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SMO-379/05
October 12, 2005

Ms. Margaret L. Marks, Director
Miamisburg Closure Project
U. S. Department of Energy
175 Tri-County Parkway
Springdale, OH 45246

ATTENTION: Paul Lucas

SUBJECT: **Contract No. DE-AC24-03OH20152:** Deliverable #39 Potential release site and removal action documentation; Section C.2.3.1.1 Ongoing Response Actions; PRS 66 OSC Report, Final

Dear Ms. Marks:

Attached is the following Final document for your records:

- PRS 66 OSC Report, Final

If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact Dave Rakel at 937-865-4203.

Sincerely,

John Lehew
Site Manager

JL/ms

Enclosures

cc: T. Fischer, USEPA, (1) w/attachments
B. Nickel, OEPA, (1) w/attachments
R. Vandegrift, ODH, (1) w/attachments
J. Webb, ODH, (1) w/attachments
M. Wojciechowski, Tetra Tech, (1) w/attach
G. Gorsuch, DOE/MCP, (1) w/attachments
W Taylor, DOE/MCP, w/o attachments
R. Tormey, DOE/OH, (1) w/attachments
G. Desai, DOE/HQ, (1) w/attachments
S. Davis, CH2M Hill, (1) w/attachments
F. Bullock, MMCIC (3) w/attachments
~~Public Reading Room (1)~~ w/attachments
Administration Records (2) w/attachments
ER Records, CH2M Hill, (1) w/attachs
DCC (1) w/attachments
J. Lehew, CH2M Hill, w/o attachments
K. Armstrong, CH2M Hill, w/o attachments
D. Rakel, CH2M Hill, w/o attachments
D. Kramer, CH2M Hill, w/o attachments
B. Wier, CH2M Hill, w/o attachments
A. Upshaw, CH2M Hill, w/o attachments
MOAT Coordinator, CH2M Hill, w/o attachs
W. Webb, CH2M Hill, w/o attachments
M. McDougal, CH2M Hill, w/o attachments
file, CH2M Hill, w/o attachments

PRS 66
REMOVAL ACTION

OSC REPORT

PRSs 66, 38, 39, 40, 80, & 398 are closed via this OSC Report

September 2005

Final

Department of Energy
Miamisburg Closure Project

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PRS 66
REMOVAL ACTION

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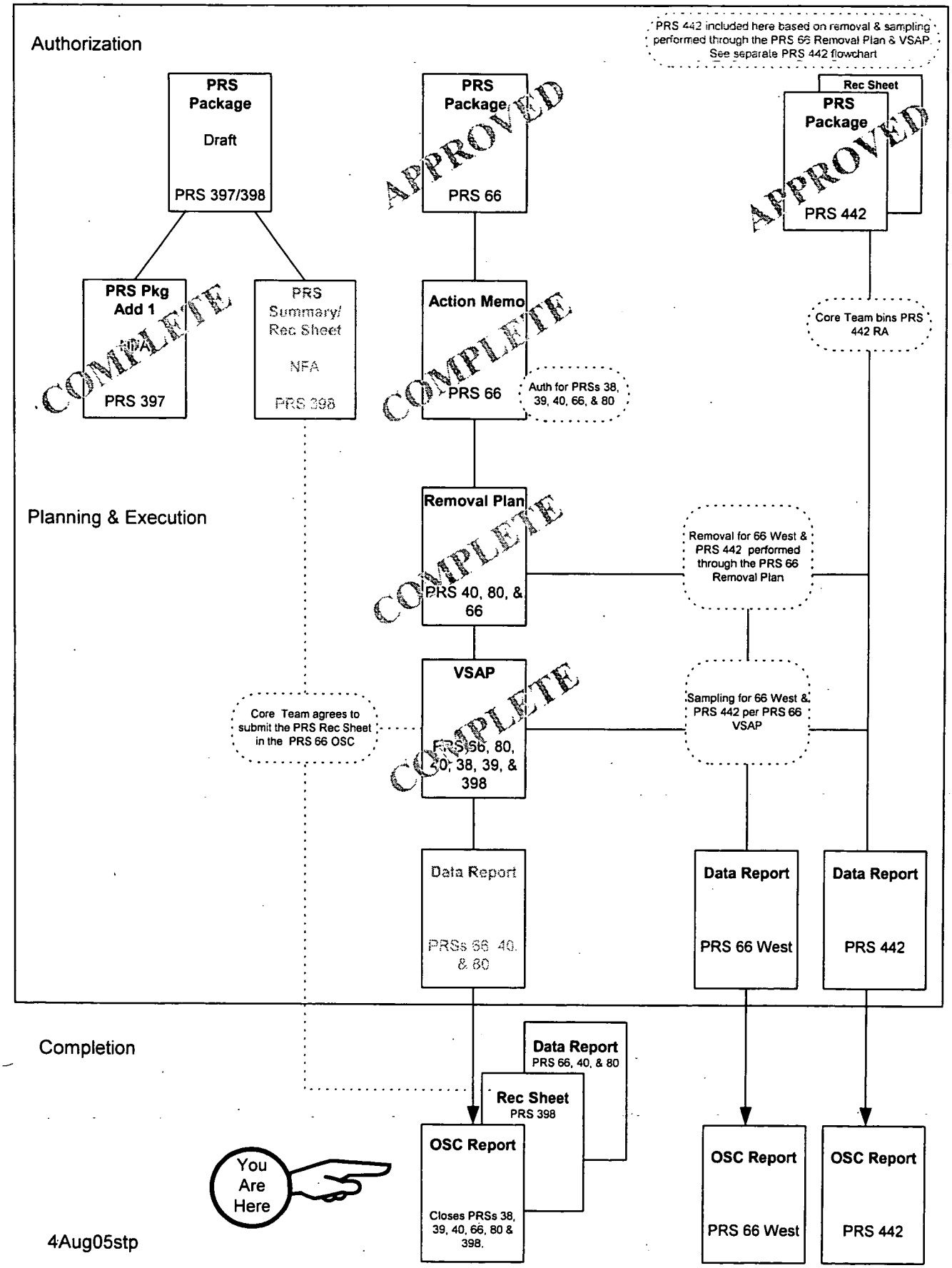
PRS 66

Includes: PRSs 66, 38, 39, 40, 80, & 398



4Aug05stp

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Acronyms

BTEX	benzene, toluene, ethylbenzene, xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CO	cleanup objective
COC	contaminant of concern
cy	cubic yards
D&D	decontamination and decommissioning
DOE	Department of Energy
EE/CA	Engineering Evaluation/Cost Analysis
FA	Further Assessment
FFA	Federal Facilities Agreement
HS	hot spot
MCP	Miamisburg Closure Project
NFA	No Further Assessment
NTS	Nevada Test Site
OEPA	Ohio Environmental Protection Agency
OSC	On-Scene Coordinator
PAH	polycyclic aromatic hydrocarbons
pCi/g	picoCuries per gram
PRP	Potentially Responsible Parties
PRS	Potential Release Site
RA	Removal Action
RBGV	Risk-Based Guideline Value
UCL	upper confidence limit
ug/kg	micrograms per kilogram
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
VSAP	Verification Sampling and Analysis Plan
yd^3	cubic yards

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RECOMMENDATION: PRSs 66, 38, 39, 40, & 80

The PRS 66 Removal Action (authorized via the PRS 66 Action Memorandum, December 2002, Final) was performed as a result of historical knowledge and processes, and radiological surveys and soil sample results which showed elevated levels of several isotopes, primarily Pu-238 and Th-232.

Contaminated soil at PRS 66 was excavated per the PRS 66 Action Memo and the PRS 66 Work Plan (PRS 66 (including PRS 80/40) Removal Work Package, Final, January 2003). Verification sampling and analysis was performed in accordance with the PRS 66 (including 80/40/38/39/398) VSAP, Final, Revision 1, October 2003 to demonstrate that the remaining soil meets the cleanup criteria.

This removal action was successfully completed and resulted in the excavation and disposal of approximately 78,093 cubic yards (cy) of radioactively contaminated soil/debris (for disposal at Envirocare), 90 cy of metal (for disposal at Stoney Hollow Landfill), and 3 cy of nonfriable asbestos (for disposal at NTS).

The primary contaminants of concern (COCs) include Pu-238, Th-232, Ac-227, Cs-137, and Ra-226. Isolated COCs include U-238, Th-230, and volatile organic compounds (VOCs). All results are below cleanup objectives.

After a thorough review of the PRS 66 OSC Report, the Core Team agrees that the PRS 66 Removal Action (including closure of PRSs 66, 38, 39, 40, and 80) is complete, and that all previously existing environmental issues associated with the PRS 66 Removal Action have been resolved.

Note: PRS 66 West (shown on Figure 11) is not included in this OSC Report and will be closed out under its own OSC Report.

Paul Lucas 9/29/05

Paul Lucas, OSC
U.S. Department of Energy
Springdale, Ohio

Timothy J. Fischer 9/29/05

Timothy J. Fischer, Remedial Project Manager
USEPA
Chicago, Illinois

Brian Nickel 9/30/05

Brian Nickel, Project Manager
OEPA
Dayton, Ohio

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PRS 398 is a 7-page recommendation that was previously approved by the Core Team but is being submitted in the PRS 66 OSC Report per Core Team request.

PRS 398 Summary

Recommendation Page

SUMMARY:

Potential Release Site (PRS) 398, an historic soil gas sample location near the site of a former fueling facility, was assessed for potential contamination from the fuel pumps. The 1993 soil gas survey detected levels of volatile organic compounds (VOCs), but results were below calculated soil gas screening levels. Samples collected near PRS 398 during a 1996 soil gas confirmation investigation essentially reaffirmed the 1993 survey by indicating that all chemical contaminants in the nearby samples were below 10^{-6} Risk-Based Guideline Values (RBGVs).

PRS 398 was included in the PRS 66 Verification Sampling and Analysis Plan (VSAP) due to the proximity of the two PRSs. Per the VSAP, one soil sample was collected in May 2003 and analyzed for BTEX (benzene, toluene, ethylbenzene, and xylenes) and PAHs (polycyclic aromatic hydrocarbons). Two PAH compounds were detected but all analytical results and detection limits (Attachment 1) were below the more restrictive of the 10^{-6} RBGV or Hazard Index equal to one value. Soil screening level calculations (Attachment 2) were performed and results indicated that detected contaminants could not leach to the groundwater at unacceptable levels.

RECOMMENDATION:

Based on the above information, the Core Team recommends **No Further Assessment** for PRS 398.

This recommendation page will be included in the PRS 66 On-Scene Coordinator Report, which will be placed in the Public Reading Room.

CONCURRENCE:

DOE/MCP: Paul Lucas — 8/20/03
Paul Lucas, Remedial Project Manager (date)

USEPA: David P. Seely — 8/20/03
David P. Seely, Remedial Project Manager (date)

OEPA: Brian K. Nickel — 8/26/03
Brian K. Nickel, Project Manager (date)

PRS 398 Summary

Attachment 1: Soil Sample Results

One surface soil sample (Sample 001) and a duplicate soil sample (Sample 002) were collected at the historic soil gas sample location.

Table 1: BTEX and PAH Results (ug/kg)

Analyte	Sample 001	Sample 002	Screening Level* (in soil)
Benzene	5U	5U	1,450
Toluene	5U	5U	2,000,000
Ethylbenzene	5U	5U	4,760,000
Xylene	5U	5U	426,000,000
Naphthalene	370U	360U	NC
2-methylnaphthalene	370U	360U	NC
Acenaphthylene	370U	360U	NC
Acenaphthene	25J	360U	NC
Dibenzofuran	370U	360U	NC
Fluorene	27J	360U	8,500,000
Phenanthrene	340J	140J	NC
Anthracene	65J	26J	64,000,000
Fluoranthene	460	220J	8,500,000
Pyrene	370	220J	6,400,000
Chrysene	190J	120J	410,000
Benzo(a)anthracene	180J	100J	4,100
Benzo(b)fluoranthene	170J	100J	4,100
Benzo(k)fluoranthene	120J	80J	41,000
Benzo(a)pyrene	160J	110J	410
Indeno(1,2,3-c,d)pyrene	88J	66J	4,100
Dibenz(a,h)anthracene	370U	360U	410
Benzo(g,h,i)perylene	98J	79J	NC

*more restrictive of 10^{-6} RBGV or HI=1
U: not detected; value assigned is detection limit
J: estimated value
NC: not calculated

PRS 398 is a 7-page recommendation that was previously approved by the Core Team but is being submitted in the PRS 66 OSC Report per Core Team request.

PRS 398 Summary

Attachment 2: Soil Screening Level Calculations

BTEX. Soil sampling at PRS 398 revealed no detections of BTEX (benzene, toluene, ethylbenzene, and total xylene) at a detection limit of 5 ppb. The detection limits of 5 ppb are well below the calculated soil screening levels (based on potential to leach from soil to ground-water) for BTEX compounds. Therefore, the soil levels are protective of the underlying groundwater system.

PAH. Soil sampling at PRS 398 revealed two detected PAH compounds (fluoranthene and pyrene). The detentions were well below the calculated soil screening levels for both compounds. Therefore, the soil levels are protective of the underlying groundwater system.

Parameters and output from the SSL calculations are included on the following pages.

Parameters for Soil Leaching Equation Applied to PRS 398

Parameters for soil leaching calculation:			
Definition	**Parameter**	**Main Hilltop soil**	**Units**
source length parallel to ground water flow	L	20	m
aquifer thickness	da	20	m
hydraulic conductivity	K	500	m/y
hydraulic gradient at the source	i	0.04	m/m
horizontal distance to receptor	xr	0.05	m
infiltration rate (Schairbaum & Frost 1988)	in	0.15	m/y
soil-water partition coefficient (Koc * foc for organic chemicals)	Kd	chemical specific	L/kg
saturated porosity	Ow	0.15	
air filled porosity	Oa	0.28	
Henry's Law constant * 41 (0 for metals and radionuclides)	H	chemical specific	
dry soil bulk density	B	1.6	kg/L
soil organic carbon/water partition coefficient	Koc	chemical specific	L/kg
fraction organic carbon in soil (DOE Mound Plant Data Base)	foc	0.02	
mixing zone depth	d	2.271816204	m
dilution factor (used to multiply the target concentration)	df=	16.15	

SOIL SCREENING LEVELS FOR PRS 398

CHEMICAL NAME	H	Koc (L/kg)	foc	Kd (L/kg)	MCL (mg/L)	0.5 SW (mg/L)	Accumulated Concentration (mg/L)	SW (mg/L)	SSL (mg/kg)
Acenapthene	7.54E-03	5848	0.02	116.92			0	0.00	—
Acetone	1.18E-03	0.46	0.02	0.0092		3.6	3.6	58.12	6.00
Aldrin	4.22E-03	94623	0.02	1892.46			0	0.00	—
Anthracene	4.55E-03	18162	0.02	363.24	0.007		0.007	0.11	41.06
Arochlor 1016		147410	0.02	2948.2			0	0.00	—
Arochlor 1254		892520	0.02	17850.4		0.00073	0.00073	0.01	210.38
Arochlor 1260		4425557	0.02	88511.14		0.000011	0.000011	0.00	15.72
Benzene	***2.24E-01***	***66***	***0.02***	***1.32***	***0.005***		***0.005***	***0.08***	***0.12***
Benzo(a)anthracene	1.48E-04	272847	0.02	5456.94	0.007		0.007	0.11	616.71
Benzo(b)flouranthene	2.53E-04	882588	0.02	17651.76	0.007		0.007	0.11	1994.89
Benzoic Acid	1.37E-05		0.02			140	140	2260.26	211.90
Benzo(a)pyrene	3.43E-05	749569	0.02	14991.38	0.0002		0.0002	0.00	48.41
Bis(2-chlorethyl)ether	8.77E-04	76	0.02	1.52			0	0.00	—
Bis(2-ethylhexyl)phthalate	3.43E-04	94361	0.02	1887.22			0	0.00	—
Bomodichloromethane	1.30E-01	54	0.02	1.08	0.08		0.08	1.29	1.55
Bromoform	2.52E-02	97	0.02	1.94	0.08		0.08	1.29	2.63
Butanol	3.50E-04	5	0.02	0.1			0	0.00	—
Butyl benzyl phthalate	7.83E-05	15975	0.02	319.5		7.3	7.3	117.86	37666.12
Carbazole	8.12E-05	2441	0.02	48.82			0	0.00	—
Carbon disulfide	5.21E-01	52	0.02	1.04		0.033	0.033	0.53	0.65
Carbon tetrachloride	1.18E+00	187	0.02	3.74	0.005		0.005	0.08	0.33
Chlordane	2.73E-03	61155	0.02	1223.1	0.002		0.002	0.03	39.50
p-Chloroaniline	4.80E-05	41	0.02	0.82			0	0.00	—
Chlorobenzene	1.79E-01	213	0.02	4.26			0	0.00	—
Chlorodibromomethane	1.02E-01	72	0.02	1.44	0.08		0.08	1.29	2.00
Chloroform	1.65E-01	47	0.02	0.94	0.08		0.08	1.29	1.37
2-Chlorphenol	6.81E-04		0.02				0	0.00	—
Chyrsene	4.96E-05	312425	0.02	6248.5		0.0046	0.0046	0.07	464.06
DDD	2.03E-04	84937	0.02	1698.74			0	0.00	—
DDE	5.08E-03	108469	0.02	2169.38		0.00017	0.00017	0.00	5.95
DDT	2.20E-03	77577	0.02	1551.54		0.001	0.001	0.02	25.05
Dibenzo(a,h)anthracene	4.59E-07	1914389	0.02	38287.78				0.00	—
Di-n-butyl phthalate	5.86E-05	16851	0.02	337.02		3	3	48.43	16327.79
1,2-Dichlorobenzene (o)	8.61E-02	693	0.02	13.86	0.6		0.6	9.69	135.31
1,2-Dichlorobenzene (p)	1.15E-01	653	0.02	13.06	0.075		0.075	1.21	15.95

SOIL SCREENING LEVELS 7/8/03 Prepared by Mark Gilliat

5 of 7

SOIL SCREENING LEVELS FOR PRS 398

CHEMICAL NAME	H	Koc	foc	Kd	MCL	0.5 SW	Accumulated Concentration	SW	SSL
3,3-Dichlorobenzidene	8.53E-07	2441	0.02	48.82			0	0.00	—
1,1-Dichloroethane	2.36E-01	35	0.02	0.7		1.1	1.1	17.76	14.83
1,2-Dichloroethane	5.25E-02	20	0.02	0.4	0.005		0.005	0.08	0.04
1,1-Dichloroethylene	1.04E+01	64	0.02	1.28	0.007		0.007	0.11	0.36
cis-1,2 Dichloroethylene	1.85E-01	29	0.02	0.58	0.07		0.07	1.13	0.80
trans-1,2-Dichloroethylene	2.29E-01	50	0.02	1	0.1		0.1	1.61	1.83
1,2-Dichloropropane	1.15E-01	59	0.02	1.18	0.005		0.005	0.08	0.10
1,3-Dichloropropene	1.21E-01	33	0.02	0.66			0	0.00	—
2,4-Dichlorophenol	9.76E-06		0.02				0	0.00	—
Dieldrin	1.09E-04	18388	0.02	367.76		0.0018	0.0018	0.03	10.69
Diethyl phthalate	2.24E-05	152	0.02	3.04			0	0.00	—
2,4-Dimethylphenol	1.33E-04		0.02				0	0.00	—
Dimethyl phthalate	2.37E-05	32	0.02	0.64			0	0.00	—
2,4-Dinitrophenol	1.98E-07		0.02				0	0.00	—
2,4-Dinotrotolulene	6.03E-06	51	0.02	1.02			0	0.00	—
2,6-Dinotrotolulene	5.33E-06	42	0.02	0.84			0	0.00	—
Di-n-octyl phthalate	3.14E-05	9.8E+08	0.02	19601631		0.73	0.73	11.79	231017457.77
Endosulfan	9.47E-04	738	0.02	14.76			0	0.00	—
Endrin	4.88E-05	9335	0.02	186.7	0.002		0.002	0.03	6.03
Ethylbenzene	***3.18E-01***	***388***	***0.02***	***7.76***	***0.7***		***0.7***	***11.30***	***89.39***
Fluoranthene	***3.83E-04***	***72025***	***0.02***	***1440.5***		***0.87***	***0.87***	***14.05***	***20234.41***
Fluorene	2.99E-03	9226	0.02	184.52			0	0.00	—
Heptachlor	2.41E-02	11651	0.02	233.02	0.0004		0.0004	0.01	1.51
Heptachlor epoxide	3.40E-04	7236	0.02	144.72	0.0002		0.0002	0.00	0.47
Hexachlorobenzene	2.19E-02	27996	0.02	559.92	0.001		0.001	0.02	9.04
Hexachloro-1,3-butadiene	9.80E-01	6992	0.02	139.84			0	0.00	—
alpha-HCH (alpha-BHC)	2.78E-04	1310	0.02	26.2			0	0.00	—
beta-HCH (beta-BHC)	1.42E-05	1392	0.02	27.84		0.000047	0.000047	0.00	0.02
gamma-HCH (lindane)	1.39E-04	1085	0.02	21.7	0.0002		0.0002	0.00	0.07
Hexachlorocyclopentadiene	7.05E-01	9589	0.02	191.78	0.05		0.05	0.81	154.99
Hexachloroethane	1.48E-01	1829	0.02	36.58			0	0.00	—
Indeno(1,2,3-c,d)pyrene	1.99E-07	4364700	0.02	87294		0.000026	0.000026	0.00	36.64
Isophorone	2.54E-04	30	0.02	0.6		7.2	7.2	116.24	80.65
Methoxychlor	2.60E-04	77936	0.02	1558.72	0.04		0.04	0.65	1006.66
Methyl bromide	5.82E-01	11	0.02	0.22			0	0.00	—
Methyl chloride	1.85E+00	7	0.02	0.14			0	0.00	—

SOIL SCREENING LEVELS 7/8/03 Prepared by Mark Gilliat

6 of 7

PRS 398 is a 7-page recommendation that was previously approved by the Core Team but is being submitted in the PRS 66 OSC Report per Core Team request.

CHEMICAL NAME	H	Koc	fo	Kd	MCL	10xSGW	Acceptable	SGW	SSL
Methylene chloride	9.72E-02	13	0.02	0.26			0	0.00	—
2-Methylphenol	6.72E-05		0.02				0	0.00	—
Napthalene	1.98E-02	1549	0.02	30.98			0	0.00	—
Nitrobenzene	8.45E-04		0.02				0	0.00	—
N-Nitrosodiphenylamine	2.86E-02	327	0.02	6.54			0	0.00	—
N-Nitrosodi-n-propylamine	1.70E-03	17	0.02	0.34			0	0.00	—
Pentachlorobenzene		13274	0.02	265.48			0	0.00	—
Pentachlorophenol	5.82E-04		0.02		0.001		0.001	0.02	0.00
Phenol	2.44E-05		0.02			22	22	355.18	33.30
Pyrene	***3.39E-04***	***59865***	***0.02***	***1197.3***		***0.68***	***0.68***	***10.98***	***13145.46***
Styrene	1.37E-01	573	0.02	11.46	0.1		0.1	1.61	18.69
1;1,2,2-Tetrachloroethane	1.53E-02	104	0.02	2.08			0	0.00	—
Tetrachloroethylene	7.09E-01	139	0.02	2.78	0.005		0.005	0.08	0.24
Toluene	***2.52E-01***	***171***	***0.02***	***3.42***	***1***		***1***	***16.14***	***57.44***
Toxaphene	1.38E-04	501	0.02	10.02	0.003		0.003	0.05	0.49
1,2,4-Trichlorobenzene	1.07E-01	1840	0.02	36.8	0.07		0.07	1.13	41.72
1,1,1-Trichloroethane	7.63E-01	110	0.02	2.2	0.2		0.2	3.23	7.84
1,1,2-Trichloroethane	4.10E-02	61	0.02	1.22	0.005		0.005	0.08	0.11
Trichloroethylene	4.35E-01	112	0.02	2.24	0.005		0.005	0.08	0.19
2,4,5-Trichlorophenol	1.80E-04		0.02				0	0.00	—
2,4,6-Trichlorophenol	1.66E-04		0.02				0	0.00	—
Vinyl acetate	2.26E-02	5	0.02	0.1			0	0.00	—
Vinyl chloride	3.45E+00	11	0.02	0.22	0.002		0.002	0.03	0.03
Xylenes (total)	***2.48E-01***	***381***	***0.02***	***7.62***	***10***		***10***	***161.45***	***1252.37***

PRS 398 is a 7-page recommendation that was previously approved by the Core Team but is being submitted in the PRS 66 OSC Report per Core Team request.

1.0 SUMMARY OF EVENTS

This section describes the site background and events leading up to the removal action (RA), parties involved in responding to the RA, cleanup objective (CO) determination, chronological narrative of the RA, and resources committed to complete the projects.

Further Assessment (FA) sampling for Potential Release Site (PRS) 398 was included as part of the PRS 66 Verification Sampling and Analysis Plan (VSAP). Based on the results of the FA sampling, the Core Team determined in August 2003 that PRS 398 required No Further Assessment (NFA). Per the VSAP, the PRS 398 recommendation is included in this PRS 66 On-Scene Coordinator (OSC) Report.

1.1 Site Conditions and Background

The levels of radiological contamination present at PRS 66 warranted a RA under CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act).

The Action Memorandum-Engineering Evaluation/Cost Analysis (EE/CA) for PRS 66 [PRS 66 (including PRS 80/40) Action Memo EE/CA, December 2002, Final] authorized removal of PRS 66 (which incorporated PRSs 40 and 80) and authorized closeout of PRSs 38 and 39 in conjunction with the PRS 66 RA. PRSs 38 and 39 are equipment that was within Building 51. Even though the equipment has been removed and Building 51 has been demolished as documented in the Building 51 Closeout Report, Final, July 2002, closeout of PRSs 38 and 39 was held back because the PRSs are completely within the limits of PRS 66.

The RA was performed in accordance with the PRS 66 Work Plan (PRS 66 (Including PRS 80/40) Removal Work Package, Final, January 2003).

Per the VSAP, PRS 66 verification sampling is used to close out PRSs 38, 39, 40, and 80; as well as PRS 66.

Table 1: PRSs Closed Out via OSC Report

PRS	Description
66	Area 7, Thorium and Polonium Wastes
38	Building 51 Waste Incinerator
39	Building 51 Waste Incinerator Scrubber
40	Building 66 Lot
80	Warehouse 15A
398	Soil Contamination

This OSC Report documents removal of contaminated soil from PRS 66 and closes out PRSs 66, 38, 39, 40, 80, and 398. This OSC Report documents verification sampling and analysis per the PRS 66 VSAP (Final, Revision 1, October 2003) to demonstrate that the remaining soil meets the cleanup criteria. The PRSs listed in Table 1 (above)

are shown in Attachment A, Data Report, on Figure 1 (A12/274).

Since the Department of Energy (DOE) is the sole responsible party for cleanup of PRS 66 soil contamination, no Potentially Responsible Parties (PRPs) were sought to clean up the site. Monsanto Research Corporation, EG&G Mound Applied technologies, and BWXT of Ohio, Inc were the operating contractors at the site from 1948 to 30 September 1988, from 1 October 1988 until 30 September 1997, and from 1 October 1997 until 31 December 2002 respectively. CH2M Hill Mound, Inc. became the site contractor for the Miamisburg Closure Project (MCP) effective January 1, 2003.

1.2 Organization of the Removal Actions

Table 2 lists the parties responding to the removal actions, and their responsibilities.

Table 2: Organization of the Removal Action

US Environmental Protection Agency (USEPA) SFR-5J 77 W. Jackson Street Chicago, IL 60604 312-353-2000	Timothy J. Fischer	Federal agency responsible for oversight
Ohio Environmental Protection Agency (OEPA) 401 E. Fifth Street Dayton, OH 45402-2911 937-285-6357	Brian K. Nickel	State agency responsible for oversight
US Dept. of Energy Miamisburg Closure Project 175 Tri-County Parkway Springdale, OH 45246 513-246-0071	Paul Lucas	On-scene Coordinator responsible for oversight and success
CH2M HILL Environmental Restoration Project 1 Mound Road Miamisburg, OH 45343-3030 937-608-8220	Jim Fontaine	Provide OSC with technical assistance, administrative support, field oversight, sample management, site safety, photo, site documentation, and preparation of the OSC Report

1.3 Objectives

The objectives of this OSC Report are to describe the PRS 66 RA fieldwork and document successful completion of the project.

Removal Action Objectives: The objectives for the removal action included:

- Project Engineering and Planning
- Public Notification
- Prerequisite Mound Site Project Prep Activities
- Removal Plan Review
- PRS Site Preparation
- Precision Excavation

- Verification
- Continued Public Involvement
- Site Restoration
- Documentation of Completion

Material quantities and disposition locations are presented in Table 3. The cost breakdown of the removal actions is presented in Table 4.

Table 3: Materials and Disposition

Type of Material	Quantity (yd^3)	Disposal Method	Disposal Location
Surveyed metal	90	Truck	Stoney Hollow Landfill
Nonfriable asbestos	3	Truck	Nevada Test Site (NTS)
Contaminated soil/debris	78,093	Rail transport	Envirocare of Utah

Table 4: Removal Cost

Cost Category	Cost
Planning/Fieldwork/ Restoration/grading/seeding	$3,100,000
Transportation/Disposal of Contaminated Soil	$28,803,200
Subcontractors (Verification Sampling, Analyses, & Data Validation)	$209,400
Closure Documentation	$125,000
Estimated Total Project Cost	**$32,237,600**

The **Cleanup Objectives** for primary contaminants of concern (COCs) identified in the PRS 66 Action Memo are presented in Table 5. COs for all results, including primary and isolated COCs, are presented in the data tables in Appendix A to the OSC Report.

The cleanup criteria are satisfied if all verification sample results are below CO or all sample results are below hot spot (HS) criteria and the 95% UCL (upper confidence limit) of the mean for the area of interest is less than the CO and the data set passes the Sign test.

Table 5: Cleanup Objectives (pCi/g)

COC	Cleanup Objective	Hot Spot Criteria
Actinium-227	4.61	13.61
Cesium-137	3.82	10.62
Radium-226	2.90	4.7
Thorium-232	2.10	3.5
Plutonium-238	55.00	165.13

Cleanup Objective. All final verification results for PRS 66 were below their respective COs as identified in the Data Report, Tables 2-9 (A26/274 – A79/274).

Hot Spot Criteria. The Hot Spot criteria (3 times the 10^{-5} RBGV [Risk-Based Guideline Value] + background) for the primary COCs are presented in Table 5. There were no sample results that exceeded the hot spot criteria.

1.4 Chronological Narrative of the Removal Actions

Table 6 presents a chronological narrative of events surrounding the PRS 66 RA.

Table 6: Chronology of RA

Timeframe	Activity
December 2002	PRS 66 Action Memorandum approved, includes PRSs 38, 39, 40, 66, 80
January 2003	PRS 66 Removal Plan approved
August 2003	PRS 398 binned NFA
January 2003 through July 2005	PRS 66 contaminated soil RA activities, and verification sampling & analysis.
June 2004 through September 2005	Backfill and Site Restoration
August 2005	PRS 66 OSC Report prepared, closes out PRSs 38, 39, 40, 66, 80, 398

2.0 EFFECTIVENESS OF THE REMOVAL ACTIONS

The PRS 66 removal action is complete, and the objectives of the Action Memorandum have been met. The limits of excavation and verification are identified on Figure 11 (see A22/274). Results of verification sampling and analysis are provided in Appendix A, and photographs of the site remediation are provided in Appendix C.

2.1 Actions Taken by Mound Personnel

CH2M Hill Mound, Inc. personnel planned and performed removal action oversight, and performed the excavation, monitoring, sampling and analyses, documentation, and transportation of contaminated soil and debris to the designated onsite soil staging area. Photographic documentation is presented in Appendix C. The project met the removal action objectives (Section 1.3), as outlined in the Action Memorandum (Final, dated December 2002). CH2M Hill Mound, Inc. personnel prepared this OSC Report, which shows that the Removal Action objectives were achieved.

2.2 Actions Taken by Local, State, and Federal Agencies

The DOE/MCP, USEPA, and OEPA had oversight responsibility for the removal actions. The DOE/MCP was the lead agency for the RA and provided the funding and oversight for the RA. The USEPA and OEPA had oversight responsibility for the RA and review of the Action Memorandum and OSC Reports to ensure that the objectives are/were met.

2.3 Actions Taken by Subcontractors

Subcontractors involved in the project included:

- Weston Solutions Inc. (Miamisburg, Ohio) - performed site soil sampling and data management.
- Envirocare (Clive, Utah) - disposal of radiologically contaminated waste via rail transport.
- Nevada Test Site (Las Vegas, Nevada) – disposal of nonfriable asbestos
- Stoney Hollow (Dayton, Ohio) – disposal of surveyed metal, poles, electrical wire
- L. S. Combs, Inc. (Xenia, Ohio) – performed restoration seeding

3.0 DIFFICULTIES ENCOUNTERED

3.1 Items that Affect the Removal Actions

No difficulties were encountered during the removals.

3.2 Issues of Intergovernmental Coordination

All DOE/OEPA/USEPA interactions were good. The agencies were updated informally on a regular basis, and formally at monthly Federal Facilities Agreement (FFA) meetings. The Mound 2000 Process worked well. Splitting of samples with OEPA went well.

4.0 RECOMMENDATIONS

4.1 Means to Prevent a Recurrence

The waste and contaminated soil were removed and therefore spread of contamination is prevented. After the removal action and the CERCLA process for the parcel are complete, the area will be transferred from Federal to private ownership. All State and Federal disposal rules will apply.

ATTACHMENT A

DATA REPORT

DATA REPORT

PRS 66

September 2005

Rev. 1

Department of Energy

Miamisburg Closure Project

CH2MHILL

10/04/05 @ 3:40 PM

A1/274

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(continued)

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Acronyms

CO	cleanup objective
COC	contaminant of concern
PRS	Potential Release Site
PV	preverification
QC	quality control
RA	removal action
RSDS	Radiological Survey Data Sheet
R&V	review and validation
SARs	Soil Analysis Reports
SE	Sample Event
SVOC	semivolatile organic compound
V	verification
VOC	volatile organic compound
VSAP	Verification Sampling and Analysis Plan

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1.0 PURPOSE

This Data Report provides documentation of sampling activities specified in the PRS 66 Verification Sampling and Analysis Plan (VSAP), Final Revision 1, October 2003; required to closeout Potential Release Sites (PRSs) in the PRS 66 area (see Figure 1).

The purposes of this Data Report are to:

- document the verification of PRS 66,
- describe any variances to the VSAP, and
- present the analytical results.

2.0 DOCUMENT ORGANIZATION / SUMMARY

The PRS 66 removal action (RA) was divided into 10 phases (Phases I-X) based on like contaminants. As the fieldwork progressed, and an area became available for verification, it was assigned a Sample Event (SE) number. A Sample Event contained all or part of a Phase based on the progress of the fieldwork. All of the Phases were verified as part of one or more SE (see Table 1). A total of eight Sample Events (SEs 1-8) were conducted, each pre-approved by the Core Team. Table 1 identifies SEs, Phases, and associated contaminants of concern (COCs). Figure 2 shows the location of Phases I-X prior to the RA. Figures 3-10 are the individual Core Team-approved SE sketches generated during the course of the RA. Figure 11 shows all verification (V) and preverification (PV) samples collected.

Weston Solutions, Inc. performed the verification sampling, oversighted the analytical laboratory (STL Richland) and data validation (TechLaw, Inc.), and generated the field QA/QC portion of the R&V Report.

The 95% UCL (upper confidence limit) calculation and Sign test are not required since no sample results indicate COCs with concentrations greater than COs. Therefore, by default, the Sign test passes and the 95% UCL should pass.

Unless otherwise specified as a variance, sampling and analyses were conducted in accordance with the VSAP and Core Team-approved Sketches provided in Appendix A (Figures 3 through 10).

A general variance occurred related to the sample collection and performance of walkover surveys. Where safety was a concern and/or access was not practical, a backhoe was used to retrieve soil from designated locations or to scrape surfaces not accessible for a walkover survey.

3.0 FIELD ACTIVITIES

3.1 SAMPLE EVENT 1

Sample Event 1 (SE1) occurred in April (PV sampling) and May (V sampling) 2003, and included all of Phase IIa. COCs are show on Table 1. Two isolated areas of U-238 contamination were identified within Phase IIa during soil excavation. Per Core Team agreement, seven additional PV samples (shown on Figure 3) were added to the verification grid in the areas of the isolated uranium. Soil Analysis Reports (SARs) for the seven PV samples are included in Appendix C (SE1 PV1-7). All results are below cleanup objectives (COs).

A 100% walkover survey was performed as documented in Appendix C (Radiological Survey Data Sheet [RSDS] 03-ER-418 excerpt). Per the Core Team-approved sketch (Figure 3), 17 verification samples were collected and analyzed onsite via long count gamma spec (Mound Technical Manual MD-80030: Environmental Analytical Procedures) and offsite gamma spec (Mound Compendium Method A-015), isotopic thorium (Compendium Method A-012), and isotopic uranium (Compendium Method A-012). Results are presented in Table 2 and include multiple results for several isotopes due to reporting onsite and offsite gamma spec results. All results are below CO.

3.2 SAMPLE EVENT 2

Sample Event 2 (SE2) occurred in September 2003 (PV and V) and included all of Phase III and part of Phases II, IV, and V. COCs are show on Table 1. A total of four

PV samples (as shown on Figure 4) were added to the verification grid in accordance with the VSAP. SARs for the PV samples are included in Appendix C (SE2 PV1-4). All results are below CO.

A 100% walkover survey was performed as documented in Appendix C (RSDS 03-ER-760 excerpt). Per the Core Team-approved sketch (Figure 4), 32 verification samples were collected from 30 locations and analyzed offsite in accordance with the Phase COCs indicated on Figure 2. Offsite gamma spec analyses were in accordance with Compendium Method A-015, isotopic thorium analyses were in accordance with Compendium Method A-012, isotopic plutonium analyses were in accordance with Compendium Method A-012, and volatile organic compound (VOC) analyses were in accordance with Compendium Method A-027. Results for SE2 are presented in Table 3. All results are below CO.

3.3 SAMPLE EVENT 3

Sample Event 3 (SE3) occurred in May 2003 (PV and V) and included all of Phase I. COCs are show on Table 1. Per the VSAP, PV samples were not required for this sample event; however, based on the COC being Th-230, four PV samples (as shown on Figure 5) were collected per OEPA request and analyzed onsite for isotopic thorium to account for the limited detection of Th-230 by RadCon field instrumentation. The onsite alpha spec results for the four samples are included in Appendix C (SE3 PV1-4). All results are below CO.

Collection of PV samples was employed in lieu of a 100% walkover survey. Per the Core Team-approved sketch (Figure 5), 1 verification sample (the PV sample with the highest Th-230 result) was analyzed offsite for isotopic thorium by Compendium Method A-012. Verification results for SE3 are presented in Table 4. All results are below CO.

3.4 SAMPLE EVENT 4

Sample Event 4 (SE4) occurred in December 2003 (PV and V) and included all of Phase VI and the remainder of Phases IV and V. COCs are show on Table 1. A total of

seven PV samples (as shown on Figure 6) were added to the Phase V verification grid in accordance with the VSAP. PV sampling was not required for Phases IV and VI. SARs for the PV samples are included in Appendix C (SE4 PV1-7). All results are below CO.

A 100% walkover survey was performed as documented in Appendix C (RSDS 05-ER-458). Per the Core Team-approved sketch (Figure 6), 29 verification samples were collected and analyzed offsite in accordance with the Phase COCs indicated on Figure 2. Offsite isotopic thorium analyses were in accordance with Compendium Method A-012, isotopic plutonium analyses were in accordance with Compendium Method A-012, and VOC analyses were in accordance with Compendium Method A-027. Results for SE4 are presented in Table 5. Sample location VVI06 result was above CO, was excavated and the location resampled as part of SE6. All other results for SE4 were below CO.

3.5 SAMPLE EVENT 5

Sample Event 5 (SE5) occurred in June 2004 (V samples only) and included all of Phase IIb. COCs are show on Table 1. Per the VSAP, PV samples were not required for this sample event.

A 100% walkover survey was performed as documented in Appendix C (RSDS 04-ER-349 excerpt). Per the Core Team-approved sketch (Figure 7), 16 verification samples were collected and analyzed offsite in accordance with the Phase COCs indicated on Figure 7. Offsite gamma spec analyses were in accordance with Compendium Method A-015, isotopic thorium analyses were in accordance with Compendium Method A-012, and isotopic uranium analyses were in accordance with Compendium Method A-012. Results for SE5 are presented in Table 6. All results are below CO.

3.6 SAMPLE EVENT 6

Sample Event 6 (SE6) occurred in June 2004 (V samples only) and included all of Phase VII and reverification of one location from SE4 (VVI06). COCs are show on Table 1. Per the VSAP, PV samples were not required for this sample event.

A 100% walkover survey was performed as documented in Appendix C (RSDS 04-ER-349 excerpt). Per the Core Team-approved sketch (Figure 8), 9 verification samples were collected and analyzed offsite in accordance with the Phase COCs indicated on Figure 2. Offsite gamma spec analyses were in accordance with Compendium Method A-015 and isotopic thorium analyses were in accordance with Compendium Method A-012. Results for SE6 are presented in Table 7. All results are below CO.

3.7 SAMPLE EVENT 7

Sample Event 7 (SE7) occurred in September 2004 and included all of the characterization west and east of Phase VIII that was required per the VSAP. Because this was a characterization event, analytical suites rather than COCs are show on Table 1. A total of 13 locations were sampled at various depths as shown on Figure 9. Seven of the locations required onsite gamma spec analysis only, the remaining six locations required offsite analysis in accordance with the VSAP. SARs for the onsite-only samples are included in Appendix C (SE7 CHAR1-30). All results are below CO.

Because this is a characterization sampling event, a 100% walkover survey was not required. A total of 30 onsite-only samples were collected and analyzed onsite via long count gamma spec (Manual MD-80030). A total of 30 samples were collected and analyzed offsite via isotopic thorium analyses in accordance with Compendium Method A-012, isotopic plutonium analyses in accordance with Compendium Method A-012, gamma spec analyses were in accordance with Compendium Method A-015, metals analyses in accordance with Compendium Method A-005, and SVOC analyses were in accordance with Compendium Method A-001. Based on field instrumentation, one of the offsite samples (B277, 5'-10') also received VOC analysis per Compendium Method A-003. All results for SE7 were below CO. These characterization data did not prompt a RA because all results were below CO. However, the adjacent RA (Phase VIII) required slopebacking into the SE7 area thereby removing some of the characterized soil. Figure 9 identifies soil intervals (and associated data) removed as part of the slopebacking. The as-left results for SE7 are presented in Table 8.

3.8 SAMPLE EVENT 8

Sample Event 8 (SE8) occurred in April 2005 (PV and V) and included all of Phases VIII-X. COCs are show on Table 1. A total of 46 PV samples (as shown on Figure 10) were added to the verification grid in accordance with the VSAP. SARs for the PV samples are included in Appendix C (SE8 PV1-47). All results are below CO.

A 100% walkover survey was performed as documented in Appendix C (RSDS 05-ER-316 excerpt). Per the Core Team-approved sketch (Figure 10), 56 verification samples were collected and analyzed offsite in accordance with the Phase COCs indicated on Figure 10. Offsite gamma spec analyses were in accordance with Compendium Method A-015, isotopic thorium analyses were in accordance with Compendium Method A-012, isotopic plutonium analyses were in accordance with Compendium Method A-012, and isotopic uranium analyses were in accordance with Compendium Method A-012. Results for SE8 are presented in Table 9. All results are below CO.

3.9 ISOLATED CONFIRMATION SAMPLING

Per the VSAP, 12 isolated borehole locations and two VOC areas (see Figure 12) were to be sampled during the course of the PRS 66 RA. Each location is discussed below.

B005. The B005 characterization boring was not installed because the borehole location was excavated as part of the Phase IIb RA. Verification results for the Phase IIb area are reported in Table 6.

B093, B109, B134, B129, B425, B173, B174, and B426. These locations were not sampled (per Core Team agreement, see Figure 5) because the RA extended into the natural till material. B426 extended to the natural till material but was inadvertently omitted from Figure 5 at the time of sampling. Figure 11 identifies B426 as not sampled.

VOC areas. The VOC areas were confirmed and results reported as part of SE2 and SE4.

B284. Per the VSAP, samples at three intervals (see Figure 12) were to be collected and the middle interval analyzed onsite for isotopic thorium by alpha spec. If this result was below CO, then the other two samples were not to be analyzed. The middle interval (15'-20') results were below CO so the other two samples were not analyzed. The 15'-20' interval results at B284 are reported in Appendix C (A196/274- A197/274).

B376. This location was sampled as part of SE8 and results are reported in Table 9.

B397 was sampled as part of SE8. Since a verification sample (VX-03) was adjusted (per Core Team agreement) to be coincident with B397, results for B397 are documented in Table 9 as those for location VX-03.

4.0 DATA REVIEW / VALIDATION

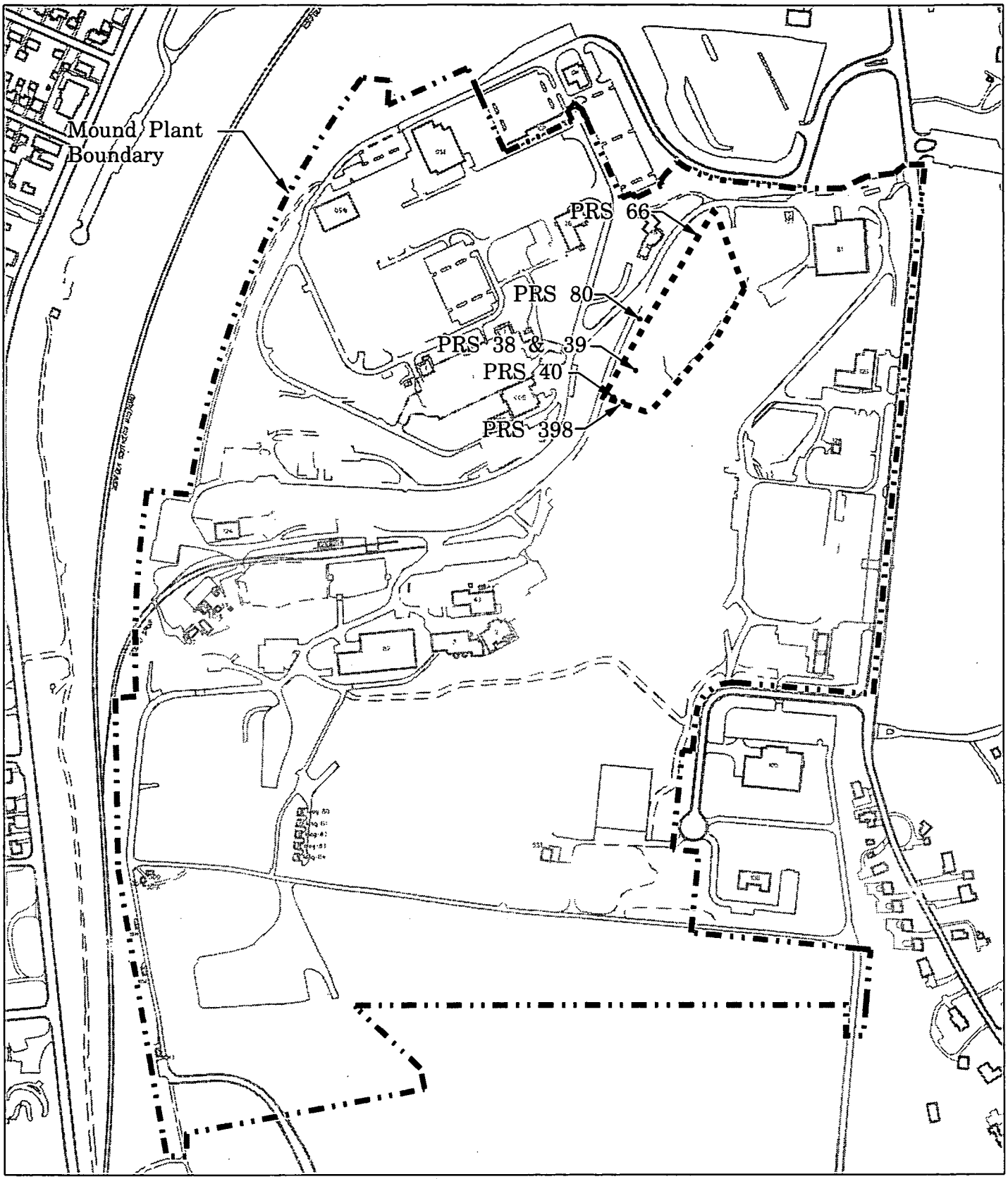
All data were reviewed and 10% of offsite data were validated.

Field and laboratory QC (quality control) were assessed as part of the data review and validation (R&V) process.

Documentation of review and validation (and related variances) is provided in three separate reports in Appendix D. One report was prepared that describes the 2003, 2004, and 2005 sampling efforts. Review and validation supports that the data are usable.

APPENDIX A

FIGURES



Legend

Structures
Paved roadway
Unpaved roadway
Mound Plant boundary
Railroad

0 100 200 400 600 800 1000
Scale in Feet

ISS	DATE	REVISION	BY	DWR	ENG	LPMC	APVD	W
	06/22/05		SSF					

MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
ISSUE																					
SHEET	1	2	3	4	5	6															
ISSUE																					

PART CLASSIFICATION

Figure 1
Location of PRS 66/80/40 and PRS 38,39, 398

DRAWING CLASSIFICATION: UNCLASSIFIED
SIZE
DRAWING NUMBER: gen_site_plan.dgn
JOB NUMBER
DWG TYPE: STE
PRNG: ER-GIS
CADD
SCALE
SHEET 1 OF
STATUS: MD-REL-**/**/**
ORIGIN: MSTATION / J

A12/274

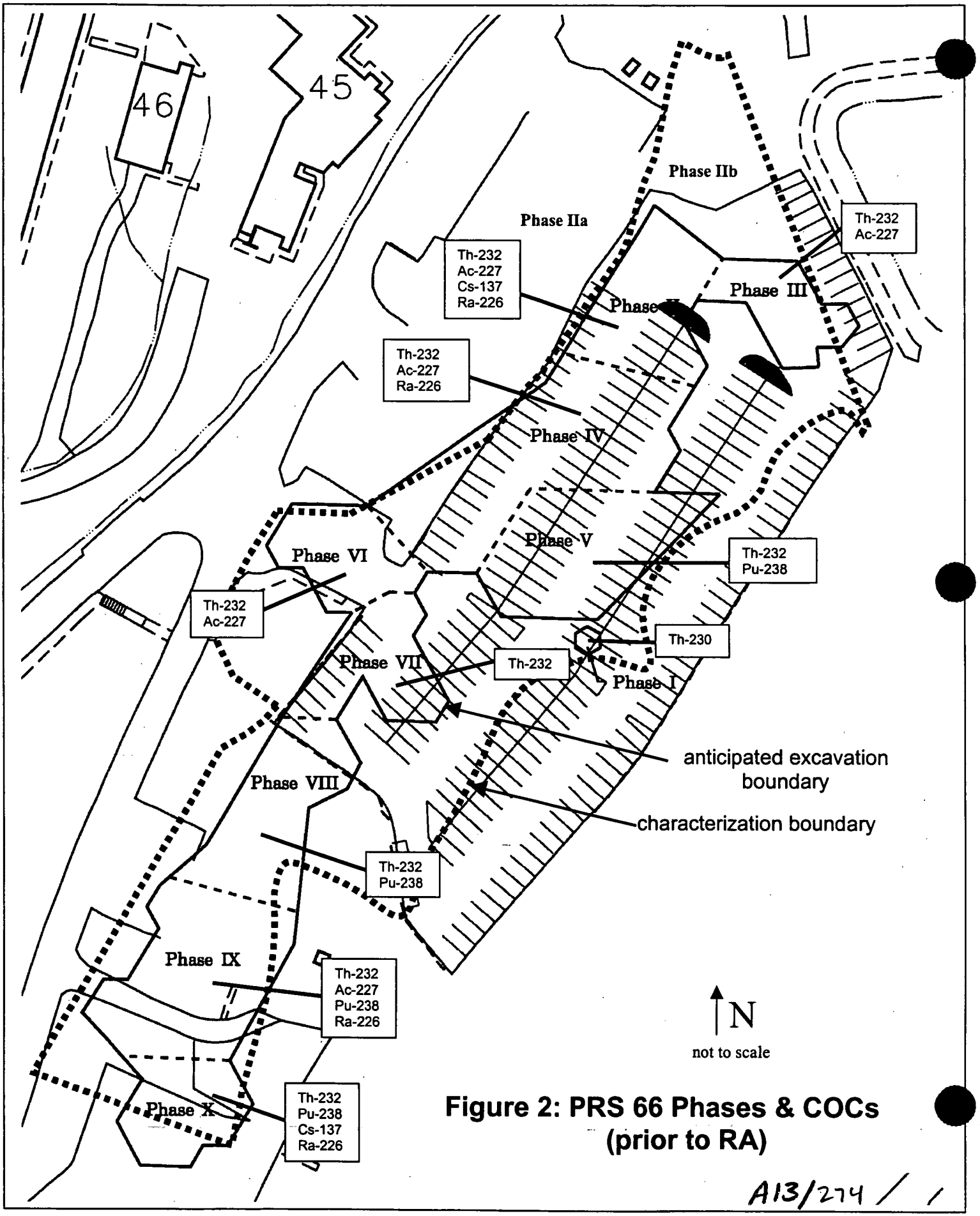


Figure 2: PRS 66 Phases & COCs (prior to RA)

A13/274 / /

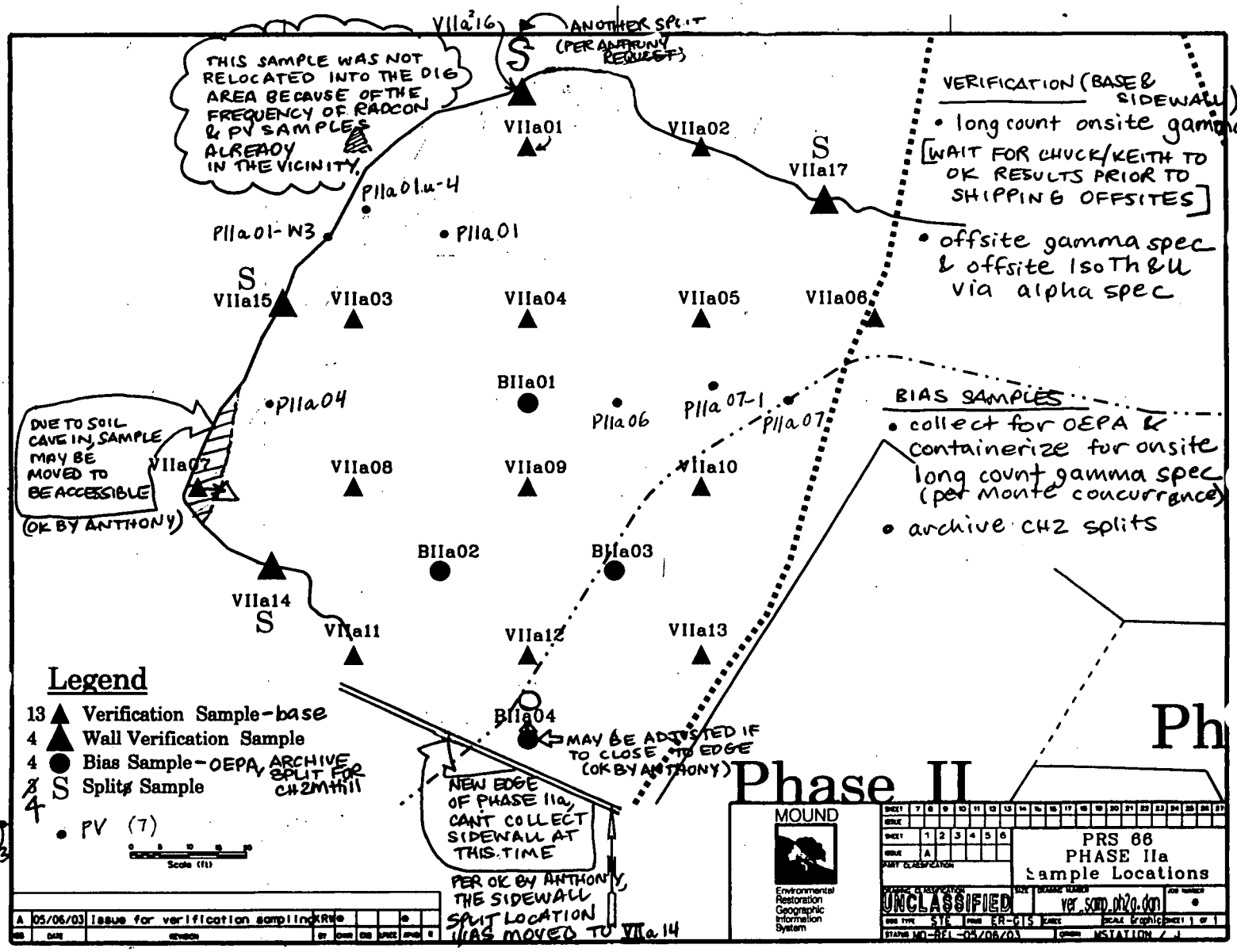
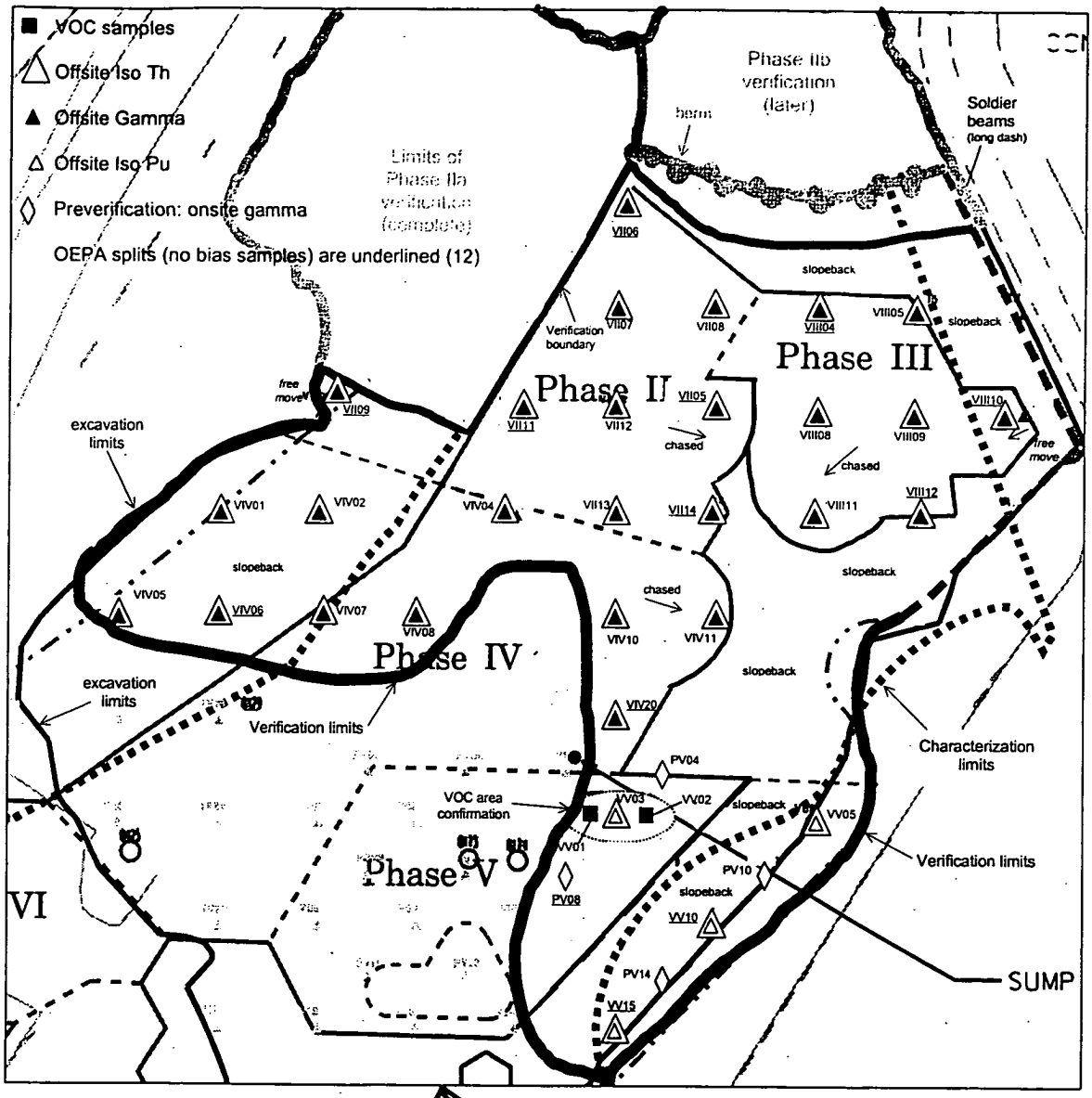


Figure 3: Sample Event 1

Note: This sketch is the Core Team-approved documentation that authorized the sample event.

A14/274



Analyses	#samples	
VOC	2	
Iso Th & Pu	4	offsite
Iso Th & gamma	26	offisite
Total	32	
gamma (PV)	4	onsite

Sample Event #2:
(Phase III & portions of Phases II, IV, & V

-update on 15 Sept 03 & included VII06 back into the sampling event, original flag disappeared and when it was re-located, fell within the verification area.
-update on 16 Sept 03 removed VIV09, VIV17, VIV18, & VIV19 due to a verification boundary change confirmed by RadCon. Confirmation borings will be assessed when surface area they are in is verified.
- Sample Event #2 occurred on 15-17 Sept 03

Final-19 Sept 03

Figure 4: Sample Event 2

Note: This sketch is the Core Team-approved documentation that authorized the sample event.

A15/274

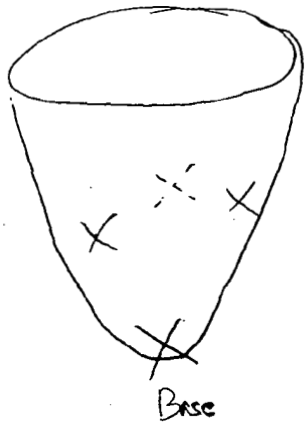
From: "Anthony Campbell" <Anthony Campbell@epa.state.oh.us>
To: <arthkm@doe-md.gov>
Date: 5/12/03 3:59PM
Subject: Fwd: 66 Phase I plan

** High Priority **

Hello Karen.

I hope that you are having a bless day. I left you a message on your voice-mail to discuss this topic. Brian and I have discuss this proposal and would like to see: 4 Per-Verification (PV) instead of 2 PV, (3 sidewalls & 1 base/Method: onsite-alpha), the highest thorium results will be forwarded for offsite alpha spec confirmation. If you have any question/or concerns, you can call me (285-6069) or Brian (285-6468)

Thank You & God Bless
Anthony



4 samples (3 side, 1 base) were collected as shown. The 4 PV (onsite alpha Th) are in App C of the Data Report. The highest result location was forwarded for offsite verification.
23 Jun 5

DUE TO SAFETY CONSIDERATIONS, THE PV LOCATIONS WERE NOT SURVEYED (∴ NOT SHOWN ON FIG. 11) LOCATION (COORDINATES) FOR VIDY WERE APPROXIMATED.
19 July

Figure 5: Sample Event 3

Note: This sketch is the Core Team-approved documentation that authorized the sample event.

A16/274

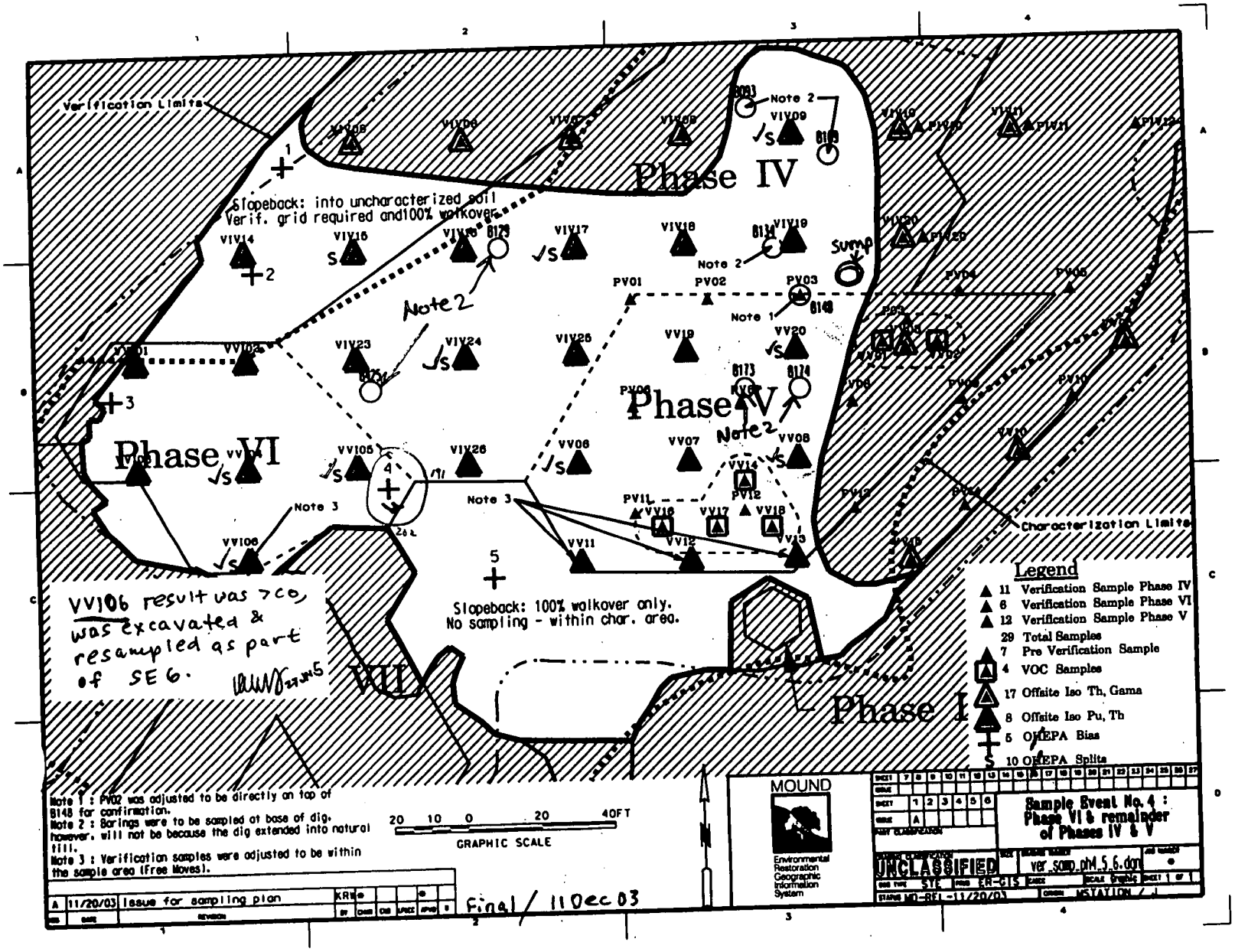
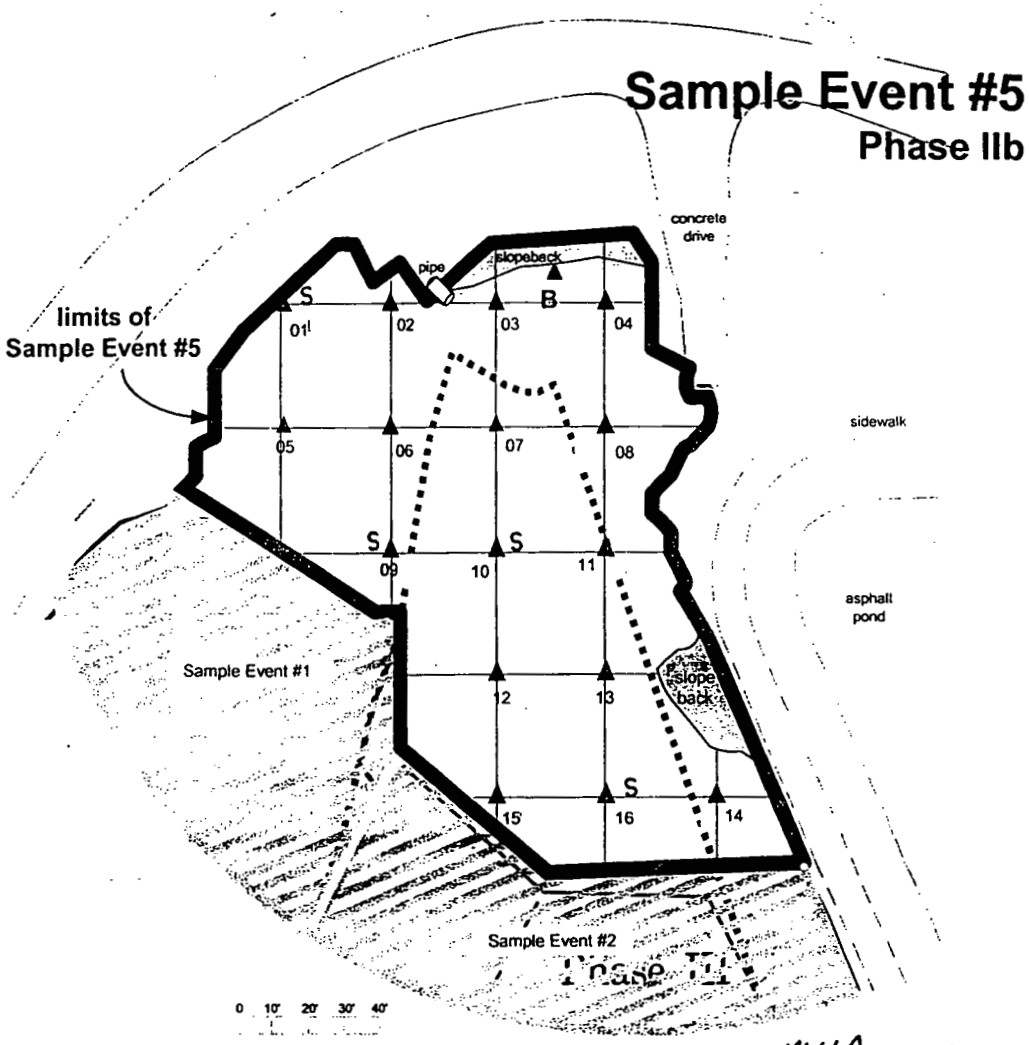


Figure 6: Sample Event 4

Note: This sketch is the Core Team-approved documentation that authorized the sample event.

A17/274



▲ (16) offsite Iso Th, Iso U, & Gamma Spec ← ALL < CO

S (3) OEPA split samples.

B (1) OEPA bias sample.

COPY

notes:

1. All samples within Phase IIb will have the sample ID of VIIb preceding the sample number (i.e., VIIb01).
2. A review of SARs from soil samples collected by RadCon during the excavation process identify the following isotopes at levels greater than CO: U-233, U-238d, Ac-227, Th-232, Ra-226, and Cs-137. Therefore Phase IIb analyses are 100% offsite Iso U, Iso Th, and gamma spec. No other isotope was chased to complete the dig. No Pu-238 was chased so no PV grid used.
3. Grid shown is 30' verification.
4. Location 13 sampled via backhoe bucket.
5. Samples collected by RFW on 29 June 04, shipped on 1 July 04, shipping authorized by K. Arthur & C. Kline.

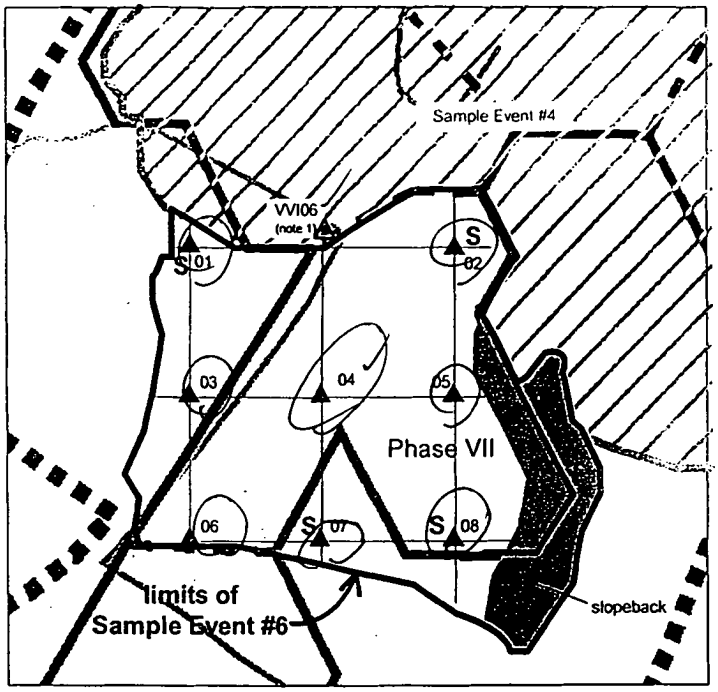
13july4

Figure 7: Sample Event 5

Note: This sketch is the Core Team-approved documentation that authorized the sample event.

A18/274

Sample Event #6
Phase VII + 1 reVer from SE#4



▲ (1) offsite Iso Th & Gamma Spec] ← all results <CO. 19Aug4
▲ (8) offsite Iso Th only
S (4) OEPA split samples. No bias samples requested.

COPY

note 1: this location is a resample of an excavated SE#4 location.

other notes:

1. All samples within Phase VII will have the sample ID of VVIL preceding the sample number (i.e., VVII01).
2. Phase VII COC = Th-232. No other isotope was chased to complete the dig. No Pu-238 was chased so no PV grid used.
3. Grid shown is 30' verification.
4. Locations 04, 07, & 08 sampled via backhoe bucket.
5. Samples collected by RFW on 29 June 04, shipped on 1 July 04 shipping authorized by K. Arthur & C. Kline.

12july4

Figure 8: Sample Event 6

Note: This sketch is the Core Team-approved documentation that authorized the sample event.

A19/274

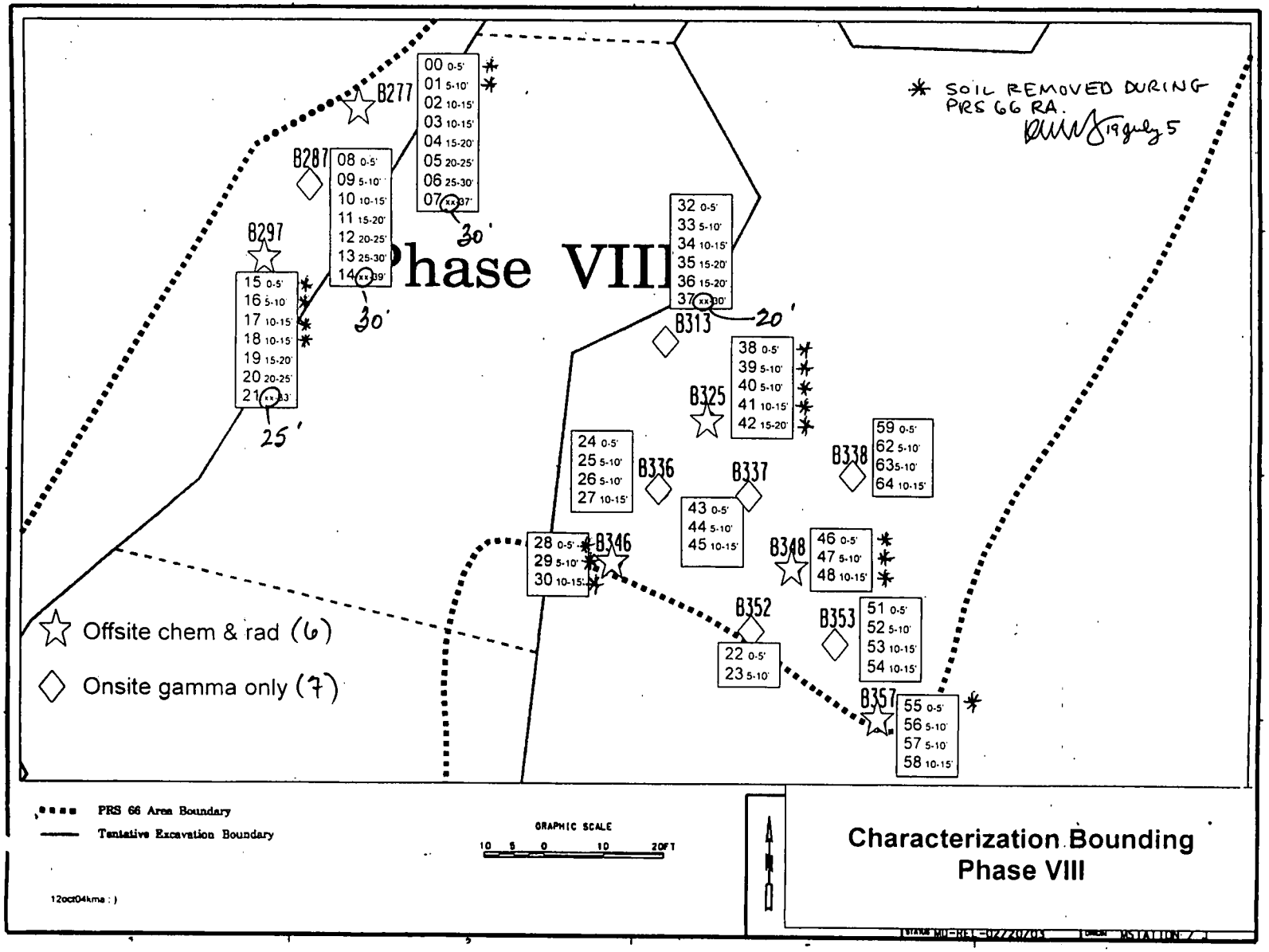


Figure 9: Sample Event 7

Note: This sketch is the Core Team-approved documentation that authorized the sample event.

