INDUSTRIAL AREA
SAMPLING AND ANALYSIS PLAN
FY03 ADDENDUM #IA-03-02
IHSS GROUP 000-1

December 2002

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ACRONYMS

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
PCB	polychlorinated biphenyl
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
SAP	Sampling and Analysis Plan
SVOC	semivolatile organic compound
ug/mg	micrograms per kilogram
VOC	volatile organic compound

1.0 INTRODUCTION

This Industrial Area (IA) Sampling and Analysis Plan (SAP) (IASAP) (DOE 2001) Addendum #IA-03-02 includes Individual Hazardous Substance Site (IHSS) Group-specific information, and sampling locations proposed for characterization. This IASAP Addendum is a supplement to the IASAP (DOE 2001) and includes data and proposed sampling locations for the IHSS Group and associated IHSSs listed in Table 1. The locations of the IHSS Group and IHSSs, for FY03 are shown on Figure 1.

Table 1
IASAP Addendum #IA-03-02 IHSS Group 000-1

IHSS Group	IHSS/PAC/UBC Site
000-1	IHSS 101 – Solar Evaporation Ponds (area north of IHSS 175)
	IHSS 165 – Triangle Area
	IHSS 175 – S&W Contractor Yard

1.1 EXISTING CHARACTERIZATION INFORMATION

Existing concentrations and activities above the background mean plus two standard deviations or method detection limits (MDLs), are presented on Figure 2. Table 2 presents the potential contaminants of concern (PCOCs). Existing data for these IHSSs are available in Appendix C of the IASAP (DOE 2001), HRR (DOE 1992-2001), and the Industrial Area Data Summary Report (DOE 2000). PCOCs in the IHSS Group 000-1 include radionuclides, metals, semivolatile organic compounds (SVOCs), volatile organic compounds (VOCs), and occasionally, polychlorinated biphyenls (PCBs).

2.0 SAMPLING

The proposed sampling specifications (number and types of samples) for IHSS Group 000-1 are listed in Table 3 and shown on Figure 3. All proposed sampling locations are biased towards areas of the IHSSs that do not have existing sampling locations and are intended to augment the existing data.

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.

3.0 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.

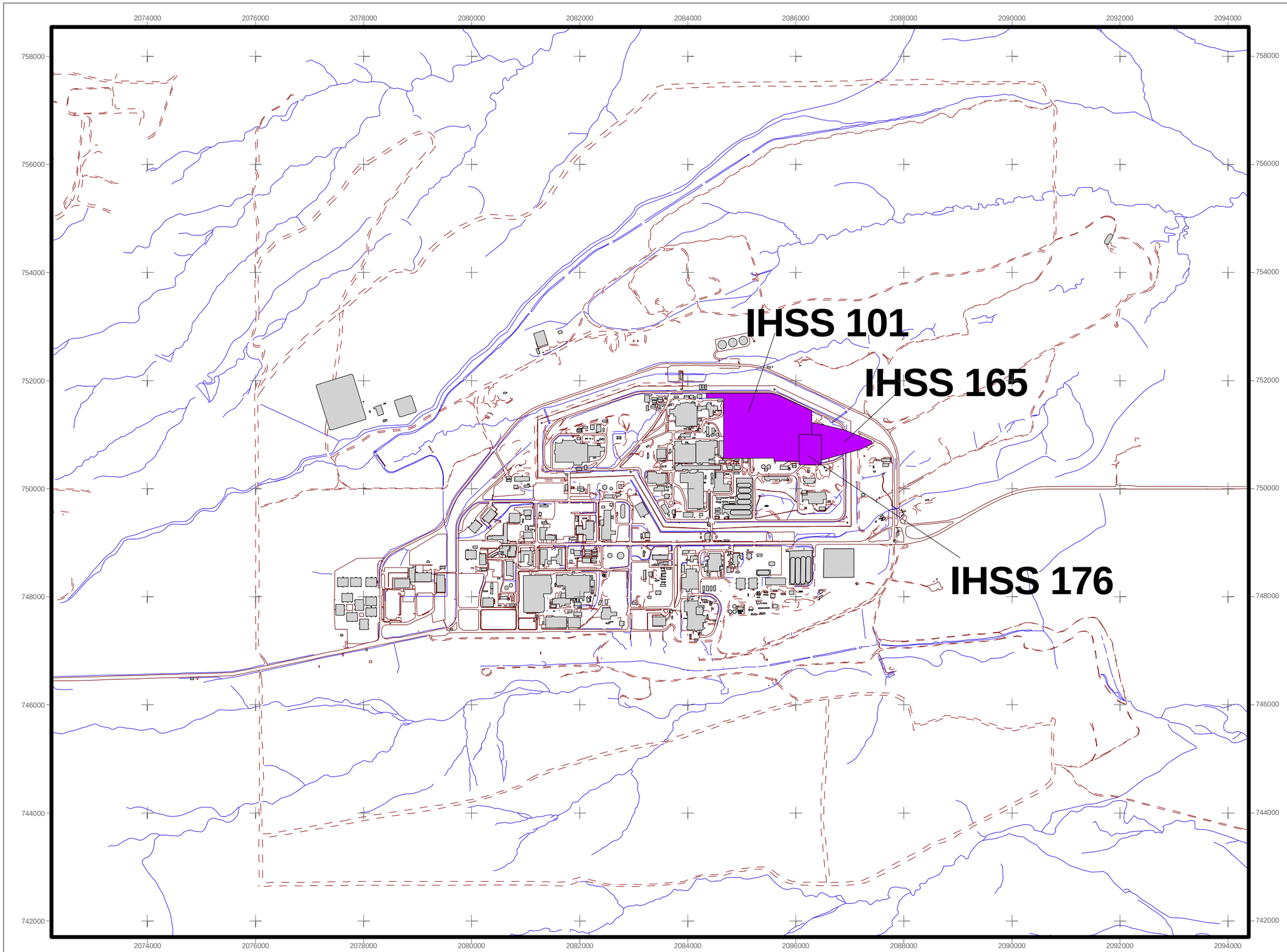

Figure 1
IHSS Group 000-1
Location Map

KEY

- IHSS Group 000-1
- Building
- Paved area
- Dirt road
- Stream, ditch, or drainage

