

DOCUMENT REVIEW: PROPOSED INTERIM MEASURES/INTERIM REMEDIAL ACTION
PLAN AND DECISION DOCUMENT: 903 PAD, MOUND, AND EAST TRENCHES AREAS
OPERABLE UNIT 2, ROCKY FLATS PLANT
DRAFT - DECEMBER 1989

GENERAL COMMENTS:

1. This plan should carry a signature page indicating approval by the appropriate authority.
2. This document should include an Executive Summary outlining the area in question, the appropriate regulations, and the proposed action.
3. This document should provide cross-sectional illustrations.
4. This document should provide isopleth illustrations.
5. This plan did not make any reference to upper-tier quality documents such as Department of Energy (DOE) Order 5700.6B, NQA-1, the Environmental Protection Agency QAMS-005/80 document, or Resource Conservation and Recovery Act (RCRA) Facility Investigation Guidance Volumes I through IV. We recommend that these documents be evaluated for their applicability and that the applicable requirements be incorporated.
6. There is a complete absence of any reference to a Quality Assurance Program based on the NQA-1 document (18 elements of control) as specified by the DOE Order. The programmatic control of these 18 elements, as applicable to a specific project, is not clearly evident in the documents. An example is the control element "Instructions, Procedures, and Drawings," which provides the requirements that all activities affecting quality will be prescribed and performed in accordance with documented instructions, procedures, or drawings of a type appropriate to the circumstances. We strongly recommend that the NQA-1 requirements be evaluated against their applicability to the project and be integrated accordingly. The 18 control elements should be evaluated, and those determined to be applicable should be tailored to meet the needs of this project. We also recommend that two additional elements of control be included: (1) Problem Prevention, which would include requirements to prevent problems through assessments, readiness reviews, and modeling; and (2) Software Quality Assurance, which would delineate what is to be controlled in the development, modification, use, and maintenance of software. The life cycle should be identified and adequate controls applied to the development, testing, use, and maintenance of software. Configuration control and verification/validation of software should also be addressed.
7. We suggest the use of a flow-down matrix that will show the flow of requirements from the upper-tier documents down through the project plans to the specific procedures used to implement the requirements.

8. We recommend that the organizational structure be provided to show the independence of the quality function and provide the quality function with a direct reporting line to upper management for resolution of conflicts associated with quality matters.

SPECIFIC COMMENTS:

1. Section 2: All figures using the site-specific topographical map as a base need to be better reproduced. The topographical lines are not clear.
2. Section 2, page 2-16, Fig. 2-5: This figure is incorporated at the wrong location.
3. Section 2, page 2-61, Fig. 2-6: This figure is incorporated at the wrong location.
4. Section 2.1.2.1, page 2-3, paragraph 3: The site history for solid waste management unit (SWMU) 112 should indicate how much soil has been moved and the corresponding surface area of the asphalt covered area. Did subsequent sampling indicate that all contaminated soil is contained? Was the estimated 5000 gal of leaked liquids the result of several small spills or one or two large spills?
5. Section 2.1.2.1, page 2-3, paragraph 5: How much waste is buried in Trench T-2?
6. Section 2.1.2.2, page 2-5, paragraph 2: A brief explanation should be given of why soil contamination at site SWMU 113 is thought to have come from the 903 Drum Storage Site.
7. Section 2.1.2.2, page 2-5, paragraphs 4 and 5: Briefly describe what cleanup actions were performed at SWMU Sites 153 and 154.
8. Section 2.1.2.3, page 2-6, paragraph 2: It is indicated that samples from the February spill were analyzed using the Extraction Procedure toxicity test. Since RCRA land disposal restrictions may be applicable or relevant and appropriate requirements (ARARs) for site, remedial actions in any future soil removal may be involved. The Toxicity Characteristic Leaching Procedure should also be used for future analysis of soil samples.
9. Section 2.2.2.1, page 2-11, paragraph 1: The age and approximate thickness of the surficial units should be discussed in this section. Since no well logs are provided in the report, we suggest including a stratigraphic column that illustrates the formation thicknesses, characteristics, etc. for all relevant formations.
10. Section 2.2.2.1, page 2-11, paragraph 2: A figure that illustrates the Paleo ridges and valleys discussed in this paragraph should be provided.
11. Section 2.2.3.2, page 2-16, Fig. 2-5: The data points that were contoured should be provided on this figure and in tabular form; otherwise, the map cannot be checked for accuracy. Including water flow lines on this map would also be helpful.

