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G1	NA	Section 1 0 Specific comments address a few inconsistencies noted in the section	Responses to specific comments are given below
G2	NA	Section 2 0 Operational histories for each of the 14 OU 13 IHSSs are presented As a result of the supplemental information, many of the IHSS outlines used in this work plan are different in size and/or location from what is shown in the HRR and previous documents This fact is not clearly stated in the work plan although much of the supplemental information is presented in Appendix A Therefore, all changes made in this work plan to IHSS locations from previous delineations of the IHSSs must be clearly identified, documented and justified	The location delineated in the work plan for each IHSS will be shown on a detailed map of the IHSS These IHSS maps will be introduced in Section 2 under "Location and Operational Histories of IHSSs " Changes from previous delineations (ie the Historical Release Report) will be identified, and documentation justifying the changes will be presented in the text of this section
G2	NA	The second subsection of Section 2 0 it is recommended that available data must be compiled and summarized to show trends across the entire OU 13 geographic area.	Maps will be developed for surficial material, bedrock, and groundwater that show the constituents detected at levels above background at each well or borehole Separate maps will be presented for organic constituents, radionuclides, and metals These maps will be introduced in the subsection titled "Summary of Surficial Material, Bedrock, and Groundwater Contamination and Additional Data Requirements "
G3	NA	Section 3 0 this section should be rewritten to include a discussion of the ARARs process The preliminary identification of potential chemical-specific ARARS for surface water and ground water is the subject of a separate review process and comments from EPA and CDH will be submitted in a separate document. The final version of this work plan must be amended to reflect any such comments that are submitted	Section 3 will be rewritten to include a statement that cleanup criteria will be based on likely ARARs as well as environmental and human-based risk assessment. Section 3 will include a discussion of the concept of establishing ARARs on a sitewide (all Rocky Flats OUs) basis versus establishing ARARs on an OU specific basis

REVIEWED FOR CLASSIFICATION/UCNI
By Bea Duran (UNU)
Date 10/22/92

ADMIN RECORD

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G4	NA	Section 6 0 Screening methods to determine the presence of metals must also be proposed in the FSP	A surficial soil sampling program to provide a survey for metals will be added to Section 6 Surficial soil sampling will be added to the types of activities to be conducted during stage 1 Appropriate text will be added to Subsection 6 2 1 ("Stage 1 Investigation") to indicate that surficial soil metals surveys will be conducted on a subset of the radiological survey grid points Surface soil sampling will be added to Stage 1 investigations summarized in Table 6 1 The surficial soil sampling points will be shown on the detailed maps of IHSSs that will be developed and added to the work plan A boring will be added at IHSS 148 where the abandoned waste line passes from beneath the building Additional borings will be added at IHSS 186 These will extend below the depth of the previous excavation of contaminated soil or the depth of the Original Process Waste Lines Surficial soils analyses will not be reported until the end of Stage 2

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G4	NA	The stage 2 sampling effort does not appear to be well thought out, in regards to stage II activities It seems that groundwater (and soil) screening samples need to be collected using a hydraulic probing rig and small diameter probes (approximately 1") prior to drilling any boreholes to further delineate any contamination detected from the stage 1 surveys Only after this data is all analyzed and mapped shall boreholes be located and drilled In addition, some of the boreholes would need to be completed as monitoring wells immediately, as opposed to the proposed plan that does not mention completion of any stage II boreholes as monitoring wells	We think there is no significant difference between the activities specified in the Work Plan and the activities described in this comment However, we have relegated any probing to delineate contamination to Stage 3 because we think this approach is likely to be more cost effective Probing will be relatively expensive and should be conducted only after careful analysis of confirmed screening data. We have suggested Hydropunch technology (subsection 6 1 2) rather than one-inch probe rods because the subsurface materials are cobbly We have not found documentation that one-inch probe rods have been used successfully to the necessary depths in the cobbly Rocky Flats Alluvium If such documentation is found, we would consider one-inch probe rods to be an equivalent technology mentioned in subsection 6 1 2 of the Work Plan Otherwise, we think there is reason to doubt the capability of a one-inch probe to penetrate cobbly materials to the depths required and remain straight enough to be a conduit for soil and water sampling equipment Limiting Stage 2 activities to those that can be performed as soon as screening data are contoured will expedite the field program and allow for timely completion of the RFI/RI investigation We will add text that specifies that Stage 2 boreholes will be completed as monitoring wells immediately if they are immediately determined to be located where monitoring wells are needed for risk assessment or characterization of contamination This text will be added to the "Stage 2 Investigation" of the "Sampling Program" subsection

