NOTICE

All drawings located at the end of the document.

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DRAFT INDUSTRIAL AREA SAMPLING AND ANALYSIS PLAN FY03 ADDENDUM #IA-03-07 IHSS GROUP 500-2

• Environmental Restoration •
Rocky Flats Environmental Technology Site

April 2003

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DRAFT INDUSTRIAL AREA SAMPLING AND ANALYSIS PLAN FY03 ADDENDUM #IA-03-07 IHSS GROUP 500-2

Approval received from the Colorado Department of Public Health and Environment

(DRAFT)

Approval letter contained in the Administrative Record

April 2003

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ACRONYMS

FY	Fiscal Year
HRR	Historical Release Report
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
MDL	method detection limit
mg/kg	milligrams per kilogram
N/A	not applicable
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
SAP	Sampling and Analysis Plan
ug/kg	microgram per kilogram
VOC	volatile organic compound

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1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001) Addendum #IA-03-07 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for IHSS Group 500-2. IHSS Group 500-2 consists of a single IHSS, IHSS 158, Building 551 Radioactive Site. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for IHSS 158. The location of IHSS 158 is shown on Figure 1.

1.1 EXISTING CHARACTERIZATION INFORMATION

Concentrations and activities detected above the background mean plus two standard deviations, or method detection limit (MDL), are presented on Figure 2. Existing information and data for this IHSS are available in Appendix C of the IASAP (DOE 2001), the Historical Release Report (HRR) (DOE 1992- 2002), and the Industrial Area Data Summary Report (DOE 2000). PCOCs for this IHSS include radionuclides, metals, and volatile organic compounds (VOCs) in surface and subsurface soils as presented in Table 1.

Analyte concentrations and radionuclide activities above background means plus two standard deviations or MDLs for existing analytical data, are presented on Figure 2. Table 2 presents these PCOCs. Results from eight locations indicated radionuclides, primarily americum-241 and plutonium-239/240, greater than background mean plus two standard deviation activities. Metal concentrations were greater than background mean plus two standard deviations at eight locations. Volatile organic compounds were not analyzed for in IHSS 158.

2.0 IHSS GROUP 500-2 SAMPLING

The proposed sampling specifications (number and types of samples) for IHSS 158 are listed in Table 2 and Figure 3. Proposed new sampling locations are the starting point for this IHSS characterization. After characterization starts, the number and type of samples may change based on sampling results. Changes to sampling specifications will be considered in consultation with the regulatory agencies.

Three types of sampling strategies are used to determine sampling locations: statistical, geostatistical, and biased. Statistical grids have computer-generated random start points and orientations. Additionally, the grids extend outside the IHSS, PAC, or UBC Site to provide additional sampling locations if needed. Biased samples may be added based on existing data coverage to supplement the statistical grid locations.

A statistical grid was selected to determine sampling locations for IHSS 158. The grid dimension is 11 meters in accordance with the IASAP (DOE 2001). Where a new sampling location overlaps or is adjacent to an existing sampling location, the existing sampling location data will be used during evaluation. Statistical sampling locations within a building footprint may be adjusted in the field to collect samples from specific building features.

Two biased sample locations (CA42-030 and CA42-031) were selected to characterize retention pond assocated with Building 553. The retention pond was identifed on an engineering drawing (08926-002) and is located 50 feet east and 7 feet north of the south east corner of Building 553.

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Table 1
Potential Contaminants of Concern IHSS Group 500-2

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Data Source	Sampling Location Method
500-2	IHSS 158 – Building 551 Radioactive Site	Radionuclides Metals VOCs	Surface and Subsurface Soil	HRR (DOE 1992-2002) Process knowledge (IASAP [DOE 2001]) IA Data Summary Report (DOE 2000)	Statistical
500-2	IHSS 158 – Building 551 Radioactive Site – Retention Pond	Radionuclides Metals VOCs	Surface and Subsurface Soil	HRR (DOE 1992-2002) Process knowledge (IASAP [DOE 2001]) IA Data Summary Report (DOE 2000)	Biased

