NOTICE

All drawings located at the end of the document.

REF: 03-RF-01043; JLB-068-03

Characterization Data Summary
IHSS Group 300-6

Approval received from the Colorado Department of Public Health and Environment
( )
Approval letter contained in the Administrative Record

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ADMIN RECORD

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 SITE CHARACTERIZATION 1
3.0 DEVIATIONS FROM PLANNED SAMPLING SPECIFICATIONS 6
4.0 DATA QUALITY ASSESSMENT (DQA) 6
4.1.1 Data Quality Assessment Process 6
4.1.2 Verification and Validation of Results 7
4.1.3 Accuracy 8
4.1.4 Precision 10
4.1.5 Sensitivity 13
4.1.6 Summary of Data Quality 13
5.0 REFERENCES 14

LIST OF FIGURES

Figure 1 IHSS Group 300-6 Location Map 2
Figure 2 IHSS Group 300-6 Surface Soil Results Greater Reporting/Detection Limits ... 3

LIST OF TABLES

Table 1 Characterization Sampling Specifications 4
Table 2 Surface Soil Results Greater Than Detection/Reporting Limits 5
Table 3 Surface Soil Summary of Analytical Results 5
Table 4 Deviations From Planned Sampling Specifications 6
Table 5 Laboratory Control Sample Evaluation 9
Table 6 Sample Matrix Spike Evaluation 10
Table 7 Sample Matrix Spike Duplicate Evaluation 11
Table 8 Field Duplicate Sample Frequency 12
Table 9 RPD Evaluation 12
Table 10 Validation and Verification Summary 13

ENCLOSURE

IHSS Group 300-6 Raw Data (Compact Disc)

ACRONYMS AND ABBREVATIONS

AL	action level
AR	Administrative Record
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Contaminant of Concern
DL	Detection Limit
DOE	U.S. Department of Energy
DQA	Data Quality Assessment
DQO	Data Quality Objective
EDD	Electronic Data Deliverable
EPA	U.S. Environmental Protection Agency
ER	Ecological Receptor
HRR	Historical Release Report
IA	Industial Area
IASAP	Industrial Area Sampling and Analysis Plan
ICP	Inductively Coupled Plasma
IHSS	Individual Hazardous Substance Site
K-H	Kaiser-Hill Company, L.L.C.
LCS	laboratory control spike
mg/kg	milligrams per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NA	not available
NFAA	No Further Accelerated Action
%REC	percent recovered
PAC	Potential Area of Concern
PARCCS	precision, accuracy, representativeness, completeness, comparability, and sensitivity
PCBs	polychlorinated biphenyls
POC	point of compliance
QC	Quality Control
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RIN	report identification number
RL	Reporting Limit
RPD	relative percent difference
SD	standard deviation
SVOC	semivolatile organic compound
SWD	Soil Water Database
ug/kg	micrograms per kilogram
VOC	volatile organic compound
V&V	verification and validation
WRW	Wildlife Refuge Worker

3

1.0 INTRODUCTION

This Data Summary Report summarizes characterization activities conducted at Individual Hazardous Substance Site (IHSS) Group 300-6 located in the Industrial Area (IA) at the Rocky Flats Environmental Technology Site (RFETS) in Golden, Colorado. Characterization activities were conducted in accordance with the Industrial Area Sampling and Analysis Plan (IASAP) (DOE 2002a) and IASAP Addendum #IA-02-01 (DOE 2002b).

The IHSS included in this report is IHSS 300-702 (Pesticide Shed). Its location is shown on Figure 1.

2.0 SITE CHARACTERIZATION

IHSS Group 300-6 information consists of historical knowledge (DOE 1992-2002) and 5 additional sampling locations as described in IASAP Addendum #IA-02-01 (DOE 2002b). The sampling specifications for the characterization samples collected are listed in Table 1. The locations of these samples and associated analytical results with action levels (ALs) greater than detection/reporting limits are presented in Figure 2 and Table 2. A summary of the analytical results is presented in Table 3. Deviations from planned sampling specifications are presented in Table 4. The raw data are enclosed on a compact disc.

Analytical results indicate that No Further Accelerated Action (NFAA) for IHSS Group 300-6 is warranted for the following reasons:

- All contaminant concentrations are less than Wildlife Refuge Worker (WRW) ALs.
- All contaminant concentrations are less than Ecological Receptor ALs.
- There is no identified potential to exceed surface water standards from this IHSS Group.

Based on historical knowledge and previous sampling data, subsurface soil sampling was deemed unnecessary and was not evaluated per IASAP Addendum IA#-02-01 (DOE 2002a). Consequently, a Subsurface Soil Risk Screen (SSRS) is not required.

Approval of this Data Summary Report constitutes regulatory agency concurrence that this IHSS Group is an NFAA. This information and NFAA determination will be documented in the FY03 Historical Release Report (HRR).

