

Colorado Department of Health

INSTRUCTIONS TO AMEND

FINAL DRAFT

PHASE 1 RFI/RI WORK PLAN

ROCKY FLATS PLANT

PRESENT LANDFILL IHSS 114

and

INACTIVE HAZARDOUS WASTE STORAGE AREA IHSS 202

(OPERABLE UNIT No. 7)

AUGUST, 1991

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Table of Contents:

Page numbers for sub-headings in Sections 2, 7 and 9 must be revised. Please allow for any additional changes resulting from new amendments.

List of Figures:

The reference to Figure 9-7 should read "Potential Reference Area and Down-Drainage Sampling Locations for OU-7 Environmental Evaluation. A new reference to Figure 9-8 should read " Schedule for OU7 Environmental Evaluation.

Section 1.3.3.5: The last sentence of paragraph 2, page 1-11 states that "No vegetative stresses attributable to hazardous waste contamination have been identified" within the buffer zone. Vegetative stress has been reported at the West Spray Field. Whether this stress is from nitrates or hazardous waste is not known at this time; however, the fact that stress has been observed should be acknowledged and clarified.

SEP-21-1991

**Figure 2-1:** Although the Division accepts and welcomes inclusion of the East Landfill Pond into Operable Unit No. 7, it is unacceptable to expand the boundary of IHSS 114. Please retain the original IHSS 114 boundary and differentiate it from the OU-7 boundary. The figure title accurately conveys the differences between IHSSs and OUs and should be retained. All other impacted figures should be changed and resubmitted.

**Figure 2-2:** A "valve" symbol still needs to be added to the legend. This should be done by showing a valve symbol with the Groundwater Intercept System symbol and adding the words "with valve".

**Section 2.2.4:** The discussion in the first paragraph of page 2-19 describes a potential breach beneath the groundwater intercept system. Please reference Figure 2-2 following the appropriate sentence.

**Figure 2-11 & 2-12:** These figures provide data for fiscal year quarters, please indicate as (First Quarter, FY 1991).

**Section 2.3.1:** Table 2-6 referenced in the first paragraph of page 2-27 contains a listing of only 49 of 97 waste streams containing hazardous waste or hazardous constituents. It appears that a second page of the table is missing, please provide a complete listing.

**Section 2.4:** On page 2-40, it is stated that "the site conceptual model is used to assist in identifying sampling needs to obtain information for evaluating risks to human health..." In order for the Division to determine the adequacy of sampling, it was necessary to chart from the source, through the release mechanism, transport medium and exposure route to the receptor then determine the types of samples required for risk assessment. Although the Division will not require a flow chart analysis for this Phase I characterization, the additional complexities of nature and extent of contamination to be addressed in Phase II warrant such analysis. Figures 2-25 and 2-26 are valuable but do not clearly show what types of samples or analyses are appropriate. (The Division's analysis uncovered deficiencies in the sampling effort that will be described later in these instructions.)

**Section 3.1:** CDH WQCC groundwater standards effective April 30, 1991 should be referenced as Regulation 3.12.0 (5CCR 1002-8).

**Table 3-1:** State standards are shown as TBC. While it may be challenged that site specific requirements are not ARAR, the Table A & B statewide standards are ARAR. Please amend this table to reflect this conclusion.

Section 4.1.2.2: The last sentences of paragraphs two and three, page 4-5, discusses the need to evaluate the "effectiveness of the system". It was previously agreed that "impacts", not effectiveness, was the issue to be addressed.

Section 4.1.4: Item 1 of page 4-11 omits soils. Please revise the sentence to include soils.

Section 5.1: Regarding the second paragraph, page 5-1, the Implementation Plan currently being prepared to integrate ongoing waste operations (mounding) with RFI/RI activities should be submitted to EPA and the Division for approval and should be included as an appendix to this work plan.

Section 5.2: The first paragraph of page 5-2 should reference the involvement of the public in the RFI/RI process through the Technical Review Group (TRG) process.

Section 5.3.1: Item 5, page 5-4, gives the false impression that 11 holes will penetrate land filled material. Only six holes are designed to penetrate fill with three additional holes being upgradient and two being downgradient below the pond. Please correct/clarify the purpose of the drill holes.

Section 5.2.2: Under "5.6 - Task 6", page 5-9, it should be clearly stated that the baseline risk assessment for Phase I is intended to address the risk associated with source and soils. The IAG Statement of Work (SOW), Section I. B. 11. b, page 13, states that "... Phase I RFI/RI Workplans for interim status closure units external to buildings shall implement field work designed to characterize the sources/soils of each interim status unit which shall provide the information necessary to determine the risk associated with the source of contamination (bolds added)...." There is no clarification here, or in Section 8, that the determination of risk will be limited in this Phase I effort. In fact, the objectives listed on page 8-2 clearly define Phase II issues, i. e. fate and transport, that cannot be fully supported by the Phase I work plan. This section and Section 8 should be amended to avoid the impression that Phase I will address the risks of transported contaminants. (Be aware that the discussion in the last paragraph, page 15, of the IAG SOW, states that the Phase II RFI/RI report "shall include draft comprehensive Baseline Risk Assessments", bold added.)

