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DRAFT RESPONSIVENESS SUMMARY

FOR THE PROPOSED INTERIM MEASURES/ INTERIM REMEDIAL ACTION DECISION DOCUMENT FOR THE ROCKY FLATS INDUSTRIAL AREA

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

October 1994

ENVIRONMENTAL RESTORATION PROGRAM

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Section 1

Introduction

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For the Proposed Interim Measures/Interim Remedial Action Decision Document for the Rocky Flats Industrial Area

This document presents the Draft Responsiveness Summary (RS) for the Interim Measures/Interim Remedial Action Decision Document (IM/IRA/DD) for the Rocky Flats Plant (RFP) Industrial Area. The IM/IRA/DD and Draft RS were prepared in accordance with the Rocky Flats Plant Interagency Agreement, dated January 22, 1991, and applicable regulatory guidance documents. Comments from the U.S. Environmental Protection Agency (EPA) and Colorado Department of Health (CDH) were incorporated throughout the development of the decision document and the Draft RS.

Generally, the IM/IRA/DD is based on environmental information collected, compiled, and reviewed from October 1993 through February 1994. New information and program changes that were identified after February 1994 have not been incorporated into the IM/IRA/DD; therefore, references to Rocky Flats Environmental Technology Site, Colorado Department of Public Health and Environment, and other recent changes are not reflected in the decision document nor in the responses to public comments.

The IM/IRA process is used at RFP as a means for rapidly completing remedial actions by reducing or eliminating a potential threat to human health and the environment. The term IM/IRA is a combination of the terminology used for both Resource Conservation and Recovery Act (RCRA) and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) environmental investigation and cleanup programs. The IM/IRA/DD for the Industrial Area presents the proposed verification monitoring for Decontamination and Decommissioning (D&D) activities. D&D is primarily concerned with decontamination, dismantling, removal, and entombment of surplus nuclear facilities and portions of these facilities.

The objective of the IM/IRA/DD is to maintain a safety net around the Industrial Area to monitor for, protect against, and respond to potential contaminant releases until and during D&D and other nonroutine activities. The IM/IRA/DD describes the proposed verification monitoring for the primary pathways of concern during D&D activities. Potential contaminant transport pathways and mechanisms were reviewed to assess the current monitoring system's capability to detect potential contamination before it is transported past the Industrial Area fenceline. Contaminants of potential concern and transport pathways were identified to evaluate the current monitoring system for spatial distribution of monitoring locations, locations relative to contaminant pathways, monitoring frequency, and adequacy of analytical testing parameters.

The purpose of this Draft RS is to present comments that were made by the public during the public comment period based on review of the IM/IRA/DD and responses to the public comments. The IM/IRA/DD public review period was September 28, 1994 through October

27, 1994. A series of presentations were made to provide information about the IM/IRA/DD to the public. These presentations included the following:

- September 19: Overview of the IM/IRA/DD presented at the Monthly Information Exchange Meeting;

- September 23: General concept of the IM/IRA/DD presented to the Technical Review Group;

- September 28: Overview of the IM/IRA/DD presented to representatives from the City of Westminster; and

- October 19: Overview of the IM/IRA presented at the Monthly Information Exchange Meeting, including accepting verbal and written comments from the public.

This Draft RS presents public comments on the IM/IRA/DD and responses to those comments that were made both verbally and in writing from September 28, 1994 through October 14, 1994. The Final RS will present the public's verbal and written comments and responses to public comments that were collected throughout the entire public comment period.

Section 2

Responsiveness Summary

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Responsiveness Summary

For the Proposed Interim Measures/Interim Remedial Action Decision Document for the Rocky Flats Industrial Area

Colorado Department of Public Health and Environment:

Comment 1

Appendix 3.8: This needs to be revised to accurately reflect which units are permitted. The Division considers the term "permitted" to refer to those regulated units which are contained in the existing state RCRA Part B Permit for Rocky Flats. This is limited to container storage areas only. There are no permitted storage tanks (PST) or permitted treatment areas (PTA). We do not consider units that have interim status to be "permitted", and the appendix must be updated accordingly. As currently shown, the appendix implies the majority of units at Rocky Flats are permitted; this is both untrue and misleading.

