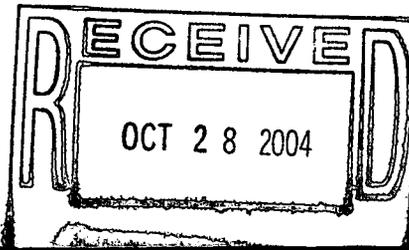




**Draft Environmental Restoration
RFCA Standard Operating Protocol
for Routine Soil Remediation
FY04 Notification #05-01
IHSS Group 000-4
PAC 000-504
New Process Waste Lines**



October 2004

IA-A-002393

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Approval received from the Colorado Department of Public Health and Environment

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Approval letter is contained in the Administrative Record.

October 2004

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ACRONYMS

AL	action level
CDD	Closure Description Document
CDPHE	Colorado Department of Public Health and Environment
COC	contaminant of concern
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
EDDIE	Environmental Data Dynamic Information Exchange
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation
FY	Fiscal Year
IA	Industrial Area
IABZSAP	Industrial Area and Buffer Zone Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
nCi/g	nanocuries per gram
NPWL	New Process Waste Lines
OPWL	Original Process Waste Lines
PAC	Potential Area of Concern
PCOC	potential contaminant of concern
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RSOP	RFCA Standard Operating Protocol
SEP	Solar Evaporation Pond
SSRS	Subsurface Soil Risk Screen
WRW	wildlife refuge worker

1.0 INTRODUCTION

This Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) Fiscal Year (FY) 04 Notification addresses the remediation of a Potential Area of Concern (PAC) in the Rocky Flats Environmental Technology Site (RFETS) Industrial Area (IA). The purpose of this Notification is to invoke the ER RSOP (DOE 2003a) for soil at Individual Hazardous Substance Site (IHSS) Group 000-4, PAC 000-504 – New Process Waste Lines (NPWL). The location of IHSS Group 000-4 is shown on Figure 1.

NPWL is a permitted Resource Conservation and Recovery Act (RCRA) Unit and is being closed in accordance with approved RCRA closure description documents (CDDs) (DOE 2002 and 2003b). Portions of the NPWL were cleaned and will be clean-closed in accordance with the RCRA Part B Permit. Some valve vaults and sections of pipeline that cannot be clean-closed will be removed. This ER RSOP Notifications addresses the soil around the valve vaults and pipelines. When the valve vaults and pipelines are removed, confirmation samples will be collected in accordance with the Industrial Area and Buffer Zone Sampling and Analysis Plan (IABZSAP) (DOE 2004). Activities specified in the ER RSOP (DOE 2003a) are not reiterated here; however, deviations from the ER RSOP are included where appropriate.

Soil associated with NPWL is addressed under this ER RSOP Notification.

2.0 IHSS GROUP 000-4

The NPWL consist of a network of double-contained underground pipelines and tanks that were used to transport liquid waste streams to Building 374 Waste Treatment Operations. The NPWL overlap the Original Process Waste Lines (OPWL) in many places, and for the most part, replaced the OPWL infrastructure. The installation of the NPWL was completed in 1984.

The NPWL transported a variety of waste streams to Building 374. These waste streams included laundry water, non-radioactive/chemical laboratory waste, uranium and beryllium waste, Solar Evaporation Pond (SEP) water, incidental water, high-nitrate waste from Building 774, and waste from Site laboratories and utilities. Potential contaminants of concern (PCOCs) include acids, bases, solvents, radionuclides, metals, oils, and photographic laboratory chemicals (DOE 1999).