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N

700 0 700 Feet

Scale = 1:15,000

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared by:

KAISER•HILL COMPANY

165and 176sampling.apr

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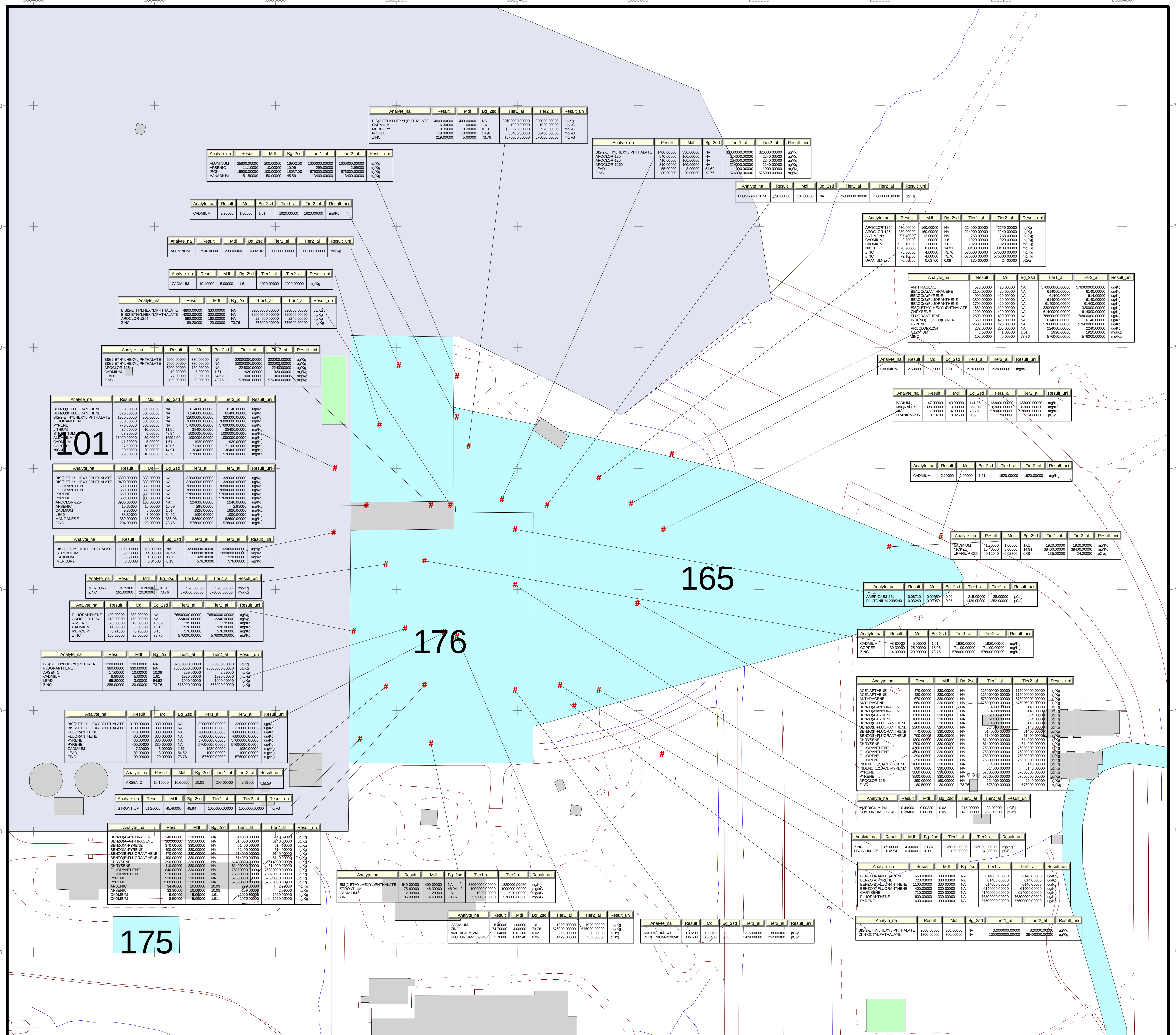
Figure 2
Existing Surface Soil Results Greater Than Background Mean Plus Two Standard Deviations or Method Detection Limits



Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	4000.00000	400.00000	NA	32000000.00000	320000.00000	ug/Kg
CADMIUM	6.30000	1.00000	1.61	1920.00000	1920.00000	mg/kG
MERCURY	0.35000	0.20000	0.13	576.00000	576.00000	mg/kG
NICKEL	18.30000	10.00000	14.91	38400.00000	38400.00000	mg/kG
ZINC	219.00000	5.00000	73.76	576000.00000	576000.00000	mg/kG