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G4	NA	Although on page 2-18 it is stated that Additional wells are needed that penetrate the bedrock to a depth deep enough to evaluate the presence of the No 1 Sandstone," no details could be found in the field sampling plan that specified this type of activity It is necessary to drill approximately 15' to 25' of bedrock in at least five different locations to make such an evaluation	The penetration of bedrock to a depth deep enough to evaluate the presence of the No 1 Sandstone is specified on page 6-18 of the work plan where the following requirement appears "All boreholes will be drilled to a depth of six feet into weathered bedrock If the weathered bedrock encountered in any borehole is sandstone, the borehole will be drilled through the sandstone to at least six feet into the next bedrock horizon "
G4	NA	The FSP did not provide individual maps of each IHSS to illustrate the proposed sampling locations	Individual maps of each IHSS will be prepared that show all sample locations, buildings, tanks, paved areas, and other surface features that affect sampling locations These maps will be added to the "Stage 1 Investigation" part of the "Sampling Program" subsection
G4	NA	the proposed work does not completely match the previously submitted outline All these noted deviations should be explained and justified in the FSP The [differences] are listed in the specific comments section of this report.	The deviations will be explained in the responses to the specific comments A table will be added to the "Background and Sampling Rationale" subsection of the FSAP which will compare IAG requirements to activities specified in the field sampling plan and present the rationale for any differences
G4	NA	No information was provided regarding the effectiveness, limitations, sensitivities, or field procedures of the two proposed field screening methods HPGe gamma ray detector and the soil gas survey	Information on the effectiveness, limitations, sensitivities, and field procedures of the proposed screening methods will be added to the work plan in a new subsection, which will be titled "Sampling Equipment and Procedures "
G4	NA	The FSP should specifically explain why these additional compounds were chosen for analysis [Compounds that are not listed in the IAG for soil gas analysis] The information presented in Section 2 0 would also support the inclusion of these compounds on the analyte list	The text will be revised to clarify the reasons for including analytes that are not listed in the IAG The analytes that are not included in the IAG but are added to the FSAP because they are indicated by available data will be specifically identified in the "Sampling Program" subsection under each individual IHSS The available data that indicate the need for the additional analyses will be presented in Section 2 under the subsection titled "Nature and Extent of Contamination "

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G4	NA	The FSP does not address the potential effect on OU 13 of contamination from newly identified potential areas of concern (PACs) and under building contamination (UBC)	The IHSSs to be investigated in the RFI/RI Work Plan are specified in the IAG UBCs, PACs and PICs are not included in this work plan because they have not been formally added to OU13 using the procedures outlined in the IAG UBC will be addressed in the D and D plan for RFP
G4	NA	The stage 3 investigation does not include any surface water or sediment sampling These media must be evaluated in determining the extent of OU 13 contaminants Information from ongoing "routine" monitoring, samples from other OU investigations, or additional sampling needed to provide the information required to support this determination must be identified.	Subsection 6 1 2 contains the following requirement for surface water and sediment sampling "If results of Stages 1 and 2 indicate the need for sampling other environmental media, such as surface water and sediments, these investigations will be established in the technical memorandum submitted at the completion of Stage 2 " Any surface water or sediment sampling will be conducted as part of the RFP integrated sampling plan Information from ongoing "routine" monitoring of surface water and sediment is described in Subsection 2 2 15 of the Work Plan Subsection 6 1 4 requires that data from studies of other OUs be utilized Currently, an integrated field sampling program is being developed for inclusion in the OU12 Work Plan as a technical memorandum This program will address surface water and sedimant sampling, and sampling relevant to OU13 will be included
G4	NA	Surficial soil samples and depth profile samples must be collected at a subset of the HPGe survey locations and analyzed to evaluate the vertical extent of radionuclide contamination	Surficial soil samples and depth profile samples are specified in Subsection 6 2 2 at a maximum of three boreholes Additional samples are specified on an "as needed" basis in Stage 3 (Subsection 6 2 3) Depth profile samples will include 4-inch deep plugs analyzed at 2-inch intervals for radionuclides to confirm HPGe results These plugs will be included in the "Background and Sampling Rationale" subsection and further specified in the "Sampling Program" subsection under "Stage 1 Investigation "

