria - Estimation. What uncertainty is reduced? What if contamination is missed because only biased sampling was conducted?	The objective of the investigation described in this QAPP is to identify maximum COI concentrations to develop the list of COPCs and COPECs. To address that objective, biased sampling will be conducted in areas of known or suspected maximum COI concentrations (based on historical operations incorporation, existing data, gamma surveys, etc.). It is unlikely that greater contamination exists beyond the areas of the investigation's focus. This biased sampling approach is expected to address the investigation objectives. Separately, a plan to characterize the nature and extent of impacts will be established in the forthcoming OU2 Groundwater/OU3 QAPP and the OU1 QAPP.	This is acceptable with the understanding that the information derived from the proposed sampling approach leads to one of the following outcomes depending on the concentrations found: 1. If maximum concentrations of all COIs are below screening levels, then no further evaluation is needed. 2. If the maximum concentrations of any of the COIs are above screening levels, then either 2a. response action may be taken to address the contamination assuming it is present across the entire DU/EU since representative sampling was not conducted, or 2b. further characterization is needed to assess risk.
243	10	Section 6	Specify Performance or Acceptance Criteria. Delete "in groundwater" from the second to last sentence in Section 6. This applies to all media.	The text was revised as requested.	Resolved. No further comment.
244	1 to 11	Throughout	The sampling discussions throughout this worksheet need to clearly identify discrete versus ISM sampling.	Soil samples for soil irrigated with groundwater from private wells in OU2 will be collected using ISM. As requested, this clarification was added where necessary in Worksheet 11.	Resolved. No further comment.
Measurement Performance Criteria, Worksheet 12					
245	1	Footnotes #1 & #2	These footnotes do not point to Eurofins's method SOPs but rather a Region 1 document, a DoD/DoE document and others. Do these tables reflect the performance criteria contained in Eurofins's analytical method SOPs or are they “generally acceptable” parameters based on the listed citations? If they do not reflect the actual performance criteria that Eurofins's SOPs specify, when will the worksheets be updated to reflect that information? It is suggested that Eurofins’s SOPs are included as an Appendix to the QAPP so that the criteria listed in Worksheets #12 and #28 can be verified.	The revised Worksheet 12 does reflect the limits set forth by Eurofins analytical methods. Copies of the SOPs will be included in Appendix to the QAPP.	Resolved. No further comment.
246	1	Footnote #3	Change "Detection limits" to "Reporting limits"	The footnotes have been deleted in the revised tables.	
247	6	Analytical Group	EPH & VPH. Explain the basis for using Massachusetts methods in Colorado.	The MassDEP analytical method produces results for TPH aromatic/aliphatic fractions. Although they do not match the generic screening levels for TPH in USEPA RSL tables, they are similar enough to be used for screening purposes. Colorado does not have a certified analytical method available to provide TPH aromatic/aliphatic fractions.	
248	7	Table title, page 7 of 20	Specify that it is TAL metals	The Analytical Group or Method has been revised to include TAL as ICP/MS TAL Metals/6020B.	
249	14	Matrix: Soil/Sediment - Analytical Group or Method: TAL Metals 6020B	It is unclear if ISM sampling is proposed for any of the soil sampling. If it is used, then the RSD needs to be added to the soil tables.	As noted in the response to several comments on Worksheet 11, ISM sampling is proposed for OU2 soil irrigated with groundwater from private wells. ISM samples will be subject to the same measurement and performance criteria as other soil/sediment samples, including evaluation of relative percent difference of duplicate samples (field and lab), which are summarized in Worksheet 12. However, if the commenter is referring to RSD calculated from replicate ISM samples, this is not relevant to Worksheet 12. The ITRC guidance for ISM sampling (ITRC 2020) indicates that "RSD is a measure of reproducibility of estimates of the mean provided by replicates". Further, high RSD "strongly suggests a substantial degree of heterogeneity in the DU contaminant concentrations". Thus, evaluation of RSD for replicate ISM samples is a reflection of the data distribution and, therefore, measurement performance criteria and is not defined in Worksheet 12.	RSD is a measure of reproducibility of the mean for ISM samples; however, somewhere in the QAPP the "acceptance criteria" should be specified for the RSD, with a proposed corrective/plan of action if the acceptance criteria are not met. If the RSD suggests a substantial degree of heterogeneity, corrective actions could include additional sampling with delineation of smaller DUs/EUs or increasing the number of increments that would comprise a single ISM sample.
250	14	Matrix: Soil/Sediment - Analytical Group or Method: TAL Metals 6020B	The method and table for mercury are missing.	A method and table for mercury has been added.	Resolved. No further comment.
251	20	Analytical Group or Method	Why are methods for other COIs not presented for air?	Methods for COI for air sampling have been included. No additional air COI are included in Worksheet 17 sampling design.	Resolved. No further comment.
252	4 through 11	Row: Sensitivity Column: Measurement Performance Criteria	Change "Detection limits" to "Reporting limits"	The suggested change was made.	Resolved. No further comment.
Secondary Data Uses and Limitation, Worksheet 13					

253	1	Data Summary Technical Assessment (CLL, 2018)	"Useability of data was identified with general assessment factors" Explicitly state here any issues with the existing dataset	Text revised to state *Locations of wells and surface water sampling had no limitations on data use. Useability of data was identified with general assessment factors. Locations of wells and surface water sampling had no limitations on data use. The well useability is identified in Worksheet 17 for each well.*	Resolved. No further comment.
254	1	Table	Add 2021 final report for TCE in groundwater.	Report added as requested	Resolved. No further comment.
				Additional revisions to the worksheet were for consistency with other worksheets in the QAPP and to address EPA Region 8 QA Comments.	Resolved. No further comment.
Project Tasks and Schedule, Worksheet 14 & 16					
255	1	OU2 Public Scoping	Deliverable should be updated from "None" to "meeting summary" for deliverable.	OU2 Public Scoping has been deleted from Worksheet 14 & 16 in response to comments on the Region 8 QAPP Crosswalk. The AOC/SOW Section 13 States *The Agencies will develop and implement community relations activities for the Site and the RI/FS* and *All Respondent's community relations activities that are initiated by the State, EPA, or the established community advisory group for the Site will be the subject of oversight by the Agencies.* *As outlined in the QMP and the AOC, Cotter does not communicate directly with the public, CAG, and other stakeholders. Cotter will assist the Agencies when requested.*	Resolved. No further comment.
256	1	OU2 Homeowner Surveys	Include EPA/CDPHE with Responsible Party and change "None" to "Meeting Summary" for deliverable.	Table revised, Deliverable changed to *Technical Memorandum with table of properties and property owners where surveys were attempted or conducted and summary of responses*	Resolved. No further comment.
257	1	Access Agreements	Include EPA/CDPHE with Responsible Party.	Table revised as requested	Resolved. No further comment.
258	1	Mobilization/Demobilization	Add "Notice of Mobilization (email)" as a deliverable with a due date of "10-days prior to mobilization"; change frequency to "as appropriate".	Table revised as requested	Resolved. No further comment.
259	1	Description, Frequency, Planned completion date, Deliverable(s)	Editorial comments:		
			Merge activity and description boxes so that there aren't any blanks.	Stylistic comment understood. Worksheet not revised in response to this comment. This comment will be considered in future UFP-QAPPs	Resolved. No further comment.
			The first row in the Frequency column is blank.	Table revised in response to comment 258	Resolved. No further comment.
			Seep/Spring Surveys - Planned Completion Date: Add a footnote to indicate when collections will be made (e.g. April after snowmelt and August toward the end of the rainy season).	The Seep and Spring Survey is more related to nature and extent than to the identification of maximum COI concentrations. Seep and Spring Survey will be conducted as part of the OU2/OU3 RI and the OU1 RI. This line item has been removed.	Resolved. No further comment.
			Deliverable for Coordinate OU1 restricted area sample collection with CDPHE should be a memo for more formal documentation that can be cited.	Cotter does not believe this is a deliverable required under the AOC or applicable guidance. Cotter anticipates documenting this in the Quarterly Progress Report.	Resolved. No further comment.
			Deliverable for OU1 sample collection -- air and soils should be field sampling reports.	The following response addresses the multiple items in this comment regarding deliverables identified as "field sampling reports", "sampling summary reports", "survey summary reports", etc.:	The agencies understand there will be frequent communication between Cotter and the agencies upon fieldwork mobilization and duration. The agencies reserve the right to request more frequent communication and fieldwork or sample result reporting to mitigate delays in relaying information or issues to the agencies.
			Deliverable for all sample collections should also include a sampling summary report	Summary Reports per the AOC, SOW section 8.3.e. Summary Reports are to be developed for each "*sampling event*" and are to contain "***results*** *of all field QC procedures*" (which we understand to be replicate and duplicate sample results). Samples under the Phase I Risk Assessment are collected on a quarterly basis. Further, Summary Reports are to be submitted for "*each* ***phase*** *of sampling*". This indicates that Summary Reports would be submitted quarterly and would need to include the validated QC sample data, which indicates that these reports would be provided roughly two months after sample collection when QC sample validated data are available. The AOC language does not suggest that the Summary Reports relate to data collection where there are environmental media collected and analyzed or quantitative performance criteria but not to other field activities (i.e., land and water use surveys, springs and surface water surveys, etc.). The AOC Section VIII.42 (Progress Reports) identifies a requirement to provide quarterly Progress Reports with content requirements that largely overlap with those in the Summary Reports. Therefore, Cotter sees Summary Reports and Quarterly Reports, as defined in the AOC, as occurring on the same frequency and being largely duplicative. Therefore, Cotter proposes to submit just quarterly Progress Reports that contain all information identified in both AOC, SOW section 8.3.1.e and AOC Section VIII.42.	

			Deliverable for OU2 Public Scoping at CAG meeting should be meeting notes.	The Public Scoping has been removed from this worksheet in response to other comments.	Resolved. No further comment.
			Deliverable for OU2 Homeowner surveys should be a spreadsheet and a survey summary report documenting that all homeowners were contacted and what, if any, responses were received.	Cotter does not believe this is a required submittal under the AOC or applicable guidance. Cotter proposes to document the the OU2 homeowner surveys in Quarterly Progress Reports. The status of the homeowner will reported to the Agencies in the regular technical discussions held with Cotter.	Resolved. No further comment.
			Deliverable for OU1, OU2 and OU3 access agreements should be a Summary Report.	Cotter does not believe this is a required submittal under the AOC or applicable guidance. Per AOC Section X.55 (Site Access), Cotter will use its best efforts to obtain all necessary access and will notify the Agencies in writing within 10 days if it is unable to obtain such agreements despite its best efforts. The status of the access agreements will be documented in Quarterly Progress Reports and reported to the Agencies in the regular technical discussions held with Cotter.	Resolved. No further comment.
260	1	Responsible Party	ENSERO needs to be added to Worksheets #3/#5 and Worksheets #4/#7/#8.	Ensero has been added to Worksheets #3/#5 and Worksheets #4/#7/#8.	Resolved. No further comment.
261	1	Responsible Party	WESI is listed as the Responsible party for OU1 sample collection for air. Worksheet #6 indicates H3 as doing air, soil, and RAD sampling. There needs to be consistency in identifying project teams and responsibilities.	Worksheets 14 and 16 revised to provide consistency in project teams and responsibilities	Resolved. No further comment.
262	1	Seasonal habitat/vegetation survey	These have not been mentioned previously. These surveys should be described in Worksheet #11.	The Seasonal habitat/vegetation survey is more related to nature and extent than to the identification of maximum COI concentrations. Seasonal habitat/vegetation survey will be conducted as part of the OU2/OU3 RI and the OU1 RI. This line item has been removed.	Resolved. No further comment.
263	2	Responsible Party	WESI is listed as the Responsible party for OU1 sample collection for surface water. Worksheet #6 indicates Brown and Caldwell as doing surface water and sediment sampling. There needs to be consistency in identifying project teams and responsibilities.	Worksheet 14 and 16 revised to provide consistency in project teams and responsibilities	Resolved. No further comment.
264	2	Responsible Party	WESI is listed as the Responsible party for data analysis of all sampling activities. Worksheet #6 indicates Eurofins is responsible for analytical corrective actions. There needs to be consistency in identifying project teams and responsibilities.	Worksheet 14 and 16 revised to provide consistency in project teams and responsibilities	Resolved. No further comment.
				The Description column has been revised in Worksheet #14 and #16 in response to comments included on the Region 8 QAPP Crosswalk. Other fields in frequency, planned start date, duration, and planned completion date were revised for consistency with the rest of the QAPP. The planned start date for air sampling was changed to the start of the following quarter as air samples are composited quarterly.	The agencies understand there will be frequent communication between Cotter and the agencies upon fieldwork mobilization and duration. The agencies reserve the right to request more frequent communication and fieldwork or sample result reporting to mitigate delays in relaying information or issues to the agencies.
Project Action Limits and Laboratory-Specific Detection/Quantitation Limits, Worksheet 15					
265	1	Introduction	Acronyms "COI" and "RL" are not defined.	Definitions added	Resolved. No further comment.
266	1	Section 10.1	Section should be renamed from a 10 series (10.1) to 15 series throughout.	Worksheet revised as requested	Resolved. No further comment.
267	1	Section 10.1	"ELCR" and "HQ" are not defined in the text.	Definitions added	Resolved. No further comment.
268	1	Section 10.1	3rd bullet. Explain the basis for using Massachusetts standards in Colorado.	The text has been revised. Refer to the response to Comment 247.	Resolved. No further comment.
269	1	Section 10.1	"Specific references appear in “PAL Reference” column in each table." Need to define the abbreviations used in the "PAL Reference" column. For example, WQCC(41) on the groundwater table needs to be defined.	The tables in Worksheet 15 have been updated, including replacing the PAL reference column with a Project Action Limit Source. These edits show the lowest human health screening level, lowest ecological screening level, and chosen project action level (PAL) (minimum of the lowest human health and ecological screening levels), as well as the references for each of the three screening levels provided. In addition, acronym definitions and sources of screening levels have been provided on each table in Worksheet 15.	Resolved. No further comment. Please note: EPA also typically considers the following for ecological screening/toxicity values for soil: Los Alamos National Laboratory ECORISK database; Oak Ridge National Laboratory Soil Invertebrates (often only the chromium plant benchmark value is lowest), Texas Commission on Environmental Quality (NOAELs for several organic compounds); For sediment: Consensus-Based Sediment Quality Guidelines (MacDonald et al. 2000), US EPA Region 3 BTAG Screening Benchmarks (2006), Thompson et al 2005 for selenium and vanadium; For surface water: EPA National Ambient Water Quality Criteria and EPA R5 RCRA Eco Screening Levels (2003) For radionuclides: ERICA Version 2.0
270	1	Footnote #2	The QAPP proposes that only Steps 1 and 2 of the ERA will be completed. ESVs should be used in the SLERA. USEPA Region 4 uses RSVs for refining COPECs in Step 3A; however, this is not done throughout EPA, and saying "USEPA recommends the use of" RSVs is misleading.	Footnote removed as requested	Resolved. No further comment.

271	2	Section 10.1	The reference for the National Recommended Water Quality Criteria - Human Health Criteria Table should be for water + organism.	Section 15.1 and the associated Worksheet 15 surface water table have been updated to reference and use the water + organism criteria from the National Recommended Water Quality Criteria - Human Health Criteria Table.	Resolved. No further comment.
272	2	Groundwater Table	ESVs for surface water should be used for groundwater for the SLERA.	The following footnote has been added to the text regarding groundwater PALs and to the groundwater Table as a part of footnote a. *USEPA may also screen groundwater against surface water ecological screening levels in the SLERA, to address potential points of expression that have not been sampled and may include ecological habitat.*	Resolved, however adding surface water ESVs to the groundwater table would facilitate ease of reference.
273	2	Sediment Table - SVOCs	SVOCs are indicated to be in ug/kg, but the ESV values listed are in mg/kg. Suggest changing the SVOC table header to "SVOCs (mg/kg)". The units of the SVOC laboratory RLs and MDLs need to be confirmed to determine whether they are ug/kg or mg/kg.	SVOC table header revised and units for ESVs, RLs, and MDLs are presented in mg/kg	Resolved. No further comment.
274	2	Sediment Table - SVOCs	The PALs for benzo[a]anthracene, benzo[b]fluoranthene and hexachlorobenzene are marine ESVs. Although they are lower than the freshwater ESVs, freshwater ESVs should be used as the PALs.	Section 15.1 and the associated Worksheet 15 sediment table have been updated to reference and use the freshwater ESVs and no longer consider the marine ESVs when identifying the minimum ecological screening level.	Resolved. No further comment.
275	3	Section 10.3	"Laboratory RLs and MDLs that exceed the PALs respective analyte are highlighted in red." PALs should only be compared to the RL, which is the lowest concentration that can be reliably measured (within specified limits of precision and accuracy), and is generally 3 to 10 times the MDL.	Section 15.3 and the Worksheet 15 tables have been updated to identify RLs that exceed the PALs.	Resolved. No further comment.
276		All Worksheet 15 tables	MDLs for several analytes are erroneously displayed in red font where the MDL is indeed lower than the respective PAL.	The Worksheet 15 tables have been updated to remove all red text and now show an asterisk "*" next to RLs (updated per comment 275) that exceed the PAL.	Resolved. No further comment.
277	4	Air Table	It is not clear which EPA PRG table the PALs for radionuclides were identified. The values shown do not match the generic air PRGs. If an assumption of equilibrium was made those details need to be provided and the basis for that assumption should be included.	This table has been updated to clarify the human health screening level derived using the EPA Default Resident Preliminary Remediation Goals for Radionuclides (resident air; risk target ELCR 1E-06). These default PRGs assume secular equilibrium. These details have been added to the text.	Resolved. No further comment.
278	4	Air Table	EPA Radionuclide screening levels are in units of pCi/m^3, while the PALs referenced in this QAPP are in units of pCi/filter. Can pCi/m^3 be estimated from Ci/filter based on anticipated collection duration?	A footnote was added to the table to explain the conversion.	Resolved. No further comment.
279	4	Groundwater Table	The Reporting Levels and Method Detection Limits for many analytes, particularly radionuclides, exceed PALs. Steps should be taken to ensure the analytical methods selected achieve the lowest concentrations possible.	The laboratory methods included in this QAPP have the lowest available RLs and MDLs for standard analytical methods. Instances where RLs and MDLs exceed PALs are identified with an * in Worksheet 15.	Resolved. No further comment.
280	4	Groundwater Table	Add fluoride to COI and PAL list. EPA included fluoride in the Final Phase 1 Risk Assessment Work Plan in response to comments from community stakeholders.	Fluoride was included in Table 17-1 but it was inadvertently not included in Worksheet 15. Fluoride has been included in worksheet 15.	Resolved. No further comment.
281	4	Groundwater Table	The PAL for U-238 listed in the table is associated with the uranium chemical screening level, use the respective radionuclide screening levels for all uranium isotopes	The Worksheet 15 tables have been updated to present the respective radionuclide screening levels for all uranium isotopes. Where total uranium is presented, the screening levels associated with the chemical uranium are presented.	Resolved. No further comment.
282	4	Groundwater Table	Laboratory MDLs exceed the PALs for Radon-220 and Radon-222 but they are not highlighted in red as indicated in the text on Page 3.	The Worksheet 15 tables have been updated to remove all red text and now show an asterisk "*" next to RLs (updated per comment 275) that exceed the PAL.	Resolved. No further comment.
283	5	Groundwater Table	What is the basis for groundwater PALs for the radionuclides? The values shown do not match EPA's residential tap water PRGs.	The Groundwater PALs for radionuclides have been modified to match EPA's residential tap water PRGs.	Resolved. No further comment.
			Where are the VISL values being pulled from? The values shown do not match the default residential VISLs.	Values have been corrected to match default residential VISLs.	VISL should be included in the groundwater table footnotes.
			The lower of the "tap water" and "MCL" values in the RSL table should be selected as the PAL. This is not done here, so there are multiple values that should be lower (see 1,1,1-Trichloroethane and Methylene Chloride for examples).The Cadmium tap water value from the RSL table is lower. There is a lower value for Manganese in the WQCC(41)-Table 1,2,3,4. Why is that value not being pulled in? There are lower values for Petroleum Hydrocarbons in the RSL table. Why are those values not being utilized?	The table has been updated to use the lowest of the Reference Limits. The table has been updated to use the TPH fraction RSLs associated with EPA Provisionally Peer Reviewed Toxicity Values (PPRTVs).	Resolved. No further comment.

