

NOTICE

All drawings located at the end of the document.

**Draft Environmental Restoration
RFCA Standard Operating Protocol
for Routine Soil Remediation
FY04 Notification #04-01
IHSS Group 600-3, IHSS 600-120.1
Fiberglass Area North of Building 664**

NOV 2003
RECORDED
RECORDS CENTER

NOVEMBER 2003

ADMIN RECORD

IA-A-001792

1
14

**November 2003 Draft Environmental Restoration
RFCA Standard Operating Protocol
for Routine Soil Remediation
FY04 Notification #04-01
IHSS Group 600-3, IHSS 600-120.1
Fiberglass Area North of Building 664**

Approval received from the Colorado Department of Public Health and Environment

()

Approval Letter contained in the Administrative Record

November 2003

TABLE OF CONTENTS

1.0 INTRODUCTION.....	1
2.0 IHSS GROUP 600-3, IHSS 600-120.1	1
2.1 Potential Contaminants of Concern.....	4
2.2 Project Conditions	4
2.3 RFCA Subsurface Soil Risk Screen Evaluation.....	4
2.4 Remediation Plan	5
2.5 Stewardship Evaluation.....	5
2.5.1 Proximity to Other Contaminant Sources	5
2.5.2 Surface Water Protection.....	6
2.5.3 Monitoring.....	6
2.5.4 Stewardship Actions and Recommendations	7
2.6 Accelerated Action Remediation Goals	7
2.7 Treatment.....	8
2.8 Project-Specific Monitoring.....	8
2.9 Resource Conservation and Recovery Act (RCRA) Units and Intended Waste Disposition	8
2.10 Administrative Record Documents	8
2.11 Projected Schedule	9
3.0 PUBLIC PARTICIPATION.....	9
4.0 REFERENCES.....	9

List of Tables

Table 1 Potential Remediation Areas for IHSS Group 600-3	1
--	---

List of Figures

Figure 1 ER RSOP Notification #04-01 IHSS Group 600-3 Location Map	2
Figure 2 IHSS Group 600-3 Existing Sample Data Map	3

ACRONYMS

AL	Action Level
BM+2SD	Background Means + 2 Standard Deviations
COC	Contaminant Of Concern
DOE	Department of Energy
ECO AL	Ecological Receptor Action Level
ER	Environmental Restoration
ER RSOP	Environmental Restoration RFCA Standard Operating Protocol
FY	Fiscal Year
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
nCi/g	nanoCuries per gram (nano = 10^{-9})
PAC	Potential Area of Concern
PCOC	Potential Contaminant of Concern
pCi/g	picoCuries per gram (pico = 10^{-12})
POC	Point of Compliance
POE	Point of Evaluation
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RISS	Remediation and Industrial Site Services
RSOP	RFCA Standard Operating Protocol
SSRS	Subsurface Soil Risk Screen
SVOC	Semi-Volatile Organic Compound
UBC	Under Building Contamination
VOC	Volatile Organic Compound
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) 2004 Notification addresses the remediation of Individual Hazardous Substance Sites (IHSSs) at the Rocky Flats Environmental Technology Site (RFETS) Industrial Area (IA). The purpose of this Notification is to invoke the ER RSOP for IHSS 600-120.1 Fiberglass Area North of Building 664 in IHSS Group 600-3. This comprises an area under and around Building 668. Activities specified in the ER RSOP (DOE 2003d) are not reiterated here; however, deviations from the ER RSOP are included where appropriate.

Soil with contaminant concentrations greater than the RFCA Action Levels (ALs), or as indicated by the Subsurface Soil Risk Screen (SSRS) and associated debris will be removed in accordance with RFCA (DOE et al 1996, 2003b) and the ER RSOP (DOE 2003d).

IHSS Group 600-3 is shown on Figure 1 and the proposed remediation sites covered under this ER RSOP Notification #04-01 are listed in Table 1.