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G4	NA	Justification should be provided for the chosen grid spacing for the radiological and soil gas surveys Information to be considered includes statistics, site histories, and capabilities of the chosen screening technologies This specific information should be incorporated into an additional section of the FSP	Justification for the grid spacings based on capabilities of the technologies selected has been provided in Subsection 6 2 1 of the Work Plan Additional details will be added to the text to clarify the reasons for the grid spacing Statistics and site histories will be considered Percent coverage (90%) provided by a 20 foot spacing for a tripod mounted HPGe will be given in the "Sampling Program" subsection of the FSAP This subsection will also describe the size of a contaminated area that might be missed at a 20 foot grid spacing assuming point sampling The size of the contaminated area will be based on a statistical procedure The basis for grid spacings will be discussed for each IHSS in the "Sampling Program" subsection In general, where the size of the releases are not known, a 20 foot grid spacing will be specified to provide a conservative approach to locating contamination, and where releases are large or dispersed the grid spacing will be increased to 40 feet.
G5		Section 8 (human health risk assessment) presents a cohesive strategy to carry out the human health risk assessment for OU 13	It is assumed that the responses to the specific comments will satisfy this general comment
G6		The ecological evaluation (Section 9 0) described in the OU 13 work plan states that all ecological studies in industrial areas of the RFP will be conducted under the OU 9 remedial investigation (RI), The environmental evaluation for OU 6 (Walnut Creek drainage) will also provide information on the ecological conditions of OU 13	The OU9 EE investigation will cover all operable units in the Industrial Area, as well as those portions of OU10 which lie outside the area near the salvage yard

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G6		It should be noted that the work plans for most of the industrial area operable units (OU 9, OU 10, OU 12) identify the primary issue related to the environmental evaluation as the movement of contaminants out of the operable unit by biological vectors The OU 13 work plan discusses the identification of risks of contamination of off-site biota through the migration of contaminants off-site by physical or abiotic means The work plans all should have the same objectives if the same studies are to meet those objectives	The OU13 EEWP erred in stating that it would consider migration of contaminants off-site by other than biotic vectors Transport of contaminants by abiotic or physical means will be considered in other sections of the OU13 RFI/RI work plan It should be noted that the OU9 EEWP has undergone revision based on agency comments and is not a formal addendum to the OU9 RFI/RI Work Plan
S1	1-5	Last paragraph This section references the recent background geochemical investigation The scope of the investigation and report submitted in 1990 have been substantially modified The revised, February 1992, background geochemical investigation plan must also be referenced in this section	The February 1992 background geochemical investigation plan will be referenced in this section by stating "A recent background geochemical characterization plan [reference] describes a plan for continued collection, screening, and statistical analysis of background data."
S2	1-18	First paragraph The conclusion stated here that "The Arapahoe and the alluvial hydrostratigraphic units at the RFP are not generally believed to be capable of producing amounts of water of economic significance ", must either be quantitatively documented or deleted. The discussion of hydraulic conductivities in this section is not sufficient to draw such a conclusion	Agreed. The conclusion will be deleted

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S3		Figure 1-12 This figure shows a stratigraphic section for the Rocky Flats Plant. A more detailed stratigraphic section that also includes a revised interpretation for the contact between the Arapahoe and Laramie Formations must be substituted for the older section Figure 4-53 from Phase II Geologic Characterization (EG&G, 1992), shows a revision alongside a previous stratigraphic column and would be a much better figure to use in this work plan It would also conform to the geologic map shown in figure 1-9 that was taken from the same document	Agreed The alternate figure will be substituted
S4	2-1	IHSS 122, Underground Concrete Tanks, is not included on the IHSS list for OU 13 This IHSS was included in the IAG definition of OU 13 but has been transferred into OU 9, the original process waste lines The reason that IHSS 122 is no longer considered part of OU 13 must be explained in this work plan	Agreed. The explanation will be added in Section 2 1 The tanks are part of the OPWL system
S5	2-2	Paragraph 1 The various storage areas, buildings, and paved areas of IHSS 117 1 are not illustrated on Figure 2-1 These features must be added to Figure 2-1, or a separate figure created for IHSS 117 1, for clarity	A separate figure will be created for IHSS 117 1 and presented in this section
S6	2-3	Section 2 1 1 2, page 2-3 and Appendix A, page A-3 Both of these sections provide descriptions of IHSS 117 2 The text states that aerial photographs indicate the area was first used for storage sometime prior to July 1955 The appendix description states 1954 The areal photographs should be reviewed again and the correct date used in both areas of the report.	Agreed. This date will be checked and the correct date will be substituted.