284	4	Groundwater and Soil Tables	The generic RSL tables contain screening levels for TPH aromatic/aliphatic fractions. Although the TPH fractions do not match the Mass DEP analytical method exactly, they are similar enough to be used for screening purposes. The TPH fraction RSLs are associated with EPA Provisionally Peer Reviewed Toxicity Values (PPRTVs), which as "Tier 2" toxicity values under EPA OSRTI's toxicity value hierarchy (OSWER Directive 9285.7-53), are preferred over the "Tier 3" screening values from Massachusetts DEP currently reference in this QAPP.	The table has been updated to use the TPH fraction RSLs associated with EPA Provisionally Peer Reviewed Toxicity Values (PPRTVs).	Resolved. No further comment.
285	9	Sediment Table	Sediment PALs should be added for radionuclides or assume the same PALs as soil.	Sediment PALs for radionuclides based on recreator soil were added.	Resolved. No further comment.
			All RSL values are in mg/kg not ug/kg. Confirm if PQL, RL, and MDL values are mg/kg or ug/kg.	Worksheet revised as requested; sediment values are presented in mg/kg.	Resolved. No further comment.
			The lowest value is not being pulled from the RSL table; only the child ingestion value is being pulled in rather than the lowest SL.	Worksheet revised to select the lowest RSL.	Resolved. No further comment.
			Why are the values from the RSL recreator table not being pulled in for petroleum hydrocarbons?	The table has been updated to use the TPH fraction RSLs associated with EPA Provisionally Peer Reviewed Toxicity Values (PPRTVs).	Resolved. No further comment.
			The freshwater sediment ESV (0.204 mg/kg) should be listed for phenanthrene.	Worksheet revised to use freshwater instead of marine ESVs.	Resolved. No further comment.
			No PALs are identified for petroleum hydrocarbons. Human health PALs should be considered as well as available ESVs for TPH diesel and TPH residual.	Worksheet updated as requested	The TPH diesel ESV should be corrected to 340 mg/kg.
			For the following analytes, the saltwater sediment ESV was used when it was lower than the freshwater ESV: 1,1,2,2-Tetrachloroethane, 1,1-Dichloroethene, 1,2,3-Trichlorobenzene, Carbon tetrachloride, Dibromochloromethane, Ethylbenzene, Naphthalene, 2,4-Dimethylphenol, 2,4-Dinitrophenol, 2,4-Dinitrotoluene, 2-Methylphenol, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Chrysene, Dibenz(a,h)anthracene, Diethyl phthalate, Dimethyl phthalate, Fluoranthene, Fluorene, Hexachlorobenzene, Hexachlorocyclopentadiene, Naphthalene, Phenol, Pyrene, Cadmium, Copper, Lead, Mercury, Nickel, Silver, and Total PCBs. Section 10.1 Identification of Reference Limits of the worksheet indicates that freshwater screening values would be used.	Worksheet revised to include sediment PALs	Resolved. No further comment.
			For the following analytes, a RSV was used when a ESV should have been selected as the PAL: Cyclohexane, 1,2,4,5-Tetrachlorobenzene, 2,6-Dinitrotoluene, . Section 10.1 Identification of Reference Limits of the worksheet indicates that RSVs would not be used.	Worksheet revised to use the ESV instead of the RSV	Resolved. No further comment.
286	13	Soil Table - Vinyl chloride	The lower of the soil ESV and the RSL should be selected as the PAL. There are a number of instances where the RSL is selected as the PAL. Examples noted during the review include vinyl chloride (0.03 mg/kg) and PAHs such as anthracene (29 mg/kg based on total LMWPAH), benzo[k]fluoranthene and pyrene (1.1 mg/kg based on total HMWPAH).	Table revised to use the lowest of the ESV and RSL as the PAL.	Resolved. No further comment.
287	14	Soil Table	Default PRGs for radionuclides should be based on peak PRGs for the most highly exposed receptor (residents). Values shown in this table do not match EPA PRGs.	Radionuclide PRGs revised to use default EPA assumptions for resident.	Resolved. No further comment.
			Why are the values from the RSL table not being pulled in for petroleum hydrocarbons?	The table has been updated to use the TPH fraction RSLs associated with EPA Provisionally Peer Reviewed Toxicity Values (PPRTVs).	Resolved. No further comment.
			3&4-methylphenol: The Reference Limit Source is ESV - Table 3.	Table revised as requested	Resolved. No further comment.
288	17	Surface Water Table	Surface water PALs should be added for radionuclides or assume the same PALs as groundwater.	Worksheet revised to use the EPA Radionuclide PRG Calculator for recreator surface water.	Resolved. No further comment.
			There is a value available for 1,1,2-Trichloroethane in the RSL table (64.20 ug/l).	Worksheet revised to select the lowest PAL for 1,1,2-Trichloroethane, based on the USEPA NRWQC	Resolved. No further comment.
			The value for bromodichloromethane seems to have a typo based on the source.	Worksheet revised as requested	Resolved. No further comment.
			The value shown for carbon tetrachloride does not match the value in the source document.	Worksheet revised to select the lowest value as the PAL and is based on the USEPA NRWQC	Resolved. No further comment.
			There are lower values for cadmium, silver and zinc that should have been selected. The surface water ESV in Table 1a is 0.45 ug/L for cadmium, 0.06 ug/L for silver, and 66 ug/L for zinc.	Worksheet revised as requested to select the lowest value for these metals	The ESV for cadmium is 0.45 µg/L, not 0.426 µg/L.
			Why are the values from the surface water RSL recreator table not being pulled in for petroleum hydrocarbons?	The table has been updated to use the TPH fraction RSLs - recreator for surface water associated with EPA Provisionally Peer Reviewed Toxicity Values (PPRTVs).	Resolved. No further comment.

			The mercury ESV listed is the aquatic life value. There is a lower value available (wildlife based): 0.0013 ug/L that should be used as the PAL.	Worksheet was revised to select the lowest mercury ESV (0.00035 ug/L), based on methylmercury	The ESV selected is actually 0.0013 ug/L, which is for inorganic mercury. An inconsistent selection approach is applied for mercury. For soil and sediment, the methylmercury ESV is selected. For surface water, the mercury ESV is selected. The worksheets either need to have a note that states that the lower of the value for mercury and methylmercury is selected or, as an alternative, include separate entries for mercury and methylmercury.
			There is a surface water ESV available for 1,1,2-trichloroethane, phenanthrene, and potassium. The chronic ESV from Table 1a (76 µg/L) should be used for 1,1,2-Trichloroethane. The chronic ESV from Table 1a (2.3 µg/L) should be used for phenanthrene. The chronic ESV from Table 1a (53,000 µg/L) should be used for potassium.	A chronic FW value of 730 ug/L is available for 1,1,2 trichloroethane in USEPA (2018); however the human-health based value (0.55; NRWQC) is lower and was selected as the PAL. The table was updated to use the chronic freshwater ESV from Table 1a (USEPA 2018) for both phenanthrene and potassium.	Resolved. No further comment.
289	4, 20		The PALs in this table for radionuclides for air, soil, and water are different from the PALs listed in Table 6-1 of EPA's Phase I Risk Assessment Work Plan dated February 2024.	Radionuclide PRGs revised to use default EPA assumptions for resident.	Resolved. No further comment.
Sampling Design and Rationale, Worksheet 17					
290	0	Sampling Design	Worksheet. Sections on each specific OU/media only discuss Uranium and Molybdenum basis for selection, although first section describes all COI analytes being analyzed for. Current Ur & Mo section should be expanded to include all COIs or additional sections added to describe those COI basis for selection.	To clarify, all sample locations will be analyzed for the broader list of COIs, as noted in the "Analyte/Analytical Group" Column of the tables in Worksheet 18. Thus, there is no separate "non-uranium/molybdenum sampling design" as the comment implies. Existing uranium and molybdenum data are just one of the ways that sample locations were selected in an effort to target areas of maximum COI concentrations. The specific rationale for selecting each location is included within the tables in Worksheet 17. Additional explanation is provided below and was added to Worksheet 17, where appropriate: Consistent with the objectives of the Phase 1 Risk Assessment, a biased sampling program was proposed, whereby samples will be collected from areas with known or suspected high COI concentrations. The rationale for selecting locations in different media/OUs differs slightly, but overall, it is based on either: historical sampling data (where available), historical site use information (where data are not available), the CSM, or field screening/gamma scanning (for OU3 subareas). This approach is necessary because there is not existing data for all COI in each OU/media. For example, for OU1 groundwater:	Resolved. No further comment.
			Cannot currently evaluate non-Uranium/Molybdenum sampling designs without further clarification on which wells will be sampled and why.	• Historical uranium and molybdenum data were used to identify wells with high mill-related COI concentrations (because uranium and molybdenum are known to be associated with the former mill and are mobile in the environment).	Resolved. No further comment.
				• Historical TCE data were used to identify wells likely impacted by use of TCE at the former mill.	Resolved. No further comment.
				• Historical mill operations information was used to identify areas with suspected maximum petroleum hydrocarbons and PCB concentrations.	Resolved. No further comment.
				• All of the wells identified for the reasons above will be analyzed for all the groundwater COIs to identify maxima for each COI within OU1.	Resolved. No further comment.
291	0	Tables	Multiple tables are missing acronym definition for DSTA.	Table has been updated to define DSTA. Abbreviations are in the list of Acronyms and Abbreviations.	Resolved. No further comment.
292	0	Section	Text regarding access agreements. The Agencies can compel access at Superfund Sites if needed. If Cotter is not able to gain access through best efforts, the Agencies should be consulted prior to a sample location being dismissed.	Text has been revised to state *If consent to access private property cannot be obtained, the Agencies will be consulted prior to elimination of a sample location due to the inability to gain an access agreement.*	Resolved. No further comment.
293	1	Worksheet	Worksheet should be organized with Section numbers as previous worksheets were.	Worksheet 17 has been updated to include section numbers.	Resolved. No further comment.
294	1	Introduction	2nd Paragraph. Why is NONAC Soil specific? Does that sentence not apply to all investigatory areas?	Reference to NONAC was removed and replaced with "various media".	Resolved. No further comment.
				The text in the introduction to Worksheet 17 is not contradictory; rather it describes that a judgmental sampling design is consistent with the objectives of the investigation and EPA guidance (as demonstrated by the excerpts below):	Resolved. No further comment.

295	1	Introduction	2nd/3rd Paragraph, Guidance Quote. The EPA Guidance text does not agree with the statements directly before and after the quote. The EPA Guidance says, "....samples only from areas known by experts to have the highest concentration levels...". Currently, it is believed or expected that the highest concentrations are in their present locations. Text should be included that explains that if higher concentrations are found at the Site elsewhere as part of the RI process, they will be included in the Risk Assessment, as warranted.	*•The overall objective of this investigation is to provide a sufficient data set to EPA for a screening-level assessment to determine what human health contaminants of potential concern (COPC) and contaminants of potential ecological concern (COPEC) require further evaluation in establishing the nature and extent of contamination from mill operations and in a subsequent baseline risk assessment to be included in the Final Remedial Investigation (RI).*	Resolved. No further comment.
				•"Since the purpose of this investigation is to generate sufficient data for a screening level assessment, a judgmental sampling design will be used to identify and sample locations of maximum concentrations in various media.	Resolved. No further comment.
				• The use of available data is consistent with EPA guidance (EPA, 2006) on systematic planning using the data quality objective processes where it is stated that: '[I]f good information is available on the target site of interest…then the sampling design for a screening assessment may be designed to collect samples only from areas known by experts to have the highest concentration levels on the target site.	Resolved. No further comment.
				Regarding the second issue raised in the comment (note that "if higher concentrations are found at the Site elsewhere as part of the RI process, they will be included in the Risk Assessment, as warranted"): This QAPP pertains only to identification of maximum COI concentrations for identification of COPCs and COPECs from the COI list. The baseline risk assessment will consider all applicable/relevant data collected at the Site when it is completed and thus will include "higher concentrations... found at the Site elsewhere as part of the RI process". No revisions to the text are proposed.	Resolved. No further comment.
296	2	Table 17-1	Table should include a column showing the Analytical Method since Worksheet 18 refers to the Table for Analytes.	As the reviewer stated, Worksheet 18 refers to this table for analytes, not methods. Methods are included in Worksheets 19 and 30. No revisions to the text are proposed.	Resolved. No further comment.
297	2	Table 17-1	COIs should include plutonium.	Small amounts of naturally occurring plutonium-244 were once present in the earth's crust, but plutonium-244 has a half-life of 81 million years and it has since decayed to undetectable levels. The Toxological Profile for Plutonium (ATSDR, 2010) states *Plutonium is not considered a naturally occurring element; however, trace amounts of ^{239}Pu are found in naturally occurring uranium ores, but the amounts are in such small amounts that extraction is not practical (Clark et al. 2006; EPA 2006b; Lide 2008). Small amounts of 244Pu exist in nature from remnants of primordial stellar nucleosynthesis (Clark et al. 2006).* Additionally, it states *Atmospheric testing of nuclear weapons, which ended in 1980, is the source of most of the plutonium in the environment worldwide, which released approximately 10,000 kilograms of plutonium.* *The Congo Raffinates or Colorado Raffinates were the material, or residue, remaining after Mallinckrodt Chemical Company extracted uranium from the ore. Mallinckrodt Chemical Company was once one of the largest uranium producers in America. This Mallinckrodt produced uranium was ultimately enriched into plutonium in a nuclear reactor at a separate location. The United States owned all the uranium and plutonium generated at the time.* *Based on Former Cañon City Mill operations data, plutonium is not expected to be a Site-related contaminant and none of the information provided to date suggests measurable activities of plutonium associated with the Former Cañon City Mill greater than those due to global fallout from weapons testing being detected. Therefore, the COIs should not include plutonium and a plan for addressing the questions raised in the comment is not necessary.* *The following text summarizes what is known about plutonium at the Site:* *In the past, the Former Cañon City Mill has been allowed to possess small*	Resolved. No further comment.

298	1	Introduction	For the last sentence on this page, this is true. However, if this method is followed, then the data collected in Phase 1 will not be used in the Baseline Risk Assessments and cannot be compared to reference area data as discussed in Worksheet 11.	It is not clear why the Agencies believe that sampling data collected under this QAPP could not be used in the baseline risk assessment. The objective of this QAPP is to outline data collection for use in the risk assessment, specifically the screening level risk assessment where COPC and COPEC will be identified. If data collected under this QAPP are suitable for the screening level risk assessment why would they not be suitable for the baseline risk assessment? Regarding the references areas, see response to comment 236.	It is true that some of the data may be usable in the baseline risk assessments on a case-by-case basis; however, data from judgmental discrete samples may not be sufficient for the purpose of calculating EPCs. To clarify, Phase I sampling data will be used to evaluate COIs and identify COPCs and COPECs for further investigation, but sampling is needed to generate definitive data for those COPCs/COPECs to calculate EPCs for use in the baseline risk assessments. Definitive data that meet Superfund data quality requirements are needed to fulfill risk assessment data quality objectives to characterize exposures to people and environmental receptors in accordance with Superfund risk assessment guidance and standard practices. Data generated from Phase I sampling and additional nature and extent sampling will be used to further inform remaining risk assessment data gaps and identify areas for further characterization. See response to Comment #242 also.
299	12	Sampling Design	DWR monitoring well construction requirements should be referenced/footnoted.	Reference has been added to the text.	Resolved. No further comment.
300	13	last paragraph	Format issues with text.	Text revised to address format	Resolved. No further comment.
301	14	Table 17-5	Sampling density is not high enough. Additional samples should be added to ensure that each potential contaminant group has redundant wells to ensure that no COI is overlooked. Currently, based on the sampling rationale, TPH has 3 wells, while metals, PCBs, and TCE have 1 well each. Additionally, radiological and PAHs have no wells identified.	As described in the response to comment 290, all wells will be sampled for all COI, therefore, no COI will be overlooked. Considering the objective of the investigation (identification of maxima to screen the COI list) and use of a judgmental sampling design (selecting areas of known or suspected highest COI concentrations), the sampling density is believed to be sufficient. Where possible, multiple wells were selected to represent a specific rationale (e.g., two wells were selected with the highest uranium and molybdenum concentrations, representing mill-related metals and radionuclide impacts). However, where historical data or existing wells in a suitable location were not present, the former mill operational history and CSM were used to guide sample selection. For example, PCB data are not available for the Site so a new well (6002) will be installed in the area of where mill material contaminated with PCBs were located and this area would most likely have PCB contamination. Similarly, new well 6001 will be installed in the area of a known hydrocarbon spill. PAH data was not discussed in the rationale for any of the wells because PAH data are not available for the Site and there is no reason to suspect elevated PAH data at any particular existing well; despite this, PAH data will be analyzed at all wells, as noted above.	Resolved. No further comment.
302	14	Table 17-5	Change "COI Determination" in "Purpose" column to "COPC/COPEC Determination".	Table revised as requested	Resolved. No further comment.
303	16	OU1 GW: Sample Location / Field Contingencies	Recommend that each well is sampled once, then the wells (primary vs backup) are evaluated to determine which set should be carried through to quarterly sampling.	There is no need to sample all wells initially before proceeding with quarterly sampling because each of these wells has a historical dataset, which was examined for this QAPP. These historical datasets were then used to select the wells identified in this QAPP.	Resolved. No further comment.
304	18	OU2 GW: Sampling Design	1st Paragraph. Last sentence of the first paragraph appears to be more related to determination of Nature and Extent. Recommend adding explanation on how this will better determine maxima.	The sentence, related text throughout the worksheet, and associated wells were removed from this QAPP; analogous wells will be included in the forthcoming OU2 Groundwater/OU3 QAPP to better understand nature and extent of impacts to groundwater in OU2.	Resolved. No further comment.
305	18	OU2 GW: Sampling Design, Ur & Mo	1st Paragraph. RML and CERCLA are different regulatory environments. The use of certain wells for RML monitoring does not mean that they are acceptable under CERCLA. Justification for using these well locations should not rely on RML acceptability.	The text was revised to remove reference to the RML monitoring program.	Resolved. No further comment.
306	18	OU2 GW: Sampling Design, Ur & Mo	3rd Paragraph. Paragraph should better define/explain what the visual assessment will be evaluating (fouling, screen intervals, sediment, material, etc) to determine usability.	Visual inspection would be conducted to confirm well construction details if that information is not available for a given well. As described in the text (emphasis added): "[C]onstruction information for partially ranked wells will be reviewed prior to collection of groundwater samples to confirm that well construction information (e.g., casing type, screen interval depth, etc.) is known and that partially classified wells are suitable for evaluation of groundwater COIs. If this information is unavailable, a video camera will be lowered into the well to determine whether well construction information can be visually ascertained." No changes to the text are proposed.	Resolved. No further comment.

307	18	OU2 - Groundwater - Sampling Design and Basis for Selection	The sampling analysis should include TAL metals in addition to molybdenum and uranium	See response to comment 290.	Resolved. No further comment.
308	20	Tables 17-6 & Table 17-7	Can these tables be combined? Recommend removing "Number of Samples" column and greying out wells/analytes/dates that are non-maximum.	The information is presented clearly in Tables 17-6 and 17-7. Combining tables, which would require one larger and more complicated table as well as renumbering all subsequent tables and references in Worksheet 17, is a matter of stylistic preference and will be considered for future deliverables.	Resolved. No further comment.
				The "Number of Samples" column is important to understand the robustness of the dataset for each well and we recommend keeping it in the tables.	Resolved. No further comment.
				The tables specifically present the maximum concentration observed at each well - no comparison is being made between the values for different wells presented in the tables and therefore no inputs need to be greyed out.	Resolved. No further comment.
309	22	Sampling Design, Supplemental Wells	2nd Paragraph. Explain the basis for choosing that specific screen length and interval for Well 2002. Is it based on contamination dates & vertical flow gradients, arbitrary, or presence of a shale/coal seam? Deep well sampling design should typically be based on a contingency plan (first this, or else this).	While the screened interval of new well 2002 can be estimated now, the exact screened interval will need to be determined in the field based on observations of the lithology, bedrock weathering, competence, coal seams, water levels, and water production. Worksheet 17 was revised to note that these observations will guide where well 2002 is screened.	Resolved. No further comment.
310	22	Sampling Design, Supplemental Wells	4th Paragraph. Sentences appear to be more related to determination of Nature and Extent. Recommend adding explanation on how this will better determine maxima.	See response to comment 304.	Resolved. No further comment.
311	22	Sampling Design, Supplemental Wells	5th Paragraph. Sentences appear to be more related to determination of Nature and Extent. Recommend adding explanation on how this will better determine maxima.	See response to comment 304.	Resolved. No further comment.
312	22	Sampling Design, Supplemental Wells	6th Paragraph. The agencies appreciate Cotter being proactive in submitting filings to DWR. Since these wells will fall under the CERCLA permit exemption, revise the last sentence to exclude "required regulatory filings".	The text was revised.	Resolved. No further comment.
313	23	Sample Location and contingencies	1st Paragraph. All wells should be sampled, then evaluated to see which set should be included in the periodic sampling.	See response to comment 303.	Resolved. No further comment.
314	23	Sample Location and contingencies	3rd Paragraph. Contingency Well Locations should be included on Figure 17-11.	The other monitoring wells that may be sampled if a well selected for sampling cannot be sampled have been added to Figure 17-11	Resolved. No further comment.
315	25	Table 17-8	Rationale for last 3 rows should be revised, since they are more appropriate for the nature and extent investigation. Additionally, purpose and rationale of the rows do not match.	See response to comment 304.	Resolved. No further comment.
316	27	Sampling Design and Basis for Selection	A note should be added that the geographical extent of OU3 is not yet defined and that any additional areas discovered during the Nature & Extent investigation would need to be assessed; currently the text only covers known OU3 subareas.	This clarification was added to the introduction to Worksheet 17 as well as the "Physical Boundaries of Study Area" section of the OU3 Groundwater section in Worksheet 17.	Resolved. No further comment.
317	28	Tables 17-9, -10	Recommend combining these tables as discussed in a previous comment.	Recommendation is understood. This stylistic recommendation will be considered in future RI/FS documents. Tables were not revised.	Resolved. No further comment.
318	29	OU3 Sampling Design and Basis for Selection –	Add wells along the Arkansas River with one upstream from Sand Creek and one downstream from Sand Creek.	The objective of this QAPP for OU3 is to define maximum concentrations of COI to screen for COPC and COPECs. Other wells proposed in OU3 that based	Resolved. No further comment.
319	30	Sampling Design, Supplemental Wells	7th Paragraph. The agencies appreciate Cotter being proactive in submitting filings to DWR. Since these wells will fall under the CERCLA permit exemption, revise the last sentence to exclude "required regulatory filings".	The text was revised.	Resolved. No further comment.
320	33	Section	Margins are different from previous pages.	Comment understood.	Resolved. No further comment.
321	33	Section	Concerns with sampling density. Basis for limited sampling stations should be better clarified, or additional monitoring points should be included.	The basis for selecting air sampling locations AS-202 and AS-204 is that of all the sampling locations associated with the mill, which is contained in OU1, these two locations have consistently demonstrated the highest radionuclide concentrations since 2012. These data are presented in Table 17-12. The objective of the P1RA QAPP is to target maximum concentrations of COIs as a screening decision for inclusion as a COPC or COPEC. This is described in Worksheet 17. No proposed changes to text or additional sampling locations are proposed.	Resolved. No further comment.
322	33	OU1 - Air - Sampling Design and Basis for Selection	For the second bullet point that states "metals," does this refer to TAL metals or does it also include mercury?	The term "metals" in the second bullet is used in a general sense. Worksheet 18 for OU1 Air indicates the metals listed in Table 17-1 will be included in the air analysis. This includes mercury.	Resolved. No further comment.
323	33	OU1 - Air - Sampling Design and Basis for Selection	For the third bullet, reference comment in Worksheet #10 regarding justification needed to support the assumption that no pathway exists for PCBs and TCE and other COIs.	See response to comment 38.	Resolved. No further comment.

