

CLARIFICATIONS TO
COLORADO DEPARTMENT OF HEALTH COMMENTS AND RESPONSES
DATED FEBRUARY 26, 1993 CONCERNING THE FINAL PHASE I
RFI/RI WORK PLAN DATED DECEMBER 1, 1992

ROCKY FLATS PLANT
700 AREA
OPERABLE UNIT NO. 8

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

ENVIRONMENTAL RESTORATION PROGRAM

August 2, 1993

ADMIN RECORD

INTRODUCTION

The U. S. Department of Energy has provided the following clarifications to comments made by the Colorado Department of Health (CDH) during a comment resolution meeting held on April 14, 1993. The comment resolution meeting was based on the comment responsiveness summary entitled Responses to CDH Comments Concerning the Final Phase I RFI/RI Work Plan [Operable Unit No. 8] dated December 1, 1992 submitted for regulatory review on February 26, 1993. During the comment resolution meeting the CDH requested further clarifications on comment numbers 1, 2, 6, 7, 10, 12, 13, 15, 19, 20, 21, and 23 of the comment responsiveness summary. For clarity the original CDH comment and DOE response is provided in this document only for the CDH requested clarification. A narrative clarification follows each original response and describes CDH's requested clarification made during the meeting on April 14, 1993. Following each clarification a subsequent response is provided which presents the position of DOE and the manner in which the clarification was addressed. Also, where applicable, each response includes the disposition of the changes to the Final Phase I RFI/RI Work Plan for Operable Unit No. 8 dated December 1, 1992.

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Specific Comments:

1. **Section 2.3.1:** Contrary to the statement in "Responses to Colorado Department of Health Comments Concerning the Draft Phase I RFI/RI Work Plan" (hereafter, Responses) the location of Building 730 has not been located and identified on each of the renumbered figures, i.e. Figures 6-4 and 6-5. Please locate and identify Building 730 on Figure 6-5. (Given the scale of Figure 6-4, Building 730 need not be labeled. Note: The renumbered figure in Section 2 is Figure 2-3, not 2-32; Building 730 is, however, identified on Figure 2-3.)

Response: Building 730 has been located and identified on Figure 6-4 and 6-5.

Figure 2-3 was improperly referenced as Figure 2-32 in the Responses at the top of page 7. The proper reference should be Figure 2-3

Clarification: Building number 730 was not labeled on Figure 6-5.

Response: Building 730 has been labeled on Figure 6-5 and a new Figure 6-5 is provided for insertion into the Phase I RFI/RI Work Plan.

2. **Section 2.3.2:** According to the Responses, page 7, "Text has been changed to clarify the organic solvent and carbon tetrachloride tanks (emphasis added) are located in a bermed area...." Only the carbon tetrachloride tank is discussed in Section 2.3.2. The Division presumes that the carbon tetrachloride tank is the only one that leaked; however Section 2.5.3.3.1, page 2-133, continues to describe the source of contamination as "organic solvent tanks" and as a 30 by 70 foot area south of Building 776. Section 6.5.2 sheds some light on the issue by stating that carbon tetrachloride was released to the ground and that other solvents may have been stored at or adjacent to the site. Again the Division must presume that the "organic solvent tank" did not leak but may have contaminated the soil during filling operations. What should be done? First, if DOE is convinced that the 30 by 70 description is inappropriate it should be dropped from the discussion in Section 2.5.3.3.1 and replaced by the 30 by 20 foot description. Second, if the

other solvents are an issue as discussed in Section 6.5.2, then they, and the tank that contained them, should be discussed in Section 2.3.2 as a "heads-up" to what FSP activities may be needed. Fortunately, in this case, we are concerned about organic solvents that require a common sampling approach; however, other IHSSs may require two or more basic approaches. Inconsistencies, such as those addressed above, must be removed from the document to ensure FSP adequacy.

