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EG&G ROCKY FLATS

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September 10, 1991

91-RF-5877

Robert M Nelson, Jr
Manager
DOE, RFO

Attn F R Lockhart

IAG DELIVERABLE FINAL PHASE I RCRA FACILITIES INVESTIGATION/REMEDIAL INVESTIGATION (RFI/RI) WORK PLAN FOR THE ROCKY FLATS PLANT (RFP) WALNUT CREEK PRIORITY DRAINAGE - OPERABLE UNIT NO 6 (OU 6) - JMK-0602-91

As required by the Interagency Agreement (IAG), we are enclosing two copies of the Final Phase I RCRA Facilities Investigation/Remedial Investigation (RFI/RI) Work Plan for the Rocky Flats Plant (RFP) Walnut Creek Priority Drainage - Operable Unit No 6 (OU 6). This document includes work plans for a Remedial Investigation, Field Sampling Plan Baseline Health Risk Assessment Plan, Environmental Evaluation and Quality Assurance Addendum (QAA). The Work Plan incorporates the July 1991 comments from the department of Energy (DOE), the Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) on the April 1991 final draft of the Work Plan.

Please contact E A Dillé at extension 5910 or P S Bunge at extension 5747, both of Remediation Programs, when the transmittal letter is ready and we will deliver the comments to EPA and CDH. The documents are due to EPA and CDH on September 16, 1991.

J M Kersh
J M Kersh, Associate General Manager
Environmental and Waste Management

EAD dmf

Orig and 4 cc - R M Nelson, Jr

Enclosures
As Stated

cc
B R Lewis - DOE, RFO
R J Schassburger - DOE, RFO

DIST	LTR	ENC
BRETZKE, J C		
BURLINGAME, A H		
COPP, R D		
CROUCHER, D W		
DAVIS J G		
EVERED J E	X	
FERRERA D W		
FERRIS L R		
FRAIKOR, F J		
FRANCIS G E	X	
GOODWIN, R		
HEALY, T J		
IDEKER, F H		
JENS, J P		
KEELE, P B		
KERSH, J M	X	
KIRBY W A		
KIRKEBO, J A		
LEE, E M	X	
MAJESTIC, J R		
MATHEWS, T A		
MEURRENS, B E		
MORGAN, R V	X	
NORTH, P		
PALMER L A		
POTTER, G L	X	
PIZZUTO, V M		
RHOADES, J I	X	
SAFFELL, B E		
SWANSON, F R		
WIEBE, J S		
WILKINSON, R B	X	
WILLIAMS, R E		
WILSON, J M		
YOUNG, E R		
ZANE, J O		
Greenard, T. C.	X	
Jemison, E. A.	X	
Dille, E. A.	X	
Potter, J. P.	X	
Bunge, P. S.	X	
+W/M Tracking	X	
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EXECUTIVE SUMMARY

This document presents the work plan for the Phase I RCRA Facility Investigation (RFI)/Remedial Investigation (RI) of the North and South Walnut Creek drainages (Operable Unit Number 6) at the Rocky Flats Plant, Jefferson County, Colorado. This work plan includes a field sampling plan (FSP) that presents the investigation planned to evaluate the presence or absence of contamination at Individual Hazardous Substance Sites (IHSSs) within the North and South Walnut Creek drainages. The FSP developed in this work plan is based on the requirements of the Interagency Agreement (IAG) amongst the Department of Energy, Environmental Protection Agency, and the State of Colorado Department of Health and additional work as needed to initially assess each IHSS. Twenty IHSSs, as identified in the IAG, are located in Operable Unit Number 6 (OU6). They are the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142 1 through 142 4) and IHSS 142 12, the B-series Detection Ponds, Ponds B-1 through B-5 (IHSSs 142 5 through 142 9), the North, Pond, and South Area spray fields (IHSSs 167 1, 167 2 and 167 3), the East Area Spray Field (IHSS 216 1), Trenches A, B and C (IHSSs 166 1 166 ,2 and 166 3), the Sludge Dispersal Area (IHSS 141), the Triangle Area (IHSS 165), and the Old Outfall (IHSS 143). A Soil Dump Area (IHSS 156 2) has also been added to this work plan because of its location along the Walnut Creek drainage making a total of twenty-one IHSSs in OU6.

The schedule and the sequence of work for completing the OU6 investigation is specified in the IAG and is outlined below to provide some background on the requirements for the OU6 RFI/RI. The IAG states that each operable unit (OU), including OU6, may proceed through several phases of investigation dependent on the information gathered to characterize the OU (Section I B 9, IAG Statement of Work). For OU6, the IAG requires that DOE submit a draft Phase I RFI/RI Workplan in accordance with the requirements for RFI/RI Workplans, to EPA and the State for review and comment (this document was submitted in April 1991). DOE has subsequently revised this draft RFI/RI Workplan to address all comments submitted by EPA and the State, and is resubmitting this RFI/RI Workplan to EPA and the State for review and joint written approval.

Following completion of the Phase I work plan the IAG requires that the results of the Phase I RFI/RI, for OU6 be documented within a draft Phase I RFI/RI report. This draft RFI/RI report will include a Preliminary Site Characterization and will also recommend work to be performed for the Phase II investigation if needed. The IAG specifies that this draft Phase I report be submitted to the EPA and the State for review with DOE to address their comments and resubmit a Final Phase I RFI/RI report for EPA and/or the State review and approval. DOE is not to commence the next investigatory phase prior to receiving approval of the Final Phase I Report for OU6 and approval of Phase II RFI/RI Workplans.

