DRAFT INDUSTRIAL AREA SAMPLING AND ANALYSIS PLAN FY03 ADDENDUM #IA-03-03 IHSS GROUP 900-1

December 2002

Y 17

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ACRONYMS

D&D	Decontamination and Decommissioning
DOE	Department of Energy
FY	Fiscal Year
HPGe	high-purity germanium
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
PAC	Potential Area of Concern
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
RFCA	Rocky Flats Cleanup Agreement
SAP	Sampling and Analysis Plan
UBC	Under Building Contamination
VOC	volatile organic compound

1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) Addendum #IA-03-03 includes Individual Hazardous Substance Site (IHSS) Group-specific information, sampling locations, and potential contaminants of concern (PCOCs) for IHSS, Potential Area of Concern (PAC), and Under Building Contamination (UBC) Sites proposed for characterization during Fiscal Year (FY) 03 This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for IHSS Group 900-1 and associated IHSS, PAC, and UBC Sites listed in Table 1 The locations of the IHSS Group, and IHSS, PAC, and UBC Sites proposed for sampling during FY03 are shown on Figure 1 and Figure 2, respectively

Table 1
IASAP Addendum #IA-03-03 IHSS Groups

IHSS Group	IHSS/PAC/UBC Sites
900-1	UBC 991, Weapons Assembly and R&D (including Vault Bldgs 996, 997, 998 and 999, and associated tunnels)
	Radioactive Site Building 991, IHSS 900-173
	Radioactive Site 991 Steam Cleaning Area, IHSS 900-184
	Building 991 Enclosed Area, PAC 900-1301
	Explosive Bonding Pit, PAC 900-1307 (Bldg 993)

2.0 EXISTING CHARACTERIZATION INFORMATION

Existing concentrations above the background mean plus two standard deviations, or method detection limit (MDL), are presented in Figure 3 Table 2 presents the PCOCs Existing information and data for the IHSS, PAC, and UBC Sites are available in Appendix C of the IASAP (DOE 2001) and in the Industrial Area Data Summary Report (DOE 2000)

3.0 SAMPLING

The proposed sampling and analysis specifications for each IHSS, PAC and UBC Site are listed in Table 3 Proposed new sampling locations are shown in Figure 4 for UBC 991, IHSS 900-173, IHSS 900-184, and PAC 900-1301, and in Figure 5 for PAC 900-1307 Proposed new sampling locations are the starting point for IHSS Group 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 have been extended outside the IHSS, PAC, or UBC Site to provide additional sampling locations if needed Biased samples supplement the statistical grid locations Geostatistical methods were not used at this IHSS Group

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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

For IHSS Group 900-1, the statistical grid size (i e , the length between grid points) is 36 ft, except for UBC 991, where the grid size is 72 ft Additional biased samples will be taken around Building 991 (i e , near foundation and storm drains, within one storm drain and one storm culvert, and from an exterior drain near the east basement entrance) Radiological swipe and core data from Decontamination and Decommissioning (D&D) characterization will be evaluated to determine whether UBC samples are required under the vault buildings and associated tunnels No significant releases have occurred in these vaults and tunnels (DOE 1992 – 2001), and the associated concrete slabs are very thick Based on similar investigations through slabs, it is very unlikely that soils under these structures have contaminant concentrations above RFCA Tier II action levels, if all the D&D data are below ALs If the data indicate that samples are required, the existing grid will be expanded to cover suspect locations in consultation with the agencies and a contact record issued

It should be noted that IHSSs 900-175 and 900-210 are predominantly surface sites and are not associated with the subsurface tunnels (i e , UBC 991) IHSS 900-175 has been previously proposed for no further action

For PAC 900-1307, the grid size was extended to 40 feet beyond the building footprint (i e , to twice the length of the PAC) because explosive experiments disbursed debris outside Building 993 One biased sample will be taken from under the pit located within Building 993, estimated at approximately 6 feet below grade If contaminant concentrations are found to be above ALs near the grid boundary, under the Building 993 slab, or under the Building 993 pit, additional samples will be taken in consultation with the agencies and a contact record issued

4.0 REFERENCES

DOE, 1992-2001, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado

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

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

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Table 2
Potential Contaminants of Concern

IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Sources	Sampling Type
900-1	UBC 991, Weapons Assembly and R&D	Uranium Plutonium Metals VOCs	Surface and Subsurface Soil Beneath Slab	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001])	Statistical grid
	Radioactive Site Building 991, IHSS 900-173	Uranium Plutonium Metals VOCs	Surface and Subsurface Soil Beneath Asphalt	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001])	Statistical grid and biased locations
	Radioactive Site 991 Steam Cleaning Area, IHSS 900-184	Uranium Plutonium Metals VOCs	Surface and Subsurface Soil Beneath Asphalt	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001])	Statistical grid and biased locations
	Building 991 Enclosed Area, PAC 900-1301	Uranium Plutonium Metals VOCs	Surface and Subsurface Soil Beneath Asphalt	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001])	Statistical grid and biased locations
	Explosive Bonding Pit, PAC 900-1307	Uranium Metals	Surface and Subsurface Soil, including soil beneath slab and pit	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001])	Statistical grid and biased locations

R&D research and development
HRR Historical Release Report
VOC volatile organic compound

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Table 3
Sampling Specifications

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Method	Offsite Laboratory Method
900-1	UBC 991	CM42-001	2085293 745	749869 735	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5	VOCs	8260	8260
					Subsurface Soil	0 5'-2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5'-2 5'	VOCs	8260	8260
		CM42-004	2085293 557	749941 734	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5'	VOCs	8260	8260
					Subsurface Soil	0 5'-2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5'	Metals	6200	6010
					Subsurface Soil	0 5'-2 5	VOCs	8260	8260
		CN42-005	2085480 712	749906 222	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5'	VOCs	8260	8260
					Subsurface Soil	0 5'-2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5'	VOCs	8260	8260
		CN42-007	2085418 452	749870 059	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Surface Soil	0-0 5	VOCs	8260	8260
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5 2 5	VOCs	8260	8260
		CN42-015	2085418 265	749942 059	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5	VOCs	8260	8260
					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 Method	Offsite Laboratory Method
					Subsurface Soil	0 5 -2 5'	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CN42-017	2085356 005	749905 897	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5	VOCs	8260	8260
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5'-2 5'	VOCs	8260	8260
		CN43-000	2085480 525	749978 221	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5	VOCs	8260	8260
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CN43-002	2085355 817	749977 897	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5'	VOCs	8260	8260
					Subsurface Soil	0 5'-2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5'	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CO42-000	2085605 419	749906 547	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Surface Soil	0-0 5'	VOCs	8260	8260
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5	Metals	6200	6010
					Subsurface Soil	0 5'-2 5	VOCs	8260	8260
		CO42-001	2085543 159	749870 384	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Surface Soil	0-0 5	VOCs	8260	8260
					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 Method	Offsite Laboratory Method
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CO42-006	2085542 972	749942 384	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Surface Soil	0-0 5	VOCs	8260	8260
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5'-2 5	VOCs	8260	8260
		CM42-014	2085281 639	749950 832	Subsurface Soil	2 5'-4 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	2 5 -4 5'	Metals	6200	6010
					Subsurface Soil	2 5 -4 5	VOCs	8260	8260
		CM43-000	2085324 340	749967 577	Subsurface Soil	2 5 -4 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	2 5 -4 5	Metals	6200	6010
					Subsurface Soil	2 5 -4 5	VOCs	8260	8260
		CO42-007	2085609 850	749955 018	Subsurface Soil	2 5 -4 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	2 5'-4 5	Metals	6200	6010
					Subsurface Soil	2 5'-4 5	VOCs	8260	8260
		CO42-008	2085728 742	749951 669	Subsurface Soil	2 5 -4 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	2 5 -4 5	Metals	6200	6010
					Subsurface Soil	2 5 -4 5'	VOCs	8260	8260
		CO42-009	2085575 522	749869 617	Sediment in Drain	0-0'	Radionuclides	HPGe	Alpha Spec
					Sediment in Drain	0-0	Metals	6200	6010
		CO43-001	2085593 942	749998 556	Subsurface Soil	2 5'-4 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	2 5 -4 5'	Metals	6200	6010
					Subsurface Soil	2 5 -4 5	VOCs	8260	8260
	IHSS 900-173	CM42-005	2085319 287	749866 516	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Subsurface Soil	0 5'-2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5'	Metals	6200	6010
					Subsurface Soil	0 5'-2 5'	VOCs	8260	8260