Response to Comment 1

The title to Appendix 3.8 will be revised from "Industrial Area IM/IRA/DD Permitted Storage Units" to "Industrial Area IM/IRA/DD RCRA-Regulated Storage and Treatment Units" to more accurately reflect the regulatory status of such units at Rocky Flats. The unit type column in the table comprising Appendix 3.8 will also be revised by removing any reference to permitted status so that any misleading information regarding the current status of specific units is eliminated.

Question 2

Figure 4-4: All the wells in the vicinity of the solar ponds have been omitted. They were on Figure 4-4 in the preliminary document, and several showed significantly elevated contaminant levels. Is there a good reason why they were left out of this version?

Response to Question 2

This change was made for consistency of wells shown in Figures 4-4 and 4-5. Also, the wells in the vicinity of the Solar Ponds had been eliminated from Figure 4-4 because the analytical suite for these wells was limited, compared to that for the other wells.

We agree that the figure was more complete as it appeared in the preliminary document. The wells and selected analytical results for the Solar Pond wells will be added to Figure 4-4; Table 4-8 will be changed to Table 4-8A, and an additional table presenting the complete results for the Solar Pond wells will be added as Table 4-8B.

Comment 3

Plate 4-1 is very busy and makes finding the locations of the 11 proposed new wells very difficult. A separate drawing, similar to Figure 4-6 of the preliminary document (but not included in this version), needs to be reinserted.

Response to Comment 3

A separate plate to present 11 monitoring wells is probably unnecessary, and locating the wells on an 8 1/2 by 11-inch or 11 by 17-inch figure would be imprecise. The 11 well symbols on Plate 4-1 will be changed to make them more easily visible to the reader.

Question 4

Section 4.7.3: What is a well point? The term is never defined.

Response to Question 4

A well point consists of a continuous-slot stainless-steel well screen that is connected to a forged-steel point, which is pushed or driven into the ground to a depth that intercepts the water table. Well points are recommended in this case because they (1) are a relatively inexpensive way to obtain groundwater samples and water-level measurements, (2) do not produce drill cuttings, and (3) are easily abandoned when no longer needed.

A paragraph will be added to Section 4.7.3 as follows: "A well point consists of a slotted stainless-steel well screen attached to a steel point on the lower end and threaded pipe shank on the upper end. The well point is pushed or driven into the ground to a depth encountering groundwater."

A sentence will be added to the first paragraph stating: "All well points will be installed according to standard operating procedure (SOP) GT.6, Revision 2 - Monitoring Well and Piezometer Installation."

Comment 5

Section 5.3.2: The OU2 surface water information is outdated. Collection of SW-61 and SW-132 were discontinued earlier this spring.

Response to Comment 5

Section 5.3.2 (page 5-17) has been changed to, "Historically, the OU2 IM/IRA surface water from SW059, SW061, and SW132 was collected for treatment. Monitoring for SW061 and SW132 have since been eliminated under OU2. SW059, which is associated with active seep/spring in the South Walnut Creek Basin, is still an active monitoring site. SW061 was located at the outlet of a concrete culvert. SW132 was located at a buried corrugated metal culvert approximately 225 feet downgradient of SW061. The surface water sample that was collected at SW061 and SW132 (and is currently being collected at SW059) was located upstream of the B-series ponds. The purpose of the upstream location was to reduce the potential for further downstream contamination. A treatment system consisting of a chemical precipitation/cross-flow membrane filtration system was installed by OU2 to remove heavy metals, radionuclides, and VOCs form the seeps (DOE 1992a)." The last two sentences were eliminated from the text.

Comment 6

Sections 5.5.1 and 5.5.2: The data gaps identified for base flow and storm conditions are missing the establishment of a mass balance for pollutant loading. Again, these data gaps were identified in the preliminary draft but omitted here.

Response to Comment 6

Contaminant concentrations and flow will be measured during verification monitoring of basins and subbasins within the Industrial Area. Mass loadings can be calculated from these data. However, the establishment of chemical mass balances for the major outfalls was eliminated in the Draft Final version because this was not a fundamental verification monitoring requirement for the Industrial Area D&D activities.