A20/274

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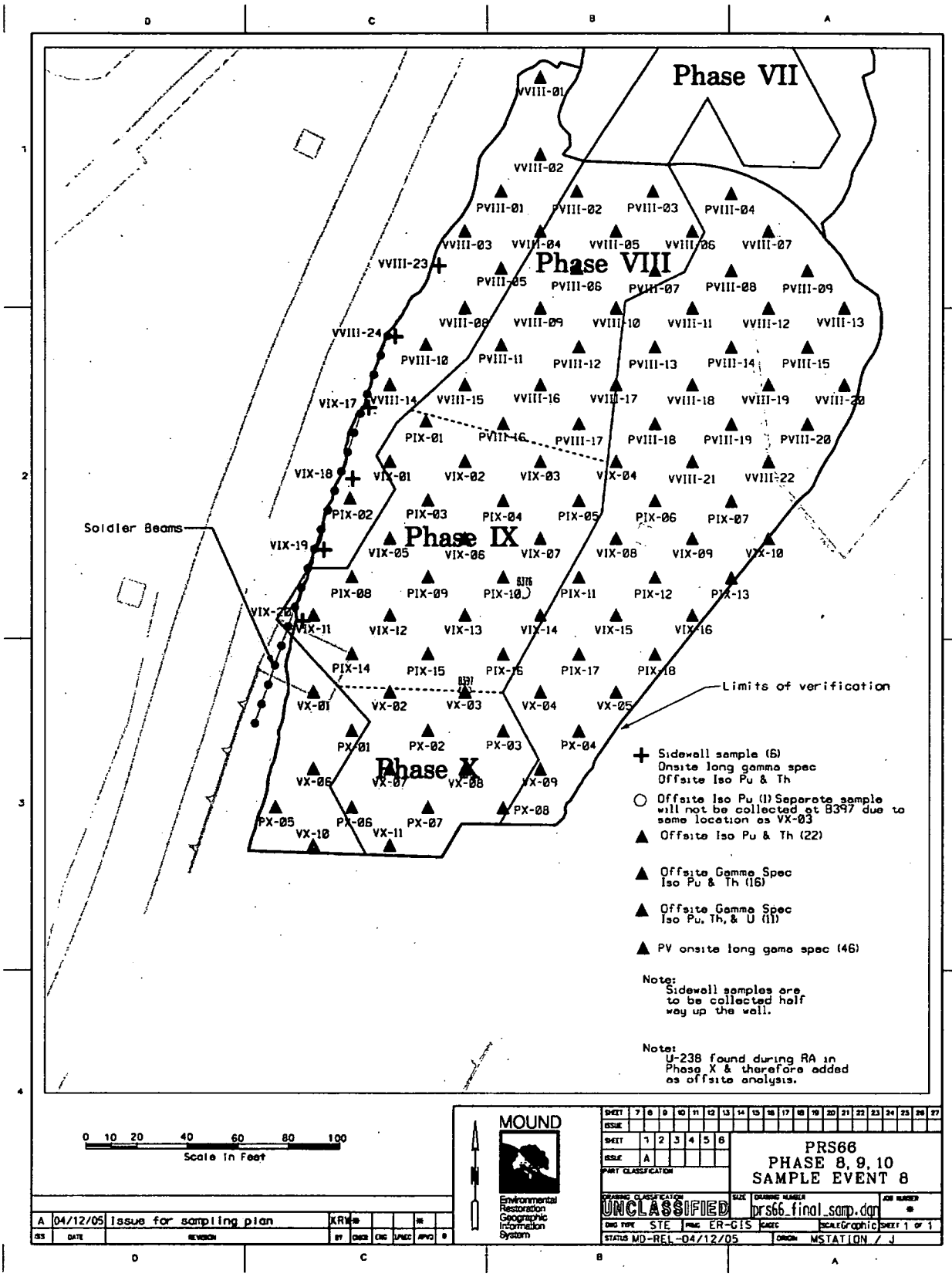

Figure 10: Sample Event 8

Note: this sketch is the Core Team-approved documentation that authorized the sample event

A21/274

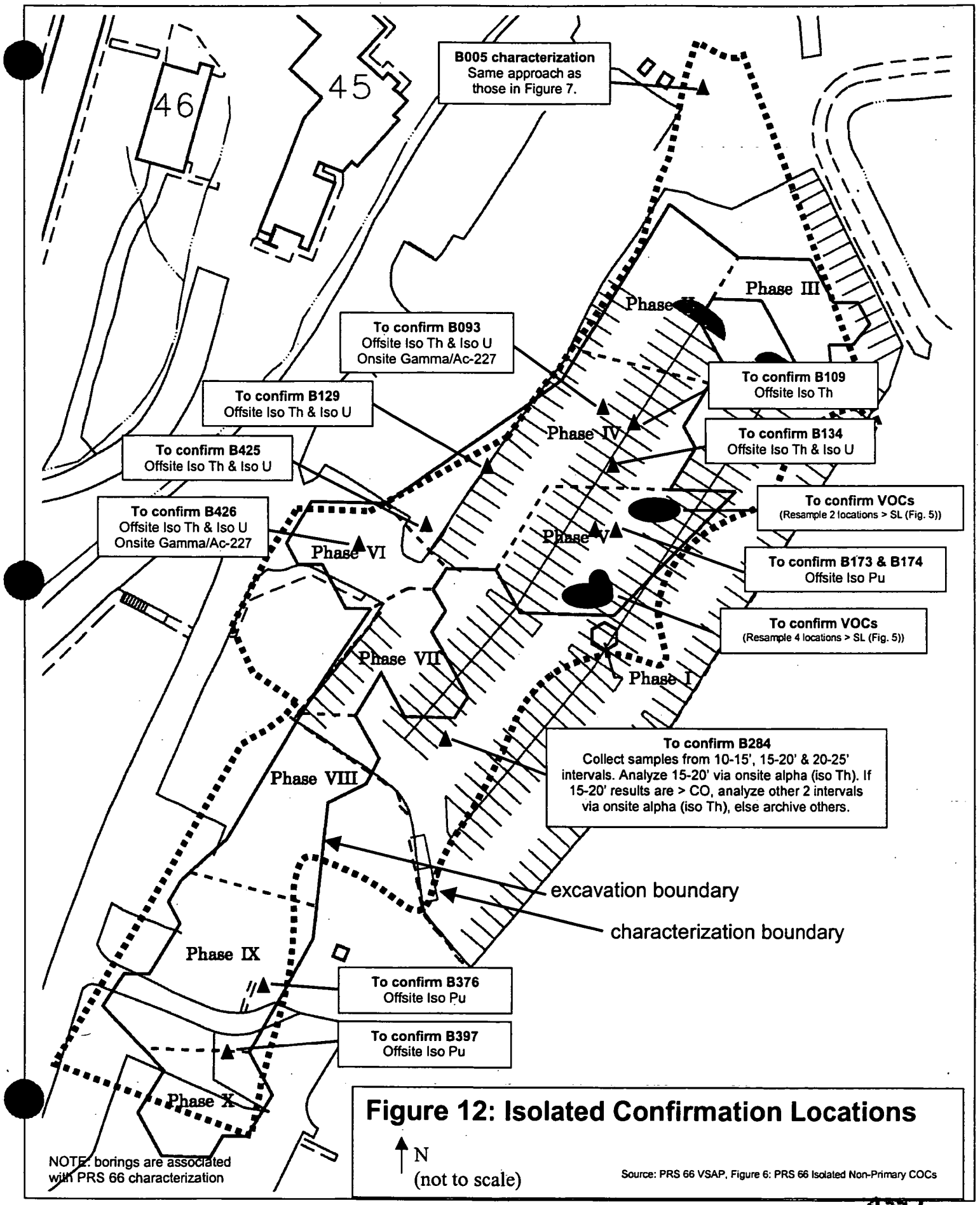

Figure 12: Isolated Confirmation Locations

Source: PRS 66 VSAP, Figure 6: PRS 66 Isolated Non-Primary COCs

APPENDIX B

TABLES

Table 1: Sample Event Summary

Sample Event (SE)	Phases included		Contaminants of Concern (COCs)
1	all of	IIa	Th-232, Ac-227, Cs-137, Ra-226, and U-238*
2	part of	II	Th-232, Ac-227, Cs-137, and Ra-226
	all of	III	Th-232 and Ac-227
	part of	IV	Th-232, Ac-227, and Ra-226
	part of	V	Th-232 and Pu-238 [isolated VOCs]
3	all of	I	Th-230
4	rest of	IV	Th-232, Ac-227, and Ra-226
	rest of	V	Th-232 and Pu-238
	all of	VI	Th-232 and Ac-227
5	all of**	IIb	Th-232, Ac-227, Cs-137, Ra-226, and U-238*
6	all of	VII	Th-232
7	all of	char	Th-232, Pu-238, and gamma [VOCs, SVOCs, Metals]
8	all of	VIII	Th-232 and Pu-238
	all of	IX	Th-232, Pu-238, Ac-227, and Ra-226
	all of	X	Th-232, Pu-238, Cs-137, and Ra-226

*U-238 was discovered during Phase IIa and Phase IIb soil excavation, and was added as a COC.
** all of Phase IIb is the rest of Phase II

Table 2: Results for Sample Event 1 (pCi/g)

(Includes all of Phase IIa)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIa01	20030508	Actinium-227	4.6	0.387	0.387		U	1465950.47	599248.05
VIIa01	20030508	Americium-241	63	0.216	0.216		U	1465950.47	599248.05
VIIa01	20030508	Bismuth-207	1.2	0.0577	0.0577		U	1465950.47	599248.05
VIIa01	20030508	Bismuth-210M	8.3	0.0741	0.0741		U	1465950.47	599248.05
VIIa01	20030508	Cesium-137	3.8	0.0717	0.0717		U	1465950.47	599248.05
VIIa01	20030508	Cobalt-60	0.7	0.0715	0.0715		U	1465950.47	599248.05
VIIa01	20030508	Potassium-40	47.8	19.2	0.663			1465950.47	599248.05
VIIa01	20030508	Radium-226	2.9	0.639	0.115			1465950.47	599248.05
VIIa01	20030508	Thorium-228	2.6	0.515	0.0173			1465950.47	599248.05
VIIa01	20030508	Thorium-230	2.8	0.372	0.00563			1465950.47	599248.05
VIIa01	20030508	Thorium-232	2.1	0.38	0.00563			1465950.47	599248.05
VIIa01	20030508	Uranium-234	2.0	0.268	0.0353			1465950.47	599248.05
VIIa01	20030508	Uranium-235	3.2	0.0353	0.0353		U	1465950.47	599248.05
VIIa01	20030508	Uranium-238	2.2	0.302	0.0353			1465950.47	599248.05
VIIa02	20030507	Actinium-227	4.6	1.51	0.478			1465980.57	599247.95
VIIa02	20030507	Actinium-227	4.6	0.32	0.32		U	1465980.57	599247.95
VIIa02	20030507	Americium-241	63	0.208	0.208		U	1465980.57	599247.95
VIIa02	20030507	Americium-241	63	0.167	0.167		U	1465980.57	599247.95
VIIa02	20030507	Bismuth-207	1.2	0.0451	0.0451		U	1465980.57	599247.95
VIIa02	20030507	Bismuth-207	1.2	0.0406	0.0406		U	1465980.57	599247.95
VIIa02	20030507	Bismuth-210M	8.3	0.0645	0.0645		U	1465980.57	599247.95
VIIa02	20030507	Bismuth-210M	8.3	0.0625	0.0625		U	1465980.57	599247.95
VIIa02	20030507	Cesium-137	3.8	0.0581	0.0581		U	1465980.57	599247.95
VIIa02	20030507	Cesium-137	3.8	0.0499	0.0499		U	1465980.57	599247.95
VIIa02	20030507	Cobalt-60	0.7	0.0618	0.0618		U	1465980.57	599247.95
VIIa02	20030507	Cobalt-60	0.7	0.0535	0.0535		U	1465980.57	599247.95
VIIa02	20030507	Potassium-40	47.8	10.2	0.433			1465980.57	599247.95
VIIa02	20030507	Potassium-40	47.8	11.1	0.576			1465980.57	599247.95
VIIa02	20030507	Radium-226	2.9	0.637	0.189			1465980.57	599247.95
VIIa02	20030507	Radium-226	2.9	0.63	0.218			1465980.57	599247.95
VIIa02	20030507	Thorium-228	2.6	0.416	0.0128			1465980.57	599247.95
VIIa02	20030507	Thorium-228	2.6	0.377	0.013			1465980.57	599247.95
VIIa02	20030507	Thorium-230	2.8	0.413	0.0126			1465980.57	599247.95
VIIa02	20030507	Thorium-230	2.8	0.42	0.00578			1465980.57	599247.95
VIIa02	20030507	Thorium-232	2.1	0.631	0.0126			1465980.57	599247.95
VIIa02	20030507	Thorium-232	2.1	0.329	0.0128	J		1465980.57	599247.95
VIIa02	20030507	Uranium-234	2.0	0.292	0.0195			1465980.57	599247.95
VIIa02	20030507	Uranium-234	2.0	0.235	0.0108			1465980.57	599247.95
VIIa02	20030507	Uranium-235	3.2	0.0163	0.011		J	1465980.57	599247.95
VIIa02	20030507	Uranium-235	3.2	0.0108	0.0108		U	1465980.57	599247.95
VIIa02	20030507	Uranium-238	2.2	0.334	0.011			1465980.57	599247.95
VIIa02	20030507	Uranium-238	2.2	0.31	0.0191			1465980.57	599247.95
VIIa03	20030508	Actinium-227	4.6	0.514	0.514		U	1465920.47	599218.05
VIIa03	20030508	Americium-241	63	0.455	0.455		U	1465920.47	599218.05
VIIa03	20030508	Bismuth-207	1.2	0.0687	0.0687		U	1465920.47	599218.05
VIIa03	20030508	Bismuth-210M	8.3	0.108	0.108		U	1465920.47	599218.05
VIIa03	20030508	Cesium-137	3.8	0.093	0.093		U	1465920.47	599218.05
VIIa03	20030508	Cobalt-60	0.7	0.115	0.115		U	1465920.47	599218.05
VIIa03	20030508	Potassium-40	47.8	35.2	0.717			1465920.47	599218.05

Table 2: Results for Sample Event 1 (pCi/g)

(Includes all of Phase IIa)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIa03	20030508	Radium-226	2.9	0.609	0.324			1465920.47	599218.05
VIIa03	20030508	Thorium-228	2.6	0.705	0.0131			1465920.47	599218.05
VIIa03	20030508	Thorium-230	2.8	0.315	0.00416			1465920.47	599218.05
VIIa03	20030508	Thorium-232	2.1	0.582	0.00416			1465920.47	599218.05
VIIa03	20030508	Uranium-234	2.0	0.273	0.0128			1465920.47	599218.05
VIIa03	20030508	Uranium-235	3.2	0.0235	0.0128		J	1465920.47	599218.05
VIIa03	20030508	Uranium-238	2.2	0.184	0.0128			1465920.47	599218.05
VIIa04	20030508	Actinium-227	4.6	1.98	0.682			1465950.47	599218.05
VIIa04	20030508	Americium-241	63	0.691	0.691		U	1465950.47	599218.05
VIIa04	20030508	Bismuth-207	1.2	0.0621	0.0621		U	1465950.47	599218.05
VIIa04	20030508	Bismuth-210M	8.3	0.0937	0.0937		U	1465950.47	599218.05
VIIa04	20030508	Cesium-137	3.8	0.0791	0.0791		U	1465950.47	599218.05
VIIa04	20030508	Cobalt-60	0.7	0.0753	0.0753		U	1465950.47	599218.05
VIIa04	20030508	Potassium-40	47.8	21.2	0.708			1465950.47	599218.05
VIIa04	20030508	Radium-226	2.9	0.519	0.249			1465950.47	599218.05
VIIa04	20030508	Thorium-228	2.6	0.525	0.0138			1465950.47	599218.05
VIIa04	20030508	Thorium-230	2.8	0.233	0.0136			1465950.47	599218.05
VIIa04	20030508	Thorium-232	2.1	0.472	0.0044			1465950.47	599218.05
VIIa04	20030508	Uranium-234	2.0	0.478	0.0366			1465950.47	599218.05
VIIa04	20030508	Uranium-235	3.2	0.0297	0.0297		U	1465950.47	599218.05
VIIa04	20030508	Uranium-238	2.2	0.374	0.0327			1465950.47	599218.05
VIIa05	20030507	Actinium-227	4.6	1.63	0.603			1465980.47	599218.05
VIIa05	20030507	Americium-241	63	0.625	0.625		U	1465980.47	599218.05
VIIa05	20030507	Bismuth-207	1.2	0.0581	0.0581		U	1465980.47	599218.05
VIIa05	20030507	Bismuth-210M	8.3	0.0856	0.0856		U	1465980.47	599218.05
VIIa05	20030507	Cesium-137	3.8	0.0649	0.0649		U	1465980.47	599218.05
VIIa05	20030507	Cobalt-60	0.7	0.0593	0.0593		U	1465980.47	599218.05
VIIa05	20030507	Potassium-40	47.8	17.9	0.545			1465980.47	599218.05
VIIa05	20030507	Radium-226	2.9	0.645	0.244			1465980.47	599218.05
VIIa05	20030507	Thorium-228	2.6	0.405	0.0115			1465980.47	599218.05
VIIa05	20030507	Thorium-230	2.8	0.35	0.0113			1465980.47	599218.05
VIIa05	20030507	Thorium-232	2.1	0.315	0.0113			1465980.47	599218.05
VIIa05	20030507	Uranium-234	2.0	0.29	0.0239			1465980.47	599218.05
VIIa05	20030507	Uranium-235	3.2	0.0226	0.0226		U	1465980.47	599218.05
VIIa05	20030507	Uranium-238	2.2	0.294	0.0272			1465980.47	599218.05
VIIa06	20030507	Actinium-227	4.6	1.7	0.63			1466010.47	599218.05
VIIa06	20030507	Americium-241	63	0.702	0.702		U	1466010.47	599218.05
VIIa06	20030507	Bismuth-207	1.2	0.0589	0.0589		U	1466010.47	599218.05
VIIa06	20030507	Bismuth-210M	8.3	0.0934	0.0934		U	1466010.47	599218.05
VIIa06	20030507	Cesium-137	3.8	0.0864	0.0864		U	1466010.47	599218.05
VIIa06	20030507	Cobalt-60	0.7	0.07	0.07		U	1466010.47	599218.05
VIIa06	20030507	Potassium-40	47.8	12.3	0.521			1466010.47	599218.05
VIIa06	20030507	Radium-226	2.9	0.601	0.239			1466010.47	599218.05
VIIa06	20030507	Thorium-228	2.6	0.442	0.0142			1466010.47	599218.05
VIIa06	20030507	Thorium-230	2.8	0.486	0.00451			1466010.47	599218.05
VIIa06	20030507	Thorium-232	2.1	0.417	0.00451			1466010.47	599218.05
VIIa06	20030507	Uranium-234	2.0	0.335	0.0322			1466010.47	599218.05
VIIa06	20030507	Uranium-235	3.2	0.0236	0.0236		U	1466010.47	599218.05
VIIa06	20030507	Uranium-238	2.2	0.475	0.0292			1466010.47	599218.05

Table 2: Results for Sample Event 1 (pCi/g)

(Includes all of Phase IIa)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIa07	20030508	Actinium-227	4.6	0.5	0.5		U	1465893.58	599188.04
VIIa07	20030508	Americium-241	63	0.259	0.259		U	1465893.58	599188.04
VIIa07	20030508	Bismuth-207	1.2	0.0628	0.0628		U	1465893.58	599188.04
VIIa07	20030508	Bismuth-210M	8.3	0.0953	0.0953		U	1465893.58	599188.04
VIIa07	20030508	Cesium-137	3.8	0.0809	0.0809		U	1465893.58	599188.04
VIIa07	20030508	Cobalt-60	0.7	0.0812	0.0812		U	1465893.58	599188.04
VIIa07	20030508	Potassium-40	47.8	33.1	0.791			1465893.58	599188.04
VIIa07	20030508	Radium-226	2.9	0.845	0.154			1465893.58	599188.04
VIIa07	20030508	Thorium-228	2.6	0.694	0.0119			1465893.58	599188.04
VIIa07	20030508	Thorium-230	2.8	0.35	0.0118			1465893.58	599188.04
VIIa07	20030508	Thorium-232	2.1	0.528	0.0118			1465893.58	599188.04
VIIa07	20030508	Uranium-234	2.0	0.213	0.0365			1465893.58	599188.04
VIIa07	20030508	Uranium-235	3.2	0.0258	0.0258		U	1465893.58	599188.04
VIIa07	20030508	Uranium-238	2.2	0.157	0.0351			1465893.58	599188.04
VIIa08	20030508	Actinium-227	4.6	0.441	0.441		U	1465920.47	599188.05
VIIa08	20030508	Americium-241	63	0.116	0.116		U	1465920.47	599188.05
VIIa08	20030508	Bismuth-207	1.2	0.0611	0.0611		U	1465920.47	599188.05
VIIa08	20030508	Bismuth-210M	8.3	0.0897	0.0897		U	1465920.47	599188.05
VIIa08	20030508	Cesium-137	3.8	0.0775	0.0775		U	1465920.47	599188.05
VIIa08	20030508	Cobalt-60	0.7	0.0814	0.0814		U	1465920.47	599188.05
VIIa08	20030508	Potassium-40	47.8	24	0.543			1465920.47	599188.05
VIIa08	20030508	Radium-226	2.9	0.815	0.268			1465920.47	599188.05
VIIa08	20030508	Thorium-228	2.6	0.579	0.00594			1465920.47	599188.05
VIIa08	20030508	Thorium-230	2.8	0.375	0.00587			1465920.47	599188.05
VIIa08	20030508	Thorium-232	2.1	0.594	0.013			1465920.47	599188.05
VIIa08	20030508	Uranium-234	2.0	0.335	0.0178			1465920.47	599188.05
VIIa08	20030508	Uranium-235	3.2	0.0112	0.0101		J	1465920.47	599188.05
VIIa08	20030508	Uranium-238	2.2	0.22	0.0101			1465920.47	599188.05
VIIa09	20030507	Actinium-227	4.6	0.438	0.438		U	1465950.47	599188.05
VIIa09	20030507	Americium-241	63	0.2	0.2		U	1465950.47	599188.05
VIIa09	20030507	Bismuth-207	1.2	0.0531	0.0531		U	1465950.47	599188.05
VIIa09	20030507	Bismuth-210M	8.3	0.0803	0.0803		U	1465950.47	599188.05
VIIa09	20030507	Cesium-137	3.8	0.0887	0.0887		U	1465950.47	599188.05
VIIa09	20030507	Cobalt-60	0.7	0.0802	0.0802		U	1465950.47	599188.05
VIIa09	20030507	Potassium-40	47.8	29.2	0.575			1465950.47	599188.05
VIIa09	20030507	Radium-226	2.9	0.687	0.263			1465950.47	599188.05
VIIa09	20030507	Thorium-228	2.6	0.742	0.0177			1465950.47	599188.05
VIIa09	20030507	Thorium-230	2.8	0.302	0.00971			1465950.47	599188.05
VIIa09	20030507	Thorium-232	2.1	0.758	0.00549			1465950.47	599188.05
VIIa09	20030507	Uranium-234	2.0	0.302	0.0193			1465950.47	599188.05
VIIa09	20030507	Uranium-235	3.2	0.0193	0.0193		U	1465950.47	599188.05
VIIa09	20030507	Uranium-238	2.2	0.153	0.0219			1465950.47	599188.05
VIIa10	20030507	Actinium-227	4.6	0.454	0.454		U	1465980.47	599188.05
VIIa10	20030507	Americium-241	63	0.468	0.468		U	1465980.47	599188.05
VIIa10	20030507	Bismuth-207	1.2	0.0722	0.0722		U	1465980.47	599188.05
VIIa10	20030507	Bismuth-210M	8.3	0.103	0.103		U	1465980.47	599188.05
VIIa10	20030507	Cesium-137	3.8	0.0739	0.0739		U	1465980.47	599188.05
VIIa10	20030507	Cobalt-60	0.7	0.0905	0.0905		U	1465980.47	599188.05
VIIa10	20030507	Potassium-40	47.8	35.6	0.585			1465980.47	599188.05

Table 2: Results for Sample Event 1 (pCi/g)

(Includes all of Phase IIa)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIa10	20030507	Radium-226	2.9	0.826	0.151			1465980.47	599188.05
VIIa10	20030507	Thorium-228	2.6	0.179	0.0134			1465980.47	599188.05
VIIa10	20030507	Thorium-230	2.8	0.0636	0.00942		J	1465980.47	599188.05
VIIa10	20030507	Thorium-232	2.1	0.148	0.00426			1465980.47	599188.05
VIIa10	20030507	Uranium-234	2.0	0.411	0.0178			1465980.47	599188.05
VIIa10	20030507	Uranium-235	3.2	0.0221	0.0221		U	1465980.47	599188.05
VIIa10	20030507	Uranium-238	2.2	0.208	0.0178			1465980.47	599188.05
VIIa11	20030508	Actinium-227	4.6	0.316	0.316		U	1465920.47	599158.05
VIIa11	20030508	Americium-241	63	0.15	0.15		U	1465920.47	599158.05
VIIa11	20030508	Bismuth-207	1.2	0.0443	0.0443		U	1465920.47	599158.05
VIIa11	20030508	Bismuth-210M	8.3	0.0602	0.0602		U	1465920.47	599158.05
VIIa11	20030508	Cesium-137	3.8	0.0588	0.0588		U	1465920.47	599158.05
VIIa11	20030508	Cobalt-60	0.7	0.0681	0.0681		U	1465920.47	599158.05
VIIa11	20030508	Potassium-40	47.8	14.1	0.505			1465920.47	599158.05
VIIa11	20030508	Radium-226	2.9	0.74	0.091			1465920.47	599158.05
VIIa11	20030508	Thorium-228	2.6	0.287	0.0122			1465920.47	599158.05
VIIa11	20030508	Thorium-230	2.8	0.293	0.0121			1465920.47	599158.05
VIIa11	20030508	Thorium-232	2.1	0.259	0.0121			1465920.47	599158.05
VIIa11	20030508	Uranium-234	2.0	0.31	0.012			1465920.47	599158.05
VIIa11	20030508	Uranium-235	3.2	0.0133	0.012		J	1465920.47	599158.05
VIIa11	20030508	Uranium-238	2.2	0.398	0.012			1465920.47	599158.05
VIIa12	20030507	Actinium-227	4.6	0.451	0.451		U	1465950.47	599158.05
VIIa12	20030507	Americium-241	63	0.131	0.131		U	1465950.47	599158.05
VIIa12	20030507	Bismuth-207	1.2	0.0568	0.0568		U	1465950.47	599158.05
VIIa12	20030507	Bismuth-210M	8.3	0.094	0.094		U	1465950.47	599158.05
VIIa12	20030507	Cesium-137	3.8	0.0804	0.0804		U	1465950.47	599158.05
VIIa12	20030507	Cobalt-60	0.7	0.0749	0.0749		U	1465950.47	599158.05
VIIa12	20030507	Potassium-40	47.8	26.9	0.427			1465950.47	599158.05
VIIa12	20030507	Radium-226	2.9	0.681	0.144			1465950.47	599158.05
VIIa12	20030507	Thorium-228	2.6	0.706	0.00404			1465950.47	599158.05
VIIa12	20030507	Thorium-230	2.8	0.346	0.0108			1465950.47	599158.05
VIIa12	20030507	Thorium-232	2.1	0.549	0.00882			1465950.47	599158.05
VIIa12	20030507	Uranium-234	2.0	0.328	0.0255			1465950.47	599158.05
VIIa12	20030507	Uranium-235	3.2	0.0189	0.0189		U	1465950.47	599158.05
VIIa12	20030507	Uranium-238	2.2	0.167	0.0255			1465950.47	599158.05
VIIa13	20030507	Actinium-227	4.6	0.451	0.451		U	1465980.47	599158.05
VIIa13	20030507	Actinium-227	4.6	0.407	0.407		U	1465980.47	599158.05
VIIa13	20030507	Americium-241	63	0.128	0.128		U	1465980.47	599158.05
VIIa13	20030507	Americium-241	63	0.408	0.408		U	1465980.47	599158.05
VIIa13	20030507	Bismuth-207	1.2	0.0637	0.0637		U	1465980.47	599158.05
VIIa13	20030507	Bismuth-207	1.2	0.0633	0.0633		U	1465980.47	599158.05
VIIa13	20030507	Bismuth-210M	8.3	0.0968	0.0968		U	1465980.47	599158.05
VIIa13	20030507	Bismuth-210M	8.3	0.0884	0.0884		U	1465980.47	599158.05
VIIa13	20030507	Cesium-137	3.8	0.0811	0.0811		U	1465980.47	599158.05
VIIa13	20030507	Cesium-137	3.8	0.0649	0.0649		U	1465980.47	599158.05
VIIa13	20030507	Cobalt-60	0.7	0.0778	0.0778		U	1465980.47	599158.05
VIIa13	20030507	Cobalt-60	0.7	0.0931	0.0931		U	1465980.47	599158.05
VIIa13	20030507	Potassium-40	47.8	32.1	0.715			1465980.47	599158.05
VIIa13	20030507	Potassium-40	47.8	34.9	0.493			1465980.47	599158.05

Table 2: Results for Sample Event 1 (pCi/g)

(Includes all of Phase IIa)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIa13	20030507	Radium-226	2.9	0.779	0.146			1465980.47	599158.05
VIIa13	20030507	Radium-226	2.9	0.687	0.276			1465980.47	599158.05
VIIa13	20030507	Thorium-228	2.6	0.691	0.0133			1465980.47	599158.05
VIIa13	20030507	Thorium-228	2.6	0.764	0.0223			1465980.47	599158.05
VIIa13	20030507	Thorium-230	2.8	0.278	0.0131			1465980.47	599158.05
VIIa13	20030507	Thorium-230	2.8	0.31	0.00621			1465980.47	599158.05
VIIa13	20030507	Thorium-232	2.1	0.529	0.00423			1465980.47	599158.05
VIIa13	20030507	Thorium-232	2.1	0.557	0.00621			1465980.47	599158.05
VIIa13	20030507	Uranium-234	2.0	0.34	0.0115			1465980.47	599158.05
VIIa13	20030507	Uranium-234	2.0	0.329	0.018			1465980.47	599158.05
VIIa13	20030507	Uranium-235	3.2	0.0115	0.0115		U	1465980.47	599158.05
VIIa13	20030507	Uranium-235	3.2	0.0102	0.0102		U	1465980.47	599158.05
VIIa13	20030507	Uranium-238	2.2	0.115	0.0115			1465980.47	599158.05
VIIa13	20030507	Uranium-238	2.2	0.143	0.0102			1465980.47	599158.05
VIIa14	20030507	Actinium-227	4.6	0.793	0.525		J	1465906.36	599174.09
VIIa14	20030507	Americium-241	63	0.598	0.598		U	1465906.36	599174.09
VIIa14	20030507	Bismuth-207	1.2	0.0559	0.0559		U	1465906.36	599174.09
VIIa14	20030507	Bismuth-210M	8.3	0.0849	0.0849		U	1465906.36	599174.09
VIIa14	20030507	Cesium-137	3.8	0.0715	0.0715		U	1465906.36	599174.09
VIIa14	20030507	Cobalt-60	0.7	0.0637	0.0637		U	1465906.36	599174.09
VIIa14	20030507	Potassium-40	47.8	13.1	0.483			1465906.36	599174.09
VIIa14	20030507	Radium-226	2.9	0.638	0.254			1465906.36	599174.09
VIIa14	20030507	Thorium-228	2.6	0.293	0.0184			1465906.36	599174.09
VIIa14	20030507	Thorium-230	2.8	0.477	0.0107			1465906.36	599174.09
VIIa14	20030507	Thorium-232	2.1	0.247	0.0151			1465906.36	599174.09
VIIa14	20030507	Uranium-234	2.0	0.42	0.114			1465906.36	599174.09
VIIa14	20030507	Uranium-235	3.2	0.114	0.114		U	1465906.36	599174.09
VIIa14	20030507	Uranium-238	2.2	0.171	0.114			1465906.36	599174.09
VIIa15	20030507	Actinium-227	4.6	0.424	0.424		U	1465908.24	599220.79
VIIa15	20030507	Americium-241	63	0.117	0.117		U	1465908.24	599220.79
VIIa15	20030507	Bismuth-207	1.2	0.0578	0.0578		U	1465908.24	599220.79
VIIa15	20030507	Bismuth-210M	8.3	0.0879	0.0879		U	1465908.24	599220.79
VIIa15	20030507	Cesium-137	3.8	0.0891	0.0891		U	1465908.24	599220.79
VIIa15	20030507	Cobalt-60	0.7	0.0714	0.0714		U	1465908.24	599220.79
VIIa15	20030507	Potassium-40	47.8	20.2	0.5			1465908.24	599220.79
VIIa15	20030507	Radium-226	2.9	0.668	0.263			1465908.24	599220.79
VIIa15	20030507	Thorium-228	2.6	0.639	0.0179			1465908.24	599220.79
VIIa15	20030507	Thorium-230	2.8	0.471	0.00982			1465908.24	599220.79
VIIa15	20030507	Thorium-232	2.1	0.453	0.00556			1465908.24	599220.79
VIIa15	20030507	Uranium-234	2.0	0.302	0.0272			1465908.24	599220.79
VIIa15	20030507	Uranium-235	3.2	0.025	0.025		U	1465908.24	599220.79
VIIa15	20030507	Uranium-238	2.2	0.248	0.0224			1465908.24	599220.79
VIIa16	20030507	Actinium-227	4.6	0.405	0.405		U	1465956.63	599258.8
VIIa16	20030507	Americium-241	63	0.383	0.383		U	1465956.63	599258.8
VIIa16	20030507	Bismuth-207	1.2	0.0565	0.0565		U	1465956.63	599258.8
VIIa16	20030507	Bismuth-210M	8.3	0.0843	0.0843		U	1465956.63	599258.8
VIIa16	20030507	Cesium-137	3.8	0.0788	0.0788		U	1465956.63	599258.8
VIIa16	20030507	Cobalt-60	0.7	0.0742	0.0742		U	1465956.63	599258.8
VIIa16	20030507	Potassium-40	47.8	16.9	0.469			1465956.63	599258.8

Table 2: Results for Sample Event 1 (pCi/g)

(Includes all of Phase IIa)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIa16	20030507	Radium-226	2.9	0.816	0.296			1465956.63	599258.8
VIIa16	20030507	Thorium-228	2.6	0.458	0.0162			1465956.63	599258.8
VIIa16	20030507	Thorium-230	2.8	0.361	0.00529			1465956.63	599258.8
VIIa16	20030507	Thorium-232	2.1	0.42	0.00529			1465956.63	599258.8
VIIa16	20030507	Uranium-234	2.0	0.233	0.0283			1465956.63	599258.8
VIIa16	20030507	Uranium-235	3.2	0.0269	0.0269		U	1465956.63	599258.8
VIIa16	20030507	Uranium-238	2.2	0.211	0.0309			1465956.63	599258.8
VIIa17	20030507	Actinium-227	4.6	0.357	0.357		U	1466001.79	599238.67
VIIa17	20030507	Americium-241	63	0.172	0.172		U	1466001.79	599238.67
VIIa17	20030507	Bismuth-207	1.2	0.0472	0.0472		U	1466001.79	599238.67
VIIa17	20030507	Bismuth-210M	8.3	0.0656	0.0656		U	1466001.79	599238.67
VIIa17	20030507	Cesium-137	3.8	0.0511	0.0511		U	1466001.79	599238.67
VIIa17	20030507	Cobalt-60	0.7	0.0628	0.0628		U	1466001.79	599238.67
VIIa17	20030507	Potassium-40	47.8	10.7	0.563			1466001.79	599238.67
VIIa17	20030507	Radium-226	2.9	0.657	0.112			1466001.79	599238.67
VIIa17	20030507	Thorium-228	2.6	0.273	0.0218			1466001.79	599238.67
VIIa17	20030507	Thorium-230	2.8	0.4	0.00747			1466001.79	599238.67
VIIa17	20030507	Thorium-232	2.1	0.259	0.0132			1466001.79	599238.67
VIIa17	20030507	Uranium-234	2.0	0.322	0.01			1466001.79	599238.67
VIIa17	20030507	Uranium-235	3.2	0.01	0.01		U	1466001.79	599238.67
VIIa17	20030507	Uranium-238	2.2	0.333	0.01			1466001.79	599238.67

U = not detected

J = estimated

CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VII05	20030915	Actinium-227	4.6	0.451	0.451	pCi/g		U	1466040.47	599128.05
VII05	20030915	Americium-241	63	0.0939	0.0939	pCi/g		U	1466040.47	599128.05
VII05	20030915	Bismuth-207	1.2	0.0645	0.0645	pCi/g		U	1466040.47	599128.05
VII05	20030915	Bismuth-210M	8.3	0.0966	0.0966	pCi/g		U	1466040.47	599128.05
VII05	20030915	Cesium-137	3.8	0.0896	0.0896	pCi/g		U	1466040.47	599128.05
VII05	20030915	Cobalt-60	0.7	0.0997	0.0997	pCi/g		U	1466040.47	599128.05
VII05	20030915	Potassium-40	47.8	13.3	0.725	pCi/g			1466040.47	599128.05
VII05	20030915	Radium-226	2.9	0.957	0.157	pCi/g			1466040.47	599128.05
VII05	20030915	Radium-228	2.1	0.765	0.498	pCi/g			1466040.47	599128.05
VII05	20030915	Thorium-228	2.6	0.78	0.0146	pCi/g			1466040.47	599128.05
VII05	20030915	Thorium-230	2.8	0.645	0.0144	pCi/g			1466040.47	599128.05
VII05	20030915	Thorium-232	2.1	0.73	0.00649	pCi/g			1466040.47	599128.05
VII06	20030915	Actinium-227	4.6	0.335	0.335	pCi/g		U	1466010.47	599188.05
VII06	20030915	Americium-241	63	0.164	0.164	pCi/g		U	1466010.47	599188.05
VII06	20030915	Bismuth-207	1.2	0.0521	0.0521	pCi/g		U	1466010.47	599188.05
VII06	20030915	Bismuth-210M	8.3	0.0746	0.0746	pCi/g		U	1466010.47	599188.05
VII06	20030915	Cesium-137	3.8	0.0671	0.0671	pCi/g		U	1466010.47	599188.05
VII06	20030915	Cobalt-60	0.7	0.0845	0.0845	pCi/g		U	1466010.47	599188.05
VII06	20030915	Potassium-40	47.8	21.5	0.703	pCi/g			1466010.47	599188.05
VII06	20030915	Radium-226	2.9	0.561	0.243	pCi/g	J+		1466010.47	599188.05
VII06	20030915	Radium-228	2.1	0.862	0.267	pCi/g			1466010.47	599188.05
VII06	20030915	Thorium-228	2.6	1.13	0.0135	pCi/g			1466010.47	599188.05
VII06	20030915	Thorium-230	2.8	0.438	0.0112	pCi/g			1466010.47	599188.05
VII06	20030915	Thorium-232	2.1	0.88	0.00633	pCi/g			1466010.47	599188.05
VII07	20030915	Actinium-227	4.6	0.455	0.455	pCi/g		U	1466010.47	599158.05
VII07	20030915	Americium-241	63	0.193	0.193	pCi/g		U	1466010.47	599158.05
VII07	20030915	Bismuth-207	1.2	0.0704	0.0704	pCi/g		U	1466010.47	599158.05
VII07	20030915	Bismuth-210M	8.3	0.0958	0.0958	pCi/g		U	1466010.47	599158.05
VII07	20030915	Cesium-137	3.8	0.0786	0.0786	pCi/g		U	1466010.47	599158.05
VII07	20030915	Cobalt-60	0.7	0.0989	0.0989	pCi/g		U	1466010.47	599158.05
VII07	20030915	Potassium-40	47.8	33.8	0.85	pCi/g			1466010.47	599158.05
VII07	20030915	Radium-226	2.9	0.78	0.154	pCi/g			1466010.47	599158.05
VII07	20030915	Radium-228	2.1	1.25	0.309	pCi/g			1466010.47	599158.05
VII07	20030915	Thorium-228	2.6	0.746	0.0478	pCi/g			1466010.47	599158.05
VII07	20030915	Thorium-230	2.8	0.183	0.0327	pCi/g			1466010.47	599158.05
VII07	20030915	Thorium-232	2.1	0.485	0.0185	pCi/g			1466010.47	599158.05
VII08	20030915	Actinium-227	4.6	0.443	0.443	pCi/g		U	1466040.47	599158.05
VII08	20030915	Americium-241	63	0.353	0.353	pCi/g		U	1466040.47	599158.05
VII08	20030915	Bismuth-207	1.2	0.061	0.061	pCi/g		U	1466040.47	599158.05
VII08	20030915	Bismuth-210M	8.3	0.0961	0.0961	pCi/g		U	1466040.47	599158.05
VII08	20030915	Cesium-137	3.8	0.0875	0.0875	pCi/g		U	1466040.47	599158.05
VII08	20030915	Cobalt-60	0.7	0.113	0.113	pCi/g		U	1466040.47	599158.05
VII08	20030915	Potassium-40	47.8	12.6	0.898	pCi/g			1466040.47	599158.05
VII08	20030915	Radium-226	2.9	0.574	0.162	pCi/g			1466040.47	599158.05
VII08	20030915	Radium-228	2.1	0.635	0.525	pCi/g	J+		1466040.47	599158.05
VII08	20030915	Thorium-228	2.6	0.528	0.0122	pCi/g			1466040.47	599158.05
VII08	20030915	Thorium-230	2.8	0.708	0.012	pCi/g			1466040.47	599158.05
VII08	20030915	Thorium-232	2.1	0.456	0.012	pCi/g			1466040.47	599158.05
VII09	20030916	Actinium-227	4.6	0.489	0.489	pCi/g		U	1465920.47	599128.05
VII09	20030916	Americium-241	63	0.394	0.394	pCi/g		U	1465920.47	599128.05
VII09	20030916	Bismuth-207	1.2	0.0819	0.0819	pCi/g		U	1465920.47	599128.05
VII09	20030916	Bismuth-210M	8.3	0.11	0.11	pCi/g		U	1465920.47	599128.05
VII09	20030916	Cesium-137	3.8	0.0957	0.0957	pCi/g		U	1465920.47	599128.05
VII09	20030916	Cobalt-60	0.7	0.123	0.123	pCi/g		U	1465920.47	599128.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VII09	20030916	Potassium-40	47.8	36.8	0.816	pCi/g			1465920.47	599128.05
VII09	20030916	Radium-226	2.9	0.629	0.181	pCi/g			1465920.47	599128.05
VII09	20030916	Radium-228	2.1	0.859	0.352	pCi/g			1465920.47	599128.05
VII09	20030916	Thorium-228	2.6	0.942	0.0195	pCi/g			1465920.47	599128.05
VII09	20030916	Thorium-230	2.8	0.315	0.0116	pCi/g			1465920.47	599128.05
VII09	20030916	Thorium-232	2.1	0.697	0.00653	pCi/g			1465920.47	599128.05
VII11	20030915	Actinium-227	4.6	0.439	0.439	pCi/g		U	1465980.47	599128.05
VII11	20030915	Americium-241	63	0.331	0.331	pCi/g		U	1465980.47	599128.05
VII11	20030915	Bismuth-207	1.2	0.0722	0.0722	pCi/g		U	1465980.47	599128.05
VII11	20030915	Bismuth-210M	8.3	0.0965	0.0965	pCi/g		U	1465980.47	599128.05
VII11	20030915	Cesium-137	3.8	0.086	0.086	pCi/g		U	1465980.47	599128.05
VII11	20030915	Cobalt-60	0.7	0.109	0.109	pCi/g		U	1465980.47	599128.05
VII11	20030915	Potassium-40	47.8	24.8	0.909	pCi/g			1465980.47	599128.05
VII11	20030915	Radium-226	2.9	0.543	0.151	pCi/g			1465980.47	599128.05
VII11	20030915	Radium-228	2.1	0.691	0.566	pCi/g			1465980.47	599128.05
VII11	20030915	Thorium-228	2.6	0.741	0.0279	pCi/g			1465980.47	599128.05
VII11	20030915	Thorium-230	2.8	0.333	0.0273	pCi/g			1465980.47	599128.05
VII11	20030915	Thorium-232	2.1	0.65	0.0605	pCi/g			1465980.47	599128.05
VII12	20030915	Actinium-227	4.6	0.523	0.523	pCi/g		U	1466010.47	599128.05
VII12	20030915	Americium-241	63	0.127	0.127	pCi/g		U	1466010.47	599128.05
VII12	20030915	Bismuth-207	1.2	0.0792	0.0792	pCi/g		U	1466010.47	599128.05
VII12	20030915	Bismuth-210M	8.3	0.113	0.113	pCi/g		U	1466010.47	599128.05
VII12	20030915	Cesium-137	3.8	0.103	0.103	pCi/g		U	1466010.47	599128.05
VII12	20030915	Cobalt-60	0.7	0.122	0.122	pCi/g		U	1466010.47	599128.05
VII12	20030915	Potassium-40	47.8	21.8	0.935	pCi/g			1466010.47	599128.05
VII12	20030915	Radium-226	2.9	1.08	0.193	pCi/g			1466010.47	599128.05
VII12	20030915	Radium-228	2.1	1.32	0.345	pCi/g			1466010.47	599128.05
VII12	20030915	Thorium-228	2.6	1.02	0.0214	pCi/g			1466010.47	599128.05
VII12	20030915	Thorium-230	2.8	0.641	0.0209	pCi/g			1466010.47	599128.05
VII12	20030915	Thorium-232	2.1	1.07	0.0463	pCi/g			1466010.47	599128.05
VII13	20030915	Actinium-227	4.6	0.346	0.346	pCi/g		U	1466010.47	599098.05
VII13	20030915	Americium-241	63	0.152	0.152	pCi/g		U	1466010.47	599098.05
VII13	20030915	Bismuth-207	1.2	0.0499	0.0499	pCi/g		U	1466010.47	599098.05
VII13	20030915	Bismuth-210M	8.3	0.0691	0.0691	pCi/g		U	1466010.47	599098.05
VII13	20030915	Cesium-137	3.8	0.0694	0.0694	pCi/g		U	1466010.47	599098.05
VII13	20030915	Cobalt-60	0.7	0.0863	0.0863	pCi/g		U	1466010.47	599098.05
VII13	20030915	Potassium-40	47.8	15.7	0.613	pCi/g			1466010.47	599098.05
VII13	20030915	Radium-226	2.9	0.708	0.118	pCi/g			1466010.47	599098.05
VII13	20030915	Radium-228	2.1	0.915	0.259	pCi/g			1466010.47	599098.05
VII13	20030915	Thorium-228	2.6	0.698	0.0369	pCi/g			1466010.47	599098.05
VII13	20030915	Thorium-230	2.8	0.611	0.0361	pCi/g			1466010.47	599098.05
VII13	20030915	Thorium-232	2.1	0.407	0.0361	pCi/g			1466010.47	599098.05
VII14	20030915	Actinium-227	4.6	0.491	0.491	pCi/g		U	1466040.47	599098.05
VII14	20030915	Americium-241	63	0.182	0.182	pCi/g		U	1466040.47	599098.05
VII14	20030915	Bismuth-207	1.2	0.0768	0.0768	pCi/g		U	1466040.47	599098.05
VII14	20030915	Bismuth-210M	8.3	0.0986	0.0986	pCi/g		U	1466040.47	599098.05
VII14	20030915	Cesium-137	3.8	0.103	0.103	pCi/g		U	1466040.47	599098.05
VII14	20030915	Cobalt-60	0.7	0.127	0.127	pCi/g		U	1466040.47	599098.05
VII14	20030915	Potassium-40	47.8	18.4	0.867	pCi/g			1466040.47	599098.05
VII14	20030915	Radium-226	2.9	0.861	0.348	pCi/g			1466040.47	599098.05
VII14	20030915	Radium-228	2.1	1.34	0.708	pCi/g			1466040.47	599098.05
VII14	20030915	Thorium-228	2.6	1.48	0.0129	pCi/g			1466040.47	599098.05
VII14	20030915	Thorium-230	2.8	0.965	0.0126	pCi/g			1466040.47	599098.05
VII14	20030915	Thorium-232	2.1	1.19	0.0126	pCi/g			1466040.47	599098.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIII04	20030915	Actinium-227	4.6	0.483	0.483	pCi/g		U	1466070.47	599158.05
VIII04	20030915	Americium-241	63	0.105	0.105	pCi/g		U	1466070.47	599158.05
VIII04	20030915	Bismuth-207	1.2	0.081	0.081	pCi/g		U	1466070.47	599158.05
VIII04	20030915	Bismuth-210M	8.3	0.105	0.105	pCi/g		U	1466070.47	599158.05
VIII04	20030915	Cesium-137	3.8	0.107	0.107	pCi/g		U	1466070.47	599158.05
VIII04	20030915	Cobalt-60	0.7	0.119	0.119	pCi/g		U	1466070.47	599158.05
VIII04	20030915	Potassium-40	47.8	16	1.03	pCi/g			1466070.47	599158.05
VIII04	20030915	Radium-226	2.9	0.8	0.181	pCi/g			1466070.47	599158.05
VIII04	20030915	Radium-228	2.1	1.21	0.386	pCi/g			1466070.47	599158.05
VIII04	20030915	Thorium-228	2.6	0.951	0.0313	pCi/g			1466070.47	599158.05
VIII04	20030915	Thorium-230	2.8	0.93	0.0138	pCi/g			1466070.47	599158.05
VIII04	20030915	Thorium-232	2.1	0.909	0.0138	pCi/g			1466070.47	599158.05
VIII05	20030915	Actinium-227	4.6	0.323	0.323	pCi/g		U	1466100.47	599158.05
VIII05	20030915	Americium-241	63	0.148	0.148	pCi/g		U	1466100.47	599158.05
VIII05	20030915	Bismuth-207	1.2	0.0476	0.0476	pCi/g		U	1466100.47	599158.05
VIII05	20030915	Bismuth-210M	8.3	0.0668	0.0668	pCi/g		U	1466100.47	599158.05
VIII05	20030915	Cesium-137	3.8	0.0596	0.0596	pCi/g		U	1466100.47	599158.05
VIII05	20030915	Cobalt-60	0.7	0.0799	0.0799	pCi/g		U	1466100.47	599158.05
VIII05	20030915	Potassium-40	47.8	16.3	0.618	pCi/g			1466100.47	599158.05
VIII05	20030915	Radium-226	2.9	0.741	0.113	pCi/g			1466100.47	599158.05
VIII05	20030915	Radium-228	2.1	1.04	0.214	pCi/g			1466100.47	599158.05
VIII05	20030915	Thorium-228	2.6	0.87	0.0558	pCi/g			1466100.47	599158.05
VIII05	20030915	Thorium-230	2.8	0.999	0.0396	pCi/g			1466100.47	599158.05
VIII05	20030915	Thorium-232	2.1	0.593	0.0396	pCi/g			1466100.47	599158.05
VIII08	20030915	Actinium-227	4.6	0.635	0.635	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Actinium-227	4.6	0.568	0.568	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Americium-241	63	0.123	0.123	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Americium-241	63	0.208	0.208	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Bismuth-207	1.2	0.0873	0.0873	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Bismuth-207	1.2	0.0968	0.0968	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Bismuth-210M	8.3	0.122	0.122	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Bismuth-210M	8.3	0.126	0.126	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Cesium-137	3.8	0.116	0.116	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Cesium-137	3.8	0.128	0.128	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Cobalt-60	0.7	0.111	0.111	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Cobalt-60	0.7	0.143	0.143	pCi/g		U	1466070.47	599128.05
VIII08	20030915	Potassium-40	47.8	15.4	0.889	pCi/g			1466070.47	599128.05
VIII08	20030915	Potassium-40	47.8	14.1	1.54	pCi/g			1466070.47	599128.05
VIII08	20030915	Radium-226	2.9	0.626	0.359	pCi/g	J+		1466070.47	599128.05
VIII08	20030915	Radium-226	2.9	0.827	0.391	pCi/g			1466070.47	599128.05
VIII08	20030915	Radium-228	2.1	1.54	0.357	pCi/g			1466070.47	599128.05
VIII08	20030915	Radium-228	2.1	1.44	0.792	pCi/g			1466070.47	599128.05
VIII08	20030915	Thorium-228	2.6	1.51	0.0382	pCi/g	J		1466070.47	599128.05
VIII08	20030915	Thorium-228	2.6	1.55	0.015	pCi/g			1466070.47	599128.05
VIII08	20030915	Thorium-230	2.8	0.833	0.0374	pCi/g	J		1466070.47	599128.05
VIII08	20030915	Thorium-230	2.8	0.741	0.0147	pCi/g			1466070.47	599128.05
VIII08	20030915	Thorium-232	2.1	1.41	0.0169	pCi/g	J		1466070.47	599128.05
VIII08	20030915	Thorium-232	2.1	1.35	0.0147	pCi/g			1466070.47	599128.05
VIII09	20030915	Actinium-227	4.6	0.345	0.345	pCi/g		U	1466100.47	599128.05
VIII09	20030915	Americium-241	63	0.161	0.161	pCi/g		U	1466100.47	599128.05
VIII09	20030915	Bismuth-207	1.2	0.0658	0.0658	pCi/g		U	1466100.47	599128.05
VIII09	20030915	Bismuth-210M	8.3	0.0702	0.0702	pCi/g		U	1466100.47	599128.05
VIII09	20030915	Cesium-137	3.8	0.0698	0.0698	pCi/g		U	1466100.47	599128.05
VIII09	20030915	Cobalt-60	0.7	0.0852	0.0852	pCi/g		U	1466100.47	599128.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIII09	20030915	Potassium-40	47.8	16	0.752	pCi/g			1466100.47	599128.05
VIII09	20030915	Radium-226	2.9	0.645	0.273	pCi/g			1466100.47	599128.05
VIII09	20030915	Radium-228	2.1	0.599	0.285	pCi/g			1466100.47	599128.05
VIII09	20030915	Thorium-228	2.6	0.742	0.00971	pCi/g			1466100.47	599128.05
VIII09	20030915	Thorium-230	2.8	0.657	0.00952	pCi/g			1466100.47	599128.05
VIII09	20030915	Thorium-232	2.1	0.578	0.0211	pCi/g			1466100.47	599128.05
VIII10	20030915	Actinium-227	4.6	0.332	0.332	pCi/g		U	1466130.47	599128.05
VIII10	20030915	Americium-241	63	0.117	0.117	pCi/g		U	1466130.47	599128.05
VIII10	20030915	Bismuth-207	1.2	0.0484	0.0484	pCi/g		U	1466130.47	599128.05
VIII10	20030915	Bismuth-210M	8.3	0.0648	0.0648	pCi/g		U	1466130.47	599128.05
VIII10	20030915	Cesium-137	3.8	0.0596	0.0596	pCi/g		U	1466130.47	599128.05
VIII10	20030915	Cobalt-60	0.7	0.07	0.07	pCi/g		U	1466130.47	599128.05
VIII10	20030915	Potassium-40	47.8	11.6	0.802	pCi/g			1466130.47	599128.05
VIII10	20030915	Radium-226	2.9	0.575	0.238	pCi/g			1466130.47	599128.05
VIII10	20030915	Radium-228	2.1	0.74	0.436	pCi/g			1466130.47	599128.05
VIII10	20030915	Thorium-228	2.6	0.469	0.16	pCi/g			1466130.47	599128.05
VIII10	20030915	Thorium-230	2.8	0.612	0.098	pCi/g			1466130.47	599128.05
VIII10	20030915	Thorium-232	2.1	0.424	0.098	pCi/g			1466130.47	599128.05
VIII11	20030915	Actinium-227	4.6	0.429	0.429	pCi/g		U	1466070.47	599098.05
VIII11	20030915	Americium-241	63	0.0928	0.0928	pCi/g		U	1466070.47	599098.05
VIII11	20030915	Bismuth-207	1.2	0.062	0.062	pCi/g		U	1466070.47	599098.05
VIII11	20030915	Bismuth-210M	8.3	0.0854	0.0854	pCi/g		U	1466070.47	599098.05
VIII11	20030915	Cesium-137	3.8	0.0759	0.0759	pCi/g		U	1466070.47	599098.05
VIII11	20030915	Cobalt-60	0.7	0.102	0.102	pCi/g		U	1466070.47	599098.05
VIII11	20030915	Potassium-40	47.8	21.1	0.555	pCi/g			1466070.47	599098.05
VIII11	20030915	Radium-226	2.9	0.85	0.142	pCi/g			1466070.47	599098.05
VIII11	20030915	Radium-228	2.1	0.972	0.501	pCi/g			1466070.47	599098.05
VIII11	20030915	Thorium-228	2.6	0.89	0.0945	pCi/g			1466070.47	599098.05
VIII11	20030915	Thorium-230	2.8	0.664	0.0418	pCi/g			1466070.47	599098.05
VIII11	20030915	Thorium-232	2.1	0.718	0.0926	pCi/g			1466070.47	599098.05
VIII12	20030915	Actinium-227	4.6	0.575	0.543	pCi/g		J	1466100.47	599098.05
VIII12	20030915	Americium-241	63	0.113	0.113	pCi/g		U	1466100.47	599098.05
VIII12	20030915	Bismuth-207	1.2	0.0798	0.0798	pCi/g		U	1466100.47	599098.05
VIII12	20030915	Bismuth-210M	8.3	0.103	0.103	pCi/g		U	1466100.47	599098.05
VIII12	20030915	Cesium-137	3.8	0.0962	0.0962	pCi/g		U	1466100.47	599098.05
VIII12	20030915	Cobalt-60	0.7	0.115	0.115	pCi/g		U	1466100.47	599098.05
VIII12	20030915	Potassium-40	47.8	25.4	0.823	pCi/g			1466100.47	599098.05
VIII12	20030915	Radium-226	2.9	0.933	0.343	pCi/g			1466100.47	599098.05
VIII12	20030915	Radium-228	2.1	1.02	0.613	pCi/g			1466100.47	599098.05
VIII12	20030915	Thorium-228	2.6	0.906	0.042	pCi/g			1466100.47	599098.05
VIII12	20030915	Thorium-230	2.8	0.521	0.0186	pCi/g			1466100.47	599098.05
VIII12	20030915	Thorium-232	2.1	0.785	0.0411	pCi/g			1466100.47	599098.05
VIV01	20030916	Actinium-227	4.6	1.29	0.494	pCi/g			1465890.47	599098.05
VIV01	20030916	Actinium-227	4.6	1.26	0.485	pCi/g			1465890.47	599098.05
VIV01	20030916	Americium-241	63	0.219	0.219	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Americium-241	63	0.231	0.231	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Bismuth-207	1.2	0.0587	0.0587	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Bismuth-207	1.2	0.0607	0.0607	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Bismuth-210M	8.3	0.0797	0.0797	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Bismuth-210M	8.3	0.0775	0.0775	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Cesium-137	3.8	0.0743	0.0743	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Cesium-137	3.8	0.0731	0.0731	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Cobalt-60	0.7	0.0883	0.0883	pCi/g		U	1465890.47	599098.05
VIV01	20030916	Cobalt-60	0.7	0.0852	0.0852	pCi/g		U	1465890.47	599098.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIV01	20030916	Potassium-40	47.8	32.8	0.762	pCi/g			1465890.47	599098.05
VIV01	20030916	Potassium-40	47.8	32.3	0.744	pCi/g			1465890.47	599098.05
VIV01	20030916	Radium-226	2.9	0.919	0.243	pCi/g			1465890.47	599098.05
VIV01	20030916	Radium-226	2.9	0.71	0.233	pCi/g			1465890.47	599098.05
VIV01	20030916	Radium-228	2.1	1.47	0.25	pCi/g			1465890.47	599098.05
VIV01	20030916	Radium-228	2.1	1.2	0.454	pCi/g			1465890.47	599098.05
VIV01	20030916	Thorium-228	2.6	0.992	0.0255	pCi/g			1465890.47	599098.05
VIV01	20030916	Thorium-228	2.6	1.06	0.0114	pCi/g			1465890.47	599098.05
VIV01	20030916	Thorium-230	2.8	0.375	0.0144	pCi/g			1465890.47	599098.05
VIV01	20030916	Thorium-230	2.8	0.398	0.0135	pCi/g			1465890.47	599098.05
VIV01	20030916	Thorium-232	2.1	0.786	0.0172	pCi/g			1465890.47	599098.05
VIV01	20030916	Thorium-232	2.1	0.819	0.00496	pCi/g			1465890.47	599098.05
VIV02	20030917	Actinium-227	4.6	1.12	0.37	pCi/g			1465920.47	599098.05
VIV02	20030917	Americium-241	63	0.155	0.155	pCi/g		U	1465920.47	599098.05
VIV02	20030917	Bismuth-207	1.2	0.0466	0.0466	pCi/g		U	1465920.47	599098.05
VIV02	20030917	Bismuth-210M	8.3	0.0585	0.0585	pCi/g		U	1465920.47	599098.05
VIV02	20030917	Cesium-137	3.8	0.0551	0.0551	pCi/g		U	1465920.47	599098.05
VIV02	20030917	Cobalt-60	0.7	0.0792	0.0792	pCi/g		U	1465920.47	599098.05
VIV02	20030917	Potassium-40	47.8	20	0.597	pCi/g			1465920.47	599098.05
VIV02	20030917	Radium-226	2.9	0.921	0.102	pCi/g			1465920.47	599098.05
VIV02	20030917	Radium-228	2.1	0.968	0.355	pCi/g			1465920.47	599098.05
VIV02	20030917	Thorium-228	2.6	0.839	0.0263	pCi/g			1465920.47	599098.05
VIV02	20030917	Thorium-230	2.8	0.565	0.0162	pCi/g			1465920.47	599098.05
VIV02	20030917	Thorium-232	2.1	0.774	0.0189	pCi/g			1465920.47	599098.05
VIV04	20030917	Actinium-227	4.6	0.412	0.412	pCi/g		U	1465980.47	599098.05
VIV04	20030917	Americium-241	63	0.0916	0.0916	pCi/g		U	1465980.47	599098.05
VIV04	20030917	Bismuth-207	1.2	0.0631	0.0631	pCi/g		U	1465980.47	599098.05
VIV04	20030917	Bismuth-210M	8.3	0.0862	0.0862	pCi/g		U	1465980.47	599098.05
VIV04	20030917	Cesium-137	3.8	0.0812	0.0812	pCi/g		U	1465980.47	599098.05
VIV04	20030917	Cobalt-60	0.7	0.0997	0.0997	pCi/g		U	1465980.47	599098.05
VIV04	20030917	Potassium-40	47.8	24.8	0.718	pCi/g			1465980.47	599098.05
VIV04	20030917	Radium-226	2.9	0.907	0.278	pCi/g			1465980.47	599098.05
VIV04	20030917	Radium-228	2.1	1.19	0.282	pCi/g			1465980.47	599098.05
VIV04	20030917	Thorium-228	2.6	1.15	0.00757	pCi/g			1465980.47	599098.05
VIV04	20030917	Thorium-230	2.8	0.651	0.00732	pCi/g			1465980.47	599098.05
VIV04	20030917	Thorium-232	2.1	0.831	0.0199	pCi/g			1465980.47	599098.05
VIV05	20030916	Actinium-227	4.6	0.463	0.463	pCi/g		U	1465860.47	599068.05
VIV05	20030916	Americium-241	63	0.171	0.171	pCi/g		U	1465860.47	599068.05
VIV05	20030916	Bismuth-207	1.2	0.083	0.083	pCi/g		U	1465860.47	599068.05
VIV05	20030916	Bismuth-210M	8.3	0.103	0.103	pCi/g		U	1465860.47	599068.05
VIV05	20030916	Cesium-137	3.8	0.0972	0.0972	pCi/g		U	1465860.47	599068.05
VIV05	20030916	Cobalt-60	0.7	0.126	0.126	pCi/g		U	1465860.47	599068.05
VIV05	20030916	Potassium-40	47.8	28.8	0.999	pCi/g			1465860.47	599068.05
VIV05	20030916	Radium-226	2.9	0.866	0.173	pCi/g			1465860.47	599068.05
VIV05	20030916	Radium-228	2.1	1.08	0.386	pCi/g			1465860.47	599068.05
VIV05	20030916	Thorium-228	2.6	0.887	0.0168	pCi/g			1465860.47	599068.05
VIV05	20030916	Thorium-230	2.8	0.472	0.0105	pCi/g			1465860.47	599068.05
VIV05	20030916	Thorium-232	2.1	0.72	0.0147	pCi/g			1465860.47	599068.05
VIV06	20030916	Actinium-227	4.6	1.46	0.684	pCi/g			1465890.47	599068.05
VIV06	20030916	Americium-241	63	0.321	0.321	pCi/g		U	1465890.47	599068.05
VIV06	20030916	Bismuth-207	1.2	0.0925	0.0925	pCi/g		U	1465890.47	599068.05
VIV06	20030916	Bismuth-210M	8.3	0.12	0.12	pCi/g		U	1465890.47	599068.05
VIV06	20030916	Cesium-137	3.8	0.119	0.119	pCi/g		U	1465890.47	599068.05
VIV06	20030916	Cobalt-60	0.7	0.138	0.138	pCi/g		U	1465890.47	599068.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIV06	20030916	Potassium-40	47.8	35.2	1.08	pCi/g			1465890.47	599068.05
VIV06	20030916	Radium-226	2.9	0.891	0.325	pCi/g			1465890.47	599068.05
VIV06	20030916	Radium-228	2.1	1.4	0.415	pCi/g			1465890.47	599068.05
VIV06	20030916	Thorium-228	2.6	0.884	0.0226	pCi/g			1465890.47	599068.05
VIV06	20030916	Thorium-230	2.8	0.347	0.0124	pCi/g			1465890.47	599068.05
VIV06	20030916	Thorium-232	2.1	0.619	0.0124	pCi/g			1465890.47	599068.05
VIV07	20030917	Actinium-227	4.6	0.939	0.529	pCi/g		J	1465920.47	599068.05
VIV07	20030917	Americium-241	63	0.251	0.251	pCi/g		U	1465920.47	599068.05
VIV07	20030917	Bismuth-207	1.2	0.0687	0.0687	pCi/g		U	1465920.47	599068.05
VIV07	20030917	Bismuth-210M	8.3	0.0892	0.0892	pCi/g		U	1465920.47	599068.05
VIV07	20030917	Cesium-137	3.8	0.089	0.089	pCi/g		U	1465920.47	599068.05
VIV07	20030917	Cobalt-60	0.7	0.092	0.092	pCi/g		U	1465920.47	599068.05
VIV07	20030917	Potassium-40	47.8	31.8	0.792	pCi/g			1465920.47	599068.05
VIV07	20030917	Radium-226	2.9	0.847	0.154	pCi/g			1465920.47	599068.05
VIV07	20030917	Radium-228	2.1	1.22	0.325	pCi/g			1465920.47	599068.05
VIV07	20030917	Thorium-228	2.6	0.984	0.005	pCi/g			1465920.47	599068.05
VIV07	20030917	Thorium-230	2.8	0.444	0.015	pCi/g			1465920.47	599068.05
VIV07	20030917	Thorium-232	2.1	0.75	0.00482	pCi/g			1465920.47	599068.05
VIV08	20030917	Actinium-227	4.6	1.49	0.482	pCi/g			1465950.47	599068.05
VIV08	20030917	Americium-241	63	0.211	0.211	pCi/g		U	1465950.47	599068.05
VIV08	20030917	Bismuth-207	1.2	0.0589	0.0589	pCi/g		U	1465950.47	599068.05
VIV08	20030917	Bismuth-210M	8.3	0.0731	0.0731	pCi/g		U	1465950.47	599068.05
VIV08	20030917	Cesium-137	3.8	0.0671	0.0671	pCi/g		U	1465950.47	599068.05
VIV08	20030917	Cobalt-60	0.7	0.08	0.08	pCi/g		U	1465950.47	599068.05
VIV08	20030917	Potassium-40	47.8	23.7	0.688	pCi/g			1465950.47	599068.05
VIV08	20030917	Radium-226	2.9	0.878	0.125	pCi/g			1465950.47	599068.05
VIV08	20030917	Radium-228	2.1	1.13	0.436	pCi/g			1465950.47	599068.05
VIV08	20030917	Thorium-228	2.6	1.02	0.00634	pCi/g			1465950.47	599068.05
VIV08	20030917	Thorium-230	2.8	0.64	0.00612	pCi/g			1465950.47	599068.05
VIV08	20030917	Thorium-232	2.1	0.9	0.00612	pCi/g			1465950.47	599068.05
VIV10	20030917	Actinium-227	4.6	0.566	0.46	pCi/g		J	1466010.47	599068.05
VIV10	20030917	Actinium-227	4.6	0.489	0.489	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Americium-241	63	0.101	0.101	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Americium-241	63	0.214	0.214	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Bismuth-207	1.2	0.0707	0.0707	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Bismuth-207	1.2	0.0811	0.0811	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Bismuth-210M	8.3	0.088	0.088	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Bismuth-210M	8.3	0.108	0.108	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Cesium-137	3.8	0.0875	0.0875	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Cesium-137	3.8	0.0932	0.0932	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Cobalt-60	0.7	0.0936	0.0936	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Cobalt-60	0.7	0.118	0.118	pCi/g		U	1466010.47	599068.05
VIV10	20030917	Potassium-40	47.8	22.7	0.846	pCi/g			1466010.47	599068.05
VIV10	20030917	Potassium-40	47.8	23.8	0.98	pCi/g			1466010.47	599068.05
VIV10	20030917	Radium-226	2.9	1.14	0.15	pCi/g			1466010.47	599068.05
VIV10	20030917	Radium-226	2.9	1.05	0.358	pCi/g			1466010.47	599068.05
VIV10	20030917	Radium-228	2.1	1.29	0.298	pCi/g			1466010.47	599068.05
VIV10	20030917	Radium-228	2.1	1.57	0.351	pCi/g			1466010.47	599068.05
VIV10	20030917	Thorium-228	2.6	1.03	0.018	pCi/g			1466010.47	599068.05
VIV10	20030917	Thorium-228	2.6	1.11	0.0151	pCi/g			1466010.47	599068.05
VIV10	20030917	Thorium-230	2.8	0.726	0.00639	pCi/g			1466010.47	599068.05
VIV10	20030917	Thorium-230	2.8	0.739	0.0104	pCi/g			1466010.47	599068.05
VIV10	20030917	Thorium-232	2.1	0.932	0.0141	pCi/g			1466010.47	599068.05
VIV10	20030917	Thorium-232	2.1	0.934	0.0128	pCi/g			1466010.47	599068.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIV11	20030916	Actinium-227	4.6	1.13	0.48	pCi/g			1466040.47	599068.05
VIV11	20030916	Americium-241	63	0.223	0.223	pCi/g		U	1466040.47	599068.05
VIV11	20030916	Bismuth-207	1.2	0.0594	0.0594	pCi/g		U	1466040.47	599068.05
VIV11	20030916	Bismuth-210M	8.3	0.0769	0.0769	pCi/g		U	1466040.47	599068.05
VIV11	20030916	Cesium-137	3.8	0.0744	0.0744	pCi/g		U	1466040.47	599068.05
VIV11	20030916	Cobalt-60	0.7	0.0822	0.0822	pCi/g		U	1466040.47	599068.05
VIV11	20030916	Potassium-40	47.8	18.8	0.675	pCi/g			1466040.47	599068.05
VIV11	20030916	Radium-226	2.9	1.11	0.129	pCi/g			1466040.47	599068.05
VIV11	20030916	Radium-228	2.1	1.46	0.284	pCi/g			1466040.47	599068.05
VIV11	20030916	Thorium-228	2.6	0.926	0.0127	pCi/g			1466040.47	599068.05
VIV11	20030916	Thorium-230	2.8	0.789	0.01	pCi/g			1466040.47	599068.05
VIV11	20030916	Thorium-232	2.1	0.884	0.00452	pCi/g			1466040.47	599068.05
VIV20	20030916	Actinium-227	4.6	1.46	0.571	pCi/g			1466010.47	599038.05
VIV20	20030916	Americium-241	63	0.266	0.266	pCi/g		U	1466010.47	599038.05
VIV20	20030916	Bismuth-207	1.2	0.0658	0.0658	pCi/g		U	1466010.47	599038.05
VIV20	20030916	Bismuth-210M	8.3	0.091	0.091	pCi/g		U	1466010.47	599038.05
VIV20	20030916	Cesium-137	3.8	0.0885	0.0885	pCi/g		U	1466010.47	599038.05
VIV20	20030916	Cobalt-60	0.7	0.0925	0.0925	pCi/g		U	1466010.47	599038.05
VIV20	20030916	Potassium-40	47.8	10.5	0.749	pCi/g			1466010.47	599038.05
VIV20	20030916	Radium-226	2.9	1.05	0.159	pCi/g			1466010.47	599038.05
VIV20	20030916	Radium-228	2.1	1.43	0.561	pCi/g			1466010.47	599038.05
VIV20	20030916	Thorium-228	2.6	1.01	0.00608	pCi/g			1466010.47	599038.05
VIV20	20030916	Thorium-230	2.8	0.832	0.00587	pCi/g			1466010.47	599038.05
VIV20	20030916	Thorium-232	2.1	1.06	0.00587	pCi/g			1466010.47	599038.05
VV01	20030917	1,1,1-Trichloroethane	3310	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,1,2,2-Tetrachloroethane	8.88	0.006	6	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,1,2-Trichloroethane	19	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,1-Dichloroethane	102,000	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,1-Dichloroethene	102,000	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,2-Dichloroethane	7.61	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,2-Dichloroethene	nc	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,2-Dichloropropane	438	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	1,3-trans-Dichloropropene	nc	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	2-Butanone	9,300	0.013	0.013	mg/kg		U	1465950.47	599008.05
VV01	20030917	2-Hexanone	nc	0.013	0.013	mg/kg		U	1465950.47	599008.05
VV01	20030917	4-Methyl-2-pentanone	nc	0.013	0.013	mg/kg		U	1465950.47	599008.05
VV01	20030917	Acetone	192,000	0.013	0.013	mg/kg		U	1465950.47	599008.05
VV01	20030917	Benzene	542	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Bromodichloromethane	481	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Bromoform	3,770	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Carbon Disulfide	1,160	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Carbon Tetrachloride	5.38	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Chlorobenzene	489	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Dibromochloromethane	355	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Dichloromethane (Methylene Chloride)	203	0.019	*	mg/kg		B	1465950.47	599008.05
VV01	20030917	Ethylbenzene	0.48	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Styrene	14,500	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Tetrachloroethene (PCE)	187	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Toluene	250	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Trichloroethylene (TCE)	52.5	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Trichloromethane (Cholorform)	5.15	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV01	20030917	Vinyl Chloride	4.14	0.013	0.013	mg/kg		U	1465950.47	599008.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV01	20030917	Xylenes, Total	42,600	0.006	0.006	mg/kg		U	1465950.47	599008.05
VV02	20030917	1,1,1-Trichloroethane	3,310	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1,1-Trichloroethane	3,310	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1,2,2-Tetrachloroethane	9	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1,2,2-Tetrachloroethane	9	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1,2-Trichloroethane	19	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1,2-Trichloroethane	19	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1-Dichloroethane	10,600	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1-Dichloroethane	10,600	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1-Dichloroethene	102,000	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,1-Dichloroethene	102,000	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,2-Dichloroethane	7.61	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,2-Dichloroethane	7.61	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,2-Dichloroethene	nc	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,2-Dichloroethene	nc	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,2-Dichloropropane	438	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,2-Dichloropropane	438	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,3-trans-Dichloropropene	nc	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	1,3-trans-Dichloropropene	nc	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	2-Butanone	9,300	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	2-Butanone	9,300	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	2-Hexanone	nc	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	2-Hexanone	nc	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	4-Methyl-2-pentanone	nc	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	4-Methyl-2-pentanone	nc	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	Acetone	192,000	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	Acetone	192,000	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	Benzene	542	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Benzene	542	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Bromodichloromethane	481	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Bromodichloromethane	481	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Bromoform	3,770	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Bromoform	3,770	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Carbon Disulfide	1,160	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Carbon Disulfide	1,160	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Carbon Tetrachloride	5.38	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Carbon Tetrachloride	5.38	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Chlorobenzene	489	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Chlorobenzene	489	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Dibromochloromethane	355	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Dibromochloromethane	355	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Dichloromethane (Methylene Chloride)	203	0.019	*	mg/kg		B	1465980.47	599008.05
VV02	20030917	Dichloromethane (Methylene Chloride)	203	0.015	*	mg/kg		B	1465980.47	599008.05
VV02	20030917	Ethylbenzene	0.48	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Ethylbenzene	0.48	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Styrene	14,500	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Styrene	14,500	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Tetrachloroethene (PCE)	187	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Tetrachloroethene (PCE)	187	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Toluene	250	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Toluene	250	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Trichloroethylene (TCE)	52.5	0.006	0.006	mg/kg		U	1465980.47	599008.05