4

Table 1
Characterization Sampling Specifications

IHSS Group	IHSS/PAC/UBC Site	Location Code	Easting	Northing	Media	Depth Interval	Analyte	Laboratory Method
300-6	IHSS 300-702 – Pesticide Shed	BU44-000	2081625.96	750337.55	Surface Soil	0 - 0.50 ft	Organochlorine Pesticide	SW8081A
		BU44-000	2081625.96	750337.55	Surface Soil	0 - 0.50 ft	Organophosphorous Compounds	SW8141A
		BU44-000	2081625.96	750337.55	Surface Soil	0 - 0.50 ft	Chlorinated Herbicides	SW8154A
		BU44-001	2081614.00	750353.37	Surface Soil	0 - 0.25 ft	Organochlorine Pesticide	SW8081A
		BU44-001	2081614.00	750353.37	Surface Soil	0 - 0.25 ft	Organophosphorous Compounds	SW8141A
		BU44-001	2081614.00	750353.37	Surface Soil	0 - 0.25 ft	Chlorinated Herbicides	SW8154A
		BU44-002	2081611.73	750338.99	Surface Soil	0 - 0.50 ft	Organochlorine Pesticide	SW8081A
		BU44-002	2081611.73	750338.99	Surface Soil	0 - 0.50 ft	Organophosphorous Compounds	SW8141A
		BU44-002	2081611.73	750338.99	Surface Soil	0 - 0.50 ft	Chlorinated Herbicides	SW8154A
		BU44-003	2081612.35	750323.12	Surface Soil	0 - 0.50 ft	Organochlorine Pesticide	SW8081A
		BU44-003	2081612.35	750323.12	Surface Soil	0 - 0.50 ft	Organophosphorous Compounds	SW8141A
		BU44-003	2081612.35	750323.12	Surface Soil	0 - 0.50 ft	Chlorinated Herbicides	SW8154A
		BU44-004	2081590.99	750338.95	Surface Soil	0 - 0.50 ft	Organochlorine Pesticide	SW8081A
		BU44-004	2081590.99	750338.95	Surface Soil	0 - 0.50 ft	Organophosphorous Compounds	SW8141A
		BU44-004	2081590.99	750338.95	Surface Soil	0 - 0.50 ft	Chlorinated Herbicides	SW8154A

Table 2
Surface Soil Results Greater Than Detection/Reporting Limits

Location	Easting	Northing	Analyte	Soil Begin Depth (feet)	Soil End Depth (feet)	Result	DL/RL	Background Mean +2SD	Wildlife Refuge Worker Action Level	Ecological Receptor Action Level	Unit
BU44-000	750337.5	2081626	DICAMBA	0	0.5	42	2.3	NA	NA	NA	ug/kg
BU44-001	750353.4	2081614	DICAMBA	0	0.25	2.9	2.3	NA	NA	NA	ug/kg
BU44-002	750339	2081612	DICAMBA	0	0.5	44	2.3	NA	NA	NA	ug/kg
BU44-003	750323.1	2081612	2,4,5-T	0	0.5	1.8	1	NA	NA	NA	ug/kg
BU44-003	750323.1	2081612	DICAMBA	0	0.5	2.3	2.2	NA	NA	NA	ug/kg

Table 3
Surface Soil Summary of Analytical Results

Analyte	Total Number Samples Analyzed	Detection Frequency	Average Concentration	Maximum Concentration	Background Mean+2SD	Unit
2,4,5-T	1	1	1.8	1.8	-	ug/kg
Dicamba	4	1	22.8	44	-	ug/kg

3.0 DEVIATIONS FROM PLANNED SAMPLING SPECIFICATIONS

Deviations from the planned sampling specifications described in IASAP Addendum #IA-02-01 (DOE 2002b) are presented in Table 4.

Table 4
Deviations From Planned Sampling Specifications

IHSS/PAC	Location Code	Planned Easting	Planned Northing	Actual Easting	Actual Northing	Comments
300-706	BU44-000	2081636	750319.6	2081626	750337.5	Four perimeter boreholes (rectangular shaped) rotated 45 degrees to locate Borehole BU44-000 to entrance of shed
	BU44-001	2081637	750356.6	2081614	750353.4	
	BU44-003	2081587	750320.5	2081612	750323.1	
	BU44-004	2081589	750357.3	2081591	750338.9	
	BU44-002	2081612	750338.9	No Change	No change	No deviation

4.0 DATA QUALITY ASSESSMENT (DQA)

The Data Quality Objectives (DQOs) for this project are described in the IASAP (DOE 2002). All DQOs for this project were achieved based on the following:

- Regulatory agency approved sampling program design (IASAP Addendum 02-01 [DOE 2002a]);
- Collection of samples in accordance with the sampling design;
- Results of the Data Quality Assessment as described in the following sections.

4.1.1 Data Quality Assessment Process

The DQA process ensures that the type, quantity and quality of environmental data used in decision making are defensible, and is based on the following guidance and requirements:

- EPA QA/G-4, 1994a, Guidance for the Data Quality Objective Process;
- EPA QA/G-9, 1998, Guidance for the Data Quality Assessment Process; Practical Methods for Data Analysis; and
- DOE Order 414.1A, 1999, Quality Assurance.