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Method	Offsite Laboratory Method
		CN42-020	2085353 895	749876 431	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Subsurface Soil	0 5 -2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5'	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
	IHSS 900-184	CM42-006	2085332 371	749799 346	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CM42-007	2085329 506	749835 232	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Subsurface Soil	0 5 2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5	Metals	6200	6010
					Subsurface Soil	0 5'-2 5'	VOCs	8260	8260
		CM42-008	2085299 861	749814 807	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CM42-009	2085296 995	749850 693	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CM42-010	2085313 456	749765 795	Subsurface Soil	2 5'-4 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	2 5 -4 5	Metals	6200	6010
					Subsurface Soil	2 5'-4 5'	VOCs	8260	8260
		CM42-011	2085320 154	749789 239	Sediment in Drain	0-0'	Radionuclides	HPGe	Alpha Spec
					Sediment in Drain	0-5	Metals	6200	6010

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Method	Offsite Laboratory Method
					Subsurface Soil	0 5'-2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5'	Metals	6200	6010
					Subsurface Soil	0 5'-2 5	VOCs	8260	8260
		CM42-012	2085330 201	749816 869	Sediment in Drain	0-0	Radionuclides	HPGe	Alpha Spec
					Sediment in Drain	0-0	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5	Metals	6200	6010
					Subsurface Soil	0 5'-2 5'	VOCs	8260	8260
		CM42-013	2085281 639	749780 029	Subsurface Soil	2 5 -4 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	2 5'-4 5'	Metals	6200	6010
					Subsurface Soil	2 5 -4 5	VOCs	8260	8260
	PAC 900-1301	CN42-021	2085411 616	749830 252	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CN42-022	2085473 955	749831 614	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Subsurface Soil	0 5 -2 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5'-2 5'	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CN42-023	2085536 294	749832 976	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
					Subsurface Soil	0 5'-2 5	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	0 5 -2 5	Metals	6200	6010
					Subsurface Soil	0 5 -2 5	VOCs	8260	8260
		CN42-024	2085423 976	749795 099	Sediment in Culvert	0-0'	Radionuclides	HPGe	Alpha Spec
					Sediment in Culvert	0-0	Metals	6200	6010
		CN41-000	2085489 283	749743 189	Sediment in Culvert	0-0	Radionuclides	HPGe	Alpha Spec
					Sediment in Culvert	0-0'	Metals	6200	6010

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Method	Offsite Laboratory Method
	PAC 900-1307	CQ42-002	2086086 608	749902 287	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
		CQ42-003	2086062 411	749928 943	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
		CQ42-004	2086038 214	749955 598	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
		CQ42-005	2086121 790	749909 914	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
		CQ42-006	2086097 594	749936 570	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5	Metals	6200	6010
		CQ42-007	2086132 776	749944 197	Surface Soil	0-0 5	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
	Under building pit	CQ42-008	2086085 021	749956 466	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
	Under building slab	CQ43-000	2086073 397	749963 225	Subsurface Soil	6 0-6 5'	Radionuclides	HPGe	Alpha Spec
					Subsurface Soil	6 0-6 5'	Metals	6200	6010
		CQ43-001	2086049 200	749989 881	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
		CQ43-002	2086108 580	749970 853	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
		CQ43-003	2086084 383	749997 508	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010
		CQ43-004	2086119 566	750005 135	Surface Soil	0-0 5'	Radionuclides	HPGe	Alpha Spec
					Surface Soil	0-0 5'	Metals	6200	6010

Figure 1
IHSS Group 900-1 Location Map

EXPLANATION

IHSS Group

900 1

Stand rd M p Features

uildings nd the uc re

Demol hed buildings

Lakes and ponds

reams ditches, or the dr inage features

Fences and othe barr rs

aved roads

rt roads

Solar E aporation Ponds (EPs)

Industrial Area Oper ble m Boundary

DATA SOURCE BASE FEATURES:
PACs
Historical Release Report (HRR)
2nd Annual Update
Sept. 30, 59
Individual Hazardous Substances (IHSS)
DOE, 1992, HRR Report and Subsequent Updates.
Buildings, fences, hydrography, roads and other structures from 1994 aerial flyover dat captured by G&S RSI, Las Vegas.
Digitized from the orthophotographs, 1:95