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S7	2-9	Paragraph 1 IHSS 169 is believed to describe the same hydrogen peroxide spill associated with IHSS 191 For this reason, IHSS 169 is proposed to be eliminated from OU 13 This section must also state whether CDH and EPA concur with the conclusion that IHSS 169 can be eliminated	The work plan will be revised to clarify that there is sufficient evidence to support a no further action finding in the record of decision, but that decision must be made by the agencies
S8	2-16	Last paragraph The text states that well P113589 is southwest of OU 13 This should be corrected to well P313589 which is southeast of OU 13	Agreed The text will be revised
S9	2-19	Paragraph 2 The unnamed tributary of North Walnut Creek that is discussed here is better identified in figure 2-24 than in figure 1-4 that is referenced A change in referenced figures should be made here	Agreed. A change in referenced figures will be made at this point in the text.
S10	2-22	Section 2 1 5 This section discusses surface water in the OU 13 area and beyond, but does not present a clear and detailed figure to illustrate all of the current surface water drainage flow paths within this OU Not only must this be presented for the current situation, but depictions of historical surface water flow paths must also be included to help determine past potential routes of contamination migration	Agreed. Figures will be developed to present and historical flow paths within the operable unit area The figures will be presented in the "Surface Water Hydrology" subsection of Section 2
S11	2-23	Paragraphs 2 and 3 It is stated on this page that both North Walnut Creek and upper (South) Walnut Creek are perennial streams This directly contradicts the statement made on page 1-9 Whichever case is correct must be stated consistently in both sections	Agreed. The streamflow classifications will be reviewed and correct classifications will be used at these two places in the text

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S12	2-26	Paragraph 1 This section discusses how the available analytical data were compared to the background data presented in the background geochemical characterization report (EG&G, 1990) As stated previously, this report has undergone substantial revision and EPA is currently reviewing the Background Geochemical Characterization Plan Therefore, discussion of contamination compared to background must be qualified that it is related to interim values at this time	Agreed Discussions related to background data will be qualified In the subsection titled "Nature and Extent of Contamination," a statement will be added that background data in the tables of Section 2 are interim values
S13	2-80	This section states that the surface water pathway will be evaluated by surface water sampling However, no surface water sampling is proposed in the FSP A surface water sampling program must be added to this work plan	Surface water sampling is addressed in Section 6 1 2 of the Work Plan Note that the paragraph referenced in this comment is discussing "potential" transport mechanisms Should surface water sampling be needed it will be addressed in the Technical Memorandum specified in Section 6 of the Work Plan Surface water sampling will be conducted as part of the RFP integrated sampling plan
S14	2-84	Section 2 3 2 1, page 2-84, and Section 5 1 1 3, page 5-7 Both these sections state that only IHSSs 128 and 148 were assigned to both group I and II conceptual models However, IHSS 191 was also assigned to both group I and II, therefore, this IHSS must be included in the above referenced sections	The assignment of the Hydrogen Peroxide Spill (191) to Group II on page 2-93 is an error This assignment will be deleted.
S15	2-89	First paragraph IHSS 186 contaminant sources are included in the group I conceptual model IHSS discussion The discussion of IHSS 186 should be moved to the group II conceptual model discussion in Section 2 3 2 2	Agreed. IHSS 186 will be reclassified as a Group II contaminant source It will be removed from the subsection on Group I releases and placed in the subsection on Group II releases