Response: *The issue of the source of information regarding organic solvent spills in this area, and the number of documents in which the original vague references to spills in this area is what has caused the confusion between the various sections of the work plan. The first references to spills in this area were documented in the 1985 CEARP Phase I report which presented recollections of Rocky Flats Plant (RFP) personnel regarding waste disposal, past releases, and spills at the RFP. These personnel had been interviewed and told that they would remain anonymous, and this was achieved. However, the preparers of the report did not utilize RFP engineering drawings, utility information, nor photographs of the plant to try to ensure that the recollections of interviewees were accurate. This, along with the fact that references to the personnel making the statements were specifically not included in the CEARP report, makes it nearly impossible to determine what an interviewee might have meant as opposed to what the interviewer thought the interviewee said. A great number of inaccuracies are known to be present in the CEARP Phase I report in terms of accurate location of release sites that were tied to some physical, and identifiable, location. This CEARP Phase I document discussed spills from organic solvent tanks in the south end of Building 776. In 1986 the release site was mapped as an area between Buildings 778 and 707. Building 778 is south of Building 776, and so already contradictions existed between what was written and what was indicated on drawings. However, when this site was investigated further it was found that there are, and have been, no organic solvent tanks in the south end of Building 776. It was found, though, that a carbon tetrachloride tank did exist in the area indicated as the release site in the 1986 mapping. No personnel were found that recollected spills of organics at the south end of Building 776, nor even in the general area in which the present carbon tetrachloride tank is located. It is also interesting to note that the supposed date of the organic spill from these tanks (1981) corresponds closely with the time at which the underground carbon tetrachloride tank (IHSS 118.1) was found to be leaking and removed. It is possible that the CEARP Phase I interviewee was confusing a number of different facts resulting in erroneous information tied to an existing tank that went into service*

about the time it is stated that it ruptured. The non-referenced nature of the CEARP Phase I report makes it impossible to re-contact the original interviewee and clear these concerns up. However, it is reasonable to expect that at times small spills or potential overfilling of the present carbon tetrachloride tank did take place. Based on the above it was determined that the most reasonable reconciliation of the available data was to identify the location of the present carbon tetrachloride tank as the IHSS. There should be no references to organic tanks in the south end of Building 776, nor to multiple tanks at all. The present carbon tetrachloride tank is located within a berm.

Clarification: Page 6-39 in the Phase I RFI/RI Work Plan references other solvents besides carbon tetrachloride that may have been stored at or adjacent to this site. References in section 2.3.2 do not include any reference to other solvents as discussed in section 2.4.1.2 and in section 6.5.2. The historical documentation between sections 2 and 6 should be cross-referenced and reconciled. Also, cross-reference the historical analytes of interest with the Tables 6.2 and 6.5 to be sure that the proposed analytical methods cover the listed analytes as referenced.

Response: *Historical information has been evaluated and a new section 2.3.2 and section 2.5.3.3.1 is provided for insertion into the Phase I RFI/RI Work Plan. The analytes listed in Table 6.2 and 6.5 are consistent with the historical data and are covered by current analytical methods as originally proposed for this IHSS.*

6. **Section 2.4.1.3:** This section presents data on contaminants found in well P218089 at a distance 400 feet downgradient of the IHSS. The concluding paragraph on page 2-51 notes, however, that the lack of data "hinders any meaningful interpretation". If data from P218089 is not meaningful why discuss it and confuse both the regulators and the implementing contractor. It is acceptable to state, at the outset, that meaningful downgradient data does not exist. Then it is possible to focus on contaminants that are typical to process waste waters not contaminants that probably came from a different source. Please focus the workplan on real versus imaginary concerns by removing unnecessary discussions in this section and, as appropriate, other sections.

Response: *The discussion concerning well P218089 is based on "factual" and best available information from existing data and chemical analyses. The discussion presents the compilation of available data in the area of IHSS*

123.1. The "fact" that the well is 400 feet away and is the closest downgradient well is not meant to be confuse anyone, it simply provides a illustration of the magnitude of the data gaps in this area. Overall this information is of real value and most likely will be utilized as part of the later stages of the Work Plan concerning decisions on location of soil borings, piezometers, and monitoring wells.

Clarification: Concern still exists as to the discussion and interpretation of data from well P218089 which is 400 feet away from the IHSS.