Table 1
Potential Remediation Areas for IHSS Group 600-3

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Estimated Remediation Volume
600-3	IHSS 600-120.1, Fiberglass Area North of Building 664 (Area Under and Around Building 668)	Radionuclides Metals VOCs SVOCs	Surface and Subsurface Soils	32 cubic yards

2.0 IHSS GROUP 600-3, IHSS 600-120.1

Soil contamination at IHSS 600-120.1, based on previous sampling results, is depicted in Figure 2. Contamination is defined as an analyte concentration greater than the background means plus two standard deviations (BM+2SD).

2.1 Potential Contaminants of Concern

Potential contaminants of concern (PCOCs) at IHSS 600-120.1 are listed in Table 1. The PCOCs at IHSS 600-120.1 were determined based on surface soil sampling as shown in Figure 2 and process knowledge.

2.2 Project Conditions

The following conditions are present within IHSS 600-120.1, the fiberglass area north of Building 664:

IHSS Group 600-3 consists of an area beneath and around Building 668 where waste packing boxes were coated with fiberglass. Building 668 is a small, regularly shaped wood frame shed with deteriorating fiberglass panels as walls. Approximately 60 percent of Building 668 has walls, while 40 percent does not, the interior being visible through the openings. The floor consists of a single concrete slab (Figure 2).

Fiberglass activities occurred in the area from 1972 to 1979. The fiberglass process may have resulted in spills of polyester resin, peroxide catalyst materials, and cleaning solvents, although no documentation of spills was indicated in the HRR research (DOE 1992-2003).

Recent Decontamination and Decommissioning activities at Building 668 found fixed plutonium-239/240 activities up to 200 dpm/100cm² along the west side (Duane Parsons, personal communication). A surface soil sample was collected from the center of the west side of the structure. Gamma spectroscopy detected uranium-238 activity greater than BM+2SD, but was less than RFCA ALs. No other radionuclide was detected above BM+2SD.

2.3 RFCA Subsurface Soil Risk Screen Evaluation

An SSRS is performed when non-radionuclides and uranium are present in the soil below 6 inches from the ground surface, when americium and plutonium are present below 3 feet from the ground surface, and for soil beneath below-grade structures. Current site conditions are evaluated to determine if remediation is required by the SSRS.

Subsurface soil data for IHSS Group 600-3 are not available. However, data from borehole P411989, approximately 15 feet west of IHSS 600-120.1, is available (Figure 2). Soil from the surface to 28 feet was analyzed for metals, VOCs, and analytes potentially affecting water quality. The results from these analyses were all below background and RFCA ALs.

Because there is little available data at this time the SSRS evaluation will be performed upon receipt of data from sampling characterization in accordance with IASAP Addendum #IA-04-05 and results will be documented in a data summary or closeout report.

2.4 Remediation Plan

This RSOP Notification remediation plan for Group 600-3 includes the following objectives:

- RISS Decontamination & Decommissioning will remove the concrete pad for Building 668. The concrete pad will be recycled in accordance with the RSOP for Recycling Concrete (DOE 1999, 2003c) or disposed at an appropriate facility based on waste characterization results.
- Remove soil with non-radionuclide or uranium contaminant concentrations greater than the RFCA WRW ALs to a depth of 6 inches. If soil contamination greater than the ALs extends below 6 inches in depth, perform the SSRS to evaluate the need for further accelerated action.
- Remove soil with plutonium-239/240 or americium-241 activities greater than the RFCA WRW AL to a depth of three feet, or to less than 50 picocuries per gram (pCi/g), whichever comes first. If activities are greater than 3 nanocuries per gram (nCi/g) between 3 and 6 feet, characterize and remediate pursuant to RFCA Attachment 5 (DOE et al 2003b). If plutonium-239/240 or americium-241 is present at activities greater than the RFCA WRW AL but less than 3 nCi/g below 3 feet, conduct an SSRS.
- Consult with regulatory agencies if contaminant concentrations are greater than the proposed Ecological Receptor (ECO) ALs but lower than the WRW ALs.
- If contaminated soil is removed, collect confirmation soil samples in accordance with the Industrial Area Sampling and Analysis Plan (DOE 2001a).

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 method detection limit or reporting limit, but below RFCA ALs.

2.5 Stewardship Evaluation

Based on the PCOCs (Table 1) and the ER RSOP (DOE 2003d), it is anticipated that all contamination above RFCA ALs will be remediated. Figure 2 shows the potential remediation area of the IHSS.