Verification and Validation (V&V) of the data are the primary components of the DQA. The final data are compared with original project DQOs and evaluated with respect to project decisions; uncertainty within the decisions; and quality criteria required for the data, specifically precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS). Validation criteria are consistent with the following RFETS-specific documents and industry guidelines:

- EPA 540/R-94/012, 1994b, USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review;

9

- EPA 540/R-94/013, 1994c, USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review; and
- Kaiser-Hill Company, L.L.C.(K-H) V&V Guidelines:
- General Guidelines for Data Verification and Validation, DA-GR01-v2, 2002a.
- V&V Guidelines for Isotopic Determinations by Alpha Spectrometry, DA-RC01-v2, 2002b.
- V&V Guidelines for Volatile Organics, DA-SS01-v3, 2002c.
- V&V Guidelines for Semivolatile Organics, DA-SS02-v3, 2002d.
- V&V Guidelines for Metals, DA-SS05-v3, 2002e.
- Lockheed-Martin, 1997, Evaluation of Radiochemical Data Usability, ES/ER/MS-5.

This report will be submitted to the Comprehensive Environmental, Response, Compensation and Liability Act (CERCLA) Administrative Record (AR) for permanent storage 30 days after being provided to CDPHE and/or U.S. EPA.

4.1.2 Verification and Validation of Results

Verification ensures that data produced and used by the project are documented and traceable in accordance with quality requirements. Validation consists of a technical review of all data that directly support the project decisions so that any limitations of the data relative to project goals are delineated and the associated data are qualified accordingly. The V&V process defines the criteria that constitute data quality, namely PARCCS parameters. Data traceability and archival are also addressed. V&V criteria include the following:

- Chain-of-custody;
- Preservation and hold-times;
- Instrument calibrations;
- Preparation blanks;
- Interference check samples (metals);
- Matrix spikes/matrix spike duplicates (MS/MSD);
- Laboratory control samples (LCS);
- Field duplicate measurements;
- Chemical yield (radiochemistry);
- Required quantitation limits/minimum detectable activities (sensitivity of chemical and radiochemical measurements, respectively); and
- Sample analysis and preparation methods.

Evaluation of V&V criteria ensures that PARCCS parameters are satisfactory (i.e., within tolerances acceptable to the project). Satisfactory V&V of laboratory quality controls are captured through application of validation "flags" or qualifiers to individual records.

10

Raw hardcopy data (e.g., individual analytical data packages) are currently filed by report identification number (RIN) and are maintained by Kaiser-Hill Analytical Services Division; older hardcopies may reside in the Federal Center in Lakewood, Colorado. Electronic data are stored in the RFETS Soil and Water Database (SWD).

The data sets addressed in this report are included on the enclosed CD, Microsoft ACCESS 2000 format.

4.1.3 Accuracy

The following measures of accuracy were evaluated:

- Laboratory Control Sample Evaluation;
- Blanks; and
- Sample Matrix Spike Evaluation.

Results were compared to method requirements and project goals. Comparisons are summarized relative to RFCA COCs to determine if project decisions are impacted. Particular attention is paid to those values near ALs when quality control (QC) results could indicate unacceptable levels of uncertainty for decision-making purposes.

Laboratory Control Sample Evaluation

The frequency of Laboratory Control Sample (LCS) measurements, relative to each laboratory batch, is given in Table 5. LCS frequency was adequate based on at least one LCS per batch. The minimum and maximum LCS results are tabulated, by chemical and method, for the entire project. The listed LCS compounds constitute a representative subset of the entire herbicide/pesticide suite; adequate accuracy relative to all other compounds is inferred. Any qualifications of results due to LCS performance are captured in the V&V flags, described in the Completeness Section.

Blank Evaluation

Laboratory blanks yielded no detectable concentrations of any contaminants. Field blanks were not acquired for this project. Consequently, all detectable concentrations of herbicides/pesticides reported herein are considered present at the sample locations, and not due to cross-contamination within the sampling process.