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
ALUMINUM	25600.00000	200.00000	16902.00	1000000.00000	1000000.00000	mg/Kg
ARSENIC	11.10000	10.00000	10.09	299.00000	2.99000	mg/Kg
IRON	19900.00000	100.00000	18037.00	576000.00000	576000.00000	mg/Kg
VANADIUM	51.50000	50.00000	45.59	13400.00000	13400.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
CADMIUM	2.20000	1.00000	1.61	1920.00000	1920.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
ALUMINUM	17500.00000	200.00000	16902.00	1000000.00000	1000000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
CADMIUM	10.10000	5.00000	1.61	1920.00000	1920.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	4800.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
BIS(2-ETHYLHEXYL)PHTHALATE	4200.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
AROCLOR-1254	890.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
ZINC	99.20000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	5000.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
BIS(2-ETHYLHEXYL)PHTHALATE	7900.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
AROCLOR-1254	5000.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
CADMIUM	10.30000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
LEAD	77.00000	3.00000	54.62	1000.00000	1000.00000	mg/Kg
ZINC	199.00000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BENZO(B)FLUORANTHENE	520.00000	360.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(K)FLUORANTHENE	620.00000	360.00000	NA	6140000.00000	61400.00000	ug/Kg
BIS(2-ETHYLHEXYL)PHTHALATE	1300.00000	360.00000	NA	32000000.00000	320000.00000	ug/Kg
FLUORANTHENE	560.00000	360.00000	NA	76800000.00000	76800000.00000	ug/Kg
PYRENE	770.00000	360.00000	NA	57600000.00000	57600000.00000	ug/Kg
LITHIUM	26.60000	10.00000	11.55	38400.00000	38400.00000	mg/Kg
STRONTIUM	63.20000	5.00000	48.94	1000000.00000	1000000.00000	mg/Kg
ALUMINUM	23400.00000	50.00000	16902.00	1000000.00000	1000000.00000	mg/Kg
CADMIUM	41.80000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
COPPER	27.50000	10.00000	18.06	71100.00000	71100.00000	mg/Kg
NICKEL	20.50000	20.00000	14.91	38400.00000	38400.00000	mg/Kg
ZINC	79.00000	10.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	5300.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
BIS(2-ETHYLHEXYL)PHTHALATE	9400.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
FLUORANTHENE	580.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
FLUORANTHENE	560.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
PYRENE	550.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
PYRENE	580.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
AROCLOR-1254	8900.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
ARSENIC	10.60000	10.00000	10.09	299.00000	2.99000	mg/Kg
CADMIUM	9.30000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
LEAD	88.80000	3.00000	54.62	1000.00000	1000.00000	mg/Kg
MANGANESE	369.00000	15.00000	365.08	83600.00000	83600.00000	mg/Kg
ZINC	204.00000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	1100.00000	360.00000	NA	32000000.00000	320000.00000	ug/Kg
STRONTIUM	68.10000	44.00000	48.94	1000000.00000	1000000.00000	mg/Kg
CADMIUM	5.60000	1.00000	1.61	1920.00000	1920.00000	mg/Kg
MERCURY	0.33000	0.04000	0.13	576.00000	576.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
MERCURY	0.25000	0.20000	0.13	576.00000	576.00000	mg/Kg
ZINC	261.00000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
FLUORANTHENE	400.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
AROCLOR-1254	210.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
ARSENIC	28.00000	10.00000	10.09	299.00000	2.99000	mg/Kg
CADMIUM	14.00000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
MERCURY	0.21000	0.20000	0.13	576.00000	576.00000	mg/Kg
ZINC	150.00000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	1200.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
FLUORANTHENE	360.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
ARSENIC	17.60000	10.00000	10.09	299.00000	2.99000	mg/Kg
CADMIUM	8.90000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
LEAD	65.80000	3.00000	54.62	1000.00000	1000.00000	mg/Kg
ZINC	288.00000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	3100.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
BIS(2-ETHYLHEXYL)PHTHALATE	3100.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
FLUORANTHENE	440.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
FLUORANTHENE	480.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
PYRENE	430.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
PYRENE	400.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
CADMIUM	7.30000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
LEAD	82.00000	3.00000	54.62	1000.00000	1000.00000	mg/Kg
ZINC	100.00000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
ARSENIC	10.10000	10.00000	10.09	299.00000	2.99000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
STRONTIUM	51.20000	45.40000	48.94	1000000.00000	1000000.00000	mg/kG

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BENZO(A)ANTHRACENE	340.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(A)ANTHRACENE	360.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(A)PYRENE	370.00000	330.00000	NA	61400.00000	614.00000	ug/Kg
BENZO(A)PYRENE	400.00000	330.00000	NA	61400.00000	614.00000	ug/Kg
BENZO(B)FLUORANTHENE	470.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(B)FLUORANTHENE	490.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
CHRYSENE	390.00000	330.00000	NA	61400000.00000	614000.00000	ug/Kg
CHRYSENE	410.00000	330.00000	NA	61400000.00000	614000.00000	ug/Kg
FLUORANTHENE	840.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
FLUORANTHENE	920.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
PYRENE	910.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
PYRENE	1200.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
ARSENIC	34.40000	10.00000	10.09	299.00000	2.99000	mg/Kg
ARSENIC	33.80000	10.00000	10.09	299.00000	2.99000	mg/Kg
CADMIUM	9.00000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
CADMIUM	8.50000	5.00000	1.61	1920.00000	1920.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	540.00000	400.00000	NA	32000000.00000	320000.00000	ug/Kg
STRONTIUM	75.60000	46.30000	48.94	1000000.00000	1000000.00000	mg/kG
CADMIUM	2.30000	1.20000	1.61	1920.00000	1920.00000	mg/kG
ZINC	106.00000	4.60000	73.76	576000.00000	576000.00000	mg/kG