The following sections present the stewardship evaluation. If remediation is conducted, an additional stewardship evaluation will be conducted during remediation using the consultative process and will be documented in a closeout report for IHSS Group 600-3. A new map of residual contamination will be generated after remediation.

2.5.1 Proximity to Other Contaminant Sources

IHSS Group 600-3 is located in the RFETS IA close to other contaminant sources. IHSS Group 400-3 containing IHSS 400-136.2 lies to the northwest of IHSS Group 600-3.

IHSS Group 400-6 containing IHSS 400-157.2 lies to the west. IHSS Group 400-10 contains two IHSSs, 600-120.2 and 600-161, and lies to the southwest. IHSS 600-161 located in IHSS Group 600-4 lies to the east.

2.5.2 Surface Water Protection

Surface water protection includes the following considerations:

Is there a pathway to surface water from potential erosion to streams and drainages?

While unlikely, soil contaminants from IHSS Group 600-3 could migrate to surface water via erosion. IHSS Group 600-3 sits on the drainage divide between South Walnut Creek and Woman Creek (Figure 2). The surface drainage from the east, north, and west sides of the IHSS is to the north and northeast, and surface runoff is conveyed to South Walnut Creek. Surface drainage derived from the south side of IHSS Group 600-3 flows south toward Building 664 and ultimately enters Woman Creek.

Do characterization data indicate there are contaminants in surface soil?

Existing soil data, as shown in Figure 2, generally indicate that contaminant concentrations are less than RFCA WRW and ECO ALs. Beryllium from SS221393 was above background and the ECO AL but below the WRW AL. Additional sampling will be conducted in accordance with IASAP Addendum #IA-04-05 in order to further characterize IHSS Group 600-3. Results will be documented in a data summary or closeout report.

Do monitoring results from Points of Evaluation (POEs) or Points of Compliance (POCs) indicate there are surface water impacts from the area under consideration?

Recent water quality monitoring results from GS01 the nearest POC for Woman Creek indicate no adverse surface water impacts from IHSSs within its drainage (DOE 2003a).

Is the IHSS Group in an area with high erosion potential, based on the 100-Year Average Erosion Map?

IHSS Group 600-3 is not located in an area subject to erosion in accordance with Figure 1 of the RFCA (DOE 2003b).

2.5.3 Monitoring

Monitoring includes the following considerations:

Do monitoring results from POEs or POCs indicate there are groundwater impacts from the area under consideration?

One groundwater well, 84002, lies just to the east of IHSS Group 600-3 (Figure 2). Tetrachloroethene, trichloroethene, and cis-1,2-dichloroethene are present in the well (DOE 2002b). Tetrachloroethene concentrations were greater than the RFCA Tier II groundwater AL (5 µg/L), but less than the Tier I groundwater AL (500 µg/L). Trichloroethene and cis-1,2-dichloroethene were detected at concentrations less than the Tier II groundwater ALs.

Can the impact be traced to a specific IHSS Group?

Impacts can not be traced specifically to IHSS Group 600-3. These contaminants are considered part of the IA Plume. A study that examines data for well 84002 and others from the 2001 Annual Groundwater Monitoring Report (DOE 2002b) shows that source areas for the tetrachloroethene, trichloroethene, and cis-1,2-dichloroethene present in the well do not coincide with IHSS Group 600-3.

Are additional monitoring stations needed?

Not applicable at this time. The need for and placement of monitoring stations will be re-evaluated in the *Long-Term Stewardship Plan*.

Can existing monitoring locations be deleted if additional remediation is conducted?

No. There are two nearby wells. Of these, P411989 is abandoned and Well 84002 monitors contamination from areas other than IHSS Group 600-3.

2.5.4 Stewardship Actions and Recommendations

The current stewardship actions and recommendations for IHSS Group 600-3 is as follows:

- Use Best Management Practices to reduce erosion into surface water drainage.
- Implement near-term institutional controls until final closure and stewardship decisions are implemented, including the following:
 - Fencing and signs to restrict access; and
 - Soil excavations controlled through the Site Soil Disturbance Permit process.
- Implement long-term stewardship actions, including the following:
 - Prohibitions on construction of buildings in the IA;
 - Restrictions on excavations or other soil disturbance; and
 - Prohibitions on groundwater pumping in the area of IHSS Group 600-3.