12. Section 2.3.1, page 2-24, paragraph 4, last sentence: This sentence should be restructured to provide an interpretation of the tables before incorporating.
13. Section 2.3.1, pages 2-25 through 2-30, Tables 2-1 through 2-6: The provided water level information was collected over a 4-month period. For comparative purposes, these tables would be more useful if they provided water levels collected during one 24-hour period.
14. Section 2.3.1.5, page 2-58, paragraph 1: The location of Well 42-86 (upgradient of the East Trenches area) and the type of contamination (primarily solvents) indicate that the source is possibly the Pad or Mound areas. The East Trench Area site history in Section 2.1.2.3 does not mention buried solvents.
15. Section 2.3.1.6, page 2-58, paragraph 1: The source of trichloroethylene contamination in Well 36-87 should be identified. If it is from the East Trench Area, the site history in Section 2.1.2.3 should be corrected to include the probability of buried solvents.
16. Section 2.3.1.6, page 2-59, paragraphs 4 and 5: In this section, the horizontal extent of groundwater contamination is addressed. Some discussion on the vertical extent of groundwater contamination should also be included. Considering the number of identified contaminants that are sinkers, vertical contamination should be a primary concern.
17. Section 2.3.2.2, page 2-63, paragraph 1: If proof that contamination is confined to surficial soils is desired, we suggest collecting discrete soil samples at that depth.
18. Section 2.3.3.1, page 2-64, paragraph 1: A figure referring to the sediment sampling locations in this section is needed.
19. Section 2.3.4, page 2-65, paragraph 1: This paragraph states that surface water contamination is localized in the immediate vicinity of the 903 Pad and Mound Areas based on the clean samples downstream. These downstream surface water samples are most likely clean because of volatilization and dilution of the contaminants detected near the 903 Pad and Mound areas. This indicates that the surface water is currently being contaminated and compounds are volatilizing into the atmosphere. This issue needs to be addressed because the contamination is probably generated from the groundwater that flows into upper South Walnut Creek.
20. Section 2.3.4, page 2-66, paragraph 2: Strong rationale indicates that the radionuclides found in seep water samples come from the particulate matter. However, the only conclusive proof will be the collection of filtered samples and subsequent analyses that show no radionuclide contamination.
21. Table 3-3, page 3-22, Probable Action-Specific ARARs: For actions involving storage in tanks or containers, the requirement that storage is prohibited unless in compliance with 40 CFR 268.50 should be indicated.
22. Section 4, page 4-13, Fig. 4-4: This figure is incorporated at the wrong location.

