

CORRES. CONTROL
INCOMING LTR. NO.

United States Government

Department of Energy

1246 RF 88

Memorandum

Albuquerque Operations Office

Rocky Flats Area Office



000025180

JUN 30 1988

DUE DATE *As Stated*

ACTION *McKinley, K*

RE:

TO:

FROM: S&E:KS

SUBJECT: Review comment transmittal

FOR: Kirk McKinley, Manager
RCRA/CERCLA Program
Rockwell International, AERO, RFP

BEST AVAILABLE COPY

Please find attached review comments of the following three documents:
Phase II Remedial Investigation Work Plan for Medium Priority Sites, Landfill
Closure Plan and TRU Mixed Waste Sections I and C. Please respond to these
comments and provide documentation to this office of their respective
resolutions. Should you have any questions regarding this matter, please
contact K. J. Schnieder of my staff at extension 2473.

Ronald D. Reed, Chief
Safety and Environmental Branch

Attachment

DIST.	LT	ENC
SANCHINI, D.J.		
BADER, C.P.		
CAMPBELL, G.W.		
HOOD, R.C.		
KINZER, J.E.		
KIRBY, W.A.		
MCNETT, J.F.		
MEYERS, G.W.		
SHANNON, W.M.		
SMITH, R.E.		
WEIDNER, C.W.		
WESTON, W.F.	XX	
WILSON, G.L.		
WOZNIAK, B.D.		
YOUNG, E.R.		
BETCHER, D.H.		
CARNIVAL, G.J.		
HARMAN, L.K.		
HEBERT, J.L.		
HOEY, J.B.		
KRIEG, D.M.		
LIM, B.W.		
LOUDENBURG, G.E.		
MAIMON, E.R.		
POTTER, G.L.		
ROECKER, J.H.		
VELASQUEZ, R.N.		
WICKLAND, C.E.		
<i>McKinley, K</i>	XX	
<i>RENGARD, T</i>	XX	
<i>Blaha, F.</i>	XX	
CORRES CONTROL	x	x

Received for Addressee
Corres. Control RFP

7-1-88 Jp

Date By

of Ltr #

ADMIN RECORD

COMMENTS ON ROCKY FLATS PLANT PHASE II REMEDIAL INVESTIGATION
WORK PLAN FOR MEDIUM PRIORITY SITES

General Comments

1. The assumption of an Arapahoe Sandstone easterly dip of 7° seems very tenuous based on one sandstone correlation between wells. The statement made page 2-3 that this sandstone orientation is consistent with that observed at the 881 Hillside is not universally true. Aside from the fact that a 7° east dip was not the operating assumption when 881 Hillside Remedial Investigation was written, some well pairs at the 881 Hillside indicate a different dip orientation. For example; well pairs 8-87 BR and 3-87 BR dip about 4° over their 325' east-west separation, nearly adjacent wells 59-86 BR and 8-87 BR show a shallow westerly dip. However, well pairs 5-87 BR and 45-87 BR indicate about a 6° true east dip and wells 8-87 BR and 45-87 BR show close to a 7° dip (8°) over their 1300' of separation both assuming sandstone correlation. The sandstone subcrop areas presented in Plate 2-3 should therefore be qualified with a statement that the constant dip angle is an assumption without universal support at this time. Since the well placement scheme assumes a constant dip angle and therefore a lower degree of correlation between wells, the number of wells and their placement as described is probably conservative. Section 4 would be strengthened with a paragraph stating this latter point with an emphasis on the conservative nature of the well placement and include language that allows changing well location as information is gathered.

Specific Comments

1. Page 2-3, first paragraph, fourth sentence
Plate 2-5, Cross Section F-F', indicates that the sandstone in wells 25-87 BR and 36-87 BR are not correlated with each other, but are drawn as separate sandstones. correlation of the sandstone bases actually results in a westerly dip.
2. Page 2-8, second paragraph, fourth sentence
This sentence is misleading as it implies that the groundwater in the sandstone will only flow as far as the sandstone's extent. Mass continuity dictates that groundwater must discharge into surrounding claystone. This sentence should be rewritten to indicate that the maximum groundwater velocity, instead of flow, in a sandstone can only be maintained along the length of the sandstone lens.
3. Page 2-13, third paragraph
It is not clear in this paragraph if the soil samples described in the first sentence are external to BH28-87. If they are, then their locations should be provided to evaluate if the potential source is bounded. If they are not, then this paragraph is incorrect since the results from one well cannot indicate the most contaminated area of the plume.