Comment 7

Section 5.7: The proposed actions for surface water differ significantly from those found in the preliminary document. The primary focus of the preliminary program was to install new surface water sampling locations at the boundary of the 28 drainage sub-basins. The approach put forth in this document falls far short of that goal. Section 5.7.1 presents a stormwater monitoring program at 6 outfalls that are already being, or already have been monitored as part of the NPDES stormwater requirements; this wasn't even in the original proposal. Additionally, the analytical requirements have been pared down from the entire RFP analyte list to only the NPDES analyte list, which is likely to be too limited to detect COPCs of interest. Section 5.7.2 contains the sub-basin approach, but is scaled down from the original version. The language in Section 5.7.3 is so weak that implementation is not enforceable ("confirmation monitoring *may* be performed....a seep monitoring program *may* be implemented"). We spent much time eliminating language of this nature from the preliminary document.

Response to Comment 7

The subbasin concept presented in the Draft Final IM/IRA/DD has not changed since the development of the preliminary draft and is consistent with the verification monitoring objectives. The proposed actions in the draft final version, which are put into a different text format than the preliminary draft, go into detail about the subbasin monitoring approach. The subbasin monitoring approach is critical to monitoring surface water because it will be much closer to the potential source area during D&D.

Perhaps the point of confusion lies with when the subbasins will be monitored. There are 28 subbasins within the seven main drainage basins that make up the Industrial Area. The specific subbasin monitoring activity to establish baseline conditions will occur only when a D&D activity has been scheduled that could affect a specific subbasin. It was never the intent to establish baseline conditions for all 28 subbasins at the same time.

The use of the previous National Pollutant Discharge Elimination System (NPDES) stormwater outfalls will provide an additional layer of surface water monitoring. This monitoring was not conceptualized during the development of the preliminary draft. By using historical data and data collected for baseline establishment, the former NPDES outfall sampling locations and several culverts will have warning and control limits developed before D&D. As with the subbasin approach, observed concentrations of COPCs will be compared with preestablished warning limits to detect potential releases from D&D operations and initiate appropriate response actions.

For subbasin monitoring, the analytical requirements have been refined to develop a cost-effective monitoring program that uses indicator chemical/physical parameters (pH, electrical conductivity, and flow) in conjunction with COPCs associated with that particular area or building undergoing D&D. This information is presented in Section 5.7.2, beginning on page 5-61. At the drainage basin outfall locations (the previous NPDES stormwater sampling locations) and in selected culverts, the analyte list will include the NPDES stormwater listing of chemicals (Table 5-4). In addition, other potential analytes that could be released from the nonroutine/D&D activities will be included in this list (page 5-60). The NPDES stormwater list of analytes will be expanded on a site-by-site basis, depending on the COPCs.

The proposed actions for the seeps, detailed in Section 5.7.3, represent a phased approach. The terminology "may be" was used to indicate activities that will be conducted, if necessary. It is possible that after performing the data review of the seeps/springs, described in the first bullet in this section, and investigating the potential sources of the seeps, it will be concluded that confirmation monitoring of seeps is needed.

Comment 8

Section 7.3.3: The CDIW analyte list (Appendix 7.2) is too limited. Chart B (Figure 7-5) is a step in the right direction, because it at least considers determining if the water is a hazardous waste.

Response to Comment 8

The CDIW analyte list addresses incidental waters that are nonroutine resulting from precipitation events and waters found in valve vaults. Under this program, incidental waters found in valve vaults do not require in-depth sampling and analysis based on historical water characterization. Foundation drain, building sump, and noncharacterized incidental waters will be characterized based on the acceptance criteria from existing onsite treatment facilities. This analyte list is summarized in Table 7-8. Once the waters are characterized, they can be routed to the appropriate treatment facility based on specific treatment facility acceptance criteria (Section 7.6.2).

Comment 9

Section 7.4: The discussion of the existing water process capabilities is satisfactory. However, one point that jumps out at the reader is the lack of any facility's ability to treat water containing significant levels of the most common chlorinated VOCs found at RFETS: carbon tetrachloride, chloroform, vinyl chloride, TCE, etc. If the OU1 UV/peroxide system, a treatment technology designed specifically to destroy such compounds, is unable in its current configuration to treat more than 5 parts per billion of influent carbon tetrachloride (which is below the current *effluent* levels), then it should be obvious that the system needs to be upgraded. Tailoring the UV system with different lamps is a simple and inexpensive fix.[sic]

Response to Comment 9

We agree that onsite treatment systems need to be upgraded. Rocky Flats is currently investigating upgrades for each treatment facility. A discussion of these investigations was not included in the scope of this project.