11

Table 5
Laboratory Control Sample Evaluation

Test Method Name	CAS	Analyte	Min (%R)	Max (%R)	Count of Analytes	Count of Batches
SW-846 8081A	50-29-3	4,4'-DDT	99	99	1	1
SW-846 8081A	309-00-2	Aldrin	96	96	1	1
SW-846 8081A	60-57-1	Dieldrin	99	99	1	1
SW-846 8081A	72-20-8	endrin	102	102	1	1
SW-846 8081A	58-89-9	gamma-BHC	97	97	1	1
SW-846 8081A	76-44-8	Heptachlor	106	106	1	1
SW-846 8141A	86-50-0	Azinphos-Methyl	67	71	2	2
SW-846 8141A	2921-88-2	Chlorpyriphos	74	75	2	2
SW-846 8141A	56-72-4	Coumaphos	73	77	2	2
SW-846 8141A	8065-48-3	Demeton (o,s total)	49	60	2	2
SW-846 8141A	333-41-5	Diazinon	80	81	2	2
SW-846 8141A	62-73-7	Dichlorovos	94	102	2	2
SW-846 8141A	60-51-5	Dimethoate	49	72	2	2
SW-846 8141A	298-04-4	Disulfoton	41	59	2	2
SW-846 8141A	13194-48-4	endrin	73	75	2	2
SW-846 8141A	52-85-7	Famphur	79	85	2	2
SW-846 8141A	115-90-2	Fensulfothion	57	73	2	2
SW-846 8141A	55-38-9	Fenthion	70	75	2	2
SW-846 8141A	297-97-2	lo,o-diethyl o-2-pyrazinyl pho	80	82	2	2
SW-846 8141A	121-75-5	Malathion	93	98	2	2
SW-846 8141A	298-00-0	Methyl Parathion	70	71	2	2
SW-846 8141A	7786-34-7	Mevinphos	77	77	2	2
SW-846 8141A	56-38-2	Parathion	79	88	2	2
SW-846 8141A	298-02-2	Phorate	64	71	2	2
SW-846 8141A	299-84-3	Ponnel	62	64	2	2
SW-846 8141A	22248-79-9	Tetrachlorovinphos (stirophos)	90	94	2	2
SW-846 8141A	3689-24-5	Tetraethyl dithiopyrophosphate	83	86	2	2
SW-846 8141A	327-98-0	Trichloronate	71	73	2	2
SW-846 8151A	93-72-1	2,4,5,-TP	66	66	1	1
SW-846 8151A	93-76-5	2,4,5-T	64	64	1	1
SW-846 8151A	94-75-7	2,4,-D	58	58	1	1
SW-846 8151A	88-85-7	Dinoseb	7.6	7.6	1	1

Sample Matrix Spike (MS) Evaluation

The frequency of MS measurements was adequate based on at least one MS per laboratory batch (Table 6). The minimum and maximum MS results are summarized by chemical for the entire project. The listed MS compounds constitute a representative subset of the entire herbicide/pesticide suite; adequate accuracy relative to all other compounds is inferred. Poor MS recoveries alone do not result in rejection of data; any

12

qualifications due to matrix spike performance are included in the V&V flags summarized in the Completeness section.

Table 6
Sample Matrix Spike Evaluation

Test Method Name	CAS	Analyte	Min (%R)	Max (%R)	# of Samples	# of Lab Batches
SW-846 8081A	50-29-3	4,4'-DDT	90	90	1	1
SW-846 8081A	309-00-2	Aldrin	85	85	1	1
SW-846 8081A	60-57-1	Dieldrin	86	86	1	1
SW-846 8081A	72-20-8	Endrin	90	90	1	1
SW-846 8081A	58-89-9	gamma-BHC	87	87	1	1
SW-846 8081A	76-44-8	Heptachlor	84	84	1	1
SW-846 8141A	86-50-0	Azinphos-Methyl	62	76	2	2
SW-846 8141A	2921-88-2	Chlorpyriphos	69	75	2	2
SW-846 8141A	56-72-4	Coumaphos	65	78	2	2
SW-846 8141A	8065-48-3	Demeton (o,s total)	65	77	2	2
SW-846 8141A	333-41-5	Diazinon	69	78	2	2
SW-846 8141A	62-73-7	Dichlorovos	94	101	2	2
SW-846 8141A	60-51-5	Dimethoate	48	59	2	2
SW-846 8141A	298-04-4	Disulfoton	67	73	2	2
SW-846 8141A	13194-48-4	Ethoprop	70	76	2	2
SW-846 8141A	52-85-7	Famphur	72	84	2	2
SW-846 8141A	115-90-2	Fensulfothion	61	75	2	2
SW-846 8141A	55-38-9	Fenthion	71	77	2	2
SW-846 8141A	297-97-2	lo,o-diethyl o-2-pyrazinyl pho	75	81	2	2
SW-846 8141A	121-75-5	Malathion	89	101	2	2
SW-846 8141A	298-00-0	Methyl Parathion	67	76	2	2
SW-846 8141A	7786-34-7	Mevinphos	75	86	2	2
SW-846 8141A	56-38-2	Parathion	83	98	2	2
SW-846 8141A	298-02-2	Phorate	66	72	2	2
SW-846 8141A	299-84-3	Ronnel	57	66	2	2
SW-846 8141A	22248-79-9	Tetrachlorovinphos (stirophos	82	94	2	2
SW-846 8141A	3689-24-5	Tetraethyl dithiopyrophosphate	76	88	2	2
SW-846 8141A	327-98-0	Trichloronate	63	72	2	2
SW-846 8151A	93-72-1	2,4,5,-TP	69	69	1	1
SW-846 8151A	93-76-5	2,4,5-T	74	74	1	1
SW-846 8151A	94-75-7	2,4,-D	66	66	1	1
SW-846 8151A	88-85-7	Dinoseb	4.5	4.5	1	1

4.1.4 Precision

Matrix Spike Duplicate Evaluation

Laboratory precision for organics is measured through use of MSDs. The frequency of MSD measurements was adequate based on at least one MS per lab batch (Table 7).