Documented releases from NPWL resulted in several IHSSs or PACs, including PAC 100-602 – Building 123 Process Waste Line Break; IHSS 300-186 – Valve Vaults 11, 12, and 13; and PAC 800-1200 – Valve Vault 2. These IHSSs and PACs are addressed with different IHSS Groups. PAC 100-602 will be investigated as part of IHSS Group 000-2 (OPWL), and PAC 800-1200 will be investigated as part of IHSS Group 800-3 (Under Building Contamination Site 883). Because radionuclides and metals are the most common constituents of the waste carried by the NPWL and would be indicators of pipeline leaks, confirmation samples will be analyzed for radionuclides and metals. If

**Figure 1
NPWL Location**

KEY

-  NPWL
-  Valve Vault
- Buildings**
-  Demolished
-  Standing
-  Streams
-  Paved Area



100 0 100 200 300 400 Feet

Scale = 1:5,000

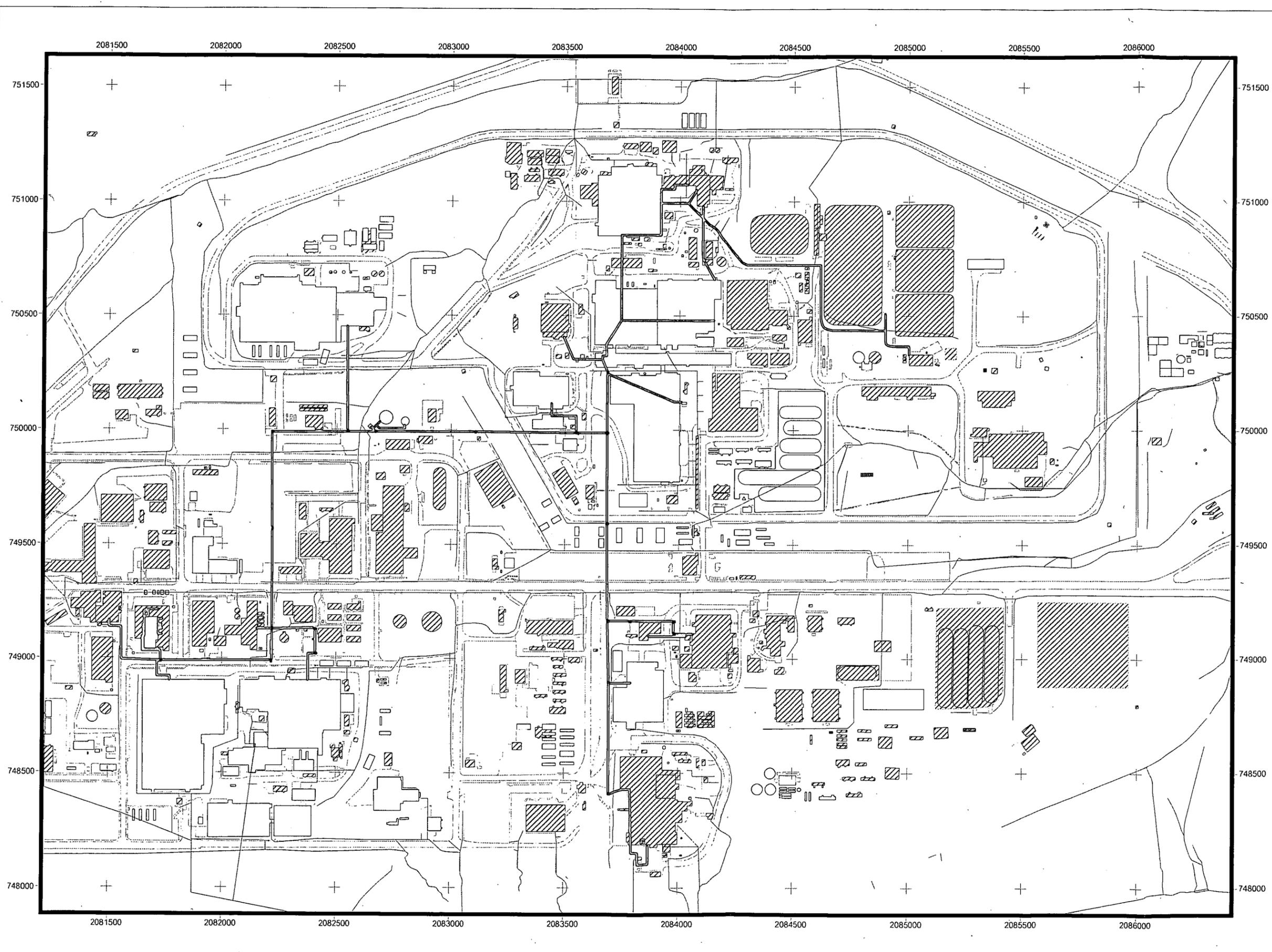
State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:



Prepared for:



Information developed as part of other IHSS Group characterizations or accelerated actions used to determine remediation targets will be included in the IHSS Group 000-4 closeout report as appropriate.