Table 3: Results for Sample Event 2

(Includes all of Phases III & Part of II, IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV02	20030917	Trichloroethylene (TCE)	52.5	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Trichloromethane (Cholorform)	5.15	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Trichloromethane (Cholorform)	5.15	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Vinyl Chloride	4.14	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	Vinyl Chloride	4.14	0.012	0.012	mg/kg		U	1465980.47	599008.05
VV02	20030917	Xylenes, Total	42,600	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV02	20030917	Xylenes, Total	42,600	0.006	0.006	mg/kg		U	1465980.47	599008.05
VV03	20030916	Plutonium-238	55	0.0183	0.0026	pCi/g			1466010.47	599008.05
VV03	20030916	Plutonium-239/240	62	0.0026	0.0026	pCi/g		U	1466010.47	599008.05
VV03	20030916	Thorium-228	2.6	0.738	0.0136	pCi/g			1466010.47	599008.05
VV03	20030916	Thorium-230	2.8	0.663	0.0107	pCi/g			1466010.47	599008.05
VV03	20030916	Thorium-232	2.1	0.603	0.015	pCi/g			1466010.47	599008.05
VV05	20030916	Plutonium-238	55	0.0804	0.00177	pCi/g			1466070.47	599008.05
VV05	20030916	Plutonium-239/240	62	0.00177	0.00177	pCi/g		U	1466070.47	599008.05
VV05	20030916	Thorium-228	2.6	0.773	0.0224	pCi/g			1466070.47	599008.05
VV05	20030916	Thorium-232	2.1	0.659	0.0123	pCi/g			1466070.47	599008.05
VV10	20030916	Plutonium-238	55	0.0114	0.00135	pCi/g			1466040.47	598978.05
VV10	20030916	Plutonium-238	55	0.0187	0.00187	pCi/g			1466040.47	598978.05
VV10	20030916	Plutonium-239/240	62	0.00135	0.00135	pCi/g		U	1466040.47	598978.05
VV10	20030916	Plutonium-239/240	62	0.00187	0.00187	pCi/g		U	1466040.47	598978.05
VV10	20030916	Thorium-228	2.6	0.727	0.0158	pCi/g			1466040.47	598978.05
VV10	20030916	Thorium-228	2.6	0.695	0.0175	pCi/g			1466040.47	598978.05
VV10	20030916	Thorium-230	2.8	0.589	0.00983	pCi/g			1466040.47	598978.05
VV10	20030916	Thorium-230	2.8	0.481	0.0118	pCi/g			1466040.47	598978.05
VV10	20030916	Thorium-232	2.1	0.51	0.00983	pCi/g			1466040.47	598978.05
VV10	20030916	Thorium-232	2.1	0.606	0.00665	pCi/g			1466040.47	598978.05
VV15	20030916	Plutonium-238	55	0.102	0.00108	pCi/g			1466010.47	598948.05
VV15	20030916	Plutonium-239/240	62	0.0016	0.00108	pCi/g		J	1466010.47	598948.05
VV15	20030916	Thorium-228	2.6	0.722	0.0192	pCi/g			1466010.47	598948.05
VV15	20030916	Thorium-230	2.8	0.473	0.0118	pCi/g			1466010.47	598948.05
VV15	20030916	Thorium-232	2.1	0.508	0.0118	pCi/g			1466010.47	598948.05

U = not detected
J = estimated
J+ = estimated; potential positive bias
CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team
CO for chem = more stringent of CO or Hazard Index = 1
B = Organics (analyte found in associated blank and sample)
nc = not calculated
• = no detection limit reported

Table 4: Results for Sample Event 3 (pCi/g)

(Includes all of Phase I)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
66_V_S_PI	20030529	Thorium-232	2.1	0.557	0.127			1465971.11	598922.857
66_V_S_PI	20030529	Thorium-228	2.6	0.856	0.199			1465971.11	598922.857
66_V_S_PI	20030529	Thorium-230	2.8	0.439	0.144			1465971.11	598922.857

CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIV09	20031203	Actinium-227	4.6	0.317	0.317	pCi/g		U	1465980.47	599068.05
VIV09	20031203	Americium-241	63	0.163	0.163	pCi/g		U	1465980.47	599068.05
VIV09	20031203	Bismuth-207	1.2	0.0464	0.0464	pCi/g		U	1465980.47	599068.05
VIV09	20031203	Bismuth-210M	8.3	0.0652	0.0652	pCi/g		U	1465980.47	599068.05
VIV09	20031203	Cesium-137	3.8	0.0476	0.0476	pCi/g		U	1465980.47	599068.05
VIV09	20031203	Cobalt-60	0.7	0.0615	0.0615	pCi/g		U	1465980.47	599068.05
VIV09	20031203	Potassium-40	47.8	15.1	0.365	pCi/g			1465980.47	599068.05
VIV09	20031203	Radium-226	2.9	0.537	0.233	pCi/g	J+		1465980.47	599068.05
VIV09	20031203	Radium-228	2.1	0.472	0.198	pCi/g			1465980.47	599068.05
VIV09	20031203	Thorium-228	2.6	0.532	0.0451	pCi/g			1465980.47	599068.05
VIV09	20031203	Thorium-230	2.8	0.576	0.0771	pCi/g			1465980.47	599068.05
VIV09	20031203	Thorium-232	2.1	0.402	0.0436	pCi/g			1465980.47	599068.05
VIV14	20031203	Actinium-227	4.6	0.39	0.39	pCi/g		U	1465830.47	599038.05
VIV14	20031203	Americium-241	63	0.182	0.182	pCi/g		U	1465830.47	599038.05
VIV14	20031203	Bismuth-207	1.2	0.0498	0.0498	pCi/g		U	1465830.47	599038.05
VIV14	20031203	Bismuth-210M	8.3	0.0774	0.0774	pCi/g		U	1465830.47	599038.05
VIV14	20031203	Cesium-137	3.8	0.0643	0.0643	pCi/g		U	1465830.47	599038.05
VIV14	20031203	Cobalt-60	0.7	0.0715	0.0715	pCi/g		U	1465830.47	599038.05
VIV14	20031203	Potassium-40	47.8	27	0.618	pCi/g			1465830.47	599038.05
VIV14	20031203	Radium-226	2.9	0.634	0.243	pCi/g			1465830.47	599038.05
VIV14	20031203	Radium-228	2.1	1.2	0.48	pCi/g			1465830.47	599038.05
VIV14	20031203	Thorium-228	2.6	0.733	0.0718	pCi/g			1465830.47	599038.05
VIV14	20031203	Thorium-230	2.8	0.492	0.0318	pCi/g			1465830.47	599038.05
VIV14	20031203	Thorium-232	2.1	0.655	0.0472	pCi/g			1465830.47	599038.05
VIV15	20031203	Actinium-227	4.6	0.476	0.476	pCi/g		U	1465860.47	599038.05
VIV15	20031203	Americium-241	63	0.134	0.134	pCi/g		U	1465860.47	599038.05
VIV15	20031203	Bismuth-207	1.2	0.0632	0.0632	pCi/g		U	1465860.47	599038.05
VIV15	20031203	Bismuth-210M	8.3	0.0942	0.0942	pCi/g		U	1465860.47	599038.05
VIV15	20031203	Cesium-137	3.8	0.0814	0.0814	pCi/g		U	1465860.47	599038.05
VIV15	20031203	Cobalt-60	0.7	0.0782	0.0782	pCi/g		U	1465860.47	599038.05
VIV15	20031203	Potassium-40	47.8	32.3	0.77	pCi/g			1465860.47	599038.05
VIV15	20031203	Radium-226	2.9	0.86	0.311	pCi/g			1465860.47	599038.05
VIV15	20031203	Radium-228	2.1	1.06	0.33	pCi/g			1465860.47	599038.05
VIV15	20031203	Thorium-228	2.6	1	0.252	pCi/g			1465860.47	599038.05
VIV15	20031203	Thorium-230	2.8	0.584	0.139	pCi/g			1465860.47	599038.05
VIV15	20031203	Thorium-232	2.1	0.826	0.139	pCi/g			1465860.47	599038.05
VIV16	20031203	Actinium-227	4.6	0.338	0.338	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Actinium-227	4.6	0.336	0.336	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Americium-241	63	0.334	0.334	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Americium-241	63	0.328	0.328	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Bismuth-207	1.2	0.046	0.046	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Bismuth-207	1.2	0.0468	0.0468	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Bismuth-210M	8.3	0.0647	0.0647	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Bismuth-210M	8.3	0.0739	0.0739	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Cesium-137	3.8	0.052	0.052	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Cesium-137	3.8	0.0589	0.0589	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Cobalt-60	0.7	0.064	0.064	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Cobalt-60	0.7	0.0597	0.0597	pCi/g		U	1465890.47	599038.05
VIV16	20031203	Potassium-40	47.8	14	0.532	pCi/g			1465890.47	599038.05
VIV16	20031203	Potassium-40	47.8	14.8	0.392	pCi/g			1465890.47	599038.05
VIV16	20031203	Radium-226	2.9	0.689	0.0927	pCi/g			1465890.47	599038.05
VIV16	20031203	Radium-226	2.9	0.766	0.1	pCi/g			1465890.47	599038.05
VIV16	20031203	Radium-228	2.1	0.632	0.21	pCi/g			1465890.47	599038.05
VIV16	20031203	Radium-228	2.1	0.515	0.205	pCi/g			1465890.47	599038.05
VIV16	20031203	Thorium-228	2.6	0.542	0.0334	pCi/g			1465890.47	599038.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIV16	20031203	Thorium-230	2.8	0.62	0.0323	pCi/g			1465890.47	599038.05
VIV16	20031203	Thorium-232	2.1	0.357	0.0323	pCi/g			1465890.47	599038.05
VIV17	20031203	Actinium-227	4.6	0.413	0.413	pCi/g		U	1465920.47	599038.05
VIV17	20031203	Americium-241	63	0.21	0.21	pCi/g		U	1465920.47	599038.05
VIV17	20031203	Bismuth-207	1.2	0.0551	0.0551	pCi/g		U	1465920.47	599038.05
VIV17	20031203	Bismuth-210M	8.3	0.0824	0.0824	pCi/g		U	1465920.47	599038.05
VIV17	20031203	Cesium-137	3.8	0.0627	0.0627	pCi/g		U	1465920.47	599038.05
VIV17	20031203	Cobalt-60	0.7	0.0677	0.0677	pCi/g		U	1465920.47	599038.05
VIV17	20031203	Potassium-40	47.8	28.9	0.56	pCi/g			1465920.47	599038.05
VIV17	20031203	Radium-226	2.9	0.588	0.243	pCi/g			1465920.47	599038.05
VIV17	20031203	Radium-228	2.1	1.02	0.273	pCi/g			1465920.47	599038.05
VIV17	20031203	Thorium-228	2.6	0.724	0.111	pCi/g			1465920.47	599038.05
VIV17	20031203	Thorium-230	2.8	0.542	0.0812	pCi/g			1465920.47	599038.05
VIV17	20031203	Thorium-232	2.1	0.783	0.0902	pCi/g			1465920.47	599038.05
VIV18	20031203	Actinium-227	4.6	0.358	0.358	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Actinium-227	4.6	0.383	0.383	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Americium-241	63	0.191	0.191	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Americium-241	63	0.188	0.188	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Bismuth-207	1.2	0.0505	0.0505	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Bismuth-207	1.2	0.0478	0.0478	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Bismuth-210M	8.3	0.066	0.066	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Bismuth-210M	8.3	0.0761	0.0761	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Cesium-137	3.8	0.0609	0.0609	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Cesium-137	3.8	0.0608	0.0608	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Cobalt-60	0.7	0.0686	0.0686	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Cobalt-60	0.7	0.0656	0.0656	pCi/g		U	1465950.47	599038.05
VIV18	20031203	Potassium-40	47.8	20.9	0.418	pCi/g			1465950.47	599038.05
VIV18	20031203	Potassium-40	47.8	20.8	0.571	pCi/g			1465950.47	599038.05
VIV18	20031203	Radium-226	2.9	0.866	0.102	pCi/g			1465950.47	599038.05
VIV18	20031203	Radium-226	2.9	0.866	0.108	pCi/g			1465950.47	599038.05
VIV18	20031203	Radium-228	2.1	1.11	0.174	pCi/g			1465950.47	599038.05
VIV18	20031203	Radium-228	2.1	0.928	0.198	pCi/g			1465950.47	599038.05
VIV18	20031203	Thorium-228	2.6	0.848	0.117	pCi/g			1465950.47	599038.05
VIV18	20031203	Thorium-228	2.6	0.784	0.131	pCi/g			1465950.47	599038.05
VIV18	20031203	Thorium-230	2.8	0.544	0.0646	pCi/g			1465950.47	599038.05
VIV18	20031203	Thorium-230	2.8	0.488	0.0976	pCi/g			1465950.47	599038.05
VIV18	20031203	Thorium-232	2.1	0.849	0.0646	pCi/g			1465950.47	599038.05
VIV18	20031203	Thorium-232	2.1	0.81	0.086	pCi/g			1465950.47	599038.05
VIV19	20031203	Actinium-227	4.6	0.551	0.398	pCi/g		J	1465980.47	599038.05
VIV19	20031203	Americium-241	63	0.113	0.113	pCi/g		U	1465980.47	599038.05
VIV19	20031203	Bismuth-207	1.2	0.0477	0.0477	pCi/g		U	1465980.47	599038.05
VIV19	20031203	Bismuth-210M	8.3	0.0715	0.0715	pCi/g		U	1465980.47	599038.05
VIV19	20031203	Cesium-137	3.8	0.0517	0.0517	pCi/g		U	1465980.47	599038.05
VIV19	20031203	Cobalt-60	0.7	0.0546	0.0546	pCi/g		U	1465980.47	599038.05
VIV19	20031203	Potassium-40	47.8	19.9	0.402	pCi/g			1465980.47	599038.05
VIV19	20031203	Radium-226	2.9	0.71	0.105	pCi/g			1465980.47	599038.05
VIV19	20031203	Radium-228	2.1	1.09	0.187	pCi/g			1465980.47	599038.05
VIV19	20031203	Thorium-228	2.6	0.935	0.0916	pCi/g			1465980.47	599038.05
VIV19	20031203	Thorium-230	2.8	0.837	0.0405	pCi/g			1465980.47	599038.05
VIV19	20031203	Thorium-232	2.1	0.478	0.0405	pCi/g			1465980.47	599038.05
VIV23	20031203	Actinium-227	4.6	0.342	0.342	pCi/g		U	1465860.47	599008.05
VIV23	20031203	Americium-241	63	0.319	0.319	pCi/g		U	1465860.47	599008.05
VIV23	20031203	Bismuth-207	1.2	0.045	0.045	pCi/g		U	1465860.47	599008.05
VIV23	20031203	Bismuth-210M	8.3	0.0695	0.0695	pCi/g		U	1465860.47	599008.05
VIV23	20031203	Cesium-137	3.8	0.0554	0.0554	pCi/g		U	1465860.47	599008.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VIV23	20031203	Cobalt-60	0.7	0.0753	0.0753	pCi/g		U	1465860.47	599008.05
VIV23	20031203	Potassium-40	47.8	13	0.514	pCi/g			1465860.47	599008.05
VIV23	20031203	Radium-226	2.9	0.746	0.0937	pCi/g			1465860.47	599008.05
VIV23	20031203	Radium-228	2.1	0.511	0.373	pCi/g			1465860.47	599008.05
VIV23	20031203	Thorium-228	2.6	0.486	0.171	pCi/g			1465860.47	599008.05
VIV23	20031203	Thorium-230	2.8	0.366	0.125	pCi/g			1465860.47	599008.05
VIV23	20031203	Thorium-232	2.1	0.433	0.139	pCi/g			1465860.47	599008.05
VIV24	20031203	Actinium-227	4.6	0.396	0.396	pCi/g		U	1465890.47	599008.05
VIV24	20031203	Americium-241	63	0.113	0.113	pCi/g		U	1465890.47	599008.05
VIV24	20031203	Bismuth-207	1.2	0.0525	0.0525	pCi/g		U	1465890.47	599008.05
VIV24	20031203	Bismuth-210M	8.3	0.0734	0.0734	pCi/g		U	1465890.47	599008.05
VIV24	20031203	Cesium-137	3.8	0.0621	0.0621	pCi/g		U	1465890.47	599008.05
VIV24	20031203	Cobalt-60	0.7	0.0699	0.0699	pCi/g		U	1465890.47	599008.05
VIV24	20031203	Potassium-40	47.8	24	0.358	pCi/g			1465890.47	599008.05
VIV24	20031203	Radium-226	2.9	0.769	0.108	pCi/g			1465890.47	599008.05
VIV24	20031203	Radium-228	2.1	0.87	0.23	pCi/g			1465890.47	599008.05
VIV24	20031203	Thorium-228	2.6	0.65	0.0701	pCi/g			1465890.47	599008.05
VIV24	20031203	Thorium-230	2.8	0.426	0.0441	pCi/g			1465890.47	599008.05
VIV24	20031203	Thorium-232	2.1	0.711	0.0441	pCi/g			1465890.47	599008.05
VIV25	20031203	Actinium-227	4.6	0.378	0.378	pCi/g		U	1465920.47	599008.05
VIV25	20031203	Americium-241	63	0.108	0.108	pCi/g		U	1465920.47	599008.05
VIV25	20031203	Bismuth-207	1.2	0.0538	0.0538	pCi/g		U	1465920.47	599008.05
VIV25	20031203	Bismuth-210M	8.3	0.0716	0.0716	pCi/g		U	1465920.47	599008.05
VIV25	20031203	Cesium-137	3.8	0.0587	0.0587	pCi/g		U	1465920.47	599008.05
VIV25	20031203	Cobalt-60	0.7	0.0585	0.0585	pCi/g		U	1465920.47	599008.05
VIV25	20031203	Potassium-40	47.8	19.1	0.555	pCi/g			1465920.47	599008.05
VIV25	20031203	Radium-226	2.9	0.829	0.251	pCi/g			1465920.47	599008.05
VIV25	20031203	Radium-228	2.1	1.04	0.216	pCi/g			1465920.47	599008.05
VIV25	20031203	Thorium-228	2.6	0.845	0.144	pCi/g			1465920.47	599008.05
VIV25	20031203	Thorium-230	2.8	0.537	0.0904	pCi/g			1465920.47	599008.05
VIV25	20031203	Thorium-232	2.1	0.784	0.0904	pCi/g			1465920.47	599008.05
VIV26	20031203	Actinium-227	4.6	0.405	0.405	pCi/g		U	1465890.47	598978.05
VIV26	20031203	Americium-241	63	0.113	0.113	pCi/g		U	1465890.47	598978.05
VIV26	20031203	Bismuth-207	1.2	0.0608	0.0608	pCi/g		U	1465890.47	598978.05
VIV26	20031203	Bismuth-210M	8.3	0.078	0.078	pCi/g		U	1465890.47	598978.05
VIV26	20031203	Cesium-137	3.8	0.0601	0.0601	pCi/g		U	1465890.47	598978.05
VIV26	20031203	Cobalt-60	0.7	0.0671	0.0671	pCi/g		U	1465890.47	598978.05
VIV26	20031203	Potassium-40	47.8	25.5	0.685	pCi/g			1465890.47	598978.05
VIV26	20031203	Radium-226	2.9	0.662	0.129	pCi/g			1465890.47	598978.05
VIV26	20031203	Radium-228	2.1	1.08	0.258	pCi/g			1465890.47	598978.05
VIV26	20031203	Thorium-228	2.6	0.844	0.0538	pCi/g			1465890.47	598978.05
VIV26	20031203	Thorium-230	2.8	0.249	0.025	pCi/g			1465890.47	598978.05
VIV26	20031203	Thorium-232	2.1	0.498	0.025	pCi/g			1465890.47	598978.05
VV06	20031203	Plutonium-238	55	1.19	0.0556	pCi/g			1465920.47	598978.05
VV06	20031203	Plutonium-239/240	62	0.0359	0.0359	pCi/g		U	1465920.47	598978.05
VV06	20031203	Thorium-228	2.6	2.29	0.0387	pCi/g			1465920.47	598978.05
VV06	20031203	Thorium-230	2.8	1.05	0.0662	pCi/g			1465920.47	598978.05
VV06	20031203	Thorium-232	2.1	2.1	0.0375	pCi/g			1465920.47	598978.05
VV07	20031203	Plutonium-238	55	0.0648	0.0648	pCi/g		U	1465950.47	598978.05
VV07	20031203	Plutonium-239/240	62	0.0419	0.0419	pCi/g		U	1465950.47	598978.05
VV07	20031203	Thorium-228	2.6	1.14	0.145	pCi/g			1465950.47	598978.05
VV07	20031203	Thorium-230	2.8	1.04	0.0671	pCi/g			1465950.47	598978.05
VV07	20031203	Thorium-232	2.1	0.669	0.0671	pCi/g			1465950.47	598978.05
VV08	20031203	Plutonium-238	55	0.0968	0.0968	pCi/g		U	1465980.47	598978.05
VV08	20031203	Plutonium-238	55	0.0256	0.0256	pCi/g		U	1465980.47	598978.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV08	20031203	Plutonium-239/240	62	0.0437	0.0437	pCi/g		U	1465980.47	598978.05
VV08	20031203	Plutonium-239/240	62	0.0283	0.0256	pCi/g			1465980.47	598978.05
VV08	20031203	Thorium-228	2.6	0.564	0.13	pCi/g			1465980.47	598978.05
VV08	20031203	Thorium-228	2.6	0.926	0.0706	pCi/g			1465980.47	598978.05
VV08	20031203	Thorium-230	2.8	0.31	0.0601	pCi/g			1465980.47	598978.05
VV08	20031203	Thorium-230	2.8	0.642	0.0387	pCi/g			1465980.47	598978.05
VV08	20031203	Thorium-232	2.1	0.554	0.0601	pCi/g			1465980.47	598978.05
VV08	20031203	Thorium-232	2.1	0.682	0.0683	pCi/g			1465980.47	598978.05
VV11	20031203	Plutonium-238	55	4.97	0.0466	pCi/g			1465890.47	598948.05
VV11	20031203	Plutonium-239/240	62	0.215	0.103	pCi/g			1465890.47	598948.05
VV11	20031203	Thorium-228	2.6	0.955	0.189	pCi/g			1465890.47	598948.05
VV11	20031203	Thorium-230	2.8	0.905	0.0876	pCi/g			1465890.47	598948.05
VV11	20031203	Thorium-232	2.1	1.07	0.0876	pCi/g			1465890.47	598948.05
VV12	20031203	Plutonium-238	55	0.00743	0.00743	pCi/g		U	1465920.47	598948.05
VV12	20031203	Plutonium-239/240	62	0.00743	0.00743	pCi/g		U	1465920.47	598948.05
VV12	20031203	Thorium-228	2.6	0.391	0.0366	pCi/g			1465920.47	598948.05
VV12	20031203	Thorium-230	2.8	0.735	0.0269	pCi/g			1465920.47	598948.05
VV12	20031203	Thorium-232	2.1	0.43	0.0317	pCi/g			1465920.47	598948.05
VV13	20031203	Plutonium-238	55	0.0414	0.0225	pCi/g			1465950.47	598948.05
VV13	20031203	Plutonium-239/240	62	0.0225	0.0225	pCi/g		U	1465950.47	598948.05
VV13	20031203	Thorium-228	2.6	0.474	0.0583	pCi/g			1465950.47	598948.05
VV13	20031203	Thorium-230	2.8	0.161	0.0242	pCi/g			1465950.47	598948.05
VV13	20031203	Thorium-232	2.1	0.371	0.0505	pCi/g			1465950.47	598948.05
VV14	20031203	1,1,1-Trichloroethane	3,310	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,1,2,2-Tetrachloroethane	8.88	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,1,2-Trichloroethane	19.0	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,1-Dichloroethane	10,600	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,1-Dichloroethene	102,000	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,2,4-Trichlorobenzene	2,130	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,2-cis-Dichloroethene (DCE)	2,130	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,2-Dibromo-3-Chloropropane	21.2	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,2-Dichlorobenzene	19,200	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,2-Dichloroethane	7.61	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,2-Dichloropropane	438	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,2-trans-Dichloroethene	4,260	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,3-cis-Dichloropropene	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,3-Dichlorobenzene	6,380	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,3-trans-Dichloropropene	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	1,4-Dichlorobenzene	1,240	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	2-Butanone	9,300	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	2-Hexanone	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	4-Methyl-2-pentanone	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Acetone	192,000	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Benzene	542	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Bromodichloromethane	481	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Bromoform	3,770	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Bromomethane	12.6	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Carbon Disulfide	1,160	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Carbon Tetrachloride	5.38	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Chlorobenzene	489	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Chloroethane	160	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Chloromethane	27.1	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Cyclohexane	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV14	20031203	Dibromochloromethane	355	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Dichlorodifluoromethane	42,600	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Dichloromethane (Methylene Chloride)	203	0.021	*	mg/kg		B	1465980.47	598948.05
VV14	20031203	Ethylbenzene	0.48	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Ethylene Dibromide (1,2-Dibromoethane)	0.337	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	FREON-113	69,300	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Isopropyl Benzene	530	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Methyl Acetate	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Methyl Cyclohexane	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Styrene	14,500	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Tert-butyl methyl ether	nc	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Tetrachloroethene (PCE)	187	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Toluene	250	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Trichloroethylene (TCE)	52.1	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Trichlorofluoromethane	730	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Trichloromethane (Cholorform)	5.15	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Vinyl Chloride	4.14	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV14	20031203	Xylenes, Total	42,600	0.011	0.011	mg/kg		U	1465980.47	598948.05
VV16	20031203	1,1,1-Trichloroethane	3,310	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1,1-Trichloroethane	3,310	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1,2,2-Tetrachloroethane	8.88	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1,2,2-Tetrachloroethane	8.88	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1,2-Trichloroethane	19.0	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1,2-Trichloroethane	19.0	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1-Dichloroethane	10,600	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1-Dichloroethane	10,600	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1-Dichloroethene	102,000	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,1-Dichloroethene	102,000	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2,4-Trichlorobenzene	2,130	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2,4-Trichlorobenzene	2,130	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-cis-Dichloroethene (DCE)	2,130	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-cis-Dichloroethene (DCE)	2,130	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dibromo-3-Chloropropane	21.2	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dibromo-3-Chloropropane	21.2	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dichlorobenzene	19,200	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dichlorobenzene	19,200	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dichloroethane	7.61	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dichloroethane	7.61	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dichloropropane	438	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-Dichloropropane	438	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-trans-Dichloroethene	4,260	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,2-trans-Dichloroethene	4,260	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,3-cis-Dichloropropene	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,3-cis-Dichloropropene	nc	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,3-Dichlorobenzene	6,380	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,3-Dichlorobenzene	6,380	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,3-trans-Dichloropropene	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,3-trans-Dichloropropene	nc	0.012	0.012	mg/kg		U	1465890.47	598918.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV16	20031203	1,4-Dichlorobenzene	1,240	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	1,4-Dichlorobenzene	1,240	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	2-Butanone	9,300	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	2-Butanone	9,300	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	2-Hexanone	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	2-Hexanone	nc	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	4-Methyl-2-pentanone	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	4-Methyl-2-pentanone	nc	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Acetone	192,000	0.017	*	mg/kg			1465890.47	598918.05
VV16	20031203	Acetone	192,000	0.012	*	mg/kg		J	1465890.47	598918.05
VV16	20031203	Benzene	542	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Benzene	542	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Bromodichloromethane	481	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Bromodichloromethane	481	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Bromoform	3,770	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Bromoform	3,770	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Bromomethane	12.6	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Bromomethane	12.6	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Carbon Disulfide	1,160	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Carbon Disulfide	1,160	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Carbon Tetrachloride	5.38	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Carbon Tetrachloride	5.38	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Chlorobenzene	489	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Chlorobenzene	489	0.003	*	mg/kg		J	1465890.47	598918.05
VV16	20031203	Chloroethane	160	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Chloroethane	160	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Chloromethane	27.1	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Chloromethane	27.1	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Cyclohexane	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Cyclohexane	nc	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Dibromochloromethane	355	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Dibromochloromethane	355	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Dichlorodifluoromethane	42,600	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Dichlorodifluoromethane	42,600	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Dichloromethane (Methylene Chloride)	203	0.028	*	mg/kg		B	1465890.47	598918.05
VV16	20031203	Dichloromethane (Methylene Chloride)	203	0.021	*	mg/kg	U	B	1465890.47	598918.05
VV16	20031203	Ethylbenzene	0.48	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Ethylbenzene	0.48	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Ethylene Dibromide (1,2-Dibromoethane)	0.337	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Ethylene Dibromide (1,2-Dibromoethane)	0.337	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	FREON-113	69,300	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	FREON-113	69,300	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Isopropyl Benzene	530	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Isopropyl Benzene	530	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Methyl Acetate	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Methyl Acetate	nc	0.012	0.012	mg/kg	UJ	U	1465890.47	598918.05
VV16	20031203	Methyl Cyclohexane	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Methyl Cyclohexane	nc	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Styrene	14,500	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Styrene	14,500	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Tert-butyl methyl ether	nc	0.011	0.011	mg/kg		U	1465890.47	598918.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV16	20031203	Tert-butyl methyl ether	nc	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Tetrachloroethene (PCE)	187	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Tetrachloroethene (PCE)	187	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Toluene	250	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Toluene	250	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Trichloroethylene (TCE)	52.1	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Trichloroethylene (TCE)	52.1	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Trichlorofluoromethane	730	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Trichlorofluoromethane	730	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Trichloromethane (Cholorform)	5.15	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Trichloromethane (Cholorform)	5.15	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Vinyl Chloride	4.14	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Vinyl Chloride	4.14	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV16	20031203	Xylenes, Total	42,600	0.011	0.011	mg/kg		U	1465890.47	598918.05
VV16	20031203	Xylenes, Total	42,600	0.012	0.012	mg/kg		U	1465890.47	598918.05
VV17	20031203	1,1,1-Trichloroethane	3,310	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,1,2,2-Tetrachloroethane	8.88	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,1,2-Trichloroethane	19.0	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,1-Dichloroethane	10,600	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,1-Dichloroethene	102,000	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,2,4-Trichlorobenzene	2,130	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,2-cis-Dichloroethene (DCE)	2,130	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,2-Dibromo-3-Chloropropane	21.2	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,2-Dichlorobenzene	19,200	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,2-Dichloroethane	7.61	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,2-Dichloropropane	438	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,2-trans-Dichloroethene	4,260	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,3-cis-Dichloropropene	nc	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,3-Dichlorobenzene	6,380	0.001	*	mg/kg		J	1465920.47	598918.05
VV17	20031203	1,3-trans-Dichloropropene	nc	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	1,4-Dichlorobenzene	1,240	0.013	*	mg/kg			1465920.47	598918.05
VV17	20031203	2-Butanone	9,300	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	2-Hexanone	nc	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	4-Methyl-2-pentanone	nc	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Acetone	192,000	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Benzene	542	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Bromodichloromethane	481	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Bromoform	3,770	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Bromomethane	12.6	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Carbon Disulfide	1,160	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Carbon Tetrachloride	5.38	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Chlorobenzene	489	0.051	*	mg/kg			1465920.47	598918.05
VV17	20031203	Chloroethane	160	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Chloromethane	27.1	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Cyclohexane	nc	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Dibromochloromethane	355	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Dichlorodifluoromethane	42,600	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Dichloromethane (Methylene Chloride)	203	0.018	*	mg/kg		B	1465920.47	598918.05
VV17	20031203	Ethylbenzene	0.48	0.011	0.011	mg/kg		U	1465920.47	598918.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV17	20031203	Ethylene Dibromide (1,2-Dibromoethane)	0.337	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	FREON-113	69,300	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Isopropyl Benzene	530	0.002	*	mg/kg		J	1465920.47	598918.05
VV17	20031203	Methyl Acetate	nc	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Methyl Cyclohexane	nc	0.005	*	mg/kg		J	1465920.47	598918.05
VV17	20031203	Styrene	14,500	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Tert-butyl methyl ether	nc	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Tetrachloroethene (PCE)	187	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Toluene	250	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Trichloroethylene (TCE)	52.1	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Trichlorofluoromethane	730	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Trichloromethane (Cholorform)	5.15	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Vinyl Chloride	4.14	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV17	20031203	Xylenes, Total	42,600	0.011	0.011	mg/kg		U	1465920.47	598918.05
VV18	20031203	1,1,1-Trichloroethane	3,310	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,1,2,2-Tetrachloroethane	8.88	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,1,2-Trichloroethane	19.0	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,1-Dichloroethane	10,600	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,1-Dichloroethene	102,000	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,2,4-Trichlorobenzene	2,130	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,2-cis-Dichloroethene (DCE)	2,130	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,2-Dibromo-3-Chloropropane	21.2	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,2-Dichlorobenzene	19,200	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,2-Dichloroethane	7.61	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,2-Dichloropropane	438	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,2-trans-Dichloroethene	4,260	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,3-cis-Dichloropropene	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,3-Dichlorobenzene	6,380	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,3-trans-Dichloropropene	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	1,4-Dichlorobenzene	1,240	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	2-Butanone	9,300	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	2-Hexanone	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	4-Methyl-2-pentanone	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Acetone	192,000	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Benzene	542	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Bromodichloromethane	481	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Bromoform	3,770	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Bromomethane	12.6	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Carbon Disulfide	1,160	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Carbon Tetrachloride	5.38	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Chlorobenzene	489	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Chloroethane	160	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Chloromethane	27.1	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Cyclohexane	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Dibromochloromethane	355	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Dichlorodifluoromethane	42,600	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Dichloromethane (Methylene Chloride)	203	0.022	*	mg/kg		B	1465950.47	598918.05
VV18	20031203	Ethylbenzene	0.48	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Ethylene Dibromide (1,2-Dibromoethane)	0.337	0.012	0.012	mg/kg		U	1465950.47	598918.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VV18	20031203	FREON-113	69,300	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Isopropyl Benzene	530	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Methyl Acetate	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Methyl Cyclohexane	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Styrene	14,500	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Tert-butyl methyl ether	nc	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Tetrachloroethene (PCE)	187	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Toluene	250	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Trichloroethylene (TCE)	52.1	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Trichlorofluoromethane	730	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Trichloromethane (Cholorform)	5.15	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Vinyl Chloride	4.14	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV18	20031203	Xylenes, Total	42,600	0.012	0.012	mg/kg		U	1465950.47	598918.05
VV19	20031203	Plutonium-238	55	0.0389	0.0389	pCi/g		U	1465980.47	598918.05
VV19	20031203	Plutonium-239/240	62	0.086	0.086	pCi/g		U	1465980.47	598918.05
VV19	20031203	Thorium-228	2.6	0.514	0.129	pCi/g			1465980.47	598918.05
VV19	20031203	Thorium-230	2.8	0.48	0.105	pCi/g			1465980.47	598918.05
VV19	20031203	Thorium-232	2.1	0.48	0.105	pCi/g			1465980.47	598918.05
VV20	20031203	Plutonium-238	55	0.0497	0.0497	pCi/g		U	1465980.47	599008.05
VV20	20031203	Plutonium-239/240	62	0.0497	0.0497	pCi/g		U	1465980.47	599008.05
VV20	20031203	Thorium-228	2.6	0.441	0.0543	pCi/g			1465980.47	599008.05
VV20	20031203	Thorium-230	2.8	0.504	0.0525	pCi/g			1465980.47	599008.05
VV20	20031203	Thorium-232	2.1	0.562	0.0525	pCi/g			1465980.47	599008.05
VVI01	20031203	Actinium-227	4.6	0.384	0.384	pCi/g		U	1465800.47	599008.05
VVI01	20031203	Americium-241	63	0.356	0.356	pCi/g		U	1465800.47	599008.05
VVI01	20031203	Bismuth-207	1.2	0.052	0.052	pCi/g		U	1465800.47	599008.05
VVI01	20031203	Bismuth-210M	8.3	0.0832	0.0832	pCi/g		U	1465800.47	599008.05
VVI01	20031203	Cesium-137	3.8	0.0663	0.0663	pCi/g		U	1465800.47	599008.05
VVI01	20031203	Cobalt-60	0.7	0.0797	0.0797	pCi/g		U	1465800.47	599008.05
VVI01	20031203	Potassium-40	47.8	29.6	0.56	pCi/g			1465800.47	599008.05
VVI01	20031203	Radium-226	2.9	0.674	0.116	pCi/g			1465800.47	599008.05
VVI01	20031203	Radium-228	2.1	1.02	0.264	pCi/g			1465800.47	599008.05
VVI01	20031203	Thorium-228	2.6	0.592	0.0649	pCi/g			1465800.47	599008.05
VVI01	20031203	Thorium-230	2.8	0.322	0.0301	pCi/g			1465800.47	599008.05
VVI01	20031203	Thorium-232	2.1	0.655	0.0301	pCi/g			1465800.47	599008.05
VVI02	20031203	Actinium-227	4.6	0.435	0.435	pCi/g		U	1465830.47	599008.05
VVI02	20031203	Americium-241	63	0.123	0.123	pCi/g		U	1465830.47	599008.05
VVI02	20031203	Bismuth-207	1.2	0.0544	0.0544	pCi/g		U	1465830.47	599008.05
VVI02	20031203	Bismuth-210M	8.3	0.0865	0.0865	pCi/g		U	1465830.47	599008.05
VVI02	20031203	Cesium-137	3.8	0.0661	0.0661	pCi/g		U	1465830.47	599008.05
VVI02	20031203	Cobalt-60	0.7	0.0795	0.0795	pCi/g		U	1465830.47	599008.05
VVI02	20031203	Potassium-40	47.8	29.9	0.714	pCi/g			1465830.47	599008.05
VVI02	20031203	Radium-226	2.9	0.709	0.259	pCi/g			1465830.47	599008.05
VVI02	20031203	Radium-228	2.1	0.949	0.257	pCi/g			1465830.47	599008.05
VVI02	20031203	Thorium-228	2.6	0.83	0.0859	pCi/g			1465830.47	599008.05
VVI02	20031203	Thorium-230	2.8	0.309	0.0398	pCi/g			1465830.47	599008.05
VVI02	20031203	Thorium-232	2.1	0.706	0.0398	pCi/g			1465830.47	599008.05
VVI03	20031203	Actinium-227	4.6	0.473	0.471	pCi/g		J	1465800.47	598978.05
VVI03	20031203	Americium-241	63	0.14	0.14	pCi/g		U	1465800.47	598978.05
VVI03	20031203	Bismuth-207	1.2	0.0605	0.0605	pCi/g		U	1465800.47	598978.05
VVI03	20031203	Bismuth-210M	8.3	0.0817	0.0817	pCi/g		U	1465800.47	598978.05
VVI03	20031203	Cesium-137	3.8	0.0681	0.0681	pCi/g		U	1465800.47	598978.05
VVI03	20031203	Cobalt-60	0.7	0.0777	0.0777	pCi/g		U	1465800.47	598978.05
VVI03	20031203	Potassium-40	47.8	35.4	0.655	pCi/g			1465800.47	598978.05

Table 5: Results for Sample Event 4

(Includes all of Phase VI & Remainder of IV & V)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
							data	lab	X	Y
VVI03	20031203	Radium-226	2.9	0.726	0.131	pCi/g			1465800.47	598978.05
VVI03	20031203	Radium-228	2.1	1.48	0.251	pCi/g			1465800.47	598978.05
VVI03	20031203	Thorium-228	2.6	0.975	0.0441	pCi/g			1465800.47	598978.05
VVI03	20031203	Thorium-230	2.8	0.419	0.0242	pCi/g			1465800.47	598978.05
VVI03	20031203	Thorium-232	2.1	0.72	0.0427	pCi/g			1465800.47	598978.05
VVI04	20031203	Actinium-227	4.6	0.381	0.381	pCi/g		U	1465830.47	598978.05
VVI04	20031203	Americium-241	63	0.218	0.218	pCi/g		U	1465830.47	598978.05
VVI04	20031203	Bismuth-207	1.2	0.055	0.055	pCi/g		U	1465830.47	598978.05
VVI04	20031203	Bismuth-210M	8.3	0.0799	0.0799	pCi/g		U	1465830.47	598978.05
VVI04	20031203	Cesium-137	3.8	0.0819	0.0819	pCi/g		U	1465830.47	598978.05
VVI04	20031203	Cobalt-60	0.7	0.0722	0.0722	pCi/g		U	1465830.47	598978.05
VVI04	20031203	Potassium-40	47.8	29.9	0.493	pCi/g			1465830.47	598978.05
VVI04	20031203	Radium-226	2.9	0.678	0.255	pCi/g			1465830.47	598978.05
VVI04	20031203	Radium-228	2.1	1.08	0.266	pCi/g			1465830.47	598978.05
VVI04	20031203	Thorium-228	2.6	0.812	0.135	pCi/g			1465830.47	598978.05
VVI04	20031203	Thorium-230	2.8	0.438	0.0517	pCi/g			1465830.47	598978.05
VVI04	20031203	Thorium-232	2.1	0.743	0.0517	pCi/g			1465830.47	598978.05
VVI05	20031203	Actinium-227	4.6	0.376	0.376	pCi/g		U	1465860.47	598978.05
VVI05	20031203	Americium-241	63	0.356	0.356	pCi/g		U	1465860.47	598978.05
VVI05	20031203	Bismuth-207	1.2	0.06	0.06	pCi/g		U	1465860.47	598978.05
VVI05	20031203	Bismuth-210M	8.3	0.0822	0.0822	pCi/g		U	1465860.47	598978.05
VVI05	20031203	Cesium-137	3.8	0.0677	0.0677	pCi/g		U	1465860.47	598978.05
VVI05	20031203	Cobalt-60	0.7	0.0796	0.0796	pCi/g		U	1465860.47	598978.05
VVI05	20031203	Potassium-40	47.8	31.9	0.65	pCi/g			1465860.47	598978.05
VVI05	20031203	Radium-226	2.9	0.664	0.254	pCi/g			1465860.47	598978.05
VVI05	20031203	Radium-228	2.1	1.28	0.217	pCi/g			1465860.47	598978.05
VVI05	20031203	Thorium-228	2.6	1.1	0.1	pCi/g			1465860.47	598978.05
VVI05	20031203	Thorium-230	2.8	0.292	0.0395	pCi/g			1465860.47	598978.05
VVI05	20031203	Thorium-232	2.1	0.86	0.0395	pCi/g			1465860.47	598978.05

Note: VVI06 was resampled during Sample Event 6; See Table 7.

U = not detected

J = estimated

CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team

CO for chem = more stringent of CO or Hazard Index = 1

B = Organics *(analyte found in associated blank and sample)*

J+ = estimated; potential positive bias

* = no detection limit reported

nc = not calculated

Table 6: Results for Sample Event 5 (pCi/g)

(Includes all of Phase IIb)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIb01	20040629	Actinium-227	4.6	0.474	0.474		U	1465980.47	599308.05
VIIb01	20040629	Americium-241	63	0.451	0.451		U	1465980.47	599308.05
VIIb01	20040629	Bismuth-207	1.2	0.0767	0.0767		U	1465980.47	599308.05
VIIb01	20040629	Bismuth-210M	8.3	0.092	0.092		U	1465980.47	599308.05
VIIb01	20040629	Cesium-137	3.8	0.107	0.0835		J	1465980.47	599308.05
VIIb01	20040629	Cobalt-60	0.7	0.103	0.103		U	1465980.47	599308.05
VIIb01	20040629	Potassium-40	47.8	14.3	0.447			1465980.47	599308.05
VIIb01	20040629	Radium-226	2.9	0.754	0.332			1465980.47	599308.05
VIIb01	20040629	Radium-228	2.1	0.864	0.272			1465980.47	599308.05
VIIb01	20040629	Thorium-228	2.6	0.607	0.0124			1465980.47	599308.05
VIIb01	20040629	Thorium-230	2.8	0.446	0.0148			1465980.47	599308.05
VIIb01	20040629	Thorium-232	2.1	0.469	0.00583			1465980.47	599308.05
VIIb01	20040629	Uranium-234	2.0	0.271	0.023			1465980.47	599308.05
VIIb01	20040629	Uranium-235	3.2	0.0175	0.0174		J	1465980.47	599308.05
VIIb01	20040629	Uranium-238	2.2	0.249	0.0205			1465980.47	599308.05
VIIb02	20040629	Actinium-227	4.6	0.608	0.608		U	1466010.47	599308.05
VIIb02	20040629	Americium-241	63	0.163	0.163		U	1466010.47	599308.05
VIIb02	20040629	Bismuth-207	1.2	0.0938	0.0938		U	1466010.47	599308.05
VIIb02	20040629	Bismuth-210M	8.3	0.129	0.129		U	1466010.47	599308.05
VIIb02	20040629	Cesium-137	3.8	0.0979	0.0979		U	1466010.47	599308.05
VIIb02	20040629	Cobalt-60	0.7	0.0888	0.0888		U	1466010.47	599308.05
VIIb02	20040629	Potassium-40	47.8	18.2	0.809			1466010.47	599308.05
VIIb02	20040629	Radium-226	2.9	0.932	0.413			1466010.47	599308.05
VIIb02	20040629	Radium-228	2.1	0.862	0.335			1466010.47	599308.05
VIIb02	20040629	Thorium-228	2.6	0.757	0.0201			1466010.47	599308.05
VIIb02	20040629	Thorium-230	2.8	0.653	0.0161			1466010.47	599308.05
VIIb02	20040629	Thorium-232	2.1	0.698	0.0161			1466010.47	599308.05
VIIb02	20040629	Uranium-234	2.0	0.309	0.0195			1466010.47	599308.05
VIIb02	20040629	Uranium-235	3.2	0.0163	0.011		J	1466010.47	599308.05
VIIb02	20040629	Uranium-238	2.2	0.312	0.023			1466010.47	599308.05
VIIb03	20040629	Actinium-227	4.6	0.5	0.5		U	1466040.47	599308.05
VIIb03	20040629	Americium-241	63	0.141	0.141		U	1466040.47	599308.05
VIIb03	20040629	Bismuth-207	1.2	0.073	0.073		U	1466040.47	599308.05
VIIb03	20040629	Bismuth-210M	8.3	0.0977	0.0977		U	1466040.47	599308.05
VIIb03	20040629	Cesium-137	3.8	0.0986	0.0986		U	1466040.47	599308.05
VIIb03	20040629	Cobalt-60	0.7	0.0953	0.0953		U	1466040.47	599308.05
VIIb03	20040629	Potassium-40	47.8	12.8	0.636			1466040.47	599308.05
VIIb03	20040629	Radium-226	2.9	0.651	0.346			1466040.47	599308.05
VIIb03	20040629	Radium-228	2.1	0.876	0.582			1466040.47	599308.05
VIIb03	20040629	Thorium-228	2.6	0.694	0.0215			1466040.47	599308.05
VIIb03	20040629	Thorium-230	2.8	0.52	0.00745			1466040.47	599308.05
VIIb03	20040629	Thorium-232	2.1	0.567	0.00745			1466040.47	599308.05
VIIb03	20040629	Uranium-234	2.0	0.308	0.0491			1466040.47	599308.05
VIIb03	20040629	Uranium-235	3.2	0.0377	0.0377		U	1466040.47	599308.05
VIIb03	20040629	Uranium-238	2.2	0.298	0.0471			1466040.47	599308.05
VIIb04	20040629	Actinium-227	4.6	0.446	0.446		U	1466070.47	599308.05
VIIb04	20040629	Americium-241	63	0.408	0.408		U	1466070.47	599308.05
VIIb04	20040629	Bismuth-207	1.2	0.0558	0.0558		U	1466070.47	599308.05
VIIb04	20040629	Bismuth-210M	8.3	0.089	0.089		U	1466070.47	599308.05
VIIb04	20040629	Cesium-137	3.8	0.0772	0.0772		U	1466070.47	599308.05
VIIb04	20040629	Cobalt-60	0.7	0.0743	0.0743		U	1466070.47	599308.05

Table 6: Results for Sample Event 5 (pCi/g)

(Includes all of Phase IIb)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIb04	20040629	Potassium-40	47.8	11.9	0.633			1466070.47	599308.05
VIIb04	20040629	Radium-226	2.9	0.494	0.12			1466070.47	599308.05
VIIb04	20040629	Radium-228	2.1	0.483	0.46			1466070.47	599308.05
VIIb04	20040629	Thorium-228	2.6	0.488	0.0135			1466070.47	599308.05
VIIb04	20040629	Thorium-230	2.8	0.354	0.0124			1466070.47	599308.05
VIIb04	20040629	Thorium-232	2.1	0.407	0.00881			1466070.47	599308.05
VIIb04	20040629	Uranium-234	2.0	0.258	0.0451			1466070.47	599308.05
VIIb04	20040629	Uranium-235	3.2	0.0285	0.0285		U	1466070.47	599308.05
VIIb04	20040629	Uranium-238	2.2	0.221	0.0241			1466070.47	599308.05
VIIb05	20040629	Actinium-227	4.6	0.725	0.725		U	1465980.47	599278.05
VIIb05	20040629	Americium-241	63	0.204	0.204		U	1465980.47	599278.05
VIIb05	20040629	Bismuth-207	1.2	0.114	0.114		U	1465980.47	599278.05
VIIb05	20040629	Bismuth-210M	8.3	0.16	0.16		U	1465980.47	599278.05
VIIb05	20040629	Cesium-137	3.8	0.134	0.134		U	1465980.47	599278.05
VIIb05	20040629	Cobalt-60	0.7	0.141	0.141		U	1465980.47	599278.05
VIIb05	20040629	Potassium-40	47.8	31.7	0.973			1465980.47	599278.05
VIIb05	20040629	Radium-226	2.9	0.888	0.448	J		1465980.47	599278.05
VIIb05	20040629	Radium-228	2.1	1.16	0.899	J		1465980.47	599278.05
VIIb05	20040629	Thorium-228	2.6	0.884	0.0152			1465980.47	599278.05
VIIb05	20040629	Thorium-230	2.8	0.363	0.00713			1465980.47	599278.05
VIIb05	20040629	Thorium-232	2.1	0.486	0.0149			1465980.47	599278.05
VIIb05	20040629	Uranium-234	2.0	0.309	0.0441			1465980.47	599278.05
VIIb05	20040629	Uranium-235	3.2	0.0441	0.0441		U	1465980.47	599278.05
VIIb05	20040629	Uranium-238	2.2	0.136	0.0492			1465980.47	599278.05
VIIb06	20040629	Actinium-227	4.6	0.508	0.508		U	1466010.47	599278.05
VIIb06	20040629	Americium-241	63	0.451	0.451		U	1466010.47	599278.05
VIIb06	20040629	Bismuth-207	1.2	0.0701	0.0701		U	1466010.47	599278.05
VIIb06	20040629	Bismuth-210M	8.3	0.0909	0.0909		U	1466010.47	599278.05
VIIb06	20040629	Cesium-137	3.8	0.0802	0.0802		U	1466010.47	599278.05
VIIb06	20040629	Cobalt-60	0.7	0.077	0.077		U	1466010.47	599278.05
VIIb06	20040629	Potassium-40	47.8	15	0.74			1466010.47	599278.05
VIIb06	20040629	Radium-226	2.9	0.884	0.351			1466010.47	599278.05
VIIb06	20040629	Radium-228	2.1	0.678	0.551			1466010.47	599278.05
VIIb06	20040629	Thorium-228	2.6	0.44	0.0162			1466010.47	599278.05
VIIb06	20040629	Thorium-230	2.8	0.458	0.0115			1466010.47	599278.05
VIIb06	20040629	Thorium-232	2.1	0.426	0.0159			1466010.47	599278.05
VIIb06	20040629	Uranium-234	2.0	0.227	0.0401			1466010.47	599278.05
VIIb06	20040629	Uranium-235	3.2	0.0353	0.0353		U	1466010.47	599278.05
VIIb06	20040629	Uranium-238	2.2	0.298	0.0353			1466010.47	599278.05
VIIb07	20040629	Actinium-227	4.6	0.431	0.431		U	1466040.47	599278.05
VIIb07	20040629	Americium-241	63	0.244	0.244		U	1466040.47	599278.05
VIIb07	20040629	Bismuth-207	1.2	0.0495	0.0495		U	1466040.47	599278.05
VIIb07	20040629	Bismuth-210M	8.3	0.0975	0.0975		U	1466040.47	599278.05
VIIb07	20040629	Cesium-137	3.8	0.0798	0.0798		U	1466040.47	599278.05
VIIb07	20040629	Cobalt-60	0.7	0.082	0.082		U	1466040.47	599278.05
VIIb07	20040629	Potassium-40	47.8	14.3	0.134			1466040.47	599278.05
VIIb07	20040629	Radium-226	2.9	0.899	0.153			1466040.47	599278.05
VIIb07	20040629	Radium-228	2.1	0.665	0.534			1466040.47	599278.05
VIIb07	20040629	Thorium-228	2.6	0.524	0.00798			1466040.47	599278.05
VIIb07	20040629	Thorium-230	2.8	0.471	0.0163			1466040.47	599278.05
VIIb07	20040629	Thorium-232	2.1	0.452	0.0078			1466040.47	599278.05

Table 6: Results for Sample Event 5 (pCi/g)

(Includes all of Phase IIb)

Location	Date Collected	Analyte	CO.	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIb07	20040629	Uranium-234	2.0	0.363	0.0224			1466040.47	599278.05
VIIb07	20040629	Uranium-235	3.2	0.0234	0.0127		J	1466040.47	599278.05
VIIb07	20040629	Uranium-238	2.2	0.349	0.0224			1466040.47	599278.05
VIIb08	20040629	Actinium-227	4.6	0.511	0.511		U	1466070.47	599278.05
VIIb08	20040629	Actinium-227	4.6	0.528	0.528		U	1466070.47	599278.05
VIIb08	20040629	Americium-241	63	0.157	0.157		U	1466070.47	599278.05
VIIb08	20040629	Americium-241	63	0.423	0.423		U	1466070.47	599278.05
VIIb08	20040629	Bismuth-207	1.2	0.0673	0.0673		U	1466070.47	599278.05
VIIb08	20040629	Bismuth-207	1.2	0.0667	0.0667		U	1466070.47	599278.05
VIIb08	20040629	Bismuth-210M	8.3	0.0978	0.0978		U	1466070.47	599278.05
VIIb08	20040629	Bismuth-210M	8.3	0.1	0.1		U	1466070.47	599278.05
VIIb08	20040629	Cesium-137	3.8	0.0901	0.0901		U	1466070.47	599278.05
VIIb08	20040629	Cesium-137	3.8	0.0947	0.0947		U	1466070.47	599278.05
VIIb08	20040629	Cobalt-60	0.7	0.0773	0.0773		U	1466070.47	599278.05
VIIb08	20040629	Cobalt-60	0.7	0.0933	0.0933		U	1466070.47	599278.05
VIIb08	20040629	Potassium-40	47.8	16.2	0.697			1466070.47	599278.05
VIIb08	20040629	Potassium-40	47.8	15.6	0.639			1466070.47	599278.05
VIIb08	20040629	Radium-226	2.9	0.857	0.361			1466070.47	599278.05
VIIb08	20040629	Radium-226	2.9	0.772	0.368			1466070.47	599278.05
VIIb08	20040629	Radium-228	2.1	0.625	0.522			1466070.47	599278.05
VIIb08	20040629	Radium-228	2.1	0.526	0.526		U	1466070.47	599278.05
VIIb08	20040629	Thorium-228	2.6	0.445	0.031			1466070.47	599278.05
VIIb08	20040629	Thorium-228	2.6	0.573	0.0173			1466070.47	599278.05
VIIb08	20040629	Thorium-230	2.8	0.466	0.0167			1466070.47	599278.05
VIIb08	20040629	Thorium-230	2.8	0.473	0.0122			1466070.47	599278.05
VIIb08	20040629	Thorium-232	2.1	0.441	0.0167			1466070.47	599278.05
VIIb08	20040629	Thorium-232	2.1	0.46	0.0122			1466070.47	599278.05
VIIb08	20040629	Uranium-234	2.0	0.284	0.0493			1466070.47	599278.05
VIIb08	20040629	Uranium-234	2.0	0.338	0.0223			1466070.47	599278.05
VIIb08	20040629	Uranium-235	3.2	0.0395	0.0395		U	1466070.47	599278.05
VIIb08	20040629	Uranium-235	3.2	0.0158	0.0107		J	1466070.47	599278.05
VIIb08	20040629	Uranium-238	2.2	0.299	0.0423			1466070.47	599278.05
VIIb08	20040629	Uranium-238	2.2	0.31	0.0223			1466070.47	599278.05
VIIb09	20040629	Actinium-227	4.6	0.619	0.619		U	1466010.47	599248.05
VIIb09	20040629	Americium-241	63	0.154	0.154		U	1466010.47	599248.05
VIIb09	20040629	Bismuth-207	1.2	0.0796	0.0796		U	1466010.47	599248.05
VIIb09	20040629	Bismuth-210M	8.3	0.118	0.118		U	1466010.47	599248.05
VIIb09	20040629	Cesium-137	3.8	0.115	0.115		U	1466010.47	599248.05
VIIb09	20040629	Cobalt-60	0.7	0.0985	0.0985		U	1466010.47	599248.05
VIIb09	20040629	Potassium-40	47.8	15.9	0.937			1466010.47	599248.05
VIIb09	20040629	Radium-226	2.9	1.01	0.446			1466010.47	599248.05
VIIb09	20040629	Radium-228	2.1	0.766	0.629			1466010.47	599248.05
VIIb09	20040629	Thorium-228	2.6	0.374	0.0185			1466010.47	599248.05
VIIb09	20040629	Thorium-230	2.8	0.475	0.0149			1466010.47	599248.05
VIIb09	20040629	Thorium-232	2.1	0.35	0.00713			1466010.47	599248.05
VIIb09	20040629	Uranium-234	2.0	0.352	0.0222			1466010.47	599248.05
VIIb09	20040629	Uranium-235	3.2	0.0166	0.0113		J	1466010.47	599248.05
VIIb09	20040629	Uranium-238	2.2	0.361	0.0207			1466010.47	599248.05
VIIb10	20040629	Actinium-227	4.6	0.462	0.462		U	1466040.47	599248.05
VIIb10	20040629	Americium-241	63	0.139	0.139		U	1466040.47	599248.05
VIIb10	20040629	Bismuth-207	1.2	0.0564	0.0564		U	1466040.47	599248.05

Table 6: Results for Sample Event 5 (pCi/g)

(Includes all of Phase IIb)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIb10	20040629	Bismuth-210M	8.3	0.0875	0.0875		U	1466040.47	599248.05
VIIb10	20040629	Cesium-137	3.8	0.0759	0.0759		U	1466040.47	599248.05
VIIb10	20040629	Cobalt-60	0.7	0.0848	0.0848		U	1466040.47	599248.05
VIIb10	20040629	Potassium-40	47.8	13.5	0.61			1466040.47	599248.05
VIIb10	20040629	Radium-226	2.9	0.741	0.324			1466040.47	599248.05
VIIb10	20040629	Radium-228	2.1	0.684	0.485			1466040.47	599248.05
VIIb10	20040629	Thorium-228	2.6	0.359	0.0143			1466040.47	599248.05
VIIb10	20040629	Thorium-230	2.8	0.442	0.0115			1466040.47	599248.05
VIIb10	20040629	Thorium-232	2.1	0.316	0.00553			1466040.47	599248.05
VIIb10	20040629	Uranium-234	2.0	0.288	0.0322			1466040.47	599248.05
VIIb10	20040629	Uranium-235	3.2	0.0233	0.0233		U	1466040.47	599248.05
VIIb10	20040629	Uranium-238	2.2	0.357	0.0339			1466040.47	599248.05
VIIb11	20040629	Actinium-227	4.6	0.495	0.495		U	1466070.47	599248.05
VIIb11	20040629	Americium-241	63	0.276	0.276		U	1466070.47	599248.05
VIIb11	20040629	Bismuth-207	1.2	0.0664	0.0664		U	1466070.47	599248.05
VIIb11	20040629	Bismuth-210M	8.3	0.0975	0.0975		U	1466070.47	599248.05
VIIb11	20040629	Cesium-137	3.8	0.0997	0.0997		U	1466070.47	599248.05
VIIb11	20040629	Cobalt-60	0.7	0.0855	0.0855		U	1466070.47	599248.05
VIIb11	20040629	Potassium-40	47.8	18	0.7			1466070.47	599248.05
VIIb11	20040629	Radium-226	2.9	1	0.146			1466070.47	599248.05
VIIb11	20040629	Radium-228	2.1	1.42	0.697			1466070.47	599248.05
VIIb11	20040629	Thorium-228	2.6	0.913	0.00776			1466070.47	599248.05
VIIb11	20040629	Thorium-230	2.8	0.83	0.0158			1466070.47	599248.05
VIIb11	20040629	Thorium-232	2.1	0.831	0.00758			1466070.47	599248.05
VIIb11	20040629	Uranium-234	2.0	0.411	0.0125			1466070.47	599248.05
VIIb11	20040629	Uranium-235	3.2	0.0185	0.0125		J	1466070.47	599248.05
VIIb11	20040629	Uranium-238	2.2	0.341	0.0211			1466070.47	599248.05
VIIb12	20040629	Actinium-227	4.6	0.429	0.429		U	1466040.47	599218.05
VIIb12	20040629	Actinium-227	4.6	0.422	0.422		U	1466040.47	599218.05
VIIb12	20040629	Americium-241	63	0.423	0.423		U	1466040.47	599218.05
VIIb12	20040629	Americium-241	63	0.127	0.127		U	1466040.47	599218.05
VIIb12	20040629	Bismuth-207	1.2	0.0628	0.0628		U	1466040.47	599218.05
VIIb12	20040629	Bismuth-207	1.2	0.0539	0.0539		U	1466040.47	599218.05
VIIb12	20040629	Bismuth-210M	8.3	0.0861	0.0861		U	1466040.47	599218.05
VIIb12	20040629	Bismuth-210M	8.3	0.0814	0.0814		U	1466040.47	599218.05
VIIb12	20040629	Cesium-137	3.8	0.0733	0.0733		U	1466040.47	599218.05
VIIb12	20040629	Cesium-137	3.8	0.0719	0.0719		U	1466040.47	599218.05
VIIb12	20040629	Cobalt-60	0.7	0.0717	0.0717		U	1466040.47	599218.05
VIIb12	20040629	Cobalt-60	0.7	0.0803	0.0803		U	1466040.47	599218.05
VIIb12	20040629	Potassium-40	47.8	12	0.122			1466040.47	599218.05
VIIb12	20040629	Potassium-40	47.8	12	0.699			1466040.47	599218.05
VIIb12	20040629	Radium-226	2.9	0.846	0.33			1466040.47	599218.05
VIIb12	20040629	Radium-226	2.9	0.797	0.123			1466040.47	599218.05
VIIb12	20040629	Radium-228	2.1	0.458	0.458		U	1466040.47	599218.05
VIIb12	20040629	Radium-228	2.1	0.472	0.434	J		1466040.47	599218.05
VIIb12	20040629	Thorium-228	2.6	0.42	0.0115			1466040.47	599218.05
VIIb12	20040629	Thorium-228	2.6	0.41	0.0164			1466040.47	599218.05
VIIb12	20040629	Thorium-230	2.8	0.501	0.0137			1466040.47	599218.05
VIIb12	20040629	Thorium-230	2.8	0.47	0.0116			1466040.47	599218.05
VIIb12	20040629	Thorium-232	2.1	0.357	0.00541			1466040.47	599218.05
VIIb12	20040629	Thorium-232	2.1	0.29	0.00557			1466040.47	599218.05

Table 6: Results for Sample Event 5 (pCi/g)

(Includes all of Phase IIb)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIb12	20040629	Uranium-234	2.0	0.341	0.0202			1466040.47	599218.05
VIIb12	20040629	Uranium-234	2.0	0.245	0.0246			1466040.47	599218.05
VIIb12	20040629	Uranium-235	3.2	0.0151	0.0136		J	1466040.47	599218.05
VIIb12	20040629	Uranium-235	3.2	0.0199	0.0199		U	1466040.47	599218.05
VIIb12	20040629	Uranium-238	2.2	0.387	0.0136			1466040.47	599218.05
VIIb12	20040629	Uranium-238	2.2	0.38	0.0134			1466040.47	599218.05
VIIb13	20040629	Actinium-227	4.6	0.446	0.446		U	1466070.47	599218.05
VIIb13	20040629	Americium-241	63	0.25	0.25		U	1466070.47	599218.05
VIIb13	20040629	Bismuth-207	1.2	0.0653	0.0653		U	1466070.47	599218.05
VIIb13	20040629	Bismuth-210M	8.3	0.0983	0.0983		U	1466070.47	599218.05
VIIb13	20040629	Cesium-137	3.8	0.0748	0.0748		U	1466070.47	599218.05
VIIb13	20040629	Cobalt-60	0.7	0.0755	0.0755		U	1466070.47	599218.05
VIIb13	20040629	Potassium-40	47.8	11.7	0.916			1466070.47	599218.05
VIIb13	20040629	Radium-226	2.9	1.05	0.146			1466070.47	599218.05
VIIb13	20040629	Radium-228	2.1	0.723	0.518			1466070.47	599218.05
VIIb13	20040629	Thorium-228	2.6	0.354	0.00737			1466070.47	599218.05
VIIb13	20040629	Thorium-230	2.8	0.566	0.015			1466070.47	599218.05
VIIb13	20040629	Thorium-232	2.1	0.242	0.00722			1466070.47	599218.05
VIIb13	20040629	Uranium-234	2.0	0.385	0.0393			1466070.47	599218.05
VIIb13	20040629	Uranium-235	3.2	0.0229	0.0229		U	1466070.47	599218.05
VIIb13	20040629	Uranium-238	2.2	0.52	0.0229			1466070.47	599218.05
VIIb14	20040629	Actinium-227	4.6	0.484	0.484		U	1466100.47	599188.05
VIIb14	20040629	Americium-241	63	0.267	0.267		U	1466100.47	599188.05
VIIb14	20040629	Bismuth-207	1.2	0.0614	0.0614		U	1466100.47	599188.05
VIIb14	20040629	Bismuth-210M	8.3	0.104	0.104		U	1466100.47	599188.05
VIIb14	20040629	Cesium-137	3.8	0.101	0.101		U	1466100.47	599188.05
VIIb14	20040629	Cobalt-60	0.7	0.0883	0.0883		U	1466100.47	599188.05
VIIb14	20040629	Potassium-40	47.8	20.7	0.749			1466100.47	599188.05
VIIb14	20040629	Radium-226	2.9	0.803	0.349			1466100.47	599188.05
VIIb14	20040629	Radium-228	2.1	0.883	0.567			1466100.47	599188.05
VIIb14	20040629	Thorium-228	2.6	0.751	0.0191			1466100.47	599188.05
VIIb14	20040629	Thorium-230	2.8	0.517	0.0173			1466100.47	599188.05
VIIb14	20040629	Thorium-232	2.1	0.622	0.0133			1466100.47	599188.05
VIIb14	20040629	Uranium-234	2.0	0.381	0.0346			1466100.47	599188.05
VIIb14	20040629	Uranium-235	3.2	0.0196	0.0196		U	1466100.47	599188.05
VIIb14	20040629	Uranium-238	2.2	0.347	0.0196			1466100.47	599188.05
VIIb15	20040629	Actinium-227	4.6	0.678	0.678		U	1466040.47	599188.05
VIIb15	20040629	Americium-241	63	0.208	0.208		U	1466040.47	599188.05
VIIb15	20040629	Bismuth-207	1.2	0.0907	0.0907		U	1466040.47	599188.05
VIIb15	20040629	Bismuth-210M	8.3	0.121	0.121		U	1466040.47	599188.05
VIIb15	20040629	Cesium-137	3.8	0.118	0.118		U	1466040.47	599188.05
VIIb15	20040629	Cobalt-60	0.7	0.135	0.135		U	1466040.47	599188.05
VIIb15	20040629	Potassium-40	47.8	25.7	1.09			1466040.47	599188.05
VIIb15	20040629	Radium-226	2.9	0.814	0.432			1466040.47	599188.05
VIIb15	20040629	Radium-228	2.1	0.863	0.69			1466040.47	599188.05
VIIb15	20040629	Thorium-228	2.6	0.759	0.0159			1466040.47	599188.05
VIIb15	20040629	Thorium-230	2.8	0.514	0.0098			1466040.47	599188.05
VIIb15	20040629	Thorium-232	2.1	0.652	0.0098			1466040.47	599188.05
VIIb15	20040629	Uranium-234	2.0	0.377	0.014			1466040.47	599188.05
VIIb15	20040629	Uranium-235	3.2	0.014	0.014		U	1466040.47	599188.05
VIIb15	20040629	Uranium-238	2.2	0.236	0.0247			1466040.47	599188.05

Table 6: Results for Sample Event 5 (pCi/g)

(Includes all of Phase IIb)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIIb16	20040629	Actinium-227	4.6	0.605	0.605		U	1466070.47	599188.05
VIIb16	20040629	Americium-241	63	0.161	0.161		U	1466070.47	599188.05
VIIb16	20040629	Bismuth-207	1.2	0.0797	0.0797		U	1466070.47	599188.05
VIIb16	20040629	Bismuth-210M	8.3	0.106	0.106		U	1466070.47	599188.05
VIIb16	20040629	Cesium-137	3.8	0.0857	0.0857		U	1466070.47	599188.05
VIIb16	20040629	Cobalt-60	0.7	0.0991	0.0991		U	1466070.47	599188.05
VIIb16	20040629	Potassium-40	47.8	14.9	0.859			1466070.47	599188.05
VIIb16	20040629	Radium-226	2.9	0.862	0.39			1466070.47	599188.05
VIIb16	20040629	Radium-228	2.1	0.796	0.657			1466070.47	599188.05
VIIb16	20040629	Thorium-228	2.6	0.553	0.0187			1466070.47	599188.05
VIIb16	20040629	Thorium-230	2.8	0.563	0.0118			1466070.47	599188.05
VIIb16	20040629	Thorium-232	2.1	0.444	0.0176			1466070.47	599188.05
VIIb16	20040629	Uranium-234	2.0	0.326	0.0455			1466070.47	599188.05
VIIb16	20040629	Uranium-235	3.2	0.0367	0.0367		U	1466070.47	599188.05
VIIb16	20040629	Uranium-238	2.2	0.328	0.0247			1466070.47	599188.05

U = not detected

CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team

Table 7: Results for Sample Event 6 (pCi/g)

(Includes all of Phase VII & Sample Event 4 Re-Verification)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VVI06	20040629	Actinium-227	4.6	0.51	0.51		U	1465830.42	598952.13
VVI06	20040629	Americium-241	63	0.49	0.49		U	1465830.42	598952.13
VVI06	20040629	Bismuth-207	1.2	0.0687	0.0687		U	1465830.42	598952.13
VVI06	20040629	Bismuth-210M	8.3	0.107	0.107		U	1465830.42	598952.13
VVI06	20040629	Cesium-137	3.8	0.121	0.121		U	1465830.42	598952.13
VVI06	20040629	Cobalt-60	0.7	0.0787	0.0787		U	1465830.42	598952.13
VVI06	20040629	Potassium-40	47.8	13.8	0.756			1465830.42	598952.13
VVI06	20040629	Radium-226	2.9	0.81	0.345			1465830.42	598952.13
VVI06	20040629	Radium-228	2.1	1.12	0.334			1465830.42	598952.13
VVI06	20040629	Thorium-228	2.6	1.1	0.012			1465830.42	598952.13
VVI06	20040629	Thorium-230	2.8	0.441	0.011			1465830.42	598952.13
VVI06	20040629	Thorium-232	2.1	1.16	0.0078			1465830.42	598952.13
VVII01	20040629	Thorium-228	2.6	0.615	0.0301			1465800.47	598948.05
VVII01	20040629	Thorium-230	2.8	0.364	0.0162			1465800.47	598948.05
VVII01	20040629	Thorium-232	2.1	0.504	0.0162			1465800.47	598948.05
VVII02	20040629	Thorium-228	2.6	0.551	0.0227			1465860.47	598948.05
VVII02	20040629	Thorium-230	2.8	0.536	0.00829			1465860.47	598948.05
VVII02	20040629	Thorium-232	2.1	0.477	0.00829			1465860.47	598948.05
VVII03	20040629	Thorium-228	2.6	0.676	0.0155			1465800.47	598918.05
VVII03	20040629	Thorium-230	2.8	0.366	0.0151			1465800.47	598918.05
VVII03	20040629	Thorium-232	2.1	0.542	0.00597			1465800.47	598918.05
VVII04	20040629	Thorium-228	2.6	0.868	0.0153			1465830.47	598918.05
VVII04	20040629	Thorium-228	2.6	0.898	0.0115			1465830.47	598918.05
VVII04	20040629	Thorium-230	2.8	0.346	0.0123			1465830.47	598918.05
VVII04	20040629	Thorium-230	2.8	0.323	0.0137			1465830.47	598918.05
VVII04	20040629	Thorium-232	2.1	0.659	0.00592			1465830.47	598918.05
VVII04	20040629	Thorium-232	2.1	0.648	0.0054			1465830.47	598918.05
VVII05	20040629	Thorium-228	2.6	0.792	0.00783			1465860.47	598918.05
VVII05	20040629	Thorium-230	2.8	0.348	0.00766			1465860.47	598918.05
VVII05	20040629	Thorium-232	2.1	0.695	0.016			1465860.47	598918.05
VVII06	20040629	Thorium-228	2.6	0.726	0.00639			1465800.47	598888.05
VVII06	20040629	Thorium-230	2.8	0.604	0.00625			1465800.47	598888.05
VVII06	20040629	Thorium-232	2.1	0.646	0.00625			1465800.47	598888.05
VVII07	20040629	Thorium-228	2.6	0.608	0.0196			1465830.47	598888.05
VVII07	20040629	Thorium-230	2.8	0.449	0.0124			1465830.47	598888.05
VVII07	20040629	Thorium-232	2.1	0.495	0.0185			1465830.47	598888.05
VVII08	20040629	Thorium-228	2.6	0.948	0.0202			1465860.47	598888.05
VVII08	20040629	Thorium-230	2.8	0.778	0.00554			1465860.47	598888.05
VVII08	20040629	Thorium-232	2.1	0.84	0.00554			1465860.47	598888.05