Section 5.7.1: In regard to Item 6, page 5-13, the IAG Statement of Work, Section I.B.11.b., p. 14, "shall require the clean up of all source areas exhibiting risk levels greater than 10E-6 evaluated at the source". The 10E-4 to 10E-6 range is unacceptable. Also, this item should specify how remediation goals associated w/toxic, non-cancer risk will be determined (the 10E-6 criteria does not apply).

**Figure 7-2:** This figure has been placed in the document ahead of Figure 7-1. It should be placed after the first reference to it. The first reference is on page 7-12. Figure 7-2 would then follow Figure 7-1.

**Table 7-3:** On page 1 of 5, "In-situ Sampling gas/leachate/groundwater" specifies a sample frequency of three intervals in the vadose zone. However, the first paragraph of page 7-14 suggests that only two samples will be collected. It is not clear where the third sample would be taken. Please clarify.

On page 4 of 5, the activity of surficial soil sampling for IHSS 203 is specified only when elevated radioactivity is detected through a FIDLER survey. The Division finds that surficial soil samples (scrapes) should be performed routinely over the 25' grid for IHSS 203 and agrees that subsurface soil samples should be collected and analyzed only when constituents of the surficial samples are determined to be statistically above background. (Background as determined from the Background Geochemical Characterization Report). An analysis for inorganics should be added to the requirements for surficial sample analysis and retained for sub-surface soil samples. Please modify Table 7-3 to confirm this understanding and revise the narrative under "Surface Soil/Soil-Gas Sampling, first paragraph, page 7-24.

On page 5 of 5 under the activity "Soil Sampling" for Areas Around East Landfill Pond, this should be changed to "Surficial Soil Sampling". Also, the Division agrees that sub-surface sampling should be conducted when surficial concentrations are statistically above background. Please modify Table 7-3, page 5 of 5 and revise the narrative under "Soil Sampling", page 7-26.

**Section 7.3.1:** Under "Cone Penetrometer..." stratigraphy is an improper term to describe land filled material. Please change to "fill material".

The first paragraph, page 7-15, discusses the Foxboro OVA 128 FID. It should be further explained how the methane concentrations obtained will be used to determine the "total" gas production of the fill material.

A statement was previously made on page 7-12 of the new draft document (submitted informally to the Division on 7-5-91) that ten percent of the gas/liquid samples would be submitted to a laboratory to confirm GC results. This statement has been removed from the current version; it should be re-instated on page 7-15. Also, the Division's earlier comment on the sufficiency of a 10% confirmation factor should be justified.

The third paragraph of page 7-19 discusses quarterly ground water sampling. Although monthly water level measurements were agreed upon and are acknowledged elsewhere in the document, it is also

appropriate to specify monthly measurements in this paragraph.

Under "Sediment Sampling at East Landfill Pond", page 7-20, the three sediment sample locations are discussed. The Division's prior verbal comment that a statistician should be consulted to determine acceptability of the resulting data have not been met. Please investigate this approach and either alter the plan to allow for random sampling or justify the selection of sites along the longitudinal profile.

Under "Location Surveying" page 7-22, pacement or taping the locations of wells to evaluate the interceptor system is seriously ill-advised. These wells should be located by survey to ensure that they are located as specified in the plan design.

Section 7.3.2: Under "Radiation Survey", page 7-23, the phrase "plant background" should be changed to "natural background".

Section 7.3.3: Under "Radiation Survey", page 7-25, the phrase "plant background" should be changed to "natural background".

Section 8.4: If the last sentence, first paragraph, page 8-15, is referring to E divided by Rfd, the Non-Cancer Hazard Quotient, please so state.

In the second paragraph, page 8-15, reference to the 10E-6 to 10E-4 range is unacceptable per the IAG. See comments to Section 5.7.1.

Section 10.0 (Quality Assurance Addendum):

Introduction and Scope: On page 3 of 46, second paragraph, the statement that this Phase I RFI/RI will characterize ground water is misleading. Although valuable data will be collected, the investigation of ground water is a Phase II requirement. Please delete the reference to ground water.

Figure 1: This figure is illegible. Please enlarge.

Section 3.3.1: "Stratigraphy" is an improper term to describe land filled material. Please change to "fill material".

Section 3.3.8: This section must be amended to reflect changes in the soil sampling approach as discussed under the instruction heading Table 7-3.

Also, A SOP Addendum for the hand augering should be included in the document. (If hand augering is or will be added to SOP 3.8 for sitewide use, inclusion into this document will not be necessary.)

Likewise, SOPs for CPTs and the BAT system of gas/water sampling must be provided as a SOPA or referenced herein as sitewide SOPs.