Response: *Following discussions between CDH, EG&G, and DOE at the comment resolution meeting, all parties agreed that no changes to the initial response or to the Phase I RFI/RI Work Plan are necessary.*

7. **Section 2.4.1.9:** In the first paragraph of this section it is stated that "IHSS 144(N) consists of four underground waste holding tanks located..., in a small structure identified as Building 730. Section 2.3.9 points out that IHSS 144(N) is related to the tanks but is actually "the location of the cleanout plug overflow east of Building 730." (Please note, the Responses states that the "Cleanout plug is inside building and not covered in the Work Plan. Which statement is correct?) Section 2.4.1.9 should be clarified to ensure an understanding that the tanks are not being investigated as part of the operable unit. Section 6.5.9 suggests that the underground tanks themselves have leaked, however, this is not true based on the text of Sections 2.3.9 or 2.4.1.9. The tanks apparently backed up and flooded the vault in Building 776, but this is not the same as a leak or tank overflow at the site of the tanks, i.e., Building 730. Section 6.5.9 goes on to state that the ground surface west of IHSS 144(N) was also affected by the ruptured pipeline incident. If the tanks have actually leaked or overflowed then the FSP is totally inadequate for this IHSS. Also, if there is an additional area west of 144(N) then DOE has yet another area to investigate. It appears that coordination between the authors of Section 2.3.9, 2.4.1.9, and 6.5.9 is weak, this must be resolved and the true focus of the investigation must be clarified.

Response: *Regarding the four tanks themselves, it seems reasonable to expect that leakage from these tanks has taken place, regardless of whether such leaks have been documented or not. The text of Sections 2.3.9 and 2.4.1.9 should not be interpreted to say that the tanks did not leak. The tanks are below ground, and so waste will flow to them by gravity out*

of Building 776. The tanks, but not the vault in which they are contained, were overflowed in the course of fighting the 1969 fire, but this was not the source of soil contamination east of Building 701. Soil east of Building 701 was contaminated by leakage to the outside environment from inside the building. The text of Section 2.4.1.9 can be modified to clearly state that the tanks themselves are not a part of this OU investigation.

Clarification: CDH is concerned about knowing whether or not the underground tanks in building 730 have leaked. Since there appears to be a lack of historical information to document the integrity of the tanks DOE should look at the possibility of installing of 2 to 3 soil borings adjacent to building 730 mainly to confirm if leakage has occurred in the past from the secondary containment of the tanks. Also, verify if the referenced "clean out plug" is located in or out of the building 701.

Response: *IHSS 132 which is part of OU 9 covers investigation of the tanks and pipelines associated with building 730. Currently, OU 9 has planned soil borings adjacent to building 730 that will be used to investigate potential leakages from the building 730 tanks and associated pipelines. The FSP for OU 9 is also being modified to be include overlap work from OU 8 regarding IHSS 144 and 118.1. One of the initial tasks in the implementation of OU 8 and OU 9 is to complete additional data compilation. OU 9 will be preparing a detailed Field Sampling Plan based on the data compilation and present the plan in a Technical Memoranda. The investigation of IHSS 144 (N) for OU 8 and the future planned activities for OU 9 will be sufficient to address the concerns of IHSSs in this area.*

The "clean-out plug" as described is inside the building and will be covered by investigation of IHSS 132 in OU 9. However, the "clean-out plug overflow" as referenced in section 2.3.9 on page 2-18 is located east of building 730 and has been proposed to be included as part of IHSS 144 (N). Pages 2-68 and 6-46 have been modified to provide consistent presentation of information between sections 2.3.9, 2.4.1.9, and 6.5.9.

10. Part 2 of original comment.

The discussion of IHSS 150.4, page 2-123, has not been updated to reflect that an overhead pipeline was found to be leaking thus resulting

in radionuclides in the sump. This IHSS, therefore, is an Above Ground Surface release which appears to have secondarily affected soils below ground. Investigation based on both scenarios, Group I and Group III, is appropriate.