324	33	OU1 - Air - Sampling Design and Basis for Selection	The text states "Monitoring for Radon-222 and –220 will not be conducted since the risk-based action levels are far below the analytical	The updated Worksheet 13 identifies the 2022 Annual Report as a Secondary Data source for radon. Text in Section has been updated to discuss this radon data. Radon is above the PALs as shown in this secondary data source.	Resolved. No further comment.
			sensitivity level for available sampling methods. Additionally, available monitoring data for the eight air monitoring stations		Resolved. No further comment.
			in OU1 (Ensero, 2024) demonstrate radon-222 is above risk-based action levels and will be included as a COPC." Change "monitoring" to "sampling". Radon-220 and 222 analytical results are needed for the COPC screening process regardless of whether the contaminants are presumptively included as COPCs. It is neither appropriate to exclude or include COPCs based on assumptions.		Resolved. No further comment.
325	35	Table 17 - 12	Change units from uCi/mL to pCi/m^3 since those are the units used in the EPA Radiation Screening Levels. The unit conversions are such that the number values stay the same.	Table 17-12 has been updated.	Resolved. No further comment.
326	35	Table 17-12	Recommend removing table and just referencing a report which contains the data, unless the information is directly relevant to the RA investigation.	The data in Table 17-12 are key in demonstrating air sampling location bases and provided analytical data requested in comment 33. Table 17-12 has been retained.	Resolved. No further comment.
327	37	Assumptions	Assumptions made should be verified throughout the investigation. Add additional information or include how they will be verified.	The analytical data collected for air can be used to verify the assumptions in bullets one and two. Additional text was added.	Resolved. No further comment.
328	37	Section	OU1 Soil does not currently evaluate onsite cleanups or previous dirt moving activities. Basis should be expanded to include further discussion/evaluation of previous onsite activities and their impacts on Risk Assessment approach.	The data collected for this QAPP is to identify maximum concentrations of COIs for screening to COPCs and COPECs. The approach was biased based on most recent gamma survey data, historical information and former mill operational history. Additional OU1 surface soil sampling for risk assessment will be conducted in OU1 RI/FS QAPP. No changes to text proposed.	Resolved. No further comment.
329	38	OU1 - Soil - Sampling Protocols	"Soil sampling will consist of surface soil sampling" will this be done through ISM or discrete sampling?	For OU1, discrete surface soil samples will be collected to identify maxima. Text added.	See response to Comment #242.
330	38	OU1 - Soil - Sampling Protocols	For HHRA, 0 -1 inch is preferred for surface depth based on anticipated exposures. USEPA guidance recognizes surface soil for radionuclides as 0-6 inch depth. Consideration is needed to ensure that contamination within the top inch of soil is characterized. Sampling protocols should also describe sieving.	As noted in response to Comment 214, soil collected from 0-6 inches will be used in the HHRA to represent surface soil exposure consistent with the definition of surface soil per USEPA guidance (Guidance for Data Usability in Risk Assessment (Part A); USEPA 1992) and Region 8 precedents (Vista Del Rio Subdivision Study Area Located adjacent to the Smeltertown Site, Salida, CO; Baseline Risk Assessment for Per- and Polyfluoroalkyl Substances (Operable Unit 13) at Ellsworth Air Force Base, South Dakota). The text has been updated to discuss soil sieving.	See response to Comment #213.
331	38	OU1 - Soil - Analytes	Further justification is needed to support the proposed sample density. For instance, what confidence is there that the maximum concentrations will be identified in the OPA based on a single discrete sample?	The sampling basis was developed using judgmental sampling using existing gamma data as an indicator of elevated COIs, historical sampling information, and former mill process and reclamation history. A large portion of the OPA was excavated and placed in the impoundments. Biasing sampling to areas with high gamma and elevated uranium and molybdenum concentrations after that excavation, is in accordance with the objective of identifying maxima COI. OU1 surface soil sampling is to identify maximum concentrations of COI for screening from COIs to COPCs and COPECs. Since radionuclides were collocated with metals in the tailings placed in the OPA, gamma is a reasonable indicator of where maxima would be located in the OPA. Additional OU1 surface soil sampling for nature and extent and risk assessment will be conducted in OU1 RI/FS QAPP. Text has been added to this worksheet in response to this comment.	See response to Comment #298.
332	39	Table 17-13	Revise "Comments" to "Comments/Rationale" or similar.	Table revised as requested	Resolved. No further comment.
333	39	Table 17-13 Sample Location Rationale	See previous comment on sample depth. It would be best to add a column for sieving, so that surface depth and sieving for HH versus eco are clearly identified.	See response to comment 330. Instead of adding a column to Table 17-13, a sentence was added to Worksheet 17 OU1 Soil Sampling Protocol to state that metals will be sieved for HHRA and not sieved for Eco RA.	Resolved. No further comment.
334	39	Table 17-13 Sample Location Rationale	For the samples that say "composite 0-24 inches and composite 24 inches to 10 feet" in the depth column, provide more details on how these samples will be composited. The way it is written can be interpreted as there will only be	Per comment 213 above, the first interval will be 0.5-2 ft bgs. The 0.5-2 feet and the 2 to 10 feet soil boring will be composited to create two samples. Locations 6001 and 6002 are borehole locations associated with proposed monitoring wells 6001 and 6002 described in Table 17-5. The locations of proposed wells 6001 and 6002 were selected to target former petroleum hydrocarbon remediation area and former catalyst plant, respectively. The focus of 6001 and 6002 is for maxima concentrations for a construction worker. Text has been revised to address this comment	Resolved. No further comment.

		Rationale	two samples for the 0 - 24 inch depth and 2 samples for the 24 inch to 10 ft depth. Is that a sufficient sample size for screening?	Text was revised to address this comment *One subsurface soil composite from 0.5 to 2 feet and one composite from 2 feet to 10 feet in each borehole will be collected using a split spoon sampler as outlined in SOP-LPSS-E-100 and composited for all analytes except volatile organic compounds (VOCs). Samples for VOC analysis will be collected by screening the soil core, before compositing, with a PID and selecting soil with highest readings for VOC analysis (SOP-LPSS-E-100).*	See response to Comment #242.
335	40	Scope Rationale	5th Paragraph. Sentence(s) should be added to this section to explain that a comprehensive well survey will be completed as part of nature and extent and may factor into this Risk Assessment, or similar.	The draft QAPP noted that a well survey using the Colorado DWR database would be completed as part of this investigation. The text in the "Sampling Design and Basis for Selection" section was further clarified to note that a comprehensive well survey will be completed as part of the process of identifying properties where soils may have been affected by site-impacted groundwater.	Resolved. No further comment.
				The investigation into the nature and extent of groundwater impacts in OU2 and OU3 will be outlined in the forthcoming OU2 /OU3 QAPP. This investigation will use a combination of existing monitoring wells, existing private wells, and new monitoring wells that will be installed in a phased approach.	Resolved. No further comment.
336	42	Outreach	1st Paragraph. Revise "includes a QR Code" with "includes a QR Code as well as general project and contact information" or similar.	Text revised as requested	Resolved. No further comment.
337	42	Outreach	It is recommended Cotter additionally include the Community Advisory Group in Outreach activities.	Outreach was incorrectly used for this subsection, the header has been revised. No outreach will be conducted. A survey of well presence and use will be conducted. Cotter will assist the Agencies as requested to gather information from the CAG and other stakeholders.	Resolved. No further comment.
338	42	Sampling Plan	Recommend that instead of removing nonfunctional wells from the program, that they be considered backup locations if not enough functioning wells can be sampled/assessed.	This section is about the private well-irrigated soil investigation, not the groundwater nature and extent investigation. In this context, the condition of the well will be assessed to understand whether there is actually a complete pathway from impacted groundwater to soil (through irrigation), not to understand whether it can be used to characterize nature and extent in groundwater. As such, if the well does not exist there is no groundwater to soil pathway and therefore that parcel is removed from the well-irrigated soil investigation. No changes are proposed to the text.	Resolved. No further comment.
339	42	Outreach	Note: due to the personal information that Exhibit 2 / survey will include, there will need to be consideration to Personally Identifiable Information (PII) and required redactions. Recommend including text explanation that certain information gathered may be PII and may require redaction.	Exhibit 2 has been revised to allow separation of the first page with PII from the second page. Additionally, text has been added about PII.	Resolved. No further comment.
340	43	OU2 - Private Well-Irrigated Soil - Sample Location Positioning and Field Contingencies	This is the first mention of ISM sampling in this worksheet.	This is the first mention of ISM in the worksheet because the OU2 well-irrigated soil investigation is the first (and only) part of this QAPP that will use ISM. ISM was previously mentioned in the DQOs (Worksheet 11) related to this investigation. Additional text was added to this section to explain why ISM was selected for this investigation.	Resolved. No further comment.
341	43	OU2 - Private Well-Irrigated Soil - Sample Location Positioning and Field Contingencies	The following sentence needs clarification: "The Decision Units (Dus) will be laid out on the parcel maps and developed to cover the area of irrigated soil." Is "the area of irrigated soil" within a property or across properties?	Proposed Decision Units will be presented to EPA subsequent to the procurement of access agreements and the compilation of well use surveys. The results of the survey will be used or determine the decision units to ensure that they reflect irrigation practices and are representative of potential exposures (areas where exposures are likely to occur given receptor use).	Resolved. No further comment.
342	43	OU2 - Private Well-Irrigated Soil - Sample Location Positioning and Field Contingencies	Again, 0 to 1 inch surface depth is best for HHRA. Samples should be appropriately sieved.	As noted in response to Comment 214, soil collected from 0-6 inches will be used in the HHRA to represent surface soil exposure consistent with the definition of surface soil per USEPA guidance (Guidance for Data Usability in Risk Assessment (Part A); USEPA 1992) and Region 8 precedents (Vista Del Rio Subdivision Study Area Located adjacent to the Smeltertown Site, Salida, CO; Baseline Risk Assessment for Per- and Polyfluoroalkyl Substances (Operable Unit 13) at Ellsworth Air Force Base, South Dakota). The text has been updated to discuss sieving.	See response to Comment #213.

343	43	OU2 - Private Well-Irrigated Soil - Sample Location Positioning and Field Contingencies	For the paragraph that starts with "the sampling protocol…," discuss the bulk sample that results. Will 1 to 2 kilograms of soil per increment provide enough sample material for all of the analyses being run? Please provide a breakdown of those calculations to verify it will. Additionally, discuss who is doing the sample preparation. Is the lab going to do the sieving to the correct particle size for HHRA and is slab cake subsampling necessary for ISM samples?	Worksheet 17 was revised to clarify and provide more detail regarding the ISM field and laboratory procedures.	Resolved. No further comment.
344	46	List	Recommend adding a header to this list to better distinguish it from the text, since it is associated with the Exhibit 1.	The text was revised as requested.	Resolved. No further comment.
345	48	Exhibit B	Questions 5 & 6. Additional questions should be added or current questions revised, to address any other environmental conditions/sampling that residents know about. This is more related to nature and extent, so no changes are required.	What questions should be added and how would the commentor like the current questions revised?	Resolved. No further comment.
346	49	Sampling Design; Basis for Selection	2nd Bullet. Not enough information is presented to assume that surface soils and subsurface soils share the same COIs. It seems plausible, but would need to be confirmed via sampling during nature and extent.	The referenced text was removed from the QAPP. As discussed in Worksheet 17, given the conceptual site model for Team Track, surface soil sampling is proposed to identify COI maxima.	Resolved. No further comment.
347	49	Section	Section is missing header and page numbers.	Section header and page numbers have been added.	Resolved. No further comment.
348	49-57	OU3 Sub Areas Soils	There would be significant benefits associated with the use of ICS instead of discrete samples for currently identified OU3 sub areas. At a minimum, replicates of discrete samples perpendicular to the proposed transects should be considered in order to provide a source of redundancy that reduces the possibility of areas with relatively low concentrations being sampled by chance, thereby inadvertently excluding legitimate COPCs/COPECs. A decision unit approach that utilizes ICS could be used in the baseline risk assessments since the boundaries of these sub areas are established, which would reduce overall effort associated with risk assessment data collection.	The objective of this QAPP for OU3 Subareas is to define maxima to screen for COPCs and COPECs. While ISM sampling may be beneficial for use in the risk assessment, it is not consistent with the goals of this QAPP (ISM sampling estimates the mean, not the maximum). The forthcoming OU2 /OU3 QAPP may consider ISM sample collection on OU3 subareas.	Resolved. No further comment.
				Regarding additional discrete sampling step outs, as noted in the text, surface soil samples at OU3 subareas will be biased to areas of suspected high COI concentrations based on surface gamma survey data. Subsurface sampling locations were gridded with VPS. Further characterization of the lateral distribution of impacts would be a matter of COI nature and extent, which is the topic of the forthcoming OU2 /OU3 QAPP.	Resolved. No further comment.
349	51	Sampling Design; Basis for Selection	3rd & 4th bullets are redundant and should be combined.	The fourth bullet was deleted since the COIs listed are COIs from the mill addressed in bullet 2.	Resolved. No further comment.
350	51	OU3 - NONAC Soil - Sampling Design and Basis for Selection	The acronym "bgs" should be moved in the last sentence to follow "6 feet below ground surface *(bgs)* …"	Text revised as requested	Resolved. No further comment.
351	51	OU3 - NONAC Soil - Sampling Design and Basis for Selection	The text states "Polychlorinated biphenyls, trichloroethylene, total petroleum hydrocarbons, and volatile organic compounds from historical mill activities will not be present in soil at NONAC at concentrations above action levels (refer to Conceptual Site Model, Worksheet 10) because no pathway exists." Analyses of the full suite of COIs at all locations are needed to achieve cumulative risk assessment objectives. The use of assumptions to eliminate COPCs/COPECs is not appropriate.	All soil samples from the OU3 subareas will be analyzed for soil COIs. Text has been updated.	Resolved. No further comment.
352	51	OU3 - NONAC Soil - Sampling Design and Basis for Selection	Gamma survey data are acceptable for nature and extent evaluation and for screening, but definitive laboratory information is needed for the risk assessment.	The objective of this QAPP for OU3 is to define maxima to screen for COPCs. The gamma survey data will be used to bias sampling locations at the high gamma count rates, an indicator of gamma emitting radionuclides. The COI maxima will be identified using analytical data from the samples collected. No change to the text proposed.	See response to Comment #242.
353	52	Physical Boundaries	2nd Paragraph, 2nd sentence. Sentence is in past tense and should be revised to future/anticipated tense.	Text revised as requested	Resolved. No further comment.
354	52	Sample Location; contingencies	3rd Paragraph. Hole offset is 0.5 meters; previous sections use 1.5 feet. For simplicity, contingencies should match to the extent possible.	Hole offset distance was change from 0.5 meters to 1.5 feet.	Resolved. No further comment.
355	52	Sampling Protocols	2nd bullet. Contingency should be added incase hand auger is not able to reach 8' bgs. DPT or motorized auger should be considered.	Contingency of DPT or equivalent was added to text including using DPT if hand auger reaches refusal.	Resolved. No further comment.
356	53	Sampling Protocols	4th Paragraph. Sentence discusses 0 to 6' bgs sampling, but not 8' bgs sampling	It is presumed that the comment is referring to subsurface sampling methods when it refers to "8' bgs sampling". Subsurface sampling methods were summarized in paragraphs 1, 2, and 3 of this section in the draft submittal. For clarity, the content in this section was re-organized to address surface sampling first and the subsurface sampling second. To summarize:	Resolved. No further comment.

			sampling.	- Subsurface sampling will target the native soil beneath placed fill (transition to be identified during soil logging). - The maximum depth will be 10 feet bgs. - The native soil will be screened for gamma count rate in six-inch intervals and the interval with the highest gamma count rate from each boring will be submitted for laboratory for analysis of soil COI in Table 17-1.	Resolved. No further comment.
357	54	Sampling Design; Basis for Selection	1st Paragraph. Potential contaminant deposition should also include poor handling practices. Text regarding presence of surface soils and no mechanism for depth contamination should be verified by evaluation of fill import through historical records and site manager interviews.	The text was revised to address ore handling. Cotter did not excavate or backfill Old Berta Yard. No information is available in historical records and the former site manager is unknown.	It should be noted that a lack of historical records does not substantiate the assumption that no subsurface contamination pathway exists.
358	56	Sampling Design; Basis for Selection	3rd Bullet. Text is acceptable, but will need to be confirmed during nature and extent.	Text has been deleted.	Resolved. No further comment.
359	57	Sample Location; contingencies	2rd Paragraph. Hole offset is 0.5 meters; previous sections use 1.5 feet. For simplicity, contingencies should match to the extent possible.	Hole offset distance was change from 0.5 meters to 1.5 feet.	Resolved. No further comment.
360	58	OU3 Arkansas River - Surface Water and Sediment	Additional sample locations are recommended adjacent to and downstream of the Fourth Street Depot, rather than 3 samples upstream.	To identify maximum COI concentrations in sediment potentially associated with the Fourth Street Depot, sample locations were identified adjacent to and immediately downstream of the Fourth Street Depot. Additional sample locations downstream would be useful for nature and extent characterization and will be considered in the OU2/OU3 QAPP.	Resolved. No further comment.
361	59	OU3 Arkansas River - Surface Water and Sediment - Number and Placement of Samples	The text states "Sampling will occur at ten locations within the alignment of the Arkansas River from the upstream margin of the Forked Gulch watershed (location 907) to below the confluence with Sand Creek, within the eastern portion of the Arkansas River confluence with the Willow Creek Drainage (location 904; Table 17-14 and Figure 17-24)." Shallow groundwater seeps into a wetland from the base of the bluff adjacent to the Canon City Recreation Center (38.43389551485413, -105.20250058499656), which may be hydrologically connected to the Arkansas River. Suggest including an additional Arkansas River surface water locations that would capture this potential pathway and other similar groundwater interaction zones.	The Seep and Spring Survey will be completed in the OU2/OU3 investigation and will identify areas of potential groundwater-surface water interaction and establish a monitoring program for locations that may be influenced by the Site. That investigation also includes a proposed surface water and sediment monitoring location on the Arkansas River downstream of the area referenced in the comment to characterize Arkansas River water and sediment downstream of this potential influence.	Resolved. No further comment.
362	59	OU3 Arkansas River - Surface Water and Sediment - Number and Placement of Samples	Depositional areas should be targeted for sampling. For example, If there are more downstream areas within a reasonable distance of Veterans Park that are depositional areas, it is recommended that samples be collected there, as well.	Agreed. The text in "Sample Location Positioning and Field Contingencies" describes how depositional sediment areas will be targeted for sampling. For example, the text states (emphasis added):	Resolved. No further comment.
				"Access to areas of rapid surface water flow over shallow rocky substrate may also be hazardous. The final sampling stations will be highly dependent on field observations. Suitable locations are	Resolved. No further comment.
				•Areas where Arkansas River flow is slower.	Resolved. No further comment.
				•Areas where accumulation of soft sediment indicates deposition over time.	Resolved. No further comment.
				•Accessible points where a field crew can safely enter the Arkansas River from the bank; suitable access arrangements may need to be made with adjacent landowners.	Resolved. No further comment.
				•Accessible points where Arkansas River sampling can be performed from an overpass or bridge.	Resolved. No further comment.
				While collocated samples are proposed, surface water and sediment locations may be separate to increase the likelihood of detecting mill-related impacts. For example, where there is no soft sediment, the sediment sample may be moved to another location, or biased toward a bank." Text was not revised in response to this comment.	Resolved. No further comment.
363	60	Sample Location; contingencies	7th Paragraph. Fix "Colorado Department of Public Health and Safety".	Text revised as requested	
364	61	Analytes	A report needs to be referenced/cited to support the statement, "The trichloroethene (TCE) plume in groundwater (Figure 17-3) is contained within OU1 and does not extend into the areas of potential surface water / groundwater intermingling."	Reference has been added to the text.	Resolved. No further comment.
				The comment appears to be contradictory regarding whether the agencies believe surface water samples should be collected before or after sediment sampling.	