U = not detected

CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	10	15	1,2,4-Trichlorobenzene	2,130	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	1,2,4-Trichlorobenzene	2,130	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	1,2-Dichlorobenzene	19,200	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	1,2-Dichlorobenzene	19,200	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	1,3-Dichlorobenzene	6,380	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	1,3-Dichlorobenzene	6,380	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	1,4-Dichlorobenzene	1,240	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	1,4-Dichlorobenzene	1,240	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	1-chloro-4-phenoxybenzene	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	1-chloro-4-phenoxybenzene	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,2'-oxybis (1-chloropropane)	426	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,2'-oxybis (1-chloropropane)	426	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,4,5-Trichlorophenol	21,300	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,4,5-Trichlorophenol	21,300	0.98	0.98	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2,4,6-Trichlorophenol	2,170	0.39	0.39	mg/kg		J	1465768.02	598872.551
B277	20040913	10	15	2,4,6-Trichlorophenol	2,170	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,4-Dichlorophenol	639	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2,4-Dichlorophenol	639	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2,4-Dimethylphenol	4,260	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,4-Dimethylphenol	4,260	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,4-Dinitrophenol	426	0.98	0.98	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2,4-Dinitrophenol	426	0.98	0.98	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2,4-Dinitrotoluene	43.8	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2,4-Dinitrotoluene	43.8	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2,6-Dinitrotoluene	438	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2,6-Dinitrotoluene	438	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Chloronaphthalene	17,000	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Chloronaphthalene	17,000	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Chlorophenol	1,060	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2-Chlorophenol	1,060	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2-Methylnaphthalene	852	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Methylnaphthalene	852	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Methylphenol	10,600	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	2-Methylphenol	10,600	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Nitroaniline	63.9	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Nitroaniline	63.9	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Nitrophenol	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	2-Nitrophenol	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	3,3'-Dichlorobenzidine	66.2	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	3,3'-Dichlorobenzidine	66.2	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	3-Nitroaniline	784	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	3-Nitroaniline	784	0.98	0.98	mg/kg			1465768.02	598872.551
B277	20040913	10	15	4,6-Dinitro-o-Cresol	nc	0.98	0.98	mg/kg			1465768.02	598872.551
B277	20040913	10	15	4,6-Dinitro-o-Cresol	nc	0.98	0.98	mg/kg			1465768.02	598872.551
B277	20040913	10	15	4-Bromophenyl-phenyl Ether	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Bromophenyl-phenyl Ether	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Chloro-3-methylphenol	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Chloro-3-methylphenol	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Chloroaniline	852	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Chloroaniline	852	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Methylphenol	1,060	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Methylphenol	1,060	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Nitroaniline	784	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Nitroaniline	784	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Nitrophenol	nc	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	4-Nitrophenol	nc	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Acenaphthene	12,800	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Acenaphthene	12,800	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Acenaphthylene	nc	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Acenaphthylene	nc	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Actinium-227	4.6	0.626	0.626	pCi/g		U	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	10	15	Actinium-227	4.6	0.735	0.735	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Aluminum	232,000	17100	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Aluminum	232,000	19000	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Americium-241	63	0.267	0.267	pCi/g		B	1465768.02	598872.551
B277	20040913	10	15	Americium-241	63	0.185	0.185	pCi/g			1465768.02	598872.551
B277	20040913	10	15	Anthracene	63,900	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Anthracene	63,900	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Antimony	85.2	0.31	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Antimony	85.2	0.33	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Arsenic	28.5	3.1	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Arsenic	28.5	4	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Barium	15,100	34.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Barium	15,100	33	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Benzo(a)anthracene	40.8	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Benzo(a)anthracene	40.8	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Benzo(a)pyrene	4.08	0.39	0.39	mg/kg		B	1465768.02	598872.551
B277	20040913	10	15	Benzo(a)pyrene	4.08	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Benzo(b)fluoranthene	40.8	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Benzo(b)fluoranthene	40.8	0.39	0.39	mg/kg		B	1465768.02	598872.551
B277	20040913	10	15	Benzo(g,h,i)perylene	nc	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Benzo(g,h,i)perylene	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Benzo(k)fluoranthene	408	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Benzo(k)fluoranthene	408	0.39	0.39	mg/kg		B	1465768.02	598872.551
B277	20040913	10	15	Beryllium	22,500	0.88	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Beryllium	22,500	0.98	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Bis(2-chloroethoxy) methane	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Bis(2-chloroethoxy) methane	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Bis(2-chloroethyl)ether	27.1	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Bis(2-chloroethyl)ether	27.1	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Bis(2-ethylhexyl) phthalate	2,130	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Bis(2-ethylhexyl) phthalate	2,130	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Bismuth-207	1.2	0.086	0.086	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Bismuth-207	1.2	0.122	0.122	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Bismuth-210M	8.3	0.114	0.114	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Bismuth-210M	8.3	0.143	0.143	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Butyl Benzyl Phthalate	42,600	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Butyl Benzyl Phthalate	42,600	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Cadmium	30,000	0.34	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Cadmium	30,000	0.12	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Calcium	nc	75400	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Calcium	nc	43900	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Carbazole	1,490	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Carbazole	1,490	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Cesium-137	3.8	0.0858	0.0858	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Cesium-137	3.8	0.134	0.134	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Chromium	319,000	20.4	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Chromium	319,000	22.5	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Chrysene	4,080	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Chrysene	4,080	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Cobalt	12,800	12	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Cobalt	12,800	14.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Cobalt-60	0.7	0.132	0.132	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Cobalt-60	0.7	0.105	0.105	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Copper	8,540	17.7	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Copper	8,540	17.9	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Dibenz(a,h)anthracene	4.08	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Dibenz(a,h)anthracene	4.08	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Dibenzofuran	85.2	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Dibenzofuran	85.2	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Diethyl Phthalate	170,000	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Diethyl Phthalate	170,000	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Dimethyl Phthalate	nc	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Dimethyl Phthalate	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	10	15	Di-n-butyl Phthalate	21,300	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Di-n-butyl Phthalate	21,300	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Di-n-octyl Phthalate	4,260	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Di-n-octyl Phthalate	4,260	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Fluoranthene	8,520	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Fluoranthene	8,520	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Fluorene	8,520	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Fluorene	8,520	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachlorobenzene	18.6	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachlorobenzene	18.6	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachlorobutadiene	382	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachlorobutadiene	382	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachlorocyclo pentadiene	1,270	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachlorocyclo pentadiene	1,270	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachloroethane	2,130	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Hexachloroethane	2,130	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Indeno(1,2,3-cd)pyrene	40.8	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Indeno(1,2,3-cd)pyrene	40.8	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Iron	nc	26700	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Iron	nc	28900	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Isophorone	31,400	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Isophorone	31,400	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Lead	nc	6.3	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Lead	nc	5.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Lithium	nc	41	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Lithium	nc	43.8	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Magnesium	nc	15700	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Magnesium	nc	11300	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Manganese	24,200	480	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Manganese	24,200	499	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Mercury	63.9	0.03	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Mercury	63.9	0.02	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Naphthalene	4,260	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Naphthalene	4,260	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Nickel	112,000	24.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Nickel	112,000	28.7	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Nitrobenzene	106	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Nitrobenzene	106	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	N-Nitroso-di-n-propylamine	4.26	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	N-Nitroso-di-n-propylamine	4.26	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	N-Nitrosodiphenylamine	6,080	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	N-Nitrosodiphenylamine	6,080	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Pentachlorophenol	248	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Pentachlorophenol	248	0.98	0.98	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Phenanthrene	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Phenanthrene	nc	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Phenol	128,000	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Phenol	128,000	0.39	0.39	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Plutonium-238	55	0.0723	0.0723	pCi/g			1465768.02	598872.551
B277	20040913	10	15	Plutonium-238	55	0.0752	0.0475	pCi/g			1465768.02	598872.551
B277	20040913	10	15	Plutonium-239/240	62	0.101	0.101	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Plutonium-239/240	62	0.0215	0.0215	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Potassium	nc	5780	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Potassium	nc	5840	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Potassium-40	47.8	32.8	1.17	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Potassium-40	47.8	34	0.966	pCi/g			1465768.02	598872.551
B277	20040913	10	15	Pyrene	6,390	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Pyrene	6,390	0.39	0.39	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Radium-226	2.9	0.613	0.389	pCi/g			1465768.02	598872.551
B277	20040913	10	15	Radium-226	2.9	1.1	0.496	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Radium-228	2.1	1.37	0.774	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Radium-228	2.1	1.59	0.92	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Selenium	1,060	0.4	*	mg/kg		U	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	10	15	Selenium	1,060	0.43	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Silver	1,070	0.09	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Silver	1,070	0.1	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Sodium	nc	365	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Sodium	nc	339	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Thallium	17.5	0.4	*	mg/kg			1465768.02	598872.551
B277	20040913	10	15	Thallium	17.5	0.43	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Thorium-228	2.6	0.733	0.0417	pCi/g		B	1465768.02	598872.551
B277	20040913	10	15	Thorium-228	2.6	0.737	0.0518	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Thorium-230	2.8	0.371	0.0183	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Thorium-230	2.8	0.362	0.0359	pCi/g		B	1465768.02	598872.551
B277	20040913	10	15	Thorium-232	2.1	0.758	0.0404	pCi/g		U	1465768.02	598872.551
B277	20040913	10	15	Thorium-232	2.1	0.634	0.0162	pCi/g			1465768.02	598872.551
B277	20040913	10	15	Vanadium	1,520	21.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Vanadium	1,520	23.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Zinc	64,000	59.9	*	mg/kg		U	1465768.02	598872.551
B277	20040913	10	15	Zinc	64,000	69.9	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	1,2,4-Trichlorobenzene	2,130	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	1,2-Dichlorobenzene	19,200	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	1,3-Dichlorobenzene	6,380	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	1,4-Dichlorobenzene	1,240	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	1-chloro-4-phenoxybenzene	nc	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2,2'-oxybis (1-chloropropane)	426	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2,4,5-Trichlorophenol	21,300	1	1	mg/kg			1465768.02	598872.551
B277	20040913	15	20	2,4,6-Trichlorophenol	2,170	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2,4-Dichlorophenol	639	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	2,4-Dimethylphenol	4,260	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2,4-Dinitrophenol	426	1	1	mg/kg			1465768.02	598872.551
B277	20040913	15	20	2,4-Dinitrotoluene	43.8	0.41	0.41	mg/kg		B	1465768.02	598872.551
B277	20040913	15	20	2,6-Dinitrotoluene	438	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2-Chloronaphthalene	17,000	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2-Chlorophenol	1,060	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	2-Methylnaphthalene	852	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2-Methylphenol	10,600	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2-Nitroaniline	63.9	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	2-Nitrophenol	nc	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	3,3'-Dichlorobenzidine	66.2	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	3-Nitroaniline	784	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg			1465768.02	598872.551
B277	20040913	15	20	4-Bromophenyl-phenyl Ether	nc	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	4-Chloro-3-methylphenol	nc	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	4-Chloroaniline	852	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	4-Methylphenol	1,060	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	4-Nitroaniline	784	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	4-Nitrophenol	nc	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Acenaphthene	12,800	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Acenaphthylene	nc	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Actinium-227	4.6	0.632	0.632	pCi/g		U	1465768.02	598872.551
B277	20040913	15	20	Aluminum	232,000	17600	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Americium-241	63	0.767	0.767	pCi/g		B	1465768.02	598872.551
B277	20040913	15	20	Anthracene	63,900	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Antimony	85.2	0.41	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Arsenic	28.5	3.5	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Barium	15,100	54.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Benzo(a)anthracene	40.8	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Benzo(a)pyrene	4.08	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Benzo(b)fluoranthene	40.8	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Benzo(g,h,i)perylene	nc	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Benzo(k)fluoranthene	408	0.41	0.41	mg/kg		B	1465768.02	598872.551
B277	20040913	15	20	Beryllium	22,500	0.92	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Bis(2-chloroethoxy) methane	nc	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Bis(2-chloroethyl)ether	27.1	0.41	0.41	mg/kg		U	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	15	20	Bis(2-ethylhexyl) phthalate	2,130	0.021	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Bismuth-207	1.2	0.0745	0.0745	pCi/g		U	1465768.02	598872.551
B277	20040913	15	20	Bismuth-210M	8.3	0.114	0.114	pCi/g			1465768.02	598872.551
B277	20040913	15	20	Butyl Benzyl Phthalate	42,600	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Cadmium	30,000	0.16	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Calcium	nc	93200	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Carbazole	1,490	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Cesium-137	3.8	0.0901	0.0901	pCi/g		U	1465768.02	598872.551
B277	20040913	15	20	Chromium	319,000	20.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Chrysene	4,080	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Cobalt	12,800	11.5	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Cobalt-60	0.7	0.119	0.119	pCi/g		U	1465768.02	598872.551
B277	20040913	15	20	Copper	8,540	16.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Dibenz(a,h)anthracene	4.08	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Dibenzofuran	85.2	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Diethyl Phthalate	170,000	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Dimethyl Phthalate	nc	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Di-n-butyl Phthalate	21,300	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Di-n-octyl Phthalate	4,260	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Fluoranthene	8,520	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Fluorene	8,520	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Hexachlorobenzene	18.6	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Hexachlorobutadiene	382	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Hexachlorocyclo pentadiene	1,270	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Hexachloroethane	2,130	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Indeno(1,2,3-cd)pyrene	40.8	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Iron	nc	26600	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Isophorone	31,400	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Lead	nc	8.4	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Lithium	nc	37.1	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Magnesium	nc	7610	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Manganese	24,200	452	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Mercury	63.9	0.02	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Naphthalene	4,260	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Nickel	112,000	24.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Nitrobenzene	106	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	N-Nitroso-di-n-propylamine	4.26	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	N-Nitrosodiphenylamine	6,080	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Pentachlorophenol	248	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Phenanthrene	nc	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Phenol	128,000	0.41	0.41	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Plutonium-238	55	0.0311	0.0281	pCi/g			1465768.02	598872.551
B277	20040913	15	20	Plutonium-239/240	62	0.0762	0.0762	pCi/g		U	1465768.02	598872.551
B277	20040913	15	20	Potassium	nc	5310	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Potassium-40	47.8	35	0.676	pCi/g		B	1465768.02	598872.551
B277	20040913	15	20	Pyrene	6,390	0.41	0.41	mg/kg			1465768.02	598872.551
B277	20040913	15	20	Radium-226	2.9	0.798	0.361	pCi/g		U	1465768.02	598872.551
B277	20040913	15	20	Radium-228	2.1	1.27	0.674	pCi/g		U	1465768.02	598872.551
B277	20040913	15	20	Selenium	1,060	0.46	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Silver	1,070	0.11	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Sodium	nc	527	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Thallium	17.5	0.46	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Thorium-228	2.6	0.72	0.0596	pCi/g			1465768.02	598872.551
B277	20040913	15	20	Thorium-230	2.8	0.416	0.0412	pCi/g		B	1465768.02	598872.551
B277	20040913	15	20	Thorium-232	2.1	0.594	0.0412	pCi/g			1465768.02	598872.551
B277	20040913	15	20	Vanadium	1,520	22.3	*	mg/kg		U	1465768.02	598872.551
B277	20040913	15	20	Zinc	64,000	62.3	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	1,2,4-Trichlorobenzene	2,130	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	1,2-Dichlorobenzene	19,200	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	1,3-Dichlorobenzene	6,380	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	1,4-Dichlorobenzene	1,240	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	1-chloro-4-phenoxybenzene	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	20	25	2,2'-oxybis (1-chloropropane)	426	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2,4,5-Trichlorophenol	21,300	1	1	mg/kg			1465768.02	598872.551
B277	20040913	20	25	2,4,6-Trichlorophenol	2,170	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2,4-Dichlorophenol	639	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	2,4-Dimethylphenol	4,260	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2,4-Dinitrophenol	426	1	1	mg/kg			1465768.02	598872.551
B277	20040913	20	25	2,4-Dinitrotoluene	43.8	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	2,6-Dinitrotoluene	438	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2-Chloronaphthalene	17,000	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2-Chlorophenol	1,060	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	2-Methylnaphthalene	852	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2-Methylphenol	10,600	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2-Nitroaniline	63.9	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	2-Nitrophenol	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	3,3'-Dichlorobenzidine	66.2	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	3-Nitroaniline	784	1	1	mg/kg			1465768.02	598872.551
B277	20040913	20	25	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	4-Bromophenyl-phenyl Ether	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	4-Chloro-3-methylphenol	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	4-Chloroaniline	852	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	4-Methylphenol	1,060	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	4-Nitroaniline	784	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	4-Nitrophenol	nc	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Acenaphthene	12,800	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Acenaphthylene	nc	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Actinium-227	4.6	0.571	0.571	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Aluminum	232,000	19300	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Americium-241	63	0.299	0.299	pCi/g		B	1465768.02	598872.551
B277	20040913	20	25	Anthracene	63,900	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Antimony	85.2	0.33	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Arsenic	28.5	4	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Barium	15,100	58.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Benzo(a)anthracene	40.8	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Benzo(a)pyrene	4.08	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Benzo(b)fluoranthene	40.8	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Benzo(g,h,i)perylene	nc	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Benzo(k)fluoranthene	408	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Beryllium	22,500	1	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Bis(2-chloroethoxy) methane	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Bis(2-chloroethyl)ether	27.1	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Bis(2-ethylhexyl) phthalate	2,130	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Bismuth-207	1.2	0.0777	0.0777	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Bismuth-210M	8.3	0.124	0.124	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Butyl Benzyl Phthalate	42,600	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Cadmium	30,000	0.32	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Calcium	nc	74800	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Carbazole	1,490	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Cesium-137	3.8	0.0848	0.0848	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Chromium	319,000	21.7	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Chrysene	4,080	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Cobalt	12,800	11.8	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Cobalt-60	0.7	0.0755	0.0755	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Copper	8,540	16.1	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Dibenz(a,h)anthracene	4.08	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Dibenzofuran	85.2	0.42	0.42	mg/kg		B	1465768.02	598872.551
B277	20040913	20	25	Diethyl Phthalate	170,000	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Dimethyl Phthalate	nc	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Di-n-butyl Phthalate	21,300	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Di-n-octyl Phthalate	4,260	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Fluoranthene	8,520	0.42	0.42	mg/kg		B	1465768.02	598872.551
B277	20040913	20	25	Fluorene	8,520	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Hexachlorobenzene	18.6	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Hexachlorobutadiene	382	0.42	0.42	mg/kg		J	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	20	25	Hexachlorocyclo pentadiene	1,270	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Hexachloroethane	2,130	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Indeno(1,2,3-cd)pyrene	40.8	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Iron	nc	28400	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Isophorone	31,400	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Lead	nc	7.2	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Lithium	nc	35.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Magnesium	nc	7240	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Manganese	24,200	467	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Mercury	63.9	0.02	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Naphthalene	4,260	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Nickel	112,000	23.8	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Nitrobenzene	106	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	N-Nitroso-di-n-propylamine	4.26	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	N-Nitrosodiphenylamine	6,080	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Pentachlorophenol	248	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Phenanthrene	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Phenol	128,000	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Plutonium-238	55	0.0541	0.0541	pCi/g			1465768.02	598872.551
B277	20040913	20	25	Plutonium-239/240	62	0.0199	0.0199	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Potassium	nc	5720	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Potassium-40	47.8	34	0.942	pCi/g		B	1465768.02	598872.551
B277	20040913	20	25	Pyrene	6,390	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Radium-226	2.9	0.923	0.363	pCi/g		B	1465768.02	598872.551
B277	20040913	20	25	Radium-228	2.1	1.19	0.295	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Selenium	1,060	0.44	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Silver	1,070	0.1	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Sodium	nc	525	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Thallium	17.5	0.59	*	mg/kg			1465768.02	598872.551
B277	20040913	20	25	Thorium-228	2.6	0.782	0.0238	pCi/g			1465768.02	598872.551
B277	20040913	20	25	Thorium-230	2.8	0.409	0.0231	pCi/g		B	1465768.02	598872.551
B277	20040913	20	25	Thorium-232	2.1	0.596	0.0231	pCi/g		U	1465768.02	598872.551
B277	20040913	20	25	Vanadium	1,520	24.5	*	mg/kg		U	1465768.02	598872.551
B277	20040913	20	25	Zinc	64,000	68.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	1,2,4-Trichlorobenzene	2,130	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	1,2-Dichlorobenzene	19,200	0.42	0.42	mg/kg	U	B	1465768.02	598872.551
B277	20040913	25	30	1,3-Dichlorobenzene	6,380	0.42	0.42	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	1,4-Dichlorobenzene	1,240	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	1-chloro-4-phenoxybenzene	nc	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	2,2'-oxybis (1-chloropropane)	426	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2,4,5-Trichlorophenol	21,300	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2,4,6-Trichlorophenol	2,170	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2,4-Dichlorophenol	639	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2,4-Dimethylphenol	4,260	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2,4-Dinitrophenol	426	1	1	mg/kg			1465768.02	598872.551
B277	20040913	25	30	2,4-Dinitrotoluene	43.8	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2,6-Dinitrotoluene	438	0.42	0.42	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	2-Chloronaphthalene	17,000	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2-Chlorophenol	1,060	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2-Methylnaphthalene	852	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2-Methylphenol	10,600	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2-Nitroaniline	63.9	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	2-Nitrophenol	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	3,3'-Dichlorobenzidine	66.2	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	3-Nitroaniline	784	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	4-Bromophenyl-phenyl Ether	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	4-Chloro-3-methylphenol	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	4-Chloroaniline	852	0.42	0.42	mg/kg		J	1465768.02	598872.551
B277	20040913	25	30	4-Methylphenol	1,060	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	4-Nitroaniline	784	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	4-Nitrophenol	nc	1	1	mg/kg		U	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	25	30	Acenaphthene	12,800	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Acenaphthylene	nc	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Actinium-227	4.6	0.525	0.525	pCi/g			1465768.02	598872.551
B277	20040913	25	30	Aluminum	232,000	17900	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Americium-241	63	0.505	0.505	pCi/g			1465768.02	598872.551
B277	20040913	25	30	Anthracene	63,900	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Antimony	85.2	0.45	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Arsenic	28.5	3.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Barium	15,100	55.9	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Benzo(a)anthracene	40.8	0.42	0.42	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	Benzo(a)pyrene	4.08	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Benzo(b)fluoranthene	40.8	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Benzo(g,h,i)perylene	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Benzo(k)fluoranthene	408	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Beryllium	22,500	0.88	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Bis(2-chloroethoxy) methane	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Bis(2-chloroethyl)ether	27.1	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Bis(2-ethylhexyl) phthalate	2,130	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Bismuth-207	1.2	0.0598	0.0598	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Bismuth-210M	8.3	0.107	0.107	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Butyl Benzyl Phthalate	42,600	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Cadmium	30,000	0.18	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Calcium	nc	84100	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Carbazole	1,490	0.42-	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Cesium-137	3.8	0.108	0.108	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Chromium	319,000	21.9	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Chrysene	4,080	0.42	0.42	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	Cobalt	12,800	10.9	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Cobalt-60	0.7	0.113	0.113	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Copper	8,540	16.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Dibenz(a,h)anthracene	4.08	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Dibenzofuran	85.2	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Diethyl Phthalate	170,000	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Dimethyl Phthalate	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Di-n-butyl Phthalate	21,300	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Di-n-octyl Phthalate	4,260	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Fluoranthene	8,520	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Fluorene	8,520	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Hexachlorobenzene	18.6	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Hexachlorobutadiene	382	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Hexachlorocyclo pentadiene	1,270	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Hexachloroethane	2,130	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Indeno(1,2,3-cd)pyrene	40.8	0.42	0.42	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Iron	nc	24500	*	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	Isophorone	31,400	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Lead	nc	9.7	*	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	Lithium	nc	34	*	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	Magnesium	nc	7790	*	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Manganese	24,200	474	*	mg/kg		B	1465768.02	598872.551
B277	20040913	25	30	Mercury	63.9	0.02	*	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Naphthalene	4,260	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Nickel	112,000	22.3	*	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Nitrobenzene	106	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	N-Nitroso-di-n-propylamine	4.26	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	N-Nitrosodiphenylamine	6,080	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Pentachlorophenol	248	1	1	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Phenanthrene	nc	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Phenol	128,000	0.42	0.42	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Plutonium-238	55	0.053	0.053	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Plutonium-239/240	62	0.0464	0.0464	pCi/g			1465768.02	598872.551
B277	20040913	25	30	Potassium	nc	5020	*	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Potassium-40	47.8	38.1	1.03	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Pyrene	6,390	0.42	0.42	mg/kg		J	1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	25	30	Radium-226	2.9	0.88	0.175	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Radium-228	2.1	1.08	0.265	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Selenium	1,060	0.41	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Silver	1,070	0.31	*	mg/kg			1465768.02	598872.551
B277	20040913	25	30	Sodium	nc	507	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Thallium	17.5	0.58	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Thorium-228	2.6	0.907	0.0142	pCi/g		J	1465768.02	598872.551
B277	20040913	25	30	Thorium-230	2.8	0.381	0.0138	pCi/g		U	1465768.02	598872.551
B277	20040913	25	30	Thorium-232	2.1	0.795	0.0305	pCi/g			1465768.02	598872.551
B277	20040913	25	30	Vanadium	1,520	24.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	25	30	Zinc	64,000	60.8	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	1,2,4-Trichlorobenzene	2,130	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	1,2-Dichlorobenzene	19,200	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	1,3-Dichlorobenzene	6,380	0.43	0.43	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	1,4-Dichlorobenzene	1,240	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	1-chloro-4-phenoxybenzene	nc	0.43	0.43	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	2,2'-oxybis (1-chloropropane)	426	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2,4,5-Trichlorophenol	21,300	1.1	1.1	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2,4,6-Trichlorophenol	2,170	0.43	0.43	mg/kg		B	1465768.02	598872.551
B277	20040913	30	37	2,4-Dichlorophenol	639	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2,4-Dimethylphenol	4,260	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2,4-Dinitrophenol	426	1.1	1.1	mg/kg	J		1465768.02	598872.551
B277	20040913	30	37	2,4-Dinitrotoluene	43.8	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2,6-Dinitrotoluene	438	0.43	0.43	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	2-Chloronaphthalene	17,000	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2-Chlorophenol	1,060	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2-Methylnaphthalene	852	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2-Methylphenol	10,600	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	2-Nitroaniline	63.9	1.1	1.1	mg/kg		B	1465768.02	598872.551
B277	20040913	30	37	2-Nitrophenol	nc	0.43	0.43	mg/kg	J		1465768.02	598872.551
B277	20040913	30	37	3,3'-Dichlorobenzidine	66.2	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	3-Nitroaniline	784	1.1	1.1	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	4,6-Dinitro-o-Cresol	nc	1.1	1.1	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	4-Bromophenyl-phenyl Ether	nc	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	4-Chloro-3-methylphenol	nc	0.43	0.43	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	4-Chloroaniline	852	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	4-Methylphenol	1,060	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	4-Nitroaniline	784	1.1	1.1	mg/kg	J		1465768.02	598872.551
B277	20040913	30	37	4-Nitrophenol	nc	1.1	1.1	mg/kg	J		1465768.02	598872.551
B277	20040913	30	37	Acenaphthene	12,800	0.43	0.43	mg/kg	J	B	1465768.02	598872.551
B277	20040913	30	37	Acenaphthylene	nc	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Actinium-227	4.6	0.583	0.583	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Aluminum	232,000	19900	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Americium-241	63	0.283	0.283	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Anthracene	63,900	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Antimony	85.2	0.37	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Arsenic	28.5	10	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Barium	15,100	114	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Benzo(a)anthracene	40.8	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Benzo(a)pyrene	4.08	0.43	0.43	mg/kg	J		1465768.02	598872.551
B277	20040913	30	37	Benzo(b)fluoranthene	40.8	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Benzo(g,h,i)perylene	nc	0.43	0.43	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	Benzo(k)fluoranthene	408	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Beryllium	22,500	0.97	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Bis(2-chloroethoxy) methane	nc	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Bis(2-chloroethyl)ether	27.1	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Bis(2-ethylhexyl) phthalate	2,130	0.036	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Bismuth-207	1.2	0.0782	0.0782	pCi/g	J		1465768.02	598872.551
B277	20040913	30	37	Bismuth-210M	8.3	0.111	0.111	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Butyl Benzyl Phthalate	42,600	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Cadmium	30,000	0.5	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Calcium	nc	10400	*	mg/kg	J		1465768.02	598872.551

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B277	20040913	30	37	Carbazole	1,490	0.43	0.43	mg/kg	UJ	U	1465768.02	598872.551
B277	20040913	30	37	Cesium-137	3.8	0.0881	0.0881	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Chromium	319,000	23.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Chrysene	4,080	0.43	0.43	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Cobalt	12,800	13	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Cobalt-60	0.7	0.116	0.116	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Copper	8,540	23.1	*	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Dibenz(a,h)anthracene	4.08	0.43	0.43	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Dibenzofuran	85.2	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Diethyl Phthalate	170,000	0.43	0.43	mg/kg	J		1465768.02	598872.551
B277	20040913	30	37	Dimethyl Phthalate	nc	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Di-n-butyl Phthalate	21,300	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Di-n-octyl Phthalate	4,260	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Fluoranthene	8,520	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Fluorene	8,520	0.43	0.43	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Hexachlorobenzene	18.6	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Hexachlorobutadiene	382	0.43	0.43	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Hexachlorocyclo pentadiene	1,270	0.43	0.43	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Hexachloroethane	2,130	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Indeno(1,2,3-cd)pyrene	40.8	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Iron	nc	31400	*	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	Isophorone	31,400	0.43	0.43	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Lead	nc	14.4	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Lithium	nc	22.6	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Magnesium	nc	7210	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Manganese	24,200	1400	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Mercury	63.9	0.03	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Naphthalene	4,260	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Nickel	112,000	30.3	*	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	Nitrobenzene	106	0.43	0.43	mg/kg	UJ	U	1465768.02	598872.551
B277	20040913	30	37	N-Nitroso-di-n-propylamine	4.26	0.43	0.43	mg/kg		J	1465768.02	598872.551
B277	20040913	30	37	N-Nitrosodiphenylamine	6,080	0.43	0.43	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Pentachlorophenol	248	1.1	1.1	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Phenanthrene	nc	0.43	0.43	mg/kg	J	B	1465768.02	598872.551
B277	20040913	30	37	Phenol	128,000	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Plutonium-238	55	0.0198	0.0198	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Plutonium-239/240	62	0.0198	0.0198	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Potassium	nc	3450	*	mg/kg	UJ	U	1465768.02	598872.551
B277	20040913	30	37	Potassium-40	47.8	29.8	0.754	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Pyrene	6,390	0.43	0.43	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Radium-226	2.9	1.12	0.42	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Radium-228	2.1	1.46	0.73	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Selenium	1,060	0.49	*	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Silver	1,070	0.11	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Sodium	nc	628	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Thallium	17.5	0.86	*	mg/kg		U	1465768.02	598872.551
B277	20040913	30	37	Thorium-228	2.6	0.678	0.0532	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Thorium-230	2.8	0.5	0.0302	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Thorium-232	2.1	0.676	0.0445	pCi/g		U	1465768.02	598872.551
B277	20040913	30	37	Vanadium	1,520	37.8	*	mg/kg			1465768.02	598872.551
B277	20040913	30	37	Zinc	64,000	83.8	*	mg/kg			1465768.02	598872.551
B297	20040914	15	20	1,2,4-Trichlorobenzene	2,130	0.41	0.41	mg/kg		B	1465752.35	598846.972
B297	20040914	15	20	1,2-Dichlorobenzene	19,200	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	1,3-Dichlorobenzene	6,380	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	1,4-Dichlorobenzene	1,240	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	1-chloro-4-phenoxybenzene	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	2,2'-oxybis (1-chloropropane)	426	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	2,4,5-Trichlorophenol	21,300	1	1	mg/kg			1465752.35	598846.972
B297	20040914	15	20	2,4,6-Trichlorophenol	2,170	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	2,4-Dichlorophenol	639	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	2,4-Dimethylphenol	4,260	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	2,4-Dinitrophenol	426	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	2,4-Dinitrotoluene	43.8	0.41	0.41	mg/kg		B	1465752.35	598846.972

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B297	20040914	15	20	2,6-Dinitrotoluene	438	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	2-Chloronaphthalene	17,000	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	2-Chlorophenol	1,060	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	2-Methylnaphthalene	852	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	2-Methylphenol	10,600	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	2-Nitroaniline	63.9	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	2-Nitrophenol	nc	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	3,3'-Dichlorobenzidine	66.2	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	3-Nitroaniline	784	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	4-Bromophenyl-phenyl Ether	nc	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	4-Chloro-3-methylphenol	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	4-Chloroaniline	852	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	4-Methylphenol	1,060	0.41	0.41	mg/kg		B	1465752.35	598846.972
B297	20040914	15	20	4-Nitroaniline	784	1	1	mg/kg			1465752.35	598846.972
B297	20040914	15	20	4-Nitrophenol	nc	1	1	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Acenaphthene	12,800	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	15	20	Acenaphthylene	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Actinium-227	4.6	0.536	0.536	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Aluminum	232,000	15800	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Americium-241	63	0.256	0.256	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Anthracene	63,900	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Antimony	85.2	0.36	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Arsenic	28.5	4.2	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Barium	15,100	47.6	*	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Benzo(a)anthracene	40.8	0.11	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Benzo(a)pyrene	4.08	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Benzo(b)fluoranthene	40.8	0.09	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Benzo(g,h,i)perylene	nc	0.073	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Benzo(k)fluoranthene	408	0.093	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Beryllium	22,500	0.84	*	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Bis(2-chloroethoxy) methane	nc	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Bis(2-chloroethyl)ether	27.1	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Bis(2-ethylhexyl) phthalate	2,130	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Bismuth-207	1.2	0.0783	0.0783	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Bismuth-210M	8.3	0.111	0.111	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Butyl Benzyl Phthalate	42,600	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Cadmium	30,000	0.18	*	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Calcium	nc	88200	*	mg/kg		J	1465752.35	598846.972
B297	20040914	15	20	Carbazole	1,490	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Cesium-137	3.8	0.101	0.101	pCi/g			1465752.35	598846.972
B297	20040914	15	20	Chromium	319,000	32.8	*	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Chrysene	4,080	0.11	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Cobalt	12,800	11.3	*	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Cobalt-60	0.7	0.0821	0.0821	pCi/g			1465752.35	598846.972
B297	20040914	15	20	Copper	8,540	22.9	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Dibenz(a,h)anthracene	4.08	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Dibenzofuran	85.2	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Diethyl Phthalate	170,000	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	15	20	Dimethyl Phthalate	nc	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Di-n-butyl Phthalate	21,300	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Di-n-octyl Phthalate	4,260	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Fluoranthene	8,520	0.24	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Fluorene	8,520	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	15	20	Hexachlorobenzene	18.6	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Hexachlorobutadiene	382	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Hexachlorocyclo pentadiene	1,270	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	15	20	Hexachloroethane	2,130	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Indeno(1,2,3-cd)pyrene	40.8	0.063	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Iron	nc	26800	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Isophorone	31,400	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Lead	nc	11.3	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Lithium	nc	37	*	mg/kg		U	1465752.35	598846.972

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B297	20040914	15	20	Magnesium	nc	16900	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Manganese	24,200	551	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Mercury	63.9	0.14	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Naphthalene	4,260	0.41	0.41	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Nickel	112,000	24.2	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Nitrobenzene	106	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	N-Nitroso-di-n-propylamine	4.26	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	N-Nitrosodiphenylamine	6,080	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Pentachlorophenol	248	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Phenanthrene	nc	0.084	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Phenol	128,000	0.41	0.41	mg/kg		B	1465752.35	598846.972
B297	20040914	15	20	Plutonium-238	55	1.42	0.067	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Plutonium-239/240	62	0.0587	0.0587	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Potassium	nc	5350	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Potassium-40	47.8	32.8	0.96	pCi/g			1465752.35	598846.972
B297	20040914	15	20	Pyrene	6,390	0.22	*	mg/kg			1465752.35	598846.972
B297	20040914	15	20	Radium-226	2.9	0.919	0.146	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Radium-228	2.1	1.3	0.685	pCi/g			1465752.35	598846.972
B297	20040914	15	20	Selenium	1,060	0.46	*	mg/kg		J	1465752.35	598846.972
B297	20040914	15	20	Silver	1,070	3	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Sodium	nc	378	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Thallium	17.5	0.46	*	mg/kg		U	1465752.35	598846.972
B297	20040914	15	20	Thorium-228	2.6	1.22	0.0837	pCi/g		U	1465752.35	598846.972
B297	20040914	15	20	Thorium-230	2.8	0.568	0.0237	pCi/g			1465752.35	598846.972
B297	20040914	15	20	Thorium-232	2.1	0.904	0.0524	pCi/g		J	1465752.35	598846.972
B297	20040914	15	20	Vanadium	1,520	20.8	*	mg/kg		J	1465752.35	598846.972
B297	20040914	15	20	Zinc	64,000	68	*	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	1,2,4-Trichlorobenzene	2,130	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	1,2-Dichlorobenzene	19,200	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	1,3-Dichlorobenzene	6,380	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	1,4-Dichlorobenzene	1,240	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	1-chloro-4-phenoxybenzene	nc	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2,2'-oxybis (1-chloropropane)	426	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2,4,5-Trichlorophenol	21,300	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2,4,6-Trichlorophenol	2,170	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2,4-Dichlorophenol	639	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	2,4-Dimethylphenol	4,260	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2,4-Dinitrophenol	426	1	1	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	2,4-Dinitrotoluene	43.8	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2,6-Dinitrotoluene	438	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2-Chloronaphthalene	17,000	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2-Chlorophenol	1,060	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2-Methylnaphthalene	852	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2-Methylphenol	10,600	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2-Nitroaniline	63.9	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	2-Nitrophenol	nc	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	3,3'-Dichlorobenzidine	66.2	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	3-Nitroaniline	784	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	4-Bromophenyl-phenyl Ether	nc	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	4-Chloro-3-methylphenol	nc	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	4-Chloroaniline	852	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	4-Methylphenol	1,060	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	4-Nitroaniline	784	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	4-Nitrophenol	nc	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Acenaphthene	12,800	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Acenaphthylene	nc	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Actinium-227	4.6	0.577	0.577	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Aluminum	232,000	13700	*	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Americium-241	63	0.276	0.276	pCi/g			1465752.35	598846.972
B297	20040914	20	25	Anthracene	63,900	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Antimony	85.2	0.32	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Arsenic	28.5	3.2	*	mg/kg			1465752.35	598846.972

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B297	20040914	20	25	Barium	15,100	34.7	*	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Benzo(a)anthracene	40.8	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Benzo(a)pyrene	4.08	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Benzo(b)fluoranthene	40.8	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Benzo(g,h,i)perylene	nc	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Benzo(k)fluoranthene	408	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Beryllium	22,500	0.69	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Bis(2-chloroethoxy) methane	nc	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Bis(2-chloroethyl)ether	27.1	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Bis(2-ethylhexyl) phthalate	2,130	0.032	*	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Bismuth-207	1.2	0.0725	0.0725	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Bismuth-210M	8.3	0.105	0.105	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Butyl Benzyl Phthalate	42,600	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Cadmium	30,000	0.19	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Calcium	nc	113000	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Carbazole	1,490	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Cesium-137	3.8	0.0721	0.0721	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Chromium	319,000	26.5	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Chrysene	4,080	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Cobalt	12,800	9.2	*	mg/kg		B	1465752.35	598846.972
B297	20040914	20	25	Cobalt-60	0.7	0.0852	0.0852	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Copper	8,540	28.5	*	mg/kg		B	1465752.35	598846.972
B297	20040914	20	25	Dibenz(a,h)anthracene	4.08	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Dibenzofuran	85.2	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Diethyl Phthalate	170,000	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Dimethyl Phthalate	nc	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Di-n-butyl Phthalate	21,300	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Di-n-octyl Phthalate	4,260	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Fluoranthene	8,520	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Fluorene	8,520	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Hexachlorobenzene	18.6	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Hexachlorobutadiene	382	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Hexachlorocyclo pentadiene	1,270	0.42	0.42	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Hexachloroethane	2,130	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Indeno(1,2,3-cd)pyrene	40.8	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Iron	nc	22800	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Isophorone	31,400	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Lead	nc	7.3	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Lithium	nc	36.3	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Magnesium	nc	20200	*	mg/kg		B	1465752.35	598846.972
B297	20040914	20	25	Manganese	24,200	463	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Mercury	63.9	0.05	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Naphthalene	4,260	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Nickel	112,000	19.9	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Nitrobenzene	106	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	N-Nitroso-di-n-propylamine	4.26	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	N-Nitrosodiphenylamine	6,080	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Pentachlorophenol	248	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Phenanthrene	nc	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Phenol	128,000	0.42	0.42	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Plutonium-238	55	0.0692	0.0488	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Plutonium-239/240	62	0.022	0.022	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Potassium	nc	5190	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Potassium-40	47.8	30.4	0.67	pCi/g			1465752.35	598846.972
B297	20040914	20	25	Pyrene	6,390	0.42	0.42	mg/kg		J	1465752.35	598846.972
B297	20040914	20	25	Radium-226	2.9	0.685	0.316	pCi/g			1465752.35	598846.972
B297	20040914	20	25	Radium-228	2.1	1.7	0.254	pCi/g			1465752.35	598846.972
B297	20040914	20	25	Selenium	1,060	0.42	*	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Silver	1,070	1.4	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Sodium	nc	568	*	mg/kg		U	1465752.35	598846.972
B297	20040914	20	25	Thallium	17.5	0.42	*	mg/kg		B	1465752.35	598846.972
B297	20040914	20	25	Thorium-228	2.6	0.782	0.0752	pCi/g			1465752.35	598846.972
B297	20040914	20	25	Thorium-230	2.8	0.355	0.0428	pCi/g			1465752.35	598846.972

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B297	20040914	20	25	Thorium-232	2.1	0.498	0.0583	pCi/g		U	1465752.35	598846.972
B297	20040914	20	25	Vanadium	1,520	17.8	*	mg/kg			1465752.35	598846.972
B297	20040914	20	25	Zinc	64,000	60.3	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	1,2,4-Trichlorobenzene	2,130	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	1,2-Dichlorobenzene	19,200	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	1,3-Dichlorobenzene	6,380	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	1,4-Dichlorobenzene	1,240	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	1-chloro-4-phenoxybenzene	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,2'-oxybis (1-chloropropane)	426	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,4,5-Trichlorophenol	21,300	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,4,6-Trichlorophenol	2,170	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,4-Dichlorophenol	639	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,4-Dimethylphenol	4,260	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,4-Dinitrophenol	426	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,4-Dinitrotoluene	43.8	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2,6-Dinitrotoluene	438	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2-Chloronaphthalene	17,000	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2-Chlorophenol	1,060	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2-Methylnaphthalene	852	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2-Methylphenol	10,600	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2-Nitroaniline	63.9	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	2-Nitrophenol	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	3,3'-Dichlorobenzidine	66.2	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	3-Nitroaniline	784	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	4-Bromophenyl-phenyl Ether	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	4-Chloro-3-methylphenol	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	4-Chloroaniline	852	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	4-Methylphenol	1,060	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	4-Nitroaniline	784	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	4-Nitrophenol	nc	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Acenaphthene	12,800	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Acenaphthylene	nc	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Actinium-227	4.6	0.475	0.475	pCi/g		U	1465752.35	598846.972
B297	20040914	25	33	Aluminum	232,000	13700	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Americium-241	63	0.503	0.503	pCi/g		U	1465752.35	598846.972
B297	20040914	25	33	Anthracene	63,900	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Antimony	85.2	0.3	*	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Arsenic	28.5	4.5	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Barium	15,100	55.3	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Benzo(a)anthracene	40.8	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Benzo(a)pyrene	4.08	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Benzo(b)fluoranthene	40.8	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Benzo(g,h,i)perylene	nc	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Benzo(k)fluoranthene	408	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Beryllium	22,500	0.67	*	mg/kg		B	1465752.35	598846.972
B297	20040914	25	33	Bis(2-chloroethoxy) methane	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Bis(2-chloroethyl)ether	27.1	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Bis(2-ethylhexyl) phthalate	2,130	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Bismuth-207	1.2	0.0732	0.0732	pCi/g		U	1465752.35	598846.972
B297	20040914	25	33	Bismuth-210M	8.3	0.121	0.121	pCi/g		U	1465752.35	598846.972
B297	20040914	25	33	Butyl Benzyl Phthalate	42,600	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Cadmium	30,000	0.23	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Calcium	nc	114000	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Carbazole	1,490	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Cesium-137	3.8	0.09	0.09	pCi/g		U	1465752.35	598846.972
B297	20040914	25	33	Chromium	319,000	28.6	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Chrysene	4,080	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Cobalt	12,800	8.9	*	mg/kg		B	1465752.35	598846.972
B297	20040914	25	33	Cobalt-60	0.7	0.118	0.118	pCi/g		U	1465752.35	598846.972
B297	20040914	25	33	Copper	8,540	21.1	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Dibenz(a,h)anthracene	4.08	0.41	0.41	mg/kg		U	1465752.35	598846.972

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B297	20040914	25	33	Dibenzofuran	85.2	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Diethyl Phthalate	170,000	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Dimethyl Phthalate	nc	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Di-n-butyl Phthalate	21,300	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Di-n-octyl Phthalate	4,260	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Fluoranthene	8,520	0.023	*	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Fluorene	8,520	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Hexachlorobenzene	18.6	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Hexachlorobutadiene	382	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Hexachlorocyclo pentadiene	1,270	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Hexachloroethane	2,130	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Indeno(1,2,3-cd)pyrene	40.8	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Iron	nc	21300	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Isophorone	31,400	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Lead	nc	11.9	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Lithium	nc	29.6	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Magnesium	nc	23800	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Manganese	24,200	516	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Mercury	63.9	0.13	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Naphthalene	4,260	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Nickel	112,000	18.3	*	mg/kg		B	1465752.35	598846.972
B297	20040914	25	33	Nitrobenzene	106	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	N-Nitroso-di-n-propylamine	4.26	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	N-Nitrosodiphenylamine	6,080	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Pentachlorophenol	248	1	1	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Phenanthrene	nc	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Phenol	128,000	0.41	0.41	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Plutonium-238	55	1.08	0.0246	pCi/g			1465752.35	598846.972
B297	20040914	25	33	Plutonium-239/240	62	0.0545	0.0545	pCi/g		U	1465752.35	598846.972
B297	20040914	25	33	Potassium	nc	4570	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Potassium-40	47.8	30.9	0.865	pCi/g			1465752.35	598846.972
B297	20040914	25	33	Pyrene	6,390	0.41	0.41	mg/kg		J	1465752.35	598846.972
B297	20040914	25	33	Radium-226	2.9	0.782	0.169	pCi/g			1465752.35	598846.972
B297	20040914	25	33	Radium-228	2.1	1.49	0.279	pCi/g			1465752.35	598846.972
B297	20040914	25	33	Selenium	1,060	0.38	*	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Silver	1,070	2.6	*	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Sodium	nc	488	*	mg/kg		B	1465752.35	598846.972
B297	20040914	25	33	Thallium	17.5	0.38	*	mg/kg		U	1465752.35	598846.972
B297	20040914	25	33	Thorium-228	2.6	0.956	0.0525	pCi/g			1465752.35	598846.972
B297	20040914	25	33	Thorium-230	2.8	0.421	0.0161	pCi/g			1465752.35	598846.972
B297	20040914	25	33	Thorium-232	2.1	0.742	0.0161	pCi/g			1465752.35	598846.972
B297	20040914	25	33	Vanadium	1,520	20.1	*	mg/kg			1465752.35	598846.972
B297	20040914	25	33	Zinc	64,000	63.1	*	mg/kg			1465752.35	598846.972
B357	20040916	5	10	1,2,4-Trichlorobenzene	2,130	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1,2,4-Trichlorobenzene	2,130	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1,2-Dichlorobenzene	19,200	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1,2-Dichlorobenzene	19,200	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1,3-Dichlorobenzene	6,380	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1,3-Dichlorobenzene	6,380	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	1,4-Dichlorobenzene	1,240	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1,4-Dichlorobenzene	1,240	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1-chloro-4-phenoxybenzene	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	1-chloro-4-phenoxybenzene	nc	0.39	0.39	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	2,2'-oxybis (1-chloropropane)	426	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	2,2'-oxybis (1-chloropropane)	426	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4,5-Trichlorophenol	21,300	1	1	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	2,4,5-Trichlorophenol	21,300	0.98	0.98	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4,6-Trichlorophenol	2,170	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4,6-Trichlorophenol	2,170	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	2,4-Dichlorophenol	639	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4-Dichlorophenol	639	0.39	0.39	mg/kg		U	1465826.64	598819.042

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B357	20040916	5	10	2,4-Dimethylphenol	4,260	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4-Dimethylphenol	4,260	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4-Dinitrophenol	426	1	1	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	2,4-Dinitrophenol	426	0.98	0.98	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4-Dinitrotoluene	43.8	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,4-Dinitrotoluene	43.8	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,6-Dinitrotoluene	438	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2,6-Dinitrotoluene	438	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Chloronaphthalene	17,000	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Chloronaphthalene	17,000	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Chlorophenol	1,060	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Chlorophenol	1,060	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Methylnaphthalene	852	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Methylnaphthalene	852	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Methylphenol	10,600	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Methylphenol	10,600	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Nitroaniline	63.9	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Nitroaniline	63.9	0.98	0.98	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Nitrophenol	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	2-Nitrophenol	nc	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	3,3'-Dichlorobenzidine	66.2	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	3,3'-Dichlorobenzidine	66.2	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	3-Nitroaniline	784	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	3-Nitroaniline	784	0.98	0.98	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4,6-Dinitro-o-Cresol	nc	0.98	0.98	mg/kg			1465826.64	598819.042
B357	20040916	5	10	4-Bromophenyl-phenyl Ether	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Bromophenyl-phenyl Ether	nc	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Chloro-3-methylphenol	nc	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	4-Chloro-3-methylphenol	nc	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Chloroaniline	852	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Chloroaniline	852	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Methylphenol	1,060	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Methylphenol	1,060	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Nitroaniline	784	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Nitroaniline	784	0.98	0.98	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Nitrophenol	nc	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	4-Nitrophenol	nc	0.98	0.98	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Acenaphthene	12,800	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Acenaphthene	12,800	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Acenaphthylene	nc	0.4	0.4	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Acenaphthylene	nc	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Actinium-227	4.6	1.89	0.882	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Aluminum	232,000	18700	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Aluminum	232,000	13100	*	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Americium-241	63	0.362	0.362	pCi/g			1465826.64	598819.042
B357	20040916	5	10	Anthracene	63,900	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Anthracene	63,900	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Antimony	85.2	0.34	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Antimony	85.2	0.36	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Arsenic	28.5	7.4	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Arsenic	28.5	4.5	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Barium	15,100	71.7	*	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Barium	15,100	75.1	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Benzo(a)anthracene	40.8	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Benzo(a)anthracene	40.8	0.057	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Benzo(a)pyrene	4.08	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Benzo(a)pyrene	4.08	0.063	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Benzo(b)fluoranthene	40.8	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Benzo(b)fluoranthene	40.8	0.052	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Benzo(g,h,i)perylene	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Benzo(g,h,i)perylene	nc	0.057	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Benzo(k)fluoranthene	408	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Benzo(k)fluoranthene	408	0.05	*	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Beryllium	22,500	0.94	*	mg/kg			1465826.64	598819.042

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B357	20040916	5	10	Beryllium	22,500	0.72	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Bis(2-chloroethoxy) methane	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Bis(2-chloroethoxy) methane	nc	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Bis(2-chloroethyl)ether	27.1	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Bis(2-chloroethyl)ether	27.1	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Bis(2-ethylhexyl) phthalate	2,130	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Bis(2-ethylhexyl) phthalate	2,130	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Bismuth-207	1.2	0.086	0.086	pCi/g		J	1465826.64	598819.042
B357	20040916	5	10	Bismuth-210M	8.3	0.127	0.127	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Butyl Benzyl Phthalate	42,600	0.4	0.4	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Butyl Benzyl Phthalate	42,600	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Cadmium	30,000	0.46	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Cadmium	30,000	0.44	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Calcium	nc	49700	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Calcium	nc	61900	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Carbazole	1,490	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Carbazole	1,490	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Cesium-137	3.8	0.112	0.112	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Chromium	319,000	21.9	*	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Chromium	319,000	19.1	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Chrysene	4,080	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Chrysene	4,080	0.058	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Cobalt	12,800	12	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Cobalt	12,800	9.2	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Cobalt-60	0.7	0.0804	0.0804	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Copper	8,540	22.1	*	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Copper	8,540	17	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Dibenz(a,h)anthracene	4.08	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Dibenz(a,h)anthracene	4.08	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Dibenzofuran	85.2	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Dibenzofuran	85.2	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Diethyl Phthalate	170,000	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Diethyl Phthalate	170,000	0.39	0.39	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Dimethyl Phthalate	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Dimethyl Phthalate	nc	0.39	0.39	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Di-n-butyl Phthalate	21,300	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Di-n-butyl Phthalate	21,300	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Di-n-octyl Phthalate	4,260	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Di-n-octyl Phthalate	4,260	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Fluoranthene	8,520	0.023	*	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Fluoranthene	8,520	0.11	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Fluorene	8,520	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Fluorene	8,520	0.39	0.39	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Hexachlorobenzene	18.6	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Hexachlorobenzene	18.6	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Hexachlorobutadiene	382	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Hexachlorobutadiene	382	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Hexachlorocyclo pentadiene	1,270	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Hexachlorocyclo pentadiene	1,270	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Hexachloroethane	2,130	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Hexachloroethane	2,130	0.39	0.39	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Indeno(1,2,3-cd)pyrene	40.8	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Indeno(1,2,3-cd)pyrene	40.8	0.048	*	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Iron	nc	29800	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Iron	nc	24500	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Isophorone	31,400	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Isophorone	31,400	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Lead	nc	13.6	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Lead	nc	12.1	*	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Lithium	nc	30.2	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Lithium	nc	26.7	*	mg/kg		J	1465826.64	598819.042

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B357	20040916	5	10	Magnesium	nc	14100	*	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Magnesium	nc	14500	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Manganese	24,200	480	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Manganese	24,200	648	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Mercury	63.9	0.02	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Mercury	63.9	0.03	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Naphthalene	4,260	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Naphthalene	4,260	0.39	0.39	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Nickel	112,000	25.3	*	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Nickel	112,000	19.2	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Nitrobenzene	106	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Nitrobenzene	106	0.39	0.39	mg/kg			1465826.64	598819.042
B357	20040916	5	10	N-Nitroso-di-n-propylamine	4.26	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	N-Nitroso-di-n-propylamine	4.26	0.39	0.39	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	N-Nitrosodiphenylamine	6,080	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	N-Nitrosodiphenylamine	6,080	0.39	0.39	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Pentachlorophenol	248	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Pentachlorophenol	248	0.98	0.98	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Phenanthrene	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Phenanthrene	nc	0.052	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Phenol	128,000	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Phenol	128,000	0.39	0.39	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Plutonium-238	55	0.323	0.0445	pCi/g		J	1465826.64	598819.042
B357	20040916	5	10	Plutonium-239/240	62	0.0201	0.0201	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Potassium	nc	4650	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Potassium	nc	3170	*	mg/kg		J	1465826.64	598819.042
B357	20040916	5	10	Potassium-40	47.8	22.6	0.645	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Pyrene	6,390	0.021	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Pyrene	6,390	0.098	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Radium-226	2.9	0.633	0.347	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Radium-228	2.1	1.29	0.721	pCi/g		J	1465826.64	598819.042
B357	20040916	5	10	Selenium	1,060	0.44	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Selenium	1,060	0.38	*	mg/kg		B	1465826.64	598819.042
B357	20040916	5	10	Silver	1,070	0.1	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Silver	1,070	0.09	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Sodium	nc	201	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Sodium	nc	171	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Thallium	17.5	0.44	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Thallium	17.5	0.55	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Thorium-228	2.6	0.758	0.0244	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Thorium-230	2.8	0.466	0.0107	pCi/g		U	1465826.64	598819.042
B357	20040916	5	10	Thorium-232	2.1	0.625	0.0107	pCi/g		B	1465826.64	598819.042
B357	20040916	5	10	Vanadium	1,520	29	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Vanadium	1,520	21.8	*	mg/kg		U	1465826.64	598819.042
B357	20040916	5	10	Zinc	64,000	81.6	*	mg/kg			1465826.64	598819.042
B357	20040916	5	10	Zinc	64,000	64.6	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	1,2,4-Trichlorobenzene	2,130	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	1,2-Dichlorobenzene	19,200	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	1,3-Dichlorobenzene	6,380	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	1,4-Dichlorobenzene	1,240	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	1-chloro-4-phenoxybenzene	nc	0.4	0.4	mg/kg			1465826.64	598819.042
B357	20040916	10	15	2,2'-oxybis (1-chloropropane)	426	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2,4,5-Trichlorophenol	21,300	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2,4,6-Trichlorophenol	2,170	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2,4-Dichlorophenol	639	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2,4-Dimethylphenol	4,260	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2,4-Dinitrophenol	426	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2,4-Dinitrotoluene	43.8	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2,6-Dinitrotoluene	438	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2-Chloronaphthalene	17,000	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2-Chlorophenol	1,060	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2-Methylnaphthalene	852	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2-Methylphenol	10,600	0.4	0.4	mg/kg		U	1465826.64	598819.042

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B357	20040916	10	15	2-Nitroaniline	63.9	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	2-Nitrophenol	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	3,3'-Dichlorobenzidine	66.2	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	3-Nitroaniline	784	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	4,6-Dinitro-o-Cresol	nc	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	4-Bromophenyl-phenyl Ether	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	4-Chloro-3-methylphenol	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	4-Chloroaniline	852	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	4-Methylphenol	1,060	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	4-Nitroaniline	784	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	4-Nitrophenol	nc	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Acenaphthene	12,800	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Acenaphthylene	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Actinium-227	4.6	0.674	0.674	pCi/g		U	1465826.64	598819.042
B357	20040916	10	15	Aluminum	232,000	14100	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Americium-241	63	0.538	0.538	pCi/g		U	1465826.64	598819.042
B357	20040916	10	15	Anthracene	63,900	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Antimony	85.2	0.41	*	mg/kg		B	1465826.64	598819.042
B357	20040916	10	15	Arsenic	28.5	7.1	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Barium	15,100	45.1	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Benzo(a)anthracene	40.8	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Benzo(a)pyrene	4.08	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Benzo(b)fluoranthene	40.8	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Benzo(g,h,i)perylene	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Benzo(k)fluoranthene	408	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Beryllium	22,500	0.72	*	mg/kg		B	1465826.64	598819.042
B357	20040916	10	15	Bis(2-chloroethoxy) methane	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Bis(2-chloroethyl)ether	27.1	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Bis(2-ethylhexyl) phthalate	2,130	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Bismuth-207	1.2	0.108	0.108	pCi/g		U	1465826.64	598819.042
B357	20040916	10	15	Bismuth-210M	8.3	0.133	0.133	pCi/g		U	1465826.64	598819.042
B357	20040916	10	15	Butyl Benzyl Phthalate	42,600	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Cadmium	30,000	0.26	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Calcium	nc	102000	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Carbazole	1,490	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Cesium-137	3.8	0.119	0.119	pCi/g		U	1465826.64	598819.042
B357	20040916	10	15	Chromium	319,000	17.6	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Chrysene	4,080	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Cobalt	12,800	10.6	*	mg/kg		B	1465826.64	598819.042
B357	20040916	10	15	Cobalt-60	0.7	0.127	0.127	pCi/g		U	1465826.64	598819.042
B357	20040916	10	15	Copper	8,540	19.9	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Dibenz(a,h)anthracene	4.08	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Dibenzofuran	85.2	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Diethyl Phthalate	170,000	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Dimethyl Phthalate	nc	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Di-n-butyl Phthalate	21,300	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Di-n-octyl Phthalate	4,260	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Fluoranthene	8,520	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Fluorene	8,520	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Hexachlorobenzene	18.6	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Hexachlorobutadiene	382	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Hexachlorocyclo pentadiene	1,270	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Hexachloroethane	2,130	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Indeno(1,2,3-cd)pyrene	40.8	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Iron	nc	24800	*	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Isophorone	31,400	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Lead	nc	8.8	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Lithium	nc	26.7	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Magnesium	nc	20200	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Manganese	24,200	731	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Mercury	63.9	0.02	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Naphthalene	4,260	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Nickel	112,000	22.5	*	mg/kg			1465826.64	598819.042

Table 8: Results for Sample Event 7

(Includes Characterization around Phase VIII)

Location	Date Collected	Depth (feet)		Analyte	CO	Result	Detection Limit	Units	Qualifier		Coordinates	
		Start	End						data	lab	X	Y
B357	20040916	10	15	Nitrobenzene	106	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	N-Nitroso-di-n-propylamine	4.26	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	N-Nitrosodiphenylamine	6,080	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Pentachlorophenol	248	1	1	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Phenanthrene	nc	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Phenol	128,000	0.4	0.4	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Plutonium-238	55	0.0782	0.0626	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Plutonium-239/240	62	0.0283	0.0283	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Potassium	nc	3770	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Potassium-40	47.8	24.1	1.26	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Pyrene	6,390	0.4	0.4	mg/kg		J	1465826.64	598819.042
B357	20040916	10	15	Radium-226	2.9	0.742	0.231	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Radium-228	2.1	0.948	0.523	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Selenium	1,060	0.46	*	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Silver	1,070	0.11	*	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Sodium	nc	207	*	mg/kg		B	1465826.64	598819.042
B357	20040916	10	15	Thallium	17.5	0.46	*	mg/kg		U	1465826.64	598819.042
B357	20040916	10	15	Thorium-228	2.6	0.692	0.0464	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Thorium-230	2.8	0.518	0.0322	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Thorium-232	2.1	0.574	0.0145	pCi/g			1465826.64	598819.042
B357	20040916	10	15	Vanadium	1,520	24.5	*	mg/kg			1465826.64	598819.042
B357	20040916	10	15	Zinc	64,000	58.8	*	mg/kg			1465826.64	598819.042

U = not detected
J = estimated
CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team
CO for chem = more stringent of CO or Hazard Index = 1
nc = not calculated
B = Inorganics (estimated, but below CRDL)
B = Organics (analyte found in associated blank and sample)
* = no detection limit reported