Response: The detailed description of IHSS 150.4 is presented in Section 2.4.1.13. The description of IHSS 150.4 in the following sections of the Work Plan is summarized from the previous more detailed historical account. Ambiguity exists over the interpretation of the description on page 2-83 of the "leaking process waste line located above the sump.", thus, IHSS 150.4 was already included in both Group I and Group III areas (see pages 2-123 and 2-135, also Figure 2-34).

Clarification: Ambiguity concerning descriptions of the "leaking process waste line located above the sump" needs to be clarified consistently amongst sections concerning IHSS 150.4. Therefore page 2-123 should be rewritten for clarity.

Response: Page 2-123 for IHSS 150.4 has been rewritten to be consistent with information presented in earlier sections. Because of the reference to a "leaking process waste line located above the sump", IHSS 150.4 was already included in both Group I and Group III areas in the original work plan. A new page 2-123 is provided for insertion into the Phase I RFI/RI Work Plan.

12. **Section 2.5.3.3.1:** It is unclear why IHSS 163.2 is included in Group III, Above Ground Releases, when the issue is a buried concrete slab. The original site of the slab, approximately 30 feet north of Building 771, would qualify as a Group III release. The Division questions why the decontaminated slab is of apparent greater concern while its original location is not included in the investigation. The Historical Release Report for PAC 700-163.2 (IHSS 163.2) states that an environmental report for 1973 does not indicate impacts to the soil; however, this does not preclude the potential for soil contamination. Unless the slab provided viable secondary containment, the soil surrounding the slab warrants investigations. The Division and EPA has completed its analysis of PACs and PICs for inclusion into the various work plans. The Division considers the original site of the concrete slab to be part of PAC 700-163.2 and hereby instructs DOE to plan an investigation of possible soil contamination.

Response: IHSS 163.2 is categorized under Group III because the original incident leading to the contamination of the buried slab was an above ground

release. The slab was subsequently decontaminated and buried. The concern for the buried slab is, where exactly is it located and was the decontamination of the slab sufficient. DOE acknowledges the concern for soil contamination in and around the original slab area, however this area already has complete investigative coverage by portions of IHSS 172 and IHSS 150.1 (see Figure 6-11). The investigation of these IHSSs already includes soil sampling, soil gas surveys, radiation surveys, and potential soil borings. Efforts have been made to consolidate field sampling where overlap exists between individual IHSSs. If specific information about the original location of IHSS 163.2 is required or adjustment to the proposed sampling locations is necessary, the scheduled Technical Memorandum for OU 8 would provide the appropriate forum to disposition these concerns.

Clarification: Provide the rationale for why the location of the buried slab is being investigated first and that soil sampling is planned after the slab is located.

Response: *Investigation for the location of the buried slab was selected to be performed first rather than investigation of the original location because of the historical account of how the slab was moved and the pavement history of the area (see page 2-31). The logic for looking for the slab first is that the slab should be easy to locate using geophysical methods and once located a sampling plan will be developed from the slab area back towards the original location. The historical account of how the slab was buried indicated that following decontamination the slab was pushed a short distance north of its original location into a ditch and used as fill. Thus, once the slab is located, the original location can be investigated more precisely. Section 6.5.18 has been updated to explain this approach and new pages are provided for insertion into the Phase I RFI/RI Work Plan.*

13. **Figure 6-5:** Since the sampling proposed around the Nitric Acid Dumpster is not specifically an investigation of IHSS 139.2, it would be appropriate to label the site "Nitric Acid Sampling" or a comparable wording. For the record, the Division specifically agrees that sampling of IHSS 139.2 is unwarranted given the fact that Hydrofluoric Acid has not leaked to the ground and filling operations are not conducted on site. Any contamination of IHSS 139.2, if present, would be from other operations not from the site's functions.

Response: *Comment acknowledged. Future references to this area will be addressed as "nitric acid sampling". The existing descriptions in sections 2.4.1.8 and 6.5.8 provide sufficient clarity for the purpose of the sampling activities around the nitric acid dumpster.*

Clarification: Label the area northwest of IHSS 139.2 as the "nitric acid sampling area" to be consistent with the text in sections 2.4.1.8 and 6.5.8.