Comment 10

Section 7.6.2: Along the theme of comment #9 above, the dispositional strategy presented in Figures 7-12 and 7-13 is worrisome. It suggests routing contaminated incidental waters to the sewage treatment plant first. There is a basic flaw in this logic: why is a plant that is designed to treat primarily sewage more effective in handling hazardous constituents than other facilities that were designed especially for them? The Division understands that the OU1, OU2 and 374 facilities were designed for known contaminants at known levels and

may not be currently capable of handling the wide range of potential contaminants in incidental waters. Nevertheless, we feel it would be more appropriate to consolidate the treatment capabilities (as DOE is considering) and spend the money to retrofit existing hardware to achieve better hazardous waste treatment capability. It appears to the Division a given that modification to existing water treatment facilities is needed.

We recognize that updating the existing treatment capabilities may be viewed as being outside the scope of this document. Arguments have been forwarded that the OU1 and OU2 facilities have specific missions. However, these missions are changing as the agencies authorize discontinuing treatment of certain influent sources, freeing up significant capacities. Ownership and responsibilities for these newly available facilities can be shaped as needed. As the vehicle to disposition incidental waters across the plantsite, this IM/IRA has the ability to define a new charter for these facilities. DOE should take the opportunity to do so.

Response to Comment 10

Figures 7-12 and 7-13 are incidental/foundation water treatment decision flow diagrams. The logic flow of these diagrams is described below and in Tables 7-9 and 7-10. The first step of these decision flow diagrams is to determine if the incidental/foundation water, after being characterized, meets surface water discharge standards. If the incidental/foundation waters do meet surface discharge standards, then the waters can be discharged to the storm drainage. If the incidental/foundation waters do not meet surface discharge standards, the next step is to move to the next decision block, the WWTP. If the incidental/foundation waters do meet the acceptance criteria for the WWTP, water can be routed to the WWTP for treatment. If the incidental/foundation waters do not meet the acceptance criteria for the WWTP, the next step is to move to the next decision block, OU1 treatment facility. These steps will be followed through the flow diagram. As stated in the acceptance criteria for the WWTP in Section 7.4, the WWTP will not accept hazardous material.

We agree that it might be more appropriate to consolidate the treatment capabilities and spend the money to retrofit existing hardware to achieve better hazardous waste treatment capability. Rocky Flats is moving in this direction as addressed in the response to comment 9.

The purpose of Figures 7-12 and 7-13 is to provide a treatment decision flow diagram for treatment of incidental/foundation waters. The development of these treatment decision flow diagrams was based on current onsite treatment facility capabilities and not on treatment facility capacity, ownership, and responsibility. We believe that this document does provide a new charter for the onsite treatment facilities, where waste will be accepted based on volume and acceptance criteria and not on the point of origin.

Comment 11

Section 9.4: Establishment of baseline conditions using control chart statistics is sound for normally distributed data. However, environmental data at or near analytical detection limits is [sic] rarely normally distributed. The text does not recommend a method of calculating warning limits for non-normally distributed data.

Response to Comment 11

In the paragraph titled Nondetect concentrations on page 9-35, the text states that the baseline data set and toxicity of the COPCs will be evaluated to determine the most appropriate method to address nondetections. If a COPC is particularly toxic, any detection may constitute above-warning limit conditions. As noted in the paragraph titled Distribution on pages 9-34 and 9-35, appropriate formulas will be used to calculate warning limits if the data are distributed nonnormally. For example, Gilbert (1987) recommends using logarithms of the data in the standard formulas if the data are distributed lognormally.

Comment 12

Section 9.5.2: The concept of using grab samples to support the limited real-time parameters is good; the text should define the frequency with which the grab samples will be collected during a D&D activity.