365	61	OU3 Arkansas River - Surface Water and Sediment - Sampling Protocols	Clarify that surface water samples should be collected before sediment. For human health, disturbed surface water samples are preferred to characterize exposures during sediment disturbance.	To clarify, surface water will be collected before sediment and will be collected in such a way to minimize sediment disturbance. The sampling procedures should not and will not create sediment disturbance to mimic human exposure for several reasons, as noted in the QAPP: *Surface water will be collected in the middle of the surface water-column, as feasible. Samples for both total and dissolved analysis will be collected with as little disturbance as possible for the following reasons:* • *Exposures are estimated separately for surface water and sediment. Including sediment in the surface water sample confounds the exposure estimates.* • *For metals, concentrations in surface water are typically in the part-per-billion range, and in sediment are in the part-per-million range. Thus, even a small quantity of sediment in a surface water sample can greatly bias the surface water result.* • *For dermal contact with water, exposure is quantified using a permeability constant, which is based on soluble transport .*	Resolved. No further comment.
366	62	Table 17-14	Figure No., Analytes, and Additional Notes columns should be removed from the table and added as a notes to the extent possible, since information is the same in each cell.	Recommendation understood. This comment will be considered in future RI/FS QAPPs. Table was not modified.	Please note column "Figure No." appears to reference both figures as well as what appears to be depths.
367	1 through 63	Sampling Protocols	Note that 0-6 inches unsieved will be assessed for ecological receptors. For human health, the top 0-1 inches soil best represents exposure to surface soils. USEPA guidance also recognizes surface soil for radionuclides as 0-6 inch depth. Consideration is needed to ensure that contamination within the top inch of soil is characterized. Sampling protocols should also describe sieving. For metals, sieved soils are needed to characterize concentrations in the particle size that adheres to skin and is thus incidentally ingested.	As requested, 0-6 inches unsieved soils will be assessed for the ecological receptors. As noted in the response to Comment 213, surface soil will be defined as 0-6 inches for the HHRA consistent with EPA guidance and Region 8 precedents. The text has been updated to discuss soil sieving.	See response to Comment #213.
			Clarify whether soil sampling be discrete samples or ISM.		Resolved. No further comment.
				Soil sampling will be discrete except for OU2 where ISM sampling will be conducted	Resolved. No further comment.
368	1 through 63	Sampling Protocols	Need to discuss decontamination procedures or whether dedicated sampling equipment will be used.	In accordance with the UFP-QAPP outline, detailed field methods are included in Worksheet 18 (Sampling Locations and Methods) and Worksheet 21 (Field SOPs). Within Worksheet 18, the tables specify the standard operating procedure (SOP) to be used for each planned sample. Within Worksheet 21, the SOPs specify the sample collection method, including whether dedicated or reusable sampling devices will be used. Additionally, Worksheet 21 includes an SOP for field equipment decontamination. No changes to the text in Worksheet 17 are proposed.	Arcadis and Cotter Field Sampling SOPS, included in Appendix A and listed in QAPP Worksheet #21: Field SOPs, present multiple options for sampling techniques and equipment that can be used (some examples include: SOP-ARC-13, Low-Flow Groundwater Purging and sampling Procedures for Monitoring Wells lists several types of pumps that can be used; SOP-ARC-18 Monitoring Well Development includes several methods that could be used). The methods and equipment that will actually be utilized for the Lincoln Park Phase 1 Risk Assessment should be documented in the far-right column of QAPP Worksheet #21 and if different per OU, specified in QAPP Worksheet #18: Sampling Locations and Methods. Additionally, SOP-ARC-18 Monitoring Well Development includes language that states: “A site-specific field implementation plan (FIP) for well installation and development detailing the specific methods and tools is strongly recommended to provide site-specific instruction and guidance.” The QAPP should include this information as opposed to creating another document just to address this specific issue.
369	13, 23, 42	Throughout	Editorial comments,		
			Page 13: "Two wells, 371 and 379, with groundwater samples with the highest reported concentrations of molybdenum and uranium, and wells 802 and 042, with the highest reported concentrations of TCE, were selected for groundwater sampling to support determination of OU1 *groundwater* COIs and are listed in Table 17-5." Change "OU1 COIs" to "OU1 groundwater COIs".	Text revised as requested	Resolved. No further comment.
			Page 23: "Each well will have a groundwater sample collected from it and each groundwater sample will be analyzed for the *full* list of COIs as listed in Table 17-1." Correct "fill list" to "full list".	Text revised as requested	Resolved. No further comment.
			Page 42: "The field team *may* also make two subsequent attempts via a door knock." Correct "make also make" to "may also make".	Text revised as requested	Resolved. No further comment.

370	17, 24, 31	OU1 & OU2 & OU3 - Groundwater and Surface Water - Analytes	For the ecological risk assessment, both filtered and unfiltered samples are needed for metals, and total/unfiltered samples are needed for the other COIs. Hardness should also be included in the analysis.	Table 17-1 was revised to note that total and dissolved fractions will be analyzed for water samples. Hardness is included in the analysis	Resolved. No further comment.
371	Throughout	Groundwater and Surface Water Analytes	Analytes for groundwater and surface water should include hardness and include both total and dissolved TAL metals.	Table 17-1 was revised to note that total and dissolved fractions will be analyzed for water samples. Hardness is included in the analysis	Resolved. No further comment.
372	Figures, pg. 1 through 26	All	Define the brown and lime green areas in the figure legends.	These features are labeled in the figure and therefore are not in the legend. The stylistic recommendation is understood but the figure was not revised in response to this comment.	Resolved. No further comment.
373	Figures, pg. 12 & 13	Figures 17-12, -13	Recommend combining figures and using small tables/different colors to distinguish uranium and molybdenum.	Recommendation understood. This comment will be considered in future RI/FS QAPPs. Figures were not modified.	Resolved. No further comment.
374	Figures, pg. 15 & 16	Figures 17-15, -6	Sample locations 1001 and 1002 should be added to the Figure since soil samples will be collected from those borings.	Well locations 6001 and 6002 (renumbered after revision of the QAPP) have been added to these figures.	Resolved. No further comment.
375	Figures, pg. 19 & 20	Figures 17-19, -20	Figures should be updated to better show both the Residence property boundary and also which samples will be collected to which depths.	Property boundary has been added to figures.	Resolved. No further comment.
				While making revisions to Worksheet 17, the OU2 Private Well-Irrigated Soils investigation scope was revised to be more consistent with the recommendations in the Phase 1 Risk Assessment Work Plan (EPA 2024). Specifically, subsurface ISM soil sampling was removed as it is not a complete exposure pathway. Consistent with the Phase 1 Risk Assessment Work Plan, surface ISM soil sampling is proposed for OU2 Private Well-Irrigated Soils Investigation and additional details were included in Worksheet 17. While responding to comments and revising Worksheet 17, it was identified that OU1 Surface Water and Sediment investigation scope was not included. OU1 Surface Water and Sediment has been included in Worksheet 17.	No further Comment.
Sampling Locations and Methods, Worksheet 18					
376	0	Groundwater	Recommend moving Type, Analyte, SOP, and Comments to Notes at bottom of Table. Information. Other helpful columns should be evaluated for inclusion, such as: rationale, subarea, purpose, etc.	The recommendation is understood and will be considered in future QAPPs. The worksheet was not revised in response to this recommendation	Resolved. No further comment.
377	0	Columns	Combine redundant columns and/or cells. Many of the tables are very repetitive and busy to the point of being hard to read. Some cells should be combined, some columns can be moved to notes, formatting changes could be made to increase readability.	The recommendation is understood and will be considered in future QAPPs. The worksheet was not revised in response to this recommendation	Resolved. No further comment.
378	0	Sampling SOP	All Tables in Worksheet should include the brief SOP Title in addition to SOP number (groundwater, soil, ISM, etc).	SOPs have been updated with contractor-specific SOPs and all SOPs have been placed into an Appendix.	Resolved. No further comment.
379	0	Type	Recommend removing Duplicate from Type and adding a separate QC column or other clearer distinguishment (for example: adding a second line: "[with duplicate]"). See other comment regarding combining cells.	A footnote describing duplicate frequency has been added to the tables.	Resolved. No further comment.
380	1	Groundwater	Significant figures for depth/screen interval should be evaluated/confirmed.	The significant figures for the anticipated well screen intervals have been revised and well screen intervals were rounded the nearest foot. For proposed new wells, the final well construction will be determined based on the well objective (e.g., water table well, competent bedrock well) and field conditions (e.g., geologic conditions, water levels, borehole water yield, etc.), therefore, screen intervals were not specified.	Resolved. No further comment.
381	2	Matrix	Revise "Matrix" to "OU / Matrix", then add in OU to the column. Although Sample IDs do provide reference to which OU the sample is from, having each OU listed provides easier reference.	A column for operable unit has been added.	Resolved. No further comment.
382	6	OU2 Private Wells	ITRC sampling SOP is referenced and does not appear to be present in Worksheet 21. Worksheet 21 lists a Brown and Caldwell SOP for ISM Sampling.	ITRC (2020) is a guidance document not a project-specific SOP, and therefore should not be included in Worksheet 21. It was referenced several times in the text (and included in the references section) because it provides guidance on how ISM should be planned and implemented. This document is publicly available on the internet here: https://ism-2.itrcweb.org/	Resolved. No further comment.
				The Brown and Caldwell SOP was included to provide more site-specific description of the sampling procedures, however it is redundant and was removed.	Resolved. No further comment.
383	11	OU3 Fourth Street Soil	Comments column should include maximum potential depth.	This information was added to the table (maximum depth of 10 feet below ground surface).	Resolved. No further comment.

384	15	Footnote	Frequency of QA/QC samples should be identified on this worksheet.	Consistent with the UFP-QAPP outline and the other tables in this worksheet, QA/QC sample frequencies are presented in Worksheet 20 (Field QC Summary).	Resolved. No further comment.
385	1 through 15	Table	Add a column for OU, since Worksheet #20 sample counts are not separated out by OU.	The headers for each table indicate from which operable unit the samples are being collected. Only one table ("OU1/OU2/OU3 Groundwater") includes multiple operable units. A column was added to this table to denote the OU for each sample.	Resolved. No further comment.
386	Throughout	Type	Indicate type of sample (e.g., total, filtered). Also include QC samples (e.g., field duplicates), and number of samples per location.	Water fractions were included in the table for OU3 Arkansas River - Surface Water and Sediment. Sample fractions were added to the table for OU1/OU2/OU3 Groundwater. For soil, each sample listed in Worksheet 18 tables is one single sample. For groundwater, surface water, and sediment where multiple samples will be collected over time, notes were included. For example, the groundwater table notes "Sample quarterly for a total of 4 quarters". This information was added to the Arkansas River table. Consistent with the UFP-QAPP outline, QA/QC sample frequencies are presented in Worksheet 20 (Field QC Summary).	Resolved. No further comment.
				While responding to comments and revising Worksheet 17, it was identified that OU1 Surface Water and Sediment investigation scope was not included. OU1 Surface Water and Sediment samples have been included in Worksheet 18.	No further comment.
Sampling Containers, Preservative, and Hold Times, Worksheet 19 and 30					
387	0	Matrix	Table should be split between Matrix, then alphabetical.	A revised worksheet replaces the original and is organized by matrix and analytical groups.	Resolved. No further comment.
388	0	Columns	Move accreditation, sample volume, and turnaround time columns to notes. Add note/asterisk as applicable.	Accreditation and turnaround time was moved to the top of the page.	Resolved. No further comment.
389	0	Method/SOP	Split Method and SOP into separate columns. Add SOP title into SOP column (groundwater, soil, ISM).	Worksheet was revised by splitting the columns with method in one column and SOP into the other. The title names can be found in Worksheet 23. The tables are too limited in capacity to capture the full SOP title. However the table is broken out by media type, so it should be clear.	Resolved. No further comment.
390	2	Mercury	Minimum sample volume is 0.5 L, and 1L is needed for MS/MSD samples.	Worksheet 20 addresses QC sample collection. A note was added to Worksheet 20 that state Adequate sample will be collected to complete the analysis of parent/MS/MSD. No changes are proposed to this table, which specifies sample containers, preservation, and holding times.	Resolved. No further comment.
391	1 to 5	Throughout	ISM samples are being collected, which will arrive at the laboratory as bulk samples. These will require special sample preparation steps that are not included in this table.	This worksheet addresses sample containers, preservation, and holding times - it is not intended to provide information about laboratory processing of samples. This information is included in the lab SOPs (Worksheet 23). The laboratory SOP for ISM samples, DV-OP-0013, has been added to Worksheet 23.	Resolved. No further comment.
392	1 to 5	Throughout	Fill out the sample volume column throughout document.	A revised worksheet replaces the original. The "Sample Volume" column was removed from the table. Sample volumes correspond to the containers listed in the "Containers" column.	Resolved. No further comment.
393	3, 4	Volatiles	The last row "volatiles" on this page repeats the same information included two rows up in the table.	A revised worksheet replaces the original. Sample container information was provided by the certified laboratory that will be completing the work. A note was added to Worksheet 20 indicating that *Adequate sample will be collected to complete the analysis of parent/MS/MSD* .	Resolved. No further comment.
			Need 4 vials for samples, Cool to ≤ 6 °C, additional vials for samples with MS/MSD, accordingly to CLP Field Samplers guidance, Table D-1. Remove last row on page 3 of 5, which is a duplicate of two rows above.		Resolved. No further comment.
394	4	PCBs	The PCB method should be 1668 instead of 8082/8082A. Congener analysis as opposed to homologue/Aroclor analysis is needed since the PCB source has likely weathered over time.	The analysis of PCBs will be completed using method 8082/8082A during the P1RA. This method is sufficient to evaluate maxima and determine if PCB will be retained as a COPC/COPEC. Samples for PCBs will be analyzed using method 1668 (Congener analysis) during the OU2 Groundwater/OU3 and OU1 RIs to support nature and extent characterization.	Resolved. No further comment.
Field QC Summary, Worksheet 20					
395	0	Columns	Table is very hard to interpret. Additional columns should be added for OU and subareas. Table should be organized by: OU, Subarea, Matrix, then Analyte. MS/MSD should be a combined column. Other column should be removed.	Worksheet 20 has been replaced with a revised table that shows the frequency of QC instead of specific numbers. The table is organized by media.	Resolved. No further comment.
396	0	Quality Control	Standard QC for CERCLA is 1:10 field duplicates, 1:20 MS/MSD, daily equipment blanks per team, and a field blank per activity/subarea.	Worksheet 20 has been replaced in its entirety and now shows the frequency of QC instead of specific numbers. The QAPP is consistent with the EPA Work	The footnote should be updated to better reflect criteria for increasing duplicate frequency. Suggested edit "If the Relative Percent Difference

396	0	Quality Control	Field QC notes at end of Table clarify rationale, but it is not accurate to the table itself. Table should replace "--" with "See Table notes".	Plan which identifies field duplicates at 1 per 20 samples collected. A footnote discussing potential increase in duplicate frequency has been included at the	(RPD) of any set of samples is greater than 20%, it might indicate a problem and increasing the frequency of field duplicates from 5% to
397	2	VOCs	Trip blanks are required for VOCs for all matrices.	Trip blanks are documented for all matrices as one per cooler.	Resolved. No further comment.
398	3	Notes	Table should show all samples planned to be collected under this QAPP. Remove note regarding the number of samples in a typical year. Recommend adding in a frequency column (if applicable) - once, quarterly, etc.	Worksheet 20 has been replaced with a revised table that shows the frequency of QC instead of specific numbers. Frequency of the samples is detailed in Worksheets 17 and 18.	Resolved. No further comment.
399	1 to 3	Throughout	The number of MS/MSD samples need to reflect the percentage of samples listed in worksheet 28 (1 per 20 samples). The number should round up to the next whole number, so if 126 samples are being run, then 7 MS/MSD samples are required. Fix throughout tables.	Worksheet 20 has been replaced with a revised table that shows the frequency of QC instead of specific numbers.	Resolved. No further comment.
				Worksheet 20 has been replaced in its entirety	Noted.
			Field SOPs, Worksheet 21		
400	0	SOP	Multiple SOPs (SOP 130, 140, 120, 110, 105, 060, etc) have errors with page numbers. All SOPs need to be checked and corrected.	SOPs have been updated with subcontractor-specific SOPs and all SOPs have been placed into an Appendix.	Resolved. No further comment.
401	1	TOC	Remove "Modified for Project" column. No columns are marked "Y" and any SOP through a QAPP is approved for a project specific purpose, so marking if it is modified is unnecessary.	Column has been removed.	Resolved. No further comment.
402	1	TOC	Table is inconsistent. Remove or add "N/A" from SOP option & Comments columns. Some rows are marked as "N/A", others are not - make use of N/A consistent. Additionally, either equipment for each SOP needs to be listed or removed. Current column is inconsistent.	Updated with the applicability of the SOP (SOP option) and equipment type if known at this time.	Resolved. No further comment.
403	1	TOC	No Restricted Area check-in/check-out SOP is listed.	A Radiation Protection Plan (RPP) has been developed, which includes identification of the Restricted Area, Controlled Area, and Temporary Exclusion Zones. Personnel and equipment release procedures from these areas are provided in SOP-3 of the RPP.	Additional comments have been provided in response to the submitted Radiation Protection Plan.
404	1	Materials	Recommend evaluating SOPs to determine if field efficiencies could include the (potential) use of electronic forms for certain tasks (sample sheets, calibration logs, drilling logs, surveys). SOP 010 discusses the use of ruggedized laptops/iPad, but it is not discussed anywhere else. Recommend adding in a new section to SOP 010 that discusses the possibility of using electronic forms and how other SOPs may implement this change (if warranted) in comparison to use of pen/paper. For example, calibration, sample collection, lithological, and COC forms could likely be primarily electronic (with paper forms available as backup), since the information is similar/repetitive.	SOPs have been updated with subcontractor-specific SOPs and include the use of electronic field forms. Please see SOP-ARC-01. Additionally, electronic forms are mentioned throughout the task specific SOPs where applicable.	Resolved. No further comment.
405	1	Comments	Include "Equipment Rinsate Sampling" in the comments for SOP E-060	SOPs have been updated with subcontractor-specific SOPs, please see second paragraph in Section 2 in the new SOP-ARC-07 that includes mention of the equipment blanks.	Resolved. No further comment.
406	1	Field SOPs	EPA SOPs were cited earlier in the QAPP but are not listed here.	The cited EPA Potable Water Supply Sampling SOP has been replaced with Residential Drinking Water Well Sample Collection SOP and listed as SOP-ARC-11.	Resolved. No further comment.
407	1	Originating Organization; Organization Performing Analysis	All organizations listed in Worksheet #21 should be listed on Worksheets #3 through #8.	The list of contractors has been updated in Worksheets #3 through #8.	Resolved. No further comment.
408	2	Soil Sampling	Soil Sampling SOP / Equipment column lists ISM, although ISM is listed as its' own line directly below. Additionally ISM sampling has no equipment listed.	Revised to remove ISM from the soil sampling SOP row.	Resolved. No further comment.
409	2	Soil Sampling	Remove ISM from Soil Sampling option since ISM already has a listed SOP (SOP LPSS-E-105).	Revised as requested	Resolved. No further comment.
410	2	SOP-LPSS-E-100	This SOP does not stipulate that there is a random component to designing the grid from which increments will be collected. It identifies equal spacing for increments as critical, which is not true. See ITRCs guidance on possible ISM sampling strategies.	The Well Development SOP has been replaced with the SOP-ARC-18 for Well Development and this language is not included.	Resolved. No further comment.
411	3	Well Development	Comment is unnecessary. SOP should include applicable variance for low recharge / unstable parameters wells.	The Well Development SOP has been replaced with the SOP-ARC-18 for Well Development and this language is not included.	Resolved. No further comment.
412	6	Materials	Recommend adding bullet point to Section 5.2 (Materials) that lists expected data logging equipment (transducers, weather stations, GPS, etc) that may be used. Can be phrased to by inclusive of unidentified equipment.	This SOP has been replaced with the SOP-ARC-01 for general Field Activities Documentation, with specific materials and equipment lists found in each task specific SOP.	Resolved. No further comment.