13

Ideally, RPDs of less than 35 percent in a soil matrix indicate satisfactory precision. However, relative percent differences (RPDs) exceeding 35 percent do not affect project decisions because there are no applicable action levels. Any biases due to inherent variance in spiked concentrations will be evaluated within the RFETS Comprehensive Risk Assessment (CRA) as necessary.

Table 7
Sample Matrix Spike Duplicate Evaluation

Test Method Name	CAS	Analyte	# of Sample Pairs	# of Lab Batches	Max of RPD (%)
SW-846 8081A	50-29-3	4,4'-DDt	1	1	2
SW-846 8081A	309-00-2	Aldrin	1	1	2
SW-846 8081A	60-57-1	Dieldrin	1	1	0
SW-846 8081A	72-20-8	Endrin	1	1	1
SW-846 8081A	58-89-9	gamma-BHC	1	1	1
SW-846 8081A	76-44-8	Heptachlor	1	1	0
SW-846 8141A	86-50-0	Azinphos-methyl	2	2	16
SW-846 8141A	2921-88-2	Chlorpyriphos	2	2	13
SW-846 8141A	56-72-4	Coumaphos	2	2	18
SW-846 8141A	8065-48-3	Demeton (o,s total)	2	2	23
SW-846 8141A	333-41-5	Diazinon	2	2	12
SW-846 8141A	62-73-7	Dichlorovos	2	2	14
SW-846 8141A	60-51-5	Dimethoate	2	2	15
SW-846 8141A	298-04-4	Disulfoton	2	2	16
SW-846 8141A	13194-48-4	Ethoprop	2	2	17
SW-846 8141A	52-85-7	Famphur	2	2	17
SW-846 8141A	115-90-2	Fensulfothion	2	2	22
SW-846 8141A	55-38-9	Fenthion	2	2	14
SW-846 8141A	297-97-2	lo,o-diethyl o-2-pyrazinyl pho	2	2	15
SW-846 8141A	121-75-5	Malathion	2	2	21
SW-846 8141A	298-00-0	Methyl Parathion	2	2	8
SW-846 8141A	7786-34-7	Mevinphos	2	2	19
SW-846 8141A	56-38-2	Parathion	2	2	14
SW-846 8141A	298-02-2	Phorate	2	2	7
SW-846 8141A	299-84-3	Ronnel	2	2	15
SW-846 8141A	22248-79-9	Tetrachlorovinphos (stirophos	2	2	15
SW-846 8141A	3689-24-5	Tetraethyl dithiopyrophosphate	2	2	16
SW-846 8141A	327-98-0	Trichloronate	2	2	13
SW-846 8151A	93-72-1	2,4,5,-TP	1	1	4
SW-846 8151A	93-76-5	2,4,5-T	1	1	3
SW-846 8151A	94-75-7	2,4,-D	1	1	13
SW-846 8151A	88-85-7	Dinoseb	1	1	70

4

Field Duplicate Evaluation

Field duplicate results reflect sampling precision, or overall repeatability, of the sampling process. The frequency of field duplicate collection should exceed 1 field duplicate per 20 real samples, or 5 percent. Table 8 indicates that duplicate sampling frequencies were adequate for all analytical suites.

The RPD value is also a common metric for evaluating sampling precision. RPD values are given in Table 9. Ideally, RPDs of less than 35 percent (in soil) indicate satisfactory precision. Values exceeding 35 percent only affect project decisions if the imprecision is great enough to cause contradictory decisions relative to the COC (i.e., one sample indicates clean soil whereas the QC partner does not). All results of the real and corresponding duplicate sample were nondetects, thus sampling precision is adequate.

Table 8
Field Duplicate Sample Frequency

Test Method Name	Sample Code	Number of Samples	% Duplicate Samples
SW-846 8081A	REAL	5	20
SW-846 8081A	DUP	1	
SW-846 8141A	REAL	5	20
SW-846 8141A	DUP	1	
SW-846 8151A	REAL	5	20
SW-846 8151A	DUP	1	

Table 9
RPD Evaluation

Analyte	Maximum Result of RPD (%)
ALDRIN	0
ALPHA-BHC	0
BETA-BHC	0
DIELDRIN	0
ENDOSULFAN I	0
ENDOSULFAN II	0
ENDOSULFAN SULFATE	0
HEPTACHLOR	0
HEPTACHLOR EPOXIDE	1
METHOXYCHLOR	0
TOXAPHENE	0

Completeness

The minimum number of 5 real samples and 1 duplicate (QC) sample were acquired in accordance with the approved and controlled IASAP Addendum (DOE, 2002b). Based

15

on this compliance, the sample set is considered complete. An adequate percentage of the sample results are valid, as explained below.