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
B376	20050421	Plutonium-238	55	0.0542	0.00700			1465763.946	598716.727
B376	20050421	Plutonium-239/240	62	0.0155	0.0155		U	1465763.946	598716.727
VIX-01	20050425	Actinium-227	4.6	0.457	0.457		U	1465710.465	598768.050
VIX-01	20050425	Americium-241	63	0.117	0.117		U	1465710.465	598768.050
VIX-01	20050425	Bismuth-207	1.2	0.0603	0.0603		U	1465710.465	598768.050
VIX-01	20050425	Bismuth-210M	8.3	0.0929	0.0929		U	1465710.465	598768.050
VIX-01	20050425	Cesium-137	3.8	0.0772	0.0772		U	1465710.465	598768.050
VIX-01	20050425	Cobalt-60	0.7	0.0823	0.0823		U	1465710.465	598768.050
VIX-01	20050425	Plutonium-238	55	0.0132	0.0132		U	1465710.465	598768.050
VIX-01	20050425	Plutonium-239/240	62	0.0132	0.0132		U	1465710.465	598768.050
VIX-01	20050425	Potassium-40	47.8	32.3	0.610			1465710.465	598768.050
VIX-01	20050425	Radium-226	2.9	0.606	0.143			1465710.465	598768.050
VIX-01	20050425	Thorium-228	2.6	0.738	0.0157			1465710.465	598768.050
VIX-01	20050425	Thorium-230	2.8	0.313	0.00662			1465710.465	598768.050
VIX-01	20050425	Thorium-232	2.1	0.648	0.00662			1465710.465	598768.050
VIX-02	20050421	Actinium-227	4.6	0.262	0.262		U	1465740.465	598768.050
VIX-02	20050421	Actinium-227	4.6	0.339	0.339		U	1465740.465	598768.050
VIX-02	20050421	Americium-241	63	0.331	0.331		U	1465740.465	598768.050
VIX-02	20050421	Americium-241	63	0.263	0.263		U	1465740.465	598768.050
VIX-02	20050421	Bismuth-207	1.2	0.0465	0.0465		U	1465740.465	598768.050
VIX-02	20050421	Bismuth-207	1.2	0.0341	0.0341		U	1465740.465	598768.050
VIX-02	20050421	Bismuth-210M	8.3	0.0796	0.0796		U	1465740.465	598768.050
VIX-02	20050421	Bismuth-210M	8.3	0.0556	0.0556		U	1465740.465	598768.050
VIX-02	20050421	Cesium-137	3.8	0.0509	0.0509		U	1465740.465	598768.050
VIX-02	20050421	Cesium-137	3.8	0.0516	0.0516		U	1465740.465	598768.050
VIX-02	20050421	Cobalt-60	0.7	0.0615	0.0615		U	1465740.465	598768.050
VIX-02	20050421	Cobalt-60	0.7	0.047	0.0470		U	1465740.465	598768.050
VIX-02	20050421	Plutonium-238	55	0.0311	0.0220			1465740.465	598768.050
VIX-02	20050421	Plutonium-238	55	0.0167	0.0101			1465740.465	598768.050
VIX-02	20050421	Plutonium-239/240	62	0.0101	0.0101		U	1465740.465	598768.050
VIX-02	20050421	Plutonium-239/240	62	0.00992	0.00992		U	1465740.465	598768.050
VIX-02	20050421	Potassium-40	47.8	23.1	0.406			1465740.465	598768.050
VIX-02	20050421	Potassium-40	47.8	22.6	0.471			1465740.465	598768.050
VIX-02	20050421	Radium-226	2.9	0.885	0.0913			1465740.465	598768.050
VIX-02	20050421	Radium-226	2.9	0.78	0.0745			1465740.465	598768.050
VIX-02	20050421	Thorium-228	2.6	0.717	0.0191			1465740.465	598768.050
VIX-02	20050421	Thorium-228	2.6	0.707	0.0215			1465740.465	598768.050
VIX-02	20050421	Thorium-230	2.8	0.564	0.00738			1465740.465	598768.050
VIX-02	20050421	Thorium-230	2.8	0.573	0.00639			1465740.465	598768.050
VIX-02	20050421	Thorium-232	2.1	0.71	0.0113			1465740.465	598768.050
VIX-02	20050421	Thorium-232	2.1	0.755	0.00738			1465740.465	598768.050
VIX-03	20050420	Actinium-227	4.6	0.261	0.261		U	1465770.465	598768.050
VIX-03	20050420	Americium-241	63	0.254	0.254		U	1465770.465	598768.050
VIX-03	20050420	Bismuth-207	1.2	0.0338	0.0338		U	1465770.465	598768.050
VIX-03	20050420	Bismuth-210M	8.3	0.0554	0.0554		U	1465770.465	598768.050
VIX-03	20050420	Cesium-137	3.8	0.0482	0.0482		U	1465770.465	598768.050
VIX-03	20050420	Cobalt-60	0.7	0.048	0.0480		U	1465770.465	598768.050
VIX-03	20050420	Plutonium-238	55	0.0405	0.0147			1465770.465	598768.050
VIX-03	20050420	Plutonium-239/240	62	0.00665	0.00665		U	1465770.465	598768.050
VIX-03	20050420	Potassium-40	47.8	20.7	0.341			1465770.465	598768.050
VIX-03	20050420	Radium-226	2.9	0.736	0.0736			1465770.465	598768.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIX-03	20050420	Thorium-228	2.6	0.709	0.0112			1465770.465	598768.050
VIX-03	20050420	Thorium-230	2.8	0.79	0.00980			1465770.465	598768.050
VIX-03	20050420	Thorium-232	2.1	0.568	0.00980			1465770.465	598768.050
VIX-04	20050421	Actinium-227	4.6	0.395	0.395		U	1465800.465	598768.050
VIX-04	20050421	Americium-241	63	0.113	0.113		U	1465800.465	598768.050
VIX-04	20050421	Bismuth-207	1.2	0.0548	0.0548		U	1465800.465	598768.050
VIX-04	20050421	Bismuth-210M	8.3	0.0814	0.0814		U	1465800.465	598768.050
VIX-04	20050421	Cesium-137	3.8	0.064	0.0640		U	1465800.465	598768.050
VIX-04	20050421	Cobalt-60	0.7	0.0693	0.0693		U	1465800.465	598768.050
VIX-04	20050421	Plutonium-238	55	0.0164	0.0164		U	1465800.465	598768.050
VIX-04	20050421	Plutonium-239/240	62	0.0164	0.0164		U	1465800.465	598768.050
VIX-04	20050421	Potassium-40	47.8	37.1	0.558			1465800.465	598768.050
VIX-04	20050421	Radium-226	2.9	0.825	0.110			1465800.465	598768.050
VIX-04	20050421	Thorium-228	2.6	0.967	0.00575			1465800.465	598768.050
VIX-04	20050421	Thorium-230	2.8	0.392	0.0125			1465800.465	598768.050
VIX-04	20050421	Thorium-232	2.1	0.78	0.0125			1465800.465	598768.050
VIX-05	20050425	Actinium-227	4.6	0.332	0.332		U	1465710.465	598738.050
VIX-05	20050425	Americium-241	63	0.161	0.161		U	1465710.465	598738.050
VIX-05	20050425	Bismuth-207	1.2	0.0435	0.0435		U	1465710.465	598738.050
VIX-05	20050425	Bismuth-210M	8.3	0.0667	0.0667		U	1465710.465	598738.050
VIX-05	20050425	Cesium-137	3.8	0.0536	0.0536		U	1465710.465	598738.050
VIX-05	20050425	Cobalt-60	0.7	0.0655	0.0655		U	1465710.465	598738.050
VIX-05	20050425	Plutonium-238	55	0.0219	0.0219		U	1465710.465	598738.050
VIX-05	20050425	Plutonium-239/240	62	0.0186	0.0186		U	1465710.465	598738.050
VIX-05	20050425	Potassium-40	47.8	31.1	0.721			1465710.465	598738.050
VIX-05	20050425	Radium-226	2.9	0.757	0.0869			1465710.465	598738.050
VIX-05	20050425	Thorium-228	2.6	0.783	0.0151			1465710.465	598738.050
VIX-05	20050425	Thorium-230	2.8	0.425	0.0113			1465710.465	598738.050
VIX-05	20050425	Thorium-232	2.1	0.703	0.00637			1465710.465	598738.050
VIX-06	20050420	Actinium-227	4.6	0.206	0.206		U	1465740.465	598738.050
VIX-06	20050420	Americium-241	63	0.218	0.218		U	1465740.465	598738.050
VIX-06	20050420	Bismuth-207	1.2	0.0268	0.0268		U	1465740.465	598738.050
VIX-06	20050420	Bismuth-210M	8.3	0.0415	0.0415		U	1465740.465	598738.050
VIX-06	20050420	Cesium-137	3.8	0.0327	0.0327		U	1465740.465	598738.050
VIX-06	20050420	Cobalt-60	0.7	0.0351	0.0351		U	1465740.465	598738.050
VIX-06	20050420	Plutonium-238	55	0.0575	0.0169			1465740.465	598738.050
VIX-06	20050420	Plutonium-239/240	62	0.0152	0.0152		U	1465740.465	598738.050
VIX-06	20050420	Potassium-40	47.8	12.3	0.310			1465740.465	598738.050
VIX-06	20050420	Radium-226	2.9	0.659	0.0618			1465740.465	598738.050
VIX-06	20050420	Thorium-228	2.6	0.364	0.0158			1465740.465	598738.050
VIX-06	20050420	Thorium-230	2.8	0.521	0.00569			1465740.465	598738.050
VIX-06	20050420	Thorium-232	2.1	0.326	0.00569			1465740.465	598738.050
VIX-07	20050420	Actinium-227	4.6	0.276	0.276		U	1465770.465	598738.050
VIX-07	20050420	Americium-241	63	0.255	0.255		U	1465770.465	598738.050
VIX-07	20050420	Bismuth-207	1.2	0.0409	0.0409		U	1465770.465	598738.050
VIX-07	20050420	Bismuth-210M	8.3	0.0584	0.0584		U	1465770.465	598738.050
VIX-07	20050420	Cesium-137	3.8	0.0663	0.0663		U	1465770.465	598738.050
VIX-07	20050420	Cobalt-60	0.7	0.0529	0.0529		U	1465770.465	598738.050
VIX-07	20050420	Plutonium-238	55	0.0333	0.0129			1465770.465	598738.050
VIX-07	20050420	Plutonium-239/240	62	0.0399	0.0399		U	1465770.465	598738.050
VIX-07	20050420	Potassium-40	47.8	26.7	0.350			1465770.465	598738.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIX-07	20050420	Radium-226	2.9	0.746	0.0688			1465770.465	598738.050
VIX-07	20050420	Thorium-228	2.6	0.848	0.0167			1465770.465	598738.050
VIX-07	20050420	Thorium-230	2.8	0.47	0.0106			1465770.465	598738.050
VIX-07	20050420	Thorium-232	2.1	0.681	0.00478			1465770.465	598738.050
VIX-08	20050421	Actinium-227	4.6	0.37	0.370		U	1465800.465	598738.050
VIX-08	20050421	Americium-241	63	0.101	0.101		U	1465800.465	598738.050
VIX-08	20050421	Bismuth-207	1.2	0.0448	0.0448		U	1465800.465	598738.050
VIX-08	20050421	Bismuth-210M	8.3	0.0743	0.0743		U	1465800.465	598738.050
VIX-08	20050421	Cesium-137	3.8	0.0538	0.0538		U	1465800.465	598738.050
VIX-08	20050421	Cobalt-60	0.7	0.0532	0.0532		U	1465800.465	598738.050
VIX-08	20050421	Plutonium-238	55	0.0144	0.0144		U	1465800.465	598738.050
VIX-08	20050421	Plutonium-239/240	62	0.0065	0.00650		U	1465800.465	598738.050
VIX-08	20050421	Potassium-40	47.8	21.2	0.556			1465800.465	598738.050
VIX-08	20050421	Radium-226	2.9	0.992	0.0988			1465800.465	598738.050
VIX-08	20050421	Thorium-228	2.6	0.684	0.0101			1465800.465	598738.050
VIX-08	20050421	Thorium-230	2.8	0.846	0.00992			1465800.465	598738.050
VIX-08	20050421	Thorium-232	2.1	0.546	0.00448			1465800.465	598738.050
VIX-09	20050425	Actinium-227	4.6	0.389	0.389		U	1465830.465	598738.050
VIX-09	20050425	Americium-241	63	0.211	0.211		U	1465830.465	598738.050
VIX-09	20050425	Bismuth-207	1.2	0.0457	0.0457		U	1465830.465	598738.050
VIX-09	20050425	Bismuth-210M	8.3	0.0799	0.0799		U	1465830.465	598738.050
VIX-09	20050425	Cesium-137	3.8	0.0733	0.0724		J	1465830.465	598738.050
VIX-09	20050425	Cobalt-60	0.7	0.0795	0.0795		U	1465830.465	598738.050
VIX-09	20050425	Plutonium-238	55	1.07	0.0108			1465830.465	598738.050
VIX-09	20050425	Plutonium-239/240	62	0.0142	0.0142		U	1465830.465	598738.050
VIX-09	20050425	Potassium-40	47.8	19.9	0.536			1465830.465	598738.050
VIX-09	20050425	Radium-226	2.9	0.609	0.107			1465830.465	598738.050
VIX-09	20050425	Thorium-228	2.6	0.456	0.0147			1465830.465	598738.050
VIX-09	20050425	Thorium-230	2.8	0.333	0.0144			1465830.465	598738.050
VIX-09	20050425	Thorium-232	2.1	0.484	0.00531			1465830.465	598738.050
VIX-10	20050425	Actinium-227	4.6	3.1	0.746			1465860.465	598738.050
VIX-10	20050425	Americium-241	63	0.287	0.287		U	1465860.465	598738.050
VIX-10	20050425	Bismuth-207	1.2	0.0579	0.0579		U	1465860.465	598738.050
VIX-10	20050425	Bismuth-210M	8.3	0.0887	0.0887		U	1465860.465	598738.050
VIX-10	20050425	Cesium-137	3.8	0.0812	0.0812		U	1465860.465	598738.050
VIX-10	20050425	Cobalt-60	0.7	0.0644	0.0644		U	1465860.465	598738.050
VIX-10	20050425	Plutonium-238	55	0.316	0.00674			1465860.465	598738.050
VIX-10	20050425	Plutonium-239/240	62	0.0209	0.0209		U	1465860.465	598738.050
VIX-10	20050425	Potassium-40	47.8	18.6	0.691			1465860.465	598738.050
VIX-10	20050425	Radium-226	2.9	0.688	0.227			1465860.465	598738.050
VIX-10	20050425	Thorium-228	2.6	0.852	0.0158			1465860.465	598738.050
VIX-10	20050425	Thorium-230	2.8	0.397	0.0111			1465860.465	598738.050
VIX-10	20050425	Thorium-232	2.1	0.76	0.00502			1465860.465	598738.050
VIX-11	20050425	Actinium-227	4.6	0.457	0.457	J	U	1465680.465	598708.050
VIX-11	20050425	Americium-241	63	0.121	0.121	J	U	1465680.465	598708.050
VIX-11	20050425	Bismuth-207	1.2	0.065	0.0650	J	U	1465680.465	598708.050
VIX-11	20050425	Bismuth-210M	8.3	0.0922	0.0922	J	U	1465680.465	598708.050
VIX-11	20050425	Cesium-137	3.8	0.0809	0.0809	J	U	1465680.465	598708.050
VIX-11	20050425	Cobalt-60	0.7	0.0683	0.0683	J	U	1465680.465	598708.050
VIX-11	20050425	Plutonium-238	55	0.0267	0.0267		U	1465680.465	598708.050
VIX-11	20050425	Plutonium-239/240	62	0.0351	0.0351		U	1465680.465	598708.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIX-11	20050425	Potassium-40	47.8	28.4	0.798	J		1465680.465	598708.050
VIX-11	20050425	Radium-226	2.9	0.61	0.281	J		1465680.465	598708.050
VIX-11	20050425	Thorium-228	2.6	0.644	0.0200			1465680.465	598708.050
VIX-11	20050425	Thorium-230	2.8	0.326	0.00597			1465680.465	598708.050
VIX-11	20050425	Thorium-232	2.1	0.546	0.0105			1465680.465	598708.050
VIX-12	20050425	Actinium-227	4.6	0.537	0.537		U	1465710.465	598708.050
VIX-12	20050425	Americium-241	63	0.136	0.136		U	1465710.465	598708.050
VIX-12	20050425	Bismuth-207	1.2	0.0714	0.0714		U	1465710.465	598708.050
VIX-12	20050425	Bismuth-210M	8.3	0.103	0.103		U	1465710.465	598708.050
VIX-12	20050425	Cesium-137	3.8	0.0876	0.0876		U	1465710.465	598708.050
VIX-12	20050425	Cobalt-60	0.7	0.0975	0.0975		U	1465710.465	598708.050
VIX-12	20050425	Plutonium-238	55	0.107	0.00633			1465710.465	598708.050
VIX-12	20050425	Plutonium-239/240	62	0.014	0.0140		U	1465710.465	598708.050
VIX-12	20050425	Potassium-40	47.8	29.6	0.655			1465710.465	598708.050
VIX-12	20050425	Radium-226	2.9	0.852	0.318			1465710.465	598708.050
VIX-12	20050425	Thorium-228	2.6	0.87	0.00582			1465710.465	598708.050
VIX-12	20050425	Thorium-230	2.8	0.477	0.0127			1465710.465	598708.050
VIX-12	20050425	Thorium-232	2.1	0.697	0.0127			1465710.465	598708.050
VIX-13	20050420	Actinium-227	4.6	0.428	0.428		U	1465740.465	598708.050
VIX-13	20050420	Americium-241	63	0.115	0.115		U	1465740.465	598708.050
VIX-13	20050420	Bismuth-207	1.2	0.0661	0.0661		U	1465740.465	598708.050
VIX-13	20050420	Bismuth-210M	8.3	0.0867	0.0867		U	1465740.465	598708.050
VIX-13	20050420	Cesium-137	3.8	0.0776	0.0776		U	1465740.465	598708.050
VIX-13	20050420	Cobalt-60	0.7	0.0769	0.0769		U	1465740.465	598708.050
VIX-13	20050420	Plutonium-238	55	0.153	0.0168			1465740.465	598708.050
VIX-13	20050420	Plutonium-239/240	62	0.0168	0.0168		U	1465740.465	598708.050
VIX-13	20050420	Potassium-40	47.8	20.9	0.523			1465740.465	598708.050
VIX-13	20050420	Radium-226	2.9	0.978	0.120			1465740.465	598708.050
VIX-13	20050420	Thorium-228	2.6	0.598	0.00690			1465740.465	598708.050
VIX-13	20050420	Thorium-230	2.8	0.628	0.0150			1465740.465	598708.050
VIX-13	20050420	Thorium-232	2.1	0.423	0.0150			1465740.465	598708.050
VIX-14	20050421	Actinium-227	4.6	0.401	0.401		U	1465770.465	598708.050
VIX-14	20050421	Americium-241	63	0.201	0.201		U	1465770.465	598708.050
VIX-14	20050421	Bismuth-207	1.2	0.0477	0.0477		U	1465770.465	598708.050
VIX-14	20050421	Bismuth-210M	8.3	0.0776	0.0776		U	1465770.465	598708.050
VIX-14	20050421	Cesium-137	3.8	0.0656	0.0656		U	1465770.465	598708.050
VIX-14	20050421	Cobalt-60	0.7	0.0662	0.0662		U	1465770.465	598708.050
VIX-14	20050421	Plutonium-238	55	0.0489	0.0122			1465770.465	598708.050
VIX-14	20050421	Plutonium-239/240	62	0.0122	0.0122		U	1465770.465	598708.050
VIX-14	20050421	Potassium-40	47.8	23	0.562			1465770.465	598708.050
VIX-14	20050421	Radium-226	2.9	0.788	0.258			1465770.465	598708.050
VIX-14	20050421	Thorium-228	2.6	0.741	0.0159			1465770.465	598708.050
VIX-14	20050421	Thorium-230	2.8	0.439	0.00456			1465770.465	598708.050
VIX-14	20050421	Thorium-232	2.1	0.617	0.0101			1465770.465	598708.050
VIX-15	20050421	Actinium-227	4.6	0.373	0.350		J	1465800.465	598708.050
VIX-15	20050421	Americium-241	63	0.096	0.0960		U	1465800.465	598708.050
VIX-15	20050421	Bismuth-207	1.2	0.0465	0.0465		U	1465800.465	598708.050
VIX-15	20050421	Bismuth-210M	8.3	0.0646	0.0646		U	1465800.465	598708.050
VIX-15	20050421	Cesium-137	3.8	0.0459	0.0459		U	1465800.465	598708.050
VIX-15	20050421	Cobalt-60	0.7	0.0566	0.0566		U	1465800.465	598708.050
VIX-15	20050421	Plutonium-238	55	0.0109	0.0109		U	1465800.465	598708.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VIX-15	20050421	Plutonium-239/240	62	0.024	0.0240		U	1465800.465	598708.050
VIX-15	20050421	Potassium-40	47.8	13.7	0.447			1465800.465	598708.050
VIX-15	20050421	Radium-226	2.9	0.798	0.0931			1465800.465	598708.050
VIX-15	20050421	Thorium-228	2.6	0.393	0.0140			1465800.465	598708.050
VIX-15	20050421	Thorium-230	2.8	0.677	0.0120			1465800.465	598708.050
VIX-15	20050421	Thorium-232	2.1	0.44	0.00443			1465800.465	598708.050
VIX-16	20050425	Actinium-227	4.6	0.346	0.346		U	1465830.465	598708.050
VIX-16	20050425	Americium-241	63	0.175	0.175		U	1465830.465	598708.050
VIX-16	20050425	Bismuth-207	1.2	0.0468	0.0468		U	1465830.465	598708.050
VIX-16	20050425	Bismuth-210M	8.3	0.0704	0.0704		U	1465830.465	598708.050
VIX-16	20050425	Cesium-137	3.8	0.0592	0.0592		U	1465830.465	598708.050
VIX-16	20050425	Cobalt-60	0.7	0.0646	0.0646		U	1465830.465	598708.050
VIX-16	20050425	Plutonium-238	55	0.0266	0.0110			1465830.465	598708.050
VIX-16	20050425	Plutonium-239/240	62	0.00917	0.00497		J	1465830.465	598708.050
VIX-16	20050425	Potassium-40	47.8	29.3	0.631			1465830.465	598708.050
VIX-16	20050425	Radium-226	2.9	1.33	0.102			1465830.465	598708.050
VIX-16	20050425	Thorium-228	2.6	0.935	0.0177			1465830.465	598708.050
VIX-16	20050425	Thorium-230	2.8	0.4	0.0134			1465830.465	598708.050
VIX-16	20050425	Thorium-232	2.1	0.656	0.0102			1465830.465	598708.050
VIX-17	20050420	Plutonium-238	55	0.021	0.0210		U	1465702.243	598788.867
VIX-17	20050420	Plutonium-239/240	62	0.021	0.0210		U	1465702.243	598788.867
VIX-17	20050420	Thorium-228	2.6	0.192	0.0186			1465702.243	598788.867
VIX-17	20050420	Thorium-230	2.8	0.379	0.0130			1465702.243	598788.867
VIX-17	20050420	Thorium-232	2.1	0.2	0.0160			1465702.243	598788.867
VIX-18	20050420	Plutonium-238	55	0.111	0.0146			1465695.864	598761.109
VIX-18	20050420	Plutonium-239/240	62	0.0146	0.0146		U	1465695.864	598761.109
VIX-18	20050420	Thorium-228	2.6	0.297	0.0101			1465695.864	598761.109
VIX-18	20050420	Thorium-230	2.8	0.43	0.00991			1465695.864	598761.109
VIX-18	20050420	Thorium-232	2.1	0.233	0.00448			1465695.864	598761.109
VIX-19	20050420	Plutonium-238	55	0.121	0.0133			1465684.485	598733.351
VIX-19	20050420	Plutonium-239/240	62	0.0133	0.0133		U	1465684.485	598733.351
VIX-19	20050420	Thorium-228	2.6	0.427	0.0108			1465684.485	598733.351
VIX-19	20050420	Thorium-230	2.8	0.54	0.00873			1465684.485	598733.351
VIX-19	20050420	Thorium-232	2.1	0.401	0.00873			1465684.485	598733.351
VIX-20	20050420	Plutonium-238	55	0.153	0.0171			1465676.106	598705.592
VIX-20	20050420	Plutonium-239/240	62	0.0225	0.0225		U	1465676.106	598705.592
VIX-20	20050420	Thorium-228	2.6	0.403	0.0162			1465676.106	598705.592
VIX-20	20050420	Thorium-230	2.8	0.6	0.00511			1465676.106	598705.592
VIX-20	20050420	Thorium-232	2.1	0.372	0.0113			1465676.106	598705.592
VVIII-01	20050420	Plutonium-238	55	0.551	0.0189			1465770.465	598918.050
VVIII-01	20050420	Plutonium-239/240	62	0.0189	0.0189		U	1465770.465	598918.050
VVIII-01	20050420	Thorium-228	2.6	0.695	0.00898			1465770.465	598918.050
VVIII-01	20050420	Thorium-230	2.8	0.356	0.00668			1465770.465	598918.050
VVIII-01	20050420	Thorium-232	2.1	0.546	0.00788			1465770.465	598918.050
VVIII-02	20050420	Plutonium-238	55	0.0471	0.0240			1465770.465	598888.050
VVIII-02	20050420	Plutonium-239/240	62	0.024	0.0240		U	1465770.465	598888.050
VVIII-02	20050420	Thorium-228	2.6	0.755	0.0191			1465770.465	598888.050
VVIII-02	20050420	Thorium-230	2.8	0.357	0.00605			1465770.465	598888.050
VVIII-02	20050420	Thorium-232	2.1	0.597	0.00605			1465770.465	598888.050
VVIII-03	20050420	Plutonium-238	55	0.296	0.0125			1465740.465	598858.050
VVIII-03	20050420	Plutonium-238	55	0.263	0.0155			1465740.465	598858.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VVIII-03	20050420	Plutonium-239/240	62	0.0155	0.0155		U	1465740.465	598858.050
VVIII-03	20050420	Plutonium-239/240	62	6.98	0.0340			1465740.465	598858.050
VVIII-03	20050420	Thorium-228	2.6	0.679	0.0197			1465740.465	598858.050
VVIII-03	20050420	Thorium-228	2.6	0.752	0.0152			1465740.465	598858.050
VVIII-03	20050420	Thorium-230	2.8	0.414	0.00710			1465740.465	598858.050
VVIII-03	20050420	Thorium-230	2.8	0.336	0.0106			1465740.465	598858.050
VVIII-03	20050420	Thorium-232	2.1	0.5	0.00710			1465740.465	598858.050
VVIII-03	20050420	Thorium-232	2.1	0.6	0.00481			1465740.465	598858.050
VVIII-04	20050425	Plutonium-238	55	0.0668	0.0143			1465770.465	598858.050
VVIII-04	20050425	Plutonium-239/240	62	0.0156	0.0156		U	1465770.465	598858.050
VVIII-04	20050425	Thorium-228	2.6	0.734	0.0196			1465770.465	598858.050
VVIII-04	20050425	Thorium-230	2.8	0.338	0.00584			1465770.465	598858.050
VVIII-04	20050425	Thorium-232	2.1	0.614	0.0103			1465770.465	598858.050
VVIII-05	20050425	Plutonium-238	55	0.481	0.0121			1465800.465	598858.050
VVIII-05	20050425	Plutonium-239/240	62	0.00807	0.00547		J	1465800.465	598858.050
VVIII-05	20050425	Thorium-228	2.6	0.648	0.00459			1465800.465	598858.050
VVIII-05	20050425	Thorium-230	2.8	0.478	0.0100			1465800.465	598858.050
VVIII-05	20050425	Thorium-232	2.1	0.504	0.00452			1465800.465	598858.050
VVIII-06	20050425	Plutonium-238	55	0.0103	0.00697			1465830.465	598858.050
VVIII-06	20050425	Plutonium-238	55	0.0111	0.0111		U	1465830.465	598858.050
VVIII-06	20050425	Plutonium-239/240	60.5	0.0189	0.0189			1465830.465	598858.050
VVIII-06	20050425	Plutonium-239/240	62	0.0111	0.0111		U	1465830.465	598858.050
VVIII-06	20050425	Thorium-228	2.6	0.609	0.0158			1465830.465	598858.050
VVIII-06	20050425	Thorium-228	2.6	0.635	0.0160			1465830.465	598858.050
VVIII-06	20050425	Thorium-230	2.8	0.334	0.00572			1465830.465	598858.050
VVIII-06	20050425	Thorium-230	2.8	0.363	0.00460			1465830.465	598858.050
VVIII-06	20050425	Thorium-232	2.1	0.485	0.0102			1465830.465	598858.050
VVIII-06	20050425	Thorium-232	2.1	0.42	0.00572			1465830.465	598858.050
VVIII-07	20050425	Plutonium-238	55	0.39	0.0306			1465860.465	598858.050
VVIII-07	20050425	Plutonium-239/240	62	0.0138	0.0138		U	1465860.465	598858.050
VVIII-07	20050425	Thorium-228	2.6	0.801	0.00473			1465860.465	598858.050
VVIII-07	20050425	Thorium-230	2.8	0.683	0.0103			1465860.465	598858.050
VVIII-07	20050425	Thorium-232	2.1	0.661	0.00465			1465860.465	598858.050
VVIII-08	20050425	Plutonium-238	55	0.67	0.0249			1465740.465	598828.050
VVIII-08	20050425	Plutonium-239/240	62	0.0812	0.0249			1465740.465	598828.050
VVIII-08	20050425	Thorium-228	2.6	0.589	0.0159			1465740.465	598828.050
VVIII-08	20050425	Thorium-230	2.8	0.328	0.00578			1465740.465	598828.050
VVIII-08	20050425	Thorium-232	2.1	0.514	0.00578			1465740.465	598828.050
VVIII-09	20050425	Plutonium-238	55	0.155	0.0160			1465770.465	598828.050
VVIII-09	20050425	Plutonium-239/240	62	0.0174	0.0174		U	1465770.465	598828.050
VVIII-09	20050425	Thorium-228	2.6	1.19	0.0188			1465770.465	598828.050
VVIII-09	20050425	Thorium-230	2.8	0.617	0.0132			1465770.465	598828.050
VVIII-09	20050425	Thorium-232	2.1	1.09	0.0132			1465770.465	598828.050
VVIII-10	20050425	Plutonium-238	55	0.0324	0.0324		U	1465800.465	598828.050
VVIII-10	20050425	Plutonium-239/240	62	0.0266	0.0266		U	1465800.465	598828.050
VVIII-10	20050425	Thorium-228	2.6	0.458	0.0168			1465800.465	598828.050
VVIII-10	20050425	Thorium-230	2.8	0.343	0.00447			1465800.465	598828.050
VVIII-10	20050425	Thorium-232	2.1	0.339	0.00988			1465800.465	598828.050
VVIII-11	20050425	Plutonium-238	55	0.0131	0.0131		U	1465830.465	598828.050
VVIII-11	20050425	Plutonium-239/240	62	0.0131	0.0131		U	1465830.465	598828.050
VVIII-11	20050425	Thorium-228	2.6	1.01	0.0184			1465830.465	598828.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VVIII-11	20050425	Thorium-230	2.8	0.452	0.00586			1465830.465	598828.050
VVIII-11	20050425	Thorium-232	2.1	0.836	0.00586			1465830.465	598828.050
VVIII-12	20050425	Plutonium-238	55	0.0673	0.0172			1465860.465	598828.050
VVIII-12	20050425	Plutonium-239/240	62	0.00776	0.00776		U	1465860.465	598828.050
VVIII-12	20050425	Thorium-228	2.6	0.943	0.0160			1465860.465	598828.050
VVIII-12	20050425	Thorium-230	2.8	0.435	0.00678			1465860.465	598828.050
VVIII-12	20050425	Thorium-232	2.1	0.718	0.00678			1465860.465	598828.050
VVIII-13	20050425	Plutonium-238	55	0.827	0.00760			1465890.465	598828.050
VVIII-13	20050425	Plutonium-239/240	62	0.0168	0.0168		U	1465890.465	598828.050
VVIII-13	20050425	Thorium-228	2.6	0.66	0.0198			1465890.465	598828.050
VVIII-13	20050425	Thorium-230	2.8	0.495	0.0139			1465890.465	598828.050
VVIII-13	20050425	Thorium-232	2.1	0.559	0.0171			1465890.465	598828.050
VVIII-14	20050425	Plutonium-238	55	0.0237	0.0237		U	1465770.465	598858.050
VVIII-14	20050425	Plutonium-239/240	62	0.0237	0.0237		U	1465770.465	598858.050
VVIII-14	20050425	Thorium-228	2.6	0.703	0.00945			1465770.465	598858.050
VVIII-14	20050425	Thorium-230	2.8	0.261	0.00765			1465770.465	598858.050
VVIII-14	20050425	Thorium-232	2.1	0.541	0.00765			1465770.465	598858.050
VVIII-15	20050421	Plutonium-238	55	0.234	0.00857			1465740.465	598798.050
VVIII-15	20050421	Plutonium-239/240	62	0.019	0.0190		U	1465740.465	598798.050
VVIII-15	20050421	Thorium-228	2.6	1.34	0.0187			1465740.465	598798.050
VVIII-15	20050421	Thorium-230	2.8	0.414	0.0131			1465740.465	598798.050
VVIII-15	20050421	Thorium-232	2.1	0.989	0.0161			1465740.465	598798.050
VVIII-16	20050421	Plutonium-238	55	0.0132	0.0132		U	1465770.465	598798.050
VVIII-16	20050421	Plutonium-238	55	0.017	0.0120			1465770.465	598798.050
VVIII-16	20050421	Plutonium-239/240	62	0.0143	0.0143		U	1465770.465	598798.050
VVIII-16	20050421	Plutonium-239/240	62	0.00541	0.00541		U	1465770.465	598798.050
VVIII-16	20050421	Thorium-228	2.6	0.781	0.0272			1465770.465	598798.050
VVIII-16	20050421	Thorium-228	2.6	0.782	0.0106			1465770.465	598798.050
VVIII-16	20050421	Thorium-230	2.8	0.577	0.00778			1465770.465	598798.050
VVIII-16	20050421	Thorium-230	2.8	0.579	0.00724			1465770.465	598798.050
VVIII-16	20050421	Thorium-232	2.1	0.677	0.0137			1465770.465	598798.050
VVIII-16	20050421	Thorium-232	2.1	0.751	0.00854			1465770.465	598798.050
VVIII-17	20050421	Plutonium-238	55	0.0249	0.0153			1465800.465	598798.050
VVIII-17	20050421	Plutonium-239/240	62	0.0201	0.0201		U	1465800.465	598798.050
VVIII-17	20050421	Thorium-228	2.6	0.554	0.0203			1465800.465	598798.050
VVIII-17	20050421	Thorium-230	2.8	0.612	0.00603			1465800.465	598798.050
VVIII-17	20050421	Thorium-232	2.1	0.496	0.00603			1465800.465	598798.050
VVIII-18	20050425	Plutonium-238	55	0.0246	0.0246		U	1465830.465	598798.050
VVIII-18	20050425	Plutonium-238	55	0.0133	0.0133		U	1465830.465	598798.050
VVIII-18	20050425	Plutonium-239/240	62	0.0139	0.0139		U	1465830.465	598798.050
VVIII-18	20050425	Plutonium-239/240	62	0.0113	0.0113			1465830.465	598798.050
VVIII-18	20050425	Thorium-228	2.6	0.856	0.0150			1465830.465	598798.050
VVIII-18	20050425	Thorium-228	2.6	0.89	0.0135			1465830.465	598798.050
VVIII-18	20050425	Thorium-230	2.8	0.377	0.0112			1465830.465	598798.050
VVIII-18	20050425	Thorium-230	2.8	0.401	0.0102			1465830.465	598798.050
VVIII-18	20050425	Thorium-232	2.1	0.765	0.00632			1465830.465	598798.050
VVIII-18	20050425	Thorium-232	2.1	0.698	0.00774			1465830.465	598798.050
VVIII-19	20050425	Plutonium-238	55	0.159	0.0268			1465860.465	598798.050
VVIII-19	20050425	Plutonium-239/240	62	0.0268	0.0268		U	1465860.465	598798.050
VVIII-19	20050425	Thorium-228	2.6	0.895	0.00571			1465860.465	598798.050
VVIII-19	20050425	Thorium-230	2.8	0.596	0.0124			1465860.465	598798.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VVIII-19	20050425	Thorium-232	2.1	0.745	0.0124			1465860.465	598798.050
VVIII-20	20050425	Plutonium-238	55	0.76	0.0167			1465890.465	598798.050
VVIII-20	20050425	Plutonium-239/240	62	0.0181	0.0167			1465890.465	598798.050
VVIII-20	20050425	Thorium-228	2.6	0.842	0.0145			1465890.465	598798.050
VVIII-20	20050425	Thorium-230	2.8	0.533	0.0108			1465890.465	598798.050
VVIII-20	20050425	Thorium-232	2.1	0.574	0.00613			1465890.465	598798.050
VVIII-21	20050425	Plutonium-238	55	0.445	0.0108			1465830.465	598768.050
VVIII-21	20050425	Plutonium-239/240	62	0.0108	0.0108		U	1465830.465	598768.050
VVIII-21	20050425	Thorium-228	2.6	0.703	0.0137			1465830.465	598768.050
VVIII-21	20050425	Thorium-230	2.8	0.454	0.0118			1465830.465	598768.050
VVIII-21	20050425	Thorium-232	2.1	0.627	0.00435			1465830.465	598768.050
VVIII-22	20050425	Plutonium-238	55	0.452	0.0128			1465860.465	598768.050
VVIII-22	20050425	Plutonium-239/240	62	0.00803	0.00726		J	1465860.465	598768.050
VVIII-22	20050425	Thorium-228	2.6	0.765	0.0149			1465860.465	598768.050
VVIII-22	20050425	Thorium-230	2.8	0.521	0.00472			1465860.465	598768.050
VVIII-22	20050425	Thorium-232	2.1	0.664	0.0104			1465860.465	598768.050
VVIII-23	20050420	Plutonium-238	55	0.563	0.00549			1465730.001	598844.384
VVIII-23	20050420	Plutonium-239/240	62	0.0142	0.00549			1465730.001	598844.384
VVIII-23	20050420	Thorium-228	2.6	0.317	0.0140			1465730.001	598844.384
VVIII-23	20050420	Thorium-230	2.8	0.331	0.0105			1465730.001	598844.384
VVIII-23	20050420	Thorium-232	2.1	0.285	0.00798			1465730.001	598844.384
VVIII-24	20050420	Plutonium-238	55	0.156	0.0132			1465712.622	598816.625
VVIII-24	20050420	Plutonium-239/240	62	0.0146	0.0132			1465712.622	598816.625
VVIII-24	20050420	Thorium-228	2.6	0.399	0.0134			1465712.622	598816.625
VVIII-24	20050420	Thorium-230	2.8	0.404	0.0101			1465712.622	598816.625
VVIII-24	20050420	Thorium-232	2.1	0.333	0.00767			1465712.622	598816.625
VX-01	20050420	Actinium-227	4.6	0.32	0.320		U	1465680.465	598678.050
VX-01	20050420	Americium-241	63	0.141	0.141		U	1465680.465	598678.050
VX-01	20050420	Bismuth-207	1.2	0.0414	0.0414		U	1465680.465	598678.050
VX-01	20050420	Bismuth-210M	8.3	0.0585	0.0585		U	1465680.465	598678.050
VX-01	20050420	Cesium-137	3.8	0.05	0.0500		U	1465680.465	598678.050
VX-01	20050420	Cobalt-60	0.7	0.0546	0.0546		U	1465680.465	598678.050
VX-01	20050420	Plutonium-238	55	0.0376	0.0213			1465680.465	598678.050
VX-01	20050420	Plutonium-239/240	62	0.0145	0.00783			1465680.465	598678.050
VX-01	20050420	Potassium-40	47.8	27.5	0.689			1465680.465	598678.050
VX-01	20050420	Radium-226	2.9	0.769	0.0858			1465680.465	598678.050
VX-01	20050420	Thorium-228	2.6	0.714	0.0167			1465680.465	598678.050
VX-01	20050420	Thorium-230	2.8	0.379	0.00605			1465680.465	598678.050
VX-01	20050420	Thorium-232	2.1	0.603	0.00605			1465680.465	598678.050
VX-01	20050420	Uranium-234	2.0	0.249	0.00756			1465680.465	598678.050
VX-01	20050420	Uranium-235	3.2	0.00882	0.00342		J	1465680.465	598678.050
VX-01	20050420	Uranium-238	2.2	0.173	0.00342			1465680.465	598678.050
VX-02	20050420	Actinium-227	4.6	0.15	0.150		U	1465710.465	598678.050
VX-02	20050420	Americium-241	63	0.0669	0.0669		U	1465710.465	598678.050
VX-02	20050420	Bismuth-207	1.2	0.0236	0.0236		U	1465710.465	598678.050
VX-02	20050420	Bismuth-210M	8.3	0.033	0.0330		U	1465710.465	598678.050
VX-02	20050420	Cesium-137	3.8	0.0307	0.0307		U	1465710.465	598678.050
VX-02	20050420	Cobalt-60	0.7	0.0365	0.0365		U	1465710.465	598678.050
VX-02	20050420	Plutonium-238	55	0.174	0.0157			1465710.465	598678.050
VX-02	20050420	Plutonium-239/240	62	0.0204	0.0204		U	1465710.465	598678.050
VX-02	20050420	Potassium-40	47.8	22.7	0.408			1465710.465	598678.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VX-02	20050420	Radium-226	2.9	0.617	0.0549			1465710.465	598678.050
VX-02	20050420	Thorium-228	2.6	1.37	0.0159			1465710.465	598678.050
VX-02	20050420	Thorium-230	2.8	0.687	0.0136			1465710.465	598678.050
VX-02	20050420	Thorium-232	2.1	1.67	0.00502			1465710.465	598678.050
VX-02	20050420	Uranium-234	2.0	0.395	0.0268			1465710.465	598678.050
VX-02	20050420	Uranium-235	3.2	0.0284	0.0284		U	1465710.465	598678.050
VX-02	20050420	Uranium-238	2.2	0.33	0.0250			1465710.465	598678.050
VX-03	20050420	Actinium-227	4.6	0.234	0.234		U	1465740.465	598678.050
VX-03	20050420	Americium-241	63	0.231	0.231		U	1465740.465	598678.050
VX-03	20050420	Bismuth-207	1.2	0.027	0.0270		U	1465740.465	598678.050
VX-03	20050420	Bismuth-210M	8.3	0.0415	0.0415		U	1465740.465	598678.050
VX-03	20050420	Cesium-137	3.8	0.0566	0.0566		U	1465740.465	598678.050
VX-03	20050420	Cobalt-60	0.7	0.0438	0.0438		U	1465740.465	598678.050
VX-03	20050420	Plutonium-238	55	0.187	0.0233			1465740.465	598678.050
VX-03	20050420	Plutonium-239/240	62	0.0233	0.0233		U	1465740.465	598678.050
VX-03	20050420	Potassium-40	47.8	13.5	0.334			1465740.465	598678.050
VX-03	20050420	Radium-226	2.9	0.722	0.0673			1465740.465	598678.050
VX-03	20050420	Thorium-228	2.6	0.421	0.00974			1465740.465	598678.050
VX-03	20050420	Thorium-230	2.8	0.554	0.00665			1465740.465	598678.050
VX-03	20050420	Thorium-232	2.1	0.378	0.00785			1465740.465	598678.050
VX-03	20050420	Uranium-234	2.0	0.285	0.00955			1465740.465	598678.050
VX-03	20050420	Uranium-235	3.2	0.0156	0.00352		J	1465740.465	598678.050
VX-03	20050420	Uranium-238	2.2	0.329	0.00352			1465740.465	598678.050
VX-04	20050420	Actinium-227	4.6	0.295	0.295		U	1465770.465	598678.050
VX-04	20050420	Americium-241	63	0.268	0.268		U	1465770.465	598678.050
VX-04	20050420	Bismuth-207	1.2	0.0383	0.0383		U	1465770.465	598678.050
VX-04	20050420	Bismuth-210M	8.3	0.0645	0.0645		U	1465770.465	598678.050
VX-04	20050420	Cesium-137	3.8	0.0657	0.0657		U	1465770.465	598678.050
VX-04	20050420	Cobalt-60	0.7	0.0495	0.0495		U	1465770.465	598678.050
VX-04	20050420	Plutonium-238	55	0.131	0.0203			1465770.465	598678.050
VX-04	20050420	Plutonium-239/240	62	0.0169	0.00918			1465770.465	598678.050
VX-04	20050420	Potassium-40	47.8	31.3	0.482			1465770.465	598678.050
VX-04	20050420	Radium-226	2.9	0.683	0.0753			1465770.465	598678.050
VX-04	20050420	Thorium-228	2.6	0.873	0.0147			1465770.465	598678.050
VX-04	20050420	Thorium-230	2.8	0.392	0.00464			1465770.465	598678.050
VX-04	20050420	Thorium-232	2.1	0.709	0.0103			1465770.465	598678.050
VX-04	20050420	Uranium-234	2.0	0.2	0.0209			1465770.465	598678.050
VX-04	20050420	Uranium-235	3.2	0.0175	0.0118		J	1465770.465	598678.050
VX-04	20050420	Uranium-238	2.2	0.157	0.0118			1465770.465	598678.050
VX-05	20050425	Actinium-227	4.6	0.425	0.425	J	U	1465800.465	598678.050
VX-05	20050425	Americium-241	63	0.362	0.362	J	U	1465800.465	598678.050
VX-05	20050425	Bismuth-207	1.2	0.0597	0.0597	J	U	1465800.465	598678.050
VX-05	20050425	Bismuth-210M	8.3	0.0847	0.0847	J	U	1465800.465	598678.050
VX-05	20050425	Cesium-137	3.8	0.0818	0.0818	J	U	1465800.465	598678.050
VX-05	20050425	Cobalt-60	0.7	0.0894	0.0894	J	U	1465800.465	598678.050
VX-05	20050425	Plutonium-238	55	0.159	0.0213			1465800.465	598678.050
VX-05	20050425	Plutonium-239/240	62	0.0213	0.0213		U	1465800.465	598678.050
VX-05	20050425	Potassium-40	47.8	27.5	0.814	J		1465800.465	598678.050
VX-05	20050425	Radium-226	2.9	0.786	0.156	J		1465800.465	598678.050
VX-05	20050425	Thorium-228	2.6	0.795	0.00994			1465800.465	598678.050
VX-05	20050425	Thorium-230	2.8	0.437	0.00979			1465800.465	598678.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VX-05	20050425	Thorium-232	2.1	0.681	0.00442			1465800.465	598678.050
VX-05	20050425	Uranium-234	2.0	0.301	0.0372			1465800.465	598678.050
VX-05	20050425	Uranium-235	3.2	0.0286	0.0286		U	1465800.465	598678.050
VX-05	20050425	Uranium-238	2.2	0.239	0.0353			1465800.465	598678.050
VX-06	20050420	Actinium-227	4.6	0.349	0.349		U	1465680.465	598648.050
VX-06	20050420	Americium-241	63	0.0993	0.0993		U	1465680.465	598648.050
VX-06	20050420	Bismuth-207	1.2	0.0388	0.0388		U	1465680.465	598648.050
VX-06	20050420	Bismuth-210M	8.3	0.0686	0.0686		U	1465680.465	598648.050
VX-06	20050420	Cesium-137	3.8	0.054	0.0540		U	1465680.465	598648.050
VX-06	20050420	Cobalt-60	0.7	0.0565	0.0565		U	1465680.465	598648.050
VX-06	20050420	Plutonium-238	55	0.471	0.00473			1465680.465	598648.050
VX-06	20050420	Plutonium-239/240	62	0.0188	0.0188		U	1465680.465	598648.050
VX-06	20050420	Potassium-40	47.8	25.4	0.389			1465680.465	598648.050
VX-06	20050420	Radium-226	2.9	0.569	0.216			1465680.465	598648.050
VX-06	20050420	Thorium-228	2.6	0.601	0.0120			1465680.465	598648.050
VX-06	20050420	Thorium-230	2.8	0.324	0.0118			1465680.465	598648.050
VX-06	20050420	Thorium-232	2.1	0.537	0.00533			1465680.465	598648.050
VX-06	20050420	Uranium-234	2.0	0.432	0.0270			1465680.465	598648.050
VX-06	20050420	Uranium-235	3.2	0.0382	0.0129		J	1465680.465	598648.050
VX-06	20050420	Uranium-238	2.2	0.21	0.0129			1465680.465	598648.050
VX-07	20050420	Actinium-227	4.6	0.413	0.254		J	1465710.465	598648.050
VX-07	20050420	Americium-241	63	0.0563	0.0563		U	1465710.465	598648.050
VX-07	20050420	Bismuth-207	1.2	0.0367	0.0367		U	1465710.465	598648.050
VX-07	20050420	Bismuth-210M	8.3	0.049	0.0490		U	1465710.465	598648.050
VX-07	20050420	Cesium-137	3.8	0.0424	0.0424		U	1465710.465	598648.050
VX-07	20050420	Cobalt-60	0.7	0.0423	0.0423		U	1465710.465	598648.050
VX-07	20050420	Plutonium-238	55	0.226	0.0152			1465710.465	598648.050
VX-07	20050420	Plutonium-239/240	62	0.0152	0.0152		U	1465710.465	598648.050
VX-07	20050420	Potassium-40	47.8	25.4	0.404			1465710.465	598648.050
VX-07	20050420	Radium-226	2.9	0.911	0.0796			1465710.465	598648.050
VX-07	20050420	Thorium-228	2.6	0.628	0.0144			1465710.465	598648.050
VX-07	20050420	Thorium-230	2.8	0.433	0.0107			1465710.465	598648.050
VX-07	20050420	Thorium-232	2.1	0.557	0.00606			1465710.465	598648.050
VX-07	20050420	Uranium-234	2.0	0.221	0.0165			1465710.465	598648.050
VX-07	20050420	Uranium-235	3.2	0.0151	0.0151		U	1465710.465	598648.050
VX-07	20050420	Uranium-238	2.2	0.271	0.0165			1465710.465	598648.050
VX-08	20050420	Actinium-227	4.6	0.238	0.238		U	1465740.465	598648.050
VX-08	20050420	Actinium-227	4.6	0.543	0.543		U	1465740.465	598648.050
VX-08	20050420	Americium-241	63	0.138	0.138		U	1465740.465	598648.050
VX-08	20050420	Americium-241	63	0.19	0.190		U	1465740.465	598648.050
VX-08	20050420	Bismuth-207	1.2	0.041	0.0410		U	1465740.465	598648.050
VX-08	20050420	Bismuth-207	1.2	0.0735	0.0735		U	1465740.465	598648.050
VX-08	20050420	Bismuth-210M	8.3	0.106	0.106		U	1465740.465	598648.050
VX-08	20050420	Bismuth-210M	8.3	0.0536	0.0536		U	1465740.465	598648.050
VX-08	20050420	Cesium-137	3.8	0.107	0.107		U	1465740.465	598648.050
VX-08	20050420	Cesium-137	3.8	0.0642	0.0560		J	1465740.465	598648.050
VX-08	20050420	Cobalt-60	0.7	0.0771	0.0771		U	1465740.465	598648.050
VX-08	20050420	Cobalt-60	0.7	0.0523	0.0523		U	1465740.465	598648.050
VX-08	20050420	Plutonium-238	55	1.72	0.0163			1465740.465	598648.050
VX-08	20050420	Plutonium-238	55	3.14	0.00475			1465740.465	598648.050
VX-08	20050420	Plutonium-239/240	62	0.0989	0.0163			1465740.465	598648.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VX-08	20050420	Plutonium-239/240	62	0.0237	0.0147			1465740.465	598648.050
VX-08	20050420	Potassium-40	47.8	21.5	0.478			1465740.465	598648.050
VX-08	20050420	Potassium-40	47.8	25	0.770			1465740.465	598648.050
VX-08	20050420	Radium-226	2.9	0.834	0.0833			1465740.465	598648.050
VX-08	20050420	Radium-226	2.9	0.971	0.160			1465740.465	598648.050
VX-08	20050420	Thorium-228	2.6	1.13	0.00671			1465740.465	598648.050
VX-08	20050420	Thorium-228	2.6	0.958	0.0156			1465740.465	598648.050
VX-08	20050420	Thorium-230	2.8	0.786	0.0146			1465740.465	598648.050
VX-08	20050420	Thorium-230	2.8	0.707	0.0109			1465740.465	598648.050
VX-08	20050420	Thorium-232	2.1	1.01	0.0146			1465740.465	598648.050
VX-08	20050420	Thorium-232	2.1	0.939	0.00493			1465740.465	598648.050
VX-08	20050420	Uranium-234	2.0	0.363	0.0449			1465740.465	598648.050
VX-08	20050420	Uranium-234	2.0	0.303	0.00977			1465740.465	598648.050
VX-08	20050420	Uranium-235	3.2	0.0264	0.0264		U	1465740.465	598648.050
VX-08	20050420	Uranium-235	3.2	0.0144	0.00977		J	1465740.465	598648.050
VX-08	20050420	Uranium-238	2.2	0.582	0.0359			1465740.465	598648.050
VX-08	20050420	Uranium-238	2.2	0.407	0.00977			1465740.465	598648.050
VX-09	20050425	Actinium-227	4.6	0.408	0.408		U	1465770.465	598648.050
VX-09	20050425	Americium-241	63	0.381	0.381		U	1465770.465	598648.050
VX-09	20050425	Bismuth-207	1.2	0.0598	0.0598		U	1465770.465	598648.050
VX-09	20050425	Bismuth-210M	8.3	0.0911	0.0911		U	1465770.465	598648.050
VX-09	20050425	Cesium-137	3.8	0.0809	0.0809		U	1465770.465	598648.050
VX-09	20050425	Cobalt-60	0.7	0.0632	0.0632		U	1465770.465	598648.050
VX-09	20050425	Plutonium-238	55	0.524	0.00612			1465770.465	598648.050
VX-09	20050425	Plutonium-239/240	62	0.0226	0.00612			1465770.465	598648.050
VX-09	20050425	Potassium-40	47.8	24.1	0.843			1465770.465	598648.050
VX-09	20050425	Radium-226	2.9	0.848	0.135			1465770.465	598648.050
VX-09	20050425	Thorium-228	2.6	1.43	0.0155			1465770.465	598648.050
VX-09	20050425	Thorium-230	2.8	0.632	0.0116			1465770.465	598648.050
VX-09	20050425	Thorium-232	2.1	1.33	0.00657			1465770.465	598648.050
VX-09	20050425	Uranium-234	2.0	0.273	0.0184			1465770.465	598648.050
VX-09	20050425	Uranium-235	3.2	0.0224	0.0224		U	1465770.465	598648.050
VX-09	20050425	Uranium-238	2.2	0.281	0.0224			1465770.465	598648.050
VX-10	20050420	Actinium-227	4.6	0.372	0.372	J	U	1465680.465	598618.050
VX-10	20050420	Actinium-227	4.6	0.281	0.281		U	1465680.465	598618.050
VX-10	20050420	Americium-241	63	0.282	0.282		U	1465680.465	598618.050
VX-10	20050420	Americium-241	63	0.194	0.194	J	U	1465680.465	598618.050
VX-10	20050420	Bismuth-207	1.2	0.0483	0.0483	J	U	1465680.465	598618.050
VX-10	20050420	Bismuth-207	1.2	0.039	0.0390		U	1465680.465	598618.050
VX-10	20050420	Bismuth-210M	8.3	0.0614	0.0614		U	1465680.465	598618.050
VX-10	20050420	Bismuth-210M	8.3	0.0699	0.0699	J	U	1465680.465	598618.050
VX-10	20050420	Cesium-137	3.8	0.0487	0.0487		U	1465680.465	598618.050
VX-10	20050420	Cesium-137	3.8	0.0601	0.0601	J	U	1465680.465	598618.050
VX-10	20050420	Cobalt-60	0.7	0.0694	0.0694	J	U	1465680.465	598618.050
VX-10	20050420	Cobalt-60	0.7	0.0444	0.0444		U	1465680.465	598618.050
VX-10	20050420	Plutonium-238	55	8.86	0.0143			1465680.465	598618.050
VX-10	20050420	Plutonium-238	55	7.37	0.0243			1465680.465	598618.050
VX-10	20050420	Plutonium-239/240	62	0.218	0.0110	J		1465680.465	598618.050
VX-10	20050420	Plutonium-239/240	62	0.105	0.00811			1465680.465	598618.050
VX-10	20050420	Potassium-40	47.8	22.6	0.446	J		1465680.465	598618.050
VX-10	20050420	Potassium-40	47.8	22.5	0.310			1465680.465	598618.050

Table 9: Results for Sample Event 8 (pCi/g)

(Includes of Phase VIII, IX and X)

Location	Date Collected	Analyte	CO	Result	Detection Limit	Qualifier		Coordinates	
						data	lab	X	Y
VX-10	20050420	Radium-226	2.9	0.692	0.0975			1465680.465	598618.050
VX-10	20050420	Radium-226	2.9	0.569	0.221	J		1465680.465	598618.050
VX-10	20050420	Thorium-228	2.6	0.792	0.0162			1465680.465	598618.050
VX-10	20050420	Thorium-228	2.6	0.897	0.0189			1465680.465	598618.050
VX-10	20050420	Thorium-230	2.8	0.491	0.00462			1465680.465	598618.050
VX-10	20050420	Thorium-230	2.8	0.463	0.00794			1465680.465	598618.050
VX-10	20050420	Thorium-232	2.1	0.651	0.00794			1465680.465	598618.050
VX-10	20050420	Thorium-232	2.1	0.693	0.0102			1465680.465	598618.050
VX-10	20050420	Uranium-234	2.0	0.396	0.0251			1465680.465	598618.050
VX-10	20050420	Uranium-234	2.0	0.351	0.0164			1465680.465	598618.050
VX-10	20050420	Uranium-235	3.2	0.0119	0.0108		J	1465680.465	598618.050
VX-10	20050420	Uranium-235	3.2	0.00972	0.00972		U	1465680.465	598618.050
VX-10	20050420	Uranium-238	2.2	0.488	0.0225			1465680.465	598618.050
VX-10	20050420	Uranium-238	2.2	0.477	0.00972			1465680.465	598618.050
VX-11	20050420	Actinium-227	4.6	0.321	0.321		U	1465710.465	598618.050
VX-11	20050420	Americium-241	63	0.0611	0.0611		U	1465710.465	598618.050
VX-11	20050420	Bismuth-207	1.2	0.0467	0.0467		U	1465710.465	598618.050
VX-11	20050420	Bismuth-210M	8.3	0.0684	0.0684		U	1465710.465	598618.050
VX-11	20050420	Cesium-137	3.8	0.335	0.0601			1465710.465	598618.050
VX-11	20050420	Cobalt-60	0.7	0.065	0.0650		U	1465710.465	598618.050
VX-11	20050420	Plutonium-238	55	0.365	0.0170			1465710.465	598618.050
VX-11	20050420	Plutonium-239/240	62	0.017	0.00769			1465710.465	598618.050
VX-11	20050420	Potassium-40	47.8	24.6	0.562			1465710.465	598618.050
VX-11	20050420	Radium-226	2.9	0.758	0.106			1465710.465	598618.050
VX-11	20050420	Thorium-228	2.6	1.14	0.0183			1465710.465	598618.050
VX-11	20050420	Thorium-230	2.8	0.673	0.0138			1465710.465	598618.050
VX-11	20050420	Thorium-232	2.1	1.14	0.0105			1465710.465	598618.050
VX-11	20050420	Uranium-234	2.0	0.321	0.0204			1465710.465	598618.050
VX-11	20050420	Uranium-235	3.2	0.00921	0.00921		U	1465710.465	598618.050
VX-11	20050420	Uranium-238	2.2	0.27	0.0204			1465710.465	598618.050

U = not detected
J = estimated
CO = cleanup objective for rad = 10-5 RBGV + background or as agreed upon by the Core Team
CO for chem = more stringent of CO or Hazard Index = 1
nc = not calculated
* = no detection limit reported

APPENDIX C

SARs/RSDSs

A91/274

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) PRS 66 Phase II A	SURVEY NO. 03-ER-418
PURPOSE: pre-verification scan and samples for excavated area.	RWP NO. 1269
	DATE: 4/23 and 4/24
	TIME: N/A

MAP/DRAWING

NOTE! Fidler/NaI are detection instruments used as an indicator only

- 100% walkover survey performed of the excavated area with Fidler and 3X3 NaI, Fidler was used on out channel. All areas were ≤ background unless indicated on attached map. [see Figure 3 of Data Report for associated verification area.] 27Sep05
- All locations with elevated readings identified during the scan were sampled.
- The area in grid PIIa01 with history of U-238 was sampled and three grid locations around the area were also sampled (PIIa01, PIIa04, PIIa05). Pre-verification samples were also taken at PIIa06 and PIIa07 since U-238 was identified in that area.
- Locations identified below were excavated and rescanned and re-sampled after scans indicated contamination had been removed

w - indicates wall sample

excavated locations ⇒ PIIa02-1, PIIa02-2, PIIa02-3, PIIa02w-4, PIIa02w-5, PIIa04-1, PIIa07-1

Initial Scan and sampling on 4/23. Removal of soil, rescan and resample on 4/24.

NaI Bkg - 2500 cpm
Fidler Bkg - 10,000-12,000 cpm

LEGEND: # = mrem/hr (γ) whole body; # E = mrem/hr (β+η+γ) extremity on contact; # = mrem/hr neutron; # = air sample number; # = swipe number; #/α or /β = direct cont. measurement in dpm/100cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
3X3 NaI	3955/3956	3/11/04
Fidler	3712/3541	11/8/03
	N/A	

[redacted]	HPs 6149 2839	Date: 4/29/03
Counted by: (Signature) N/A	HPs	Date:
Counted by: (Print Name) (see attached)		
Reviewed/Approved b[redacted]	HPs 7581	Date: 4-29-03
Reviewed/Approved b[redacted]		

ML-9620 (2-98)

SE1 WALKOVER A92/274

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML15368
File ID: MG102110.s0
Priority: Yes

Description/Location
PII A01 recount
Long Count (overnight)

PIIa 01

Collector: 6144
Date Received: 4/23/03
Date Collected: 4/23/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.02
Cs-137		0.03	0.02
Pb-210		0.83	0.21
Ra-226		1.97	0.25
Ac-227 (D)	*	0	0.08
Th-230	*	0	1.96
Th-232 (D)		0.94	0.07
Pu-238	*	1.93	4.48
Am-241		0.03	0.02

all < CO

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.01 nCi/g $\Sigma_{Respirator}$ 0.02

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/24/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML15371
File ID: MG500392.s0
Priority: Yes

Description\Location
PII A01W-3
Long Count

PIIa01W-3

Collector: 6144
Date Received: 4/23/03
Date Collected: 4/23/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.03
Cs-137	*	0	0.03
Pb-210		1.82	0.77
Ra-226		2.28	0.74
Ac-227 (D)	*	0	0.38
Th-230	*	1.88	7.76
Th-232 (D)		1.16	0.11
Pu-238	*	0	19.76
Am-241	*	0	0.09

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.03 nCi/g $\Sigma_{Respirator}$ 0.07

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/28/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML15376
File ID: MG102107.s0
Priority: Yes

Description\Location
PII A01U-4
Long Count

PII a01u-4

Collector: 6144
Date Received: 4/23/03
Date Collected: 4/23/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.04	0.09
Cs-137	*	0.03	0.06
Pb-210	*	0	1.04
Ra-226		1.65	0.98
Ac-227 (D)	*	0	0.38
Th-230	*	5.38	7.97
Th-232 (D)		0.93	0.28
Pu-238	*	0	20.22
Am-241		0.09	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.03 nCi/g $\Sigma_{Respirator}$ 0.07

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments: U isotopes not observed above MDA.

Date: 4/23/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

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03-ER-418

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML15374
File ID: MG500387.s0
Priority: Yes

Description\Location
PII A04
Long Count

PIIa04

Collector: 6144
Date Received: 4/23/03
Date Collected: 4/23/03

Radionuclide		Activity (pCi/g)	MDA
Co-60		0.04	0.03
Cs-137	*	0	0.03
Pb-210		1.81	0.71
Ra-226		1.35	0.7
Ac-227 (D)	*	0	0.35
Th-230	*	0	7.15
Th-232 (D)		0.85	0.09
Pu-238	*	4.59	19.06
Am-241	*	0	0.08

< 20 DWT

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.03 nCi/g $\Sigma_{Respirator}$ 0.06

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/23/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

SE1 PV 4 of 7 A96/274

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03-ER-418

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML15390
File ID: MG500393.s0
Priority: Yes

Description\Location
PII A06
Long Count

PII a06

Collector: 6144
Date Received: 4/24/03
Date Collected: 4/24/03

Radionuclide		Activity (pCi/g)	MDA
Co-60		0.04	0.03
Cs-137	*	0.02	0.04
Pb-210		2.01	0.86
Ra-226		2.46	0.71
Ac-227 (D)	*	0	0.41
Th-230	*	0	8.53
Th-232 (D)		0.87	0.13
Pu-238	*	0	25.99
Am-241	*	0.05	0.08

<20 DWR

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.04 nCi/g

$\Sigma_{Respirator}$ 0.08

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium

• Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments: Recounted per client request.

Date: 4/28/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted] 97/274

SE 1 PV 5 of 7

27 of 30
03-ER-418

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML15391
File ID: MG102118.s0
Priority: Yes

Description\Location
PII A07 PIIa07
Long Count

Collector: 6144
Date Received: 4/24/03
Date Collected: 4/24/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.03
Cs-137	*	0	0.02
Pb-210		0.6	0.29
Ra-226		1.79	0.34
Ac-227 (D)	*	0	0.11
Th-230	*	0.85	2.53
Th-232 (D)		1.04	0.08
Pu-238	*	0	6.01
Am-241	*	0	0.03

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.01 nCi/g $\Sigma_{Respirator}$ 0.03

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments: Recounted per client request.

Date: 4/29/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted] 8/274

SE1 PV6 of 7

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: ML15392
File ID: MG102114.s0
Priority: Yes

Description\Location
PII A07-1A
Long Count

PIIa07-1

Collector: 6144
Date Received: 4/24/03
Date Collected: 4/24/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.11
Cs-137	*	0	0.08
Pb-210	*	0.73	0.87
Ra-226		1.72	0.94
Ac-227 (D)	*	0	0.37
Th-230	*	0	8.57
Th-232 (D)		0.66	0.3
Pu-238	*	12.07	17.01
Am-241	*	0	0.1

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
U-235	0.06	0.27	
U-238D	0.49	14.2	

Σ_{DOT} 0.04 nCi/g $\Sigma_{Respirator}$ 0.06

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/28/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted] 9/274

RADIOLOGICAL SURVEY DATA SHEET

Page 1 of 1 RIC 10-21-03

LOCATION (BLDG/AREA/ROOM) PRS 66	SURVEY NO 03-ER- 760
PURPOSE Summary of Daily FIDLER surveys during/after excavation of contaminated spoils in Phases 2, 3, partial 4 & partial 5	RWP NO 1269
	DATE 9-08-03
	TIME 0730 hrs

MAP/DRAWING

This is a summary report of FIDLER readings taken during daily field activities to date at PRS 66 after excavating the contaminated spoils in Phases 2, 3, partial 4 and partial 5.

100% FIDLER readings on all surfaces were at background levels for outchannel in phases 2, 3, & partial 4 and at background levels on both channels one and out in the partial phase 5 and interfaces of phase 4/5 (Areas excavated for layback were scanned as per the same requirements as the phases they border with readings at background levels)

Note : There are still contaminated areas in other parts of phase 4 & 5 and outside of phase 2 to the North that will still need cleaned but are outside of our proposed verification area. (See attached map)

→ Figure 4 of Data Report. 22 Sep 05

LEGEND: # = mrem/hr (γ) whole body
E = mrem/hr (β+n+γ) extremity on contact
= mrem/hr neutron
= air sample number
= swipe number
/α or /β = direct contamination measurement in dpm/100cm2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
	N/A	

ML-9620 (2/98)

[redacted] 5520 Date: 10-21-03 9-18-03

Page 4 of 4 added 10-21-03 CMline

Counted by: (Signature) N/A	HP#	Date:
Counted by: (Print) N/A		
Reviewed/Ap[redacted]	HP# 7725	Date 9-25-03
Reviewed/Approved by: (Print) [redacted]		A100/274

COPY

SE2 WALKOVER

03-ER-769
P 3 of 4
R.M

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00145
File ID: MG102327.s0
Priority: Yes

Description\Location
PV04 (R1 Pre Verification Resample)
Long Count

Collector: 5520
Date Received: 9/10/03
Date Collected: 9/9/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.06
Cs-137	*	0.01	0.05
Pb-210	*	0.54	0.86
Ra-226		1.12	1.02
Ac-227 (D)	*	0	0.39
Th-230	*	5.72	5.86
Th-232 (D)		0.52	0.24
Pu-238	*	0	20.04
Am-241	*	0	0.09

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.03 nCi/g $\Sigma_{Respirator}$ 0.06

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

COPY

Comments:

Date: 9/10/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

SE 2 PV 1 OF 4 A101/274

03-ER-759
p 7 of 11
RM

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00120
File ID: 6SC00034.s0
Priority: Yes

Description\Location
PV08 Pre Verification
Long Count

Collector: 5520
Date Received: 9/8/03
Date Collected: 9/8/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.03
Cs-137	*	0	0.04
Pb-210		1.29	0.96
Ra-226		2.13	0.99
Ac-227 (D)		0.38	0.29
Th-230	*	4	10.18
Th-232 (D)		0.87	0.09
Pu-238	*	2.08	34.37
Am-241	*	0	0.11

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.05 nCi/g $\Sigma_{Respirator}$ 0.10

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 9/9/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

SE 2 PV 2 of 4 A102/274

03-ER-759
p 9 of 11
Rm

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00122
File ID: MG102319.s0
Priority: Yes

Description\Location
PV10 Pre Verification
Long Count

Collector: 5520
Date Received: 9/8/03
Date Collected: 9/8/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.13
Cs-137	*	0	0.08
Pb-210	*	0.71	0.98
Ra-226		1.33	1.1
Ac-227 (D)	*	0.07	0.36
Th-230	*	0.01	8.57
Th-232 (D)		0.99	0.28
Pu-238	*	5.24	19.83
Am-241	*	0	0.1

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.03 nCi/g $\Sigma_{Respirator}$ 0.07

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 9/9/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted]

SE 2 PV3 of 4 A103 274

03-ER-759
p 11 of 11
RIM

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00124
File ID: MG102321.s0
Priority: Yes

Description\Location
PV14 Pre Verification
Long Count

Collector: 5520
Date Received: 9/8/03
Date Collected: 9/8/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.03	0.08
Cs-137	*	0	0.1
Pb-210	*	0.55	1.05
Ra-226		2.29	1.16
Ac-227 (D)	*	0	0.44
Th-230	*	2.85	7.92
Th-232 (D)		0.6	0.32
Pu-238	*	0	24.15
Am-241	*	0.01	0.1

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.04 nCi/g $\Sigma_{Respirator}$ 0.08

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 9/9/03 Counted By: 5288 Analyzed By: 7559 Initials [redacted] 04/274

SE 2 PV 4 of 4

Laboratory ID#: 0306182 - 0306185
Project/function: ER
Submitted: Jun 2, 2003
Submitted by: C. Hill
Point of Contact: C. Hill
RSDS#: N/A
Date: Jun 11, 2003

Phase I (SE 3)

x4581 PV data

NOTE: SAMPLES COLLECTED 5/29/03

Lab ID 0306182
Sample Location 000028 #1

Isotope	pCi/g	Uncertainty +/-	LDL
Th-232	1.25	0.13	0.05
Th-230	1.03	0.11	0.02
Th-228	1.32	0.14	0.06
Th-227	0.10	0.03	0.02

PV

Sample Event ~~#2~~ 3

Lab ID 0306183
Sample Location 000029 #2

Isotope	pCi/g	Uncertainty +/-	LDL
Th-232	1.24	0.13	0.02
Th-230	0.92	0.10	0.04
Th-228	1.25	0.13	0.06
Th-227	0.08	0.02	0.04

PV

Lab ID 0306184
Sample Location 000030 #3

Isotope	pCi/g	Uncertainty +/-	LDL
Th-232	0.84	0.09	0.01
Th-230	1.03	0.10	0.04
Th-228	1.00	0.10	0.04
Th-227	0.05	0.02	0.01

PV

Lab ID 0306185
Sample Location 000031 #4

Isotope	pCi/g	Uncertainty +/-	LDL
Th-232	1.16	0.12	0.04
Th-230	1.80	0.16	0.01
Th-228	1.18	0.12	0.04
Th-227	0.06	0.02	0.01

PV forwarded for offsite verification

160 Th.

22 Sep 5

[redacted]

1585 6-11-03
HP # Date

4812 06/11/03
HP # Date

A105/274

SE 3 PV Results

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) PRS 66 Phases 6 & partial 4 & 5	SURVEY NO. 05-ER-458
PURPOSE: PRS 66 Walk-over Sample event No. 4	RWP NO. N/A
	DATE: 7-18-05
	TIME: 0900 hrs

The Bicron FIDLER or Sodium Iodine is used as an indicator only :

N/A = not applicable N/D = Non detectable

MAP/DRAWING

Figure 6 of the Data Report

Walk-over

This is a summary report of FIDLER readings taken during and following daily field excavation activities at PRS 66 and represents the as-left surfaces prior to verification sampling for the areas shown on ~~Figure 4~~ and includes the limits of verification. This report only applies to the areas indicated on the figure.

100% walkover of all surfaces within verification limits and slopeback areas occurred as a matter of course throughout the excavation process. Walkovers entailed surveying in overlapping rows as per the VSAP

FIDLER readings on all surfaces were at background levels for channel out and channel one

Walkover surveys are indicators of the presence or absence of gross contamination only. However, certain correlations to specific isotopes and respective COs have been made based on testing described in [Recharacterization of pink soil in PRS 66 Dec 3, 2003,Final.]

COPY

LEGEND:
= mrem/hr (γ) whole body
E = mrem/hr (β+n+γ) extremity on contact
△# = mrem/hr neutron
[#] = air sample number
(#) = swipe number
(# /α) or /β = direct contamination measurement in dpm/100cm2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
	N/A	

ML-9620 (2/98)

[redacted]	HP# 5520	Date: 7-18-05
Counted by: (Signature) N/A	HP#	Date:
Counted by: (Print) N/A		
Reviewed/App[redacted]	HP# 7340	Date: 7/18/05
Reviewed/Approved[redacted]		

SE4 WALKOVER A 106/274

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A 107/274

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00520
File ID: MG102573.s0
Priority: Yes

Description\Location
PRS66 PV01
Long Count

Collector: 5520
Date Received: 11/26/03
Date Collected: 11/26/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.09
Cs-137	*	0	0.07
Pb-210	*	0.95	1.08
Ra-226		1.58	1.2
Ac-227 (D)	*	0	0.41
Th-230	*	0	9.77
Th-232 (D)		1.19	0.19
Pu-238	*	0	22.29
Am-241	*	0.03	0.1

✓ Below Co.

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.04 nCi/g $\Sigma_{Respirator}$ 0.08

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 11/26/03 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

A108/274

SE4 PV1 of 7

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00521
File ID: MGI02574.s0
Priority: Yes

Description\Location
PRS66 PV02
Long Count

Collector: 5520
Date Received: 11/26/03
Date Collected: 11/26/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.04 ✓	0.05
Cs-137	*	0.01 ✓	0.07
Pb-210		1.2 ✓	0.93
Ra-226		1.39 ✓	0.96
Ac-227 (D)	*	0.01 ✓	0.36
Th-230	*	0 ✓	8.26
Th-232 (D)		0.94 ✓	0.23
Pu-238	*	0 ✓	21.23
Am-241	*	0.02 ✓	0.09

✓ Below CO.

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.03 nCi/g $\Sigma_{Respirator}$ 0.07

$\Sigma_{Respirator}$ < 1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 11/26/03 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

SE ✓ PV2 A109/274 OF 7

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00522
File ID: MG102575.s0
Priority: Yes

Description\Location
PRS66 PV03
Long Count

Collector: 5520
Date Received: 11/26/03
Date Collected: 11/26/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137	*	0	0.06
Pb-210	*	0.31	0.71
Ra-226	*	0.63	0.85
Ac-227 (D)	*	0	0.33
Th-230	*	0	6.34
Th-232 (D)		0.36	0.2
Pu-238	*	0	15.27
Am-241	*	0	0.07

✓ Below CO.

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.02 nCi/g $\Sigma_{Respirator}$ 0.05

$\Sigma_{Respirator}$ <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 11/26/03 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

A 110/274

SE4 PV 3 of 7

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00523
File ID: MGI02576.s0
Priority: Yes

Description\Location
PRS66 PV06
Long Count

Collector: 5520
Date Received: 11/26/03
Date Collected: 11/26/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.08
Cs-137	*	0.02	0.07
Pb-210	*	0.79	1.12
Ra-226		2.49	1.17
Ac-227 (D)	*	0.12	0.38
Th-230	*	2.25	8.49
Th-232 (D)		0.79	0.29
Pu-238	*	5.33	20.2
Am-241	*	0.02	0.1

✓ Below C.O.

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.03 nCi/g $\Sigma_{Respirator}$ 0.07

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ DOT 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA, MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 11/26/03 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

AIII 1/274

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00524
File ID: MG102634.s0
Priority: Yes

Description\Location
PRS66 PV07
Long Count

Collector: 5520
Date Received: 11/26/03
Date Collected: 11/26/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0.01	0.03
Pb-210	*	0.41	0.62
Ra-226	*	0.68	0.76
Ac-227 (D)	*	0	0.23
Th-230	*	0	5.56
Th-232 (D)		0.35	0.2
Pu-238	*	6.85	10.9
Am-241	*	0.04	0.05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments: Recount for Th-230.

Date: 12/02/03 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

A 112/274

SE4 PV 5 of 7.

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00525
File ID: MG102578.s0
Priority: Yes

Description\Location
PRS66 PV11
Long Count

Collector: 5520
Date Received: 11/26/03
Date Collected: 11/26/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137	*	0.02	0.05
Pb-210	*	0.39	0.63
Ra-226		0.92	0.75
Ac-227 (D)	*	0	0.23
Th-230	*	0.69	5.76
Th-232 (D)		0.37	0.2
Pu-238	*	0	13.8
Am-241	*	0	0.06

✓ Bhow co.

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.02 nCi/g $\Sigma_{Respirator}$ 0.04

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Instrument type: High Purity Germanium

Σ DOT 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 11/26/03 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

SE4 PV 6 of 7 A113/274

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL00526
File ID: MG102579.s0
Priority: Yes

Description\Location
PRS66 PV12
Long Count

Collector: 5520
Date Received: 11/26/03
Date Collected: 11/26/03

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.05
Cs-137	*	0	0.05
Pb-210	*	0.05	0.73
Ra-226		1.08	0.78
Ac-227 (D)	*	0	0.26
Th-230	*	4.06	5.34 ✓
Th-232 (D)		0.46	0.2
Pu-238	*	0	16.11
Am-241	*	0	0.07

✓ BELOW C.O.

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)

Σ_{DOT} 0.02 nCi/g $\Sigma_{Respirator}$ 0.05

Σ Respirator <1 indicates soil levels below limit.
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4

Σ DOT 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity MDA, MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 11/26/03 Counted By: 2257 Analyzed By: 7559 Initials [redacted]

SE 4 PV 7 OF 7 A114/274

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) PRS 66	SURVEY NO. 04-ER-349
PURPOSE: Summary of Daily FIDLER surveys during/after excavation of contaminated spoils Phases 2B & 7	RWP NO. 1501 R0
	DATE: 6-22-04
	TIME: 1400 hrs

The FIDLER is used as an indicator only

N/A = not applicable N/D = Non detectable

MAP/DRAWING

This is a summary report of FIDLER readings taken during and following daily field excavation activities at PRS 66 and represents the as-left surfaces prior to verification sampling for the phases / areas shown on Figures ~~1~~ 7 and ~~2~~ 8 of the Data Report and includes the limits of verification. This report only applies to the areas indicated on the figures.

OMA 22Sep5

100% walkover of all surfaces within verification limits and slopeback areas occurred as a matter of course throughout the excavation process. Walkovers entailed surveying in overlapping rows as per the VSAP

FIDLER readings on all surfaces were at background levels for channel out

COCs did not include Pu-238, per 66 VSAP, no FV samples were required,

Walkover surveys are indicators of the presence or absence of gross contamination only. However, certain correlation's to specific isotopes and respective COs have been made based on testing described in

[Recharacterization of pink soil in PRS 66 Dec 3, 2003,Final.]

All verification sample results < CO for sample events 5&6. The resample of VV106 (Sample event 4) was also < CO.

COPY

19AUG4

LEGEND:

= mrem/hr (γ) whole body

E = mrem/hr (β+n+γ) extremity on contact

= mrem/hr neutron

= air sample number

= swipe number

/α or /β = direct contamination measurement in dpm/100cm2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
	N/A	

[redacted]	HP# 5520	Date: 8-16-04
Counted by: (Signature)	HP#	Date:
Counted by: (Print)	N/A	
Reviewed/Appro[redacted]	HP# 7725	Date: 8-16-04
Reviewed/Approved by: (Print) [redacted]	A115/274	

2/4

SE5 WALKOVER

ML-9620 (2/98)

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) PRS 66	SURVEY NO. 04-ER-349
PURPOSE: Summary of Daily FIDLER surveys during/after excavation of contaminated spoils Phases 2B & 7	RWP NO. 1501 R0
	DATE: 6-22-04
	TIME: 1400 hrs

The FIDLER is used as an indicator only

N/A = not applicable N/D = Non detectable

MAP/DRAWING

This is a summary report of FIDLER readings taken during and following daily field excavation activities at PRS 66 and represents the as-left surfaces prior to verification sampling for the phases / areas shown on Figures ~~1~~ 7 and ~~2~~ 8 and includes the limits of verification. This report only applies to the areas indicated on the figures.

of the Data Report

[illegible] 22Sep5

100% walkover of all surfaces within verification limits and slopeback areas occurred as a matter of course throughout the excavation process. Walkovers entailed surveying in overlapping rows as per the VSAP

FIDLER readings on all surfaces were at background levels for channel out

COCs did not include Pu-238, per 66 VSAP, no PV samples were required.

Walkover surveys are indicators of the presence or absence of gross contamination only. However, certain correlation's to specific isotopes and respective COs have been made based on testing described in

[Recharacterization of pink soil in PRS 66 Dec 3, 2003,Final.]

All verification sample results < CO for sample events 5&6. The resample of VV106 (Sample Event 4) was also < CO.