These recommendations may change based on in-process remediation activities and other future RFETS remediation decisions.

2.6 Accelerated Action Remediation Goals

ER RSOP remedial action objectives include the following:

1. Provide a remedy consistent with the RFETS goal of protection of human health and the environment;

2. Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls; and
3. Minimize the spread of contaminants during implementation of accelerated actions.

2.7 Treatment

Not applicable

2.8 Project-Specific Monitoring

High-volume air samplers may be used at the remediation area consistent with work controls to determine airborne radioactivity concentrations. Approximate locations of air samplers are shown on Figure 2.

2.9 Resource Conservation and Recovery Act (RCRA) Units and Intended Waste Disposition

Not Applicable

2.10 Administrative Record Documents

DOE, 1992-2003, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado, June.

DOE, CDPHE, EPA, 1996, Final Rocky Flats Cleanup Agreement, 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, July.

DOE, 1999, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, 2001b, Final Source Evaluation Report for Point of Evaluation GS10 Water Years 2000-2001, RF/EMM/WP-01-003.UN, August.

DOE, 2002a, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January.

DOE, 2002b, Final Annual RFCA Groundwater Monitoring Report, 02-RF-01873, November.

DOE, 2003a, Automated Surface Water Monitoring Second Quarter FY03 (Jan.-March 2003).

DOE, CDPHE, EPA, 2003b, 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.

DOE, 2003c, RFCA Standard Operating Protocol for Recycling Concrete, Revision 1, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

2.11 Projected Schedule

Remediation of IHSS Groups 600-3 is expected to begin in the first quarter of FY 04.

3.0 PUBLIC PARTICIPATION

ER RSOP Notification #04-01 activities were discussed at the November 2003 ER/D&D Status Meeting. This notification was provided to the local governments. This notification is available at the Rocky Flats Reading Rooms and on the EDDIE website at www.rfets.gov.

4.0 REFERENCES

DOE, 1992-2003, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado, June.

DOE, CDPHE, EPA, 1996, Final Rocky Flats Cleanup Agreement, 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, July.

DOE, 1999, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September.

DOE, 2001a, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

DOE, 2001b, Final Source Evaluation Report for Point of Evaluation GS10 Water Years 2000-2001, RF/EMM/WP-01-003.UN, August.

DOE, 2002, Final Annual RFCA Groundwater Monitoring Report, 02-RF-01873, November.

DOE, 2003a, Automated Surface Water Monitoring Second Quarter FY03 (Jan.-March 2003).

DOE, CDPHE, EPA, 2003b, 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.

DOE, 2003c, RFCA Standard Operating Protocol for Recycling Concrete, Revision 1, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

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

Figure 1

IHSS Group 600-3
General Location

KEY

-  IHSS Group 600-3
- Buildings**
-  Demolished
-  Standing
-  Paved Roads
-  Dirt Roads
-  Trails
-  Railroads
-  Fences
-  Sewers
-  Surface Water Routes



200 0 200 400 600 800 Feet

Scale = 1:6500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared for:



Prepared by:



Date: 10/21/03
File: W:\Projects\FY2004\600-3\group_600-3.apr

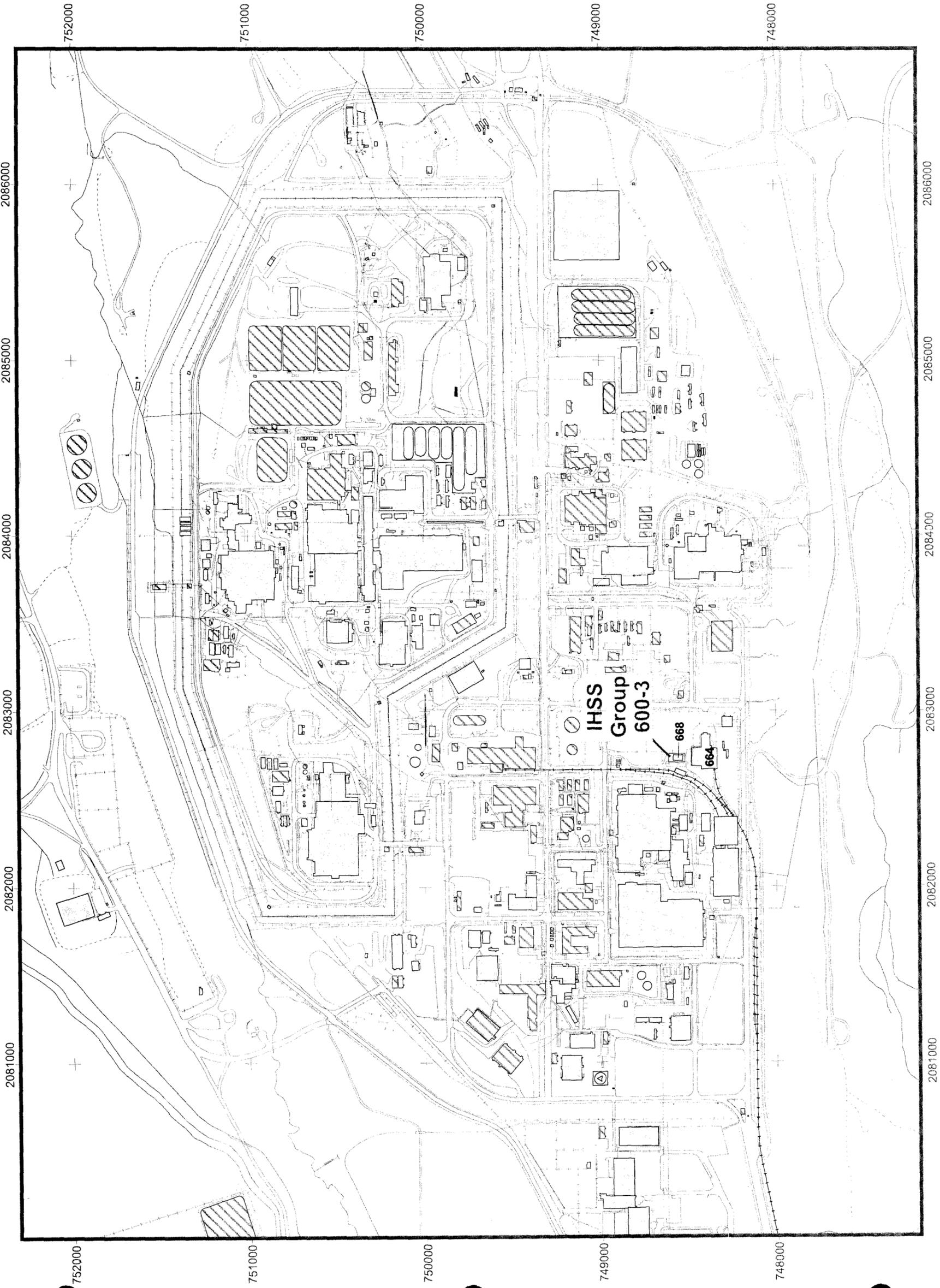
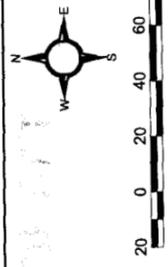


Figure 2
IHSS Group 600-3
Existing Sample Data

KEY

- Surface Soil Sample Locations Less Than Background
 - Subsurface Soil Sample Location Less Than Background
 - Surface Soil Sample Location Greater Than Background and Less Than Wildlife Refuge Worker or Ecological Action Levels
 - Surface Soil Sample Location Greater Than Background and Greater Than Ecological Receptor Action Level, but Less Than Wildlife Refuge Worker Action Level
- IHSS Group 600-3
 Paved Roads
 Dirt Roads
 Fences
 Railroads
 Sewers
 Streams
 High Volume Air Sampler
- Buildings**
 Demolished
 Standing
 Asphalt
 Conex



Scale = 1:750
 State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD 27

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

Prepared for: **KAISER HILL COMPANY**

Prepared by: **RADMS**

Date: 10/21/03
 File: W:\Projects\Fy2004\600-3\group 600-3.apr