Table 2
Sampling Specifications IHSS Group 500-2

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
500-2	IHSS 158 – Building 551 Radioactive Active	BZ40-003	2082667.624	749560.344	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ40-003	2082667.624	749560.344	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ40-003	2082667.624	749560.344	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ40-003	2082667.624	749560.344	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ40-003	2082667.624	749560.344	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ40-003	2082667.624	749560.344	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ41-006	2082671.968	749760.737	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ41-006	2082671.968	749760.737	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ41-006	2082671.968	749760.737	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ41-006	2082671.968	749760.737	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ41-006	2082671.968	749760.737	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ41-006	2082671.968	749760.737	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ41-007	2082676.796	749725.062	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ41-007	2082676.796	749725.062	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ41-007	2082676.796	749725.062	Surface Soil	0.0 - 0.5	VOCs	8260	8260

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		BZ41-007	2082676.796	749725.062	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ41-007	2082676.796	749725.062	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ41-007	2082676.796	749725.062	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ41-008	2082681.623	749689.387	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ41-008	2082681.623	749689.387	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ41-008	2082681.623	749689.387	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ41-008	2082681.623	749689.387	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ41-008	2082681.623	749689.387	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ41-008	2082681.623	749689.387	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ41-009	2082686.451	749653.712	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ41-009	2082686.451	749653.712	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ41-009	2082686.451	749653.712	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ41-009	2082686.451	749653.712	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ41-009	2082686.451	749653.712	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ41-009	2082686.451	749653.712	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ41-010	2082691.278	749618.037	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ41-010	2082691.278	749618.037	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ41-010	2082691.278	749618.037	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ41-010	2082691.278	749618.037	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ41-010	2082691.278	749618.037	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ41-010	2082691.278	749618.037	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ41-011	2082696.105	749582.362	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ41-011	2082696.105	749582.362	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ41-011	2082696.105	749582.362	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ41-011	2082696.105	749582.362	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ41-011	2082696.105	749582.362	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ41-011	2082696.105	749582.362	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ42-001	2082724.104	749840.448	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ42-001	2082724.104	749840.448	Surface Soil	0.0 - 0.5	Metals	6200	6010

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		BZ42-001	2082724.104	749840.448	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ42-001	2082724.104	749840.448	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ42-001	2082724.104	749840.448	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ42-001	2082724.104	749840.448	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ42-002	2082728.932	749804.773	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ42-002	2082728.932	749804.773	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ42-002	2082728.932	749804.773	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ42-002	2082728.932	749804.773	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ42-002	2082728.932	749804.773	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ42-002	2082728.932	749804.773	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ42-003	2082733.759	749769.098	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ42-003	2082733.759	749769.098	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ42-003	2082733.759	749769.098	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ42-003	2082733.759	749769.098	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ42-003	2082733.759	749769.098	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ42-003	2082733.759	749769.098	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ42-005	2082695.623	749818.43	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ42-005	2082695.623	749818.43	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ42-005	2082695.623	749818.43	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ42-005	2082695.623	749818.43	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ42-005	2082695.623	749818.43	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ42-005	2082695.623	749818.43	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		BZ42-009	2082667.141	749796.412	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		BZ42-009	2082667.141	749796.412	Surface Soil	0.0 - 0.5	Metals	6200	6010
		BZ42-009	2082667.141	749796.412	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		BZ42-009	2082667.141	749796.412	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		BZ42-009	2082667.141	749796.412	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		BZ42-009	2082667.141	749796.412	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA40-014	2082857.823	749549.753	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CA40-014	2082857.823	749549.753	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA40-014	2082857.823	749549.753	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA40-014	2082857.823	749549.753	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA40-014	2082857.823	749549.753	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA40-014	2082857.823	749549.753	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-017	2082862.168	749750.146	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-017	2082862.168	749750.146	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-017	2082862.168	749750.146	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-017	2082862.168	749750.146	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-017	2082862.168	749750.146	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-017	2082862.168	749750.146	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-018	2082866.995	749714.471	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-018	2082866.995	749714.471	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-018	2082866.995	749714.471	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-018	2082866.995	749714.471	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-018	2082866.995	749714.471	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-018	2082866.995	749714.471	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-019	2082871.823	749678.796	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-019	2082871.823	749678.796	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-019	2082871.823	749678.796	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-019	2082871.823	749678.796	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-019	2082871.823	749678.796	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-019	2082871.823	749678.796	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-020	2082876.65	749643.121	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-020	2082876.65	749643.121	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-020	2082876.65	749643.121	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-020	2082876.65	749643.121	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-020	2082876.65	749643.121	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-020	2082876.65	749643.121	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CA41-023	2082833.686	749728.128	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-023	2082833.686	749728.128	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-023	2082833.686	749728.128	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-023	2082833.686	749728.128	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-023	2082833.686	749728.128	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-023	2082833.686	749728.128	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-024	2082838.514	749692.453	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-024	2082838.514	749692.453	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-024	2082838.514	749692.453	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-024	2082838.514	749692.453	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-024	2082838.514	749692.453	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-024	2082838.514	749692.453	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-025	2082843.341	749656.778	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-025	2082843.341	749656.778	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-025	2082843.341	749656.778	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-025	2082843.341	749656.778	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-025	2082843.341	749656.778	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-025	2082843.341	749656.778	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-026	2082848.168	749621.103	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-026	2082848.168	749621.103	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-026	2082848.168	749621.103	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-026	2082848.168	749621.103	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-026	2082848.168	749621.103	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-026	2082848.168	749621.103	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-027	2082852.996	749585.428	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-027	2082852.996	749585.428	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-027	2082852.996	749585.428	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-027	2082852.996	749585.428	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-027	2082852.996	749585.428	Subsurface Soil	0.5 - 2.5	Metals	6200	6010