4. Page 4-7, first paragraph

It is not clear if the soil sampling procedure to be applied at the 903 Pad, Mound, and East Trenches Areas is the same as that described on page 4-12 for downwind trench samples or the surface (upper 5 cm) samples described in the last paragraph on page 4-7. Whatever procedure is applied at the 903 Pad should stress near surface resolution to help estimate the volume of soil for removal.

COMMENTS ON THE PRESENT LANDFILL CLOSURE PLAN

General Comments

1. The topic of post-closure groundwater monitoring, as required by 6 CCR 1007-3, Sections 265.117 and 265.310, is not at all addressed in this closure plan. Relevant points such as the location of both alluvial and bedrock monitoring wells and long-term management of post-closure sampling must be discussed in a section dedicated to post-closure groundwater monitoring. If post-closure monitoring of the landfill is contained within some other site wide monitoring document, then it should be referenced.
2. Section 5 of Appendix 5 discusses present groundwater contamination resulting from the landfill operation. Issues concerning how this existing groundwater contamination is to be cleaned up or even if it is necessary to provide mitigative action are not addressed. Existing groundwater contamination has a good chance of raising the public ire during review. Therefore, a more critical analysis of existing conditions should be provided with an emphasis on the means available to clean up the existing plume (i.e., pump and treat/dispose).
3. Overall, the quality of the document's presentation, particularly the appendices, leaves the impression of being put together in haste. Time should be given to typing and filling in handwritten analysis notes with descriptive text as well as improving figures, organization, etc.

Specific Comments

1. Page 18, last paragraph This paragraph is confusing without a definition of a "lift elevation" and the basis for selecting the number of lifts throughout the landfill.
2. Page 19, Section 2.3.3, second sentence This paragraph contradicts the statement on page 16, third paragraph, that guidelines were set in February 1973 that established maximum concentrations for disposed radioactive materials, but did not eliminate them. If the monitoring procedures superseded the 1973 guidelines, then this should be so stated.
3. Page 59, second paragraph The first sentence of this paragraph is written in the past tense indicating that sampling locations have already been determined. If this is the case they should be presented on a figure. If not, correct the tense of the sentence.
4. Page 59, third paragraph It seems unnecessary and undesirable to randomly place just three samples within a sprayfield. The natural variability within an area the size of a sprayfield

might be better represented with a sampling geometry that maximizes the area sampled, i.e., triangular. Random sampling is applicable in a statistical evaluation of contamination which is not the intent of the Phase I study, at least as stated in this section. Reference to a standard sampling procedure or statistical design is needed here.

5. Page 62, Section 3.2.2, second paragraph
What is the rationale for randomly selecting two water samples within the east pond? If only two samples are taken, it would seem water quality within the pond would be better represented with one sample through the shallow western edge of the pond near the influx of surface seepage (i.e., leachate) and another through the deeper eastern portion.
6. Page 70, second full paragraph
Provide a reference for the HELP computer model.
7. Page 80, second paragraph
Provide a discussion on the manner by which the estimated flow velocity within the riprap was obtained.
8. Appendix A, Section 3.5.3.3, first paragraph
It is not clear why a new pair of wells is needed "at the base of the pond dam to characterize downgradient groundwater quality" when the existing well pair 40-87, 41-87 BR are located in the tributary just 100' below the dam. Presumably discharge out of the base of the dam would be intercepted by this well pair in the drainage. The rationale for the new well pair should be discussed in terms of contamination that may or may not be detected in well pair 40-87, 41-87 BR. If the purpose is to establish point of compliance, then so state.
9. Revised Landfill Sampling Plan, pp. 4-6
The use of an alternate well sampling scheme (well IDs 101-87 through 114-87) is confusing. The well numbers should be made consistent with the rest of the document or at least explained.
10. Revised Landfill Sampling Plan, page 3, last sentence
The assumption that the landfill has "largely dewatered" contradicts statements made on pages 38 and 103 of volume 1 that water level measurements in monitoring wells indicate that the groundwater and leachate collection systems do not appear functional.