413	18	Numbering	Section 3.2 is a typo.	This SOP has been replaced with an SOP for field sampling, measurement, and observation and an SOP for Sample Chain of Custody, Handling, Packing and Shipping (SOP-ARC-02 and SOP-ARC-03, respectively)	Resolved. No further comment.
414	21	Sample Labels	If tape is not going to be utilized, text should be modified to describe how label integrity will be maintained (indelible ink, water proof labels, redundancy, etc).	This SOP has been replaced with a new SOP for field sampling, measurement, and observation and an SOP for Sample Chain of Custody, Handling, Packing and Shipping (SOP-ARC-02 and SOP-ARC-03, respectively)	Resolved. No further comment.
415	22	Sample Packaging	Verify if the ice will be double bagged or if two layers of plastic will separate samples from ice (samples in a bag + ice in a bag). Likely isn't necessary to double bag ice, unless bottles are not already bagged.	SOP-LPSS-E-010, LPPS-E-020 have been replaced with three new SOPs that cover Field documentation, field sampling, measurement, and observation, and chain of custody and are SOP-ARC-01, SOP-ARC-02, SOP-ARC-03, respectively.	Resolved. No further comment.
416	22	Sample Packaging	Will the cooler be lined with a trash bag, or is the ice being double bagged the planned approach? Some concerns with melted ice leaking, causing shipping delays.	Yes, the cooler will be lined with a trash bag, and if wet ice is needed for the preservative, this will be double bagged. Please see revised SOP-ARC-03	Resolved. No further comment.
417	22	Custody Seals	Section relies on the assumption that coolers used have hinges (only 1 seal needed). Two custody seals may need to be used (opposite sides) to ensure that coolers with removable lids are securely closed. Text should be made more specific or general to encompass other cooler types.	Text has been revised and a discussion of cooler types was added. Please see SOP-ARC-03	Resolved. No further comment.
418	23	Sample Shipping	3rd Paragraph. It should be evaluated/described as to whether or not samples collected on a Friday should be stored over the weekend and shipped. Recommend adding text to allow for the holding of samples if necessary.	SOP-ARC_03 Section IV requires that staff understand the offsite transfer requirements for the Site at which samples are collected. Shipping schedules are dependent on the field event, analytes collected, hold times, and the laboratory the samples are being shipped, courier availability, and other conditions. No additional text was added to SOP-ARC-03 as this varies and will be discussed prior to each field event with the QA Manager and project chemist.	Resolved. No further comment.
419	28	SOP	Pages 28 through 37 appear to be duplicative of the previous text and should be deleted.	SOP-LPSS-E-010, LPPS-E-020 have been replaced with three new SOPs that cover Field documentation, field sampling, measurement, and observation, and chain of custody and are SOP-ARC-01, SOP-ARC-02, SOP-ARC-03, respectively.	Resolved. No further comment.
420	73	SOP	SOP 33 is mislabeled as SOP 030 in header.	SOPs SOP-LPSS-E-030, 031, 032, and 033 have been replaced with a SOP that covers calibration and control of measuring and test equipment (SOP-ARC-04). Headers have been updated throughout.	Resolved. No further comment.
421	87	Types of IDW	Cotter cannot rely on a Licensee and/or Licensing Agency to manage IDW without an agreement in place. If an agreement cannot be reached between Cotter and a Licensee and/or Licensing Agency, then Cotter needs to identify an alternative way to manage and dispose of IDW wastes. Leaving IDW in place or in an unsecure location is not protective to human health or the environment. Options that the Agencies believe are protective of human health & the environment include disposal in the primary impoundment, subtitle C landfill, or other disposal options suitable for the types of IDW generated.	The IDW SOP has been updated to an ARC-SOP-5 that specifies the IDW generated will be disposed in the primary impoundment. Text remains in the IDW SOP to characterize waste that may not need to be disposed in the primary and could potentially go to a landfill for disposal (ie background locations).	Resolved. No further comment.
			All current text referencing Licensee and/or regulating agency managing RI/FS derived wastes should be removed.	Work will be completed under the Arcadis RML and IDW will be handled in coordination with Ensero.	Resolved. No further comment.
			Currently, on-site wastes that are disposed of in the Primary Impoundment include spill impacted soils and sediments collected from the Check Dam. Here are the general procedures conducted by Ensero:		
			a) Health and safety planning - Determine if a Radiation Work Permit or Job Hazard Analysis are needed which includes determination on whether any PPEs, occupational monitoring, or surveys are needed.	IDW SOP has been replaced with an SOP ARC-SOP-05	Resolved. No further comment.
			b) Collected soil samples for representativeness (if needed)		
			c) Excavate soils (either with machinery or by hand with a shovel). Document the volume.	IDW SOP has been replaced with an SOP ARC-SOP-05. H&S and IDW procedures will be followed and coordinated with Ensero, as needed.	Resolved. No further comment.
			d) Transport to the Primary Impoundment in container(s) (either bucket with a lid or in a dump truck)		
			e) Place in the Primary Impoundment (empty bucket or dump truck).		
422	92	Section 8.2	State Regulations and References should be referenced.	Concur: 6 CCR 1007-1: Radiation Control is referenced and included in new SOP (ARC-SOP-05) in Section 2.	Resolved. No further comment.
			IDW SOP should include text related to show Haz vs non-Haz assessment will be made. Is it based upon analytical data of waste constituents, analytical data from IDW itself, or RCRA Haz waste field characterization?	Section 8 of the new SOP (SOP-ARC-05) outlines Waste Management	

423	92	Section 8.3	Assumptions made in the SOP (background samples not requiring waste management, pre-characterization of wastes, etc) don't appear to be wrong, but there needs to be a more formal process described that verifies these assumptions, especially when field conditions may not be accurately known.	practices. It specifies that all waste from the Site will be managed in accordance with the Radiation Protection Plan. Some waste, such as IDW from background locations, may not require onsite disposal, and as such will be managed as described in this section. Waste Characterization will be completed based on process knowledge and/or waste characterization in accordance with waste hauler, waste handling facility, and local/state/federal requirements.	
			Current Section relies too heavily on professional judgement without further description. Professional judgement should be used, but the text should better describe how these judgements will be made, using what field methods or information, use of supportive lines of evidence, what tests will be completed to make the judgement, etc.		Resolved. No further comment.
424	94	Section 8.4	First sentence (and second paragraph) should be revised to include a staging area or nearby location. It may not be feasible or protective to HH&E to keep individual waste streams separate in all situations. A common (temporary) staging area may be required.	SOP (SOP-ARC-05) includes a reference to the Radiation Protection Plan for storage requirements. It also specifies that IDW will be temporarily and securely stored under constant supervision within each area of contamination (AOC) if possible or transported to a secure location (the Restricted Area).	Resolved. No further comment.
425	102	Section 8.0	Last bullet point has a typo, "verification".	SOP LPSS-E-050 has been replaced with an SOP-ARC-06 that covers utility locating using radio frequency.	Resolved. No further comment.
426	104	Section 8.4	"verification is typically required" should be revised to a statement, such as "verification will be required". Additionally, SOP should identify which activities require utility clearance vs which do not. Will utility clearance be completed for 0'-0.5' soil sampling or only for drilling, or for any activities deeper than x-feet, etc. If this information is included in the specific sampling SOPs, sentence should be added to reference that.	SOP-LPSS-E-050 has been replaced with an SOP-ARC-06 that covers utility locating using radio frequency. In this SOP, in accordance with the Utility Location SOP, field personnel conducting subsurface work and/or investigation (SWI) activities where above ground or underground utilities are in the vicinity of the work have the responsibility to read, understand, and follow the Utility Location Policy and Procedure.	Resolved. No further comment.
427	117	Section 8.1.1	Additional details regarding decontamination area within the restricted area should be included. Area should be assessed for integrity of holding IDW and a liner installed if necessary. Need periodic checks/evaluations to ensure waste is not being released.	The Radiation Protection Plan states this process will be conducted in Section 4.1: *1) Radiological contamination control and surveys for unrestricted release of equipment and personnel.* Equipment decontamination within the restricted area and periodic checks/evaluations are documented in SOP-ARC-07 Equipment Decontamination (section 6.3) and in RPP SOP-3 Radiological Decontamination Surveys.	Resolved. No further comment.
428	117	Section 8.1.1	For any equipment or personnel release from the restricted area, radiological contamination surveys should be performed in addition to equipment decontamination activities described in this section.	See response above	Resolved. No further comment.
429	117	Section 8.1.1	Currently, state contractor Ensero has been disposing of their purge water from environmental sampling and equipment wash water in the truck wash station container located within the restricted area. Water collected in the truck wash station container drains to the Water Management Pond 3 also located within the restricted area.	This disposal practice will continue. The Radiation Protection Plan states this process will be conducted in Section 4.1: *2) Handling and onsite disposal of investigation derived waste (IDW), including IDW generated within the Restricted Area in operable unit OU1, as well as IDW generated beyond the Restricted Area in operable units OU1, OU2 and OU3* . This is also documented in SOP-ARC-05 IDW Handling and Storage.	Resolved. No further comment.
430	120	Section 10.2	Recommend moving Section 10.2 to SOP E-030. Since E-060 is regarding decontamination, a section focused on deficiencies/maintenance does not belong.	SOP-LPSS-E-030 and 060 have been replaced with subcontractor SOPs that cover these topics. Text in SOP-ARC-04 includes explanation of operational or periodic calibration, and the various calibration procedures.	Resolved. No further comment.
			Text in E-030 can be updated to include text showing that instruments will be inspected through multiple processes (daily checks, calibration, decon, drift check, as needed, etc).		Resolved. No further comment.
431	125	Section 8.1.3	Section has very large blocks of text, recommend breaking down bullets to include additional sub bullets for easier field reading/review.	Revised as suggested	Resolved. No further comment.
432	127	Section 8.2	It describes that one of the required materials is lead donut shield. Describe the formal name of this material if available.	Text has been revised to, *Collimator (i.e., Lead donut shield)*	Resolved. No further comment.
433	136	Section 8.2	Step 8 should be removed as it is out of order (more applicable within Step 6). Step 6 should be clarified that vegetation/materials should be removed prior to placing in a designated bag since ISM should be the composition of equal parts of its' aliquots. Agree with Step 8 that the lab will screen out large material, but it is important that each aliquot be as close to possible for usable material.	SOP-LPSS-E-101 has been replaced with and SOP for Incremental Sampling Methodology (SOP-ARC-08). This methodology specifies that vegetation will be included.	Resolved. No further comment.
434	152	Sections 4, 5, & 6	Sections 4, 5, & 6 of the Surface Water Sampling QAPP are inconsistent with other SOPs. In general, there is some inconsistency on how detailed/documented these two sections are throughout all the SOPs. It should be evaluated whether other SOPs need to be updated to match.	Many SOPs have been replaced and checked for consistency. Level of detail in various sections do vary depending on how involved and how many options are available for the method a particular SOP is aiming to explain.	Resolved. No further comment.
435	158	SOP	SOP 130 is mislabeled as A-010 starting on second page. Page numbers on SOP are wrong.	SOP- LPSS -E-130 has been replaced with groundwater level measurements SOPs which resolves this comment.	Resolved. No further comment.

436	164	Parameters	ORP, DO, and turbidity need to be collected and are not optional, but required.	SOP- LPSS -E-140 has been replaced with groundwater sampling SOP-ARC-13 and includes collection of water quality parameters as a requirement.	Resolved. No further comment.
437	168	Note	DO stabilization criteria should be "10% if >1mg/L, or 0.1 if <1mg/L", while ORP stabilization criteria should be "plus/minus 10 mV". Stabilization updates should be consistent throughout SOP.	SOP- LPSS -E-140 has been replaced with groundwater sampling SOP-ARC-13 and includes these stabilization criteria on page 11, bullet # 18.	Resolved. No further comment.
438	168	Note	Well cannot be sampled if stability is not reached within 15-minutes. Need to develop a protocol for wells not reaching stability (ex.: pH, EC, Turb (below 50 NTU) are stable and 3-well volumes have been purge).	SOP- LPSS -E-140 has been replaced with groundwater sampling SOP-ARC-13 and includes protocol for wells not reaching stability on page 11 and 12, bullet # 20.	Resolved. No further comment.
439	171	Section 9	Duplicates should be collected at 10% intervals, not 5%.	The QAPP is consistent with the EPA Work Plan (EPA, 2024) which identifies field duplicates at 1 per 20 samples collected. A note has been added to the bottom of the worksheet that states *If the Relative Percent Difference (RPD) between the primary and the field duplicate for multiple analytes and multiple samples in a sample delivery group are above the RPD, after review and reanalysis by the laboratory, as stated in Worksheet 28, the frequency of field duplicates and the potential for increasing the frequency of field duplicates will be discussed with the Agencies.*	The footnote should be updated to better reflect criteria for increasing duplicate frequency. Suggested edit "If the Relative Percent Difference (RPD) of any set of samples is greater than 20%, it might indicate a problem and increasing the frequency of field duplicates from 5% to 10% will be discussed with the Agencies. If the RPD is greater than 50%, field duplicates shall be increased to a frequency of 10%"
440	191	Section 5.1	"Stem" is misspelled as "Stern" in the heading.	SOP- LPSS -E-200, 210, 220, 230, and 240 have been replaced with Arcadis' bedrock chip collection and description, soil description, monitoring well installation, and monitoring well development. A new SOP (SOP-ARC-17) includes monitoring well inspection assessment.	Resolved. No further comment.
441	194	Section 8.1	Last paragraph. Paragraph says that water levels will be measured each day before drilling, but doesn't describe where (closest MW?).	SOP- LPSS -E-200, 210, 220, 230, and 240 have been replaced with SOPs for bedrock chip collection and description, soil description, monitoring well installation, and monitoring well development. A new SOP (SOP-ARC-17) includes monitoring well inspection assessment.	Resolved. No further comment.
442	203	Section 1.0	DPT is included within Purpose for Borehole Logging (SOP E-210), but is not included in the drilling SOP (SOP E-200). Recommend including DPT in SOP E-200 as applicable.	SOP- LPSS -E-200, 210, 220, 230, and 240 have been replaced with SOPs for bedrock chip collection and description, soil description, monitoring well installation, and monitoring well development. These SOPs include DPT.	Resolved. No further comment.
443	205	Section 8.1	Text should specify how precise/often/granularity of the logging (every 1', as often as visually required, etc.). PID/FID readings every 5' should be included.	SOP- LPSS -E-200, 210, 220, 230, and 240 have been replaced with SOPs for bedrock chip collection and description, soil description, monitoring well installation, and monitoring well development. A new SOP (SOP-ARC-16) includes monitoring well installation.	Resolved. No further comment.
444	217	Section 8.3.1	Remove requirement for RML licensee to handle IDW.	SOP- LPSS -E-210 has been replaced with SOPs for bedrock chip collection and description, soil description, monitoring well installation, and monitoring well development. RML requirements are not included	Resolved. No further comment.
445	241	Section 8.0	Change 24 hours wait period to 48 hour.	SOP-LPSS-E-230 has been replaced with well development SOP and specifies 48 hours in Section 8.2.	Resolved. No further comment.
446	242	Section 8.2.5	Well Development needs to have development criteria similar to monitoring well sampling, plus minimum of 3 well volumes. Development should not solely rely on turbidity and professional judgement.	SOP-LPSS-E-230 has been replaced with well development SOP-ARC-18 and specifies criteria in Section 8.2.	Resolved. No further comment.
447	249	Section 8.2	"Construction debris" is not previously defined or discussed regarding materials handling. IDW SOP should be updated to include waste disposal evaluation.	Acknowledged: hazardous waste determination is included in the IDW SOP	Resolved. No further comment.
448	253	SOP-LPSS-E-300, Section 7.1	Change the words "obtaining soil samples" to "obtaining radiation survey data" because this SOP is related to radiation surveys instead of soil sampling.	Revised as suggested	Resolved. No further comment.
449	253	SOP-LPSS-E-300, Section 7.3	Second bullet item, change the words "for sampling activities" to "for surveying activities".	Revised as suggested	Resolved. No further comment.
Updated SOPs-1	1	Throughout all SOPs	General concern that ARCADIS SOPs are not project specific and at times can be in conflict with the QAPP, except for "unless otherwise described" type of text.		
Updated SOPs-2	1	Throughout all SOPs	Overarching comment regarding terms used in Arcadis SOPs. Many of the terms are only present in the SOPs and not in the other QAPP worksheets. Concerns with use of "Quality Consultant", "Quality Procedure", "Certified Project Manager", "Field Implementation Plan", etc. If differing terms are going to be present between the SOPs and other QAPP worksheets, then a note/terms explanation should be included to note that it is only a change in term, not substantive meaning. For example, is the "Field Implementation Plan" referring specifically to the SOPs, a specific SOP, or the QAPP as a whole?		

Updated SOPs-3	1 Table of Contents	Given the number of SOPs and length of Appendix, a Table of Contents needs to be added to make SOP reference easier. Page numbers do not need to be included, but a list of SOPs should be added.		
Updated SOPs-4	5 Section 4	QMS Document Library Link does not exist. If links are going to be included in this document, they should be accessible.		
Updated SOPs-5	16 Section 0	Multiple references throughout SOPs are made to Resilience Environment and Environment Business Line in SOPs. Is it correct to assume that these are different divisions/units within ARCADIS? Preference would be for these sentences to reference and EPA guidance, not an ARCADIS policy.		
Updated SOPs-6	17 Section 3	TGI Library (EQMS Sharepoint Site) Link does not exist. If links are going to be included in this document, they should be accessible. Additional link to QMS is present on the same page in Section 4.		
Updated SOPs-7	24 Section 4	Include Radioactive compounds in list of potential DOT regulations.		
Updated SOPs-8	40 Section 8	Last sentence, "[Click to enter text]".		
Updated SOPs-9	54 Section 8	Soil/Solids Characterization, 2nd Paragraph. 250 cubic yard basis for stockpiled soil should be applied to each waste stream/OU or better account for heterogeneity. Sampling density is not high enough if the stockpiled soil could be coming from all areas/waste streams.		
Updated SOPs-10	121 Section 10	Last sentence, "[Click to enter text]".		
Updated SOPs-11	123 Attachment A	Amend "B Release" text from access agreement. The property owner cannot be held liable for damage to the well/equipment in such a broad definition. Current text would deter access unnecessarily. Additionally, regarding "C Data and Reports". This text shall be amended to proactively transmit sampling results to the property owner and resident. Additional information, summary reports, findings, etc, are not required to be transmitted, but collected data is (sampling & survey). Cotter should work to additionally track and transmit property owner contact information to the Agencies if requests for additional data/information are made during field investigations.		
Updated SOPs-12	233 Section 12	Include Colorado's DWR Well Installation Regulations into the SOP/References.		
Updated SOPs-13	239 Section 5	Would Monitoring Well Inspection Assessment include downhole camera usage? If so, camera should be included in equipment list.		
Updated SOPs-14	270 Section 12	Include Colorado's DWR Well Installation Regulations into the SOP/References.		
Updated SOPs-15	287 Section 0	Agencies commented on, and revisions made to this SOP, but it doesn't appear that the signatures or dates were updated. Could clarification be given as to what types of changes would/would not qualify as a marked revision?		
Updated SOPs-16	287 SOP E-300 & ARC-27	Are these SOPs duplicative of each other in practice? ARC-27 does not appear to be referenced in the QAPP except for in Worksheet 21 SOP list. Could this be clarified which SOP will be used for which investigations?		
Updated SOPs-17	310 SOP-LPSS-E-100 (Soil Sampling)	This SOP is specifically for the Lincoln Park site and this should correspond to the site specific conditions established in the QAPP. The stated depth for surface soil sampling is incorrectly stated as 0-6", when the appropriate sampling depth for the human health risk assessment should be 0-1" for incidental ingestion exposure scenarios associated with surface soil exposure. This is noted as comment #213 also.		
Field Equipment Calibration, Maintenance, Testing, and Inspection, Worksheet 22				
450	0 Acceptance Criteria and Corrective Action	Listed acceptance criteria and corrective actions are not consistent for multiple rows. All rows should have a corrective action. Some acceptance criteria listed is more appropriate for the corrective action column (see solist water level meter).	Table format was changed. Each instrument/equipment listed now has performance criteria and field calibration procedures including corrective actions.	Resolved. No further comment.