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CA41-027	2082852.996	749585.428	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-028	2082800.377	749741.784	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-028	2082800.377	749741.784	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-028	2082800.377	749741.784	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-028	2082800.377	749741.784	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-028	2082800.377	749741.784	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-028	2082800.377	749741.784	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-029	2082805.205	749706.11	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-029	2082805.205	749706.11	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-029	2082805.205	749706.11	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-029	2082805.205	749706.11	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-029	2082805.205	749706.11	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-029	2082805.205	749706.11	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-031	2082814.859	749634.76	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-031	2082814.859	749634.76	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-031	2082814.859	749634.76	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-031	2082814.859	749634.76	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-031	2082814.859	749634.76	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-031	2082814.859	749634.76	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-032	2082819.687	749599.085	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-032	2082819.687	749599.085	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-032	2082819.687	749599.085	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-032	2082819.687	749599.085	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-032	2082819.687	749599.085	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-032	2082819.687	749599.085	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-033	2082824.514	749563.41	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-033	2082824.514	749563.41	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-033	2082824.514	749563.41	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-033	2082824.514	749563.41	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CA41-033	2082824.514	749563.41	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-033	2082824.514	749563.41	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA41-034	2082767.068	749755.441	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA41-034	2082767.068	749755.441	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA41-034	2082767.068	749755.441	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA41-034	2082767.068	749755.441	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA41-034	2082767.068	749755.441	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA41-034	2082767.068	749755.441	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA42-015	2082852.513	749821.495	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA42-015	2082852.513	749821.495	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA42-015	2082852.513	749821.495	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA42-015	2082852.513	749821.495	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA42-015	2082852.513	749821.495	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA42-015	2082852.513	749821.495	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA42-016	2082857.341	749785.821	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA42-016	2082857.341	749785.821	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA42-016	2082857.341	749785.821	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA42-016	2082857.341	749785.821	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA42-016	2082857.341	749785.821	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA42-016	2082857.341	749785.821	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA42-019	2082824.031	749799.477	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA42-019	2082824.031	749799.477	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA42-019	2082824.031	749799.477	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA42-019	2082824.031	749799.477	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA42-019	2082824.031	749799.477	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA42-019	2082824.031	749799.477	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA42-020	2082828.859	749763.802	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA42-020	2082828.859	749763.802	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA42-020	2082828.859	749763.802	Surface Soil	0.0 - 0.5	VOCs	8260	8260