A minimum of 25% of the Environmental Restoration (ER) Program's analytical (and radiological) results are targeted for formal validation. Of that percentage, no more than 10 percent of the results may be rejected, which ensures that analytical laboratory practices are consistent with quality requirements. Table 10 shows the number of validated records (codes without "1"), verified records (codes with "1"), and rejected records for each analytical group.

Considering the "validation" numbers shown on Table 10 alone, it would appear that frequency goals were not attained for any analyte groups within the project. However, for organic SW-846 analyses, technical criteria used in data review of hardcopies is identical between the "verification" and the "validation" process, with one exception: the validation process includes a comparison between approximately 10% of the electronic data deliverable (EDD) results to the hardcopy to ensure (alphanumeric) consistency. Technically, with 100% of the data "verified" and 0% rejected, compliance with the minimum "validation" requirement of 25% is considered satisfactory.

If additional validation information is received, IHSS Group 300-6 records will be updated in the Soil and Water Database. Frequency of data qualification and inferences from it will also be assessed as part of the Comprehensive Risk Assessment.

4.1.5 Sensitivity

Reporting limits, in units of ug/kg for organics, mg/kg for metals, and pCi/g for radionuclides, were compared with RFCA WRW and Ecological Receptor ALs. Adequate sensitivities of analytical methods were attained for all COCs that affect project decisions. "Adequate" sensitivity is defined as a reporting limit less than an analyte's associated AL, typically less than one-half the AL.

4.1.6 Summary of Data Quality

Data quality is acceptable for project decisions based on the V&V criteria cited and with the qualifications given.

Table 10
Validation and Verification Summary

Validation Qualifier Code	Number of Records	SW8081 Pesticides	SW8141 Organophosphorous	SW8151 Herbicides
V1	285	95	140	50
Total	285	95	140	50
Total Validated	0	0	0	0
% Validated	0%	0%	0%	0%
Total Verified	285	95	140	50
% Verified	100%	100%	100%	100%
% Rejected	0.00%	0.00%	0.00%	0.00%

Key: V1 – Verified

16

5.0 REFERENCES

DOE, 1992-2002, Historical Release Reports for the Rocky Flats Plant, Rocky Flats Plant, Golden, Colorado.

DOE, 1999, Order 414.1A, Quality Assurance.

DOE, 2000, Rocky Flats Cleanup Agreement, Attachment 5, March.

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17

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V&V Guidelines for Inorganic Metals, DA-SS05-v1, 12/97Data Quality Assessment

18

ENCLOSURE

IHSS GROUP NE/NW RAW DATA
(Compact Disc)