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
CADMIUM	6.40000	1.00000	1.61	1920.00000	1920.00000	mg/Kg
ZINC	74.70000	4.00000	73.76	576000.00000	576000.00000	mg/Kg
AMERICIUM-241	1.64000	0.01300	0.02	215.00000	38.00000	pCi/g
PLUTONIUM-239/240	1.76000	0.00940	0.05	1429.00000	252.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
AMERICIUM-241	0.30200	0.00910	0.02	215.00000	38.00000	pCi/g
PLUTONIUM-239/240	0.22500	0.00400	0.05	1429.00000	252.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	1400.00000	330.00000	NA	32000000.00000	320000.00000	ug/Kg
AROCLOR-1254	540.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
AROCLOR-1254	410.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
AROCLOR-1260	310.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
LEAD	55.00000	3.00000	54.62	1000.00000	1000.00000	mg/Kg
ZINC	80.90000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
FLUORANTHENE	390.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
AROCLOR-1254	570.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
AROCLOR-1254	280.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
ANTIMONY	27.40000	12.00000	NA	768.00000	768.00000	mg/Kg
CADMIUM	2.80000	1.00000	1.61	1920.00000	1920.00000	mg/Kg
CADMIUM	3.10000	1.00000	1.61	1920.00000	1920.00000	mg/Kg
NICKEL	20.90000	8.00000	14.91	38400.00000	38400.00000	mg/Kg
ZINC	75.30000	4.00000	73.76	576000.00000	576000.00000	mg/Kg
ZINC	79.10000	4.00000	73.76	576000.00000	576000.00000	mg/Kg
URANIUM-235	0.09560	0.03700	0.09	135.00000	24.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
ANTHRACENE	570.00000	420.00000	NA	576000000.00000	576000000.00000	ug/Kg
BENZO(A)ANTHRACENE	1100.00000	420.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(A)PYRENE	990.00000	420.00000	NA	61400.00000	614.00000	ug/Kg
BENZO(B)FLUORANTHENE	1800.00000	420.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(K)FLUORANTHENE	1700.00000	420.00000	NA	6140000.00000	61400.00000	ug/Kg
BIS(2-ETHYLHEXYL)PHTHALATE	660.00000	420.00000	NA	32000000.00000	320000.00000	ug/Kg
CHRYSENE	1200.00000	420.00000	NA	61400000.00000	614000.00000	ug/Kg
FLUORANTHENE	2500.00000	420.00000	NA	76800000.00000	76800000.00000	ug/Kg
INDENO(1,2,3-CD)PYRENE	660.00000	420.00000	NA	614000.00000	6140.00000	ug/Kg
PYRENE	2500.00000	420.00000	NA	57600000.00000	57600000.00000	ug/Kg
AROCLOR-1254	282.00000	200.00000	NA	224000.00000	2240.00000	ug/Kg
CADMIUM	3.50000	1.00000	1.61	1920.00000	1920.00000	mg/Kg
ZINC	102.00000	5.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
CADMIUM	2.50000	1.10000	1.61	1920.00000	1920.00000	mg/kG

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BARIUM	147.00000	40.00000	141.26	133000.00000	133000.00000	mg/Kg
MANGANESE	398.00000	3.00000	365.08	83600.00000	83600.00000	mg/Kg
ZINC	117.00000	4.00000	73.76	576000.00000	576000.00000	mg/Kg
URANIUM-235	0.10790	0.02500	0.09	135.00000	24.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
CADMIUM	2.10000	1.00000	1.61	1920.00000	1920.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
CADMIUM	1.90000	1.00000	1.61	1920.00000	1920.00000	mg/Kg
NICKEL	15.40000	8.00000	14.91	38400.00000	38400.00000	mg/Kg
URANIUM-235	0.12040	0.02300	0.09	135.00000	24.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
AMERICIUM-241	0.06710	0.00950	0.02	215.00000	38.00000	pCi/g
PLUTONIUM-239/240	0.03240	0.00950	0.05	1429.00000	252.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
CADMIUM	8.80000	5.00000	1.61	1920.00000	1920.00000	mg/Kg
COPPER	30.30000	25.00000	18.06	71100.00000	71100.00000	mg/Kg
ZINC	114.00000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
ACENAPTHENE	470.00000	330.00000	NA	115000000.00000	115000000.00000	ug/Kg
ACENAPTHENE	430.00000	330.00000	NA	115000000.00000	115000000.00000	ug/Kg
ANTHRACENE	670.00000	330.00000	NA	576000000.00000	576000000.00000	ug/Kg
ANTHRACENE	660.00000	330.00000	NA	576000000.00000	576000000.00000	ug/Kg
BENZO(A)ANTHRACENE	1800.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(A)ANTHRACENE	1600.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(A)PYRENE	1700.00000	330.00000	NA	61400.00000	614.00000	ug/Kg
BENZO(A)PYRENE	1600.00000	330.00000	NA	61400.00000	614.00000	ug/Kg
BENZO(B)FLUORANTHENE	2400.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(B)FLUORANTHENE	2200.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(K)FLUORANTHENE	770.00000	330.00000	NA	6140000.00000	61400.00000	ug/Kg
BENZO(K)FLUORANTHENE	700.00000	330.00000	NA	6140000.00000	61400.00000	ug/Kg
CHRYSENE	1800.00000	330.00000	NA	61400000.00000	614000.00000	ug/Kg
CHRYSENE	1700.00000	330.00000	NA	61400000.00000	614000.00000	ug/Kg
FLUORANTHENE	4700.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
FLUORANTHENE	4600.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
FLUORENE	390.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
FLUORENE	350.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
INDENO(1,2,3-CD)PYRENE	1000.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
INDENO(1,2,3-CD)PYRENE	890.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
PYRENE	3800.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
PYRENE	3500.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg
AROCLOR-1254	290.00000	160.00000	NA	224000.00000	2240.00000	ug/Kg
ZINC	80.50000	20.00000	73.76	576000.00000	576000.00000	mg/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
AMERICIUM-241	0.49900	0.00320	0.02	215.00000	38.00000	pCi/g
PLUTONIUM-239/240	0.38400	0.00360	0.05	1429.00000	252.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
ZINC	85.60000	4.00000	73.76	576000.00000	576000.00000	mg/Kg
URANIUM-235	0.09542	0.00000	0.09	135.00000	24.00000	pCi/g