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CA42-020	2082828.859	749763.802	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA42-020	2082828.859	749763.802	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA42-020	2082828.859	749763.802	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA42-024	2082795.55	749777.459	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA42-024	2082795.55	749777.459	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA42-024	2082795.55	749777.459	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA42-024	2082795.55	749777.459	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA42-024	2082795.55	749777.459	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA42-024	2082795.55	749777.459	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA42-026	2082757.413	749826.791	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA42-026	2082757.413	749826.791	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA42-026	2082757.413	749826.791	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA42-026	2082757.413	749826.791	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA42-026	2082757.413	749826.791	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA42-026	2082757.413	749826.791	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA42-027	2082762.241	749791.116	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA42-027	2082762.241	749791.116	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA42-027	2082762.241	749791.116	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA42-027	2082762.241	749791.116	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA42-027	2082762.241	749791.116	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA42-027	2082762.241	749791.116	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA-42-030	2082876.151	749823.087	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA-42-030	2082876.151	749823.087	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA-42-030	2082876.151	749823.087	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA-42-030	2082876.151	749823.087	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA-42-030	2082876.151	749823.087	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA-42-030	2082876.151	749823.087	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA-42-030	2082876.151	749823.087	Subsurface Soil	2.5 - 4.5	Radionuclides	HPGe	Alpha Spec
		CA-42-030	2082876.151	749823.087	Subsurface Soil	2.5 - 4.5	Metals	6200	6010

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CA-42-030	2082876.151	749823.087	Subsurface Soil	2.5 - 4.5	VOCs	8260	8260
		CA-42-030	2082876.151	749823.087	Subsurface Soil	4.5 - 6.5	Radionuclides	HPGe	Alpha Spec
		CA-42-030	2082876.151	749823.087	Subsurface Soil	4.5 - 6.5	Metals	6200	6010
		CA-42-030	2082876.151	749823.087	Subsurface Soil	4.5 - 6.5	VOCs	8260	8260
		CA-42-030	2082876.151	749823.087	Subsurface Soil	6.5 - 8.5	Radionuclides	HPGe	Alpha Spec
		CA-42-030	2082876.151	749823.087	Subsurface Soil	6.5 - 8.5	Metals	6200	6010
		CA-42-030	2082876.151	749823.087	Subsurface Soil	6.5 - 8.5	VOCs	8260	8260
		CA-42-030	2082876.151	749823.087	Subsurface Soil	8.5 - 10.5	Radionuclides	HPGe	Alpha Spec
		CA-42-030	2082876.151	749823.087	Subsurface Soil	8.5 - 10.5	Metals	6200	6010
		CA-42-030	2082876.151	749823.087	Subsurface Soil	8.5 - 10.5	VOCs	8260	8260
		CA-42-031	2082872.467	749814.982	Surface Soil	0.0 - 0.5	Radionuclides	HPGe	Alpha Spec
		CA-42-031	2082872.467	749814.982	Surface Soil	0.0 - 0.5	Metals	6200	6010
		CA-42-031	2082872.467	749814.982	Surface Soil	0.0 - 0.5	VOCs	8260	8260
		CA-42-031	2082872.467	749814.982	Subsurface Soil	0.5 - 2.5	Radionuclides	HPGe	Alpha Spec
		CA-42-031	2082872.467	749814.982	Subsurface Soil	0.5 - 2.5	Metals	6200	6010
		CA-42-031	2082872.467	749814.982	Subsurface Soil	0.5 - 2.5	VOCs	8260	8260
		CA-42-031	2082872.467	749814.982	Subsurface Soil	2.5 - 4.5	Radionuclides	HPGe	Alpha Spec
		CA-42-031	2082872.467	749814.982	Subsurface Soil	2.5 - 4.5	Metals	6200	6010
		CA-42-031	2082872.467	749814.982	Subsurface Soil	2.5 - 4.5	VOCs	8260	8260
		CA-42-031	2082872.467	749814.982	Subsurface Soil	4.5 - 6.5	Radionuclides	HPGe	Alpha Spec
		CA-42-031	2082872.467	749814.982	Subsurface Soil	4.5 - 6.5	Metals	6200	6010
		CA-42-031	2082872.467	749814.982	Subsurface Soil	4.5 - 6.5	VOCs	8260	8260
		CA-42-031	2082872.467	749814.982	Subsurface Soil	6.5 - 8.5	Radionuclides	HPGe	Alpha Spec
		CA-42-031	2082872.467	749814.982	Subsurface Soil	6.5 - 8.5	Metals	6200	6010
		CA-42-031	2082872.467	749814.982	Subsurface Soil	6.5 - 8.5	VOCs	8260	8260
		CA-42-031	2082872.467	749814.982	Subsurface Soil	8.5 - 10.5	Radionuclides	HPGe	Alpha Spec
		CA-42-031	2082872.467	749814.982	Subsurface Soil	8.5 - 10.5	Metals	6200	6010
		CA-42-031	2082872.467	749814.982	Subsurface Soil	8.5 - 10.5	VOCs	8260	8260