451	0	Responsible Person	Recommend delegating responsibilities to "trained personnel" or "personnel delegated by field team leader" as applicable. Current delegation puts significant responsibility on the field team leader and is not typical for field mobilizations.	Added *Authorized Users designated under the Radiation Protection Plan* for Ludlum meter/detector. For all other equipment, responsible person changed to Field Team Leader or personnel delegated by field team leader	Resolved. No further comment.
452	1	Columns	Column should be added showing topic (groundwater samples, ISM sampling, drilling, etc).	A column for Equipment Purpose has been added to the table.	Resolved. No further comment.
453	1	Frequency	Grundfos frequency should be clarified to be either/both "periodic" or "as needed (with explanation)".	Worksheet has been updated to more accurately identify field calibration and corrective actions	Resolved. No further comment.
				Additional revisions were made to this worksheet to add additional equipment, ensure consistency with the equipment to be used, address corrective actions, and address Region 8 QA comments..	Noted.
Analytical SOPs, Worksheet 23					
454	1	Lab SOP Number	There needs to be an SOP for sample prep for ISM samples included in this table.	ISM sample prep is included in Eurofins SOP DV-OP-0013, Rev 18 describing ISM Sampling Methodology for Soils and Sediment. This SOP has been included Worksheet #23.	Resolved. No further comment.
				Additional revisions were made to the worksheet to ensure consistency with lab SOPs and laboratories conducting analyses and to address Region 8 QA Comments. Eurofins Denver will contract with Eurofins Lancaster. All communication will be with and shipment will be to Eurofins Denver for the Eurofins Lancaster analyses.	Noted.
Analytical Instrument Calibration, Worksheet 24					
				This worksheet was revised to ensure consistency with analytical instruments to be used and laboratory SOPs.	Resolved. No further comment.
Analytical Instrument and Equipment Maintenance, Testing, and Inspection, Worksheet 25					
				This worksheet was revised to ensure consistency with analytical instruments to be used and laboratory SOPs.	Resolved. No further comment.
Data Verification Procedures, Worksheet 35					
455	0	Responsible Person	QA Manager should be involved in periodic reviews of documents to ensure standards are being met throughout the process, not just as a final conclusion.	A tapered review has been added.	
			Recommend setting a Tapered review (weekly, then monthly, then quarterly, yearly, end of project) or other more thorough involvement.		Resolved. No further comment.
				The Field EDD has been removed. All data will be collected electronically and uploaded as needed to the Site database. Other revisions have been made to this worksheet to ensure consistency with the QMP, other portions of the QAPP, and to address Region 8 QA comments.	Resolved. No further comment.
Data Validation Procedures, Worksheet 36					
456	0	Data Validation Level	Stage 4 data validation should be completed for all duplicate samples (10% of all samples). Alternatively, Cotter may propose decision criteria for Stage 4 data validation.	Percent of data packages to be validated was changed to 100%. A note was added stating that 100% of the data will be reviewed and verified at Stage 2B. In addition, 10% of each sample delivery group will be validated at Stage 4	No further comment.
Radiation Protection Plan					
RPP-1	4	Introduction, 1st paragraph	CCMF is not a commonly used acronym and should be replaced with one that is more regularly used.		
RPP-2	4	Introduction, 1st paragraph	Replace, "intermittently through 2006" with "intermittently through 2011" since the facility still had an active license.		
RPP-3	4	Introduction, 1st paragraph	Decommissioning began in 2012, not 2014.		
RPP-4	4	Introduction, 3rd paragraph	Bullets should quote definitions of OUs, not paraphrase.		
RPP-5	6	Section 3.1, 1st paragraph	Replace, "conducted under the jurisdiction of EPA and the CERCLA process" with "conducted under CERCLA".		
RPP-6	5	Section 2	Bulleted lists should include materials management, IDW handling, decontamination, check-in/out, etc.		
RPP-7	13	Section 4.3.2, Escorted Visitors	Escort for Agency oversight & collection of split samples should be included in this section. Term "tour" is more limiting than scope for Agency staff/representatives. Authorized users should be expanded to provide supervision and instruction, beyond sign-in sheet only.		
RPP-8		General Comment	This document indicates that the scope of this radiation protection plan is for remedial investigation and feasibility study (RI/FS) activities. RI/FS activities are outside the scope of the phase 1 risk assessment. Therefore, the Agencies can only approve the plan for the proposed phase 1 risk assessment activities. Cotter may submit the same radiation protection plan as part of the RI/FS work plans if it will be used for RI/FS activities.		
RPP-9	4	Section 1	The last sentence of the first paragraph says that Colorado Legacy Land, LLC became the licensee in 2017. It was actually in 2018.		

RPP-10	6	Section 3.1	Please replace the second - fifth sentences of the first paragraph with the following: "However, in accord with the 2014 Agreement on Consent, CDPHE expects the radiation protection provisions of the existing RML (CO 369-01) and the Colorado Rules and Regulations Pertaining to Radiation Control to be observed for this RI project, including consistency with existing occupational and environmental radiation monitoring and any additional radiological monitoring, surveys, and sampling needed for the project. All monitoring, surveys, and sampling required for radiation control and protection of RI workers, the public, and the environment shall be performed in a manner consistent with existing RML requirements and the Colorado Rules and Regulations Pertaining to Radiation Control. While expressed somewhat differently from the Colorado Rules and Regulations Pertaining to Radiation Control, OSHA radiation protection regulations are essentially equivalent or are similar in terms of occupational radiation dose limits when expressed on an annualized basis (rather than quarterly). In general, it is expected that compliance with the Colorado Rules and Regulations Pertaining to Radiation Control and existing RML conditions will ensure compliance with OSHA radiation protection regulations for RI workers."		
RPP-11	9	Section 3.3	This section says that "it is anticipated that occupational radiation exposures during RI sampling, surveys, and monitoring activities under the CERCLA program will be similar to the low, near background occupational exposure levels consistently measured for routine site operations in recent years." Routine site operations in recent years have not required workers to be present for an extended time at the highly contaminated areas on site. Please provide additional discussion in this section on how much time a worker is anticipated to spend at the highly contaminated areas on site such as the ore pad areas, old ponds area, and the impoundments in order to complete the proposed RA activities and the anticipated RI activities and evaluate the potential doses.		
RPP-12	11	Section 4.1	The first bullet item in the second paragraph should also include "decontamination" in addition to radiological contamination control and surveys.		
RPP-13	11	Section 4.1	Please revise the last sentence on this page to: "Routine RML operations that Ensero will continue to perform as a direct contractor to CDPHE under its current contract with CDPHE, include (but are not limited to).."		
RPP-14	16	Section 5.1.1	The second sentence says that the entire property is considered a "Controlled Area" under the RML. The RML does not specifically define a Controlled Area. The RML only defines the Restricted Area.		
RPP-15	24	Section 5.2.8	Please change the words "notify CDPHE within 24 hours" to "notify CDPHE as soon as practicable but no later than 24 hours upon discovery of any spill or release".		
RPP-16	27	Section 5.3.1	In the event of the current contracted environmental monitoring program is reduced, modified or ceased, Cotter should conduct the environmental monitoring as approved to demonstrate compliance with the public dose requirements. Please indicate this in the document.		
RPP-17	SOP-2	Section 4.5	For Steps 6 and 7, it is not clear how and in which forms the daily QC check readings will be documented. Please add such information in detail as well as how these results will be inputted in the forms.		
RPP-18	SOP-3	Section 4.2	This section indicates that relatively little zirconium ore was ever received or processed at the site. However, there is still a zirconium ore pile present at the site.		

RPP-19	SOP-3	Section 4.3, Table 3-1, and Table	Currently, CDPHE contracted activities as related to the RML CO 369-01 are using the radiological release limits for surface contamination based on alpha emissions from natural thorium series (i.e., 200 DPM/100 cm2 removable; 1000 DPM/100 cm2 average; 3000 DPM/100 cm2 maximum) and beta emissions. These limits are used for both releases of equipment and personnel. For consistency and conservatism, we would request the same limits for RA and RI activities. Please revise the applicable numbers and survey procedures in this SOP as well as other sections or tables of the RPP accordingly.		
RPP-20	SOP-3	Section 4.7	The 5th bullet item refers to Section 4.9.2 of the SOP for decontamination procedure. It should be corrected to "Section 4.8.2".		
RPP-21	SOP-3	Sections 4.6 and 4.7	It is not clear from the texts in these two sections whether an equipment or a person will be resurveyed after decontamination. Please indicate clearly that resurvey will be performed after decontamination until release limits are met.		
RPP-22	SOP-3	Section 4.7	Please perform surveys for both alpha and beta to demonstrate compliance with alpha's and beta's total and removable release limits. Please provide additional details on how ALARA goal and release limits in cpm for both alpha and beta are calculated so they are clear for the surveyors who will be filling out the forms.		
RPP-23	SOP-3	Form SOP-3A	Please add the release limits used for the survey in the form. Please indicate whether the readings include background values.		
RPP-24	SOP-3	Form SOP-3B	Please add columns for swipe survey results and swipe instrument information. Please also add columns for beta measurements. Please indicate both alpha and beta ALARA and release limits.		
RPP-25	SOP-4	Form SOP-4A	Please add a place in the form to input the sampler model and series number information.		
RPP-26	SOP-4	Form SOP-4B	Please add a place in the form to input the RWP number.		
RPP-27	SOP-6	Form SOP-6A	The form includes an option for conducting general air sampling. However, there is no procedure for general air sampling in SOP-4. If general air sampling is provided as an occupational monitoring option, please add a procedure for general air sampling in SOP-4.		
RPP-28	SOP-6	Form SOP-6A	Under the section of "Work Description" of this form, please include the anticipated date of the work and the work location.		
RPP-29	SOP-7	Section 5.3	Please develop a weekly inspection form for routine RA/RI activity and attach it to this SOP. The form should include the inspection items listed in this section so that it is clear to ones who will conduct weekly inspections. Since these inspection items are also applicable for the weekly inspections for RWP activities, please include these details in the Form SOP-6A too.		
RPP-30	SOP-7	Section 5.4	In addition to the annual RSO audit, the RSO should review on a monthly basis records of radiological contamination surveys and release surveys of personnel and equipment, instrument calibration and QA/QC checks, occupational exposure monitoring, and weekly inspections, at least during the months where RA or RI activities are being conducted. Please add this review to this SOP and provide a form that can be used to document RSO's monthly review. This SOP does not specifically discuss any RSO's visits to the site. RSO should visit the site periodically to ensure that the RPP is implemented properly. This SOP should indicate the visits and the frequency.		
RPP-31	SOP-8	Section 4.2	Please change the first part of the first sentence of the 4th paragraph to: "In the event of an unplanned release of licensed radioactive material, the Site Program Manager or RSO shall notify Cotter and the CDPHE as soon as practicable but no later than 24 hours upon discovery of any spill or release involving toxic or radioactive material....." Please also indicate that the initial notification and written report will be sent to CDPHE's and EPA's CERCLA project managers, in addition to the two phone numbers listed in this paragraph.		
RPP-32	SOP-8	Sections 4.2.2 and 4.2.3	Bullet item 8 of Section 4.2.2 and item 9 of Section 4.2.3: CDPHE should be notified as soon as practicable but no later than 24 hours upon discovery of any spill or release involving toxic or radioactive material.		

RPP-33	SOP-8	Section 4.2.2	Bullet item 6, the degree and urgency of the cleanup will also depend on the amount of soils impacted by the spill.		
RPP-34	SOP-8	Section 4.2.2	Please add to bullet item 5 to indicate that corrective measures will also be developed to prevent future occurrences.		
RPP-35	SOP-8	Section 5	Inventory of the IDWs generated and disposed of in the impoundments should be tracked and documented with the information including but not limited to: the amount (in tons and cubic yards for solid wastes or gallons/liters in liquid wastes), description of the wastes, radiological characteristics, locations where the wastes are generated, and date of disposal. This information should be filed in Site files as well as provided to CDPHE's contractor who maintains the overall inventory of the impoundments. Please add this tracking and record keeping activity to this section.		

Attachment 2:
EPA Region 8 Quality Assurance Project Plan QA Review Crosswalk

EPA REGION 8 CERCLA UFP QAPP DOCUMENT REVIEW CROSSWALK

QAPP/FSP/SAP for: *(check appropriate box)* [ ] **GRANTEE** [ ] **CONTRACTOR** [ ] **EPA** [x] **Other:**	**Entity** *(grantee, contract, EPA AO, EPA Program, Other)* Cotter Corporation (N.S.L)	**Regulatory Authority and/or Funding Mechanism**	___ **2 CFR 1500 for Grantee/Cooperative Agreements** ___ **48 CFR 46 for Contracts** ___ **Interagency Agreement (FFA/CERCLA)** _X_ **EPA/Court Order AOC/PRP** ___ **EPA Program Funding** ___ **EPA Program Regulation**
Document Title *[Note: Title will be repeated in Header]*	Phase I Risk Assessment Quality Assurance Project Plan Lincoln Park Superfund Site	**Review cycle**	New
QAPP/FSP/SAP Preparer	Wright Environmental Services, Inc.	**EPA Technical Reviewer**	
Period of Performance *(of QAPP/FSP/SAP)*	**12/2024 through 12/2026**	**Date Submitted for Review**	July 8, 2024 December 24, 2024
EPA Project Officer **EPA Project Manager**	Paul Stoick	**PO Phone #** **PM Phone #**	303-312-6908
QA Program Reviewer or Approving Official	1st QA Reviewer: Nathan Delhierro Record ID 363 Technical Reviewers: Paul Stoick/SEMD 2nd QA Reviewer: Nathan Delhierro 3rd QA Reviewer: Nathan Delhierro	**Date of Review**	1st R8 EPA QAB Received Revision 0, Dated 7/8/2024: Completed on 8/1/2024 2nd R8 EPA QAB Received Revision 0, Dated December 2024: Completed on 01/16/2025 3rd R8 EPA QAB Received Revision 0, Dated December, 2024 Portfolio file received on 1/27/25 with Appendix A and Appendix B: Completed on 01/31/2025.

Documents Submitted for QAPP Review **(QA Reviewer must complete)*:***

1. QA Document(s) submitted for review:

QA Document	Document Date	Document Stand-alone	Document with QAPP
QAPP	7/8/2024	[Yes] / No	
FSP		Yes / No	Yes / [No]
SAP		Yes / No	Yes / [No]
SOP(s)			[Yes] / No

2. WP/SOW/TO/PP/RP Date Click or tap to enter a date.
WP/SOW/TO/RP Performance Period Not Applicable

3. QA document consistent with the:
WP/SOW/PP? Yes / **[No]**
SOW/TO for contracts? Yes / No / [NA]

4. QARF signed by R8 QAM Yes / No / [NA]
Funding Mechanism IA / contract / grant / [NA]
Amount **Not Applicable**_____

Notes for Document Submittals:

1. A QAPP written by a Grantee, EPA, or Federal Partner must include for review:
Work Plan (WP) / Statement of Work (SOW) / Program Plan (PP) / Research Proposal (RP) and funding mechanism

2. A QAPP written by Contractor must include for review:
a) Copy of Task Order Work Assignment/SOW
b) Reference to a hard or electronic copy of the contractor's approved QMP
c) Copy of Contract SOW if no QMP has been approved
d) Copy of EPA/Court Order, if applicable
e) The QA Review must determine (with the EPA CO or PO) if a QARF was completed for the environmental data activity described in the QAPP.

3. a. Field Sampling Plan (FSP) and/or Sampling & Analyses Plan (SAP) must include the Project QAPP ***or*** must be a stand-alone QA document that contain all QAPP required elements (Project Management, Data Generation/Acquisition, Assessment and Oversight, and Data Validation and Usability).
b. SOPs must be submitted with a QA document that contains all QAPP required elements.

Summary of Comments *(highlight significant concerns/issues)*:

1. Comment: Please update the UFP-QAPP to resolve the inconsistencies between Cotter's UFP-QAPP and the risk assessment framework outlined in EPA's Phase 1 Risk Assessment Workplan (SRC, 2024), (RAWP). An example:
   a. State the Problem on WK #11 does not address the basis for human health and environmental concern at the site from mill operations and uranium processing by Cotter, resulting in contaminants being released into the environment as stated in Section 2.7 of the RAWP.

   Cotter Response & Date: (December 24, 2024) The UFP-QAPP was updated as requested. Specifically, the problem statement in Worksheet #11 has been updated to include additional detail on the source, migration pathways, affected media and COIs, and process for Phase 1 Risk Assessment to be more consistent with Section 2.7 of the RAWP, and a revision to Worksheet #11 Step 5 was made to indicate the approach taken if no RBSL is available for use.
   EPA Resolved (date): 1/3/2025

2. Comment: There are no references to Cotter's QMP in the appropriate WKs. Please reference and cite Cotter's QMP in the appropriate worksheets (WK) of this UFP-QAPP to ensure alignment between **Cotter's QMP** and their UFP-QAPP. One example: Cotter's QMP Section 4.1 states "*each employee responsible for collecting or generating any aspect of environmental information operations for the Lincoln Park Superfund Site shall read this QMP and the UFP-QAPP and sign the employee acknowledgement form (Appendix C) to verify understanding of the overall quality goals and personal responsibilities.*
   Cotter Response & Date: (December 24, 2024) Worksheet 29 has been updated to include the acknowledgement form in the Project Documents and Records
   EPA Resolved (date): 1/3/2024

3. Comment: For all UFP-QAPPs submitted to EPA for review and approval, each UFP-QAPP must be accompanied by a **completed Region 8 UFP-QAPP crosswalk** as stated in Cotter's QMP Section 3 *"The EPA Region 8 UFP-QAPP Crosswalk will be completed and submitted with UFP-QAPPs for review by the Agencies under the AOC/SOW as discussed in Section 5.3.4 of this QMP*." A blank UFP-QAPP crosswalk was received from Cotter on 7/8/2024 without entry. Cotter must respond to all comments including the Summary of Comments and the Comments column of this crosswalk, Cotter's response must also include the response date. When the revised UFP-QAPP is re-submitted, an EPA QA reviewer will review the revisions and document the review findings under "EPA Resolved (date)."
   Cotter Response & Date: (December 24, 2024) Responses have been added to this UFP-QAPP crosswalk and this UFP-QAPP crosswalk will be submitted with the revised UFP-QAPP.
   EPA Resolved (date): 1/3/2024

4. Comment: Please reference within the text of the UFP-QAPP worksheets, each attached **SOP** and when they are to be applied, and correct mislabeled SOPs (see a. below).
   a. Worksheet #21 identifies SOP-LPSS-E-033 as the Organic Vapor Analyzer Calibration, but the attached SOP for Organic Vapor Analyzer Calibration is titled as Number: SOP-LPSS-E-030, SOP-LPSS-E-130 is identified as the Groundwater Level Measurements, but the attached SOP is titled Number: SOP-LPSS-A-010, and SOP-LPSS-E-170 as the Air Sampling and Analysis of Samples, but the attached SOP for Air Sampling and Analysis of Samples is titled as Number: SOP-LPSS-E-105. Note: correction email for the portfolio sent by Cotter on 7/11/2024 and 7/30/24.
   b. One example of SOPs attached but not within the scope of this UFP-QAPP is SOP-LPSS-E-240 Borehole and Monitoring Well Abandonment is attached, but as currently written, well abandonment is not within the scope of this UFP-QAPP.
   c. Administrative SOPs LPSS-A-010 for preparation and revision of SOPs are not referenced in WK #21. LPSS-A-020 for control of documents is not referenced in WK #29. LPSS-A-040 Assessment SOP is not referenced in WK #31 ,32, 33 for Assessments and Corrective Actions.
   d. Worksheet #18 incorrectly identifies SOP-LPSS-E-100 for Sediment Sampling, this should be SOP-LPSS-E-110

   Cotter Response & Date: (December 24, 2024) a) Worksheet 21 has been revised to correctly reference the appropriate SOPs. b) The borehole and monitoring well abandonment SOP is included in the event that one of the boreholes or wells cannot be completed and must be abandoned. c). The requested SOPs have been referenced on the requested worksheets. SOP-LPSS-A-010 is an administrative SOP, not a field SOP, for creating Cotter specific SOPs. It is not included on Worksheet 21 as it is included in the referenced QMP.
   d). Worksheet 18 has been revised to identify the appropriate SOPs
   EPA Resolved (date): Not Resolved. Please attach Appendix B (Arcadis SOPs) to the QAPP, referenced in WK #21.
   EPA Resolved (date): 1/31/2025 Received on 1/27/2025

5. Comment: Exhibit 2 Resident Survey Form collects Personally Identifiable Information (PII). Cotter must revise the UFP-QAPP to define their process for protecting PII in compliance with 5 U.S.C. § 552a and EPA's Privacy Policy. The *Outreach* described in WK #17 associated with the Resident Survey Form are inconsistent with organizational chart on Worksheets #3 & 5; The Community Advisory Group, members of the public, and other project stakeholders, are omitted. This is also inconsistent with Cotter's QMP Figure 2-1 and AOC Section 13 stating "*The Agencies will develop and implement community relations activities for the Site and the RI/FS*". Please revise the document to describe Cotter's interactions with the community throughout the QAPP, QMP and AOC.
   Cotter Response & Date: (December 24, 2024). The header *Outreach* in Worksheet 17 was incorrectly used. The subsection has been retitled to *Private Property Owner and Resident Contact* and information has been included as to how Cotter will interact with the community at the direction of the Agencies in accordance with the AOC/SOW. Text has been added to Worksheet 17 as to the process for protection of personally identifiable information.
   EPA Resolved (date): 1/3/2025

6. Comment: Please revise all statements for soils "*Field duplicate samples will be collected as a split of the primary sample*" and use **Co-located duplicate** sampling as defined in ISM as "*a set of two separate samples taken a few inches apart*", not splitting one primary sample into two. The contrast of a split versus co-located field duplicates for soil at Team Track, Nonac, Old Berta Yard and Fourth Street, would be to provide important information for example: about the spatial heterogeneity and associated sampling error. Analytical laboratory duplicates already take two subsamples from the same field sample for separate analysis, as a standard lab QC practice.
   Cotter Response & Date: (December 24, 2024). As scoped with the Agencies, ISM sampling is not being conducted at the OU3 subareas because nature and extent is not known. Nature and extent will be investigated in the OU2 Groundwater/OU3 RI QAPP. The focus of the investigation at OU3 subareas is identification of maximum COI concentrations in soil. Although the analytical laboratories split samples for laboratory duplicates, those duplicates may not occur on samples submitted as part of this investigation as other samples may be included in a sample batch or at the frequency of quality assurance samples required for this investigation. With biased sampling at the OU3 subareas, spatial heterogeneity is by sampling design. The split sample will provide quality assurance information on the laboratory. Text was not revised as a result of this comment.
   EPA Resolved (date): 1/15/2025 Note: Per RPM directive, Cotter will not be collecting ISM samples at OU3, rather discrete samples with the objective of the sampling to identify maximum COI concentrations in soil.