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BENZO(A)ANTHRACENE	660.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(A)PYRENE	720.00000	330.00000	NA	61400.00000	614.00000	ug/Kg
BENZO(B)FLUORANTHENE	1100.00000	330.00000	NA	614000.00000	6140.00000	ug/Kg
BENZO(K)FLUORANTHENE	400.00000	330.00000	NA	6140000.00000	61400.00000	ug/Kg
CHRYSENE	710.00000	330.00000	NA	61400000.00000	614000.00000	ug/Kg
FLUORANTHENE	1600.00000	330.00000	NA	76800000.00000	76800000.00000	ug/Kg
PYRENE	1600.00000	330.00000	NA	57600000.00000	57600000.00000	ug/Kg

Analyte_na	Result	Mdl	Bg_2sd	Tier1_al	Tier2_al	Result_uni
BIS(2-ETHYLHEXYL)PHTHALATE	2600.00000	360.00000	NA	32000000.00000	320000.00000	ug/Kg
DI-N-OCTYLPHTHALATE	1300.00000	360.00000	NA	1000000000.00000	38400000.00000	ug/Kg

KEY

- IHSS
- PAC
- SEP AOC
- Building
- Paved area
- Dirt road-
- Stream, ditch, or drainage
- # Existing Sampling Location

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N

60 0 60 120 Feet

Scale = 1:1,350

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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

Prepared by:

KAISER-HILL COMPANY

165and 176sampling.apr November 2002

Table 2
Potential Contaminants of Concern IHSS Group 000-1

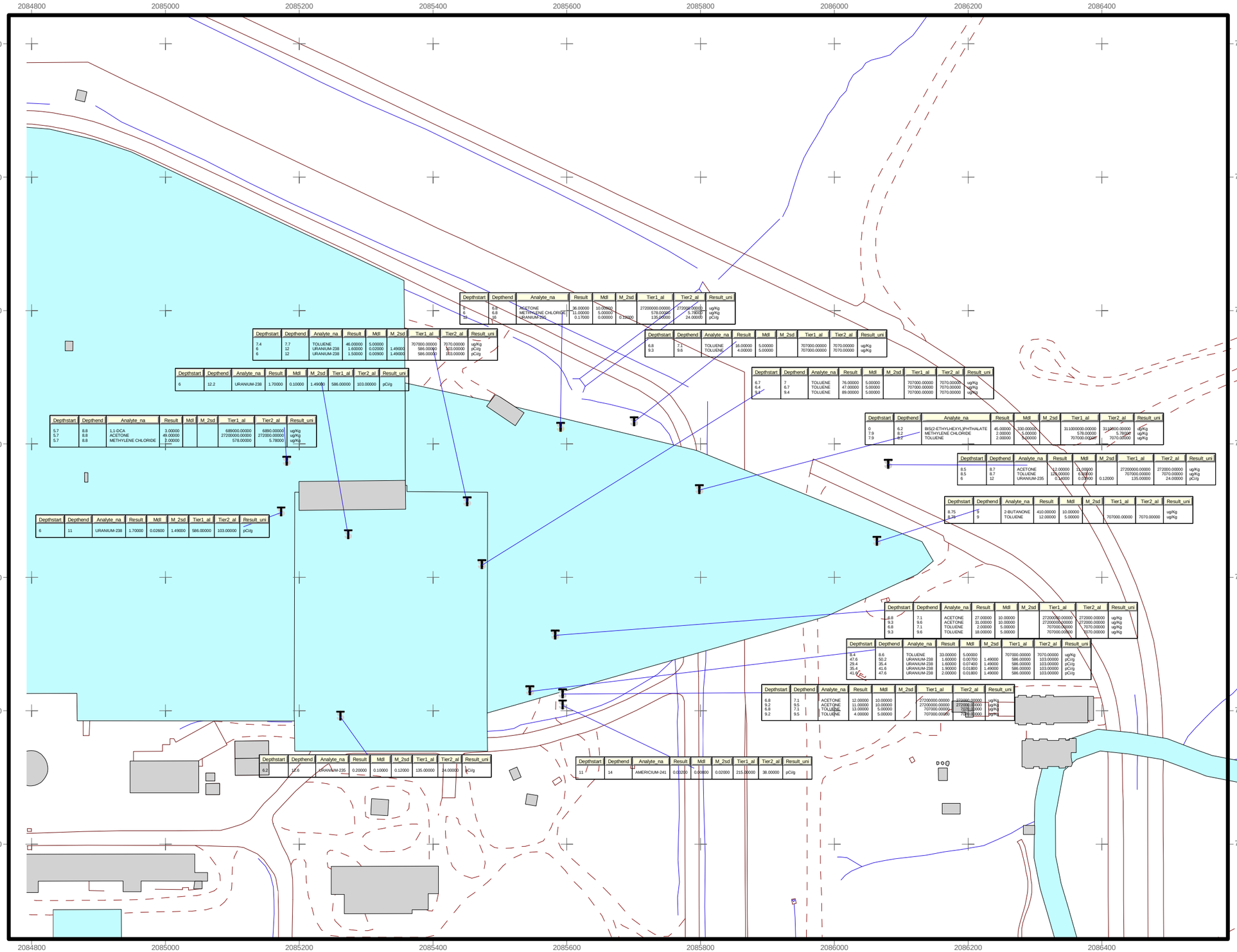
IHSS Group	IHSS/PAC/UBC Site	PCOCs	Media	Data Source	Sampling Location Method
000-1	IHSS 101 – Solar Evaporation Ponds	Metals	Surface	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001]) IA Data Summary Report (DOE 2000)	Biased
	IHSS 165 – Triangle Area	Radionuclides Metals SVOCs	Surface	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001]) IA Data Summary Report (DOE 2000)	Biased
	IHSS 176 – S&W Contractor Yard	Radionuclides Metals SVOCs PCBs	Surface	HRR (DOE 1992-2001) Process knowledge (IASAP [DOE 2001]) IA Data Summary Report (DOE 2000)	Biased