Response: *The area has been labeled consistent with the text descriptions and a new Figure 6-5 is provided for insertion into the Phase I RFI/RI Work Plan.*

15. **Section 6.4.2.1:** Contrary to statements on pages 6-18 and 6-20 that vertical profile samples (VSPs) are proposed for exposed soils, it appears that some paved IHSSs are scheduled for VSP sampling. For example, note IHSSs 150.3, 150.4 and 150.7. Please review each IHSS and determine the appropriateness of VSPs at paved IHSSs.

Response: *Comment acknowledged. Provisions are already built into the Work Plan for accommodating VSP locations that fall onto paved areas. Also, the VSP locations are dependant on the evaluation of the HPGe results. Each IHSS will be reviewed prior to field implementation and VPS locations adjusted accordingly. CDH and EPA will be updated on any changes to the FSP.*

Clarification: The response for comment number 15 needs to be clearer regarding the collection of VSPs. VSPs are not to be collected on paved surfaces and the regulatory agencies will need to be involved in the VSP location selection process prior to collection of the samples.

Response: *As stated on Page 6-18 of the Phase I RFI/RI Work Plan VSPs are not proposed "under asphalt or concrete". However, useful information can be collected for paved IHSSs that will be collecting surface asphalt or concrete samples based on the results of the HPGe (p.6-21). Both VSP and concrete or asphalt samples will be collected based on the results of the HPGe survey. The Work Plan has provided for tentative VSP and other sample locations as shown on Figures 6-4 through 6-14; and even some VSP samples are located on paved areas. However, the exact location of the VSPs will need to be determined from the results of the HPGe. As described at the bottom of page 6-21 the Work*

Plan provides for a minimum of VSPs for collection. Since the exact number and location of VSPs for certain IHSSs may vary depending on the HPGe results each VSP proposed sample location has been noted on each IHSS figure that the "Actual location will be selected in the field". Both EPA and CDH will be kept apprised of the HPGe results and how the results will change VSP locations in the field.

19. Part 3 and 4 of original comment.

Also, our understanding is that vertical soil profiles (VSP) are irrelevant to confirm HPGe readings when the area to be surveyed is covered with concrete or asphalt.

Response: Utilization of the HPGe in this case will be to confirm the presence/absence of potential radioactive contamination at the surface of the IHSS area.

DOE should clarify the implementation of activities for the benefit of field personnel and determine the need for VSPs.

Response: Part of the implementation process for the subcontractor will be to address special concerns and implement proposed solutions. Both EPA and CDH will be involved throughout these processes.

Clarification: CDH and EPA need to be involved in decisions that changes the Field Sampling Plan and any proposed implementation solutions. Also the application of the HPGe is still questioned.

Response: See response to clarification for comment number 15 above. Also, the HPGe will be utilized to determine presence/absence of contamination of the soil that covers the concrete tunnel as shown in Figure 2-16 for IHSS 105.3. The surface of IHSS 105.3 is unpaved and VSP samples would be appropriate. Subsequent Technical Memoranda (TM) will summarize the results from Stage 1 and 2 activities and a more detailed Field Sampling Plan will be presented in the TMs

20. Section 6.5.16: Since the fuel oil tank is still present; sampling should be directed, if possible, to the specific location of spills based on fill connections, staining, surface flow direction, etc. The specified grid locations may and should be altered if such physical evidence permits a more focused sampling plan. Given the photograph on Figure 2-21, it

does not appear possible to conduct sampling on the planned grid. Please verify the appropriateness of the plan.

Response: *Comment acknowledged. The planned grid locations are outside the perimeter extent of the concrete slab as shown in Figure 2-21. Following field inspections the sampling locations may be altered depending on evidence of contamination and physical layout of the area. Both EPA and CDH will be advised prior to initiating sampling at new locations.*

Clarification: Is sampling on the current grid possible given the photograph on Figure 2-21.