CD NOT
ENCLOSED
R 9/16

19/19

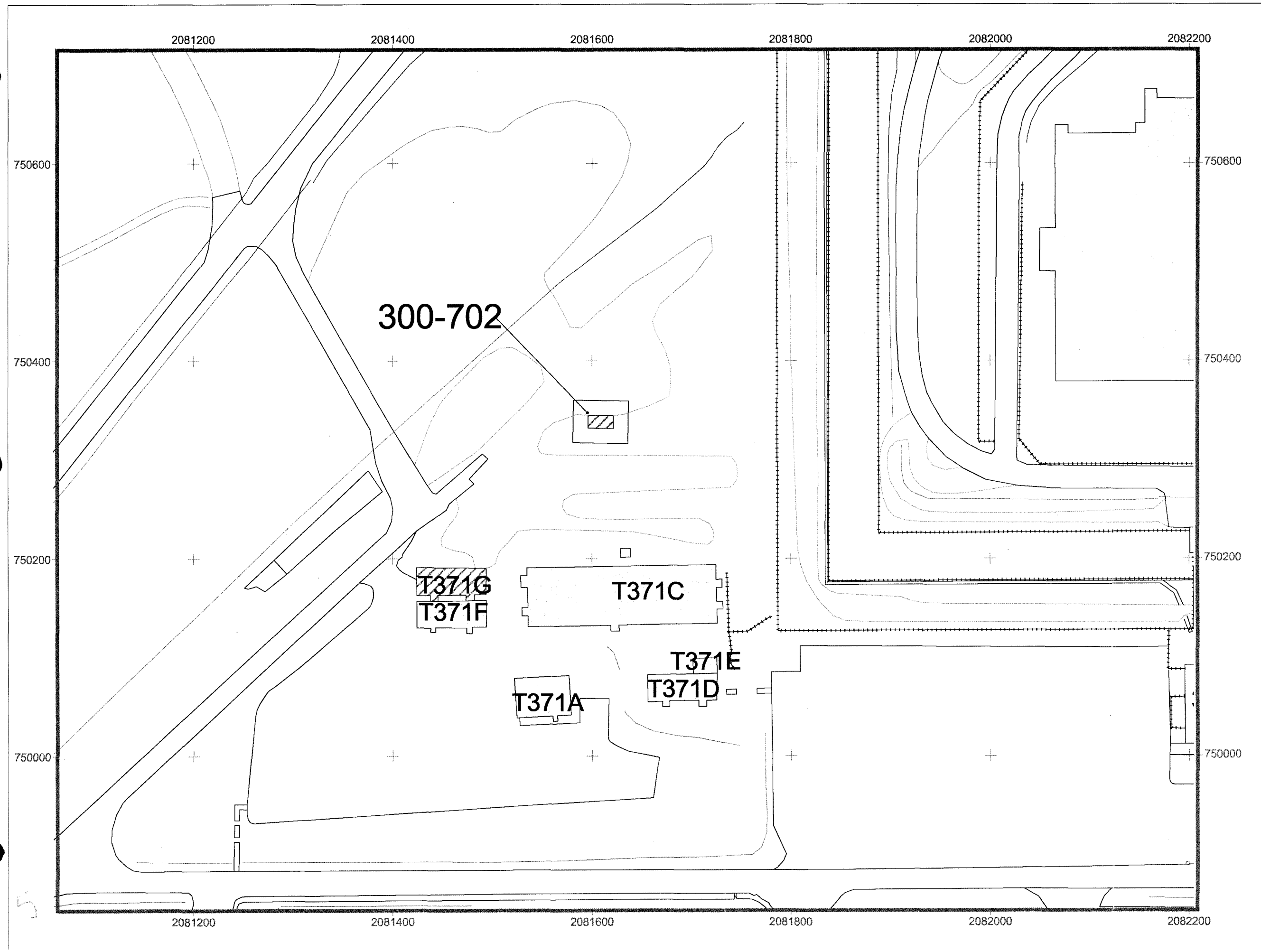

Figure 1
IHSS Group 300-6
Location Map

Key

- Existing Structure
- Demolished Sructure
- Dirt road
- Paved area
- PAC 300-702
- Sample location

N

30 0 30 60 Feet

Scale = 1:1,100

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:

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COMPANY

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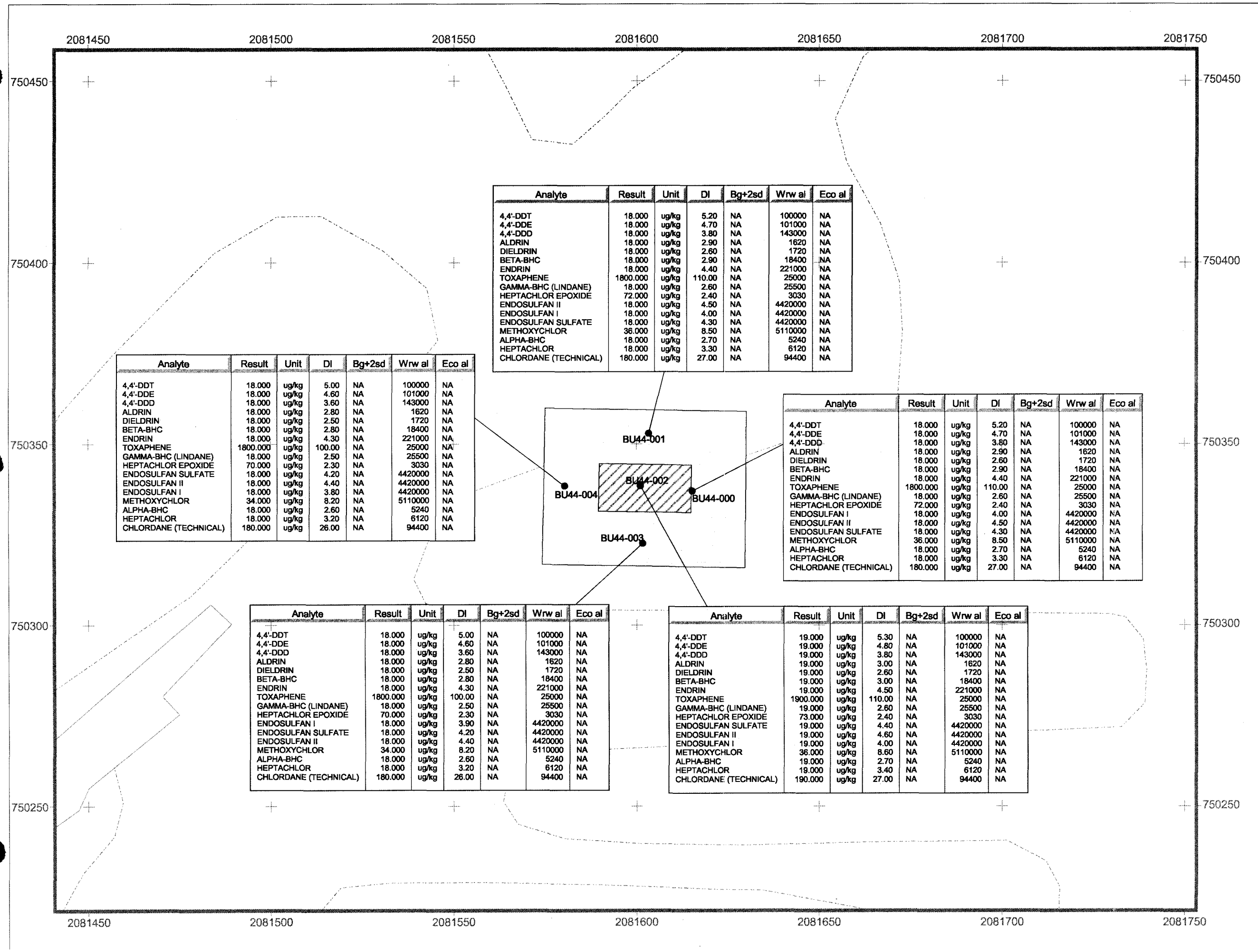
June 200