2.1 Project Conditions

Features of IHSS Group 000-4 that might affect accelerated action decisions include the following:

- Accidental releases of process waste occurred during the operating history of the NPWL; however, because the NPWL was double-contained, little soil contamination is anticipated. In the area where the soil has been evaluated, only metals and radionuclides were contaminants of concern (COCs).
- Known leaks to the soil include PAC 100-611, IHSS 300-186, and PAC 800-1200. Soil at these locations is being evaluated as part of ongoing IHSS Group investigations.
- NPWL is a permitted RCRA Unit. Closure of this unit is being conducted in accordance with the RFETS RCRA Part B Permit (CO-097-05-03-01), Part X, Closure (CDPHE 1997). As part of RCRA closure, portions of the NPWL were cleaned and will be clean-closed in accordance with RFETS RCRA Part B Permit (CO-097-05-03-01), Part X, Closure (CDPHE 1997). The remaining valve vaults and sections of pipeline that cannot be clean-closed will be closed by removal.

2.2 RFCA Subsurface Soil Risk Screen

The Subsurface Soil Risk Screen (SSRS) is conducted when non-radionuclides and uranium at concentrations greater than RFCA wildlife refuge worker (WRW) action levels (ALs) are present in soil below a depth of 6 inches, and when americium and plutonium at activities greater than WRW ALs are present below a depth of 3 feet (DOE et al 2003). Because the NPWL are found across the IA, the SSRS evaluation will be postponed until the extent of accelerated actions are complete. Results will be documented in the closeout report.

2.3 Remediation Plan

This RSOP Notification remediation plan for IHSS Group 000-4 includes the following objectives:

- Conduct confirmation sampling at valve vaults and pipelines that were not clean-closed. Confirmation samples will be collected at valve vaults as they are removed. It is anticipated that valve vaults 8, 9, 10, 11, 12, and 13, along with the associated NPWL, will be removed. Confirmation samples will be collected for radionuclide and metals analysis along pipelines at the following locations:
 - Breaks in the pipeline containment; and

- Areas of stained soil.

These locations are shown on Figure 2. As these valve vaults and pipelines are removed, the following actions will take place:

- Remove soil with plutonium-239/240 or americium-241 activities greater than the RFCA WRW ALs to a depth of 3 feet, or to less than the applicable AL, which ever comes first. If concentrations are greater than 3 nanocuries per gram (nCi/g) between 3 and 6 feet, characterize and remediate in accordance with RFCA Attachment 5 (DOE et al 2003). Conduct the SSRS to evaluate the need for additional action.
- If contaminated soil is removed, collect confirmation soil samples in accordance with the IABZSAP (DOE 2004).

Remediation targets will be identified based on ER characterization sampling conducted as part of other IHSS Group characterization or on Decommissioning information. It is anticipated that after remediation there may be areas with concentrations of metals, radionuclides, and organics greater than background means plus two standard deviations or detection limits, but below RFCA ALs between 0.0 and 3 feet in depth.

2.4 Stewardship Evaluation

Because the NPWL are spread out across the Site and the full extent of excavation and remediation is not known at this time, stewardship evaluation will be conducted during soil remediation and documented in the closeout report.

2.5 Accelerated Action Remediation Goals

ER RSOP remedial action objectives (RAOs) include the following:

- Provide a remedy consistent with the RFETS goal of protection of human health and the environment;
- Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls; and
- Minimize the spread of contaminants during implementation of accelerated actions.

2.6 Treatment

Treatment of soil is not anticipated.