[illegible] 19AUG4

COPY

LEGEND:

= mrem/hr (γ) whole body

E = mrem/hr (β+n+γ) extremity on contact

△# = mrem/hr neutron

[#] = air sample number

(#) = swipe number

(# /α) or /β = direct contamination measurement in dpm/100cm2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
	N/A	

[redacted]	HP# 5520	Date: 8-16-04
Counted by: (Signature)	HP#	Date:
Counted by: (Print)	N/A	
Reviewed/Approv [redacted]	HP# 7725	Date: 8-16-04
Reviewed/Approved by: (Print) [redacted]	A116/274	

2/4

SE6 WALKOVER

ML-9620 (2/98)

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02630
File ID: 2SC00208.s0
Priority: Yes

Description\Location
PRS 66-0-287-05-025008
Long Count

Collector: 5520
Date Received: 09/13/04
Date Collected: 09/13/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.05
Cs-137	*	0	0.05
Pb-210	*	0.36	0.55
Ra-226		0.83	0.67
Ac-227 (D)	*	0	0.2
Th-230	*	0.59	5.76
Th-232 (D)		0.51	0.15
Pu-238	*	0	12.65
Am-241	*	0	0.06

✓ < CO. MB. 29 dwr 05

OK to ship
Allline 9-22-04

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

COPY

Comments:

Date: 09/15/04 Counted By: 5268 Analyzed By: 5755 Initials [redacted]

A117/274
SE 7-CHAR 1 of 20

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02645
File ID: 2SC00209.s0
Priority: Yes

Description\Location
PRS66-0-287-10-025009
Long Count

Collector:
Date Received: 09/14/04
Date Collected: 09/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137	*	0.02	0.05
Pb-210	*	0.43	0.59
Ra-226	*	0.75	0.77
Ac-227 (D)	*	0	0.23
Th-230	*	0.6	6.48
Th-232 (D)		0.72	0.16
Pu-238	*	0	14.64
Am-241	*	0.02	0.06

OK to ship
Celine 9-22-04

✓ < Co. WB 28 days OK

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

COPY

Comments:

Date: 09/15/04 Counted By: 5288 Analyzed By: 5755 Initials [redacted]

A11B/274

SE 7-2 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02646
File ID: 2SC00210.s0
Priority: Yes

Description\Location
PRS66-0-287-15-025010
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.03	0.06
Cs-137	*	0.02	0.04
Pb-210	*	0.36	0.63
Ra-226		1.53	0.67
Ac-227 (D)	*	0	0.25
Th-230	*	1.22	6.91
Th-232 (D)		0.83	0.2
Pu-238	*	6.57	12.69
Am-241	*	0.01	0.07

✓ < Co 28 June 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A119/274
SE 7-CHAR 3 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02647
File ID: 2SC00211.s0
Priority: Yes

Description\Location
PRS 66-0-287-20-025011
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.06
Cs-137	*	0.01	0.04
Pb-210	*	0.59	0.6
Ra-226		1.03	0.66
Ac-227 (D)	*	0.12	0.24
Th-230	*	1.79	6.31
Th-232 (D)		0.81	0.19
Pu-238	*	0	14.4
Am-241	*	0	0.07

✓ < CO µB 28 DWIE OK

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/15/04 Counted By: 5288 Analyzed By: 5755 Initials [redacted]

A1201 274

SE 7 · CHAR 4 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02648
File ID: 2SC00212.s0
Priority: Yes

Description\Location
PRS66-0287-25-025012
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0	0.04
Pb-210	*	0.45	0.58
Ra-226		0.81	0.71
Ac-227 (D)	*	0.11	0.2
Th-230	*	1.38	6.08
Th-232 (D)		0.68	0.19
Pu-238	*	1.41	12.55
Am-241	*	0	0.06

✓ < Co. up 28 2w,E 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A121/274
SE7 CHAR 2 OF 20

04-EK-00
P16 of 60
Rom

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02649
File ID: 1SC00518.s0
Priority: Yes

Description\Location
PRS66-0-287-30-025013
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.05
Cs-137		0.03	0.03
Pb-210		0.55	0.48
Ra-226		0.67	0.57
Ac-227 (D)	*	0.05	0.18
Th-230	*	0	5.2
Th-232 (D)		0.48	0.15
Pu-238	*	0	9.57
Am-241	*	0	0.06

✓ < CO. MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/21/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A122/274
SE 7 CHAR 6 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02704
File ID: MG500653.s0
Priority: Yes

Description\Location
PRS66-0-287-39-025014
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.03
Cs-137	*	0.01	0.03
Pb-210	*	0	0.67
Ra-226		1.26	0.63
Ac-227 (D)	*	0.02	0.3
Th-230	*	0.2	6.83
Th-232 (D)		0.51	0.1
Pu-238	*	4.19	14.85
Am-241	*	0	0.07

✓ < Co. MB 28 June 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initia[redacted]

A123/274
SE 7 CHAR 7 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02665
File ID: 6SC00485.s0
Priority: Yes

Description\Location
PRS66-0-336-05-025024
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0	0.04
Pb-210		1.13	0.85
Ra-226		1.3	0.82
Ac-227 (D)	*	0.33	0.4
Th-230	*	0	8.63
Th-232 (D)		0.72	0.16
Pu-238	*	6.84	23.59
Am-241	*	0.04	0.09

✓ < CO. MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.04 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A124/274
SE 7 CHAR 8 OF 20

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02675
File ID: 6SC00487.s0
Priority: Yes

Description\Location
PRS66-0-336-10-025025
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.03
Cs-137		0.03	0.03
Pb-210		0.78	0.69
Ra-226		1.43	0.69
Ac-227 (D)	*	0.14	0.32
Th-230	*	4	7.22
Th-232 (D)		0.62	0.08
Pu-238	*	14.48	19.39
Am-241	*	0.03	0.08

✓ < Co. MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A125/274
SE 7 CHAR 9 of 20

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02677
File ID: 6SC00489.s0
Priority: Yes

Description\Location
PRS66-1-336-10-025026
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.03
Cs-137		0.05	0.03
Pb-210		0.67	0.65
Ra-226		1.36	0.65
Ac-227 (D)	*	0.09	0.32
Th-230	*	0	7.01
Th-232 (D)		0.54	0.08
Pu-238	*	0	18.55
Am-241	*	0	0.08

✓ < CO. 28 JUN 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A126/274
SE7 CHAR 10 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02680
File ID: 6SC00492.s0
Priority: Yes

Description\Location
PRS66-0-336-15-025027
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60		0.02	0.02
Cs-137	*	0.02	0.03
Pb-210	*	0.51	0.65
Ra-226		1.02	0.67
Ac-227 (D)	*	0.11	0.31
Th-230	*	0.6	7.12
Th-232 (D)		0.64	0.09
Pu-238	*	13.46	20.23
Am-241	*	0.03	0.07

✓ < Co. MB 28 June 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A127/274
SE 7 CHAR 11 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02663
File ID: 6SC00483.s0
Priority: Yes

Description\Location
PRS66-0-352-05-025022
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.03
Cs-137		0.04	0.03
Pb-210	*	0.55	0.8
Ra-226		1.54	0.8
Ac-227 (D)	*	0.2	0.37
Th-230	*	1.97	8.24
Th-232 (D)		0.7	0.11
Pu-238	*	11.83	22.03
Am-241	*	0.01	0.09

✓ < CO. MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A12B/274
SE7 CHAR 12 of 20

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02664
File ID: 6SC00484.s0
Priority: Yes

Description\Location
PRS66 0-352-10-025023
Long Count

Collector:
Date Received: 9/14/04
Date Collected: 9/14/04

Radionuclide		Activity (pCi/g)	MDA
Co-60		0.03	0.02
Cs-137	*	0.02	0.04
Pb-210		1.1	0.93
Ra-226		1.9	0.92
Ac-227 (D)	*	0.29	0.43
Th-230	*	8.05	9.02
Th-232 (D)		0.94	0.12
Pu-238	*	8.62	25.24
Am-241	*	0	0.1

✓ L CO. MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.04 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A129/274
SE-7 CHAR 13 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02707
File ID: 6SC00493.s0
Priority: Yes

Description\Location
PRS66 0-313-05-025032
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.04
Cs-137	*	0.03	0.04
Pb-210		1.76	0.9
Ra-226		2.75	0.91
Ac-227 (D)	*	0	0.45
Th-230	*	0	9.79
Th-232 (D)		0.76	0.12
Pu-238	*	16.9	25.67
Am-241	*	0	0.11

✓ L CO MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.04 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A130/274
SE 7 CHAR 14 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02708
File ID: 6SC00494.s0
Priority: Yes

Description\Location
PRS66-0-313-10-025033
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.03
Cs-137		0.03	0.03
Pb-210		0.81	0.81
Ra-226		1.6	0.78
Ac-227 (D)	*	0	0.39
Th-230	*	2.31	8.55
Th-232 (D)		0.77	0.11
Pu-238	*	0	23.46
Am-241	*	0	0.09

✓ < CO MB 28 Jan 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.04 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A131/274
SE 7 CHAR 15 01 80

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02709
File ID: 6SC00495.s0
Priority: Yes

Description\Location
PRS66 0-313-15-025034
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60		0.02	0.02
Cs-137	*	0.02	0.03
Pb-210	*	0.48	0.65
Ra-226		1.02	0.7
Ac-227 (D)	*	0	0.32
Th-230	*	1.2	6.77
Th-232 (D)		0.43	0.1
Pu-238	*	0	19.52
Am-241	*	0	0.07

J < CO µB 28 LINE OF

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A132/274

SE 7 CHAR 16 OF 20

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02710
File ID: 6SC00496.s0
Priority: Yes

Description\Location
PRS66 0-313-20-025035
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.04
Cs-137		0.11	0.04
Pb-210		1.58	0.99
Ra-226		1.57	0.89
Ac-227 (D)	*	0.2	0.48
Th-230	*	5.78	9.86
Th-232 (D)		0.96	0.1
Pu-238	*	4.1 •	29.05
Am-241	*	0.04	0.11

✓ < CO MB 28 June 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.04 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A133/274

SE 7 CHAR 17 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02711
File ID: 6SC00497.s0
Priority: Yes

Description\Location
PRS66-1-313-20-025036
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.06
Cs-137		0.12	0.04
Pb-210		2.01	1.12
Ra-226		1.96	1.02
Ac-227 (D)	*	0.23	0.54
Th-230	*	0	9.93
Th-232 (D)		1.18	0.2
Pu-238	*	0	31.23
Am-241	*	0	0.12

✓ < Co MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.05 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A134/274

SE 7 CHAR 18 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02712
File ID: 6SC00498.s0
Priority: Yes

Description\Location
PRS66-0-313-30-025037
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60		0.02	0.02
Cs-137	*	0.01	0.02
Pb-210	*	0.57	0.63
Ra-226		1.29 •	0.68
Ac-227 (D)	*	0.2	0.29
Th-230	*	0	6.72
Th-232 (D)		0.43	0.08
Pu-238	*	0	18.17
Am-241	*	0.02	0.07

✓ L CO. MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A135/274

SE 7 CHAP 19 OF 30

Monica - These samples OK to Ship

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02736
File ID: 6SC00503.s0
Priority: Yes

21 Sep 04

Description\Location
PRS66-0-337-05-025043
Long Count

Collector:
Date Received: 09/15/04
Date Collected: 09/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.03
Cs-137		0.03	0.03
Pb-210	*	0.6	0.86
Ra-226		1.64	0.82
Ac-227 (D)	*	0	0.42
Th-230	*	0	9.26
Th-232 (D)		0.72	0.11
Pu-238	*	0.9	25.52
Am-241	*	0.02	0.09

21 Sep 04

COPY

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

Σ_{DOT} 0.04 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

1/6

Comments:

Date: 09/18/04 Counted By: 5268 Analyzed By: 5288 Initials [redacted]

SEP 7 MAR 2005

A136/274

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02737
File ID: 6SC00504:s0
Priority: Yes

Description\Location
PRS66-0-337-10-025044
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.03
Cs-137		0.05	0.03
Pb-210		1.22	0.76
Ra-226		1.94	0.75
Ac-227 (D)	*	0.13	0.36
Th-230	*	0	8.17
Th-232 (D)		0.74	0.08
Pu-238	*	0	22.38
Am-241	*	0	0.09

✓ < Co MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/18/04 Counted By: 5268 Analyzed By: 5288 Initials [redacted]

A137/274

SE 7 CHAR 21 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02738
File ID: MG500667.s0
Priority: Yes

Description\Location
PRS66 0-337-15-025045
Long Count

Collector:
Date Received: 9/15/04
Date Collected: 9/15/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.04
Cs-137	*	0.02	0.04
Pb-210	*	0	0.87
Ra-226		1.18	0.7
Ac-227 (D)	*	0	0.38
Th-230	*	0	8.5
Th-232 (D)		0.81	0.12
Pu-238	*	0	20.91
Am-241	*	0.03	0.09

✓ < CO μB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/16/04 Counted By: 5268 Analyzed By: 5288 Initials [redacted]

A138/274

SE 7 CHAR 22 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02761
File ID: 1SC00497.s0
Priority: Yes

Description\Location
PRS66-0-353-05-025051
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.07
Cs-137	*	0.03	0.06
Pb-210		0.87	0.77
Ra-226		1.74	0.91
Ac-227 (D)	*	0.02	0.3
Th-230	*	0.97	8.47
Th-232 (D)		0.65	0.25
Pu-238	*	0.48	15.61
Am-241	*	0	0.09

✓ < CO MB. 2σ time 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/18/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A139/274

SE 7 CHAR 23 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02762
File ID: 1SC00498.s0
Priority: Yes

Description\Location
PRS66-0-353-10-025052
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.03	0.05
Cs-137	*	0.03	0.07
Pb-210		0.98	0.74
Ra-226		1.45	0.93
Ac-227 (D)	*	0	0.29
Th-230	*	0	8.77
Th-232 (D)		0.96	0.23
Pu-238	*	0.19	15.97
Am-241	*	0	0.1

✓ < Co. MB 28 June 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/18/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A140/274

SE 7 CHAR. 24 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02763
File ID: 1SC00499.s0
Priority: Yes

Description\Location
PRS66-0-353-15-025053
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.12
Cs-137	*	0.05	0.06
Pb-210	*	0.78	0.9
Ra-226		1.74	0.8
Ac-227 (D)	*	0	0.34
Th-230	*	4.52	9.39
Th-232 (D)		1.04	0.24
Pu-238	*	2.34	15.96
Am-241	*	0.02	0.1

✓ < CO MB 28 Sept 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/18/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A141/274

JE 7 CHAR 25 of 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02764
File ID: 1SC00500.s0
Priority: Yes

Description\Location
PRS66-1-353-15-025054
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.1
Cs-137	*	0	0.08
Pb-210		1.36	0.86
Ra-226		1.21	0.91
Ac-227 (D)	*	0.09	0.34
Th-230	*	0	9.77
Th-232 (D)		0.78	0.27
Pu-238	*	0	18.12
Am-241	*	0	0.1

✓ < CO MB. 28 June 04

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/18/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A142/274

SE 07 CHAP. 26 of 30

04-ER-307
p 57 of 60
Rm

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02786
File ID: 6SC00521.s0
Priority: Yes

Description\Location
PRS66-0-338-05-025059
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60		0.02	0.02
Cs-137		0.07	0.02
Pb-210	*	0.03	0.78
Ra-226	*	0.7	0.76
Ac-227 (D)	*	0	0.35
Th-230	*	3.58	7.34
Th-232 (D)		0.6	0.1
Pu-238	*	11.07	19.63
Am-241	*	0.01	0.08

✓ < Co MB 28 Jun 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

COPY

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/20/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A143/274

SE 7 CHAR 27 of 30

04-ER-501
P 586-6
Rin

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02787
File ID: 6SC00522.s0
Priority: Yes

Description\Location
PRS66-0-338-10-025062
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.03
Cs-137	*	0.01	0.03
Pb-210		0.64	0.64
Ra-226		1.08	0.6
Ac-227 (D)	*	.0.1	0.29
Th-230	*	3.69	6.37
Th-232 (D)		0.53	0.09
Pu-238	*	0	17.61
Am-241	*	0	0.07

✓ < CO MB 28 June 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

COPY

Comments:

Date: 9/20/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A144/274

SE 7 CHAR 28 OF 30

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02788
File ID: 6SC00523.s0
Priority: Yes

Description\Location
PRS66-1-338/10-025063
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.03
Cs-137	*	0	0.03
Pb-210	*	0.35	0.65
Ra-226		1.42	0.63
Ac-227 (D)	*	0.04	0.31
Th-230	*	0	6.84
Th-232 (D)		0.49	0.1
Pu-238	*	0	18.64
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

COPY

Comments:

Date: 9/20/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A145/274

SE 7 CHAR 29 OF 30

04-ER-501
P 6 of 6
RM

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL02789
File ID: 6SC00524.s0
Priority: Yes

Description\Location
PRS66-0-338-15-025064
Long Count

Collector:
Date Received: 9/16/04
Date Collected: 9/16/04

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.04
Cs-137	*	0	0.03
Pb-210	*	0.74	0.78
Ra-226		1.8	0.76
Ac-227 (D)	*	0.13	0.36
Th-230	*	0	8.57
Th-232 (D)		0.87	0.08
Pu-238	*	12.06	20.38
Am-241	*	0	0.09

J < CO MB 28 JUNE 05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

COPY

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 9/20/04 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A146/274
SE 7 CHAR 30 of 30

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) PRS 66 Phases 8, 9, & 10	SURVEY NO. 05-ER-316
PURPOSE: PRS 66 Walk-over Sample event 8	RWP NO. N/A
	DATE: 5-26-05
	TIME: 1300 hrs

The Bicron FIDLER or Sodium Iodine is used as an indicator only :

N/A = not applicable N/D = Non detectable

MAP/DRAWING

Figure 10 of the Data Report. 27Sep5

Walk-over

This is a summary report of FIDLER readings taken during and following daily field excavation activities at PRS 66 and represents the as-left surfaces prior to verification sampling for the areas shown on ~~Figure 4~~ and includes the limits of verification. This report only applies to the areas indicated on the figure.

100% walkover of all surfaces within verification limits and slopeback areas occurred as a matter of course throughout the excavation process. Walkovers entailed surveying in overlapping rows as per the VSAP

FIDLER readings on all surfaces were at background levels for channel out and channel one

Walkover surveys are indicators of the presence or absence of gross contamination only. However, certain correlations to specific isotopes and respective COs have been made based on testing described in [Recharacterization of pink soil in PRS 66 Dec 3, 2003,Final.]

COPY

LEGEND:

= mrem/hr (γ) whole body

E = mrem/hr (β+n+γ) extremity on contact

△# = mrem/hr neutron

[#] = air sample number

(#) = swipe number

(# /α) or /β = direct contamination measurement in dpm/100cm2

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
	N/A	

[redacted]	HP# 5520 4992	Date: 5-26-05
Counted by: (Signature) N/A	HP#	Date:
Counted by: (Print) N/A		
Reviewed/App[redacted]	HP# 7725	Date: 5-26-05
Reviewed/Approved by: (Print) [redacted]	A147/274	

ML-9620 (2/98) SE8 WALKOVER 1/2

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A148/274

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05678
File ID: 2SC01737.s0
Priority: Yes

Description\Location
PRS 66 PVIII01 000179
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.08
Cs-137	*	0	0.06
Pb-210	*	0.8	0.82
Ra-226		1.43	0.89
Ac-227 (D)	*	0	0.32
Th-230	*	3.47	7.72
Th-232 (D)		1.15	0.26
Pu-238	*	5.42	16.51
Am-241	*	0	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ AB 5/25/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A149/274

SEC 8 PV 1 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05750
File ID: 2SC01788.s0
Priority: Yes

Description\Location
PRS 66 PVIII02 000248
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.03	0.05
Cs-137	*	0.02	0.04
Pb-210	*	0.48	0.61
Ra-226		1.38	0.64
Ac-227 (D)	*	0.06	0.21
Th-230	*	2.19	6.22
Th-232 (D)		0.78	0.22
Pu-238	*	0	13.35
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A150/274

SE 8 PV 2 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05745
File ID: 2SC01783.s0
Priority: Yes

Description\Location
PRS 66 PVIII03 000242
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.03	0.05
Cs-137	*	0.02	0.03
Pb-210		0.59	0.52
Ra-226		1.16	0.62
Ac-227 (D)	*	0.08	0.21
Th-230	*	1.5	5.69
Th-232 (D)		0.68	0.19
Pu-238	*	0	12.86
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A151/274

SE8 PN 3 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05770
File ID: 2SC01798.s0
Priority: Yes

Description\Location
PRS 66 PVIII04 000239
Long Count

Collector: 8542
Date Received: 4/26/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.06
Cs-137	*	0.02	0.03
Pb-210	*	0.36	0.52
Ra-226		1.16	0.57
Ac-227 (D)	*	0	0.22
Th-230	*	1.59	5.19
Th-232 (D)		0.52	0.15
Pu-238	*	0.63	11.53
Am-241	*	0	0.05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A152/274

SE 8 PV 4 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05753
File ID: 1SC01811.s0
Priority: Yes

Description\Location
PRS 66 PVIII05 000251
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0.02	0.06
Pb-210	*	0.33	0.64
Ra-226		1.18	0.7
Ac-227 (D)	*	0.13	0.24
Th-230	*	2.31	6.51
Th-232 (D)		0.69	0.2
Pu-238	*	1.04	11.63
Am-241	*	0.02	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MD 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A153/274

SE8 PV5 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05771
File ID: 2SC01800.s0
Priority: Yes

Description\Location
PRS 66. PVIII06 000247
Long Count

Collector: 8542
Date Received: 4/26/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.03	0.05
Cs-137		0.04	0.04
Pb-210		0.98	0.5
Ra-226		1.67	0.67
Ac-227 (D)	*	0	0.2
Th-230	*	0.91	5.47
Th-232 (D)		0.85	0.17
Pu-238	*	0	12.8
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
		√ NB 3/12 < 10⁻

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A154/274

SE 8 PV 6 OF 4+

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05746
File ID: 2SC01784.s0
Priority: Yes

Description\Location
PRS 66 PVIII07 000243
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.04
Cs-137	*	0.03	0.04
Pb-210		0.73	0.56
Ra-226		1.27	0.7
Ac-227 (D)	*	0.03	0.21
Th-230	*	1.5	6.1
Th-232 (D)		0.73	0.17
Pu-238	*	0	13.41
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

√ - μD 3/2<10<

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A155/274

SE 8 PV 7 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05740
File ID: 1SC01801.s0
Priority: Yes

Description\Location
PRS 66 PVIII08 000236
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.06
Cs-137	*	0	0.07
Pb-210		0.83	0.77
Ra-226		1.32	0.88
Ac-227 (D)	*	0.23	0.27
Th-230	*	6.23	7.84
Th-232 (D)		0.79	0.23
Pu-238	*	0	14.78
Am-241	*	0.04	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/26/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/27/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A156/274

SE8 PV 8 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05741
File ID: 1SC01802.s0
Priority: Yes

Description\Location
PRS 66 PVIII09 000237
Long Count

Collector: 8542
Date Received: 04/25/05
Date Collected: 04/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.05
Cs-137	*	0.04	0.05
Pb-210	*	0.48	0.6
Ra-226		1.33	0.7
Ac-227 (D)	*	0.17	0.23
Th-230	*	4.45	6.68
Th-232 (D)		0.67	0.19
Pu-238	*	3.69	11.34
Am-241	*	0.02	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/27/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/27/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A157/274

SE 8 PV 9 OF 17

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05704
File ID: 2SC01761.s0
Priority: Yes

Description\Location
PRS 66 PVIII10 000205
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/21/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.05
Cs-137	*	0	0.04
Pb-210	*	0.27	0.55
Ra-226		1.2	0.54
Ac-227 (D)	*	0.05	0.2
Th-230	*	0	5.74
Th-232 (D)		0.66	0.17
Pu-238	*	0	12.81
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/12/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/23/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A150/274

SE 8 PV 10 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05752
File ID: 1SC01810.s0
Priority: Yes

Description\Location
PRS 66 PVIII11 000250
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.06
Cs-137	*	0	0.05
Pb-210	*	0.04	0.64
Ra-226		1.2	0.71
Ac-227 (D)	*	0.18	0.22
Th-230	*	0	6.74
Th-232 (D)		0.51	0.19
Pu-238	*	0	11.85
Am-241	*	0.03	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
		0.0
		5.2 x 10^-2

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A159/274

SE 8 PV 11 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05748
File ID: 2SC01786.s0
Priority: Yes

Description\Location
PRS 66 PVIII12 000245
Long Count

Collector: 8542
Date Received: 04/25/05
Date Collected: 04/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.08
Cs-137		0.1	0.04
Pb-210		0.66	0.53
Ra-226		1.41	0.65
Ac-227 (D)	*	0	0.22
Th-230	*	0	5.59
Th-232 (D)		0.43	0.15
Pu-238	*	0	12.99
Am-241	*	0.03	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

SE8 PV 12 of 47 A160/274

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05743
File ID: 2SC01781.s0
Priority: Yes

Description\Location
PRS 66 PVIII13 000240
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137		0.05	0.04
Pb-210		1	0.52
Ra-226		1.17	0.68
Ac-227 (D)	*	0	0.23
Th-230	*	1.46	5.95
Th-232 (D)		0.74	0.16
Pu-238	*	0	12.62
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ 5/2/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A161/274

SE8 PV 13 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05731
File ID: 1SC01792.s0
Priority: Yes

Description\Location
PRS 66 PVIII14 000229
Long Count

Collector: 8542
Date Received: 04/25/05
Date Collected: 04/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137	*	0	0.05
Pb-210	*	0.09	0.72
Ra-226		1.3	0.81
Ac-227 (D)	*	0.13	0.26
Th-230	*	2.7	7.32
Th-232 (D)		0.53	0.24
Pu-238	*	0.24	13.37
Am-241	*	0	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/26/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A162/274

SE 8 PV 14 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05733
File ID: 1SC01794.s0
Priority: Yes

Description\Location
PRS 66 PVIII15 000231
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0	0.05
Pb-210	*	0.49	0.61
Ra-226		1.65	0.66
Ac-227 (D)	*	0.06	0.28
Th-230	*	0	6.83
Th-232 (D)		0.68	0.16
Pu-238	*	4.3	10.84
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
		✓ NB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/26/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A163/274

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05694
File ID: 2SC01751.s0
Priority: Yes

PVIII-16 MB.

Description\Location
PRS 66 ~~PVIII06~~ 000195
Long Count MB

Collector: 8542
Date Received: 04/21/05
Date Collected: 04/21/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.1
Cs-137	*	0	0.05
Pb-210		1.52	0.62
Ra-226		1.99	0.77
Ac-227 (D)	*	0.02	0.26
Th-230	*	0	7.46
Th-232 (D)		0.81	0.25
Pu-238	*	6.77	13.41
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 8/25/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A164/274

SE8 PV 16 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05700
File ID: 2SC01757.s0
Priority: Yes

Description\Location
PRS 66 PVIII17 000201
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/21/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.09
Cs-137		0.04	0.02
Pb-210	*	0.46	0.68
Ra-226		1.82	0.8
Ac-227 (D)	*	0.01	0.25
Th-230	*	1.73	6.68
Th-232 (D)		0.59	0.16
Pu-238	*	1.56	13.92
Am-241	*	0.02	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/2-to<

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/23/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05705
File ID: 2SC01762.s0
Priority: Yes

Description\Location
PRS 66 PVIII18 000206
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/21/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.04	0.07
Cs-137	*	0.04	0.05
Pb-210		1.57	0.76
Ra-226		1.52	0.96
Ac-227 (D)	*	0.03	0.32
Th-230	*	1.7	8.67
Th-232 (D)		1.17	0.25
Pu-238	*	0	19.83
Am-241	*	0.04	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MD 5/25/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/23/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A166 / 274

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05739
File ID: 1SC01800.s0
Priority: Yes

Description\Location
PRS 66 PVIII19 000223
Long Count

Collector: 8542
Date Received: 04/25/05
Date Collected: 04/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137	*	0.03	0.05
Pb-210		0.86	0.63
Ra-226		1.49	0.72
Ac-227 (D)	*	0.1	0.25
Th-230	*	0	7.35
Th-232 (D)		0.67	0.23
Pu-238	*	0	12.9
Am-241	*	0.04	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/27/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A167/274

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05727
File ID: 2SC01777.s0
Priority: Yes

Description\Location
PRS 66 PVIII20 000225
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137		0.04	0.04
Pb-210	*	0.3	0.61
Ra-226		1.53	0.73
Ac-227 (D)	*	0	0.24
Th-230	*	2.57	5.77
Th-232 (D)		0.7	0.19
Pu-238	*	6.79	12.41
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/26/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A168/274

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05758
File ID: 2SC01793.s0
Priority: Yes

Description\Location
PRS 66 PIX01 000256
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137		0.08	0.06
Pb-210		0.83	0.78
Ra-226		1.31	0.85
Ac-227 (D)	*	0.04	0.3
Th-230	*	0	8.67
Th-232 (D)		1.9	0.21
Pu-238	*	2.86	17.51
Am-241	*	0	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MD 5/26/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/28/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A169/274

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05686
File ID: 1SC01779.s0
Priority: Yes

Description\Location
PRS 66 PIX02 000187
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137	*	0	0.05
Pb-210	*	0.59	0.68
Ra-226		1.19	0.75
Ac-227 (D)	*	0.15	0.25
Th-230	*	0	7.33
Th-232 (D)		0.32	0.27
Pu-238	*	0	13.05
Am-241	*	0	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05697
File ID: 2SC01754.s0
Priority: Yes

Description\Location
PRS 66 PIX03 000198
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/21/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.05
Cs-137	*	0	0.05
Pb-210		1.18	0.71
Ra-226		1.44	0.83
Ac-227 (D)	*	0.04	0.25
Th-230	*	5	6.84
Th-232 (D)		0.72	0.24
Pu-238	*	0	15.89
Am-241	*	0.02	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MD 5/25/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/23/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A171/274

SE 8 PV 23 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05691
File ID: 1SC01784.s0
Priority: Yes

Description\Location
PRS 66 PIX04 000192
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.01	0.08
Cs-137	*	0	0.08
Pb-210	*	0.95	0.97
Ra-226		2.13	1.07
Ac-227 (D)	*	0.2	0.32
Th-230	*	0.69	9.56
Th-232 (D)		0.63	0.27
Pu-238	*	4.11	16.4
Am-241	*	0.04	0.11

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MD 5/2/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/23/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A172/274

SE8 PV24 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05692
File ID: 2SC01749.s0
Priority: Yes

Description\Location
PRS 66 PIX05 000193
Long Count

Collector: 8542
Date Received: 04/21/05
Date Collected: 04/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.11
Cs-137	*	0.02	0.06
Pb-210		0.99	0.74
Ra-226		1.68	0.89
Ac-227 (D)	*	0	0.31
Th-230	*	0	8.15
Th-232 (D)		0.98	0.27
Pu-238	*	0	18.06
Am-241	*	0	0.09

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
		ND 8/25/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A173/274

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05710
File ID: 2SC01767.s0
Priority: Yes

Description\Location
PRS 66 PIX06 000211
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/21/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.1
Cs-137	*	0.01	0.05
Pb-210	*	0.62	0.71
Ra-226		1.96	0.76
Ac-227 (D)	*	0.08	0.27
Th-230	*	2.02	6.86
Th-232 (D)		0.87	0.28
Pu-238	*	0	17.23
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 8/25/05

Σ_{DOT} 0.03 nCi/g

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/23/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A174/274

SE8PV2605 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05723
File ID: 2SC01773.s0
Priority: Yes

Description\Location
PRS 66 PIX07 000219
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137		0.04	0.04
Pb-210		0.77	0.53
Ra-226		1.25	0.66
Ac-227 (D)	*	0.08	0.2
Th-230	*	2.75	5.5
Th-232 (D)		0.61	0.19
Pu-238	*	6.07	11.55
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/26/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A175/274

SE 8 PV 27 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05672
File ID: 1SC01775.s0
Priority: Yes

Description\Location
PRS 66 PIX08 000173
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.05	0.06
Cs-137	*	0	0.07
Pb-210	*	0.55	0.87
Ra-226		1.08	1.02
Ac-227 (D)		0.39	0.29
Th-230	*	0.02	9.01
Th-232 (D)		0.71	0.26
Pu-238	*	4.72	15.17
Am-241	*	0.03	0.09

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ AAB 5/2/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A176/274

SE 8 PV 28 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05673
File ID: 1SC01764.s0
Priority: Yes

Description\Location
PRS 66 PIX09 000174
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.1
Cs-137	*	0.04	0.07
Pb-210		1.13	1.13
Ra-226		2.63	1.18
Ac-227 (D)		0.51	0.36
Th-230	*	4.31	9.96
Th-232 (D)		1.37	0.23
Pu-238	*	5.12	18.85
Am-241	*	0.05	0.12

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/2/05

Σ_{DOT} 0.03 nCi/g

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A177/274

SE8 Pv 29 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05670
File ID: 1SC01773.s0
Priority: Yes

Description\Location
PRS 66 PIX10 000171
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.06
Cs-137	*	0	0.06
Pb-210		1.11	0.73
Ra-226		2	0.79
Ac-227 (D)	*	0	0.31
Th-230	*	0	7.95
Th-232 (D)		0.54	0.2
Pu-238	*	0	14.03
Am-241	*	0	0.1

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ WB 5/2/05

Σ_{DOT} 0.03 nCi/g

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A178/274

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05674
File ID: 1SC01765.s0
Priority: Yes

Description\Location
PRS 66 PIX11 000175
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0	0.06
Pb-210		0.68	0.65
Ra-226		1.64	0.64
Ac-227 (D)	*	0.18	0.24
Th-230	*	0	7.43
Th-232 (D)		0.52	0.19
Pu-238	*	0	12.7
Am-241	*	0.02	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05675
File ID: 1SC01766.s0
Priority: Yes

Description\Location
PRS 66 PIX12 000176
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.04
Cs-137	*	0	0.04
Pb-210		0.49	0.45
Ra-226		0.96	0.54
Ac-227 (D)	*	0.07	0.18
Th-230	*	0.92	4.98
Th-232 (D)		0.21	0.1
Pu-238	*	0	9.85
Am-241	*	0	0.05

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/22/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A180/274

SE8PV32 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05724
File ID: 2SC01774.s0
Priority: Yes

Description\Location
PRS 66 PIX13 000220
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137		0.05	0.04
Pb-210		0.85	0.53
Ra-226		1.48	0.62
Ac-227 (D)	*	0	0.22
Th-230	*	0	6.14
Th-232 (D)		0.71	0.21
Pu-238	*	6.32	11.59
Am-241	*	0.01	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/26/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A181/274

SE 8 PV 33 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05663
File ID: 1SC01761.s0
Priority: Yes

Description\Location
PRS 66 PIX14 000164
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.09
Cs-137	*	0.01	0.07
Pb-210	*	0.69	0.88
Ra-226		1.57	1.02
Ac-227 (D)	*	0.16	0.41
Th-230	*	4.45	8.76
Th-232 (D)		0.54	0.33
Pu-238	*	0	17.48
Am-241	*	0	0.1

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/12/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A182/274

SE 8 PV 34 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05664
File ID: 1SC01762.s0
Priority: Yes

Description\Location
PRS 66 PIX15 000165
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.09
Cs-137	*	0	0.05
Pb-210		1.39	0.72
Ra-226		1.89	0.87
Ac-227 (D)	*	0.14	0.36
Th-230	*	0	8.32
Th-232 (D)		0.6	0.25
Pu-238	*	0	15.96
Am-241	*	0	0.09

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ DB 5/25/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A183/274
SE 8 PV 35 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05665
File ID: 1SC01763.s0
Priority: Yes

Description\Location
PRS 66 PIX16 000166
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.09
Cs-137	*	0	0.07
Pb-210	*	0.09	0.97
Ra-226		1.55	0.98
Ac-227 (D)	*	0.17	0.42
Th-230	*	1.16	8.87
Th-232 (D)		0.97	0.22
Pu-238	*	11.19	16.79
Am-241	*	0	0.1

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/26/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A184/274

SE 8 PV 36 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05666
File ID: 1SC01769.s0
Priority: Yes

Description\Location
PRS 66 PIX17 000167
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0	0.04
Pb-210	*	0.06	0.58
Ra-226		0.95	0.65
Ac-227 (D)	*	0.01	0.22
Th-230	*	0	5.88
Th-232 (D)		0.57	0.11
Pu-238	*	3.98	9.87
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A185/274

SE8 PV 37 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05721
File ID: 2SC01771.s0
Priority: Yes

Description\Location
PRS 66 PIX18 000217
Long Count

Collector: 8542
Date Received: 04/25/05
Date Collected: 04/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.07
Cs-137		0.04	0.04
Pb-210		0.68	0.49
Ra-226		0.96	0.71
Ac-227 (D)	*	0.07	0.21
Th-230	*	0	6.04
Th-232 (D)		0.68	0.22
Pu-238	*	5.09	12.58
Am-241	*	0	0.06

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MD 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/26/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05655
File ID: 2SC01743.s0
Priority: Yes

Description\Location
PRS 66 PX01 000156
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0.01	0.05
Pb-210		0.87	0.64
Ra-226		1.1	0.84
Ac-227 (D)	*	0.05	0.27
Th-230	*	0	7.39
Th-232 (D)		0.89	0.24
Pu-238	*	0	15.97
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 8/21/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A187/274

SE8 PV34 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05657
File ID: 2SC01745.s0
Priority: Yes

OK. MB.

Description\Location
PRS 66 PX02 000158
Long Count

Collector: 8542
Date Received: 04/21/05
Date Collected: 04/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0	0.05
Pb-210	*	0.65	0.71
Ra-226		2.62	0.73
Ac-227 (D)	*	0	0.27
Th-230	*	2.85 ✓	7.11
Th-232 (D)		0.87	0.21
Pu-238	*	0.87	15.78
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
		✓ MB 8/24/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments: Reissued to correct sample ID from PX07 to PX02.

Date: 04/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A188/274
SE8 PV 40 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05661
File ID: 1SC01759.s0
Priority: Yes

Description\Location
PRS 66 PX03 000162
Long Count

Collector: 8542
Date Received: 04/21/05
Date Collected: 04/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.9
Cs-137	*	0.03	0.07
Pb-210		1.43	0.83
Ra-226		1.7	1.05
Ac-227 (D)	*	0.16	0.33
Th-230	*	0.88	9.27
Th-232 (D)		0.69	0.24
Pu-238	*	0	17.49
Am-241	*	0	0.1

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/25/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 04/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A189/274

SE8 PV 41 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05719
File ID: 2SC01769.s0
Priority: Yes

Description\Location
PRS 66 PX04 000215
Long Count

Collector: 8542
Date Received: 4/25/05
Date Collected: 4/25/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.09
Cs-137	*	0.03	0.05
Pb-210		0.87	0.58
Ra-226		1.52	0.68
Ac-227 (D)	*	0	0.26
Th-230	*	0	6.54
Th-232 (D)		1.16	0.19
Pu-238	*	0	14.08
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
	✓	LB 5/25/05

Σ_{DOT} 0.02 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/26/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

A190/274
SE 8 PV42 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05667
File ID: 1SC01770.s0
Priority: Yes

Description\Location
PRS 66 PX05 000168
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.08
Cs-137	*	0	0.07
Pb-210	*	0.32	0.86
Ra-226		1.3	0.87
Ac-227 (D)	*	0.25	0.29
Th-230	*	0	8.74
Th-232 (D)		0.65	0.26
Pu-238	*	1.47	14.97
Am-241	*	0.01	0.09

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ MB 5/20/05

Σ_{DOT} 0.03 nCi/g

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Instrument type: High Purity Germanium

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SE 8 PV 43 of 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05652
File ID: 2SC01735.s0
Priority: Yes

Description\Location
PRS 66 PX06 000153
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.08
Cs-137	*	0.02	0.05
Pb-210		0.8	0.64
Ra-226		1.19	0.78
Ac-227 (D)	*	0	0.27
Th-230	*	0	7.07
Th-232 (D)		0.97	0.22
Pu-238	*	0	16.02
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

MB 5/12/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/21/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SE8 PV 46 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05653
File ID: 2SC01736.s0
Priority: Yes

Description\Location
PRS 66 PX07 000154
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0.02	0.08
Cs-137	*	0.01	0.05
Pb-210		1	0.67
Ra-226		1.93	0.86
Ac-227 (D)	*	0	0.3
Th-230	*	2.2	7.51
Th-232 (D)		1.12	0.19
Pu-238	*	1.48	16.43
Am-241	*	0	0.08

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
		✓ 5/12-05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/21/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SEQ PV 45 OF 47

2 results, both 2CO

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05657
File ID: 2SC01745.s0
Priority: Yes

Description\Location MB.
PRS 66 PX07 ~~000158~~ 000154
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.06
Cs-137	*	0	0.05
Pb-210	*	0.65	0.71
Ra-226		2.62	0.73
Ac-227 (D)	*	0	0.27
Th-230	*	2.85	7.11
Th-232 (D)		0.87	0.21
Pu-238	*	0.87	15.78
Am-241	*	0	0.07

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA
		MB 5/26/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions. Sample is Assumed to be in secular equilibrium.

• Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SE8 PV 46 OF 47

SOIL ANALYSIS REPORT

Field Sample ID:
Lab Sample ID: GL05660
File ID: 2SC01748.s0
Priority: Yes

Description\Location
PRS 66 PX08 000161
Long Count

Collector: 8542
Date Received: 4/21/05
Date Collected: 4/20/05

Radionuclide		Activity (pCi/g)	MDA
Co-60	*	0	0.1
Cs-137	*	0	0.07
Pb-210		1.06	0.77
Ra-226		2.54	0.87
Ac-227 (D)	*	0.06	0.3
Th-230	*	0.81	7.44
Th-232 (D)		0.97	0.26
Pu-238	*	0.82	16.95
Am-241		0.66	0.09

Other Nuclides

Radionuclide	Activity (pCi/g)	MDA

✓ 8/12/05

Σ_{DOT} 0.03 nCi/g

Instrument type: High Purity Germanium

Σ_{DOT} 2nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.
Sample is Assumed to be in secular equilibrium.

* Indicates activity < MDA. MDA used in limits calculation

Comments:

Date: 4/22/05 Counted By: 5288 Analyzed By: 5288 Initials [redacted]

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SE8 PV 47 of 47

BWXT of Ohio, Inc. B284(1/2)

ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE SUBMITTED:	SAMPLE TYPE:	COLLECTED BY:	NUMBER OF SAMPLES
4-21-05	Soil	Jim Johnson	1
PROJECT/FUNCTION:	PRIMARY CONTACT/PHONE NO.:		MAIL STOP:
CHARGE NUMBER:	DATE(S) COLLECTED:	RSDS# (if applicable):	ATTACHMENTS (list):
ER	4-20-05	N/A	

ANALYSES REQUESTED (check):

- ☐ ^3H
- ☐ Characterize/Approve for Sanitary or Storm Discharge. Estimate of Total Volume for Release_____ Approved_____
- ☒ Gross Alpha
- ☐ Air Filter – Isotopic Analysis
- ☐ Characterization per MD-80036, Operation #10015
- ☐ Isotopic Analysis: Pu____ U____ Th 1 Am____ Other____
- ☐ Other _____

ADDITIONAL INFORMATION:

Contact Connie Allen

NOTE: Attach additional information (e.g. RSDS, screening results, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE NUMBER	RESULTS
0502563	PRS-66	1	

COPY

27 July 5

COMMENTS:

B284 15'-20' SAMPLE

ANALYZED BY: Lowell Cook

DATE: 4-27-05 A196/274

ML 5222 (1-01)

Laboratory ID#:	**0502563**
Project/function:	**ER**
Submitted:	**Apr 21, 2005**
Submitted by:	**J. Johnson**
Point of Contact:	**C. Kline** **673-4084**
RSDS#:	**N/A**
Date:	**Apr 27, 2005**

B284(2/2)

Lab ID	0502563		
Sample Location	PRS-66 #1		
Isotope	pCi/g	Uncertainty +/-	LDL
Th-227	0.19	0.04	0.02
Th-228	1.11	0.12	0.06
Th-230	1.29	0.13	0.06
Th-232	1.11	0.12	0.02

COPY

B284 15'-20' SAMPLE
ALPHA SPEC/THORIUM
RESULTS

[redacted]

1585 4-27-05
HP # Date

7783 4-27-5
HP # Date

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APPENDIX D

DATA REVIEW & VALIDATION

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Acronyms and Abbreviations

%D	percent difference
BFB	p-bromofluorobenzene
BTEX	Benzene, toluene, ethylbenzene, xylenes
Conc.	concentration
CRDL	contract-required detection limit
DCE	1,2-Dichloroethane-d4
DOE	U.S. Department of Energy
EDD	electronic data deliverable
EPA	U.S. Environmental Protection Agency (see also USEPA)
FD	field duplicate
FBP	2-fluorobiphenyl
ICS	interference check standard
ID	identification
IS	internal standard
KL	key line
LD	laboratory duplicate
MB	method blank
MDA	minimum detectable activity
MEIMS	Mound Environmental Information Management System
MS	matrix spike
NBZ	nitrobenzene-d5
PAH	polyaromatic hydrocarbon(s)
pCi/g	picoCurie/gram

pCi/L	picoCurie/liter
PRS	potential release site
RPD	relative percent difference
RSD	relative standard deviation
SD	serial dilution
SOW	Statement of Work
SVOC	semi-volatile organic compound(s)
TB	trip blank
TOL	toluene-d8
TPH	2-terphenyl-d14
µg/kg	micrograms/kilogram
µg/L	micrograms/liter
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound(s)
VSAP	Verification Sampling and Analysis Plan

1.0 Introduction

1.1 Introduction

This data assessment report has been prepared to describe the data quality for Potential Release Site (PRS) 66 Verification and Characterization data. Data assessment encompasses two types of quality control reviews on the data: data review and data validation. Data review involves a review of the basic quality control data included in the laboratory data package, e.g., laboratory blanks, surrogate recoveries, matrix spike recoveries, and field duplicates. Data validation is a detailed review of the laboratory data packages that includes all of the data review elements plus verification of such things as proper instrument calibration, instrument calibration validity during sample analysis, identification of target analytes, and proper treatment and quantification of the data. Data validation was performed on 10% of the samples. The results of the data validation are assessed to identify whether any systemic problems are apparent. Because this project spanned three years, the data were grouped and assessed by the year in which the samples were collected and the verification data were separated from the characterization data.

This report includes data review and data validation for five sampling events for PRS 66 Verification Sampling and one sampling event for PRS 66 Characterization Sampling. Several locations had been inaccessible due to utility services during the original PRS 66 characterization study. In September 2004, these few locations became accessible and were sampled to complete the PRS 66 characterization information.

2.0 Field Work Quality Assurance

2.1 Work Plan Compliance

Work was generally performed in compliance with the Statement of Work (SOW) issued 17 March 2003, the PRS 66 Verification Sampling and Analysis Plan (VSAP) dated October 2003, sample maps and target parameters issued by CH2M Hill Mound for each sample event, and the Mound Methods Compendium. Exceptions to work plan compliance are noted in Table 1.

Table 1 — List of Variances

Variance	Description
1	**PRS 66 Verification Sampling – May 2003** BTEX, VOC and SVOC analysis added during the field event. BTEX analysis was by Mound Compendium Method A-027. VOC analysis was by Mound Compendium Method A-001. SVOC analysis was by Mound Compendium Method A-003. The field rinsate and trip blank were not required for the BTEX analysis per CH2M Hill.
2	**PRS 66 Verification Sampling – December 2003** (1) Field decision was made to add semi-volatile and volatile compound analyses at select locations (2) A matrix spike/matrix spike duplicate (MS/MSD) for semi-volatile analysis was not collected or analyzed. The field team expected to collect another sample for semi-volatile analysis and use that sample for the MS/MSD, but no other samples were required. The absence of the matrix spike data did not impact the data usability. (3) A field rinsate for semi-volatile analysis was not collected. The analysis was added as a field change and the appropriate bottles were not on site for a rinsate sample. The absence of the rinsate data did not impact the data usability.
3	**PRS 66 Characterization Sampling – September 2004** The original plan called for sampling using a drill rig. The site terrain precluded drill rig sampling. Sampling was conducted using a backhoe and sampling from the backhoe bucket.
4	**PRS 66 Verification Sampling – April 2005** Two fractions were collected for sample 000238. The extra fraction was collected because sample 000238 was specified as the MS/MSD. Each fraction was listed on the chain-of-custody and the laboratory analyzed each fraction as a separate sample. The error did not impact the usability of the data.

2.2 Field Quality Control Frequency — Verification Sampling

The field sampling team is responsible for introducing or specifying field quality control samples, e.g., field rinsates, field duplicates, matrix spike/matrix spike duplicates, and trip blanks. There were five field sampling events during the PRS 66 field verification project. The field quality control frequencies required for PRS 66 are:

- Field rinsates will be collected at a frequency of 1 per 20 samples
- Field duplicates will be collected at a frequency of 1 per 10 samples
- Matrix spike/matrix spike duplicates will be collected at a frequency of 1 per 20 samples
- Trip blanks will be included in each shipping containers used to transport samples for volatile analysis.

The compliance to field quality control frequencies is assessed in the following subsections.

2.2.1 Overall Verification Sampling Event

The field quality assurance frequencies were met or exceeded for the overall verification project (five sampling events.).

Table 2 — Overall Sampling Event

Analysis	Compendium Method	Number of Samples	Field Rinsates	Field Duplicates	Matrix Spikes	Trip Blanks
Gamma Spectrometry	A-015	104	8	12	7	NA
Isotopic Thorium	A-012	152	10	19	11	NA
Isotopic Plutonium	A-012	68	5	9	5	NA
Isotopic Uranium	A-012	44	3	6	3	NA
Semi-Volatile Organic Compounds	A-003	2	1	1	1	NA
Volatile organic Compounds	A-001 & A-027	8	2	3	3	2

The following subsections summarize the quality control sample frequencies for the individual sampling events.

2.2.1.1 May 2003 Sampling Event

Field samples were collected on May 7 and 8, 2003. The field quality control frequency was met for all of the radioisotopic analyses. During the sampling event, a field decision was made to collect a sample for semi-volatile organic analysis and volatile organic

analysis. Because these two analyses were added during the field event, the field team did not have a trip blank or the proper containers for a volatile field rinsate. Because the volatile results did not exceed any site action limits, the absence of the trip blank and field rinsate had no impact on the data usability.

Table 3 — May 2003 Sampling Event

Analysis	Compendium Method	Number of Samples	Field Rinsates	Field Duplicates	Matrix Spikes	Trip Blanks
Gamma Spectrometry	A-015	17	1	2	1	NA
Isotopic Thorium	A-012	17	1	2	1	NA
Isotopic Uranium	A-012	17	1	2	1	NA
Semi-Volatile Organic Compounds	A-003	1	1	1	1	NA
Volatile Organic Compounds	A-027	1	0	1	1	0

2.2.1.2 September 2003 Sampling Event

Field samples were collected from September 15 to September 17, 2003. The field quality control frequencies were met or exceeded for this sampling event.

Table 4 — September 2003 Sampling Event

Analysis	Compendium Method	Number of Samples	Field Rinsates	Field Duplicates	Matrix Spikes	Trip Blanks
Gamma Spectrometry	A-015	26	2	3	2	NA
Isotopic Thorium	A-012	30	2	4	3	NA
Isotopic Plutonium	A-012	4	1	1	1	NA
Volatile Organic Compounds	A-001	2	1	1	1	1

2.2.1.3 December 2003 Sampling Event

Field samples were collected on December 3 and 4, 2003. The field quality control frequencies were met or exceeded for radiological analyses in this sampling event. The quality control frequency was not met for semi-volatiles. Because the semi-volatile analysis was added as a special analysis during the field event, the field team lacked proper bottles for the semi-volatile rinsate and planned to make the next sample for semi-volatile analysis the matrix spike and duplicate fraction. Unfortunately, no other samples were called out for semi-volatile analysis during the field event.

Table 5 — December 2003 Sampling Event

Analysis	Compendium Method	Number of Samples	Field Rinsates	Field Duplicates	Matrix Spikes	Trip Blanks
Gamma Spectrometry	A-015	17	2	2	1	NA
Isotopic Thorium	A-012	25	2	3	2	NA
Isotopic Plutonium	A-012	8	1	1	1	NA
Semi-Volatile Organic Compounds	A-003	1	0	0	0	NA
Volatile Organic Compounds	A-001	5	1	1	1	1

2.2.1.4 June 2004 Sampling Event

Field samples were collected on June 29, 2004. The field quality control frequencies were met or exceeded for radiological analyses in this sampling event.

Table 6 — June 2004 Sampling Event

Analysis	Compendium Method	Number of Samples	Field Rinsates	Field Duplicates	Matrix Spikes	Trip Blanks
Gamma Spectrometry	A-015	17	1	2	1	NA
Isotopic Thorium	A-012	25	2	3	2	NA
Isotopic Uranium	A-012	16	1	2	1	NA

2.2.1.5 April 2005 Sampling Event

Field samples were collected from April 20 to April 25, 2005. The field quality control frequencies were met or exceeded for radiological analyses in this sampling event.

Table 7 — April 2005 Sampling Event

Analysis	Compendium Method	Number of Samples	Field Rinsates	Field Duplicates	Matrix Spikes	Trip Blanks
Gamma Spectrometry	A-015	27	2	3	2	NA
Isotopic Thorium	A-012	55	3	7	3	NA
Isotopic Plutonium	A-012	56	3	7	3	NA
Isotopic Uranium	A-012	11	1	2	1	NA

2.3 Field Quality Control Frequency – Characterization Sampling

The field sampling team is responsible for introducing or specifying field quality control samples, e.g., field rinsates, field duplicates, matrix spike/matrix spike duplicates, and

trip blanks. There was one field sampling event during the PRS 66 field characterization project. The field quality control frequencies required for PRS 66 are as follows:

- Field rinsates will be collected at a frequency of 1 per 20 samples.
- Field duplicates will be collected at a frequency of 1 per 10 samples.
- Matrix spike/matrix spike duplicates will be collected at a frequency of 1 per 20 samples.
- Trip blanks will be included in each shipping containers used to transport samples for volatile analysis.

The compliance to field quality control frequencies are assessed in the following subsections.

2.3.1 September 2004 Characterization Sampling Event

Several sample locations could not be sampled during the original PRS 66 characterization event due to utilities and/or other physical obstructions. The utilities and/or obstructions that prevented the completion of the PRS 66 Characterization sampling were removed as part of the PRS 66 remediation and site closure project and, per the VSAP, the previously inaccessible characterization samples were collected. The characterization samples were collected from September 13 to September 16, 2004. The field quality control frequencies were met or exceeded for this sampling event for all analyses except volatile organic compounds. The field team did not collect a duplicate or matrix spike fraction at the first sample location where the field instrument detected volatiles and subsequently, no other locations were identified where the field instrument indicated the potential for volatile samples. While the lack of these quality control samples reduces the known precision and accuracy of the data, the deficiency does not impact the usability of the data.

Table 8 — September 2004 Sampling Event

Analysis	Compendium Method	Number of Samples	Field Rinsates	Field Duplicates	Matrix Spikes	Trip Blanks
Gamma Spectrometry	A-015	26	3	2	2	NA
Isotopic Thorium	A-012	26	3	2	2	NA
Isotopic Plutonium	A-012	26	3	2	2	NA
Metals	A-005	26	2	4	2	NA
Semi-Volatile Organic Compounds	A-003	20	2	4	2	NA
Volatile Organic Compounds	A-001	1	1	0	0	1

3.0 Verification Sampling — Calendar Year 2003

3.1 Data Review

The quality control data submitted with the analytical data packages were reviewed and assessed. The results of the assessment are presented in this section. The following qualifications were used to indicate data quality problems identified during the data review process. The qualifications are essentially the same as those used for data validation.

Table 9 — Data Review Qualifications

Qualification	Description
J	The associated positive sample result is estimated.
J/UJ	The associated positive and not-detected sample results are qualified estimated.
R	The associated sample result is rejected and unusable.
U	The associated sample result is qualified not detected.
UJ	The associated not-detected sample result is qualified estimated.

3.1.1 Volatile Organic Compound (VOC) Analysis

The field team submitted seven samples for volatile organic compound (VOC) analysis. Of the seven samples, one sample (000025) was submitted for benzene, toluene, ethylbenzene, xylenes (BTEX) analysis by Mound Compendium Method A-027. The other six samples were analyzed for VOCs by Mound Compendium Method A-001. The associated quality control result assessments for both the BTEX and VOC samples are discussed in the following subsections. Data review elements, including holding times,

surrogates, matrix spikes, laboratory blanks, trip blanks, field rinsates, and field duplicates, are evaluated in the following subsections.

3.1.1.1 Holding Time

Holding times are established to ensure that target parameters do not deteriorate or evaporate prior to analysis. All of the samples were analyzed within the required holding time.

3.1.1.2 Surrogates

Surrogates are non-target compounds that are added to the sample fraction just before analysis to assess analytical performance. Only one sample, 000070, was reported with a deficient surrogate recovery for 1,2-dichloroethane-d4 (DCE). Sample 000025 was reported by the laboratory with a deficient recovery for p-bromofluorobenzene (BFB) (62%). The affected samples and deficient surrogate recovery are presented in the following table. The surrogates toluene-d8 (TOL), p-bromofluorobenzene, and 1,2-dichloroethane-d4 (DCE) were abbreviated in the table.

For sample 000025, the laboratory did not evaluate the BFB recovery against the recovery limits specified in Mound Compendium Method A-027. The recovery was actually within the method limits and no qualification was applied. Because there were no positive results in the sample 000070 associated with the high DCE recovery, the deficient recovery did not impact the data quality.

Table 10 — Deficient Surrogate Recoveries for Volatiles

Laboratory Batch	Sample ID	TOL (%) (84–138)	BFB (%) (59–113)	DCE (%) (70–121)
0305L375	000025	—	—	—
0309L508	000070	—	—	125

3.1.1.3 Matrix Spikes

Matrix spikes are prepared to verify that the sample matrix is not interfering with the accurate and precise determination of target parameters. The field team submitted one matrix spike pair (000025) for BTEX analysis and two matrix spike pairs (000070, 000090) for volatile organic analysis. All of the recoveries were within acceptance limits.

3.1.1.4 Laboratory Blanks

Laboratory blanks, also called method blanks, are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. No target parameters were detected in the laboratory blank associated with the BTEX sample. Three laboratory blanks were introduced during the analysis of the soil samples for VOC analysis. Methylene chloride was found in all three of these blanks. The following table shows the frequency of detection, the average detected concentration, and a qualification level based on the 10x validation rule and the average detected concentration (USEPA, 1999). Based on the results, methylene chloride was a systemic contaminant. Analyte concentrations in the samples below the methylene chloride qualification level should be treated as not detected (U).

Table 11 — Laboratory Blank Contamination for Volatiles

Analyte	Number of Detections	Average Detected Conc. (µg/kg)	Qualification Level (µg/kg)
Methylene Chloride	3	7.67	77

3.1.1.5 Trip Blanks

Trip blanks are used to verify that contaminants are not being introduced into samples after field sampling as part of shipping or storage. No trip blank was required or submitted with the BTEX sample. Because no contaminants of concern were present in the BTEX sample, the absence of the trip blank has no impact on data usability. Two trip blanks were submitted with the volatiles samples and methylene chloride was detected in both trip blanks at 3 µg/L and 6 µg/L. Because the methylene chloride

qualification level determined for the trip blanks was less than the methylene chloride qualification level determined for laboratory blanks, no qualifications were assigned on the basis of trip blank contamination. The following table lists the detected analyte, its frequency of detection, the average blank concentration (aqueous), and the associated soil qualification level using the 10x rule.

Table 12 — Trip Blank Contamination for Volatiles

Analyte	Number of Detections	Average Detected Conc. (µg/L)	Qualification Level (µg/kg)
Methylene chloride	2	5	50

Because the trip blank qualification level is less than the laboratory blank qualification level for methylene chloride, the trip blank results only further confirm that methylene chloride is a systemic contaminant. Sample qualifications will be based on the laboratory blank qualification level.

3.1.1.6 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. No field rinsate was required or collected for the BTEX sample. Two field rinsates were submitted for volatiles analysis. Methylene chloride was detected in both field rinsate samples at 4 µg/L and 10 µg/L. Because the methylene chloride qualification level determined for the field rinsates was less than the methylene chloride qualification level determined for laboratory blanks, no qualifications were assigned on the basis of field rinsate contamination. The following table lists the detected analyte, its frequency of detection, the average blank concentration (aqueous), and the associated soil qualification level using the 10x rule.

Table 13 — Field Rinsate Blank Contamination for Volatiles

Analyte	Number of Detections	Average Detected Conc. (µg/L)	Qualification Level (µg/kg)
Methylene chloride	2	7	70

Because the field rinsate qualification level is less than the laboratory blank qualification level for methylene chloride, the field rinsate results only further confirm that methylene chloride is a systemic contaminant. Sample qualifications will be based on the laboratory blank qualification level.

3.1.1.7 Field Duplicates

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the relative percent differences (RPD) between the sample results and comparing the RPD to the quality control criteria. The field team submitted a field duplicate for BTEX sample 000025. No target parameters were reported in sample 000025 or its field duplicate and consequently, no RPDs were calculated. The field team also submitted field duplicates for samples 000067 and 000084. Methylene chloride was detected in both field duplicate sets. However, the detected concentrations of methylene chloride were less than the laboratory blank determined qualification level and were qualified not detected (U). Acetone and chlorobenzene were also detected in the field duplicate set for samples 000084. The positive results for these analytes were near or below the reporting limit. In the case of chlorobenzene, the analyte was only detected in one duplicate pair and was qualified estimated (J) because it was below the reporting limit. The acetone RPD was calculated at 34% and within acceptance limits. No qualifications were applied on the basis of field duplicates.

Table 14 — Field Duplicate RPDs for Volatiles

Analyte	Number of Detections	Average RPD (%)
Acetone	2	34

3.1.2 Semi-volatile Organic Compound (SVOC) Analysis

The field team submitted two samples for polyaromatic hydrocarbon (PAH) semi-volatile organic analysis by Mound Compendium Method A-003. Data review elements including holding times, surrogates, matrix spikes, method blanks, field rinsates, and field duplicates, are evaluated in the following subsections.

3.1.2.1 Holding time

Holding times are established to ensure that target parameters do not deteriorate or evaporate prior to analysis. All samples were analyzed within the required holding time.

3.1.2.2 Surrogates

Surrogates are non-target compounds that are added to the sample fraction just before extraction to assess analytical performance. Since the target parameters were only PAHs, the laboratory only used three surrogates: nitrobenzene-d5 (NBZ), 2-fluorobiphenyl (FBP), and 2-terphenyl-d14 (TPH). All surrogates were within the acceptance limits.

3.1.2.3 Matrix Spikes

Matrix spikes are prepared to verify the sample matrix is not interfering with the accurate and precise determination of target parameters. The field team submitted one sample for matrix spike analysis. Because the only target parameters were PAHs, the laboratory only spiked with two compounds: acenaphthene and pyrene. The recoveries for these matrix spike compounds were within acceptance limits.

3.1.2.4 Laboratory Blanks

Laboratory blanks, also called method blanks, are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. The laboratory analyzed two laboratory soil blanks for PAH. No target parameters were detected in laboratory blanks.

3.1.2.5 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. No field rinsates were required or submitted with these samples.

3.1.2.6 Field Duplicates

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the RPD between the sample results and comparing the RPD to the quality control criteria. The field team submitted one field duplicate for sample 000025. In order to evaluate the systemic precision for the project, the following data were excluded:

- Results less than the reporting limit, "J" qualified by the laboratory, were eliminated from the data set.
- Replicate pairs where one result is reported as not detected (U) and the other result is reported at less than 2x the reporting limit. Two analytes, fluoranthene and pyrene, in replicate pair 000025 were not evaluated for this reason.

No results were reported that could be evaluated with confidence. The precision was judged acceptable.

3.1.3 Radiological Analysis

The field team submitted samples for radiological analysis including isotopic plutonium, isotopic thorium, isotopic uranium and gamma spectroscopy. The following table shows the number of samples submitted for each type of analysis.

Table 15 — Sample Quantities for Radioisotopes

Analysis	Compendium Method	Number of Samples
Isotopic Plutonium	A-012	12
Isotopic Thorium	A-012	72
Isotopic Uranium	A-012	17
Gamma Spectroscopy	A-015	60

Data review elements including yields, matrix spikes, laboratory blanks, laboratory duplicates, field rinsates, and field duplicates are evaluated in the following subsections.

3.1.3.1 Yields

Yields were determined for both isotopic plutonium and isotopic thorium analyses by alpha spectrometry and are used to assess and adjust for analytical inefficiencies that occur during sample preparation and analysis. Yields are typically expected to range from 20% to 120%. Yields outside this range are evaluated as possible deficiencies and yields below 10% are typically rejected. The thorium yields ranged from 45.5% in sample 000031 to 135.5% in sample 000046. One additional yield for sample 000042 was somewhat high at 132% with the next nearest yield at 102.7%. While these yields are high, the sample results were far below the site action limit and any error that might be the result of these yields would not affect the usability of the data. The plutonium yields ranged from 24.7% in sample 000052 to 75.6% in sample 000076. No qualifications were made based on the yields.

3.1.3.2 Matrix Spikes

Matrix spikes are prepared to verify that the sample matrix is not interfering with the accurate and precise determination of target parameters. Only one sample, 000018, was submitted for uranium matrix spike analysis. The recoveries for uranium-234 ranged from 92 to 101% and were judged acceptable. The recoveries for uranium-238 ranged from 96 to 99.8% and were judged acceptable.

Five samples, 000018, 000040, 000051, 000087 and 000108 were analyzed by the laboratory for thorium matrix spike analysis. Except for one matrix spike on sample

000051, all the results for thorium-230 were greater than 80%. One recovery at 50.8% in sample 000051 was below the acceptance limit of 80 – 120%. The single deficient recovery was assessed to be an anomaly and only the thorium results in sample 000051 should be treated as estimated (J). The qualification should not impact the usability of the data.

Three samples, 000018, 000040, and 000087, were analyzed by the laboratory for gamma spectrometry matrix spike analysis. One recovery in sample 000040 was below the 80 – 120% acceptance limit for Cesium-137 at 67.8%. All the other matrix spike results were acceptable. The single deficient recovery was assessed to be an anomaly and only the gamma spectrometry results in sample 000040 should be treated as estimated (J).

Two samples, 000018 and 000087, were analyzed by the laboratory for plutonium matrix spike analysis. All recoveries were within the acceptance range of 80 – 120%.

3.1.3.3 Laboratory Blanks

Laboratory blanks are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. The laboratory introduced four laboratory blanks for gamma spectrometry analysis. Only one positive result for radium-226 was reported. The positive radium-226 result occurred in blank F0WL51AX at 0.115 pCi/g. Because the action limit for radium-226 is 2.9 pCi/g, the low level of contamination in the blank should have no impact on the usability of the data. The associated data are usable without qualification.

The laboratory introduced two laboratory blanks for isotopic plutonium analysis and one laboratory blank for isotopic uranium analysis. No positive results were reported in these blanks. The associated data are usable without qualification.

The laboratory introduced seven laboratory blanks for isotopic thorium. A positive result was reported in blank F0MH91AB at 0.00805 pCi/g for thorium-230. The result was qualified estimated by the laboratory. Because the result is so far below the site action

limit and the result is below the contract reporting limit of 0.01 pCi/g, the presence of the contaminant at this concentration should have no impact on the usability of the data.

3.1.3.4 Laboratory Duplicates

Laboratory duplicates are used to assess the sample analysis precision. The following table lists the analysis, the number of samples submitted, and the number of laboratory duplicate analyses.

Table 16 — Laboratory Duplicate Quantities for Radioisotopes

Analysis	Number of Samples	Number of Lab Duplicates
Isotopic Plutonium	12	2
Isotopic Thorium	72	7
Isotopic Uranium	17	1
Gamma Spectroscopy	60	4

The laboratory duplicate samples were evaluated by calculating the RPD. Relative percent differences were not calculated for duplicate pairs where both results were not detected or less than 2x the minimum detectable activity (MDA). If one result was greater than 2x the MDA and the other result was not detected, a 200% relative percent difference was used. If one result was greater than 2x the MDA and the other result was detected at less than 2x the MDA, the RPD was calculated. After calculating the RPDs, an average of RPDs for each analyte was calculated. The following table lists the results where a valid RPD could be calculated.

Table 17 — Laboratory Duplicate RPDs for Radioisotopes

Analyte	All Detections	
	Frequency of Detection	Average RPD (%)
Potassium-40	4	5.1
Plutonium-238	1	7.4
Radium-226	3	5.7
Radium-228	1	16
Thorium-228	7	30
Thorium-230	7	29
Thorium-232	7	28
Uranium-234	1	1.3
Uranium-238	1	10

Based on these results, the overall precision was good; however, thorium in duplicate set for sample 000033 had poor precision. The following table lists the calculated RPD for the thorium isotopes in sample 000033.

Table 18 — Laboratory Duplicate RPDs for Radioisotopes

Sample Id	Duplicate Sample Id	Parameter	RPD (%)
000033	000033DUP	Thorium-228	120
000033	000033DUP	Thorium-230	130
000033	000033DUP	Thorium-232	130

The poor precision for this one duplicate set is not indicative of a systemic problem. Because the calculated laboratory precision for the other duplicate samples was good, the poor precision in this sample set was attributed to an anomaly and no qualifications were applied.

3.1.3.5 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. The field team submitted four rinsates for gamma spectroscopy and isotopic thorium analysis and one sample for isotopic uranium and plutonium analysis. No target parameters were detected in any of the rinsates.

3.1.3.6 Field Duplicates

Field duplicates are used to assess the sample collection and sample analysis precision. The following table lists the analysis, the number of samples submitted, and the number of field duplicates submitted.

Table 19 — Field Duplicate Quantities for Radioisotopes

Analysis	Number of Samples	Number of Field Duplicates
Isotopic Plutonium	12	2
Isotopic Thorium	72	9
Isotopic Uranium	17	2
Gamma Spectroscopy	60	7

The laboratory duplicate samples were evaluated by calculating the relative percent differences. Relative percent differences were not calculated for duplicate pairs where both results were not detected or less than 2x the MDA. If one result was greater than 2x the MDA and the other result was not detected, a 200% relative percent difference was used. If one result was greater than 2x the MDA and the other result was detected at less than 2x the MDA, the RPD was calculated. After calculating the relative percent differences, an average of relative percent differences for each analyte was calculated. The following table lists the results where a valid RPD could be calculated.

Table 20 — Laboratory Duplicate RPDs for Radioisotopes

Analyte	All Detections	
	Frequency of Detection	Average RPD (%)
Actinium-227	2	100
Potassium-40	7	5.4
Plutonium-238	1	48
Radium-226	6	14
Radium-228	5	17
Thorium-228	9	13
Thorium-230	9	17
Thorium-232	9	19
Uranium-234	1	12
Uranium-238	1	15

Based on these results, the overall precision was good; however, there were specific duplicate pairs whose calculated relative percent differences were outside or nearly outside the acceptance limits. The following table shows the sample, sample duplicate, parameter, and deficient relative percent difference.

Table 21 — Field Duplicate RPDs for Radioisotopes

Sample Id	Duplicate Sample Id	Parameter	RPD (%)
000012	000013	Actinium-227	200
000012	000013	Thorium-232	63
000088	000089	Thorium-230	70

There were only two samples with sufficient actinium-227 results to evaluate precision. Because one of the two precision results was determined to have poor precision, all positive actinium-227 results should be treated as estimated (J). The thorium precision results were all acceptable except in two instances. The deficient thorium precision results were assessed to not be indicative of a systemic problem and no qualifications were applied on the basis of the precision data.

3.2 Data Validation

Data validation was subcontracted to TechLaw, Inc. The results of the data validation are presented in the following subsection by analysis. Each group of validation results is evaluated to determine whether there are indications of systemic deficiencies that might require consideration before using the invalidated data.

3.2.1 Volatile Organic Compound (VOC) Analysis

The field team submitted seven samples for volatile organic analysis. The following table shows the number of samples submitted for each analysis and the number of samples validated for the analysis.

Table 22 — Sample Quantities for Volatiles Data Validation

Analysis	Number of Samples	Samples Validated
BTEX	1	1
Volatiles	7	1

Of the eight samples, one sample (000025) was submitted for BTEX analysis only. One sample for BTEX analysis and one sample for volatiles analysis were validated. For BTEX analysis, sample 000025 was validated. For Mound Compendium Method A-001 volatiles analysis, sample 000084 was validated.

Three types of deficiencies were identified during data validation:

- Internal Standard recovery low for BTEX analysis
- The continuing calibration percent difference (%D) was outside acceptance limits for Mound Compendium Method A-001 volatiles analysis.
- The laboratory blank was contaminated with methylene chloride for Mound Compendium Method A-001 volatiles analysis.

Each of these deficiencies has been assessed to determine the potential for a systemic bias and the systemic effect on the overall data usability. A complete listing of the applied data qualifications is presented in Table 23. No systemic issues were identified on the basis of the data validation results.

3.2.1.1 Percent Difference

The percent difference is used to assess the stability of the calibration curve during the analysis of samples. The percent difference is expressed as a percentage and should be less than 25%. The percent difference was exceeded for methyl acetate (32%) for the volatile analysis calibration curve associated with sample 000084. The not-detected methyl acetate result in sample 000084 was qualified estimated (UJ).

3.2.1.2 Laboratory Blanks

Laboratory blanks, also called method blanks, are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. Methylene chloride was detected at 8 µg/kg in the laboratory blank associated with sample 000084.

The methylene chloride result in sample 000084 was qualified not detected (U) based on the laboratory blank contamination.

3.2.1.3 Table of Qualifications

The following table lists all the qualifications assigned during the validation of the volatile organic samples.

Table 23 — Qualifications Volatiles

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
0305L375	BTEX	000025	1,4-difluorobenzene	IS (low)	UJ
0305L375	BTEX	000025	Chlorobenzene-d5	IS (low)	UJ
0312L297	VOC	000084	Methyl acetate	%D (32.5%)	UJ
0312L297	VOC	000084	Methylene chloride	MB (8 µg/kg)	U

IS – Internal Standard
%D – Percent Difference
MB – Method (Laboratory) Blank

3.2.2 Semi-Volatile Organic Compound (SVOC) Analysis

The field team collected two samples for semi-volatile organic analysis, of which only sample 000025 was validated. The following table shows the number of samples submitted for analysis and the number of samples validated for the analysis.

Table 24 — Sample Quantities for Semi-Volatile Data Validation

Analysis	Number of Samples	Number Validated
Semi-Volatile Organic Compounds	2	1

No deficiencies were identified during data validation.

3.2.3 Radiological Analysis

The field team submitted samples for radiological analysis including isotopic plutonium, isotopic thorium, isotopic uranium and gamma spectroscopy. The following table shows the number of samples submitted for each type of analysis and the number of samples validated for the analysis.

Table 25 — Sample Quantities for Radiological Data Validation

Analysis	Number of Samples	Number Validated
Isotopic Plutonium	12	2
Isotopic Thorium	72	7
Isotopic Uranium	17	2
Gamma Spectroscopy	60	8

The validated samples are listed in the following table.

Table 26 — Validated Samples for Radioisotopes

Isotopic Plutonium Sample Id	Isotopic Thorium Sample Id	Isotopic Uranium Sample Id	Gamma Spectroscopy Sample Id
–	000012	000012	–
–	000018	000018	–
–	000033	–	000033
–	–	–	000037
–	–	–	000041
000049	000049	–	–
–	–	–	000059
–	000063	–	000063
–	–	–	000073
000087	000087	–	–
–	–	–	000094
–	000105	–	000105

Three types of deficiencies were identified during data validation:

- Laboratory duplicate precisions outside acceptance limits
- Field duplicate precision outside acceptance limits
- Abundance criteria low for reported results

Each of these deficiencies has been assessed to determine the potential for a systemic bias and the systemic effect on the overall data usability. A complete listing of the applied data qualifications is presented in Table 27.

3.2.3.1 Laboratory Duplicates

Laboratory duplicates, also called replicates, are analyzed to assess laboratory precision. The calculated precision should be less than 4 standard deviations. The precision acceptance limit was exceeded for all thorium isotopes in sample 000033. All of the results in sample 000033 have been qualified estimated (J).

3.2.3.2 Field Duplicates

Field duplicates, also called replicates, are analyzed to assess field sampling and laboratory precision. The calculated precision should be less than 4 standard deviations. The field duplicate result for thorium-232 in sample 000012 were outside acceptance limits. The thorium-232 result in sample 000012 was qualified estimated (J).

3.2.3.3 Abundance Criteria

Sample activities are determined based on activities at key lines. Key lines are energy emissions associated with specific isotopes. For radium-226 and radium-228, the key line activity was greater than the MDA; however, the abundance criteria were not met for some reported results. The failure of the energy abundance criteria to be met indicates the potential of false positive results. Radium-226 was qualified estimated (J) in samples 000033, 000041, 000094 to indicate that these results may be false positives. Radium-228 was qualified estimated (J) in sample 000037.

3.2.3.4 Table of Qualifications

The following table lists all the qualifications assigned during the validation of the radiological samples.

Table 27 — Qualifications for Radioisotopes

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
J3E090276	Alpha Spec.	000012	Thorium-232	FD (4.2 sigma)	J
J3L080187	Gamma Spec.	000094	Radium-226	KL	J
J3I170276	Gamma Spec.	000033	Radium-226	KL	J
J3I10276	Gamma Spec.	000041	Radium-226	KL	J
J3I10276	Gamma Spec.	000037	Radium-228	KL	J
J3I170276	Alpha Spec.	000033	Thorium	LD (7.9, 8.6, 8.8)	J

FD – Field duplicate
KL – Key Line Interference
LD – Laboratory Duplicate

4.0 Verification Sampling — Calendar Year 2004

4.1 Data Review

The quality control data submitted with the analytical data packages were reviewed and assessed. The results of the assessment are presented in this section. The following qualifications were used to indicate data quality problems identified during the data review process. The qualifications are essentially the same as those used for data validation.

Table 28 — Data Review Qualifications

Qualification	Description
J	The associated positive sample result is estimated.
J/UJ	The associated positive and not-detected sample results are qualified estimated.
R	The associated sample result is rejected and unusable.
U	The associated sample result is qualified not detected.
UJ	The associated not-detected sample result is qualified estimated.

4.1.1 Radiological Analysis

The field team submitted samples for radiological analysis including isotopic plutonium, isotopic thorium, isotopic uranium, and gamma spectroscopy. The following table shows the number of samples submitted for each type of analysis.

Table 29 — Sample Quantities for Radioisotopes

Analysis	Compendium Method	Number of Samples
Isotopic Thorium	A-012	25
Isotopic Uranium	A-012	16
Gamma Spectroscopy	A-015	17

Data review elements including yields, matrix spikes, laboratory blanks, laboratory duplicates, field rinsates, and field duplicates are evaluated in the following subsections.

4.1.1.1 Yields

Yields are determined for isotopic thorium and isotopic uranium analysis and are used to assess and adjust for analytical inefficiencies that occur during sample preparation and analysis. Yields are typically expected to range from 20% to 120%. Yields outside this range are evaluated as possible deficiencies and yields below 10% are typically rejected. The isotopic thorium yields ranged from 79 to 100% and were all within the 20 to 120% acceptance limits. The isotopic uranium yields ranged from 36 to 82% and were all within the 20 to 120% acceptance limits.

4.1.1.2 Matrix Spikes

Matrix spikes are prepared to verify the sample matrix is not interfering with the accurate and precise determination of target parameters. Sample 000123 was submitted for gamma spectrometry, isotopic thorium, and isotopic uranium matrix spike analysis and sample 000136 was submitted for isotopic thorium matrix spike analysis. The following table lists the spike pairs and average recoveries for the spikes analyzed for this sampling event.

Table 30 — Matrix Spikes for Radioisotopes

Analysis	Number of Spike Pairs	Average Recovery (%)
Isotopic Uranium		
Uranium-234	1	112
Uranium-238	1	102
Isotopic Thorium	2	102
Gamma Spectrometry[1]	1	102

Notes:

(1) Individual matrix spike recoveries, 77 and 127%

All recoveries were within the acceptance limits of 80 – 120% except for cesium-137 in sample 000123 from laboratory batch J4G020165. Cesium-137 recoveries were just outside the acceptance limits at 77 and 127%. The gamma spectrometry results from this batch should be treated as estimated (J). While the gamma spectrometry results are marked as estimated, the deficiencies were very minor and should not impact the usability of the data.

4.1.1.3 Laboratory Blanks

Laboratory blanks are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. The laboratory introduced one laboratory blank for gamma spectrometry analysis. Radium-226 was detected in the gamma spectroscopy laboratory blank, GKGDT1AX. The detected radium-226 activity was less than 2 times the MDA. Because site action limits are magnitudes greater than the reported blank contamination, the contamination does not impact the usability of the radium-226 data. The laboratory introduced two blanks for isotopic thorium analysis. Thorium-228 was detected in one of the blanks, GKGDX1AB, at an activity that was less than 2 times the MDA. Because site action limits are magnitudes greater than the reported blank contamination, the contamination does not impact the usability of the isotopic thorium data. The laboratory introduced one blank for isotopic uranium analysis. No target parameters were detected in the uranium blank. The following tables summarize the results of the laboratory blanks.

Table 31 — Laboratory Blanks for Radioisotopes

Analysis	Number of Blanks	Deficient Blanks	Deficient greater than 2xMDA
Gamma Spectrometry	1	1	0
Isotopic Thorium	2	1	0
Isotopic Uranium	1	0	0

4.1.1.4 Laboratory Duplicates

Laboratory duplicates are used to assess the sample analysis precision. The table below lists the number of laboratory duplicates by analysis.

Table 32 — Laboratory Duplicates for Radioisotopes

Analysis	Number of Duplicates
Gamma Spectrometry	2
Isotopic Thorium	3
Isotopic Uranium	2

The relative percent difference between laboratory duplicates were calculated where at least one of the results was greater than 2 times the MDA. The table below lists the analytes, the number of relative percent differences calculated for the analyte, and the average relative percent difference.

Table 33 — Laboratory Duplicates for Radioisotopes

Analysis	Number of Duplicates	Average RPD (%)
Potassium-40	2	21
Radium-226	1	20
Radium-228	1	23
Thorium-228	2	48
Thorium-230	2	121
Thorium-232	2	54
Uranium-234	1	1
Uranium-238	1	2

The gamma spectrometry and isotopic uranium relative percent differences were all acceptable at less than 50%. The average thorium relative percent differences were above the acceptance limits of 50% for sample 000117. Because the relative percent differences for one of the two laboratory duplicates analyzed for thorium were

significantly greater than 50%, the thorium results should be treated as estimated (J). Because the thorium results were all below the site action limit, the lack of precision should not impact the usability of the data.