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S16	2-90	Paragraph 2 It is stated that "No evidence has been found indicating that soils were contaminated at IHSS 117 1 " This contradicts the analytical results of soil samples taken [from] borehole P214689, located in IHSS 117 1 This statement must be deleted or altered to agree with the data previously presented	Agreed. This statement will be deleted
S17	2-93	Section 2 3 2 2 IHSS 191 is not discussed in this section, even though it is listed as one of the IHSSs included in the group II conceptual model A brief discussion of IHSS 191 should be added to this section	The assignment of the Hydrogen Peroxide Spill (191) to Group II on page 2-93 is an error This assignment will be deleted, and no discussion of IHSS 191 need be added to this section
S18		Section 2, Figures 2-5, 2-6, and 2-16 The triangle symbols shown on these maps, probably pre-1986 boreholes, must be explained in the legends	Agreed. The legends will be completed
S19	4-3	Paragraph 1 Visual inspections are listed as one of the three activities to be conducted during the phase I field investigation of screening activities Only radiological and soil gas surveys are listed as screening activities in Section 6 0 of the FSP Visual inspections must be added to the text and tables of the FSP	Agreed Visual inspections will be added to the text and tables of the FSP Visual inspection will be added to a table titled "Phase I Investigation Stages for OU13 and to a list of types of activities in Stage 1 which appears in the "Background and Sampling Rationale" subsection Visual inspections will also be added to the discussions of sampling efforts at individual IHSSs
S20	4-3 and 4-4	Section 4 3, paragraph 1, and Section 4 5 1, paragraph 5 Both paragraphs state that surface water and sediment sampling will be conducted at OU 13 Neither of these media is proposed to be sampled in any of the three stages of OU 13 field investigations As stated in the general comments, surface water and sediment sampling should be included in the FSP, unless it can be demonstrated that required information is available from other programs or other OUs	Surface water sampling is addressed in Section 6 1 2 of the Work Plan Should surface water sampling be needed it will be addressed in the Technical Memorandum specified in Section 6 of the Work Plan Including surface water and sediment sampling activities in the RFI/RI tasks does not imply that such sampling will be done if it is found to be unnecessary

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S21	4-11	Last paragraph The third sentence in this paragraph is potentially overly restrictive when considering innovative and alternative technologies, and must be deleted	The sentence will be deleted
S22	4-16	Last bullet. This statement implies that a Phase II investigation will occur It is intended that only one phase of investigation shall be necessary for this OU This bullet must be modified to indicate that additional investigation will only be undertaken if deemed necessary, due to identification of data gaps	It is not intended that data gaps relevant to OU 13 will exist at the end of the RI/RFI investigation This bullet will be deleted
S23	5-7	The second bullet on this page incorrectly references IHSS 169 This is believed to be the same as 191, and is referred to as IHSS 191 throughout the work plan This bullet should be revised for consistency	Agreed. The second bullet will be revised
S24	5-11	Last paragraph The text discusses sub-asphalt surface scrape samples that may exhibit concentrations of TCL semi-volatiles and TAL metals Asphalt samples are proposed to be collected from such location and analyzed for TCL volatiles and TAL metals to determine to what extent the asphalt is the source of the contamination The asphalt samples must be analyzed for TCL semi-volatiles in order to make such a comparison and also to agree with the analytes shown in Table 6-1 In addition, this paragraph seems to imply that contaminants detected in the asphalt are not related to IHSS contamination sources This implication is not necessarily correct and the text must be clarified accordingly	Agreed The text will be changed to state that the asphalt sample will be analyzed for TCL semi-volatiles and TAL metals The text will be modified to recognize that the sample collected from the asphalt might contain contaminants related to IHSS sources At IHSSs where historical data indicate possible contamination of the asphalt, HPGe measurements of the asphalt will be taken and samples of asphalt will be taken from anomalous areas and analyzed for appropriate contaminatants These asphalt investigations will be described under the individual IHSSs in the "Sampling Program" subsection

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S25	5-12	Paragraph 2 The second sentence states that "A minimum of one randomly located borehole will be drilled in every IHSS " Since this is a stage two activity, it seems that all boreholes should be drilled in locations that would be determined on the basis of previously collected data, both historical and stage one surveys Randomly locating boreholes is inefficient and inconsistent with a multi-stage screening process that should be used to optimize placement of boreholes and reduce the number of boreholes needed to delineate the nature and extent of contamination	Agreed The text on this page will be changed to indicate that one borehole will be drilled where contamination was not indicated by Stage 1 results This borehole will be drilled at the optimum location for confirming noncontamination The location of this borehole will be based on an analysis that includes historical information on possible source locations The text will also be changed to indicate that a borehole will be drilled at the location of maximum contamination indicated by the soil gas survey and the radiation survey, or if the maxima of the two surveys do not coincide, a borehole will be drilled at each of the two locations of maximum concentration Thus, a maximum of two boreholes will be drilled at each site, unless more than two are specified by the IAG This approach will reduce the number of boreholes needed to confirm contamination or noncontamination These changes will appear in Section 5 under "Evaluate Sampling/Analysis Options" and in Section 6 under Stage 2 Investigation in the "Sampling Program" subsection
S26		Table 5 1 The data quality objectives (DQO) listed in this table do not match the objectives of the FSP These two sections of the work plan must be revised so that the objectives listed in both the table and FSP are equivalent	Agreed. Table 5 1 will be extensively revised and will be in agreement with text in Section 6 0
S27		Table 5 4 Under radionuclides, this table must also include the detection/quantitation limits for strontium 89/90, strontium 90, cesium 137, radium 226, and radium 228, all of which are proposed analytes listed in the text on page 5-12	Agreed. These radionuclides will be added to the table titled "Analytical Parameter and Dection/Quantitation Limits for Sampling Activities at OU13