Response: *Sampling according to the grid shown in Figure 6-8 is appropriate for this area. The perspective of the photo shown in Figure 2-21 shows the 15 by 20 foot concrete pad in the foreground as described on page 2-28. The IHSS dimension is 45 by 60 feet and the grid spacing fully accommodates the needs of the IHSS size.*

21. Section 6.5.19: The effectiveness of the NAI probe to determine radionuclide contamination within the asphalt of paved roadways or beneath the paved ditch is doubtful given the expected attenuation by the asphalt. Also, the planned VSPs are inappropriate for HPGe calibration for paved areas. However, surficial sampling of soil or sediment in the ditch and asphalt cores from the roadway may be useful in determining whether contamination still exists as a result of the spill. DOE must reformulate the investigation strategy and select options with the technical ability to detect radionuclides. Only the west and northbound lanes of the affected roadways need be investigated; this should effectively reduce the number of samples necessary to support an eventual ROD.

Response: *The planned investigation of IHSS 172 is going to be further evaluated within Technical Memorandum No. 1. Since this investigation has the potential to affect a large area and also require intrusive work to obtain samples, application of the NAI survey was considered a good first step of the investigation. Also, if CDH wants to limit the area of investigation to the northbound lanes and affected roadways, will the IHSS boundaries be formally changed by CDH or EPA for IHSS 172 or will the original IAG locations continue to be utilized.*

Clarification: The IHSS boundaries for IHSS 172 will remain in accordance to Table 5 of the IAG and should be investigated accordance with

the description of the IHSS given in the IAG. CDH and EPA have no intent of revising the boundary for IHSS 172. CDH is still concerned with the usage of the NAI and HPGe surveys for IHSS 172.

Response:

The application of the NAI and HPGe radiation surveys provide a timely and cost effective baseline of information on the current condition of the IHSS. The application of both surveys will be to help confirm presence or absence of contamination at the surface of the IHSS only. However, the alternative to performing NAI and HPGe surveys is a statistical based collection of soil samples beneath pavement and this sampling is very costly for the size of this IHSS. Since both NAI and HPGe can cover the IHSS in a short period of time and minimal cost (i.e. 20 to 30 thousand dollars vs. several million for soil sampling) it was determined that applying these surveys would provide an effective initial collection of data. Anomalous data could be then further utilized to direct a more comprehensive sampling effort. Also, the NAI and HPGe are non-intrusive in nature thus initially avoiding problems e.g. suspension of air borne particulates, construction hazards, and traffic flow that would be associated with cutting through the road to obtain samples. Following collection of data from the NAI and HPGe surveys the next step will be presentation of data in Technical Memoranda No. 2 which will also include further investigative recommendations. Collection of surficial soil samples from beneath the road will likely be part of the recommendations. The regulatory agencies will be involved in the review and approval of the Technical Memoranda prior to further investigation of the IHSS.

23. **Section 8.0:** In the Responses document, page 32, the following statement was given concerning DOE's future ecological land use plans and on-site residential use. "At the 8/24/92 meeting DOE stated that a scenario considering on-site residents in the industrial area as not reasonable for the future land use and risk assessment." Although the above statement was made, it was not accepted by the Division as reported in the minutes to the 8/24/92 meeting, dated 11/5/92. **The OUB RFI/RI Report will not be approved if the residential use scenario is omitted from the Baseline Risk Assessment.**

Response: *Application of the residential scenario is not reasonable for the Rocky Flats Plant industrial area given the current and probable future uses of*

the site. Thus, a quantitative evaluation of the residential scenario will not be incorporated in the baseline risk assessment for OU 8.

Clarification: The OU8 RFI/RI Report will not be approved if the residential use scenario is omitted from the Baseline Risk Assessment. Additionally, CDH may issue an order under the original Notice of Violation issued for OU 8 in May, 1992.

Response: *Application of the residential scenario is not reasonable for the Rocky Flats Plant industrial area given the current and probable future uses of the site. Thus, a quantitative evaluation of the residential scenario will not be incorporated in the baseline risk assessment for OU 8.*

Evaluation of risk for future on-site residential scenario is not a requirement of CERCLA, RCRA, CHWA nor the RFP IAG.