4.1.1.5 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. Two field rinsates, 000132 and 000144, were submitted for analysis. Sample 000132 was submitted for isotopic thorium analysis. Sample 000144 was submitted for isotopic thorium, isotopic uranium, and gamma spectrometry analysis. No target parameters were detected in the isotopic thorium and isotopic uranium analysis. Americium-241 was detected in sample 000144 at less than 2 times the MDA. Because americium-241 was not detected in the samples above the site action limits, the detection of americium in the blank does not impact the usability of the data. No qualifications were applied on the basis of the americium-241 detection. Radium-228 was detected in sample 000144 at 1.87 pCi/L. No radium-228 sample results exceeded the site action limit and therefore, the presence of the contaminant in the field rinsate does not impact the usability of the data. No qualifications were applied on the basis of the field rinsate results.

4.1.1.6 Field Duplicates

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the RPD between the sample results and comparing the RPD to the quality control criteria. The following table lists the duplicate pairs for this investigation and the analyses for which they were submitted.

Table 34 — Field Duplicate Samples for Radioisotopes

Sample	Duplicate	Gamma Spectrometry	Isotopic Thorium	Isotopic Uranium
000117	000118	X	X	X
000127	000128	X	X	X
000138	000139		X	

The relative percent differences between field duplicates were calculated where at least one of the results was greater than 2 times the MDA. The table below lists the analytes, the number of relative percent differences calculated, for the analyte, and the average relative percent difference.

Table 35 — Field Duplicates RPDs for Radioisotopes

Analysis	Number of Duplicates	Average RPD (%)
Potassium-40	2	1.9
Radium-226	2	8.2
Radium-228	1	3
Thorium-228	3	10
Thorium-230	3	4.9
Thorium-232	3	8.9
Uranium-234	2	25
Uranium-238	2	2.7

All of the relative percent differences were acceptable with differences less than 50%. The data are usable as submitted.

4.2 Data Validation

Data validation was subcontracted to TechLaw, Inc. The results of the data validation are presented in the following subsection by analysis. Each group of validation results is evaluated to determine whether there are indications of systemic deficiencies that might require consideration before using the invalidated data.

4.2.1 Radiological Analysis

The field team submitted samples for radiological analysis including isotopic plutonium, isotopic thorium, isotopic uranium, and gamma spectroscopy. The following table shows the number of samples submitted for each type of analysis and the number of samples validated for the analysis.

Table 36 — Sample Quantities for Radiological Data Validation

Analysis	Number of Samples	Number Validated
Isotopic Thorium	25	3
Isotopic Uranium	16	2
Gamma Spectroscopy	16	2

The samples selected for validation are listed in Table 37 by type of analysis.

Table 37 — Validated Radiological Samples

Isotopic Thorium Sample Id	Isotopic Uranium Sample Id	Gamma Spectroscopy Sample Id
000123	000123	000123
000127	000127	000127
000138		

Only one qualification was applied during data validation due to key line interference (abundance criteria).

4.2.1.1 Abundance Criteria

Sample activities are determined based on activities at key lines. Key lines are energy emissions associated with specific isotopes. For radium-226 and radium-228, the key line activity was greater than the MDA; however, the abundance criteria were not met for some reported results. The failure of the energy abundance criteria to be met indicates the potential of false positive results. Radium-226 was qualified estimated (J) in sample 000123 and radium-228 was qualified estimated in samples 000123 and 000127.

4.2.1.2 Table of Qualifications

The following table lists all the qualifications assigned during the validation of the radiological samples.

Table 38 — Qualifications for Radioisotopes

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
J4G020165	Gamma Spec.	000123	Radium-226	KL	J
J4G020165	Gamma Spec.	000123	Radium-228	KL	J
J4G020165	Gamma Spec.	000127	Radium-228	KL	J

KL – Key Line Interference

5.0 Characterization Sampling — Calendar Year 2004

5.1 Data Review

The quality control data submitted with the analytical data packages were reviewed and assessed. The results of the assessment are presented in this section. The following qualifications were used to indicate data quality problems identified during the data review process. The qualifications are essentially the same as those used for data validation.

Table 39 — Data Review Qualifications

Qualification	Description
J	The associated positive sample result is estimated.
J/UJ	The associated positive and not-detected sample results are qualified estimated.
R	The associated sample result is rejected and unusable.
U	The associated sample result is qualified not detected.
UJ	The associated not-detected sample result is qualified estimated.

5.1.1 Volatile Organic Compounds Analysis

The field team submitted one sample, 0025001, for volatile organic analysis by Mound Compendium Method A-001. Data review elements, including holding times, surrogates, matrix spikes, laboratory blanks, trip blanks, field rinsates, and field duplicates, are evaluated in the following subsections.

5.1.1.1 Holding Time

Holding times are established to ensure that target parameters do not deteriorate or evaporate prior to analysis. The sample was analyzed within nine days of sample collection and within the required holding time of 14 days.

5.1.1.2 Surrogates

Surrogates are non-target compounds that are added to the sample fraction just before analysis to assess analytical performance. All the surrogate recoveries were within the acceptance criteria.

5.1.1.3 Matrix Spikes

Matrix spikes are prepared to verify that the sample matrix is not interfering with the accurate and precise determination of target parameters. Sample 025001 was analyzed as a matrix spike sample by the laboratory. The matrix spike recoveries and the calculated relative percent difference between spike results were within acceptance limits.

5.1.1.4 Laboratory Blanks

Laboratory blanks, also called method blanks, are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. Laboratory blank 04LVX270-MB1 was analyzed with the soil samples and was reported with 1 µg/kg of methylene chloride, a common laboratory contaminant. Using the 10x rule for common laboratory contaminants, sample results less than 10 µg/kg should be qualified not detected (U). Because the sample result of 21 µg/kg was greater than the qualification level, no qualification was made on the basis of the laboratory blank.

5.1.1.5 Trip Blanks

Trip blanks are used to verify that contaminants are not being introduced into samples after field sampling as part of shipping or storage. The field team submitted sample 025049 as the trip blank. Two common laboratory contaminants were detected in the trip blank, methylene chloride and acetone. The following table shows the detected concentrations in the trip blank (aqueous) and the associated soil qualification level using the 10x rule.

Table 40 — Trip Blank Contamination for Volatiles

Analyte	Number of Detections	Detected Conc. (µg/L)	Qualification Level (µg/kg)
Methylene chloride	1	7	70
Acetone	1	3	30

Methylene chloride in sample 025001 was qualified not detected (U) because the sample concentration of 21 µg/kg was less than the qualification level of 70 µg/kg.

5.1.1.6 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. The field team submitted sample 025031 as the field rinsate associated with sample 025001. Methylene chloride was detected in the rinsate at 4 µg/L. The positive detection further substantiates that methylene chloride was probably introduced artificially into the sample. Because the sample was already qualified on the basis of the trip blank methylene chloride contamination, no qualification was applied on the basis of the field rinsate.

5.1.1.7 Field Duplicates

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the RPD between the sample results and comparing the RPD to the quality control criteria. No samples were submitted in duplicate to sample 025001. While the absence of a field duplicate does not allow the precision of the field effort to be determined, the deficiency does not impact the usability of the data.

5.1.2 Semi-Volatile Organic Compounds (SVOC) Analysis

The field team submitted 20 samples for semi-volatile organic analysis by Mound Compendium Method A-003. Data review elements including holding times, surrogates,

matrix spikes, method blanks, field rinsates, and field duplicates, are evaluated in the following subsections.

5.1.2.1 Holding time

Holding times are established to ensure that target parameters do not deteriorate or evaporate prior to analysis. All samples were analyzed within the required holding time.

5.1.2.2 Surrogates

Surrogates are non-target compounds that are added to the sample fraction just before extraction to assess analytical performance. All soil sample results were reported with surrogate recoveries within the acceptance limits.

5.1.2.3 Matrix Spikes

Matrix spikes are prepared to verify the sample matrix is not interfering with the accurate and precise determination of target parameters. Two samples, 025016 and 25047, were analyzed as matrix spike/matrix spike duplicates. The matrix spike recoveries for both of these samples were within acceptance limits. However, for sample 025016, the RPDs between the calculated recoveries for several of the analytes were outside the acceptance limits. The deficient RPDs indicate a possible precision problem attributable to the sample matrix. The 025047 matrix spike pair RPDs were acceptable. The results for sample 025016 should be qualified estimated due to the poor precision. Because the matrix spike pair results for 025047 does not collaborate a systemic issue with precision, no other qualifications were assigned to the data.

5.1.2.4 Laboratory Blanks

Laboratory blanks, also called method blanks, are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. The laboratory introduced three soil laboratory blanks into the analysis. No target parameters were detected in the three blanks. Two water blanks were introduced by the laboratory. In one water blank, 04LE1202-MB1, bis-(2-ethylhexyl)phthalate was detected at 0.5 µg/L.

In the other laboratory blank, 04LE1186-MB1, di-n-butylphthalate was detected at 0.7 µg/L.

A qualification for water blank contamination should be applied to the field rinsate results. For field rinsate, 025060, bis-(2-ethylhexyl)phthalate was reported at 0.8 µg/L. The result for bis-(2-ethylhexyl)phthalate in sample 025060 should be qualified not detected (U) based on the application of the 10x USEPA rule to the method blank result of 0.5 µg/L for blank 04LE1202-MB1. The 0.7 µg/L result for di-n-butylphthalate in field rinsate 025031 should be qualified not detected (U) based on the application of the 10x USEPA rule to the method blank result of 0.7 µg/L in laboratory blank 04LE1186-MB1.

5.1.2.5 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. Two field rinsates were submitted by the field team, samples 025031 and 025060. Bis(2-ethylhexyl)phthalate was detected in both rinsates and di-n-butylphthalate was detected in sample 025031. The results for bis(2-ethylhexyl)phthalate in rinsate 025060 was qualified not detected (U) due to laboratory blank contamination. No other target parameters were detected in sample 025060. The results for di-n-butylphthalate in rinsate 025031 were qualified not detected (U) due to laboratory blank contamination. Bis(2-ethylhexyl)phthalate was also detected in equipment rinsate 025031 at 7 µg/L.

There is insufficient evidence to conclude that bis-(2-ethylhexyl)phthalate contamination was systemic. Sample 025031 was collected on September 14 and could be representative of decontamination procedures affecting samples in laboratory batches 0409L654 and 0409L679 that were collected on the September 13 and 14. In these batches, four samples were reported with positive bis(2-ethylhexyl)phthalate results and all of the results were far below the reporting limit. The following table shows the affected samples, the reported sample results, and the qualifications that should be applied to the data based on the USEPA 10x rule. The qualification of these data does not affect the usability of these data.

Table 41 — Bis(2-ethylhexyl)phthalate Field Rinsate Contamination

Laboratory Batch	Soil Sample Number	Reported Results	Qualified Result
0409L654	025004	21 J	410 U
0409L654	025007	36 J	430 U
0409L679	025020	32 J	420 U
0409L679	025030	26 J	380 U

J – Estimated
U – Not Detected

5.1.2.6 Field Duplicates

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the RPD between the sample results and comparing the RPD to the quality control criteria. Four field duplicates were analyzed: 025002/025003, 025017/025018, 025039/025040, and 025056/025057. When the detected results are below or near the reporting limit, these rules were applied to determine whether the data should be assessed:

- Results less than the reporting limit, "J" qualified by the laboratory, were eliminated from the data set.
- Replicate pairs where one result is reported as not detected (U) and the other result is reported at less than 2x the reporting limit were eliminated from the data set.

After applying these rules to the data set, the only meaningful RPD that could be calculated and used was for phenanthrene in sample pairs 025039 and 025040. The RPD for phenanthrene in this pair was 141%, indicating a possible field precision problem. Because only one parameter in the four field duplicates was outside compliance, no systemic precision issue was identified. The sample results for phenanthrene in samples 025039 and 025040 should be qualified estimated (J) to show the imprecision between the two replicate analyses.

5.1.3 Inorganic Analysis

The field team submitted 26 samples for inorganic analysis for metals by Mound Compendium Method A-005. Data review elements, including holding time, matrix spike recoveries, field duplicates, laboratory duplicates, blanks, and field rinsates, are evaluated in the following subsections.

5.1.3.1 Holding Times

Holding times are established to ensure that target parameters do not deteriorate or evaporate prior to analysis. For inorganic analysis, mercury must be analyzed within 28 days and the other inorganic metals must be analyzed within 180 days. All samples met the required holding time and no qualifications to the data were required.

5.1.3.2 Serial Dilution

Serial dilutions are introduced to assess whether sample interferences are impacting the reported sample recoveries. The results obtained by serial dilution should match within 10%. Serial dilution was performed on samples 025047 from batch 0409L702 and 025016 from batch 0409L679. Potassium (12%, 14%) and sodium (11%, 13%) were outside acceptance limits in both samples. The potassium and sodium interferences have been identified as systemic issues and all sodium and potassium results should be treated as estimated (J). Because the sample results are far below site action limits for these analytes, the qualification does not impact the usability of the data.

In sample 025016, zinc was reported with a serial dilution value of 12%. There are insufficient data to determine whether the zinc interference is systemic. Only the zinc results for the samples in batch 0406L679 should be qualified estimated (J). The qualification should not impact the usability of the data.

5.1.3.3 Matrix Spike

Matrix spikes are prepared to verify that the sample matrix is not interfering with the accurate and precise determination of target parameters. Two samples were analyzed

as matrix spikes: 025016 and 025047. There were several results which were outside the 75 – 125% recovery acceptance limits. The deficient recoveries are shown in the following table. The "—" is used to indicate no deficiency for a particular listed parameter.

Table 42 — Deficient Matrix Spike Recoveries for Inorganics

Parameter	Samples	
	025016 (%)	025047 (%)
Antimony	56	56.8
Chromium	—	66.2
Copper	—	21.2
Mercury	—	141
Potassium	—	129
Zinc	—	42

Antimony recoveries have historically been reported with low recoveries. The post-digestion spikes for antimony were acceptable. Because both matrix spike samples were reported with deficient matrix spike recoveries, all of the antimony results from all of the samples should be treated as estimated (J).

Chromium, copper, and zinc were also reported with low recoveries. The post-digestion spikes for these three metals were acceptable. Because the soil samples are a similar matrix and only one of the two matrix spike samples were reported with deficient recoveries, the low recoveries were not determined to be systemic. The chromium, copper, and zinc results in sample 025047 should be qualified as estimated (J).

Potassium and mercury were reported with high matrix spike recoveries indicating the sample results may be positively biased. The recoveries for these parameters were acceptable in samples 025016. Because only one matrix spike was affected, the potential bias was judged not to be systemic. The positive results for potassium and mercury in sample 025047 should be treated as estimated (J).

5.1.3.4 Blanks

Three different types of blanks were introduced by the laboratory to assess whether the laboratory procedures were contributing contamination to the sample results:

preparation blanks, initial calibration blanks, and continuing calibration blanks. Each of these types of blanks is assessed and discussed in the following subsections.

5.1.3.4.1 Preparation Blanks

Preparation blanks are introduced by the laboratory to assess whether preparation procedures are contaminating samples. The following table lists the analyte, the number of preparation blanks, the percentage of the blanks with positive detections, the average positive blank concentration, the percentage of negative detections, the average negative blank concentration, and the contract-required detection limit (CRDL).

Table 43 — Preparation Blank Contamination for Inorganics

Analyte	Number of Blanks	Positive Detections (%)	Average Conc. (mg/kg)	Negative Detections (%)	Average Conc. (mg/kg)	CRDL (mg/kg)
Aluminum	2	50	0.810	50	-2.296	4
Barium	2	50	0.027	—	—	40
Calcium	2	50	3.2	—	—	1000
Copper	2	50	0.139	—	—	5
Magnesium	2	100	0.776	—	—	1000
Sodium	2	100	1.03	—	—	1000
Zinc	2	100	0.187	—	—	4
Lithium	1	—	—	1	-0.023	10

Since only two preparation blanks were used with these samples, even a single contaminated blank or negatively biased blank is being considered significant.

- No qualifications were made for aluminum due to systemic negative continuing calibration blank issues that resulted in more restrictive data qualifications.
- Concentrations of barium below 0.14 mg/kg should be treated as not detected (U) at the CRDL since the CRDL is greater than 0.14 mg/kg.
- Concentrations of calcium below 16 mg/kg should be treated as not detected (U) at the CRDL since the CRDL is greater than 16 mg/kg.
- No qualifications were made for copper due to systemic continuing calibration blank issues that resulted in a slightly higher qualification level.

- Concentrations of magnesium below 3.9 mg/kg should be treated as not detected (U) at the CRDL since the CRDL is greater than 3.9 mg/kg.
- Concentrations of sodium below 5.2 mg/kg should be treated as not detected (U) at the CRDL since the CRDL is greater than 5.2 mg/kg.
- Concentrations of zinc below 0.94 mg/kg should be treated as not detected (U) at the CRDL since the CRDL is greater than 0.94 mg/kg.
- Positive concentrations of lithium below 0.12 mg/kg should be treated as estimated (J) and not-detected results should be rejected due to the negative blank contamination.

5.1.3.4.2 Initial Calibration Blanks

Initial calibration blanks are introduced by the laboratory to assess whether the instrument is contaminated at the onset of the analysis, thus causing biases in the reported sample concentrations. The following table lists the analyte, number of initial calibration blanks, percentage of the blanks with positive detections, average positive blank concentration, percentage of negative detections, average negative blank concentration, and CRDL. Detection frequencies greater than 40% have been highlighted to indicate possible systematic contamination concerns.

Table 44 — Initial Calibration Blanks Contamination for Inorganics

Analyte	Number of Blanks	Positive Detections (%)	Average Conc. (µg/L)	Negative Detections (%)	Average Conc. (µg/L)	CRDL (µg/L)
Aluminum	5	20	—	20	-18.6	20
Manganese	6	**100**	**0.28**	—	—	15
Mercury	4	—	—	**100**	**-0.2**	0.2
Vanadium	5	**60**	**0.6**	—	—	10
Lithium	6	**83**	**0.25**	—	—	100

Assuming that contaminants that occurred more frequently than 40% are indicative of systematic contamination, only manganese, vanadium, mercury, and lithium are systemic contaminants in the initial calibration blanks. In order to create a comparison

between the initial calibration blank reported in µg/L and a soil sample reported in mg/kg, the initial calibration blank must be multiplied by the simplified conversion factor of 0.1 L/g. After performing this conversion and applying the USEPA 5x rule, the qualification level for lithium derived from the preparation blank was more conservative.

- Concentrations of vanadium below 0.3 mg/kg should be treated as not detected (U) at the CRDL since the CRDL (2 mg/kg) is greater than 0.3 mg/kg.
- Concentrations of manganese below 0.14 mg/kg should be treated as not detected (U) at the CRDL since the CRDL (3 mg/kg) is greater than 0.14 mg/kg.
- Concentrations of mercury below 0.1 mg/kg should be treated as rejected (R) due to the negative blank contamination. Because this qualification level occurs at the reporting limit, the qualification should not impact the value of the data collected.

5.1.3.4.3 Continuing Calibration Blanks

Continuing calibration blanks are introduced by the laboratory to assess whether the instrument is staying contamination free during a series of analyses. The following table lists the analyte, number of initial calibration blanks, percentage of the blanks with positive detections, average positive blank concentration, percentage of negative detections, average negative blank concentration, and CRDL. Detection frequencies greater than 40% have been highlighted to indicate possible systematic contamination concerns.

Table 45 — Continuing Calibration Blanks Contamination for Inorganics

Analyte	Number of Blanks	Positive Detections (%)	Average Conc. (µg/L)	Negative Detections (%)	Average Conc. (µg/L)	CRDL (µg/L)
Aluminum	12	—	—	**75**	**-35**	4
Beryllium	12	25	0.23	—	—	0.2
Cadmium	12	17	0.4	—	—	1
Calcium	14	7	9.1	—	—	1000
Chromium	16	—	—	2	-0.9	2
Copper	16	**69**	**1.4**	—	—	5
Manganese	12	**75**	**0.23**	—	—	3
Sodium	12	17	5.6	33	-8.35	1000
Zinc	16	6	0.6	—	—	4
Lithium	12	**92**	**0.26**	—	—	10

Assuming that contaminants that occurred more frequently than 40% are indicative of systematic contamination, only aluminum, copper, manganese, and lithium are systemic contaminants in the continuing calibration blanks. In order to create a comparison between the continuing calibration blank reported in µg/L and a soil sample reported in mg/kg, the continuing calibration blank must be multiplied by the simplified conversion factor of 0.1L/g. After performing this conversion and applying the USEPA 5x rule, the qualifications levels based on the preparation blank were more conservative and were used.

- Positive concentrations for aluminum less than 18 mg/kg should be rejected due to negative blank contamination.
- Copper concentrations less than 0.7 mg/kg should be treated as not detected (U) at the CRDL since the CRDL (5 mg/kg) is greater than 0.7 mg/kg.
- Manganese concentrations were not qualified because the initial calibration qualification criterion was slightly more restrictive.
- Lithium concentrations were not qualified because the preparation blank qualification criteria was judged to be slightly more restrictive resulting in rejected data.

5.1.3.5 Laboratory Duplicates

Laboratory duplicates are prepared by the laboratory to assess the precision of laboratory analysis. The precision is determined by calculating the RPD between the sample results and comparing the RPD to the quality control criteria. The laboratory analyzed two samples in duplicate: 025016 and 025047. If the laboratory duplicate results are greater than 5 times the contract reporting limit, then the calculated RPD must be ≤ 20%. If the results are less than 5 times the contract reporting limit, then the results must agree ± the contract reporting limit. All the calculated RPDs were within the acceptance limits.

5.1.3.6 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. The field team submitted two field rinsates with the samples: 025031 and 025060. While target parameters were detected in the field rinsates, all of the detected concentrations were below the reporting limit. The following table lists the parameter and the reported sample rinsate results.

Table 46 — Deficient Field Rinsate Results for Inorganics

Target Parameter	Reporting Limit (µg/L)	Field Rinsates (µg/L)				Average (µg/L)	Qual. Level (mg/kg)	CRDL (mg/kg)
		025031		025060				
Barium	200	0.88	B	0.62	B	0.75	0.38	40
Calcium	5000	169	B	148	B	158.5	79	1000
Chromium	10	0.61	B	0.75	B	0.68	0.34	2
Copper	25	1.4	B	1.7	B	1.55	0.78	5
Iron	100	37.1	B		U		—	20
Magnesium	5000	41.2	B	45.2	B	43.2	22	1000
Manganese	15	2.4	B	0.99	B	1.695	0.85	3
Potassium	5000	370	B	123	B	246.5	120	1000
Sodium	5000	119	B	63.7	B	91.35	46	1000
Zinc	20	2.2	B	3.7	B	2.95	1.5	4
Lithium	100	0.23	B	0.16	B	0.39	0.20	10

B – Detected below the reporting limit
U – Not Detected

A direct comparison of field rinsate results to a soil sample is not possible. The rinsate units must be converted from µg/L to mg/kg using the same multiplication factor of 0.1 L/g as the laboratory blanks. Unlike the laboratory blanks, it is not possible to apply the USEPA 5x rule to the modified field rinsate results to identify a qualification level. Rinsates are created by pouring water over decontaminated sample equipment and are not directly correlated to a sample result. Because the direct correlation between a rinsate and soil sample is not possible, sample results less than 5x the converted average field rinsate concentration and greater than the CRDL should be treated as estimated (J) instead of not detected (U). In this case, the determined qualification levels were all less than the CRDL and the low levels of field rinsate contamination are not indicative of a problem.

5.1.3.7 Field Duplicate

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the RPD between the sample results and comparing the RPD to the quality control criteria. Four field duplicates were submitted by the field team: 025017/025018, 025002/025003, 025056/025057, and 025039/025040. The referenced methods do not specify a specific criteria for the soil RPD. Because of the heterogeneous nature of soil, a criterion of 50% was used to

assess the soil field duplicate results. Results reported between the contract reporting limit and the instrument detection limit were not assessed due to result variances encountered at these low concentrations. The following table summarizes the deficient results.

Table 47 — Deficient Field Duplicate RPDs for Inorganics

Parameter	025002/025003	025039/025040
Calcium	53	—
Lead	—	93

The frequency of deficient RPDs does not indicate a systemic deficiency and no systemic qualifications are required. Calcium in samples 025002 and 025003 should be qualified estimated (J). Lead in samples 025039 and 025040 should be qualified estimated (J).

5.1.4 Radiological Analysis

The field team submitted 26 samples for radiological analysis including isotopic plutonium by Mound Compendium Method A-012, isotopic thorium Mound Compendium Method A-012, and gamma spectroscopy Mound Compendium Method A-015. Data review elements including yields, method blanks, laboratory duplicates, field duplicates, field rinsates, and matrix spikes are evaluated in the following subsections.

5.1.4.1 Yields

Yields were determined for both isotopic plutonium and isotopic thorium analyses by alpha spectrometry. Yields are typically expected to range from 20% to 120%. Yields outside this range are evaluated as possible deficiencies and yields below 10% are typically rejected. Thorium yields ranged from 75% in sample 025019 to 135% in sample 025007. No qualifications were applied on the basis of the thorium yields. Plutonium yields ranged from 23% in sample 025000 to 82% in sample 025048. The laboratory reported a problem with sample 025000 during preparation that impacted the tracer recovery. Sample 025000 was analyzed in duplicate. The duplicate result for sample 025000 was reported with a yield of 37.5%. The duplicate result for this sample

should be used where plutonium-238 was reported at 0.0495 pCi/g and plutonium-239 was reported at 0.00894 U. The plutonium sample results reported for sample 025000 and the low yield recovery should be treated as estimated (J). Since both the original and duplicate analysis plutonium results are far below the site action limit, there is no impact to the data usability. The next poorest recovery was 33% in sample 025055. No other qualifications should be made on the basis of yield recoveries.

5.1.4.2 Matrix Spikes

Matrix spikes are introduced to determine whether the sample matrix may impact the ability to accurately measure the sample activity. The field team identified two samples for matrix spike analysis: 025016 and 025047. The thorium spike recoveries ranged from 97 to 100% with an average recovery of 98%. These spike recoveries were judged acceptable (within the range of 80% – 120%). The plutonium spike recoveries ranged from 96 to 106% with an average recovery of 101%. The spike recoveries for plutonium were judged acceptable. The spike recoveries for gamma spectroscopy ranged from 79 to 92% with an average of 86%. The gamma spectroscopy spike recoveries were also judged acceptable.

5.1.4.3 Laboratory Blanks

Laboratory blanks are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. The laboratory introduced four blanks for isotopic plutonium analysis and three blanks for isotopic thorium and gamma spectroscopy analysis. No target isotopes were detected in the isotopic plutonium or gamma spectroscopy analyses. In one blank, GQ66M1AB, thorium-230 was detected at 0.0121 pCi/g which was slightly greater than 2 times the MDA. No other target isotopes of thorium were detected in the laboratory blanks. Because all of the thorium-230 results were more than an order of magnitude (10x) greater than the blank activity and the blank activity was only 0.002 pCi/g greater than 2 times the MDA, no qualifications were assigned to the thorium-230 results.

5.1.4.4 Laboratory Duplicates

Laboratory duplicates are used to assess the sample analysis precision. The following table lists the analysis, the number of samples submitted and the number of laboratory duplicate analyses.

Table 48 — Laboratory Duplicate Quantities for Radioisotopes

Analysis	Number of Samples	Number of Lab Duplicates
Isotopic Plutonium	26	3
Isotopic Thorium	26	2
Gamma Spectroscopy	26	2

The laboratory duplicate samples were evaluated by calculating the RPD. The RPDs were not calculated for duplicate pairs where both results were not detected or less than 2x the MDA. If one result was greater than 2x the MDA and the other result was not detected, a 200% relative percent difference was used. If one result was greater than 2x the MDA and the other result was detected at less than 2x the MDA, the RPD was calculated. After calculating the RPDs, an average of RPDs for each analyte was calculated. The following table lists the results where a valid RPD could be calculated.

Table 49 — Laboratory Duplicate RPDs for Radioisotopes

Analyte	All Detections	
	Frequency of Detection	Average RPD (%)
Potassium-40	2	4
Plutonium-238	1	82
Radium-226	1	12
Radium-228	2	28
Thorium-228	1	5
Thorium-230	1	15
Thorium-232	1	6

Based on these results, the overall precision was good (RPD less than 50% for soil); however, plutonium-238 in duplicate set for sample 025042 had poor precision at 126%. The poor precision for this one duplicate set is not indicative of a systemic problem.

Because the calculated laboratory precision for the other duplicate samples was good, the poor precision in this sample set was attributed to an anomaly and no qualifications were applied.

5.1.4.5 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. The field team submitted three rinsates for radiological analysis: 025031, 025050, and 025060. Radium-228 was detected in all three samples below the reporting limit at activities ranging from 0.606 to 0.921 pCi/L with the average activity 0.753 pCi/L. Radium-226 was detected in a single sample below the reporting limit at an activity of 0.108 pCi/L. Because no radium-226 results exceeded the site action limit and radium-226 was only detected in a single blank, 025060, no qualification was applied to the data. Because radium-228 was detected at measurable activities in three blanks, there is evidence of systemic low level contamination. The positive sample results for radium-228 are qualified estimated (J) due to this systemic contamination and may be positively biased. The positive radium-228 results are usable as qualified.

5.1.4.6 Field Duplicates

Field duplicates are used to assess the sample collection and sample analysis precision. The field duplicate samples were evaluated by calculating the RPDs. RPDs were not calculated for duplicate pairs where both results were not detected or less than 2x the MDA. If one result was greater than 2x the MDA and the other result was not detected, a 200% relative percent difference was used. If one result was greater than 2x the MDA and the other result was detected at less than 2x the MDA, the RPD was calculated. After calculating the relative percent differences, an average of relative percent differences for each analyte was calculated. The following table lists the results where a valid RPD could be calculated.

Table 50 — Field Duplicate RPDs for Radioisotopes

Analyte	All Detections	
	Frequency of Detection	Average RPD (%)
Potassium-40	2	6.8
Plutonium-238	1	51
Radium-226	1	57
Radium-228	1	15
Thorium-228	2	4
Thorium-230	2	25
Thorium-232	2	12

Based on the limited amount of data it is difficult to determine whether the results are indicative of a precision problem. The calculated RPD for plutonium-238 and radium-226 indicate a possible field precision problem. Ideally, the relative percent differences should be less than 50%. The higher relative percent differences may indicate a slight uncertainty in the results for plutonium-238 and radium-226. A similar concern, though again with very limited data, arose for plutonium-238 based on the laboratory duplicates. Since both the laboratory and field duplicate precision was poor for plutonium-238, all results should be treated as estimated (J). Because none of the plutonium-238 results were near the action limit, the addition of this qualification should not impact the usability of the data. Because the laboratory duplicate data do not confirm a radium-226 precision concern, no qualification for radium-226 was applied systemically to the data. However, the radium-226 results for the field duplicate pair 025002/025003 should be qualified estimated (J).

5.2 Data Validation

Data validation was subcontracted to TechLaw, Inc. The results of the data validation are presented in the following subsection by analysis. Each group of validation results is evaluated to determine whether there are indications of systemic deficiencies that might require consideration before using the invalidated data.

5.2.1 Volatile Organic Compound Analysis

The following table shows the number of samples submitted for analysis and the number of samples validated for the analysis. The field team submitted one soil sample, 025001, for volatile organic analysis by Mound Compendium Method A-001.

Table 51 —Sample Quantities for Volatiles Data Validation

Analysis	Number of Samples	Number Validated
VOC	1	1

The sample was also submitted for data validation. Two deficiencies were identified:

- The trip blank was contaminated with methylene chloride.
- The Relative Standard Deviation (RSD), an initial calibration parameter, was exceeded for 2-hexanone.

Each of these deficiencies is individually discussed in the following subsections. Because only one sample was submitted for analysis, it was not necessary to assess whether there is a systemic impact. A listing of the applied data qualifications is presented in Table 52.

5.2.1.1 Relative Standard Deviation

The RSD is calculated to assess the linearity of initial calibration curve. The RSD for 2-hexanone was determined to be 31.3%, indicating the initial calibration curve did not meet the linearity requirement. 2-Hexanone was qualified estimated not detected (UJ) in the sample. The qualification should not impact the usability of the data.

5.2.1.2 Trip Blanks

Trip blanks are introduced to determine whether contamination is being introduced during shipping or storage prior to analysis. While methylene chloride was detected in the laboratory blank and the field rinsate, the detected concentration was greatest in the trip blank. Methylene chloride was qualified not detected (U) in sample 025001 at 21

µg/kg. The qualification is less than the site action level and should have no impact on the usability of the data.

5.2.1.3 Summary Table

The following table lists the qualifications applied to the volatile data as a result of data validation.

Table 52 — Qualifications for Volatiles

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
0409L654	VOA	025001	2-Hexanone	RSD (31.3%)	UJ
0409L654	VOA	025001	Methylene chloride	TB	U

RSD – Relative Standard Deviation
TB – Trip Blank
UJ – Estimated Not Detected
U – Not Detected

5.2.2 Semi-volatile Organic Compound (SVOC) Analysis

The field team submitted 20 soil samples for semi-volatile organic analysis by Mound Compendium Method A-003. The following table shows the number of samples submitted for analysis and the number of samples validated for the analysis.

Table 53 — Sample Quantities for Semi-Volatiles Data Validation

Analysis	Number of Samples	Number Validated
Semi-volatile Organic Compounds	20	2

Two samples, 025001 and 025029, were submitted for data validation. The only deficiency identified during data validation was that the percent difference, a continuing calibration check, was not met for all analytes in the validated samples. The deficiency is discussed in the following subsection. The affected samples are also listed in Table 54.

5.2.2.1 Percent Difference

A continuing calibration standard is introduced during sample analysis to confirm the stability of the calibration curve. The stability is calculated by determining a percent difference. The percent difference must be less than 25%. For sample 025001, the associated percent difference for 3-nitroaniline was 27.8%. For sample 025029, the associated percent differences for 2,4-dinitrophenol and 4-nitrophenol were 26.8 and 33.9, respectively. The associated sample results were qualified estimated not detected (UJ). Because these results were reported not detected, the potential inaccuracy of the calibration curve does not impact the usability of this data.

5.2.2.2 Summary Table

The following table lists the qualifications applied to the semi-volatile data as a result of data validation.

Table 54 — Qualifications for Semi-Volatiles

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
0409L654	SVOA	025001	3-nitroaniline	%D (37.8%)	UJ
0409L679	SVOA	025029	2,4-dinitrophenol	%D (26.8%)	UJ
0409L679	SVOA	025029	4-nitrophenol	%D (33.9%)	UJ

%D – Percent Difference
UJ – Estimated Not Detected

5.2.3 Inorganic Analysis

The field team submitted 26 soil samples for inorganic analysis by Mound Compendium Method A-005. The following table shows the number of samples submitted for analysis and the number of samples validated for the analysis.

Table 55 — Sample Quantities for Inorganic Data Validation

Analysis	Number of Samples	Number Validated
Inorganic	26	3

Three samples, 025001, 025029, and 025047, were submitted for data validation. The following deficiencies were identified during data validation:

- Interference check sample recovery greater than acceptance limits for lithium
- Matrix spike recoveries outside acceptance limits for antimony, chromium, copper, mercury, and zinc
- Serial dilution percent difference exceeded for sodium, lithium, and potassium
- Initial calibration blank reported with a negative bias for mercury

A complete listing of the applied data qualifications is presented in Table 57. Each of the deficiencies is discussed in the following subsections.

5.2.3.1 Interference Check Sample

The interference check sample, measured with Solution AB, is analyzed to confirm that the instrument is capable of differentiating particular analytes. The results of the interference check standard are reported as a percentage recovery. The Interference Check Standard AB solution (ICSAB) recovery for lithium was reported at 127 and 125% for batch 0409L654. The acceptance limit is 80 – 120%. Lithium in samples 025001 and 025047 were qualified estimated (J). The positive bias should not impact the usability of the data.

5.2.3.2 Matrix Spike

Matrix spike analyses are performed to determine whether the sample matrix or laboratory handling procedures are affecting the reported sample results. Two matrix spike samples were analyzed 025047 and 025016. The recovery limits for matrix spike analyses are: 75 – 125%. The following table summarizes the deficient matrix spike recoveries.

Table 56 — Deficient Matrix Spike Recoveries for Inorganics

Analyte	025016	025047
Antimony	56%	57%
Chromium	Compliant	66%
Copper	Compliant	21%
Mercury	Compliant	141%
Zinc	Compliant	42%

Based on these matrix spike recoveries, antimony results in samples 025001, 025029, and 025047 were qualified estimated not detected (UJ). Additionally, chromium, copper, zinc, and mercury were qualified estimated (J) in samples 025001. The antimony deficient was determined to be systemic and all antimony results should be treated as estimated (J).

5.2.3.3 Serial Dilution

Serial dilutions are introduced to assess which sample interferences are impacting the reported sample recoveries. The results obtained by serial dilution should match within 10%. Serial dilution was performed on samples 025047 from batch 0409L702 and 025016 from batch 0409L679. Potassium (12%, 14%) and sodium (11%, 13%) were outside acceptance limits in both samples. Sodium and potassium were qualified in all three validated samples on the basis of the serial dilution recoveries. The potassium and sodium interference have been identified as systemic issues and all sodium and potassium results should be treated as estimated (J). Because the sample results are far below site action limits for these analytes, the qualification does not impact the usability of the data.

In sample 025016, zinc was reported with a serial dilution value of 12% and affected batch 0409L679. The zinc result in sample 025029 was qualified estimated (J) due to the serial dilution recovery in sample 025016. There are insufficient data to determine whether the zinc interference is systemic and only the result for sample 025029 was qualified estimated (J).

5.2.3.4 Initial Calibration Blank

The initial calibration blank is used to verify that the instrument is free of contamination after performing the required calibration analyses. The initial calibration blank result for mercury in batches 0409L654 and 0409L679 was negative. The negative blank result indicates a potential negative bias in the calibration curve, particularly for results near the reporting limit. Mercury results in samples 025001 and 025029 were qualified estimated (J) due to the negative blank result. The deficiency was also reported in batch 0409L654. Because the deficiency affected two batches, the deficiency was identified as a possible systemic bias. All of the mercury results from batches 0409L679 and 0409L654 should be treated as estimated (J) with a negative bias. The initial calibration blank in batch 0409L704 was acceptable and the batch was not qualified. One other batch was analyzed, 0409L685. No qualifications were applied to batch 0409L685. Because the results for mercury were so low, the qualifications did not impact the usability of the data.

5.2.3.5 Summary Table

The following table lists the qualifications applied to the inorganic data as a result of data validation.

Table 57 — Qualifications for Inorganics

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
0409L654	Metals	025001	Lithium	ICS (127%, 125%)	J
0409L702	Metals	025047	Lithium	ICS (127%, 125%)	J
0409L654	Metals	025001	Chromium	MS (66.2%)	J
0409L654	Metals	025001	Copper	MS (21.2%)	J
0409L654	Metals	025001	Zinc	MS (42.4%)	J
0409L654	Metals	025001	Mercury	MS (141%)	J
0409L654	Metals	025001	Antimony	MS (56.8%)	J
0409L654	Metals	025001	Potassium	SD (11.6%)	J
0409L654	Metals	025001	Sodium	SD (10.8%)	J
0409L654	Metals	025001	Mercury	ICB (-0.2 µg/L)	J
0409L679	Metals	025029	Mercury	ICB (-0.2 µg/L)	J
0409L679	Metals	025029	Potassium	SD (14%)	J
0409L679	Metals	025029	Sodium	SD (13%)	J
0409L679	Metals	025029	Lithium	SD (12%)	J
0409L679	Metals	025029	Antimony	MS (56%)	UJ

ICS – Interference Check Standard
MS – Matrix Spike
SD – Serial Dilution
J – Estimated
UJ – Estimated Not Detected

5.2.4 Radiological Analysis

The field team submitted 26 soil samples radiological analysis including isotopic plutonium, isotopic thorium, and gamma spectroscopy. The following table shows the number of samples submitted for analysis and the number of samples validated for the analysis.

Table 58 — Sample Quantities for Radiological Data Validation

Analysis	Number of Samples	Number Validated
Isotopic Plutonium	26	3
Isotopic Thorium	26	3
Gamma Spectrometry	26	3

Samples 025001, 025029 and 025047 were submitted for data validation.

Three types of deficiencies were identified during data validation:

- Source check standard

- Thorium blank contamination
- Abundance criteria low for reported results

Each of these deficiencies has been assessed to determine the potential for a systemic bias and the systemic effect on the overall data usability. A complete listing of the applied data qualifications is presented in Table 59.

5.2.4.1 Source Check Standard

An alpha spectroscopy check standard is analyzed to verify that the counting equipment is operating properly. The check standard is supposed to be analyzed daily. The check standard was last analyzed two weeks prior to analysis of sample 025029 for plutonium and thorium. The results for plutonium and thorium for sample 025029 were qualified estimated (J) and estimated not detected (UJ). The deficiency was not systemic.

5.2.4.2 Thorium Blank Contamination

Thorium-230 was detected at 0.0121 pCi/g in the batch associated with sample 025001. The reported blank activity for thorium-230 was twice as large as minimum detectable concentration. Since the associated sample concentration was more than three times greater than the blank activity, the thorium-230 blank result was qualified estimated (J) with a positive bias. Because the activity is below the site action limit, the positive bias does not impact the usability of the data. The deficiency was not systemic and does not impact the data usability.

5.2.4.3 Abundance Criteria

Sample activities are determined based on activities at key lines. Key lines are energy emissions associated with specific isotopes. For radium-226 and radium-228, the key line activity was greater than the MDA; however, the abundance criteria were not met for some reported results. The failure of the energy abundance criteria to be met indicates the potential of false positive results. Radium-226 and radium-228 was qualified estimated (J) in samples 025001 and 025029. Without performing data

validation, it is not possible to assess whether other results were similarly affected. However, only one sample exceeded the site action limit for radium-228, sample 025016, and that sample was assessed for this deficiency and was not affected by this deficiency.

5.2.4.4 Table of Qualifications

The following table lists all the qualifications assigned during the validation of the radiological samples.

Table 59 — Qualifications for Radioisotopes

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
J3E090276	Alpha Spec.	000012	Thorium-232	FD (4.2 sigma)	J
J3L080187	Gamma Spec.	000094	Radium-226	KL	J
J3I170276	Gamma Spec.	000033	Radium-226	KL	J
J3I10276	Gamma Spec.	000041	Radium-226	KL	J
J3I10276	Gamma Spec.	000037	Radium-228	KL	J
J3I170276	Alpha Spec.	000033	Thorium	LD (7.9, 8.6, 8.8)	J

FD – Field duplicate
KL – Key Line Interference
LD – Laboratory Duplicate

6.0 Verification Sampling — Calendar Year 2005

6.1 Data Review

The quality control data submitted with the analytical data packages were reviewed and assessed. The results of the assessment are presented in this section. The following qualifications were used to indicate data quality problems identified during the data review process. The qualifications are essentially the same as those used for data validation.

Table 60 — Data Review Qualifications

Qualification	Description
J	The associated positive sample result is estimated.
J/UJ	The associated positive and not-detected sample results are qualified estimated.
R	The associated sample result is rejected and unusable.
U	The associated sample result is qualified not detected.
UJ	The associated not-detected sample result is qualified estimated.

6.1.1 Radiological Analysis

The field team submitted samples radiological analysis including isotopic plutonium, isotopic thorium, isotopic uranium and gamma spectroscopy. The following table shows the number of samples submitted for each type of analysis.

Table 61 — Sample Quantities for Radioisotopes

Analysis	Compendium Method	Number of Samples
Isotopic Plutonium	A-012	56
Isotopic Thorium	A-012	55
Isotopic Uranium	A-012	11
Gamma Spectroscopy	A-015	27

Data review elements including yields, method blanks, laboratory duplicates, field duplicates, field rinsates, and matrix spikes are evaluated in the following subsections. In addition to these quality control sample evaluations, the data report included several re-analyses which are assessed as a subsection.

6.1.1.1 Yields

Yields are determined for isotopic plutonium, isotopic thorium, and isotopic uranium analysis and are used to assess and adjust for analytical inefficiencies that occur during sample preparation and analysis. Yields are typically expected to range from 20% to 120%. Yields outside this range are evaluated as possible deficiencies and yields below 10% are typically rejected. The plutonium yields ranged from 15.5% to 78.7%. Three samples (000244, 000246, and 000255) were reported for plutonium with yields less than 20%. These samples were re-analyzed for plutonium and the yields were within the

acceptance limits. The results associated with the re-analysis should be used. The laboratory case narrative also indicates that samples 000169, 000170, 000203MS/MSD, 000230, 000238, 000238 MS/MSD, and 000252 failed to meet plutonium yield requirements and were re-analyzed. The re-analysis data are usable and the original sample results should not be used.

The thorium recoveries ranged from 77.6 to 108.8%. In the case narrative, the laboratory reports three samples (000151, 000180, and 000189) with low yields for thorium that were re-analyzed. The re-analysis data are usable and the original sample results should not be used.

The uranium yields ranged from 35.9 to 93.7% and were acceptable.

6.1.1.2 Matrix Spikes

Matrix spikes are prepared to verify the sample matrix is not interfering with the accurate and precise determination of target parameters. Only one sample, 000172, was submitted for uranium matrix spike analysis. The laboratory reported that during the preparation of the uranium matrix spike the analyst spilled some of the digestate. The laboratory was instructed to re-prepare the uranium matrix spike pair. The recoveries for both the original and re-prepared matrix spike samples were between 80 and 120% indicating no matrix issues.

Three samples, 000172, 000203, and 000238, were submitted to the laboratory for thorium matrix spike analysis. In addition to these three samples, the laboratory ran an extra matrix spike analysis on fraction 000238 resulting in a total of four matrix spike pair results. All of the thorium results were between 80 and 120% indicating no matrix spike issue.

Three samples, 000172, 000203, and 000238, were submitted to the laboratory for plutonium matrix spike analysis. In addition to these three samples, the laboratory ran an extra matrix spike analysis on fraction 000238 resulting in a total of four matrix spike

pair results. All of the plutonium matrix spike recoveries were between 80 and 120% indicating no matrix spike issues.

Two samples, 000172 and 000203, were submitted to the laboratory for gamma spectrometry matrix spike analysis. One recovery for each of the matrix spike pairs was outside acceptance limits of 80 to 120%. Because of these deficiencies, all gamma spectrometry results should be treated as estimated (J).

Table 62 — Matrix Spikes Recoveries for Radioisotopes

Analysis	Number of Spike Pairs	Average Recovery (%)
Isotopic Uranium [1]		
Uranium-234	2	102
Uranium-238	2	95
Isotopic Thorium [2]	4	101
Isotopic Plutonium [2,3]	4	99
Gamma Spectrometry	2	68

Notes:

(1) Uranium is spiked with two measurable isotopes
(2) Both initial and re-analysis of sample 000172 MS/MSD included.
(3) Sample 000238 analyzed for MS/MSD in duplicate. Both results included.
(4) Sample 000203 analyzed for MS/MSD in duplicate. Both results included.

6.1.1.3 Laboratory Blanks

Laboratory blanks are used to verify that laboratory handling and procedures are not contaminating samples with target parameters. The laboratory introduced two laboratory blanks for gamma spectrometry analysis. No target parameters were detected in the gamma spectroscopy laboratory blanks. Six blanks were introduced by the laboratory during isotopic plutonium analysis. Plutonium-239/240 was detected at less than 2 times the MDA in two of the six blanks, G9K811AB and G9VE01AB. Because site action limits are magnitudes greater than the reported blank contamination, the contamination does not impact the usability of the isotopic plutonium data. The laboratory introduced five blanks for isotopic thorium analysis. Thorium-228 was detected in one of the blanks, G9K811AB, at an activity that was less than 2 times the MDA. Because site action limits are magnitudes greater than the reported blank contamination, the contamination does not impact the usability of the isotopic thorium data. The laboratory introduced three

blanks for isotopic uranium analysis. Uranium-238 was detected in one blank, G9KJ7F1AB, at less than 2 times the MDA. Because site action limits are magnitudes greater than the reported blank contamination, the contamination does not impact the usability of the isotopic uranium data.

Table 63 — Laboratory Blanks for Radioisotopes

Analysis	Number of Blanks	Deficient Blanks	Deficient greater than 2xMDA
Gamma Spectrometry	2	0	0
Isotopic Plutonium	6	2	0
Isotopic Thorium	5	1	0
Isotopic Uranium	3	1	0

6.1.1.4 Laboratory Duplicates

Laboratory duplicates are used to assess the sample analysis precision. The table below lists the number of laboratory duplicates by analysis.

Table 64 — Lab Duplicates for Radioisotopes

Analysis	Number of Duplicates
Gamma Spectrometry	2
Isotopic Plutonium	3
Isotopic Thorium	4
Isotopic Uranium	1

The relative percent difference between laboratory duplicates was calculated where at least one of the results was greater than 2 times the MDA. The table below lists the analytes, the number of relative percent differences calculated for the analyte, and the average relative percent difference.

Table 65 — Laboratory Duplicates for Radioisotopes

Analysis	Number of Duplicates	Average RPD (%)
Potassium-40	2	6
Plutonium-238	3	8
Radium-226	2	9
Thorium-228	4	8
Thorium-230	4	10
Thorium-232	4	11
Uranium-234	1	4
Uranium-238	1	6

All of the calculated relative percent differences were less than 50%. The laboratory precision was acceptable.

6.1.1.5 Field Rinsates

Field rinsates are introduced to determine whether field decontamination procedures and field handling procedures could be contaminating sample results with target parameters. No issues were identified in the field rinsates and no qualifications were applied on the basis of the field rinsates.

6.1.1.6 Field Duplicates

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the RPD between the sample results and comparing the RPD to the quality control criteria. The following table lists the duplicate pairs for this investigation and the analyses for which they were submitted.

Table 66 — Field Duplicate Sample Analyses for Radioisotopes

Sample ID	Duplicate ID	Gamma Spectrometry	Isotopic Plutonium	Isotopic Thorium	Isotopic Uranium
000151	000152	X	X	X	X
000159	000160	X	X	X	X
000180	000181		X	X	
000196	000197	X	X	X	X
000199	000200		X	X	
000227	000228		X	X	
000238	000238D		X	X	

The RPDs between field duplicates were calculated where at least one of the results was greater than 2 times the MDA. The table below lists the analytes, the number of relative percent differences calculated for the analyte, and the average relative percent difference.

Table 67 — Field Duplicate RPDs for Radioisotoples

Analysis	Number of Field Duplicates	Average RPD (%)
Potassium-40	3	6
Plutonium-238	3	30
Plutonium-239/240	3	130
Thorium-228	7	5
Thorium-230	7	7
Thorium-232	7	11
Uranium-234	2	12
Uranium-238	2	2

The relative percent difference for plutonium-238 in sample pair 000159/000160 was 58% and greater than the target RPD of 50% for soils. The precision results calculated for plutonium-239/240 were very poor with all three results being greater than 50%. All of the positive plutonium-239/240 results should be treated as estimated (J). All the relative percent differences indicate the other data are usable without qualification.

6.1.1.7 Re-analyses

Several samples were re-analyzed by the laboratory as noted in the case narrative. In many cases, the laboratory elected which result was of better quality and only reported the better quality data. However, there were some samples for which two results were reported in the data package and on the Electronic Data Deliverable (EDD). The following table lists the samples with duplicate results, the basis for the duplicate results and which results were selected as the better data. The following table lists the sample and analysis for which duplicate data were received, the deficiency with original analysis, and which analytical results to use (original or re-analysis).

Table 68 — Re-analyses for Radioisotopes

Sample ID	Analysis	Deficiency	Approved to Use
000150	Isotopic Uranium	Spectral Smearing in original analysis	Re-analysis
000163	Isotopic Uranium	Spectral Smearing in original analysis	Re-analysis
000169	Isotopic Uranium	Spectral Smearing in original analysis	Re-analysis
000172	Isotopic Uranium	Re-analysis to support MS/MSD.	Original
000203	Isotopic Plutonium		
000244	Isotopic Plutonium	Yield less than 20% in original analysis	Re-analysis
000238	Isotopic Plutonium	Sample ran in duplicate by laboratory with same sample id.	Special
000238	Isotopic Thorium	Sample ran in duplicate by laboratory with same sample id.	Special
000246	Isotopic Plutonium	Yield less than 20% in original analysis	Re-analysis
000252	Isotopic Plutonium	Yield less than 20% in original analysis	Re-analysis

Sample 000238 was accidentally analyzed in duplicate by the laboratory for plutonium and thorium based on a double entry on the chain-of-custody. Both results were assessed as valid. The sample with the sequentially larger sample ID was assigned a new Mound Environmental Information Management System (MEIMS) ID and identified as a field duplicate.

6.2 Data Validation

Data validation was subcontracted to TechLaw, Inc. The results of the data validation are presented in the following subsection by analysis. Each group of validation results is evaluated to determine whether there are indications of systemic deficiencies that might require consideration before using the invalidated data.

6.2.1 Radiological Analysis

The field team submitted samples for radiological analysis including isotopic plutonium, isotopic thorium, isotopic uranium and gamma spectroscopy. The following table shows the number of samples submitted for each type of analysis and the number of samples validated for the analysis.

Table 69 — Sample Quantities for Radiological Data Validation

Analysis	Number of Samples	Number Validated
Isotopic Plutonium	56	6
Isotopic Thorium	55	6
Isotopic Uranium	11	2
Gamma Spectroscopy	27	3

The validated samples are listed in the following table.

Table 70 — Validated Samples for Radioisotopes

Isotopic Plutonium Sample ID	Isotopic Thorium Sample ID	Isotopic Uranium Sample ID	Gamma Spectroscopy Sample ID
000151	000151	000151	000151
000186	000186		
000202	000202		
000216	000216	000216	000216
000238	000238		
000258	000258		000258

Two deficiencies were identified during data validation:

- Plutonium-239/240 field duplicate criteria greater than acceptance limit
- Gamma spectrometry matrix spike recovery outside acceptance limit

The applied qualifications are listed in Table 71 in Section 6.2.1.3

6.2.1.1 Field Duplicate

Field duplicates are collected to assess the precision of field sample collection. The precision is determined by calculating the difference between the sample results and comparing the differences to the quality control criteria. The results for plutonium-239/240 in sample 000151 were qualified estimated (J) due to poor field duplicate precision. This deficiency was also noted during data review. As noted in during data review, "*The precision results calculated for plutonium-239/240 were very poor with all three precision results, RPDs, being greater than 50%. All of the positive plutonium-*

239/240 results should be treated as estimated (J). All the relative percent differences indicate the other data are usable without qualification."

6.2.1.2 Matrix Spikes

Matrix spikes are prepared to verify the sample matrix is not interfering with the accurate and precise determination of target parameters. One gamma spectrometry spike recovery from each spike pair from samples 000172 and 000203 were below the lower acceptance limit of 80%. The validator noted that the deficiency was attributed to a sample technician error in a nonconformance report. Because the deficiency seems attributable to a poorly trained sample technician, all of the gamma spectrometry results were qualified estimated (J). Both the validator and assessor concurred that while the results for these samples are qualified estimated (J), the results are usable and should not be rejected. The qualification represents the uncertainty introduced into the process by the technician.

6.2.1.3 Table of Qualifications

The following table lists all the qualifications assigned during the validation of the radiological samples.

Table 71 — Qualifications for Radioisotopes

Laboratory Batch	Analysis	Sample ID	Parameter	Deficiency	Qual.
J5D290386	Isotopic Plutonium	000151	Plutonium-239/240	FDRPD	J
J5D290386	Isotopic Plutonium	000152	Plutonium-239/240	FDRPD	J
J5D290386	Gamma Spec.	000151	Gamma Spec.	MS, MSRPD	J
J5D290386	Gamma Spec.	000216	Gamma Spec.	FDRPD	J
J5D290386	Gamma Spec.	000258	Gamma Spec.	FDRPD	J

FDRPD – Field Duplicate Precision
MS, MSRPD – Low Matrix Spike Recovery, Poor Precision between MS and MSD

7.0 References

DOE (U.S. Department of Energy). 22 January 2002. *Methods Compendium.* Mound Plant, Miamisburg OH. Technical Manual MD-80045, Issue 2.

EPA (U.S. Environmental Protection Agency). July 1999. *Data Validation Standard Operating Procedures for Contract Laboratory Program Routine Analytical Services.* Region IV, Science and Ecosystem Support Division, Office of Quality Assurance, Athens GA. Revision 2.1.

APPENDIX E

PRS 66 VSAP

PRS 66

(Including PRS 80/40/38/39/398)

VSAP

Verification Sampling & Analysis Plan

Final Rev.1
October 2003

Department of Energy

CH2MHILL

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Acronyms

BTEX	benzene, toluene, ethylbenzene, xylene
CO	cleanup objective
COC	contaminant of concern
DOE	Department of Energy
DQO	Data Quality Objective
MEIMS	Mound Environmental Information Management System
NAD	North American Datum
NAVD	North American Vertical Datum
OEPA	Ohio Environmental Protection Agency
PAH	polycyclic aromatic hydrocarbon
PRS	Potential Release Site
QC	quality control
RCT	Radiological Control Technician
RPOC	Radiological Point of Contact
SAP	Sampling and Analysis Plan
SOP	standard operating procedure
SW	Semi Works
UCL	upper confidence limit
VOC	volatile organic compound
VSAP	Verification Sampling and Analysis Plan

1.0 INTRODUCTION

Characterization sampling at Potential Release Site (PRS) 66 occurred between 1999 and 2002 under the Core Team approved Sampling and Analysis Plan (SAP) (Reference 1). Data were reported in three consecutive Data Reports (Reference 2). An Action Memorandum Engineering Evaluation/Cost Analysis (Reference 3) was generated to describe the Removal Action and report conclusions of the multi-discipline evaluation of the characterization data. Locations of soil areas that required removal were presented, along with the associated contaminants of concern (COCs) and cleanup objectives (COs) for verification sampling. A Removal Plan (Reference 4) was generated to describe all aspects of the field work such as the excavation plan, shoring design, safety and environmental plans, and radiological aspects of field activities; and includes a detailed work plan that further defines the phase boundaries and COCs. This Verification Sampling and Analysis Plan (VSAP) describes post-excavation sampling requirements for the field team and required evaluation and reporting of data.

2.0 PURPOSE

This VSAP is prepared for PRS 66, (Figure 1) described in the PRS 66 Removal Plan (Reference 4). The primary purpose of this VSAP is to:

- provide specifications to collect and evaluate data to support sufficient removal of contamination at PRS 66.

For PRS 66, the Data Quality Objective (DQO) is to demonstrate to the Core Team that the cleanup objectives have been met. Supporting information to the DQO is provided in Appendix A.

Additionally, this VSAP serves to present information (in Appendix B) relevant to PRSs and situations associated with PRS 66 that have a different sampling approach than PRS 66. For these situations and PRSs, the purpose is to:

- provide information with **no additional sampling** to support disposition of PRSs 38, 39, 40, and 80;

- provide specifications to perform the remaining **characterization sampling** and evaluate the data outside of the PRS 66 dig zone;
- provide specifications to perform **confirmation sampling** at PRS 398 and isolated areas within PRS 66 and evaluate data to confirm residual contamination is at acceptable levels.
- provide information in support of reducing the requirement for precharacterized soil **stockpile sampling**; and
- provide specifications to perform **sidewall and slopeback sampling**.

3.0 PRS 66 VERIFICATION SAMPLING

3.1 BACKGROUND

PRS 66 is located on the northeastern portion of the site as shown on Figure 1. Historical records indicate that the area received between 10,000 and 20,000 collapsed empty thorium-contaminated drums, a contaminated 1940s flatbed truck, an unknown amount of ventilation equipment from Semi Works (SW) Building renovation, an old washing machine, and the potential for other contaminated debris and soil. The removal action to be performed is detailed in the Removal Plan (Reference 1) and includes rad and VOC (volatile organic compound) components.

3.2 LOCATION AND FREQUENCY

The PRS 66 removal action was created using a phased approach (removal Phases I-X, Figure 2) to account for areas with different COCs. The removal plan is generally to excavate each phase until the final base of excavation for that phase is reached. Multiple phases of work may occur simultaneously and excavation in one phase may enter another. Additionally, excavations will be sloped back (referred to as slopebacking) to facilitate access to footprint excavations. Slopebacking required in one phase may be partially or entirely created in another phase.

A **100% walkover survey** will be performed prior to the collection of preverification and/or verification sampling. Prior to performing the walkover survey, the RPOC (Radiological Point of Contact) will determine that there is not excessive moisture in the soil or snow cover that could interfere with the scan. The surveyor will scan the surface at a rate not to exceed 1.5 feet/second, walking in slightly overlapping parallel rows until

the entire surface has been evaluated. The audible output of the instrument will be monitored and locations with elevated activity above background will be investigated further. Areas or isolated points found to be significantly above instrument background will be excavated and resurveyed. Areas or isolated points that are slightly over background will be sampled and analyzed by onsite gamma spec to confirm or deny the activity. If soil sample results are above COs, the area or point in question will be excavated and resurveyed until results are generally below COs. If an instrument used for walkover scans fails a daily source check, then any areas scanned since the last passing source check will be resurveyed.

Preverification (as required) and verification will be performed following successful completion of the walkover survey for an area and will include COCs for the pre-agreed areas (Figure 3). Where preverification is required, samples will be collected and analyzed by onsite gamma spec (long count). Areas with results greater than COs will be excavated, walked over, and resampled until all results are below COs.

Verification sampling is conducted to confirm that sufficient removal of soil has occurred and/or residual contamination, if any, is at acceptable levels. The cleanup objectives and hot spot criteria for the PRS 66 COCs are presented in Table 1.

To expedite fieldwork, surveying and sampling may be performed within any area of a phase, as the surface becomes available.

Verification will be performed at the final base of excavation for each of ten phases of work and any additional areas excavated based on field monitoring.

A **30-foot square grid** will be used for verification as supported by documentation in Appendix A. A 30-foot square grid offset 15 feet from the verification grid will be used for preverification as specified in Figures 2 and 4. The grid approach is shown on Figure 2, along with the expected limits of excavation. The grid and offset grid will be established in the field using the easiest method to lay out the grid accurately. The location and number of samples may vary from that presented in Figure 2 based on the potential complexity of the surfaces involved and the likelihood of a change in the limits

of excavation due to additional contamination found during the excavation process or the walkover surveys.

Based on Figure 2, **74 verification** samples (rad only, base of excavation only) will be collected for PRS 66. Based on the 30-foot preverification grid, approximately **32 preverification** samples (rad only, base of excavation only) will be collected. Two additional biased (non grid) preverification samples will be collected at the base of Phase I. The number and location of samples may vary from Figure 2, depending on the grid layout initiation point and the final base of excavation.

Prior to initiating a verification sampling event, a sketch will be provided to the Core Team to facilitate split and bias sample placement and will depict the limits of excavation, the limits of the sampling event, sample locations, COCs, and slopeback/sidewall areas if verification is required. Isolated confirmation points, VOC confirmation locations, and areas identified by RadCon during excavation to have non-COC contaminants will be depicted if present in that sampling event.

If excavation exceeds the limits shown in Figure 2, a sketch of the final area and RadCon data regarding the isotopes identified, will be presented to the Core Team for concurrence prior to initiation of a particular sampling event.

3.3 TYPE

Other than to support quality control (QC) requirements (trip blanks, equipment rinses, etc.), all verification samples collected will be from surface soil.

3.4 ANALYTE JUSTIFICATION

Primary COCs for each phase of PRS 66 are based on characterization data and presented on Figure 3.

Expanded excavation areas will be monitored by Radiological Controls (RadCon) as to the isotopes prompting the additional excavation(s). Analytes for these areas will be based on the isotopes causing the additional excavation, and may or may not match the adjacent phase COCs. To confirm the lateral extent, sidewall and/or slopebacks will be sampled as indicated in Appendix B.

As specified in Figure 4, and where excavation exceeds expected limits, verification analysis will be offsite isotopic alpha spec where plutonium, thorium, and/or uranium results are greater than the cleanup objectives. If other isotope results are present at levels greater than the cleanup objective, offsite gamma spec will also be performed. If offsite isotopic plutonium is required, the preverification grid will be employed throughout the phase in question.

3.5 COORDINATES

Coordinates will be reported using the Ohio State Plane Coordinate System, Ohio South Zone, Horizontal ground control based on NAD (North American Datum) 1983, and vertical control based on NAVD (North American Vertical Datum) 1988. Prior to the start of the 100% walkover survey, preverification, and verification rounds for any particular phase, the grid locations for that phase will be surveyed and identified at the base of excavation using the 30-foot dual grid plan previously described. If additional grids and/or sample locations are established, they, as well as the associated sample coordinates, will be graphically represented in the Data Report.

3.6 DESIGNATION

Soil and QC samples will be identified and labeled according to procedures in Method S-028: Sample Control and Documentation, of the Methods Compendium (Reference 5). Sample identification labels will be used for each sample container. Sample containers will be sealed immediately after sample collection. Labels will be completed, when possible, prior to fieldwork to minimize the handling of the sample containers.

Each label will include the following information:

-sample identification	-time and date of collection
-parameters to be analyzed	-sampler's initials

Collected samples will be uniquely identified according to the system for each PRS location **66V-W-XXXXXX**, where:

66V = MEIMS (Mound Environmental Information Management System) Project Code (PRS 66 verification samples)

W = QC sample where:

0 = no QC sample	2 = equipment rinsate
1 = field duplicate	3 = trip blank

XXXXXX = a sequential, six digit sample identifier (i.e., 000001, 000002, etc.) to be used on the laboratory chain of custody for incorporation of the data into MEIMS. The MEIMS number will start at 000001.

Matrix spike, matrix spike duplicate, and any regulator split or bias samples will be identified on a field tracking sheet or field log, but a unique QC code will not be used for these samples.

3.7 PROCEDURES

Preverification samples will be collected by a Radiological Control Technician (RCT) per standard RadCon procedures (Reference 6).

All verification samples will be collected from surface soil following standard operating procedures (SOPs) presented in the Methods Compendium (Reference 5). Each soil sample will be field screened for radioactivity using a FIDLER (or equivalent instrument) by an RCT. These radiological activities will be appropriately documented in accordance with MD-80036 (Reference 6).

Applicable SOPs are summarized in Table 3, along with any planned additions or deviations.

3.8 QC SAMPLES

QC samples will be collected as follows:

- field duplicates: 1 for every 10 soil samples
- equipment rinses: 1 for every 20 soil samples
- matrix spikes & duplicates: 1 for every 20 soil samples
- trip blanks:1 set per shipping container with samples slated for VOC analysis

3.9 CONTAINERS, HOLDING TIMES, AND PRESERVATIVES

Table 4 presents the container requirements, preservatives, and holding times for the analyses required.

3.10 SPLIT AND BIAS SAMPLES

It is anticipated that the Ohio Environmental Protection Agency (OEPA) will require split sampling over and above the standard QC duplicates. Schedules will be coordinated to facilitate a smooth collection of samples.

The state may collect split samples (at locations already being sampled per the VSAP) and identify analytical parameters independent of the requirements of this sampling plan. The number, location, analyses, and priorities related to these split samples will be discussed at a pre-job meeting to include contractor, state, and project representation.

The state may also request additional biased surface soil samples at any time prior to or during the verification sampling event. These samples are to be analyzed for COCs only, unless field conditions suggest otherwise. Identification and communication of these biased locations will be made to the Department of Energy (DOE)/contractor as soon as possible to minimize disruption of the fieldwork. All state-requested samples will be collected and containerized by the contractor sample technician. Sufficient sample volume required to accommodate state sampling is not anticipated to be a concern because all samples are collected from surface soil. The contractor will split OEPA bias samples for archive. OEPA will be notified as to the expected date of backfill and will either rush critical analyses or concur with backfill based on verification results.

4.0 ANALYSES

For each phase, or portion thereof, prior to the collection of preverification samples, a **100% walkover** survey will be performed by an RCT(s). Detections above appropriate levels will either be excavated or confirmed to be absent (discounted) via long-count

onsite gamma spec analysis showing results below cleanup objectives. If additional excavation occurs, the newly exposed surface will be confirmed via an additional walkover survey for the newly excavated area. Excavation, walkovers, and discount sampling cycles (if opted) will occur until all excavated surfaces are accounted for.

Preverification, if required, will be performed after the walkover survey. Once the onsite gamma spec results indicate the preverification results are below cleanup objectives, verification sampling will occur and samples will be submitted for offsite analysis as presented in Figure 4. Short-count onsite gamma spec are not required for shipping purposes but may be performed at the project's discretion.

Onsite gamma spec (long-count) will be performed on all preverification samples.

Onsite alpha spec (isotopic thorium) will be performed on two biased preverification samples in Phase I.

Offsite alpha spec, and selectively, offsite gamma spec (Figure 4) will be performed for all verification samples as indicated in Table 4. Of the two preverification samples collected in Phase I, the sample with highest thorium-230 results will be forwarded for offsite alpha spec confirmation.

Offsite VOCs will be performed for samples collected within the limited VOC removal areas within Phase V (Appendix B). Specifications for the VOC analytics are presented in Table 4.

Offsite BTEX (benzene, toluene, ethylbenzene, and xylene) **and PAH** (polycyclic aromatic hydrocarbons) will be performed for the sample collected at PRS 398 (Appendix B).

5.0 EVALUATION AND REPORTING

All PRS 66 verification data will be reviewed and 10% will be validated.

Documentation of verification activities and evaluation of associated data is performed to demonstrate that the cleanup objectives have been met. A Data Report will be prepared to include:

- variances, if any, from this VSAP,
- presentation of data consistent with cleanup objectives and hot spot criteria,
- 95% upper confidence limit (UCL) calculations for each COC that exceeds its cleanup objective (per sampling event),
- leaching calculations for any VOC detections (comparison criteria discussed in Appendix B), and
- a summary of data review and validation.

Hot spot criteria are presented in Table 1. If any verification sample exceeds the hot spot criteria, additional soil removal is required. If any verification sample is below the hot spot criteria but above the cleanup objective, the data will be evaluated by applying the sign test presented in Appendix A. For each COC having results exceeding the cleanup objective, UCL and sign test ($\alpha = 0.05$, $\beta = 0.05$; see Appendix A) evaluations will be performed on the data set. Within the entire verification area of a particular sampling event (including hot spots), the 95% UCL of the verification results for each COC will not exceed its cleanup objective.

VOC results are evaluated as described in Appendix B. If VOC detections occur, leaching calculations will be performed and results issued to the Core Team for concurrence prior to backfill. Leaching equation results will be reported in the Data Report.

Since multiple contaminants are present in the PRSs, the data will need to be reviewed to determine if cumulative risk is acceptable.

Final coordinates will be provided electronically to OEPA and data will be shared in a timely manner.

6.0 REFERENCES

<u>TEXT REFERENCES</u>

Reference 1 Sampling and Analysis Plan – PRS 66, Final, Rev. 1, December 2000

Reference 2 Data Reports

- Further Assessment Data Report, PRS 66 Phase I, 2002
- Further Assessment Data Report, PRS 66 Phase II/III, Rev.0, March 2002
- Further Assessment Data Report, PRS 66 Phase IV, Rev.0, March 2003

Reference 3 PRS 66 (Including PRS 80/40) Action Memo EE/CA, Final, December 2002

Reference 4 PRS 66 Removal Plan (Includes 80, 40, 38, & 39), Final, January 2003

APPENDIX REFERENCES

Reference 5 Technical Manual MD-80045, Issue 2, Methods Compendium, 22 January 2002

Reference 6 Technical Manual MD-80036, Issue 31, Radiological Operations Procedures, 11 March 2003

Reference 7 Final Report of the PETREX Soil Gas Survey of the Non-Area of Concern, Operable Unit 5, Northeast Research Institute, 1994

Reference 8 Building Data Package, Building 51, Final, June 2002

APPENDIX A

DQO SUPPORTING INFORMATION

PRS-66 Soil Verification

Data Quality Objectives
Determination of Grid Spacing
Demonstration of Meeting Cleanup Objectives

This appendix was prepared to demonstrate via the standard DQO process that the cleanup objectives specified by the Core Team will be met, provide a statistically-based justification for the grid spacing proposed in the VSAP, and show by application of statistical measures that decision rules prescribed by the Core Team are defensible.

This appendix also serves to provide documentation to support specifications in the Action Memorandum (AM)/Work Plan regarding Phase-specific COC selection from the five primary COCs (Attachment A) and presents examples of the sign test and 95% UCL calculations prescribed in the VSAP.

The DQO process of solving a problem has seven steps:

1. State the problem
2. Identify the decision
3. Identify Inputs to the decision
4. Define the study boundaries
5. Develop a decision rule
6. Specify limits on decision errors
7. Optimize the design

This process was applied to soil verification at PRS 66 to document and demonstrate that cleanup objective will be met given specifications in the VSAP.

1.0 State the Problem:

The PRS 66 Removal Action is being performed to remove soil characterized as being >CO for various COCs. Six COCs are driving the RAs in ten areas (phases) within PRS 66. Phase boundaries differentiate areas with like COCs > CO (Figure 3). Each phase contains a subset of the six COCs. CO and HS criteria for driver COCs and other relevant analytes for isolated area confirmation are listed in Table 1. Being the most prevalent COC within the PRS, Th-232 was used for evaluation purposes.

Post-excavation verification sampling will be performed on base, sidewall, and non-characterized slopeback surfaces.

2.0 Identify the Decision:

Do verification results meet the criterion established by the Core Team (cleanup objective for Th-232)?

3.0 Identify Inputs to the Decision:

The COCs and cleanup objectives are identified in Figure 3 and Table 1.

4.0 Define the Study Boundaries:

The boundaries of the study are the soil remaining after completion of the designed excavation per the Work Plan and removal of any additional soil identified as exceeding cleanup objectives by the walkover survey or preverification sampling (where performed) and removal of any additional soil identified as exceeding hot spot criteria by verification sampling.

5.0 Develop a Decision Rule:

The purpose of this process is to determine if the residual soil contamination satisfies the cleanup objective by hypothesis testing.

Null Hypothesis, H_o: The 95% UCL of the mean concentration of the Th-232 results exceeds the cleanup objective.

Decision Rule #1

If all sample results for Th-232 is less than the cleanup objective, the null hypothesis is rejected in favor of the alternate and the verification phase meets the cleanup objective. No further tests are necessary.

Any sample result will be considered elevated if it exceeds the cleanup objective. However, the elevated result alone does not indicate that the verification phase fails to meet the cleanup objective; only that further evaluation will be necessary to determine the extent of contamination in the verification phase.

Decision Rule #2

The 95% UCL concentration for Th-232 must be less than the cleanup objective.

Decision Rule #3

In addition, the sign test will be performed to demonstrate that the mean concentration of the verification phase is less than the cleanup objective with the given probability.

If the sample set passes the sign test for Th-232, then the mean concentration identified in the verification phase will be considered less than or equal to the cleanup objective.

If the sample set fails the sign test for Th-232, then the null hypothesis is accepted and the verification phase is not considered to meet the cleanup objective.

6.0 Specify Limits on Decision Errors:

Possible Range of the Parameters of Interest

Contaminant	Lower Bound[1]	Upper Bound[2]
Thorium-232	0.67	3.5

1. Average concentration for soils less than the cleanup objective.
2. Upper Bound has been selected as the "hot-spot" criteria commonly used at the Mound site.
3. Values in pCi/g.

Null Hypothesis and Decision Errors

Null Hypothesis, H_o: The median concentration of residual radioactivity for Th-232 exceeds the cleanup objective.

Alternate Hypothesis, H_a: The median concentration of residual radioactivity for Th-232 meets the cleanup objective.

Type I Error [false positive]: Incorrectly determine that the median concentration of Th-232 is less than the cleanup objective when the median actually exceeds the cleanup objective.

The consequences of this decision error indicate that the verification method used for PRS 66 is not effective, and could result in potential risk that exceeds 10^{-5}.

The probability of making this error is α. Suggested limit on the probability of making this error is .05. (α = .05)

Type II Error [false negative]: Incorrectly determine that the median concentration of Th-232 is greater than the cleanup objective when the median is actually less than the cleanup objective.

The consequences of this decision error would result in shipping large quantities of soils as contaminated waste even though the soils actually meet cleanup objective.

The probability of making this error is β. Suggested limit on the probability of making this error is .05. (β = .05)

The Lower Bound of the Gray Region (LBGR) for Th-232 is selected at the 95% UCL of the mean of the measurement results in the characterization set that are less than the cleanup objective. Performance of this step is afforded because of the amount of characterization data available for PRS 66. The Derived Concentration Guideline Level (DCGL) for Th-232 is the cleanup objective.