Table 3
Sampling Specifications IHSS Group 000-1

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
000-1	IHSS 101 – Solar Evaporation Ponds (area north of IHSS 165)	CM47-A003	2085314.671	750929.014	Surface Soil	0-0.5'	Metals	6200	6010
		CM47-A004	2085314.671	750785.059	Surface Soil	0-0.5'	Metals	6200	6010
		CM48-A008	2085305.154	751001.586	Surface Soil	0-0.5'	Metals	6200	6010
		CN47-A000	2085374.157	750899.271	Surface Soil	0-0.5'	Metals	6200	6010
		CN47-A001	2085375.346	750825.509	Surface Soil	0-0.5'	Metals	6200	6010
		CN48-A000	2085369.398	750968.274	Surface Soil	0-0.5'	Metals	6200	6010
	IHSS 176 – S&W Contractor Yard – Building 996	CM46-A001	2085253.996	750748.178	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CM46-A001	2085253.996	750748.178	Surface Soil	0-0.5'	Metals	6200	6010
		CM46-A001	2085253.996	750748.178	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CM46-A001	2085253.996	750748.178	Surface Soil	0-0.5'	PCBs	N/A	8082
		CM46-A002	2085319.430	750713.676	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CM46-A002	2085319.430	750713.676	Surface Soil	0-0.5'	Metals	6200	6010
		CM46-A002	2085319.430	750713.676	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CM46-A002	2085319.430	750713.676	Surface Soil	0-0.5'	PCBs	N/A	8082
	IHSS 176 – S&W Contractor Yard	CM45-A001	2085330.138	750497.149	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CM45-A001	2085330.138	750497.149	Surface Soil	0-0.5'	Metals	6200	6010
		CM45-A001	2085330.138	750497.149	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CN44-A000	2085457.436	750357.953	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CN44-A000	2085457.436	750357.953	Surface Soil	0-0.5'	Metals	6200	6010
		CN44-A000	2085457.436	750357.953	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CN46-A000	2085444.350	750722.004	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CN46-A000	2085444.350	750722.004	Surface Soil	0-0.5'	Metals	6200	6010
		CN46-A000	2085444.350	750722.004	Surface Soil	0-0.5'	SVOCs	N/A	8270