Scale 6330
inc represents approximately 5 8 fee

State Plane Coordinate Projec ion
Colorado Central Zone
Da um NAD 7

U S Department of Energy
Ro ky Fl ts En nmental Technology S t

GIS Dept. 303-966-7707

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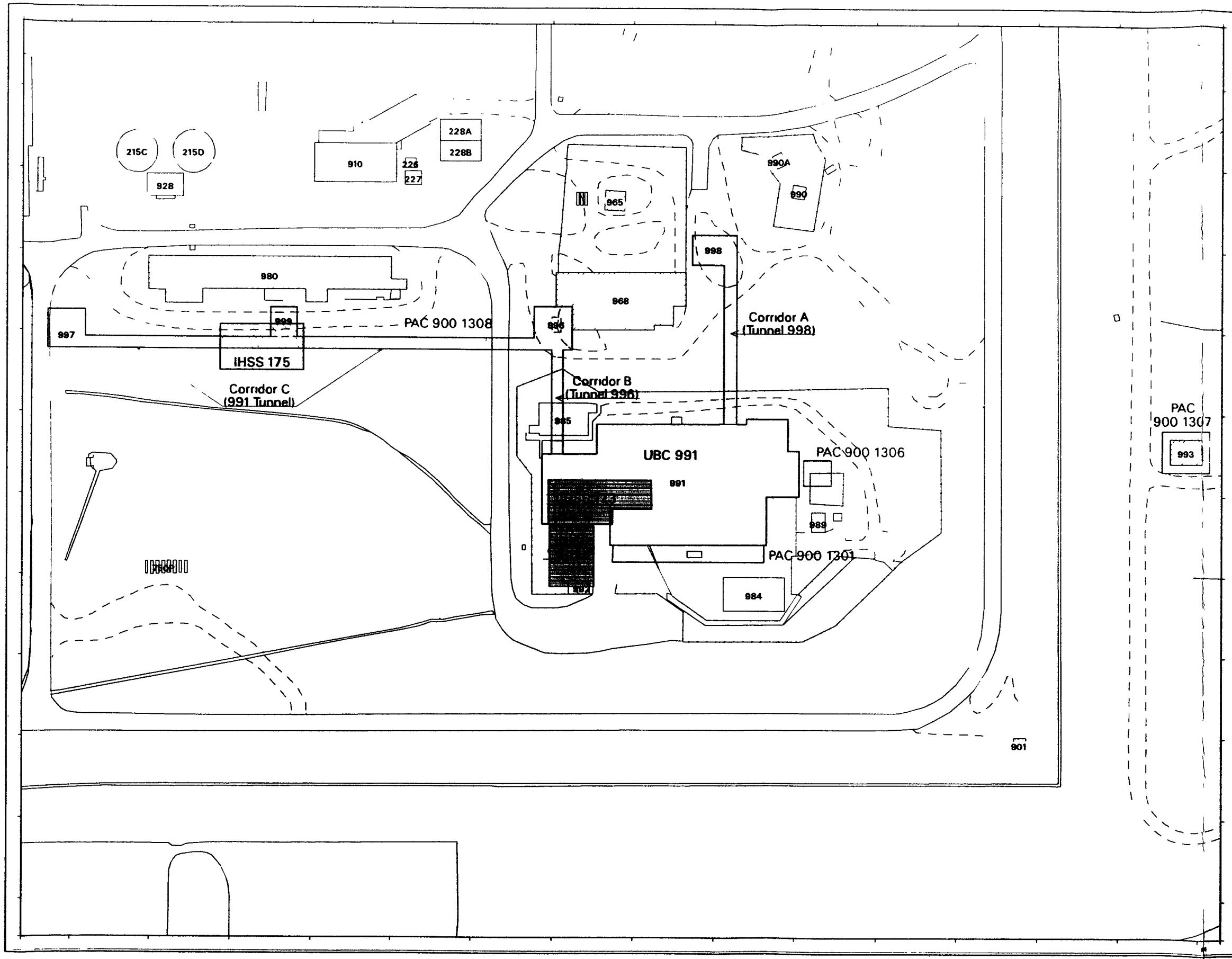
Figure 2

Potential Remediation Areas
IHSS Group 900-1



EXPLANATION

- UBCS r IHSS Gr 900 1
- IHSS f IHSS Gro 900-1
- ACS f IHSS Group 900 1
- HSS no n IHSS Grou 900 1
- PACS no IHSS Gro p 900 1