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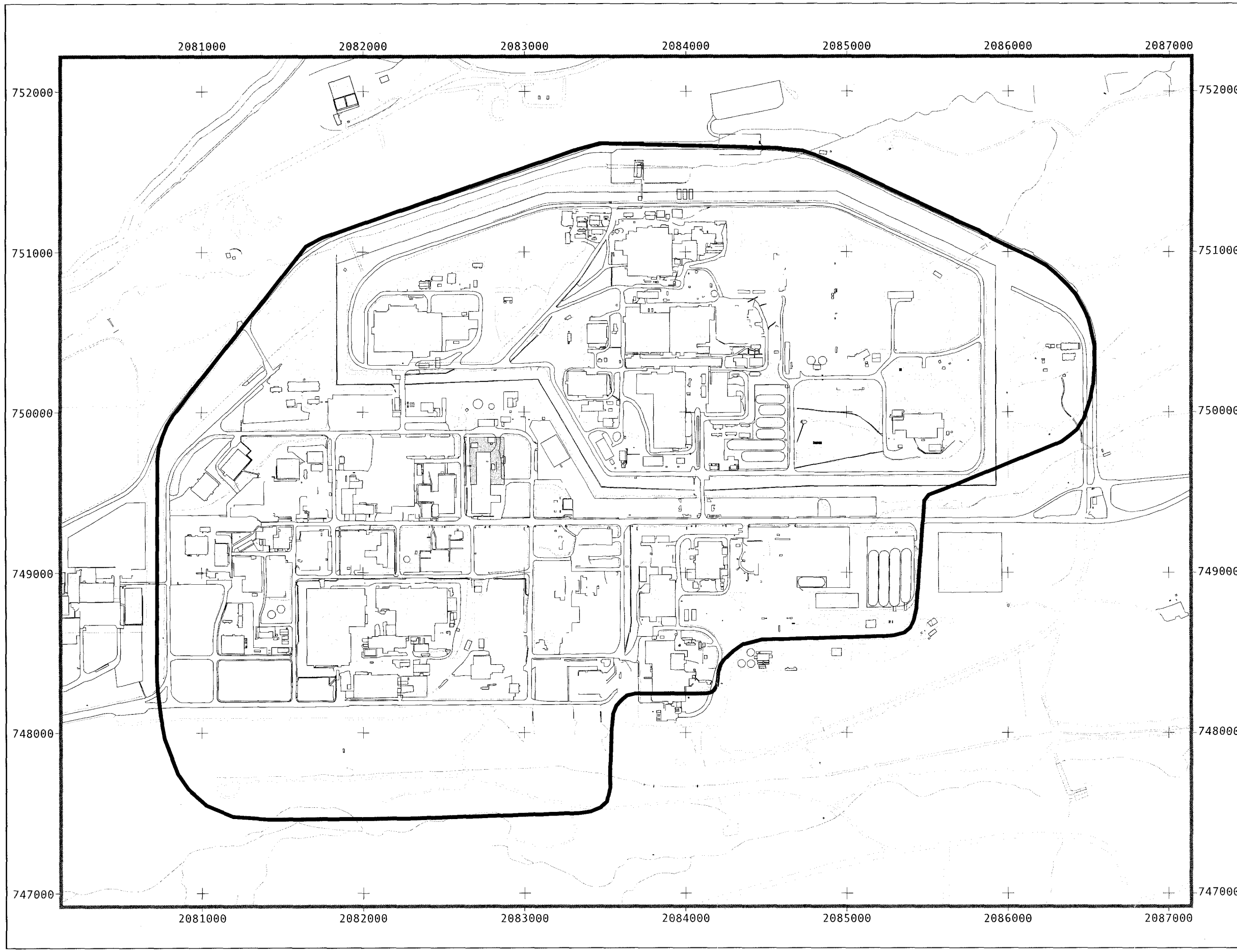