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Onsite Laboratory Method	Offsite Laboratory Method
		CN46-A001	2085450.298	750649.432	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CN46-A001	2085450.298	750649.432	Surface Soil	0-0.5'	Metals	6200	6010
		CN46-A001	2085450.298	750649.432	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CN46-A002	2085387.244	750607.792	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CN46-A002	2085387.244	750607.792	Surface Soil	0-0.5'	Metals	6200	6010
		CN46-A002	2085387.244	750607.792	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CN45-A000	2085455.057	750503.098	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CN45-A000	2085455.057	750503.098	Surface Soil	0-0.5'	Metals	6200	6010
		CN45-A000	2085455.057	750503.098	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CN45-A001	2085516.922	750398.403	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CN45-A001	2085516.922	750398.403	Surface Soil	0-0.5'	Metals	6200	6010
		CN45-A001	2085516.922	750398.403	Surface Soil	0-0.5'	SVOCs	N/A	8270
	IHSS 165 – Triangle Area	CO46-A000	2085633.513	750622.069	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CO46-A000	2085633.513	750622.069	Surface Soil	0-0.5'	Metals	6200	6010
		CO46-A000	2085633.513	750622.069	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CO46-A001	2085695.378	750660.139	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CO46-A001	2085695.378	750660.139	Surface Soil	0-0.5'	Metals	6200	6010
		CO46-A001	2085695.378	750660.139	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A000	2085821.487	750662.519	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A000	2085821.487	750662.519	Surface Soil	0-0.5'	Metals	6200	6010
		CP46-A000	2085821.487	750662.519	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A001	2085826.246	750589.946	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A001	2085826.246	750589.946	Surface Soil	0-0.5'	Metals	6200	6010
		CP46-A001	2085826.246	750589.946	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ45-A000	2085951.166	750524.512	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ45-A000	2085951.166	750524.512	Surface Soil	0-0.5'	Metals	6200	6010
		CQ45-A000	2085951.166	750524.512	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A002	2085884.542	750630.397	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A002	2085884.542	750630.397	Surface Soil	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
		CP46-A002	2085884.542	750630.397	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CP46-A003	2085879.783	750701.779	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CP46-A003	2085879.783	750701.779	Surface Soil	0-0.5'	Metals	6200	6010
		CP46-A003	2085879.783	750701.779	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A000	2085945.217	750742.229	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A000	2085945.217	750742.229	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A000	2085945.217	750742.229	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A001	2085940.458	750668.467	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A001	2085940.458	750668.467	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A001	2085940.458	750668.467	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A002	2085949.976	750598.274	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A002	2085949.976	750598.274	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A002	2085949.976	750598.274	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A003	2086011.841	750563.773	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A003	2086011.841	750563.773	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A003	2086011.841	750563.773	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A004	2086008.272	750639.914	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A004	2086008.272	750639.914	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A004	2086008.272	750639.914	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A005	2086003.513	750708.917	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A005	2086003.513	750708.917	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A005	2086003.513	750708.917	Surface Soil	0-0.5'	SVOCs	N/A	8270
		CQ46-A006	2086073.706	750599.464	Surface Soil	0-0.5'	Radionuclides	HPGe	Alpha Spec
		CQ46-A006	2086073.706	750599.464	Surface Soil	0-0.5'	Metals	6200	6010
		CQ46-A006	2086073.706	750599.464	Surface Soil	0-0.5'	SVOCs	N/A	8270



Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
5.7	8.8	1,1-DCA	3.00000			689000.00000	6890.00000	ug/Kg
5.7	8.8	ACETONE	49.00000			27200000.00000	272000.00000	ug/Kg
5.7	8.8	METHYLENE CHLORIDE	2.00000			578.00000	5.78000	ug/Kg

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6	11	URANIUM-238	1.70000	0.02600	1.49000	586.00000	103.00000	pCi/g

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6	12.2	URANIUM-238	1.70000	0.10000	1.49000	586.00000	103.00000	pCi/g

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6	6.8	ACETONE	36.00000	10.00000		27200000.00000	272000.00000	ug/Kg
6	6.8	METHYLENE CHLORIDE	11.00000	5.00000		578.00000	5.78000	ug/Kg
6	6	URANIUM-238	0.17000	0.00000	0.28000	135.00000	24.00000	pCi/g

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
7.4	7.7	TOLUENE	46.00000	5.00000		707000.00000	7070.00000	ug/Kg
6	12	URANIUM-238	1.60000	0.02000	1.49000	586.00000	103.00000	pCi/g
6	12	URANIUM-238	1.50000	0.00900	1.49000	586.00000	103.00000	pCi/g

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6.8	7.1	TOLUENE	16.00000	5.00000		707000.00000	7070.00000	ug/Kg
9.3	9.6	TOLUENE	4.00000	5.00000		707000.00000	7070.00000	ug/Kg

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6.7	7	TOLUENE	76.00000	5.00000		707000.00000	7070.00000	ug/Kg
6.4	6.7	TOLUENE	47.00000	5.00000		707000.00000	7070.00000	ug/Kg
9.3	9.4	TOLUENE	89.00000	5.00000		707000.00000	7070.00000	ug/Kg

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
0	6.2	BIS(2-ETHYLHEXYL)PHTHALATE	45.00000	330.00000		311000000.00000	3110000.00000	ug/Kg
7.9	8.2	METHYLENE CHLORIDE	2.00000	5.00000		578.00000	5.78000	ug/Kg
7.9	8.2	TOLUENE	2.00000	5.00000		707000.00000	7070.00000	ug/Kg

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
8.5	8.7	ACETONE	12.00000	10.00000		27200000.00000	272000.00000	ug/Kg
8.5	8.7	TOLUENE	126.00000	5.00000		707000.00000	7070.00000	ug/Kg
6	12	URANIUM-235	0.14000	0.02000	0.12000	135.00000	24.00000	pCi/g

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
8.75	9	2-BUTANONE	410.00000	10.00000				ug/Kg
8.75	9	TOLUENE	12.00000	5.00000		707000.00000	7070.00000	ug/Kg

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6.8	7.1	ACETONE	27.00000	10.00000		27200000.00000	272000.00000	ug/Kg
9.3	9.6	ACETONE	31.00000	10.00000		27200000.00000	272000.00000	ug/Kg
6.8	7.1	TOLUENE	2.00000	5.00000		707000.00000	7070.00000	ug/Kg
9.3	9.6	TOLUENE	18.00000	5.00000		707000.00000	7070.00000	ug/Kg

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
8.4	8.6	TOLUENE	33.00000	5.00000		707000.00000	7070.00000	ug/Kg
47.6	50.2	URANIUM-238	1.60000	0.00700	1.49000	586.00000	103.00000	pCi/g
29.4	35.4	URANIUM-238	1.60000	0.07400	1.49000	586.00000	103.00000	pCi/g
35.4	41.6	URANIUM-238	1.90000	0.01800	1.49000	586.00000	103.00000	pCi/g
41.6	47.6	URANIUM-238	2.00000	0.01800	1.49000	586.00000	103.00000	pCi/g