Stand rd M p Feature

- uild ngs nd ther uc ures
- molished buildings
- Lak s nd ponds
- reams ditches, or ha dr nage feat res
- Fenc nd the ba rs
- aved roads
- Dirt roads

DATA SOURCE BASE FEATURES:
PACs
Historical Release Report (HRR)
3rd Annual Update
Sept. 30, 1990
Individual Hazardous Substance Sites (IHSS)
DOE 1992, HRR Report and Subsequent Updates.
Buildings, fences, hydrography, roads and other structures from 1994 Aerial fly-over data captured by GEO RSL, Las Vegas.
Digitized from the stereophotographs. '95

N

Scale 1 1450
1 nch repr sent approxmat ly 121 fee

0 0 100 200

State Plane Coordinate Projectio
Colorado Cent al Zone
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

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NT 8 /p i / /hy03 /900 p ih ti /l g p 900 1 fig2 ml

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Figure 3
Existing Samples Above Background Mean Plus Two Standard Deviations or Detection Limit

2084700 2084800 2084900 2085000 2085100 2085200 2085300 2085400 2085500 2085600

750300 750200 750100 750000 749900 749800 749700

Analyte	Unit	Result	DL	Sbd ( )	Sbd ( )	Tier	Tier II	M+2sd
chromium	mg/Kg	48				44300	44	16 99
copper	mg/Kg	22 40	25			00	100	08
nickel	mg/Kg	35 30	40			38400	38400	

Analyte	Unit	Result	DL	Sbd ( )	Sed (in)	Tier	Tier	M+2sd
chromium	mg/Kg	22 70				44300	44	16 99
copper	mg/Kg	35 40	25			180	100	18 08

175

210

Analyte	Unit	Result	DL	Sbd (in)	Sed (in)	Tier I	Tier II	M+2sd
pyrene	ug/Kg	440.00	330			57800000	57800000	NA
chromium	mg/Kg	20.40	10			44300	44 0	16 99
copper	mg/Kg	27 00	25			00	100	8.08
zinc	mg/Kg	149.00	20			576000	576000	73.76

Analyte	Unit	Result	DL	Sbd (in)	Sed (in)	Tier I	Tier II	M+2sd
zinc	mg/Kg	1 00	20			576000	576000	73 76

Analyte	Unit	Result	DL	Sbd (in)	Sed (in)	Tier I	Tier II	M+2sd
fluoranthene	ug/Kg	370.00	330			78800000	78800000	NA
chromium	mg/Kg	20	10			44300	44 0	16 99
copper	mg/Kg	1 50	25			71 00	100	18.08
nickel	mg/Kg	80	40			38400	38400	14.91
zinc	mg/Kg	106.00	20			576000	576000	73 76

Analyte	Unit	Result	DL	Sbd (in)	Sed (in)	Tier I	Tier II	M+2sd
copper	mg/Kg	20.00	25			71100	71100	18.08

173

991

KEY

- Below Tier II AL
- Paved Roads
- IHSS
- Under Building Contamination
- Potential Area of Concern
- Building
- Dirt Roads
- Fence

Sbd = Sample begin depth
Sed = Sample end depth
DL = Detection limit

W E

20 0 20 40 60 Feet

Scale = 1 1000

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by RADMS Date 12 17 02

Prepared for

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Figure 4
FY 2003 Sampling Locations for IHSS Group 900-1 Building 991 Area

2085300 2085400 2085500 2085600 208 700 2085800

750100
750000
749900
749800
749700

CO43 001
CM43 000
CM42 014
CO42 007
CO42 008
CO42-009
CM42-005
CM42-009
CM42-008
CN42-024
CM42-006
CM42-013
CM42 010
CN41-000

2085300 2085400 2085500 2085600 2085700 2085800

Legend

- Potential Air Monitoring Location
- Biased Sample Locations
- Statistical Sample Locations
- Buildings
- IHSS
- PAC
- UBC
- Storm Drains
- Foundation Drains