7. Comment: Please include all Field Equipment Manuals referenced e.g. Solinst Water Level Meter, YSI Water Quality Monitoring System, Ludlum Model 44, etc.
   Cotter Response & Date: (December 24, 2024) The SOPs have been revised and as specific field equipment models are not known at this time, the manuals cannot be provided. They will be available in the field with the instruments.
   EPA Resolved (date): Not Resolved. Please make the Field Equipment Manuals or SOPs available for all field equipment listed in WK #22.
   Cotter Response & Date:
   EPA Resolved (date):

8. Comment: Please complete WK #37 Step 5 to state limitations of using data based on Cotter's selection of **judgmental sampling design**. For example, judgmental sampling does not allow the level of confidence (uncertainty) to be accurately quantified and inferences cannot be made outside of the units actually analyzed or to be extrapolated. Please also modify your use of professional judgement "*Since statistical analysis are not relevant to this work phase, selection of sample locations is based on the professional judgement considering the current site conceptual model to meet the investigation purpose and objectives*." Professional judgement should not be confused with judgmental sampling design. Cotter's UFP-QAPP defaults to *professional judgement* for NONAC soils which does not align with the risk assessment framework outlined in EPA's Phase 1 Risk Assessment Workplan. The UFP-QAPP WK #17 is inconsistent with the RAWP Section 5.1 Soil Sampling for Risk Assessment and Section 5.6.3.1 OU3-Soil for *Triplicate ISM surface soil samples,* (ITRC 2020).
   Cotter Response & Date: (December 24, 2024)
   Per EPA 2002 Guidance on Choosing a Sampling Design for Environmental Data Collection (EPA QA/G-5S), Section 4.1 Judgmental Sampling is appropriate when:
   - Relatively small-scale features are under investigation
   - There is reliable historical and physical knowledge about the feature under investigation
   - The objective is to screen an area for the presence or absence of contaminations at levels of concern, such as risk-based screening levels.

   The judgmental sampling proposed for the OU3 soils is appropriate because the OU3 subareas are relatively small, there is reliable information regarding the historical ore transfer location, and the objective to the P1RA is to determine COPC/COPECs based on COIs exceeding the PALs.

   Judgmental sampling can limit the statistical inferences and extrapolations that can be made between the sampled area to the larger operable unit. However, for the OU3 subareas, the historical knowledge and understanding of the OU3 subareas will produce sufficient data to evaluate presence or absence of COIs at the PAL risk-based screening levels. Additional text has been added to Worksheet #37 to indicate that judgmental sampling design will be taken into consideration when extrapolating COI exceedances across the entire subareas. Additional investigation may be necessary based on identified limitations.

   All elements of this sampling were discussed and scoped with the EPA and CDPHE. The sampling in this UFP-QAPP differs from the EPA RAWP after discussions with the Agencies to focus sampling to identify maximum concentrations of COI in various media to help to identify COPC and COPEC. Worksheet 17 has been revised to better explain sampling for maximum COI concentrations in various media.

   EPA Resolved (date): 1/15/2025 Note: Per RPM, the full sampling approach is not stated and deviates from the RAWP; however, the process is similar enough to MARSSIM approach and acceptable for this initial phase of the investigation.

9. Comment: Cotter Meeting Notes are attached in WK #9, however approval of the UFP-QAPP does not mean an approval of the accuracy of Cotter's meeting notes.
   Cotter Response & Date: (December 24, 2024). Comment acknowledged. These meeting notes were previously submitted to the Agencies and any comments incorporated before finalization.
   EPA Resolved (date): 1/3/2025

10. A separate EPA and CDPHE UFP-QAPP Review Crosswalk has been provided by the EPA and CDPHE technical reviewers.

Element	*Acceptable* Yes / No / NA	**Comments:**
Worksheets #1 & #2: Title and Approval Page		
A. Document title contains identifying information: Site/project name, Site location, Operational Unit (OU), project stage, and CERCLA phase.	~~No~~ Yes	EPA Comments: Please revise the header on all pages to reflect the full document title on the cover sheet to include OU1/OU2/OU3. Cotter Response & Date: (December 24, 2024). The title of the document has been revised to remove OU1/OU2/OU3. EPA Resolved (date): 1/3/2025
B. Includes Lead Organization (Federal Facility or PRP), Lead Organization Project Manager (name/title/signature/date), Lead Organization Quality Manager (name/title/signature/date)	Yes	
C. Includes USEPA Region 8 Remedial Project Manager/Designated Approving Official -or- Remedial Project Manager and Quality Assurance Manager (name/signature/date) Mary Goldade, EPA Region 8 Quality Assurance Manager	Yes	
D. State Regulatory Agency, if applicable (name/title/signature/date)	Yes	
E. Other stakeholders as needed, including at minimum the project manager and QA representative of the organization preparing the QAPP	Yes	
F. Plans and reports from previous investigations relevant to this project	Yes	
G. Identifies guidance used to prepare QAPP.	~~No~~ Yes	EPA Comments: Please ensure documented alignment between Cotter's QMP and the Phase 1 Risk Assessment UFP-QAPP. Cotter must follow their QMP in preparation of the UFP-QAPP and for implementation of environmental information operations (EIO). See Summary of Comments #2. Cotter Response & Date: (December 24, 2024) The QMP has been added to Worksheet 1 & 2. EPA Resolved (date): 1/3/2025
H. List dates of scoping sessions.	Yes	
I. List dates and titles of QAPP documents written for previous site work, if applicable:	NA	EPA Note: There is a Final Phase 1 Risk Assessment Work Plan
J. List organizational partners (stakeholders and data users) and connection with lead organization	Yes	
K. If any required QAPP elements and required information are not applicable to the project, then circle the omitted QAPP elements and required information on the attached table. Provide an explanation for their exclusion.	Yes	

Element	*Acceptable* Yes / No / NA	Comments:
L. Document should indicate both project specific and generic QAPPs should be reviewed annually by the lead organization's project manager. Project-specific and generic QAPPs must be kept current and be revised, when necessary, when directed by the approval authority, or at least every 5 years.	~~No~~ Yes	EPA Comments: Please revise WK #1, 2 page 2 to include the requirement for annual review of the UFP-QAPP documented on Region 8 *UFP-QAPP crosswalk* in alignment with Cotter's QMP. See Summary of Comments #3. Cotter Response & Date: (December 24, 2024) Text revised as requested. EPA Resolved (date): 1/3/2025
Worksheets #3 & #5: Project Organization and QAPP Distribution		
A. Organization chart provided: Depicts key personnel, lines of authority, and lines of communication among the lead agency, prime contractor, subcontractors, and regulatory agencies	Yes	
B. Documents recipients of controlled copies of the QAPP (use asterisks on chart to designate QAPP recipients)	Yes	
C. Identify reporting relationships between all organizations involved in the project, including the lead organization and all contractor and subcontractor organizations. Identify the organizations providing field sampling, on-site and off-site analysis, and data review services, including the names and telephone numbers of all project managers, project team members, and/or project contacts for each organization.	Yes	
D. Check box - EPA Contract Laboratory Services (CLP) ☐ Yes ☒ No Quality Management Plan ☐ Yes ☐ No ☒ NA QMP Title:	Yes	
Worksheets #4, #7 & #8: Personnel Qualifications and Sign-off Sheet		

Element	*Acceptable* Yes / No / NA	Comments:
This worksheet lists individuals' project titles or roles; qualifications; and any specialized/non-routine training, certifications, or clearances required by the project, e.g., explosives and ordnance disposal (EOD) technician, Professional Engineer, Certified Professional Geologist, etc.	~~No~~ Yes	EPA Comments: Please revise WK # 4,7,8 to reflect the specific contractors selected for all tasks identified in the UFP-QAPP, along with their specific role. Please provide the Name, Project Title/Role for each. For example: Validata Chemical Services for Data Validation, each Eurofins Laboratory, Brown & Caldwell for Risk Assessment. Is there a Drilling contractor selected for well installation for this phase? Etc. Cotter Response & Date: (December 24, 2024) Worksheet #4, 7, and 8 has been revised as requested EPA Resolved (date): 1/15/2025 EPA Comments: Please complete WK # 4,7,8 where *TBD* is currently indicated e.g., *Health & Safety Coordinator, Field Team Leader, Contract Project Manager, Laboratory QA Manager, Data Validation* etc. Key Staff: *QA Staff, Procurement Specialists, Analytical Laboratories, Contract Project Manager and Other Contractors* need to be specified in the UFP-QAPP in alignment with Cotter's QMP Section 2.5.1. Cotter Response & Date: (December 24, 2024) Worksheet #4, 7, and 8 has been revised as requested. Some current staff members are not known at this time. The QAPP will be updated as personnel are identified. EPA Resolved (date): 1/15/2025 EPA Comments: Please identify *Assessment Personnel*, in alignment with Cotter's QMP Section 11.3.1. Cotter Response & Date: (December 24, 2024) Assessment roles have been added to Cotter, Program Manager and QA Manager EPA Resolved (date): 1/15/2025
Worksheet #6: Communication Pathways		
A. The communication pathways must include each step of the project (planning, sampling, analysis, and data decision) This worksheet should be used to document specific issues (communication drivers) that will trigger the need to communicate with other project personnel or stakeholders. Its purpose is to ensure there are procedures in place for providing the appropriate notifications and generating the appropriate documentation when handling important communications, including those involving regulatory interfaces, unexpected events, emergencies, non-conformances, and stop-work orders.	~~No~~ Yes	EPA Comments: Please complete WK #6 *Procedure* column for *Analytical Corrective Actions* as it is not filled out and include all *Organizations* as Eurofins Denver QA Manager is the only person listed, but Lancaster and St. Louis are laboratories identified in the UFP-QAPP. Cotter Response & Date: (December 24, 2024) Worksheet #6 has been revised as requested. Eurofins Lancaster is being subcontracted by Eurofins Denver so all communications go through Eurofins Denver. EPA Resolved (date): 1/15/2025
B. Communication drivers are those activities that necessitate communication between different responsible entities. These drivers can include, but are not limited to: • Approval of amendments to the QAPP • Initiation, notification and/or approval of real time modifications • Notification of delays or changes to field work • Recommendations to stop work and initiation of corrective action • Reporting of issues related to analytical data quality, including, but not limited to, ability to meet reporting limits	Yes	
Worksheet #9: Project Planning Session Summary		

Element	*Acceptable* Yes / No / NA	Comments:
A. Identifies all electronic data deliverables (EDDs) that will be submitted for the project and the required fields for each EDD, using the Region 8 Format for EQuIS Data Processor (EDP)	~~No~~ ~~No~~ Yes	EPA Comments: Please identify all electronic data deliverables (EDD) and required fields for each EDD for this phase of the project. Cotter Response & Date: (December 24, 2024) The EDD requirements and format for laboratory deliverables to be incorporated into the EQuIS databased are provided in SOP-ARC-20, included in Appendix B and listed in Worksheet #23. The EDD requirements for export from the EQuIS database to the SCRIBE database are included in Appendix B. EPA Resolved (date): Not Resolved. Please attach Appendix B (Arcadis SOPs) to the QAPP. EPA Resolved (date): 1/31/2025 Received on 1/27/2025
B. Provides a worksheet for each internal and external project planning session (including phone, web-conferencing, and/or face-to-face)	~~No~~ Yes	EPA Comments: Please correct WK#9 for Katelyn Lavrich's *Organization* as **EPA**. Please correct Nathan Delhierro as EPA/R**8**. Cotter Response & Date: (December 24, 2024) Worksheet 9 has been revised to update EPA R8 for Ms Stocksdale and EPA/R8 for Mr. Delheirro on Worksheet 9 EPA Resolved (date): 1/16/2025
C. Include a description of the project's scoping decisions and action items	Yes	
D. Include Data Needs Worksheet – Analyte, Matrix, Regulation, User, etc.	Yes	
E. The QAPP must document the environmental decisions that need to be made and the level of data quality needed to ensure that those decisions are based on sound scientific data.	Yes	
Worksheet #10: Conceptual Site Model		
A. Background information/site history (may already have been presented in Executive Summary)	Yes	EPA Note: The EPA QA review has confirmed that the information is present, as we do a completeness check against the UFP-QAPP requirements. A separate EPA and CDPHE QAPP Review Crosswalk has been provided by the EPA and CDPHE technical reviewers.
B. Sources of known or suspected hazardous waste	Yes	
C. Known or suspected contaminants or classes of contaminants	Yes	
D. Primary release mechanism, secondary contaminant migration, and fate and transport considerations	Yes	
E. Potential receptors and exposure pathways, land use considerations	Yes	
F. Key physical aspects of the site (e.g. site geology, hydrology, topography, climate)	Yes	
G. Current interpretation of nature and extent of contamination to the extent that it will influence project-specific decision-making, data gaps and uncertainties associated with the Conceptual Site Model	Yes	

Element	*Acceptable* Yes / No / NA	Comments:
Worksheet #11: Project/Data Quality Objectives		
A. Provides the project quality objectives or data quality objectives using a systematic planning process such as EPA's Data Quality Objectives Process (EPA-QA/G-4, February 2006) or the U.S. Army Corps of Engineers' Technical Project Planning Process (USACE EM 200-1-2, 29 February 2016) document	Yes	
B. States the problem consistent with information contained in QAPP Worksheet #10	~~No~~ Yes	EPA Comments: Please add to *state the problem* consistent with the basis for Human Health and Environmental Concern as stated in Section 2.7 in the Phase 1 Risk Assessment Work Plan (RAWP). See Summary of Comments #1. Cotter Response & Date: (December 24, 2024) The problem statement in Worksheet #11 has been updated to include additional detail on the source, migration pathways, affected media and COIs, and process for Phase 1 Risk Assessment to be more consistent with Section 2.7 of the RAWP. EPA Resolved (date): 1/15/2025 EPA Comments: Please identify all worksheet # in the footer e.g. Worksheet #11, #20, etc., so that all worksheets are readily identifiable on each page. Cotter Response & Date: (December 24, 2024). Worksheet number has been added to the footer. EPA Resolved (date): 1/15/2025
C. Identifies specific study questions and defines alternative outcomes; explains how the data will be used to answer questions and choose among the stated alternatives (must be more specific than "nature and extent of contamination")	Yes	Note: The Principal Study Questions (PSQs) and Potential Outcomes are focused on Step 1 of the risk assessment process; a future baseline Risk Assessment will incorporate the Risk Assessment Guidelines for Superfund (RAGS) for baseline risk assessment e.g. exposure assessment, toxicity assessment, and risk characterization.
D. Specifies the types of data that are required to fill gaps in the Conceptual Site Model; explains in specific terms how all data will be used; identifies information inputs consistent with decisions made during project scoping consistent with QAPP Worksheet #9	Yes	
E. Specifies the target (statistical) populations and characteristics of interest; defines spatial/temporal limits and the scale of inference - which (statistical) populations will be represented by which data; develops focused list of target analytes	Yes	
F. Defines the parameter(s) of interest, specify the types of inference and which sample results will be used to support which decisions. Uses "if…then" statements for decision problems and/or the estimator and estimation procedure for estimation problems	~~No~~ Yes	EPA Comments: Please complete the *Logic for Drawing Conclusions from Findings:* <u>*Decision Rule:*</u> in WK #11, consistent with the Decision Rules in Step 5: Develop the Analytical Approach of the RAWP. One example: what should be done if the COI does not have a RBSL? etc. See Summary of Comments #1. Cotter Response & Date: (December 24, 2024) Worksheet #11 was modified as requested. This statement was added to the ecological risk portion of Step 5 (a similar statement is made for human health): *If an ecological risk screening level is not available, the COI will be retained for additional analysis as a source of uncertainty*. EPA Resolved (date): 1/15/2025

Element	*Acceptable* Yes / No / NA	Comments:
G. Specifies probability limits for decision errors for projects that involve hypothesis testing and/or specifies performance (new data) or acceptance (existing data) criteria for estimations or other analytic approaches	Yes	
H. Briefly explains the rationale for the sampling design; refers to subsequent worksheets for sampling design details and analysis design requirements	~~No~~ Yes	EPA Comments: Please detail the sampling design and rationale for ISM samples referenced in WK #17 OU2 Soils and Private Wells. The ITRC method requires establishing DU boundaries that define the scale of decision-making and/or scale the data to spatially structure the assessment and by collecting a sufficient quantity of increments for each DU, typically **30-100 increments** and total mass of 1-3 kg (workplan states 30-60 increments.) Please include information on how the DU are determined and detail the basis of how DUs and EUs will be defined and decisions to be made based on the Phase 1 results. Note the Incremental Sampling SOP-LPSS-E-105 is not referenced in the UFP-QAPP WK #18. Cotter Response & Date: (December 24, 2024) Worksheet 17 has been updated to include information on how DU are to be determined, defined, and communications with the Agencies for approval of these DU. EPA Resolved (date): 1/15/2025. Note: Cotter will develop the DU and submit them to the Agencies for comment and approval before collecting ISM samples for privately irrigated soils.
I. Assesses what analytical resources will meet the analytical needs (Regional laboratory, CLP, direct contract, subcontract), including any special requests or modified analysis for the Regional laboratory or CLP	Yes	
Worksheet #12: Measurement Performance Criteria		
A. Provides a worksheet for each type of field or laboratory measurement; for analytical methods, criteria are determined for each matrix, analyte, and concentration level	Yes	
B. Each worksheet provides quantitative measurement performance criteria in terms of precision, bias, and sensitivity	Yes	
Worksheet #13: Secondary Data Uses and Limitations		
A. Identifies sources of secondary data (sampling and testing data collected during previous investigations, historical data, background information, interviews, modeling data, photographs, aerial photographs, topographic maps, and published literature)	Yes	
B. Discusses the rationale for using this data and explains its relevance to the project	Yes	
C. Identifies factors affecting the reliability of data and limitations on data use, including how limitations will be communicated to all end data users and stakeholders	~~No~~ Yes	EPA Comments: Please specify the "*performance or acceptance criteria*" in WK #13 for review of existing information consistent with Cotter's QMP Section 11.1.2. Cotter Response & Date: (December 24, 2024) Worksheet 13 has been updated to identify performance and acceptance criteria for secondary data. EPA Resolved (date): 1/16/2025. Note: Sources listed in WK #13 and acceptance criteria and limitations on use were verified by Technical and accepted for this Initial Phase. For future UFP-QAPPs with Secondary Data, Cotter may find EPA QA/G-5 Chapter 3 useful for developing WK #13.
Worksheets #14 & #16: Project Tasks & Schedule		

Element	*Acceptable* Yes / No / NA	Comments:
Provides a summary of key on-site and off-site activities, the person or group responsible for each activity, planned start and end dates, deliverables to be produced, and deliverable due dates (may be table or Gantt Chart)	~~No~~ Yes	EPA Comments: Please revise the *Responsible Party* column in WK # 14/16 to include the specific contractors selected for all activities for: Validata Chemical Services for Data Validation, each Eurofins Laboratory, Brown & Caldwell for Risk Assessment. Is there a Drilling contractor selected for well installation for this phase? Etc. Cotter Response & Date: (December 24, 2024) Worksheet revised as requested. EPA Resolved (date): 1/15/2025
Worksheet #15: Project Action Limits and Laboratory-Specific Detection/Quantitation Limits		
A. Provides a worksheet for each type of field or laboratory measurement; criteria are determined for each matrix, analyte, analytical method, and concentration level	~~No~~ ~~No~~ Yes	EPA Comments: Please attach each third-party laboratory (Eurofins Denver, St. Louis and Lancaster) accreditation certificates to the UFP-QAPP, consistent with Cotter's QMP Section 11.3.1, and specify which analytical methods will be conducted at each laboratory. Cotter Response & Date: (December 24, 2024) The accreditation certificates for each Eurofins laboratory are included in Appendix B. EPA Resolved (date): Not Resolved. Please attach Appendix B (Eurofins QA Manuals) to the QAPP, EPA Resolved (date): 1/31/2025 Received on 1/27/2025
B. If critical contaminants/analytes of concern have been identified, lists the Project Action Limit (actual numerical criteria) for each analyte and the reference upon which it is based (such as MCLs or other ARARs, risk assessment screening levels, etc.); If critical contaminants/analytes of concern have not yet been identified, provides target analytes and their screening levels for each analyte group and the reference upon which they are based. Identifies Project Quantitation Limit Goals below the Project Action Limit or screening level for the analyte; highlights the critical contaminants/analytes for project decision-making. If applicable, discusses where levels cited will not be analytically achievable or identifies the modifications needed to the laboratory's SOP to achieve them	Yes	