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6.8	7.1	ACETONE	12.00000	10.00000		27200000.00000	272000.00000	ug/Kg
9.2	9.5	ACETONE	11.00000	10.00000		27200000.00000	272000.00000	ug/Kg
6.8	7.1	TOLUENE	13.00000	5.00000		707000.00000	7070.00000	ug/Kg
9.2	9.5	TOLUENE	4.00000	5.00000		707000.00000	7070.00000	ug/Kg

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
6.2	12.9	URANIUM-235	0.20000	0.10000	0.12000	135.00000	24.00000	pCi/g

Depthstart	Depthend	Analyte_na	Result	Mdl	M_2sd	Tier1_al	Tier2_al	Result_uni
11	14	AMERICIUM-241	0.02000	0.00000	0.02000	215.00000	38.00000	pCi/g

Figure 3
Existing Subsurface Sampling Location Results Greater Than Background Plus Two Standard Deviations or Method Detection Limits

KEY

- IHSS
- Building
- Paved area
- Dirt road
- Stream, ditch, or drainage
- T Existing Sampling Location

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N

50 0 50 100 Feet

Scale = 1:1,750

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

Prepared by:

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November 2002

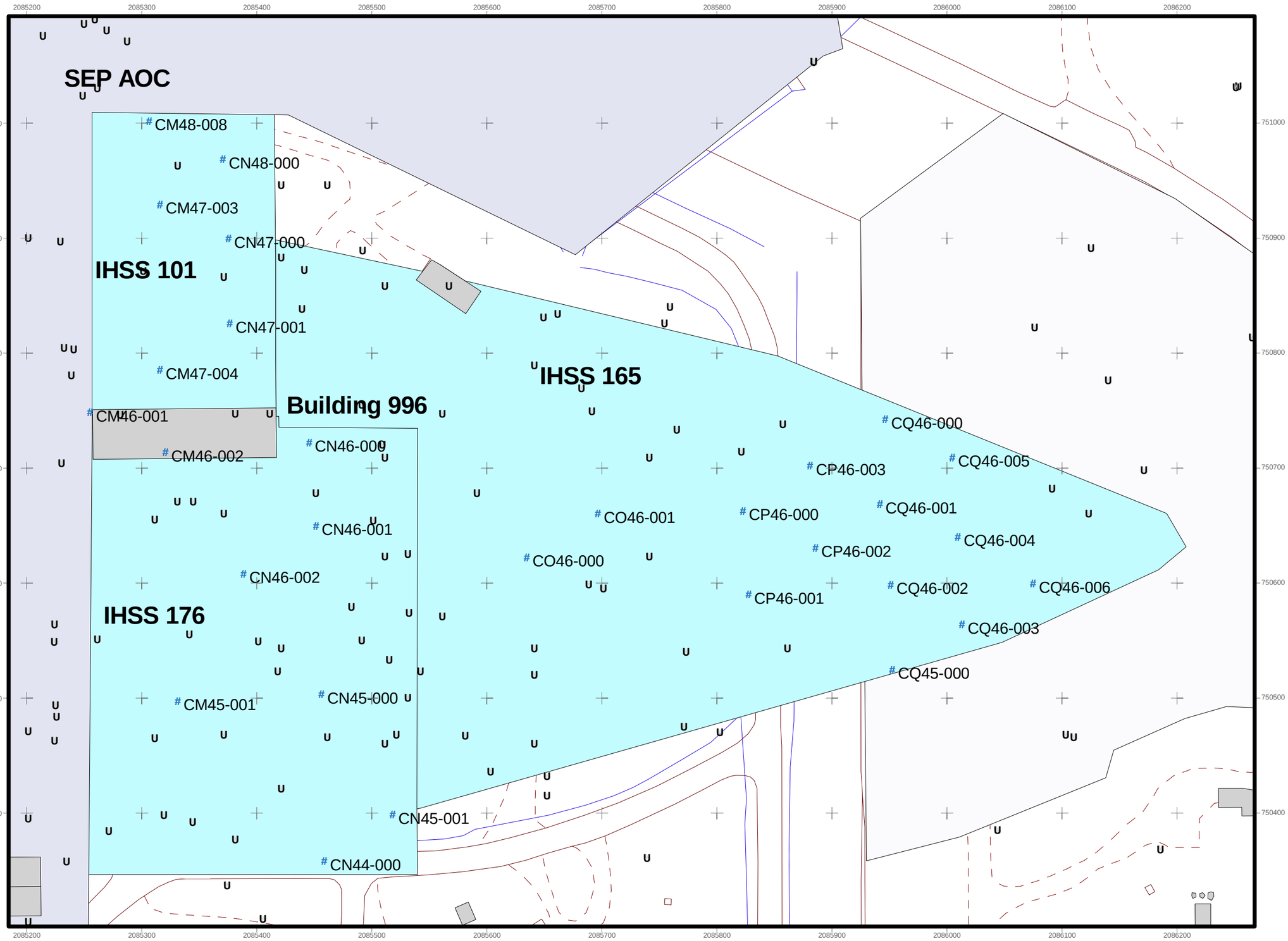

Figure 4
Proposed Sampling Locations
IHSS Group 000-1

KEY

- IHSS
- SEP AOC
- Building
- Paved area
- Dirt road
- Stream, ditch, or drainage
- # Biased Sampling Location
- U Existing Sampling Location

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N

20 0 20 40 60 80 Feet

Scale = 1:1,000
State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

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