W E

20 0 20 40 60 Feet

Scale = 1 600

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

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Prepared by:
RADIAN

Prepared for:
KAISER•HILL COMPANY

Date. 17Dec02

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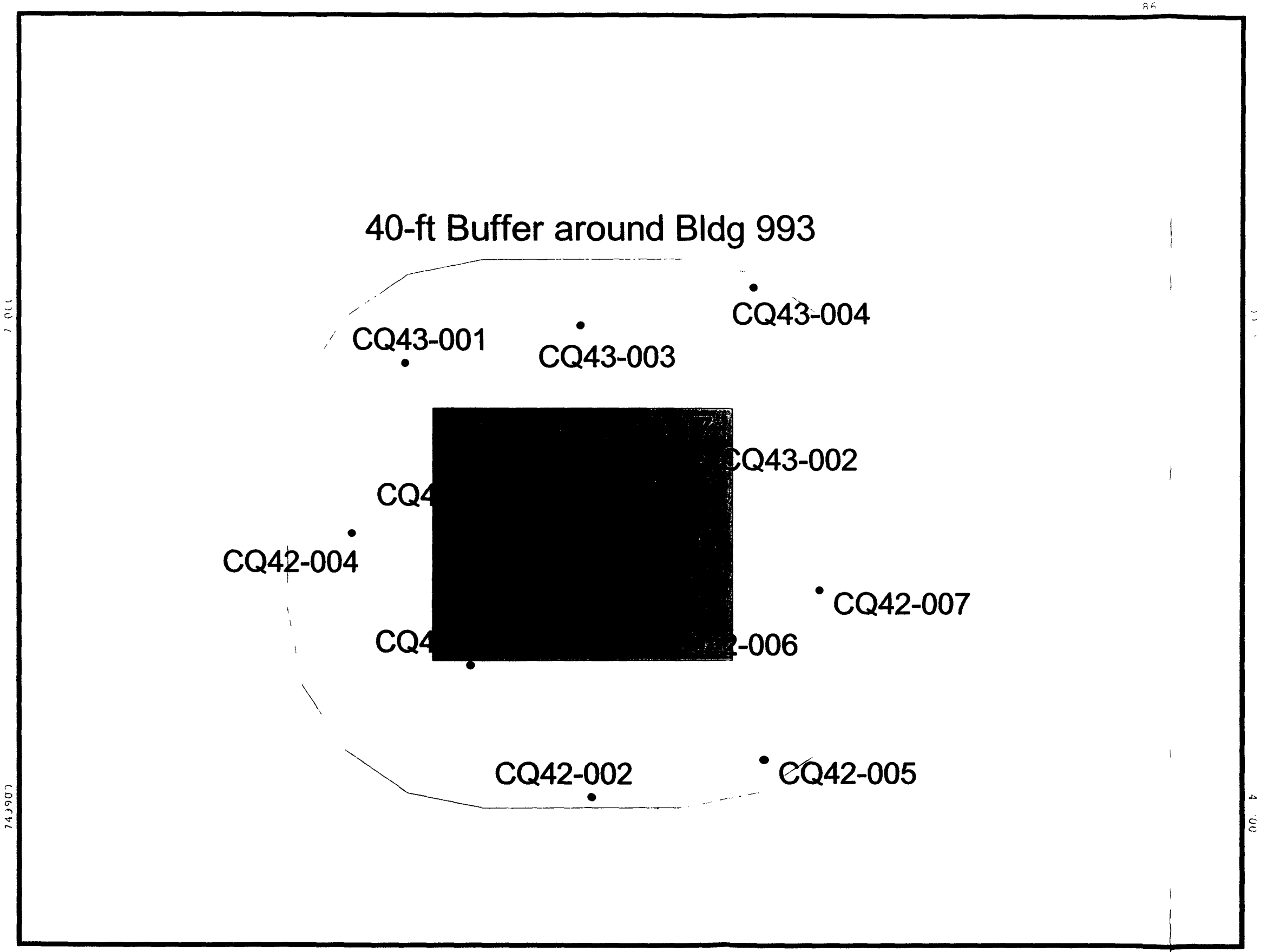

Figure 3
FY 2003 Sampling Locations for IHSS Group 900 1 Building 993 Area

Legend

- Potential Air Monitoring Location
- Biased Sample Locations
- Statistical Sample Locations
- Buildings
- Buffer around bldg 993
- PAC
- Storm Drains

20 0 20 Feet

Scale = 1:250

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

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

Prepared by:
[redacted]

Prepared for:
KAISER-HILL COMPANY

Date 05Dec02