Figure 2
IHSS Group 300-6 Surface Soil Results Greater Than Background Means Plus Two Standard Deviations or Detection Limits



Analyte	Result	Unit	DI	Bg+2sd	Wrw al	Eco al
4,4'-DDT	18.000	ug/kg	5.20	NA	100000	NA
4,4'-DDE	18.000	ug/kg	4.70	NA	101000	NA
4,4'-DDD	18.000	ug/kg	3.80	NA	143000	NA
ALDRIN	18.000	ug/kg	2.90	NA	1620	NA
DIELDRIN	18.000	ug/kg	2.60	NA	1720	NA
BETA-BHC	18.000	ug/kg	2.90	NA	18400	NA
ENDRIN	18.000	ug/kg	4.40	NA	221000	NA
TOXAPHENE	1800.000	ug/kg	110.00	NA	25000	NA
GAMMA-BHC (LINDANE)	18.000	ug/kg	2.60	NA	25500	NA
HEPTACHLOR EPOXIDE	72.000	ug/kg	2.40	NA	3030	NA
ENDOSULFAN II	18.000	ug/kg	4.50	NA	4420000	NA
ENDOSULFAN I	18.000	ug/kg	4.00	NA	4420000	NA
ENDOSULFAN SULFATE	18.000	ug/kg	4.30	NA	4420000	NA
METHOXYCHLOR	36.000	ug/kg	8.50	NA	5110000	NA
ALPHA-BHC	18.000	ug/kg	2.70	NA	5240	NA
HEPTACHLOR	18.000	ug/kg	3.30	NA	6120	NA
CHLORDANE (TECHNICAL)	180.000	ug/kg	27.00	NA	94400	NA

Analyte	Result	Unit	DI	Bg+2sd	Wrw al	Eco al
4,4'-DDT	18.000	ug/kg	5.00	NA	100000	NA
4,4'-DDE	18.000	ug/kg	4.60	NA	101000	NA
4,4'-DDD	18.000	ug/kg	3.60	NA	143000	NA
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BETA-BHC	18.000	ug/kg	2.80	NA	18400	NA
ENDRIN	18.000	ug/kg	4.30	NA	221000	NA
TOXAPHENE	1800.000	ug/kg	100.00	NA	25000	NA
GAMMA-BHC (LINDANE)	18.000	ug/kg	2.50	NA	25500	NA
HEPTACHLOR EPOXIDE	70.000	ug/kg	2.30	NA	3030	NA
ENDOSULFAN SULFATE	18.000	ug/kg	4.20	NA	4420000	NA
ENDOSULFAN II	18.000	ug/kg	4.40	NA	4420000	NA
ENDOSULFAN I	18.000	ug/kg	3.80	NA	4420000	NA
METHOXYCHLOR	34.000	ug/kg	8.20	NA	5110000	NA
ALPHA-BHC	18.000	ug/kg	2.60	NA	5240	NA
HEPTACHLOR	18.000	ug/kg	3.20	NA	6120	NA
CHLORDANE (TECHNICAL)	180.000	ug/kg	26.00	NA	94400	NA

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ENDRIN	18.000	ug/kg	4.40	NA	221000	NA
TOXAPHENE	1800.000	ug/kg	110.00	NA	25000	NA
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HEPTACHLOR EPOXIDE	72.000	ug/kg	2.40	NA	3030	NA
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ENDOSULFAN II	19.000	ug/kg	4.60	NA	4420000	NA
ENDOSULFAN I	19.000	ug/kg	4.00	NA	4420000	NA
METHOXYCHLOR	36.000	ug/kg	8.60	NA	5110000	NA
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HEPTACHLOR	19.000	ug/kg	3.40	NA	6120	NA
CHLORDANE (TECHNICAL)	190.000	ug/kg	27.00	NA	94400	NA

Key

- Existing Structure
- Demolished Sructure
- Dirt road
- Paved area
- PAC 300-702
- Sample location

N

10 0 10 Feet

Scale = 1:300

State Plane Coordinate Projection
Colorado Central Zone
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Prepared by:

RADMS

Prepared for:

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