THIS TARGET SHEET REPRESENTS AN
OVER-SIZED MAP / PLATE FOR THIS DOCUMENT:
(Ref: 04-RF-01098; KLW-032-04)

**Draft Environmental Restoration RFCA
Standard Operating Protocol for Routine Soil
Remediation FY04 Notification 05-01 IHSS
Group 000-4 PAC 000-504 New Process
Waste Lines**

October, 2004

Figure 2:

NPWL Status

FY2004/000-4/remediation/000-4base.apr/NPWLstatus

October, 2004

CERCLA Administrative Record Document, IA-A-002393

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2.7 Project-Specific Monitoring

High-volume air samplers may be used at the remediation area consistent with work controls to determine airborne radioactivity concentrations. Air samplers will be placed in locations with known or suspected leaks and will be identified in work control documents.

2.8 RCRA Units

NPWL components of RCRA Unit 40 will be closed in accordance with the RFETS RCRA Part B Permit (CO-097-05-03-01), Part X, Closure (CDPHE 1997).

2.9 Administrative Record Documents

CDPHE 1997, RCRA Part B Permit CO-097-05-03-01.

DOE, 1999, Update to the Historical Release Report for the Rocky Flats Plant, Golden, Colorado, September.

DOE, 2002, Closure Description Document for Partial Closure of Unit 374.3; 400 Area Process Waste Transfer System, Rocky Flats Environmental Technology Site, Golden, Colorado, April.

DOE, 2003a, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation Modification, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2003b, Closure Description Document for Partial Closure of Unit 374.3; 700 and 800 Area Process Waste Transfer System, Rocky Flats Environmental Technology Site, Golden, Colorado, January.

DOE, 2004, Industrial Area and Buffer Zone Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, CDPHE, and EPA, 2003, Modifications to the Rocky Flats Cleanup Agreement Attachment, U.S. Department of Energy, Colorado Department of Public Health and Environment, and U.S. Environmental Protection Agency, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

2.10 Projected Schedule

Remediation of IHSS Group 000-4 is expected to begin in first quarter of FY05. Any significant changes to the site conditions will be addressed by the consultative process.

3.0 PUBLIC PARTICIPATION

ER RSOP Notification #04-06 activities will be discussed at the November 2004 ER/Decontamination and Decommissioning (D&D) Status Meeting. This Notification

was provided to the local governments. It is available at the Rocky Flats Reading Rooms and on the Environmental Data Dynamic Information Exchange (EDDIE) Website at www.rfets.gov.

4.0 REFERENCES

CDPHE 1997, RCRA Part B Permit CO-097-05-03-01.

DOE, 1999, Update to the Historical Release Report for the Rocky Flats Plant, Golden, Colorado, September.

DOE, 2002, Closure Description Document for Partial Closure of Unit 374.3; 400 Area Process Waste Transfer System, Rocky Flats Environmental Technology Site, Golden, Colorado, April.

DOE, 2003a, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation Modification, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