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S28	6-2	Paragraph 1 The FSP states that only analytical data for groundwater, surface water and borehole samples are available for OU13 However, Section 2 0 described air monitoring and sediment data. Samples collected from all media of concern must be described in this paragraph	Agreed. Air and sediment samples will be added to this paragraph
S29	6-2	Paragraph 2 It is stated that "The data indicate the potential for contamination to be present at several IHSSs " Certainly this potential exists for all IHSSs, and so a change in wording is needed here The following sentence discusses ongoing validation	This statement refers to whether analytical data indicate the contamination at IHSSs However, the potential for contamination at the IHSSs is based on historical release information Wording in this paragraph will be changed so that it does not imply that there is no potential for contamination at some IHSSs
S30	6-5	The section states that areas of overlap between OU 13 IHSSs and IHSSs from other OUs will be examined to prevent duplication of effort The specifics of how duplication of effort will be avoided must be provided In the last paragraph of this page it is stated that, "no further investigation of IHSSs 190 and 191 is necessary" Nevertheless the outline of IHSS 190 included the Central Avenue Ditch out to pond B-1 This drainage should certainly be investigated	The specifics of how duplication of effort will be avoided will be provided in an addendum to OU12 as the integrated field sampling program for the industrial area. The drainage will be investigated as part of the RFP integrated sampling plan
S31	6-6	The FSP states that a 4 to 8 inch hole will be bored through the paved areas To obtain [HPGe] measurements from paved areas, the asphalt should be cored and a surficial soil sample collected The sampling plan currently proposed will not provide meaningful information on the radionuclide concentration beneath paved areas of the IHSS	Do not agree Since Stage 1 is a screening investigation, rapid results are important EG&G Nuclear Instruments Division suggested setting the HPGe instrument directly on the asphalt over the hole, and taking direct readings at each station Since each measurement will be from a confined source (area of the hole), the instrument will probably require recalibration The text will be modified to describe the use of the HPGe meter in more detail Text modifications will appear in the "Sampling Program" subsection under "Stage 1 Investigation," and in a new "Sampling Equipment and Procedures" subsection

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S32	6-11	The lithium destruction site was used to destroy both lithium and magnesium However, neither of these metals will be analyzed for in the Stage 1 survey Surficial soil samples must be collected and analyzed for these compounds	We will add analyzing for magnesium and lithium in surficial soils at IHSS 134 Samples will be collected during Stage 1 activities, but the analysis will be reported at the end of Stage 2 This approach will allow adequate time for analysis for metals in the soils If magnesium or lithium anomalies are found, they will be addressed in the technical memorandum that is to be produced at the end of the Stage 2 investigation The addition of magnesium and lithium will appear in the "Sampling Program" subsection under the description of the sampling program for IHSS 134
S33	6-12	The FSP proposes a soil gas survey for IHSS 148 Neither the IAG or the proposed FSP outline included a soil gas survey for this IHSS The historical data referenced on this page from which the analyte compound list was determined must be provided	The historical data related to this IHSS, as well as other IHSSs, is provided in Section 2 2 (Nature and Extent of Contamination) Specifically, the occurrence of VOCs in Well 4486, downgradient from IHSS 148, is discussed in Section 2 2 6 (p 2-48) and 2.2 8 (p 2-52) Section 2 is the appropriate location for discussion of historical data We will add a reference to Section 2 to the text in the "Analytical Rationale" subsection of Section 6, so that the dependence of analytes in Section 6 to historical data described in Section 2 is clarified
S34	6-13	<u>Paragraph 2</u> The soil gas survey proposed for this IHSS must be extended down gradient in order to better investigate the presence of potential subsurface fuel oil contamination By limiting the extent of the survey to the IHSS boundary the location of such contamination may not be covered	A line of soil gas sampling points will be placed east of 7th Street and north of Central Avenue to detect the tail of any slug of oil that may have moved in these directions These additional sampling points will be specified under the description of IHSS 152 sampling in "Sampling Program" subsection of the FSAP If soil gas analyses indicate movement to the east or north, additional sampling for characterization of the contamination will be added to Stage 3