Figure 1
IHSS Group 500-2
Location Map

Key

- Dirt Road
- Paved Road
- Streams
- Industrial Area Boundary
- Building
- IHSS 158

N
W E
S

400 0 400 Feet

Scale = 1:8,500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared by:

RADMS

Prepared for:

KAISER•HILL

File:w:/projects/FY2003/500-2/proj1 Date:4/06/03

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.03	pCi/g	NA	0.0227	76	-
Zinc	87.30	mg/kg	NA	73.76	307000	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.25	pCi/g	NA	0.0227	76	-
Plutonium-239/240	0.19	pCi/g	NA	0.066	50	-
Uranium-238	4.13	pCi/g	NA	2.00	351	-
Chromium	19.20	mg/kg	NA	16.99	268	-
Nickel (soluble)	16.00	mg/kg	NA	14.91	20400	-
Silver	1.10	mg/kg	NA	-	5110	-
Zinc	113.00	mg/kg	NA	73.76	307000	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.04	pCi/g	NA	0.0227	76	-
Plutonium-239/240	0.18	pCi/g	NA	0.066	50	-
Uranium-235	0.37	pCi/g	NA	0.094	8	-
Beryllium	1.70	mg/kg	NA	0.966	921	8.71
Silver	0.90	mg/kg	NA	-	5110	-
Zinc	676.00	mg/kg	NA	73.76	307000	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.08	pCi/g	NA	0.0227	76	-
Plutonium-239/240	0.14	pCi/g	NA	0.066	50	-
Copper	90.20	mg/kg	NA	18.06	40900	-
Zinc	1080.00	mg/kg	NA	73.76	307000	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.12	pCi/g	NA	0.0227	76	-
Plutonium-239/240	0.64	pCi/g	NA	0.066	50	-
Copper	287.00	mg/kg	NA	18.06	40900	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.03	pCi/g	NA	0.0227	76	-
Plutonium-239/240	0.08	pCi/g	NA	0.066	50	-
Lead	78.80	mg/kg	NA	54.62	1000	97.7
Zinc	132.00	mg/kg	NA	73.76	307000	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.07	pCi/g	NA	0.0227	76	-
Plutonium-239/240	0.10	pCi/g	NA	0.066	50	-
Aroclor 1260	92.00	ug/Kg	81.00	-	12400	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Americium-241	0.18	pCi/g	NA	0.0227	76	-
Uranium-235	0.13	pCi/g	NA	0.094	8	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Chromium	102.00	mg/kg	NA	16.99	268	-
Cobalt	29.90	mg/kg	NA	10.91	1550	-
Copper	21.70	mg/kg	NA	18.06	40900	-
Molybdenum	5.10	mg/kg	NA	-	5110	-
Nickel (soluble)	97.60	mg/kg	NA	14.91	20400	-

Analyte	Result	Unit	DI	Mean+2sd	Wrw_al	Eco_al
Uranium-235	0.10	pCi/g	NA	0.094	8	-
Cobalt	21.50	mg/kg	NA	10.91	1550	-
Silver	1.90	mg/kg	NA	-	5110	-

Figure 2
Existing Sample Results Above Background Mean Plus Two Standard Deviations or Detection Limit at IHSS Group 500-2

Key

- Surface Soil Results Greater than Background or Detection Limit
- Surface Soils Results Less Than Background or Detection Limit
- Dirt Road
- Paved Road
- Streams
- Building
- IHSS 158

N W E S

20 0 20 40 60 80 Feet

Scale = 1:800

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared by:

RADMS
Remedial Action Decision Management System

Prepared for:

KAISER•HILL

File:w:/projects/FY2003/500-2/proj1 Date:4/06/03

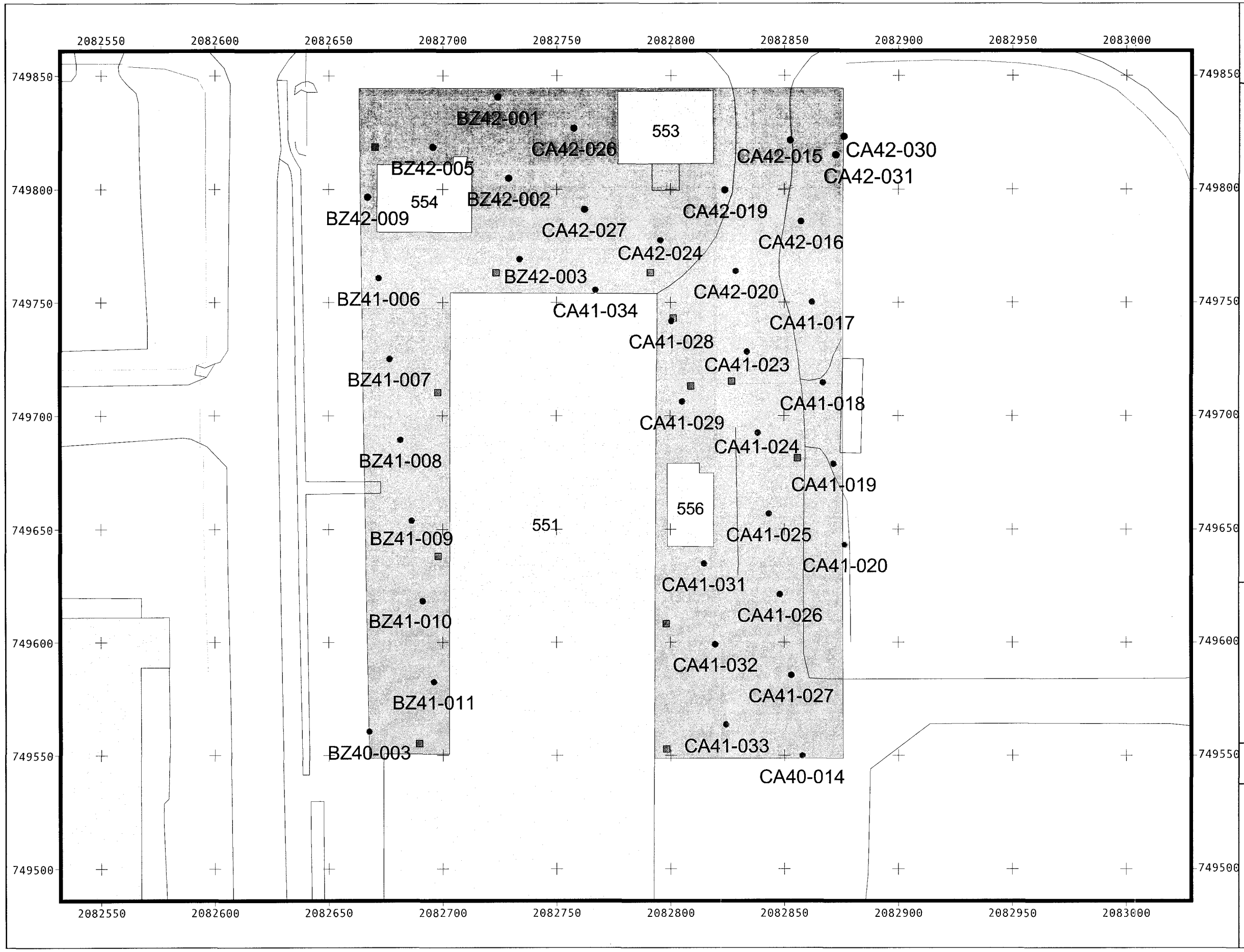

Figure 3
Proposed Sample Locations for IHSS Group 500-2

Key

- Retention Pond Biased Sample Location
- Characterization Statistical Sample Location
- Existing Sample Location
- Dirt Road
- Paved Road
- Streams
- Building
- IHSS 158

N
W E
S

20 0 20 40 60 Feet

Scale = 1:500

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared by:

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