The IAG specifies that the priority and schedule for the Phase II RFI/RI investigations for OUs 3, 5, 6, 8, 12, 13, 14, 15 and 16 will be determined after evaluating the Final Phase I RFI/RI Reports for the

operable units. If EPA and/or the State determine that no further investigatory work is required for OU6 after the Phase I investigation is complete, EPA and/or the State shall approve the Final Phase I RFI/RI Report as a Final RFI/RI Report. The field investigations for OU6 will be considered complete after approval of a Final RFI/RI Report.

This work plan presents the activities that will be carried out to complete the Phase I investigation. Section 1.0 of this Work Plan presents introductory information and a general characterization of the region and plant site. In addition, the regional geology and hydrology at Rocky Flats are discussed. Section 2.0 presents descriptions of the site physical characteristics, histories and previous investigations, available information concerning the nature and extent of contamination, and conceptual models for the IHSSs. This initial characterization forms the basis for establishing data needs, data quality objectives (DQOs), and developing an FSP for each IHSS. Section 3.0 presents applicable or relevant and appropriate requirements (ARARs) developed for OU6. Section 4.0 establishes data needs and DQOs considering site characteristics and conceptual models of each IHSS in OU6. Section 5.0 outlines RFI/RI tasks to be performed, while Section 6.0 presents the schedule for these tasks. A Field Sampling Plan, based on the requirements of the IAG, is presented in Section 7.0 to satisfy the data needs and DQOs identified in Section 4.0. The Baseline Risk Assessment Plan and Environmental Evaluation Plan are presented in Sections 8.0 and 9.0, respectively. A Quality Assurance Addendum and Standard Operating Procedure Addenda are presented in Sections 10.0 and 11.0, respectively. A list of references is presented in Section 12.0.

The initial step in the development of the OU6 RFI/RI work plan was a review of existing information. Available historical and background data for each IHSS were collected through a literature search and a review of the Rocky Flats Environmental Database System (RFEDS). Only a few limited investigations have been conducted at OU6 in the past. These investigations include sediment sampling in the A- and B-series ponds, ongoing surface water, groundwater, and sediment sampling programs along Walnut Creek, and the plant-wide Ambient Air Monitoring Program.

Data quality objectives have been developed for this Phase I investigation. DQOs are qualitative and quantitative statements that describe the quality and quantity of data required by the RFI/RI. The DQO process is divided into three stages. Through application of the DQO process, site-specific RFI/RI goals are established and data needs are identified for achieving these goals.

After assessing the existing information for OU6, the following objectives for the Phase I RFI/RI have been identified

- Characterize the physical and hydrogeologic setting of the IHSSs
- Assess the presence or absence of contamination at the sites
- Characterize the nature and extent of contamination at the sites, if present
- Support the Phase I Baseline Risk Assessment and Environmental Evaluation

Within these broad objectives, site-specific data needs have been identified based on preliminary identification of contaminants potentially present at each IHSS and the data needs for the Phase I Baseline Risk Assessment and Environmental Evaluation. The FSP developed in this work plan is based on the data needs and the requirements of the IAG. The FSP for each IHSS requires a combination of screening activities, sampling of soils, sediment and surface water, and well installation and sampling. Site-specific FSPs are briefly summarized below.

IHSS 141 - Sludge Dispersal Area The screening activity at the sludge dispersal area will be a radiological survey. Sampling activities will be limited to surface soil sampling. One monitoring well will be installed downgradient of the unit and sampled.

IHSS 142 1-9, 12 - Detention Ponds - A-Series and B-Series Surface water and sediment samples will be collected in several locations in each pond. Sediment samples will also be collected from Walnut Creek upgradient and downgradient of the ponds. A total of four monitoring wells will be installed and sampled in the alluvium downgradient of the dams at Ponds A-4 and B-5.

IHSS 143 - Old Outfall The screening activity at the Old Outfall site will be a radiological survey. Sampling will include surface soil sample collection at the existing surface and at the original surface below the fill, collection of soil samples to a depth of two feet below the original ground surface, and collection of composite fill samples. In addition, soil samples will be collected upslope from the Old Outfall where the surface runoff was channeled to this area.

IHSS 156 2 - Soil Dump Area A germanium survey radiation survey will be performed at this IHSS followed by surface and subsurface soil sampling. One well will be installed within the unit and sampled.

IHSS 165 - Triangle Area A radiological survey and a soil gas survey will be the screening activities conducted at the Triangle Area. Surface soil samples will be collected from plume areas delineated during the screening. Subsurface samples will be collected from the same locations as the surface samples. Two alluvial groundwater monitoring wells will be installed within the IHSS and sampled.

IHSS 166 1-3 - Trenches A, B and C The screening activity will consist of an electromagnetic geophysical survey that will be used to delineate the locations and extent of the trenches. Subsurface samples will be collected from borings drilled along the long axis of the trenches. One groundwater well will be installed east of this IHSS and sampled.

IHSS 167 1-3 - North Area, Pond Area and South Area Spray Fields Based on the findings of the aerial photograph review, surface and subsurface soil samples will be collected in each spray field area using a grid location system. Two alluvial groundwater monitoring wells will be installed and sampled, one downgradient of the North Area Spray Field and one downgradient of the South Area Spray Field.

IHSS 216 1 - East Area Spray Field Although the IAG does not specify field sampling at this site, limited surface and subsurface soil samples will be collected within this unit.

Data collected during the Phase I Walnut Creek drainage RFI/RI, as well as data from other ongoing and planned investigations, will be incorporated into the existing RFEDS database. These data will be used to (1) better define site characteristics, source characteristics, and the nature and extent of contamination, (2) to support the baseline risk assessment and environmental evaluation, and (3) to evaluate potential remedial alternatives. An RFI/RI Report will be prepared summarizing the data obtained during the Phase I program and containing the Phase I Risk Assessment and Environmental Evaluation.