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S35	6-18	Last paragraph It is stated here and elsewhere in the work plan that surficial soil samples will only be taken at the location of each borehole This is certainly not sufficient in either size or distribution to characterize the nature and extent of contamination in surficial soils for this OU A more extensive approach must be added to the FSP that also discusses and justifies the frequency of surficial soil sampling	Sampling of surficial soils will be added to the Stage 1 investigation The results of the chemical analyses of surficial soil samples will be reported in TM2 at the end of the Stage 2 investigation The surficial soil sampling program will be described for each individual IHSS under the "Sampling Program" subsection of the FSAP In general the sample spacing will be 20 feet where possible contaminant release sizes were small and greater than 20 feet when the releases were larger or dispersed
S36		Table 6-3 This table could not be found in the work plan	This table was inadvertently omitted from the copy of the work plan supplied It will be included in the final work plan
S37		Figures 6-2 and 6-3 In most cases, these figures indicate that soil gas surveys and radiation surveys will be conducted across the entire IHSS boundary The figures do not correspond to several descriptions in the text. Detailed IHSS sampling location maps must be prepared that clearly illustrate the areas to be sampled	Detailed IHSS sampling location maps will be added to the "Sampling Program" subsection of the FSAP
S38	8-2	First paragraph The work plan states that, "The EPA and DOE require a two-phase evaluation for the radiological portion of the assessment" This statement is not accurate Until the ICRP method is officially adopted by EPA Region, it must not be included in the risk assessment, except perhaps as an addendum	The EPA guidance manual Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A) (RAGS) does state that a two-phase evaluation of radionuclides will be performed Section 10 5 5 "Quantifying Exposure Estimating Intake and Dose Equivalent," states that both the committed and effective dose equivalent (ICRP Method) and the annual intake of each radionuclide well be reported This section also states that the dose equivalent, which includes the committed effective dose equivalent, will be compared with radiation protection standards and criteria. The calculated dose equivalent will not be used to estimate risk though
S39	8-3	Second bullet. Dermal exposure to contaminants in soil was omitted and must be included as a possible exposure route from surficial soils	The following will be added to the second bullet, "This data can also be used to assess dermal contact with surface soils "

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S40	8-4	Section 8 2 It is stated that "the objective of this section is to describe the procedures to identify source-related contaminants The objective stated here seems to imply that contamination not deemed to be "source related" will not be evaluated If contaminants are eliminated from consideration because they are not "source-related" without any other appropriate justification, the evaluation will be rejected as incomplete	It is the objective of the OU 13 risk assessment to evaluate the risks due to IHSSs located in OU 13 Contaminants located in and being transported from these IHSSs will be examined for inclusion in the risk assessment It is not the intent of the OU risk assessment to evaluate contaminants that are not related to OU 13 Any elimination of contaminants from the OU 13 risk assessment will be appropriately justified
S41	8-6	First paragraph The second sentence delineates TICs that will be excluded from the Human Health Risk Assessment. This statement seems premature and must be deleted	The second and third sentences in this paragraph will be deleted
S42	8-6	Second paragraph The work "RFP-related" must be removed from the first sentence	"RFP-related" will be removed
S43	8-6 and 8-7	Section 8 2 4 The flow chart (Figure 8-2) and description of the strategy to be used in the selection of contaminants of concern (COCs) contains major design flaws	Section 8 2 4 and Figure 8-2 will be deleted from the text The following will be added to Section 8 2 4 A methodology for selecting contaminants of concern will be developed using the guidance from RAGS Per the IAG, this methodology will be submitted to EPA/CDH for review and approval in the technical memorandum (TM) on Contaminants of Concern This TM will be submitted prior to the required submittal of the Baseline Risk Assessment and will contain the chemicals to be evaluated in the risk assessment.
S44	8-7	Paragraph 2 It is stated here that the data will be evaluated according to RAGS section 5 9 3 to determine if the detection frequency is greater than 5 percent. RAGS does not state that 5% is the detection limit -	See the preceding response
S45	8-8	Paragraph 2 This section states that chemicals which are essential human elements need not be considered further in the quantitative risk assessment. a quantitative risk assessment must be performed	See the response to comment S43