Element	*Acceptable* Yes / No / NA	Comments:
C. Provides laboratory-specific detection and quantitation limits for comparison to Project Quantitation Limit Goal. Laboratory provides documentation that demonstrates precision and bias at the laboratory-specific quantitation limit (at lowest calibration standard)	~~No~~ Yes	EPA Comments: Please address Reporting Limits and Laboratory MDLs highlighted in red text, as the numbers must be less than the risk-based PAL, or subsequently identified as a source uncertainty and discussed in the screening-level risk assessment for inadequate detection, consistent with the RAWP Section 4 Step 6. The UFP-QAPP Section 10.2 Project Action Limits were changed to ½ of Reference Limits to elevate Laboratory RLs to accommodate for sample-specific RLs and 1/5th for sediments. Please provide the rationale or guidance to determine these fractions. EPA Note: Air sample reporting was changed from concentration to "quantity" and reported as picocuries and micrograms. EPA Regional Screening Levels are in units ug/m^3) and radionuclide screening levels are in units of pCi/m^3. Please ensure unit consistency for comparisons. Cotter Response & Date: (December 24, 2024) Per Agency comments, Worksheet 15 was revised for clarity and to ensure the correct (lowest) values were selected to be the Project Action Limits (PALs). Instances where PALs are less than MDLs were flagged and are noted as a source of uncertainty. Adjustments of reference limits by a factor of 1/2 or 1/5 were removed from Worksheet 15. The air sample results will be comparable with the screening levels as discussed in Worksheet 15. EPA Resolved (date): 1/13/2025 EPA Comments: Please revise WK#15 to remove the word absence. "*Observations between the RL and MDL, if reported, would be considered estimated ("J" values) but are valid for confirming **absence** or presence."* The Laboratory Reporting Limits (RLs) in the UFP-QAPP highlighted red are higher than the Project Action Limits (PAL)s. "J" flagging these values "*if reported*" cannot confirm the **absence** of an analyte where the laboratory RL is higher than the Project Action Limit. Cotter Response & Date: (December 24, 2024) Worksheet 15 has been revised to ensure that the correct (lowest) values were selected to be the Project Action Limits (PALs). Instances where PALs are less than MDLs were flagged and are noted as a source of uncertainty. The text in Worksheet 15 was revised to omit "absence". While estimated, a j-flagged value was positively identified by the lab. This positive identification is not dependent on whether the MDL or RL are greater than or less than the PAL. EPA Resolved (date): 1/15/2025
Worksheet #17: Sampling Design and Rationale		
A. Provides design of the sampling/collection network, including physical and temporal boundaries, basis for dividing the site into decision units, basis for number and placement of samples, sample location maps or diagrams, alternate locations, process for determining sample locations in the field (if applicable), and field condition contingencies	~~No~~ Yes	EPA Comments: Please provide the precise geo-spatial locations of OU1 Air samples, consistent with the RAWP "*Air sampling should be conducted at a minimum at the four cardinal directions along the perimeter of the Restricted Area. This will capture COI concentrations in the predominant downwind direction as well as inform Phase II sampling efforts*." Note: 2 proposed air sampling locations are identified on Figure 17-14. Cotter Response & Date: (December 24, 2024) The RAWP states that *This document presents a **framework** for collecting data to conduct screening-level human health and ecological risk assessments at the Lincoln Park Superfund Site, located in Cañon City, Colorado (Site). This framework outlines data criteria that should be considered by the Potentially Responsible Party (PRP) when developing the sampling Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) and associated field sampling and workplan documents. Sampling information contained within this framework document is **suggestive** and should be **discussed** with the Environmental Protection Agency (EPA) during development of the sampling UFP-QAPP/workplan/field sampling plan.* The Phase I Risk Assessment is looking for maximum concentrations not nature and extent which would be the objective of the OU1 Remedial Investigation. This has been discussed with EPA and CDPHE. Two air samplers will be sampled that have historically shown the highest constituent concentrations. The spatial locations are included in Worksheet 18. Additionally air samplers will be sampled in the nature and extent investigation in the OU1 RI. EPA Resolved (date): 1/13/2025 EPA Comments: Please provide the basis for collecting the number of samples in worksheets #17: a. 18 sample locations for NONAC soils, b. 19 samples for Fourth Street Depot Soil, c. 10 sample locations for Old Berta Yard Soil, and d. 10 sample locations for Teamtrack Soil Cotter Response & Date: (December 24, 2024) Worksheet 17 has been updated to provide the rationale for the number of samples in the OU3 Subareas. EPA Resolved (date): 1/13/2025

Element	*Acceptable* Yes / No / NA	Comments:
B. Provides a discussion regarding the basis for selection of probability-based designs vs. judgmental designs	~~No~~ Yes	EPA Comments: Please provide the basis for selection of "***judgmental sampling design*** *will be used to identify and sample locations of maximum concentrations".* Cotter Response & Date: (December 24, 2024). Per EPA 2002 Guidance on Choosing a Sampling Design for Environmental Data Collection (EPA QA/G-5S), Section 4.1 Judgmental Sampling is appropriate when: • Relatively small-scale features are under investigation • There is reliable historical and physical knowledge about the feature under investigation • The objective is to screen an area for the presence or absence of contaminations at levels of concern, such as risk-based screening levels. The judgmental sampling proposed for the OU3 subarea soils is appropriate because the OU3 subareas are relatively small, there is reliable information regarding the historical transfer location, and the objective to the P1RA is to determine COPC/COPECs based on COIs exceeding the PALs. Judgmental sampling can limit the statistical inferences and extrapolations that can be made between the sampled area to the larger OU. However, for the OU3 subareas, the historical knowledge and site understanding of the OU3 subareas will produce sufficient data to evaluate presence or absence of COIs at the PAL risk-based screening levels. The following text has been added to or revised in Worksheet 17. *Abundant historical data are available and, although potentially not sufficient for remedial action decision making, these data inform the CSM and current preliminary understanding of contaminant nature and extent (see Worksheet #10). Selected sample locations target areas of known or suspected maximum COI concentrations based on historical data and the current CSM.* Biased sample locations are either based on historical information to aid in the identification of locations where maximum concentrations of COI are likely to be identified or located based on VSP. EPA Resolved (date): 1/13/2025
Worksheet #18: Sampling Locations and Methods		
A. Provides a table with type and number of samples required for collection such as surface soil, subsurface soil, or groundwater, preferably by individual Sample ID and collection frequency (if applicable), though sample groups may be listed in a single row	~~No~~ Yes	EPA Comments: Please add the sample collection frequency to Tables in WK #18. Cotter Response & Date: (December 24, 2024). Sample collection frequency is included either in the comments column or as a footnote to the tables in worksheet 18 EPA Resolved (date):1/13/2025
B. Identifies each sample type using matrix codes and descriptions found in the Region 8 Reference Values for EQuIS	Yes	
C. Uses existing Station IDs where available in EQuIS for the planned location (matched by latitude/longitude).	~~No~~ Yes	EPA Comments: Please provide the 20 OU1 soil sample spatial locations identified in WK #17. "*The spatial locations identified in ArcGIS Pro will be exported to a GPS unit and field located at the time of sampling."* Cotter Response & Date: (December 24, 2024) The general OU1 sample locations are shown on Figure 17-15 and the final locations may change in the field based on accessibility. Text has been revised in and spatial locations added to Worksheet 17. EPA Resolved (date): 1/10/2025 EPA Comments: Please add the spatial locations of the 29 private well irrigated soils for OU2 target parcels referenced WK#17. *"Once the target parcels have been identified, adjacent and nearby parcels will be reviewed to determine which may be suitable as reference areas"* for OU2 private well-irrigated soil. EPA Note: Personally Identifiable Information (PII) is being collected. See Summary of Comments #5. Cotter Response & Date: (December 24, 2024) The locations and number of the private wells in Lincoln Park will be identified after a well survey of Lincoln Park because the DWR database does not give precise coordinates and the wells could be within a quarter section and the accuracy of the information in the DWR database is not known. Worksheet 17 has been revised to include text to discuss the well survey and personally identifiable information. EPA Resolved (date): 1/10/2025

Element	*Acceptable* Yes / No / NA	Comments:
D. Provides the sample collection method for each sample or sample group and references the applicable sampling SOP	Yes	
E. Referenced sampling SOPs are attached to the QAPP	Yes	
F. Provides the analytes or analyte groups for each sample or sample group	Yes	
Worksheets #19 & #30: Sample Containers, Preservation, and Hold Times		
A. Provides a worksheet for each laboratory used and lists any required accreditations/certifications for the laboratory; attaches accreditations/certifications to the QAPP	Yes	
B. For each analyte/analyte group and matrix pair, provides the analytical method reference, accreditation expiration date for the laboratory for that analyte/matrix/method combination (if global expiration date, this may be in the header	Yes	
C. For each analyte/analyte group, matrix, and analytical method, provides container(s) (Number, size, and type per sample), preservation requirements, preparation holding time, analytical holding time, and data package turnaround	Yes	
Worksheet #20: Field QC Summary		
For each matrix and analyte/analytical group pair, provides a summary of the number of field samples, the number, and types of field QC samples to be collected, and the total number of analyses (field and field QC samples combined)	~~No~~ Yes	EPA Comments: Please revise all statements for soils "*Field duplicate samples will be collected as a split of the primary sample at a rate of 10% of primary samples (e.g., 2 duplicate).*" and use **Co-located duplicate**. See Summary of Comments #6. Note: SOP-LPSS-E-140 states 5% duplicates and 5% blanks for groundwater. Cotter Response & Date: (December 24, 2024) See response to Summary of Comments #6. SOP-LPSS-E-140 has been replaced with a contractor SOP. EPA Resolved (date): 1/16/2025
Worksheet #21: Field SOPs		
Lists SOPs (including title, revision, date, and originating organization) containing detailed procedures for all field activities, including sample collection, sample preservation, equipment cleaning and decontamination, equipment testing, maintenance, and inspection, and sampling handling and custody and notes any project-specific options or modifications, if applicable)	~~No~~ Yes	EPA Comments: Please correct mislabeled Field SOPs and remove Field SOPs outside the scope of this UFP-QAPP. See Summary of Comments #4. Cotter Response & Date: (December 24, 2024) See response to Summary of Comments #4 EPA Resolved (date): 1/10/2025
Worksheet #22: Field Equipment Calibration, Maintenance, Testing, and Inspection		
A. Provides a list of all in-situ testing instruments and field equipment	Yes	

Element	*Acceptable* Yes / No / NA	Comments:
B. Documents the procedures for calibrating, maintaining, testing, and/or inspecting all field equipment	Yes	
C. Identifies the individual(s) responsible for field equipment	Yes	
D. Includes frequency, acceptance criteria, and corrective action or references and attaches the relevant SOP or manufacturer's instructions	No No	EPA Comments: Please include all Field Equipment Manuals e.g. Solinst Water Level Meter, YSI Water Quality Monitoring System, Ludlum Model 44, etc. See Summary of Comments #7. Cotter Response & Date: (December 24, 2024) Worksheet 22 has been revised. The exact model of equipment is not known at the writing of this QAPP and therefore the manual for the model of the field equipment is not known or available. Operations manuals for all field equipment will be available in the field. EPA Resolved (date): Not Resolved. Please include all Field Equipment Manuals or SOPs. See Summary of Comments #7. Cotter Response & Date: EPA Resolved (date):
Worksheet #23: Analytical SOPs		
A. List SOPs (including title, revision, and date) containing the specific sample preparation and analytical procedures to be used to perform on-site or fixed laboratory analysis for each matrix/analytical group; indicate whether the procedure produces screening or definitive data; note any project-specific options or modifications, if applicable	Yes	
B. Referenced analytical SOPs are attached to the QAPP	Yes	
Worksheet #24: Analytical Instrument Calibration		
A. Identifies all analytical instruments, whether used in the field or the laboratory	Yes	
B. For each instrument, identifies the calibration procedure and title/position responsible for corrective action; references and attaches the SOP or identifies the calibration range, frequency, and acceptance criteria, and corrective action in the table; calibration process should link the calibration to a specific instrument identification number	Yes	
Worksheet #25: Analytical Instrument and Equipment Maintenance, Testing, and Inspection		
For a laboratory with a quality system that conforms to ISO 17025:2017, the laboratory's quality manual may be referenced for this work sheet; otherwise, or if project-specific modifications apply, lists each analytical instrument/equipment that requires maintenance, testing, and inspection activities, list those activities, and provides the frequency, acceptance criteria, corrective action, title/position responsible for corrective action, and reference for those activities	~~No~~ ~~No~~ Yes	EPA Comments: Please attach Eurofins QA manuals for each location identified in the UFP-QAPP (Lancaster, Denver, St. Louis). Cotter Response & Date: (December 24, 2024) Eurofins QA manuals are provided in Appendix B. Worksheet 25 has been revised to refer to the Lab QA Manual and Analytical SOPs. EPA Resolved (date): Not Resolved. Please attach Appendix B (Eurofins QA Manuals) to the QAPP EPA Resolved (date): 1/31/2025 Received on 1/27/2025
Worksheets #26 & #27: Sample Handling, Custody, and Disposal		

Element	*Acceptable* Yes / No / NA	Comments:
A. Lists all activities from sample labeling through sample disposal, indicating the organization and title/position responsible for each activity and the SOP reference	Yes	
B. Referenced SOPs are attached to the QAPP	Yes	
C. Example forms, sample labels, and chain-of-custody documentation are attached to the QAPP	Yes	
Worksheet #28: Analytical Quality Control and Corrective Action		
A. Provides a separate worksheet for each analytical method/SOP, matrix, and concentration level	Yes	
B. Identifies the type, number, and frequency of QC sample collection (field) or QC sample analysis procedure (laboratory) along with the required QC statistically derived limits/ acceptance criteria for each analyte; includes corrective action and title/position responsible for corrective action	Yes	
Worksheet #29: Project Documents and Records		
A. This worksheet should be used to record information for all documents and records that will be generated for the project. The QAPP should acknowledge the project's records will meet the CERCLA records requirements.	Yes	EPA Note: Document Control Procedure SOP-LPSS-A-020 provided in Appendix D of the QMP.
B. Provides a comprehensive list of the documents and records required for this project	Yes	EPA Note: The File naming Conventions for SOPs provided in the Document Control Procedure SOP-LPSS-A-020 in Appendix D do not match the SOPs provided in the UFP-QAPP.
C. Describes the generation, verification, and storage location/archival of hard-copy and electronic information produced during the project for sample collection and field records	Yes	
D. Describes the generation, verification, and storage location/archival of hard-copy and electronic information produced during the project for project assessments; attaches assessment checklists or other standardized forms to the QAPP	Yes	
E. Describes the generation, verification, and storage location/archival of hard-copy and electronic information produced during the project for laboratory records	Yes	
F. Provides requirements for laboratory data deliverable contents consistent with the expected stages selected for data validation (see EPA 540-R-08-005)	Yes	

Element	*Acceptable* Yes / No / NA	Comments:
G. Describes data handling equipment and procedures used to process, compile, and analyze data; provides a complete list of computer hardware and software needs; specifies requirements such as information security controls for ensuring quality of electronic information (utility, objectivity, and integrity)	Yes	
H. Provides electronic data deliverable requirements for analytical deliverables and field documentation according to the Region 8 Format for EQuIS Data Processor (EDP); describes process for assuring that Region 8 Format for EQuIS Data Processor (EDP) electronic data deliverables (EDDs) are provided to EPA Region 8 and identifies individual(s) responsible for EDD submittals	~~No~~ ~~No~~ Yes	EPA Comments: Please include the EDD format required for laboratory deliverables, e.g., SCRIBE compatible? Cotter Response & Date: (December 24, 2024). The EDD requirements and format for laboratory deliverables to be incorporated into the EQuIS database are provided in SOP-ARC-20, included in Appendix B and listed in Worksheet 23. The EDD requirements for export from the EQuIS database to the SCRIBE database are included in Appendix B. EPA Resolved (date): Not Resolved. Please attach Appendix B (Arcadis SOPs) to the QAPP. EPA Resolved (date): 1/31/2025 Received on 1/27/2025
Worksheet #30: Analytical Services		
Identify all laboratories or organizations that will provide analytical services for the project, including on-site screening, on-site definitive, and off-site laboratory analytical work. Group by matrix, analytical group, concentration, and sample location or ID number. If applicable, identify the subcontractor laboratories and backup laboratory or organization that will be used if the primary laboratory or organization cannot be used.	Yes	EPA Note: No backup laboratories indicated.
Worksheets #31, #32 & #33: Assessments and Corrective Action		
A. Lists the required number, frequency, and type of assessments with approximate dates and title/position and organization of everyone responsible for performing these assessments	Yes	EPA Note: The Assessment SOP-LPSS-A-040 was provided in Appendix D of Cotter's QMP.
B. Discusses one or more of the following types of assessments: peer reviews, technical audits, surveillance, management system reviews, readiness reviews, quality system audits, performance evaluations, data quality assessments	Yes	
C. Discusses the authority and independence of the individual(s) performing the assessments in relation to those being assessed	Yes	
D. Discusses where assessment findings will be documented and how the assessment findings will be communicated to all key project staff, state, and EPA personnel responsible for the study oversight and the deliverable due dates	Yes	
E. For each assessment listed, provides the title/position and organization of the individual(s) responsible for responding to assessment findings, assessment response documentation, and timeframe for response	Yes	

Element	*Acceptable* Yes / No / NA	Comments:
Worksheet #34: Data Verification and Validation Inputs		
Identifies the planning documents (such as QAPP, contract, field SOPs, laboratory SOPs), field records, and laboratory records that will be used during data verification and validation; indicates whether each item will be used for verification (completeness), validation (conformance to specifications), or both	Yes	
Worksheet #35: Data Verification Procedures		
A. Data verification is a completeness check to confirm that all required activities were conducted, all specific records are present, and the contents of the records are complete. Documents procedures that will be used to verify project data. For each field record, references the document containing the requirements, process description, and responsible person/organization	~~No~~ Yes	EPA Comments: Please attach the **Data Management Plan** referenced in WK#35 in Field Electronic Data Deliverable. Cotter Response & Date: (December 24, 2024). Worksheet has been revised to correctly identify the QAPP not the DMP EPA Resolved (date): 1/10/2025
B. For each laboratory record, references the document containing the requirements, process description, and responsible person/organization	Yes	EPA Note: QMP Figure 8-1 Quality Assurance Assessment and Response Process.
C. For each audit and corrective action record, references the document containing the requirements, process description, and responsible person and organization	~~No~~ Yes	EPA Comments: Please revise WK#35 in alignment with Cotter's QMP Table 2-1 Roles, Responsibilities, and Authorities to include **Cotter's role in corrective actions**. Cotter Response & Date: (December 24, 2024) Cotter and Program Manager have been added as responsible people for Audit Reports and Corrective Action Reports EPA Resolved (date): 1/10/2025
Worksheet #36: Data Validation Procedures		
A. The data usability assessment is performed at the conclusion of data collection activities, using the outputs from data verification and data validation. It is the data interpretation phase, which involves a qualitative and quantitative evaluation of environmental data to determine if the project data are of the right type, quality, and quantity to support the decisions that need to be made.	Yes	
B. Documents procedures that will be used to validate project data. Data validation is an analyte and sample-specific process for evaluating compliance with contract requirements, methods/SOPs, and measurement performance criteria. Procedures should be summarized in the worksheet, including specific SOP references, if applicable	Yes	EPA Note: National Functional Guidelines (NFGs) are referenced. No SOPs for Validata were provided.
C. Referenced data validation SOPs are attached to the QAPP, if applicable	Yes	
D. Validation procedures define validation stage code and define any data qualifiers to be applied by the data validator	Yes	

Element	*Acceptable* Yes / No / NA	Comments:
E. Validation procedures include checklists to be used by the data validator	Yes	
Worksheet #37: Data Usability Assessment		
A. Usability Report The usability report should: • Discuss and compare overall completeness of multiple data sets collected for the project for each matrix, analytical group, and concentration level. • Describe the limitations on the use of project data if project-required completeness is not achieved for the overall project, or when completeness is limited to a specific sampling or laboratory group, data set or SDG, matrix, analytical group, or concentration level.	~~No~~ Yes	EPA Comments: Please revise and complete WK#37 in alignment with Cotter's QMP Section 14 and Table 2-1 for **data usability**. Please describe the usability reports' evaluation of completeness for each matrix, analytical group, and concentration level and **limitations on use** of project data if completeness is not achieved or is limited. See Summary of Comments #8. Cotter Response & Date: (December 24, 2024). Worksheet #37 was revised to include the steps of a Data Usability Assessment, including the Data Quality Indicators included in Cotter's QMP Section 14. Steps 1 through 5 of Worksheet 37 were also revised. EPA Resolved (date): 1/10/2025
B. Identifies the individual(s) responsible for reconciling the data to the project-specific requirements	Yes	
C. Describes data usability assessment process including statistics, equations, and computer algorithms to be used to analyze the data and reconcile it to project-specific requirements	~~No~~ Yes	EPA Comments: Please revise and complete WK#37 Step 3 and Step 4 for statistical methodology referenced for "*soil data collected using ISM in OU2*". Cotter Response & Date: (December 24, 2024). Steps 3 and 4 on Worksheet 37 were updated to include statistical methodology associated with ISM in soils identified in the QAPP. EPA Resolved (date): 1/10/2025 EPA Note: documented in Data Usability Report and updated CSM.
D. Discusses how limitations in the final data set will be documented and communicated to all end data users and stakeholders	Yes	
E. Describes the circumstances under which data would be rejected and removed from the final data set and addresses resolution of potential data gaps	Yes	
F. Describes the data usability assessment process to confirm that the useable data are adequate to make the site decision	Yes	