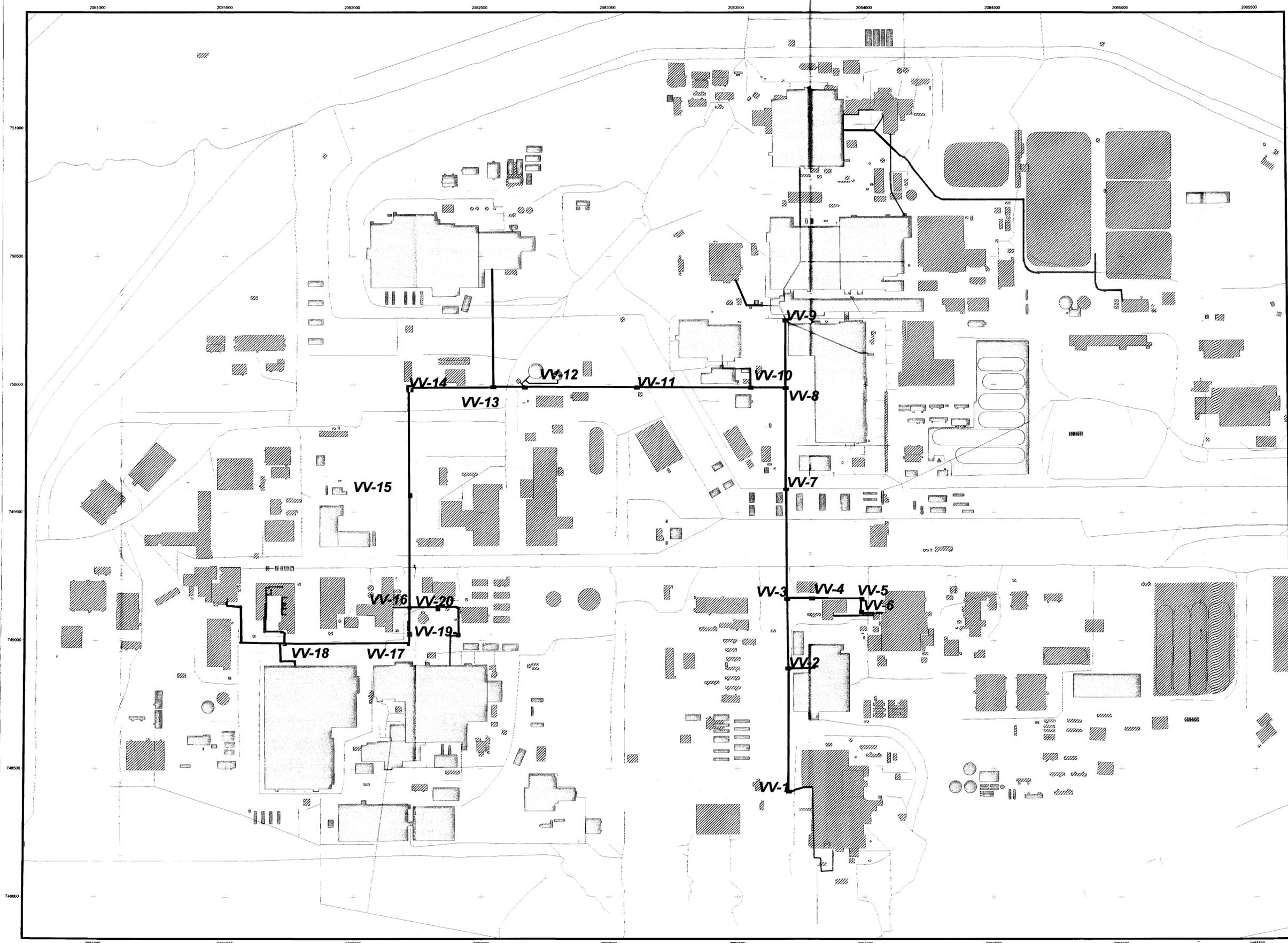
DOE, 2003b, Closure Description Document for Partial Closure of Unit 374.3; 700 and 800 Area Process Waste Transfer System, Rocky Flats Environmental Technology Site, Golden, Colorado, January.

DOE, 2004, Industrial Area and Buffer Zone Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, May.

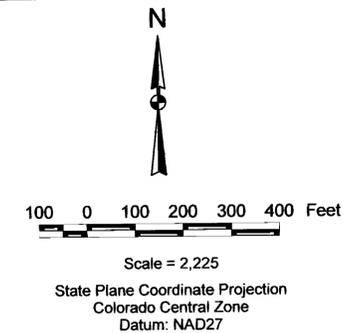
DOE, CDPHE, and EPA, 2003, Modifications to the Rocky Flats Cleanup Agreement Attachment, U.S. Department of Energy, Colorado Department of Public Health and Environment, and U.S. Environmental Protection Agency, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

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Figure 2
NPWL Status



- KEY**
- NPWL
 - Above Ground NPWL Removed
 - Below Ground NPWL Flushed - Clean
 - Below Ground NPWL Flushed - Not Clean
 - Below Ground NPWL Removed
 - Below Ground NPWL Not Found
 - ▨ Valve Vault
 - ▨ Valve Vault Flushed - Clean
 - ▨ Valve Vault Not Clean
 - ▨ Valve Vault Removed
 - ▨ Valve Vault Not Found



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FY2004/000-4/remediation/000-4base.apr/NPWLstatus

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