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S46	8-9	Paragraph 3 In this and other sections, worker exposure is alluded to although no exposure pathways, scenarios, or receptors are defined in this work plan Acknowledgement that consideration will also be given to other exposure scenarios and associated receptors must be provided or the reference to workers must be deleted	The first two sentences of the third paragraph will be changed to, "The potential adverse health effects due to OU 13 will be determined Human intakes of contaminants will be calculated separately for different exposure routes "
S47	8-9	Paragraph 3 The definition provided for the Reasonable Maximum Exposure is not exactly correct	The last sentence of the third paragraph will be changed to, "RMaxE concentrations are represented by the 95 percent upper confidence limit on the arithmetic average "
S48	8-13	Paragraph 2 The discussion of toxicity values focuses on RfDs and cancer slope factors with no mention of Inhalation Reference concentrations (RAfCs) They must also be discussed in this section	The following sentence will be added to the end of the second paragraph, "If the inhalation pathway is a potential exposure route, inhalation Reference Concentrations (RfCs) will be utilized "
S49	8-13	Paragraph 4 This section discusses the information sources of toxicity values which are used by EPA The authors should be aware that there is an established hierarchy of data sources with EPA	The following sentence will be inserted as the second sentence in paragraph 4, "IRIS is the primary source for EPA derived toxicity values and HEAST is the secondary source "
S50	8-15	Paragraph 2 The method presented in this paragraph for assessing non-cancer health effects is overly aggressive and may be unnecessary	The following sentence will be added to the end of the second paragraph, "This potential may be further examined by segregating the Hazard Quotients based on target organ and mechanisms of action "
S51	9-1	Paragraph 1 If there are no viable ecosystems or natural habitats presently existing in OU 13, as stated here, why is this OU being considered for an ecological preserve?	Discussions relating to an ecological preserve have focused on specific areas within the buffer zone (e g , Rock Creek) which may be ecologically unique and sufficiently isolated to warrant such consideration There is no intent to consider OU13, any other Industrial Area operable unit, or the Industrial Area itself for designation as an ecological preserve

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S52	9-3	Paragraph 2, bullet 1 The Work plan states that the presence of target taxa, which are accumulating or concentrating target analytes, is a criterion for initiating ecotoxicological studies The method for determining concentration or accumulation of chemicals prior to ecotoxicological studies is not clear The criterion must be clarified	We have prepared a list of contaminants which are known, based on published laboratory and field studies, to be capable of bioconcentration or bioaccumulation in plants or animals During Stage 1 investigations, we will obtain a limited number (<20) of small rodent tissue samples which will be analyzed for the presence of our listed contaminants We will thus obtain empirical confirmation or denial of contaminant uptake by what is believed to be the dominant mammal species in the Industrial Area.
S53	9-3	Section 9 3 In the section under Ecotoxicological Investigations, a number of conditions were presented which would trigger an investigation What about the effect of contaminants moving off-site and adversely affecting target taxa?	Contaminant effects on target taxa in non-operable unit areas beyond OU 13 and Industrial Area boundaries would be considered during development of the Biotic Transport Model. Impacts, if any, of OU13 contaminants on target taxa in adjacent buffer zone operable units (primarily OU6) would be considered during conduct of the environmental evaluation for the potentially affected OU
S54		Section 10, Figure 10-1 This figure should be updated with the names of the personnel who are currently in the positions shown on the chart	EG&G Environmental Management is currently being reorganized A Draft Organizational Chart is included and a complete chart will be sent to the agencies when approved by EG&G management.
S55	A-1, A-3, A-52	The site maps for IHSSs 117 1, 117 2 and 190 are not attached as stated These maps should be provided	Site maps for these IHSSs will not be needed in the Appendix because they will be presented in the main text The references to site maps in the appendix will be deleted
S56	A-8	A new PAC is discussed in this section It is believed that this area is PAC 400-802 identified in the HRR (EG&G, 1992a) The PAC number should be listed in this section so that the reviewer can reference the material	The PAC number (400-802) will be added to the text.
S57	A-16	The historical information describing the location of the oil burn pit in IHSS 128 is different than the location as described in the HRR.	The Final HRR and the OU13 Work Plan contain the same location for HRR 128 The work plan states the evidence for the location of IHSS 128

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S58	A-23	Research conducted during the preparation of the OU 13 work plan indicated the boundary for IHSS should be expanded	The boundary for IHSS 134 investigation will be extended to IHSS 171 The additional sampling locations will be shown on the map of sampling locations for IHSS 134 in the "Sampling Program" section of the FSAP
S59	A-38	Paragraph 3 This paragraph states that the borehole data for a borehole located at N36,650 and E19,650 is attached No borehole information was provided	The borehole information will be provided at the end of the IHSS description in the Appendix