11. Appendix 6, Section 3.1.2.1, last paragraph This section makes a major assumption that the low permeability clay layer is uniform over the landfill site. This paragraph should be supported by discussion the possibility of extending boreholes below 12 inches to evaluate the underlying clay layer thickness as well as the ubiquity of the clay layer and its range of thickness as observed over the site.
12. Appendix 6, Section 3.1.2.2, first paragraph The reason for selecting VOC samples at a 12 inch depth should be given. Presumably these samples would be at the cobbly sandy loam/clay contact, but this should be so stated. Observed VOC concentrations at soil contacts around the plant should be discussed if this is the reason for sampling at this horizon.
13. Appendix 6, page 9, Sections 3.2.1 and 3.2.2 Specify the type of water samples taken at the east pond: grab or composite. Justify the sampling mode and specify the water level(s) sampled.
14. Appendix 6, page 13, Section 3.5, first paragraph The use of a 90% confidence level is considered as an alternative to defining the "vertical and horizontal extent of contamination". This statement confuses how a 90% c.l. is implemented in sampling since a statistically valid analysis at 90% c.l. can be conducted over multiple spatial sample points by way of multiple sampling at each point. This section should discuss how a 90% c.l. will be achieved over the areas sampled in terms of the number of samples required at each point to establish confidence intervals.
15. Revised Landfill Sampling Plan, page 3, first paragraph and Appendix 1 It is not at all clear how the drawdown curves in Figure 1-1 were derived. The handwritten notes comprising Appendix 1 need to be expanded into a discussion clearly describing the equations used. Also the use of the "proposed" well numbers (102-87 through 114-87) is confusing since Plate 4 labels them equivalent to existing wells.

Page C-3, second paragraph, second sentence

The basis for establishing the maximum concentration of hazardous constituents for each WFN should be given and referenced.

Page C-3, second paragraph, first sentence

Table C-1 is introduced as listing WFNs for off-site disposal or long term storage. The footnote for WFN 116, TRU Combustible Waste, implies that this waste form is classified as a mixed waste with activity above the Economic Discard Level. Please rephrase this footnote to indicate that this WFN is a recoverable residue until its activity is below the EDL.

Page C-9, second paragraph, second sentence

This paragraph should include a discussion of the reasons for selecting the specific waste streams for sampling.

Page C-25, third paragraph, second sentence

Please describe and reference SW-846.

Page C-39, section C-3a(3), last sentence

Please provide a description and reference for the Compatibility Codes.

Page C-56, first paragraph

This section should describe a procedure for handling and storage of the waste in the event that it does not pass the fingerprint tests. The action to "Review Process Knowledge" given in Table C-8 provides no information on how the waste is subsequently treated.

Page I-1-9, second paragraph, second sentence

If the method for sampling airborne radioactive particles cannot supply a real time measurement, then what is the purpose of using this method? Results from a sampling procedure implemented after the period of steam cleaning can only indicate how much damage has been done and does nothing to limit worker exposure or atmospheric release. This paragraph should discuss the purpose for obtaining after-the-fact data and why a real time counting method is not being implemented.

Page I-1-15, third paragraph, second sentence

This sentence as written suggests that the rinsate will have all of the contaminants listed Tables 1 and 2. Replacement of "will have" with "could have" is probably more appropriate.

Page I-2-4, first paragraph

This paragraph should discuss the appropriateness of these two locations for establishing soil background. Considering the past airborne radionuclide releases, the background plot northeast of the site seems particularly vulnerable to contamination at the soil surface. The known spatial distribution of airborne releases, both routine and accidental, should be indicated in terms of proximity to these sampling plots.

Page I-2-11, section I-2b(2) and Table 3

The procedure for determining the number of soil samples needs to clarify the following points:

1. Is the purpose of this procedure to establish the background (i.e., natural) variance or the variance of a potential contaminant? This question should be addressed by including discussion of lead as a potential contaminant in the West Spray field and its corresponding appropriateness for establishing background or contaminant variance.
2. The procedure described in Table 3 does not indicate the area over which the lead samples were taken. The number of required samples is based on the sample variance which is in turn partly a function of the sample area. For instance, five samples taken adjacent to one another would show a variance approaching that of the lab uncertainty and not incorporate natural spatial variability in the field. Therefore a discussion of the areal extent over which this derived sampling density is appropriate is necessary.
3. Is the lead data provided in Table 3 normally distributed? A cursory examination of the data was indecisive.