Response to Comment 12

On page 9-42, second paragraph, the text indicates that surface water samples will be collected when subbasin flow is available. Because subbasin flow may only be available during precipitation events, it is difficult to be more specific. Attempts will be made to collect at least two such samples during shorter (two months or less in duration) D&D activities and at least monthly during longer D&D activities. However, the actual frequency will depend on the timing of D&D activities and the occurrence of flow within subbasins. The text of Section 9.5.2 (and Section 5.7.2) have been revised to clarify the expected frequency of sampling and to eliminate the inference that sampling will be conducted randomly with respect to time.

Question 13

Section 11.1, Groundwater implementation plan:

- Should it really take one and a half years to install eleven wells?

- "If required....if installed....as necessary": what is [sic] the criteria to determine which activities and locations require monitoring? It is up to this decision document to *define* these activities and ensure they happen.

Response to Question 13

- DOE requires sufficient time to develop a statement of work, select subcontractors to construct the wells, prepare a Health and Safety Plan, clear the well locations for underground utilities, and complete other activities associated with constructing monitoring wells, such as obtaining permits. There must also be sufficient time in the schedule to allow for unforeseen circumstances, such as weather and mechanical failure. The specified time for installing the 11 monitoring wells is 18 months from approval of the decision document. This time period allows approximately six months for subcontractor selection; three months for preparing and obtaining the necessary approvals for the Health and Safety Plan and Readiness Review; and approximately two months to implement the proposed field activities including, but not limited to, borehole drilling, well installation, and utilities clearing. The remaining seven months should be reserved for unforeseen contingencies that may affect the schedule. Based on experience at Rocky Flats, this appears to be a reasonable schedule for installation of the 11 monitoring wells.

- We concur that the scope of this decision document is to define the activities and provide the appropriate controls to ensure that verification monitoring is in place, *if* required for a specific D&D activity. On page ES-4 in the Executive Summary, the text states, "The type and extent of verification monitoring will depend on the type of D&D activity being performed...." The language included in Section 11.0 represents a phased approach to verification monitoring. Depending on the type of D&D activity performed, groundwater verification monitoring may not be required. "If required...if installed...as necessary" refer to whether the D&D activity will require groundwater verification monitoring. If, during evaluation of the D&D activity, it is determined that engineering controls will not completely protect a transport pathway, verification monitoring for that pathway *will* be instituted. This concept is stated on page 11-4 in the first bullet. The words "as necessary" have been deleted from the last sentence in the first paragraph on page 11-5.

Question 14

Section 11.2, Surface water implementation plan:

- "....implementation *may* include the following....". How many times do we have to point out that infirm language has no place in a decision document?

- The implementation schedule contains conflicting statements. The first bullet says outfalls will be *identified* within 18 months; the third bullet says automated sampling stations will be *installed* within 18 months.

- The schedule for installation of the sub-basin stations should be on the same clock as the rest of the monitoring programs this document has identified as needed to fill a gap: within 18 months of the document's approval.

- The assumption that the point of concern for surface water is at the Industrial Area fenceline is supported by the existence of this IM/IRA. It is a little late to be questioning this assumption.

Response to Question 14

- "...may" has been replaced by "will" in the first sentence in the third paragraph on page 11-6.

- The statements in the implementation schedule are not meant to be conflicting but to reflect concurrent activities. Eighteen months seemed to be a sufficient time period to both identify outfalls and install specified equipment within the seven major drainage pathways.

- The first sentence in the first bullet in the fourth paragraph on page 11-7 has been changed to state: "Within 18 months following identification of a D&D activity, subbasins that will be affected by the D&D activity will be identified."

- The third assumption identified on page 11-10 has been deleted.

Question 15

Section 11.3, Air implementation plan:

- Should it really take one and a half years to establish a COPC list for a D&D site?

Response to Question 15

- As stated in Question 14, second bullet, this statement is not meant to stand alone. It is intended to complement other subtasks and show concurrence with the third and fourth subtasks. Identification of COPCs is expected to depend on the identification of D&D activities.

Question 16

Section 11.4, Incidental waters implementation plan:

- Foundation drains should be sampled in the entire Industrial area. OU8 encompasses only the 700 area.

- The disposition tasks should also include an evaluation of and upgrades to the existing on-site water treatment facilities (see also comments 9 and 10).

Response to Question 16

- The OU8 Technical Memorandum referenced in this section encompasses the entire Industrial Area, although OU8 includes the 700 area.

- See response to comments 9 and 10.