23. Section 4, page 4-28, Fig. 4-7: This figure is incorporated at the wrong location.
24. Section 4.3.1, pages 4-4 and 4-6: Failure to suggest that radioactive substances are not of concern contradicts Section 2.1.2, Operable Unit 2 Description, which indicated radioactive materials and/or wastes were placed or found in or around 17 of the 20 sites.
25. Section 4.3.1.2, page 4-6, paragraph 3: This paragraph makes the same conclusion twice and should be combined with paragraph 4.
26. Section 4.3.1.3, page 4-7, paragraph 1: Although this document specifies that sampling will be performed twice weekly, it also states that the water in the retention tank will be continuously discharged, thereby creating the potential for environmental impact, National Pollutant Discharge Elimination System (NPDES) violations, and generation of a greater volume of waste by addition to the B-5 Pond.
27. Section 4.4.1.1, page 4-12, paragraph 1: The mass flux potential for each well is partly based on its 30-day flow. The 30-day flow calculation is largely dependent on the saturated thickness in the well. When the wells are redrilled, drilling out an additional 10 or 20 ft would significantly increase the saturated thickness and, therefore, increase flow capabilities of the wells. Well 11-87 could be drilled an additional 15 ft and provide as much flow as Well 2-71 nearby. Well 11-87 has higher levels of contaminants and is downgradient of Well 2-71. The minimal additional cost of redrilling this well deeper may provide more effective remediation. Evaluating the wells for pumping based primarily on their location and level of contamination is suggested. The additional cost of redrilling a well deeper is insignificant if it provides a substantially better pumping location.
28. Section 4.4.1.1, page 4-14, Table 4-1: The formula for calculating the 30-day average flow should be provided along with a sample calculation and any information necessary to repeat the calculations for all listed wells. The information provided does not explain why Well 42-86 has such a high flow rate compared to the other wells. Also note that Well 15-87 is a Pad well, not a Mound well, as listed in this table.
29. Section 4.4.1.1, page 4-18, paragraph 1: More information needs to be presented regarding current well completions and why these wells will be redrilled. Will the hole diameter be increased? What is the general procedure for redrilling the wells?
30. Section 4.4.1.1, page 4-19, Fig. 4-6: This figure needs to be modified to agree with the text. It appears from the figure that water from Well 42-86 flows into the ion exchange unit. This contradicts the text's description of the process. Figure 6-1 is a more accurate representation of this process.
31. Section 4.4.1.1, page 4-20, paragraph 2: Would it be beneficial to run the water from the low-yield wells first into the ion exchange unit, and then combine with water from Well 42-86 for carbon treatment? This would eliminate the need for parallel carbon systems and only one system will be necessary. This, in turn, would reduce the number of water quality checks necessary to one-half the current requirement.

32. Section 4.4.1.1, page 4-21, paragraph 2: The "blending prior to decarbonation" statements should be combined.
33. Section 4.4.2.1, page 4-28, Fig. 2-2: This figure is incorporated at the wrong location.
34. Section 4.4.2.2, page 4-34, paragraph 1: Emphasizing that the drain would only intercept the uppermost water-bearing zone is suggested.
35. Section 4.4.2.3, page 4-35, paragraph 2: Failure to suggest that radioactive substances are not of concern contradicts Section 2.1.2, Operable Unit 2 Description, which indicated radioactive materials and/or wastes were placed or found in or around 17 of the 20 sites.
36. Section 5: Alternative 3, Installation of a Collection System, may provide substantially superior protection at a cost increase of less than 10% above the cost of Alternative 1, Use of Existing Wells. An alternative that uses some existing wells and drills new wells where needed may provide the most cost-effective remediation.
37. Section 6: Because the limits of contamination are not identified, any remedial treatment system should be oversized where necessary so that additional recovery wells may be added in the future.
38. Section 6, page 6-5, paragraph 3: Although this document specifies that sampling will be performed twice weekly, it also states that the water in the retention tank will be continuously discharged, thereby creating the potential for environmental impact, NPDES violations, and generation of a greater volume of waste by addition to the B-5 Pond.
39. Section 7.1, page 7-1, paragraph 3: "Overdrilling" and "redrilling" indicate the same operation. Terminology should be consistent.
40. Section 7.1, page 7-2, paragraph 2: "Personnel exposure" should be underlined.
41. Section 7.1, Air Quality: This section should mention decarbonator emissions for volatile organic compounds, radioactive compounds, etc.
42. Section 7.2, Water Quality: Water quality discharge should be mentioned.
43. Section 7.9, Page 7-17: The capacity of the B-5 Pond should be stated as well as the present retention time before release. Furthermore, the amended retention time should be given as well as the method of discharge. These values are important because of the potential for discharge before analytical results, thereby potentially contaminating off-site environments and posing a threat to downstream surface water users.