Contaminant	Lower Bound	DCGL[1]
Thorium-232	0.67	2.1

1. DCGL is set at the Mound site cleanup objective.
2. Values in pCi/g

6.1 Determination of Grid Spacing

6.1.1 Calculate the Relative Shift

The relative shift, Δ/σ, is an expression of the resolution of the measurements in units of measurement uncertainty. Expressed in this way, it is easy to see that relative shifts of less than one standard deviation, $\Delta/\sigma < 1$, will be difficult to detect. On the other hand, relative shifts of more than three standard deviations, $\Delta/\sigma > 3$, are generally easier to detect. The number of measurements that will be required to achieve given error rates, α and β, depends almost entirely on the value of Δ/σ.

σ was estimated by calculating the standard deviation of the PRS 66 characterization data at depths below the designed limits of excavation and within the last 5 feet of excavated soil above the base of excavation.

6.1.2 Estimate the Number of Samples

The Sample Size was determined with the software MARSSIM Power 2000 for α = .05 and β = .05, the minimum number of samples, N, that should be collected is for Th-232 is 44 based on data below the base of excavation and 682 based on data within the dig zone above the base of excavation.

Δ/σ = (DCGL – LBGR)/ σ
DCGL = Mound Site Specific Cleanup objective
LBGR = 95% UCL

Contaminant	Lower Bound	DCGL	σ	Δ/σ	Sample Size
Thorium-232 below dig base	0.67	2.1	1.87	~0.76	44
Thorium-232 above dig base	0.67	2.1	8.22	~0.17	682

6.1.3 Determination of Grid Spacing

The area of Phases I-X is 56,684 sg ft.
The spacing L for a triangular grid is given by:

$$L = \sqrt{\frac{A}{0.866N}}$$ (Eq 5-5 in MARSSIM)

Where

A = area
N= sample size

The spacing for a square grid is given by:

$$L = \sqrt{\frac{A}{N}}$$ (Eq 5-6 in MARSSIM)

Contaminant	Sample Size	Triangular Spacing (ft)	Square Spacing (ft)
Thorium-232 below dig base	44	38	36
Thorium-232 above dig base	682	9.8	9.1

7.0 Optimize the Design

The 30-foot square grid proposed in the VSAP exceeds the spacing requirement using the data below the base of excavation, and is therefore acceptable for Th-232. This acceptability is supported by the 100% walkover survey that can detect Th-232 above

the cleanup objective. Th-232 found above the cleanup objective during the walkover survey will be removed and the area excavated will be resurveyed until all instrument detections are less than the Th-232 cleanup objective. This approach will produce more than enough data using approaches that are familiar to operators.

8.0 Demonstrating Meeting Cleanup Objectives

Three decision rules were identified in Section 5.0. More details of the statistical tests are provided here.

8.1 Decision Rule # 1

If all sample results for Th-232 are less than the cleanup objective, the verification phase meets the cleanup objective. No further tests are necessary.

8.1.1 95% UCL

The 95% UCL concentration for Th-232 must be less than the cleanup objective. In addition to this test, the Sign Test is applied to the results.

8.2.2 Sign Test

A non-parametric test such as the Sign or WRS test imposes the fewest assumptions on the data (e.g., that the underlying distribution is normal). The data need not be tested for normality, or transform results to try to get things normally distributed. Non-detects and high outliers are less of an issue with non-parametric tests. Since the cleanup goal already includes background, the Sign test would be the most appropriate test. [per correspondence with Robert Johnson, Argonne National Laboratory]

The Sign test is applied as outlined in the following five steps:

1. List the survey unit measurements, $X = 1, 2, 3..., N$.

2. Subtract each measurement, X, from the DCGL to obtain the differences:

$D = DCGL - X = 1, 2, 3..., N$.

3. Discard each difference that is exactly zero and reduce the sample size, N, by the number of such zero measurements.

4. Count the number of positive differences. The result is the test statistic S+. Note that a positive difference corresponds to a measurement below the DCGL and contributes evidence that the survey unit meets the release criterion.

5. Large values of S+ indicate that the null hypothesis (that the survey unit exceeds the release criterion) is false. The value of S+ is compared to the critical values in Table I.3 (in MARSSIM). If S+ is greater than the critical value, k, in that table, the null hypothesis is rejected.

Example

N	Result	DCGL – Result	Sign
1	3.3	-1.2	-1
2	1	1.1	1
3	1	1.1	1
4	1	1.1	1
5	2	0.1	1
6	2	0.1	1
7	2	0.1	1
8	2	0.1	1
9	2	0.1	1
10	2	0.1	1
11	2	0.1	1
12	2	0.1	1
13	2	0.1	1
14	2	0.1	1
15	2	0.1	1
16	2	0.1	1
17	2	0.1	1
18	2	0.1	1
19	2	0.1	1
20	2	0.1	1
Number of Positive Differences S+			19

Compare S+ to the critical values in Table I.3. The critical value, k, for N=20 is 14. If S+ is greater than k the null hypothesis is rejected. Since 19 > 14 therefore the null hypothesis is false. The verification sampling for this radionuclide meets the cleanup objective.

9.0 Phase-Specific COC Selection

A query was performed on the PRS 66 characterization data to confirm that in each phase where all five primary COCs are not specified, the COCs not specified were not present in the characterization data above cleanup objectives in the last five feet of soil excavated. The query was based on screening levels rather than cleanup objectives so that an evaluation could be made of results just below (less than) the cleanup objectives.

Phases II, III, IV, VI, and VII do not contain Pu-238 as a COC. Data were queried and sorted by actual activity of Pu-238 > 6.1 pCi/g. Results of the query are presented in the following table There are no data above cleanup objective in the query area and only one result above screening level.

Phases V, VII, and VIII do not have Ac-227, Cs-137, or Ra-226 as COCs. Data were queried and sorted by actual activity above the respective screening levels. There are no data above cleanup objectives. Result above screening levels are presented in the second table below.

station	smp_id	par_name	result	par_unit	labqual	dataqual	detlim	esmp_dep	dep_clean	roman
B025	021447	Plutonium-238	24.7	PCI/G			20.59	15	20	II
B171	011320	Actinium-227	2.01	PCI/G			1.19	25	30	V
B219	000182	Actinium-227	1.48	PCI/G			0.67	15	20	V
B175	011297	Actinium-227	1.48	PCI/G			0.78	20	25	V
B196	011326	Actinium-227	1.37	PCI/G			0.64	20	25	V
B218	000288	Actinium-227	1.24	PCI/G			0.6	15	20	V
B207	023155	Radium-226	2.31	PCI/G			0.89	20	25	V
B342	012048	Actinium-227	1.72	PCI/G			0.7	15	20	VIII
B279	011265	Actinium-227	0.76	PCI/G	J		0.72	15	20	VIII
B301	012060	Radium-226	0.96	PCI/G			0.14	15	20	VIII
B312	023128	Radium-226	2.5	PCI/G			0.82	10	15	VIII
B343	023098	Radium-226	2.11	PCI/G			0.79	15	20	VIII

APPENDIX B

ADDITIONAL INFORMATION

ADDITONAL INFORMATION

Information in this appendix is provided "additional" to PRS 66 verification sampling to detail a path forward for PRSs and situations associated with PRS 66 but handled differently than PRS 66 verification. Information obtained as a result of all actions described herein will be documented in a Data Report. All PRSs discussed herein will be dispositioned via an On-Scene Coordinator (OSC) Report for PRS 66.

Actions are segregated by type of sampling as follows and as described in the following summary pages for each:

- no additional sampling
- characterization sampling
- confirmation sampling
- stockpile sampling
- slopeback & sidewall sampling

NO ADDITIONAL SAMPLING

PRSs 38, 39, 40, and 80 have no additional sampling proposed as documented in this appendix.

PRS 38 was an incinerator (formerly located within Building 51) for nonrad wastes that likely included paints, thinners, and solvents (Reference 8). Figure 5 shows the location of Building 51 and surrounding PRS 66 characterization sampling locations. Prevailing westerly winds in the Miamisburg area tend to be locally directed from the south-southwest, following the terrain of the Test Fire Valley in the area of Building 51. Therefore if there were any residual contamination from incinerator fallout it would be expected to consist of unburned chemicals and products of incomplete combustion, and to lie predominantly to the north-northeast of the former Building 51 location and east of the former Building 29 and Building 98 locations.

Sampling and analyses of the characterization borings in PRS 66 resulted in only 4 (of 336) VOC, 3 (of 572) SVOC (semivolatile organic compound), and 4 (of 577) metal detections above cleanup objectives or Hazard Index =1 levels (Reference 3). Additionally, monitoring of the wells in the area indicates that no leaching of contaminants to groundwater has occurred. The type and frequency of chemical characterization is considered sufficient documentation to discount the likelihood of significant chemical contamination due to incinerator fallout. PRS 38 closure will be documented through the PRS 66 OSC Report.

The chemical contaminants, SVOCs, and metals, will be removed as a matter of course with the rad soil removal action (Reference 3). VOCs will be removed in two isolated areas within Phase V as shown of Figures 5 and 6 and described further under "Confirmation Sampling".

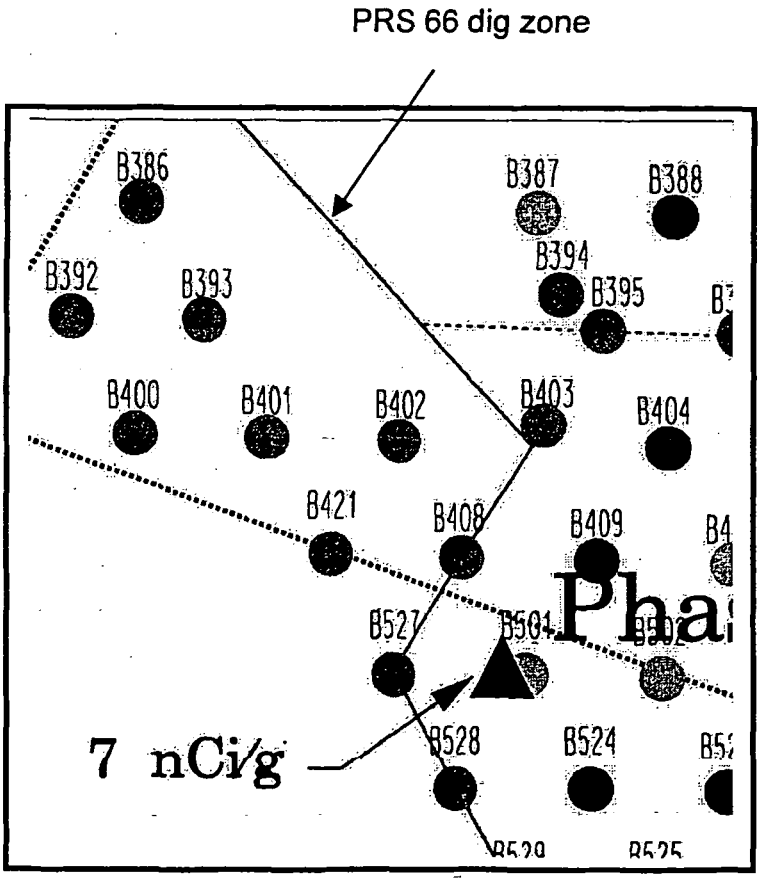
PRS 39 was a scrubber unit that was formerly located in Building 51 and was removed prior to the Building 51 demolition in 2002. There are no likely potential impacts to surrounding soil and no additional soil sampling or removal will occur. PRS 39 will be reported in the PRS 66 OSC Report as an associated piece of equipment to PRS 38 for purposes of closure.

NO ADDITIONAL SAMPLING

PRS 40 is at the south end of the PRS 66 characterization as shown below. The RA status of PRS 40 was based on a historic Pu-238 result of 7 nCi/g. Based on a field sketch and first hand information from RadCon (Roy Mowen), the 7 nCi/g location is within the PRS 66 dig zone.

Characterization associated with PRS 66 did not confirm the 7 nCi/g result, but RadCon will be using field instrumentation to monitor all excavated material. If a value of 7 nCi/g is present, it will be identified by the field instrumentation.

Verification sampling already proposed for Pu-238 in Phase X of PRS 66 will suffice for verification that the PRS 40 historic sample was sufficiently removed. PRS 40 will be closed out via and upon successful completion of verification for PRS 66 Phase X and will be indicated as such in the PRS 66 OSC Report.



NO ADDITIONAL SAMPLING

PRS 80 is the site of former Warehouse 15A. Its date of construction is not known although it is visible in the 1949 and 1965 aerial photos and not present in the 1969 photo. It was used for staging and loading radioactive waste for offsite shipment. Table A summarizes historic characterization results greater than screening levels from sample locations (Table B) in or near the footprint of former Warehouse 15A. Historic characterization identified one thorium-232 result (3.18 pCi/g) above the cleanup objective (2.1 pCi/g) and one result each of benzo(a)pyrene (1.5 mg/kg) and indeno(1,2,3-c,d)pyrene (1.1 mg/kg) above screening levels. All other historic sample results in or near the footprint are at less than cleanup objectives. Recent characterization results associated with PRS 66 did not confirm the presence of thorium-232 at levels above cleanup objectives within the building footprint; however, thorium requiring removal near and north of the building (PRS 66 Phase IV) may have been from operations at the building. Closure of PRS 80 will be completed via the PRS 66 excavation and verification. Information and verification data for this area will be documented in the PRS 66 Verification Data Report and OSC Report.

Table A: Results above Screening Levels*

Radionuclide/ Compound	No. >SL	No.>CO	Max. Result	Location & Depth	SL	CO
Actinium-227+D	1	0	1.3	B18 (10-15')	0.56	4.6
Radium-228+D	1	0	1.47	B18 (5-10')	1.47	2.1
Thorium-232+D	8	1**	3.18**	C0013** (9.8')	1.47	2.1
Benzo(a)pyrene	1	NA	1.50	B09 (0-2')	0.41	NA
Indeno(1,2,3-c,d) pyrene	1	NA	1.10	B09 (0-2')	0.41	NA

SL: screening level (more restrictive of 10^{-6} Risk-Based Guideline Value or Hazard Index =1)
CO: cleanup objective
*units are pCi/g for radionuclides or mg/kg for chemicals
**historic result not supported by recent characterization

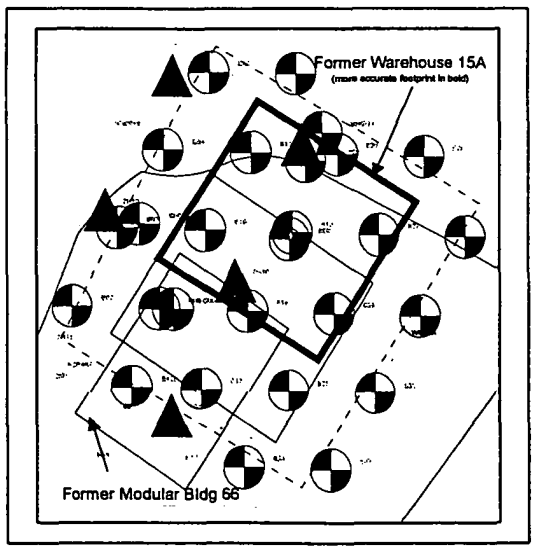


Table B: Sample Locations

Location	Date
C0013	1983
B09	1994
7G09	1994
7G10	1994
B09	2001
B10	2001
B11	2001
B18	2001
B19	2001
B20	2001

CHARACTERIZATION SAMPLING

Completion of Characterization Borings. There are 22 boreholes (both within and exterior to the Phase VIII dig zone) that could not be installed during characterization activities because they are located below overhead stanchions. Missed borings within the Phase VIII dig zone (9) will not be installed. The remaining 13 boreholes are located between the anticipated dig zone and the limits of the PRS (Figure 7). It is anticipated that the results of samples collected from these borings will be below cleanup objectives based on results of other nearby borings. Installation of these borings will follow the removal of the stanchions, which is expected to occur in June 2003. The borings will be installed in accordance with the PRS 66 Sampling and Analysis Plan (SAP, Reference 4). Data will be reported as Phase V data.

North Boring B005 (Figure 6) was not installed during characterization and is exterior to the dig zone. It is anticipated that the results of samples collected from this boring will be below cleanup objectives based on results of other nearby borings. For data completeness, this boring will be installed along with other missed characterization borings east and west of Phase VIII.

CONFIRMATION SAMPLING

Boring 284 was installed and samples analyzed as part of PRS 66 characterization. One thorium-230 result of 13.15 pCi/g with a minimum detectable activity (MDA) of 11.08 pCi/g was reported in the 15-20 foot interval. Reanalysis via onsite alpha spec was proposed to confirm or deny the thorium activity. Archiving of samples is not required and samples from Phase I (including the sample in question) were disposed of following submittal of the associated Data Report. OEPA agreed that a resample with onsite alpha spec analysis (isotopic thorium) would suffice to answer the question.

As part of the characterization effort, Boring 284 will be offset and installed to 25 feet. Per agreement on 10 April 2003 among OEPA and DOE, one sample will be collected and containerized from each of the 10-15, 15-20, and 20-25 foot intervals. The 15-20 foot interval will be analyzed via onsite alpha spec (isotopic thorium). Boring 284 is located outside of the anticipated dig zone and is expected to yield results below the cleanup objective. If the results are below cleanup objectives, the results will be reported in the Phase V Data Report. If any result is above the cleanup objective, both the 10-15 and 20-25 foot interval samples will be analyzed by onsite alpha spec (isotopic thorium) and results reported to the Core Team for a path forward.

PRS 398 (Figure 8) is the location adjacent to the former fuel pumps where historic surface soil sample (#1074) was assessed as part of the 1994 PETREX soil gas survey (Reference 7). The nature of an elevated soil gas result is that it is only relative to other samples assessed during that survey. Even though not quantifiable, the result prompted the requirement for further assessment due to residual concern. The pumps were removed but the surrounding soil was reportedly left in place. One sample will be collected to confirm residual contamination, if any, is acceptable. Since this is a surface soil location within a precharacterized overburden layer, resolution of this PRS is required prior to excavation of the overburden.

PRS 398, like PRS 397 nearby, is an isolated surface location. One surface soil sample will be collected at the same location as the PRS 398 soil gas location and analyzed for **BTEX** and **PAH** to confirm or deny the historic indicator result. If the results are less than the more stringent of 10^{-6} Risk-Based Guideline Value (RBGV) and Hazard Index

(HI) =1, and any detections are found to not have the potential to leach to groundwater at unacceptable levels, no further action will be taken and the PRS will be dispositioned via the PRS 66 OSC Report. Sample results will be reported to the Core Team immediately upon receipt for evaluation. If results are acceptable, a combination data summary/recommendation page will be forwarded for Core Team signature, which will be included in the PRS 66 OSC Report. Core Team signatures will constitute authorization to begin overburden excavation.

If the results are unacceptable to the Core Team who recommends a removal action, a two-foot by two-foot area centered at the location will be excavated to a one-foot depth and another sample collected at the base in the center of the area. If necessary, this process will be repeated until results are acceptable to the Core Team. At that point, a combination data summary/recommendation page will be forwarded for Core Team signature, which will authorize overburden excavation.

Isolated rad confirmation. Characterization revealed 11 isolated instances of isotopes that are not primary COCs but are present at levels above their cleanup objectives. These isolated detections above cleanup objective include uranium-238, uranium-235, uranium-234, uranium-233, and plutonium-239; therefore isolated samples analyzed for COCs in Figure 6 to confirm removal at these locations are appropriate. A comparison of the depth of each result compared to the anticipated depth of excavation at each area was made and it was confirmed that all of the intervals would be removed. Confirmation samples will be collected at the base of excavation in the same horizontal location as the previous boring and analyzed for the COC noted in Figure 6. These 11 samples will not be collected on grid nodes. Each location with an exceedance was surrounded by borings that were below cleanup objectives, making the borings with a result above cleanup objective "isolated".

One of the 11 instances of a non-primary COC is **thorium-230** at Phase I. In all other cases where thorium-230 is greater than the CO, other primary COC drivers are present to justify the dig and thorium-230 is removed as a matter of course with the primary COCs. Because thorium-232 is a primary COC in all phases except Phase I, thorium-

230 will be reported wherever verification samples are collected because isotopic thorium analysis is required. Thorium-230 is a COC at Phase I because no other primary COCs are present.

Isolated VOC confirmation. Two areas within Phase V will be removed based on rad contamination but contain unacceptable levels of VOCs. COs for VOCs in soil are presented in Appendix E and are based on the more stringent of 10^{-5} Risk-Based Guideline Value (RBGV) and Hazard Index (HI) of one. VOCs have the potential to leach from soil to groundwater. To account for the additional pathway applicable to VOCs, an additional calculation is performed for all VOC detections. Using the SSL (soil screening level) groundwater model and site specific parameters, the concentration of VOCs that are acceptable to remain in soil can be backcalculated from that which could cause an MCL (maximum contaminant level) exceedance via leaching from soil to a groundwater source of drinking water. The Core Team has agreed to not precalculate SSLs for Phase V, but rather calculate SSLs if there are detections of VOCs reported. VOC results will be compared to the more stringent of CO and SSL and brought to the attention of the Core Team if any are above either/both criteria.

The estimated removal area for each is shown on Figures 5 & 6. Because these areas are smaller and non-uniform, biased samples rather than gridding will be used for sample location designation. If the base of excavation for these areas remains approximately the same, **a total of six samples** (four from the larger area and 2 from the smaller area) will be collected (at characterization boring locations B197, B207, B208, B209, B163, and B164) to confirm sufficient removal of VOCs.

Confirmation of the lateral extent of VOC contamination is not required based on the frequency of periphery VOC characterization shown on Figure 5. Results of all periphery samples within the borings on Figure 5 are less than the more restrictive of the 10^{-6} RBGV or Hazard Index equal to one value.

STOCKPILE SAMPLING

During the review of the PRS 66 Removal Plan (Reference 4), OEPA comments led to a requirement for scanning (via RadCon field instrumentation) excavated clean overburden and slopeback materials in previously characterized areas adjacent to or on top of areas with Pu-238 as a COC. This soil is slated for stockpile and use as backfill. Additionally, it was required that excavated soil be placed in 20 loose cubic yard (lcy) piles to facilitate the collection and analysis of two soil samples per 20 lcy pile. It was also agreed during the response to comments on the Removal Plan that, upon review of characterization data, the Core Team could approve a request to defer or reduce the number of these samples. The review was conducted as follows:

- The 95% UCL for Pu-238 data (sample locations shown on Figure 9) in previously characterized overburden/slopeback was prepared and reviewed by the Core Team. A summary of the results of the calculations is provided in Appendix F.
- The data indicate that the 95% UCL is less than 6.1 pCi/g (10^{-6} RBGV) for all areas in question within and adjacent to PRS 66.

As a result of the review, a meeting was held with OEPA to discuss a modified approach to scanning/sampling the clean overburden and slopeback areas. The results of the meeting are as follows:

- Based on the characterization and the 95% UCL calculation, the 0'-5' overburden depth within **Phase V** does not require the two physical samples per 20 lcy pile as specified in the Removal Plan. RadCon will continue to scan the soil as it is excavated with field instrumentation and take appropriate actions based on readings above instrument background.
- For the clean overburden material within the 5'-10' depth in **Phase V**, assuming that the excavation is progressing from Phase IV to Phase V as defined in the Removal Plan, physical sampling of the 20 lcy piles is also not required. RadCon will determine the sample frequency and define the interface between the contaminated material in Phase IV and the "clean" area of Phase V. Prior to removing the clean material in Phase V, sidewall samples will be collected and analyzed by onsite gamma spec to confirm the interface. Scanning of excavated soil with field instrumentation will continue.
- For all characterized areas and undisturbed till areas where slopeback is necessary adjacent to **Phase V**, physical sampling of the 20 lcy piles is not required. Again, scanning upon excavation with field instrumentation will continue.

STOCKPILE SAMPLING

- For the remainder of phases with Pu-238 as a COC (Phases VIII-X) slopeback soil removed from areas south and east of the phases (Figure 9) will require stockpile sampling because of limited characterization data.

- Overburden and slopeback west of Phases VIII-X is currently under consideration for removal of the sampling requirement, pending submittal of information from the ER RPOC. If the Core Team approves changing the sampling requirement for this area, documentation of the agreement will be presented in a Data Report.

SLOPEBACK & SIDEWALL SURFACE SAMPLING

Slopebacks are surfaces created to reduce the hazard of soil failure and are performed in lieu of shoring, benching, or other means of providing a safe and stable work area. A **sidewall** is a nearly vertical or vertical surface that is present when sloping is not required generally because of a more shallow excavation. Slopebacks are generally created for safety reasons whereas sidewalls (except benching) are more likely the result of contamination excavation. Benching equates to a slopeback but is created in a stair step fashion rather than at a continuous grade. Although not generally created to remove contamination, slopebacks/benching are sometimes required between excavation phases to afford access to deeper areas. In this case, contamination may be removed as a result of the sloping, but it is not the primary purpose.

Slopebacks and benching created exterior to contaminated areas (precharacterized) are not a result of contamination, but per OEPA requirement, will be confirmed via walkover. Where sidewalls are the final product of excavation of contamination, verification sampling is required. Sidewalls of benching will be treated the same as slopebacks, even though there are vertical walls involved.

To confirm the lateral extent of contamination, sidewall samples will be collected every 30 lineal feet along the sidewall, half way up the sidewall. All sidewall sample COCs will match that of the base of excavation and will alternate between verification (offsite analysis) and preverification (onsite analysis), if required.

100% walkovers (as described in Section 3.2 of the VSAP) will be performed on all surfaces created to facilitate removal of contaminated soil (slopeback/benching, sidewall, and base of excavation) but where no additional excavation is anticipated. 100% walkovers are not required upon or during backfill operations, or as part of grading and/or regrading operations.

Soil sampling is required on slopebacked surfaces if not supported by characterization data as being below the PRS 66 cleanup objectives. If soil sampling is required, the COCs and frequency will match that of the phase that it is within (if interior

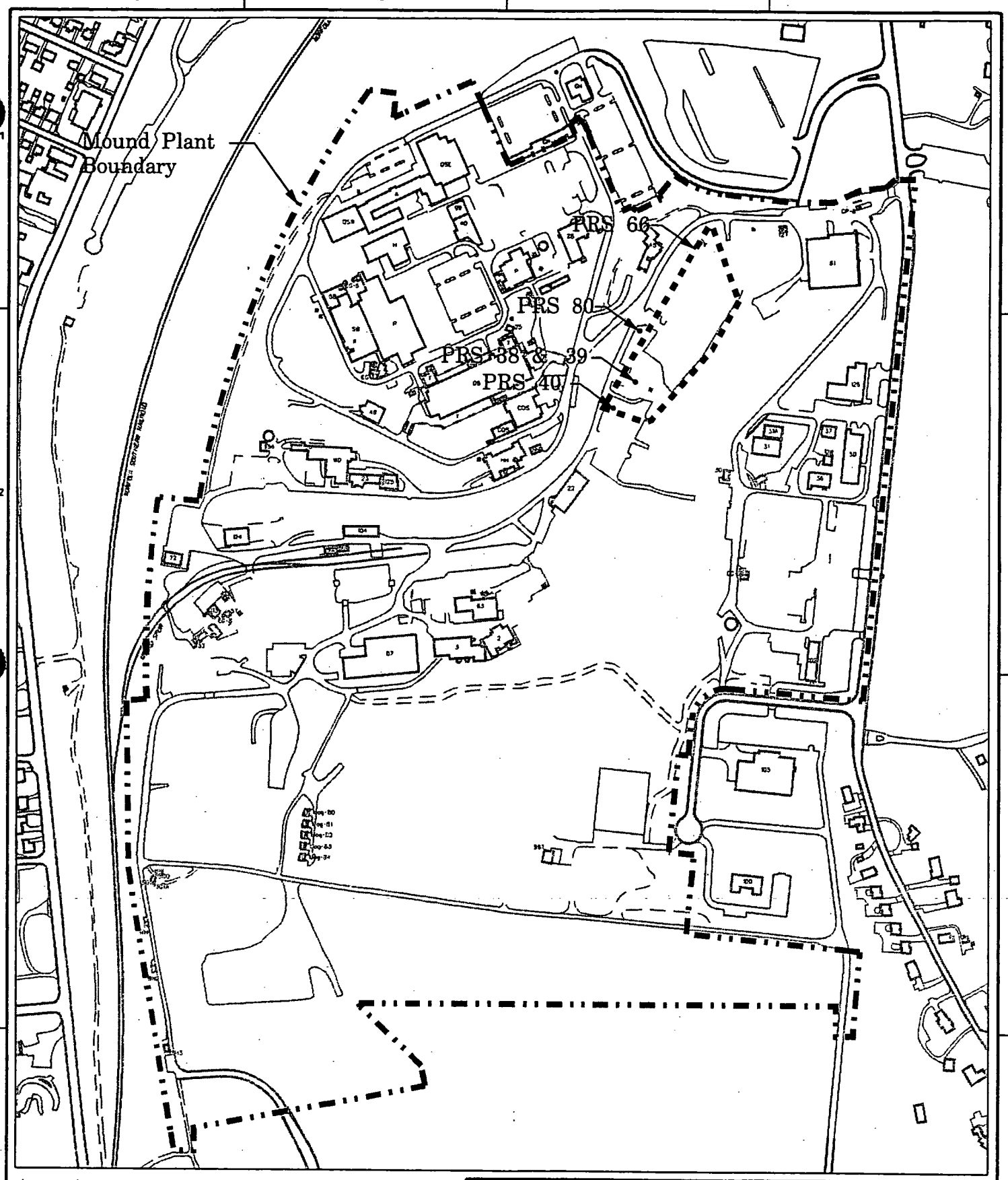
SLOPEBACK & SIDEWALL SURFACE SAMPLING

to the excavation) or, if exterior to the excavation, will match that of the adjacent phase from which it was created. Sample frequency and analyses are presented in Figure 4.

Soil sampling is not required on slopebacks within areas characterized as being below the cleanup objectives. The area between Phase III and the shoring (including the vertical surface created by use of the shoring) is assumed to be below cleanup objectives for purposes of sampling.

APPENDIX C

FIGURES



Legend

- Structures
- Paved roadway
- Unpaved roadway
- Mound Plant boundary
- Railroad

0 100 200 400 600 800 1000
Scale in Feet

ISS	DATE	REVISION	BY	CHKR	ENG	LPREC	APVD	B
	12/16/02		SSF					

MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
ISSUE																					

SHEET	1	2	3	4	5	6
ISSUE						

PART CLASSIFICATION

Figure 1
Location of PRS 66/80/40 and PRS 38,39

DRAWING CLASSIFICATION: UNCLASSIFIED

SIZE | DRAWING NUMBER: gen_site_plan.dgn | JOB NUMBER

DWG TYPE: STE | PRNG: ER-GIS | CADD | SCALE | SHEET 1 OF

STATUS: MD-REL-**/**/** | ORIGIN: MSTATION / J

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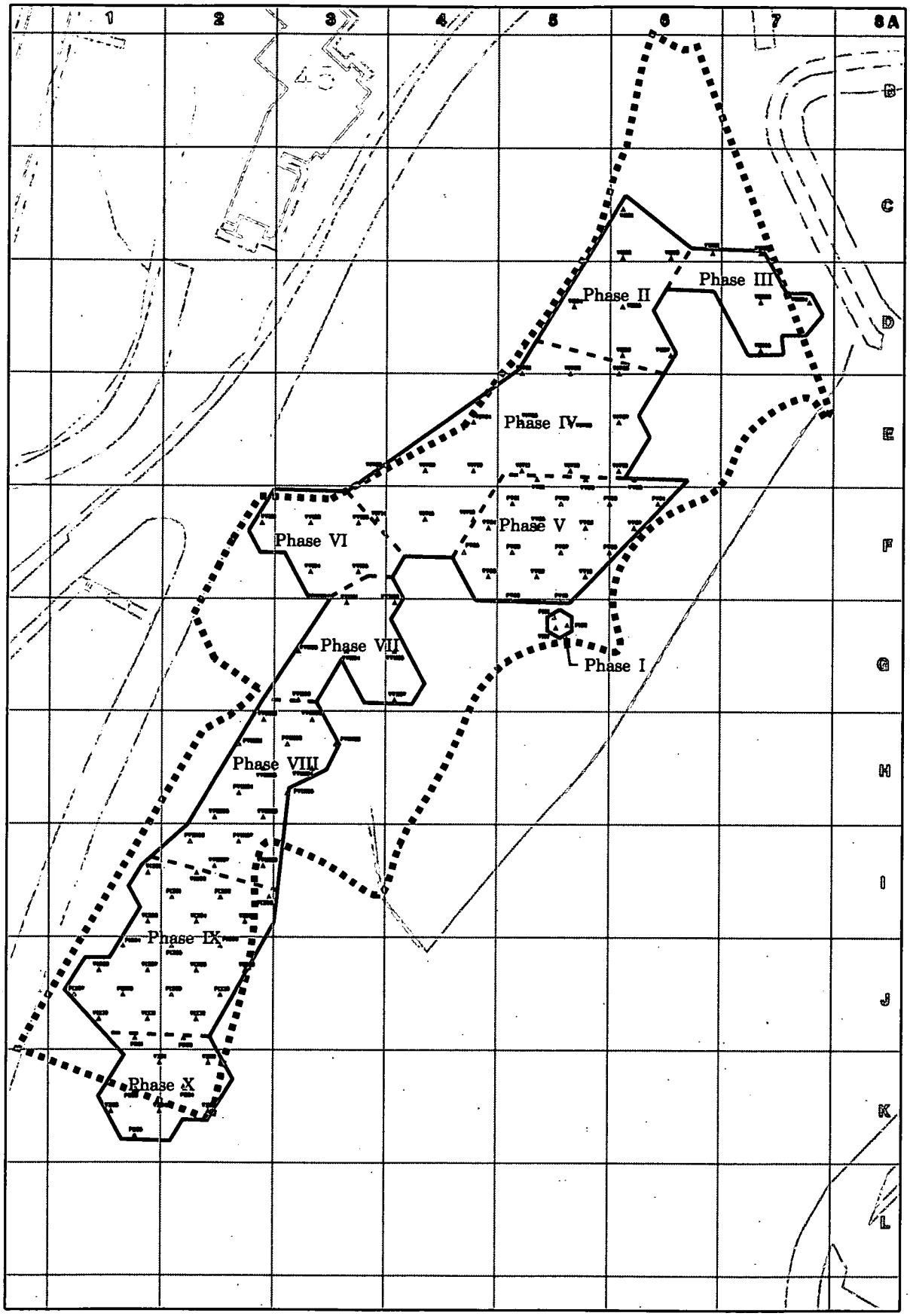


Legend

- Preverification Sample Location
- Verification Sample Location
- Tentative Excavation Boundary
- Area Boundary

0 20 40 60 80 100
Scale in Feet

MOUND
Environmental Restoration Geographic Information System

Figure 2:
PRS 66
Sampling Plan

UNCLASSIFIED

verifsampplan.dgn

05/07/03

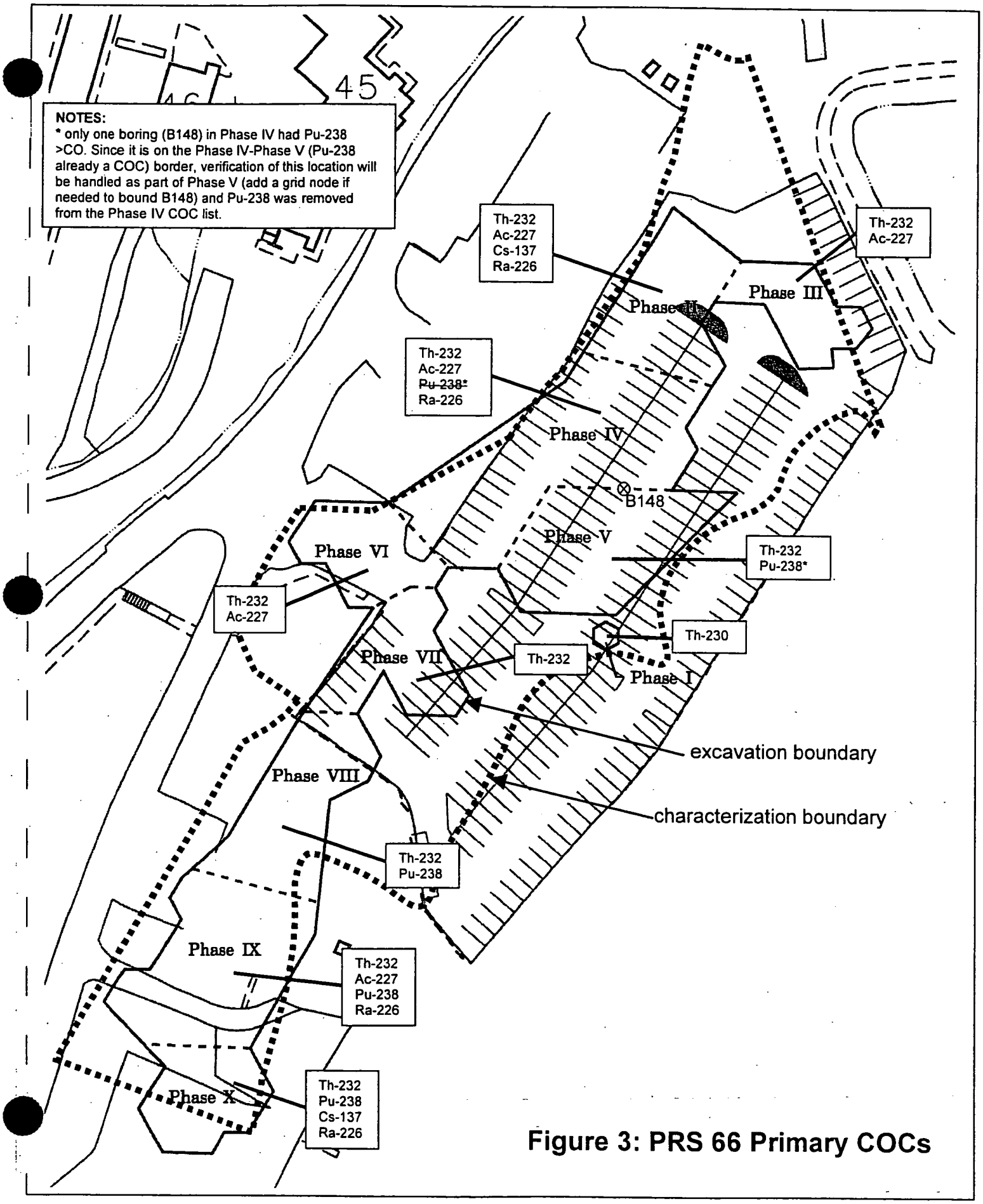


Figure 3: PRS 66 Primary COCs

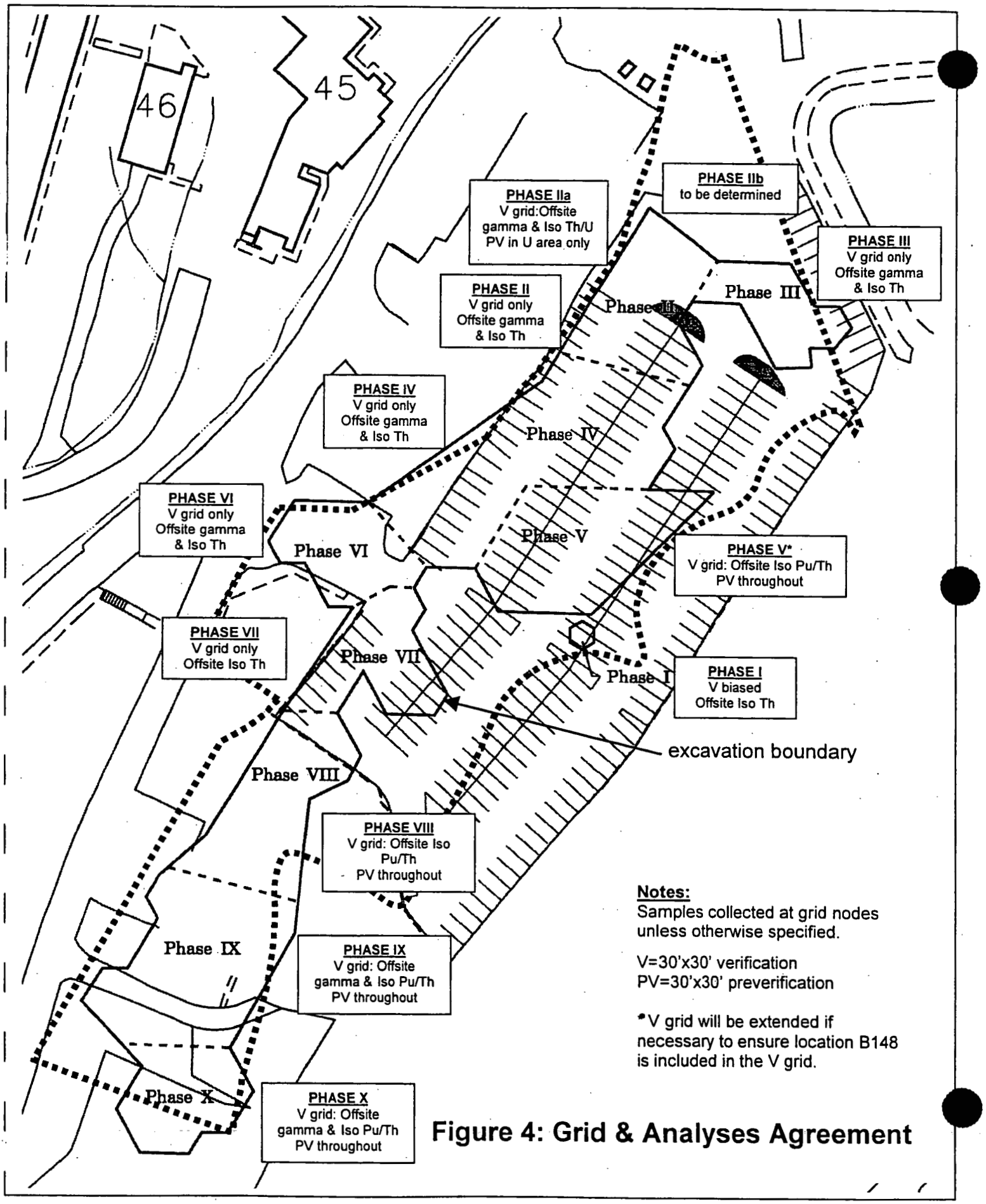
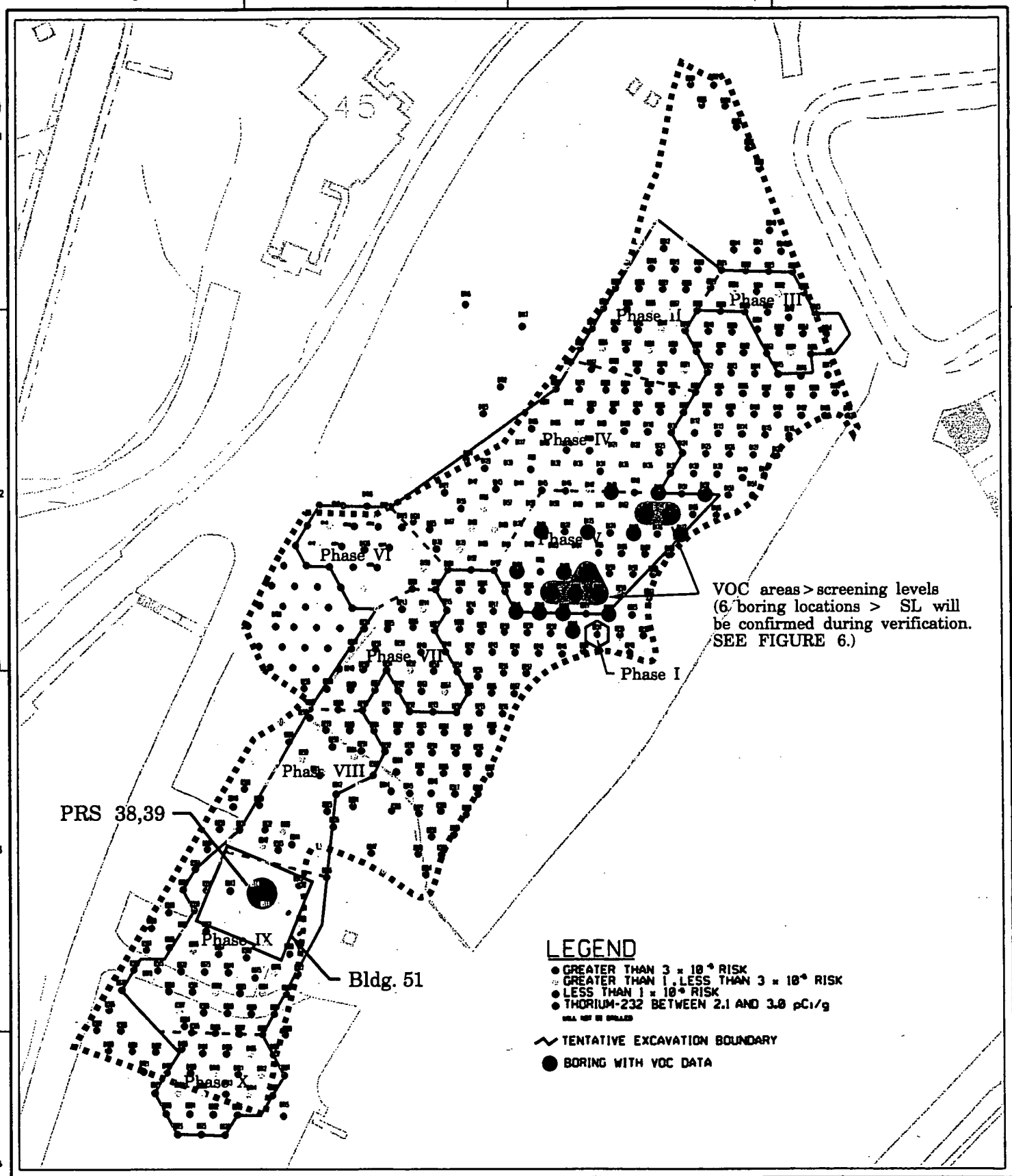


Figure 4: Grid & Analyses Agreement



SCALE

FEET 25 0 50 100 150

MOUND

Environmental Restoration Geographic Information System

Figure 5: PRS 66 Area with PRS 38,39 and Building 51

UNCLASSIFIED

prs38_39figure5ver.dgn

STE ER-GIS

STATUS MD-REL-02/20/03 MSTATION / J

SCALE GRAPHIC SHEET 1 OF 1

05/29/03 SSF

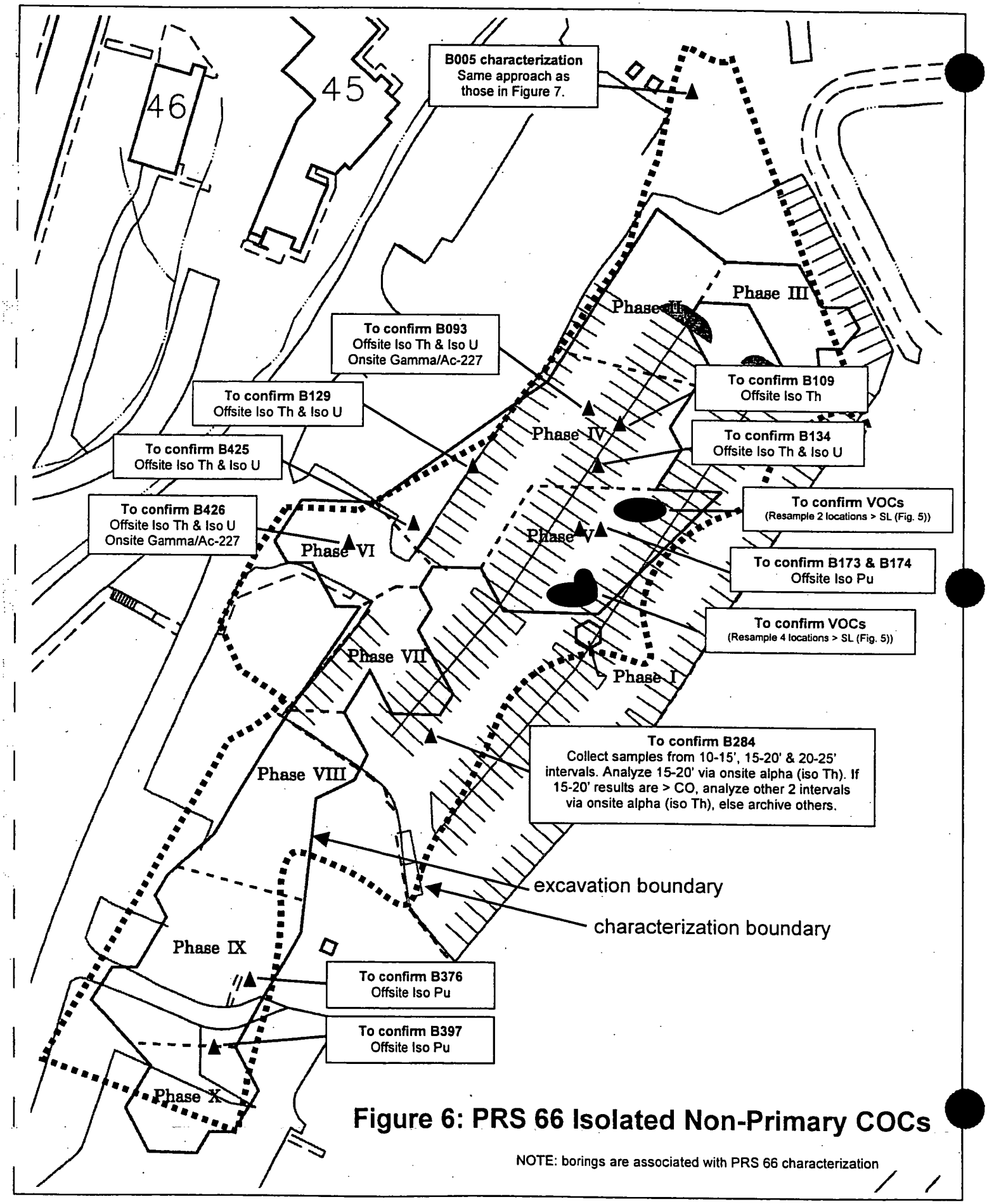
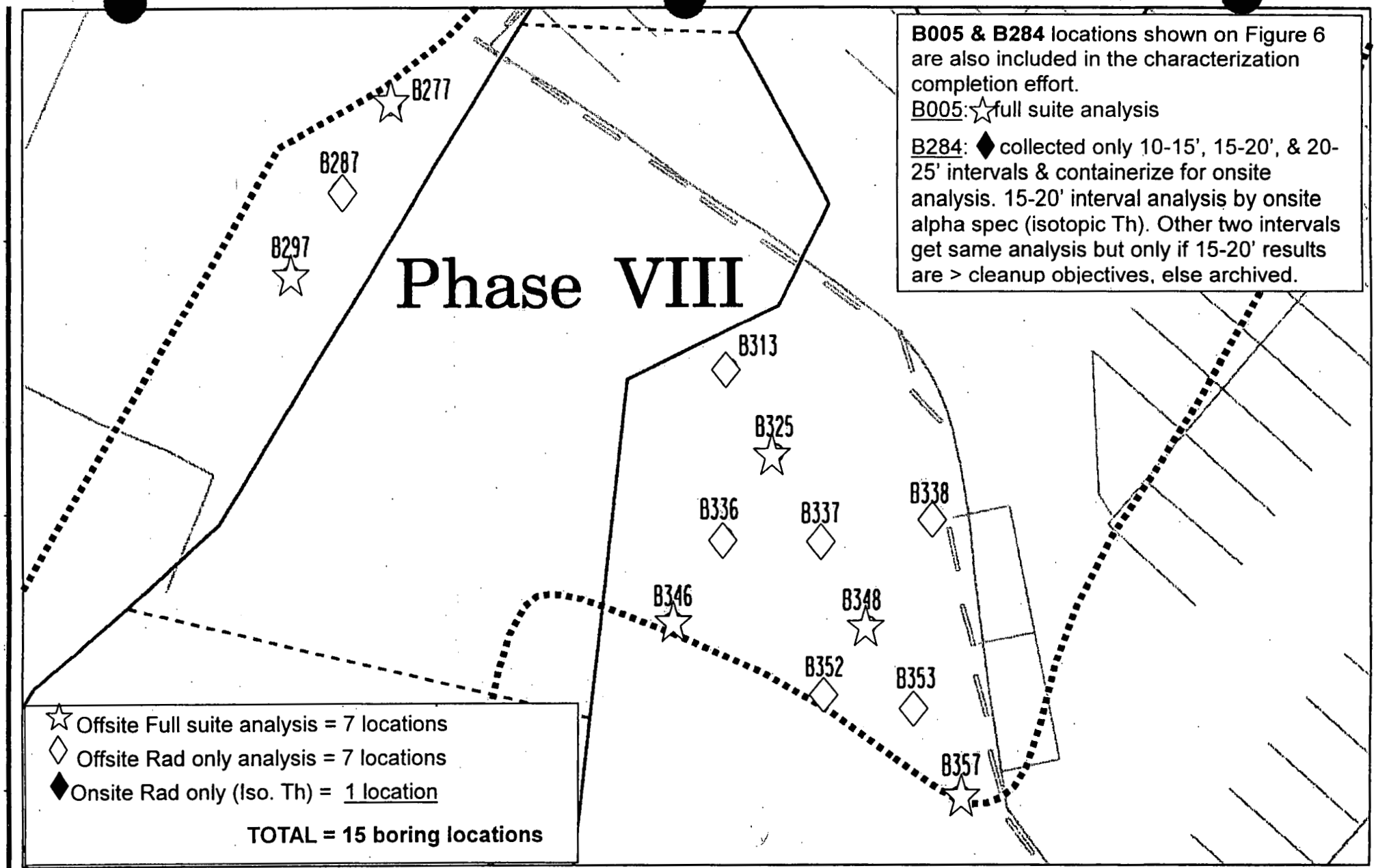


Figure 6: PRS 66 Isolated Non-Primary COCs

NOTE: borings are associated with PRS 66 characterization



PRS 66 Area Boundary

Tentative Excavation Boundary

Soil Boring

GRAPHIC SCALE

10 5 0 10 20FT

MOUND

Environmental Restoration Geographic Information System

UNCLASSIFIED

phase8undrill.dgn

Figure 7: PRS 66 Undrilled Borings Outside Dig Area

ISS	DATE	REVISION	BY	CHKD	ENG	LPREC	APVD	B
	02/20/03		SSR					

STATUS MD-REL -02/20/03

ORIGIN MSTATION

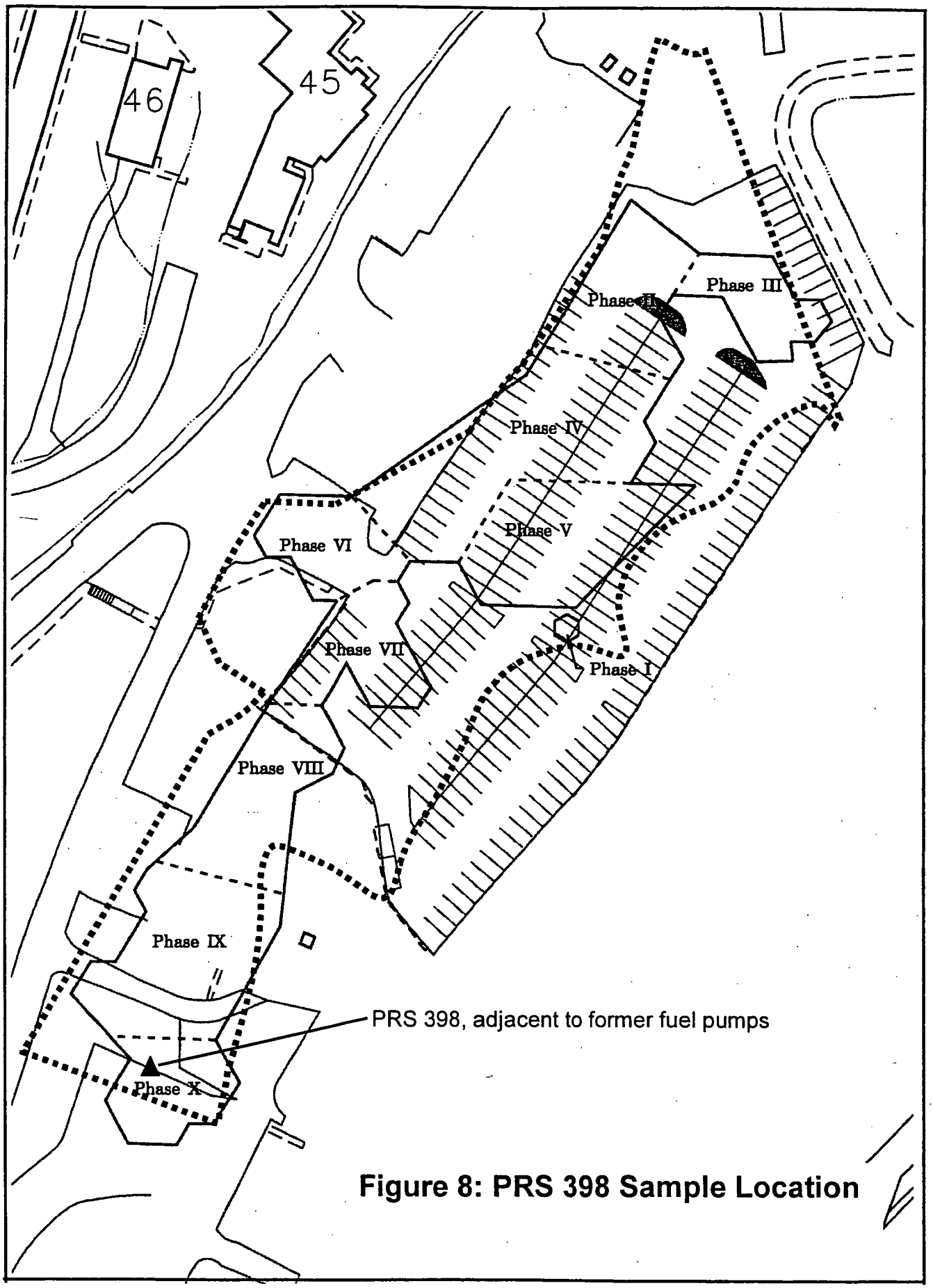


Figure 8: PRS 398 Sample Location

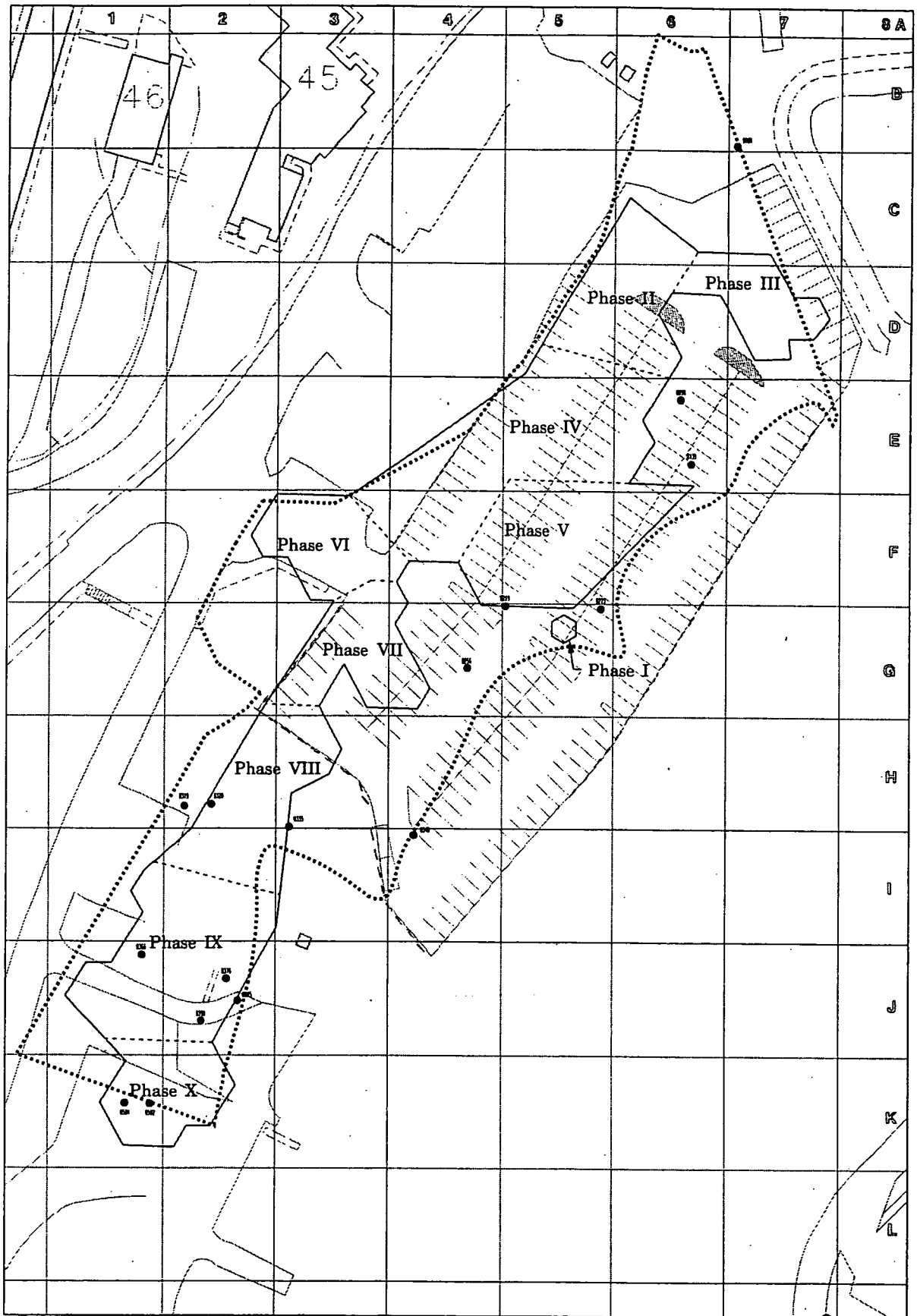


FIGURE 9

Legend

- Sample Location
- Tentative Excavation Boundary
- Area Boundary

0 20 40 60 80 100
Scale in Feet

MOUND
Environmental Restoration Geographic Information System

PRS 66 Pu-238 Sampling Locations above 6.1 pCi/g used in 95% UCL Calculations

UNCLASSIFIED

ISS	DATE	REVISION	BY	CHKR	ENG	M
	02/26/03		SSP			

STATUS MO-REL-05/16/02 ORIGIN MSTATION / J

APPENDIX D

TABLES

Table 1: PRS 66 Contaminants & Analyses (pCi/g)

Analyte	Background	RBGV (10^{-5})	Cleanup Objective	Hot Spot Criteria [4]	Analyses	CRDL
Thorium-230+D (isolated at Phase I)	1.9	0.9	2.8	4.6	Onsite Isotopic Th (MD-80030[6]) (Phase I preverification samples) / Offsite Isotopic Th (A-012[5]) (Phase I verification samples)	0.1
Thorium-232+D	1.4	0. 7 [1]	2.1[2]	3.5	Offsite Isotopic Th (A-012[5]) (Phases II-X verification samples)	0.1
Plutonium-238	0.13	61	55[2]	165.13	Offsite Isotopic Pu (A-012[5]) (Phases V, VIII, IX, X verification samples)	0.01
Plutonium-239 (isolated)	0.18	60	62	180.2	Offsite Isotopic Pu (A-012[5]) (Figure 6 isolated locations)	0.01
Uranium-234+D (isolated)	1.1	0.9	2.0	3.8	Onsite gamma spec[6] (long count) (Phase IIa preverification samples) / Offsite Isotopic U (A-012[5]) (Figure 6 isolated locations & Phase IIa verification)	0.1
Uranium-238+D (isolated & Phase IIa)	1.2	1.0	2.2	4.2		0.1
Actinium-227+D	0.11	4.5	4.6[2]	13.61	Onsite gamma spec[6] (long count) (Figure 2 preverification locations) / Offsite gamma spec (A-015 [5]) (Figure 2 verification locations)	0.8
Cesium-137+D	0.42	3.4	3.8[2]	10.62		0.2
Radium-226+D	2.0	0.9	2.9[2]	4.7		1.3

VOCs (isolated)	Analytes and comparison criteria are included as Appendix E and described in Appendix B.	A-001[5], CLP SOW (offsite VOCs)

Footnotes on next page

Table 1: PRS 66 Contaminants & Analyses [footnotes]

NA: not applicable RBGV: Risk-Based Guideline Value. CRDL: contract-required detection limit.
Radionuclides labeled with a "+ D" indicate that pertinent daughters are included within the risk calculation.

(1) These guideline values are based on the more restrictive of the Construction Worker and Site Employee Values. These values were calculated using the methodology contained in Risk-Based Guideline Values, Mound Plant, Miamisburg, Ohio, March 1997, Final (Revision 4)(DOE 1997) but were performed using April 2001 HEAST slope factors.
(2) Cleanup objective as specified in the PRS 66 (Including PRS 80/40/38/39) Action Memo EE/CA, Public Review Draft, October 2002.
(3) Based on April 2001 HEAST slope factors, the 10^{-5} RBGV for Pu-238 is 61 pCi/g; however, 55 pCi/g was retained because of its familiarity to the public.
(4) Hot Spot Criteria = 10^{-5} GV x 3 + Bkgd.
(5) Method per Technical Manual MD-80045, Issue 2, Mound Methods Compendium, 22 January 2002.
(6) Methods per Technical Manual MD-80030, Issue 34, Environmental Analytical Procedures, 4 September 2002.

Table 2: PRS 398 Contaminants of Concern (mg/kg or ppm)

Analysis	Analyte	Background	10^{-6} RBGV or HI=1[1]	Method	PQL or CRDL
BTEX	Benzene	NA	8.9 RBGV	A-001[2] CLP SOW (100%)	0.002
	Toluene	NA	250 HI		0.002
	Ethylbenzene	NA	0.48 HI		0.002
	Total xylenes	NA	430,000 HI		0.006
PAH	Benzo(a)anthracene	NA	4.1 RBGV	A-028[2] SW-846 8270 (100%)	0.66
	Benzo(a)pyrene		0.41 RBGV		0.66
	Benzo(b)fluoranthene		4.1 RBGV		0.66
	Benzo(k)fluoranthene		41.0 RBGV		0.66
	Chrysene		410 RBGV		0.66
	Dibenz(a,h)anthracene		0.41 RBGV		0.66
	Indeno(1,2,3-cd)pyrene		4.1 RBGV		0.66
	Napthalene		Not listed		0.66

HI: Hazard Index (used in the absence of a RBGV)
RBGV: Risk-Based Guideline Value
PQL: practical quantitation limit
CRDL: contract-required detection limit

VOC: volatile organic compound
NA: not applicable
PAH: polycyclic aromatic hydrocarbon
ppm: parts per million

(1) These guideline values are based on the more restrictive of the Construction Worker and Site Employee Values. These values were calculated using the methodology contained in Risk-Based Guideline Values, Mound Plant, Miamisburg, Ohio, March 1997, Final (Revision 4) but were performed using April 2001 HEAST slope factors.
(2) Method per Technical Manual MD-80045, Issue 2, Mound Methods Compendium, 22 January 2002.

Table 3: Summary of Applicable SOPs

SOP No. and Title	Procedure Description	Deviations
S-001: General Instructions for Field Personnel	Follow procedures outlined in the SOP.	None.
S-002: Soil Sampling with a Spade and Scoop	Follow procedures outlined in the SOP.	None.
S-004: Guide to Management of Collected Investigative-Derived Material	Follow procedures outlined in the SOP.	None.
S-020: General Equipment Decontamination	All sampling equipment will be decontaminated between sampling locations.	Methanol and hexane rinses for the decontamination of sampling equipment will not be used.
S-028: Sample Control and Documentation	Follow procedures outlined in the SOP.	None.
S-029: Guide to Handling, Packaging, and Shipping of Samples	Follow procedures outlined in the SOP.	None.
*MD-80036, Operation 30030: Operation of Ludlum 2360 Scaler with Ludlum 43-89 Alpha/Beta Scintillators	Mound RCT will use instrument per SOP and record field measurements on radiological survey data sheet (RSDS) form.	None.
*MD-80036, Operation 30007: Operation of Bicron Analyst with G3 (3x3) NaI Detector	Mound RCT will use instrument per SOP and record field measurements on RSDS form.	None.
*MD-80036, Operation 30005: Operation of the Bicron FIDLER	Mound RCT will use instrument per SOP and record field measurements on RSDS form.	None.

*Methods per Technical Manual MD-80036, Issue 31, Radiological Operations Procedures, 11 March 2003

NOTE: SOPs related to installation of soil borings will conform to the original characterization SAP.

Table 4: Containers, Holding Times, and Preservatives

Analysis	Method	Matrix	Container Type	Bottle Size	Number of Containers	Preservative	Holding Time
Onsite Gamma or Alpha Spec	MD-80030(1)	Soil	EPA dish	250 mL or as specified by lab	1	None	None
Offsite Alpha Spec	A-012(2)	Soil	Per lab's instructions	750 grams	1	None	None
	A-012(2)	Water	Plastic or glass	4 liters	2	pH $\leq$2 with HNO_3	None
BTEX	A-001(2) CLP SOW	Soil	Glass w/ Teflon lined septum	120 ml (minimal headspace)	1	Cool to 4°C	14 days
PAH	A-028(2) SW 8270C	Soil	Glass w/ Teflon lined lid	100 g	1	Cool to 4°C	14 days extraction 40 days analysis
VOCs	A-001(2) CLP SOW	Soil	Glass w/ Teflon lined septum	120 ml (minimal headspace)	1	Cool to 4°C	14 days
		Water	Glass vial w/ Teflon lined septum	40 ml vial	2	Cool to 4°C pH$\leq$2 w/HCL	14 days

BTEX: benzene, toluene, ethylbenzene, xylene
PAH: polycyclic aromatic hydrocarbon
VOCs: volatile organic compounds
(1) Methods per Technical Manual MD-80030, Issue 34, Environmental Analytical Procedures, 4 September 2002.
(2) Method per Technical Manual MD-80045, Issue 2, Mound Methods Compendium, 22 January 2002.

APPENDIX E

VOC ANALYTES & COMPARISON CRITERIA

VOC Detection Limits and Cleanup Objectives (ppm)

Analyte	Detection Limit(a)	Cleanup Objectives(b)
1,1,1-trichloroethane	0.005	3,310 H
1,1,2,2-tetrachloroethane	0.005	8.9 R
1,1,2-trichloroethane	0.005	19 R
1,1-dichloroethane	0.005	21,300 H
1,1-dichloroethene	0.005	1.2 R
1,2-dichloroethane	0.005	3.45 R
1,2-dichloroethene (total)	0.005	2,130 H
1,2-dichloropropane	0.005	21.6 H
2-butanone	0.01	22,800 H
2-hexanone	0.01	NC
4-methyl-2-pentanone	0.01	17,000 H
Acetone	0.01	21,000 H
Benzene	0.005	14.5 R
Bromodichloromethane	0.005	480 R
Bromomethane	0.01	12.6 H
Carbon disulfide	0.005	1,160 H
Carbon tetrachloride	0.005	5.38 R
Chlorobenzene	0.005	489 H
Chloroethane	0.01	15,500 H
Chloroform	0.005	5.2 R
Chloromethane	0.01	27.1 R
Cis-1,3-dichloropropene	0.005	NC
Dibromochloromethane	0.005	355 R
Ethylbenzene	0.005	4,760 H
Methylene chloride	0.005	203 R
Styrene	0.005	14,500 H
Tetrachloroethene	0.005	187 R
Toluene	0.005	2,000 H
Trans-1,3-dichloropropene	0.005	NC
Tribromomethane	0.005	NC
Trichloroethene	0.005	50.9 R
Vinyl chloride	0.01	4.1 R
Xylenes (total)	0.005	426,000 H

(a) source of quantitation limits is: Technical Manual MD-80045, Issue 2, Methods Compendium, January 22, 2002. These are applicable to reagent grade water or a purified solid matrix.
(b) More restrictive of 10^{-5} Risk-Based Guideline Value (RBGV) or Hazard Index equal to one
R: 10^{-5} RBGV
H: Hazard Index=1
NC: not calculated
ppm: parts per million. This unit is equivalent to mg/kg for solid samples and to mg/l for dilute samples in water.

APPENDIX F

95% UCL CALCULATIONS

95 % UCL calculation for Pu-238 on PRS-66

Summary

	95 % UCL all data		95 % UCL No Gamma	
Phase I Pu	0.8184		0.5822	
Phase IV OB Pu-238			1.1353	
Phase V OB Pu-238			0.5940	
Phase VIII	5.4719		3.0149	
Phase IX O	31.2400	note 1	21.2163	
Phase X O	28.8400	note 2	2.6800	note 2
all combine	1.3110		0.8202	

note 1 Max value 31.24 used, calculated ucl exceeds the max number
note 2 Max value n < 20

ATTACHMENT B

GENERAL MEDIA INFORMATION

DOE NEWS

U.S. DEPARTMENT OF ENERGY • OHIO FIELD OFFICE • MIAMISBURG, OH 45343

CH2MHILL

A JOINT PRESS STATEMENT
FOR IMMEDIATE RELEASE

News Media Contact:
Jane Greenwalt, DOE (937) 865-3116
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January 22, 2003

ANOTHER STEP IN *NEW DIRECTIONS* IS TAKEN AT THE MOUND SITE

MIAMISBURG, OHIO, January 15, 2003 – The U. S. Department of Energy (DOE) announced today that its Miamisburg Closure Project contractor, CH2M HILL, Mound, Inc., has begun a soil removal effort known as Potential Release Site (PRS) 66 at its Mound facility in Miamisburg. The facility was built by the U.S. Government in the mid-1940's and played an integral role in the development, manufacturing and evaluation of explosive components for the nuclear defense stockpile. It is now being cleaned up and transferred to the Miamisburg Mound Community Improvement Corporation (MMCIC) for economic development.

The PRS 66 area was once a steep-sided ravine in which contaminated construction debris and corroded drums were disposed. The area has been filled with soil over the years and until recently was used as a parking lot. Extensive characterization has been conducted in the area for types and quantities of radioactive and chemical contamination. The project work plan has been coordinated with and closely followed by the United States and Ohio Environmental Protection Agencies and the PRS 66 Technical Working Group. The working group was chartered by the Mound Reuse Committee, a committee established by the City of Miamisburg in 1999 to review activities associated with the facility. Rick Provencher, DOE Director of the Project, says that the work is expected to completed on or before November 2004. He added that "beginning this project shows how successful teamwork can be. DOE and its contractor have worked hand in hand with members of the community and the regulators to make sure the work is performed safely and the project is completed on schedule." John Fulton, CH2M HILL, Mound, Inc. President and CEO, indicated that he was "pleased with the safety, production, radiation control measures and the overall momentum demonstrated by the project team."

Slopebacks will be used to insure soil stability and worker safety as the exhumation proceeds. Contaminated material will be hauled to a railroad load-out area for offsite disposal at facilities licensed to receive it in Utah and Nevada.

Mike Grauwelman, MMCIC President, confirmed that the PRS 66 area will be transformed into the final section of Vanguard Boulevard which will run through the center of the site and connect to the new South entrance and to the Mound Avenue entrance.

PRS66 site

(jpg file available upon request to englmb@doe-md.gov)

B1/2

Mound cleanup unearths legendary missing truck

Tuesday, August 19 will go down in the history books at Mound, for this was the morning the excavators unearthed the legendary truck.

As the legend has been told, a truck was disposed of in a ravine on the project site because it was contaminated with radioactive materials during the 1960s. PRS 66 was a natural valley located between two larger hills at the site. These hills are referred to as "Main Hill" and the "SM/PP Hill."

PRS is an acronym for Potential Release Site meaning the site could potentially be contaminated due to previous activities in and around the area. PRS 66 is expected to be the single largest Environmental Restoration effort at the Mound Closure site, with about 20 Environmental Restoration (ER) personnel working to remediate over 2 million cubic feet of soil, half of which has already been excavated from the site.

In 1947 and 1948, the area underwent some major changes, including construction of a roadway in the area. In about 1947, an area was backfilled and two wooden warehouse structures were constructed and since demolished, including an above ground gasoline tank.

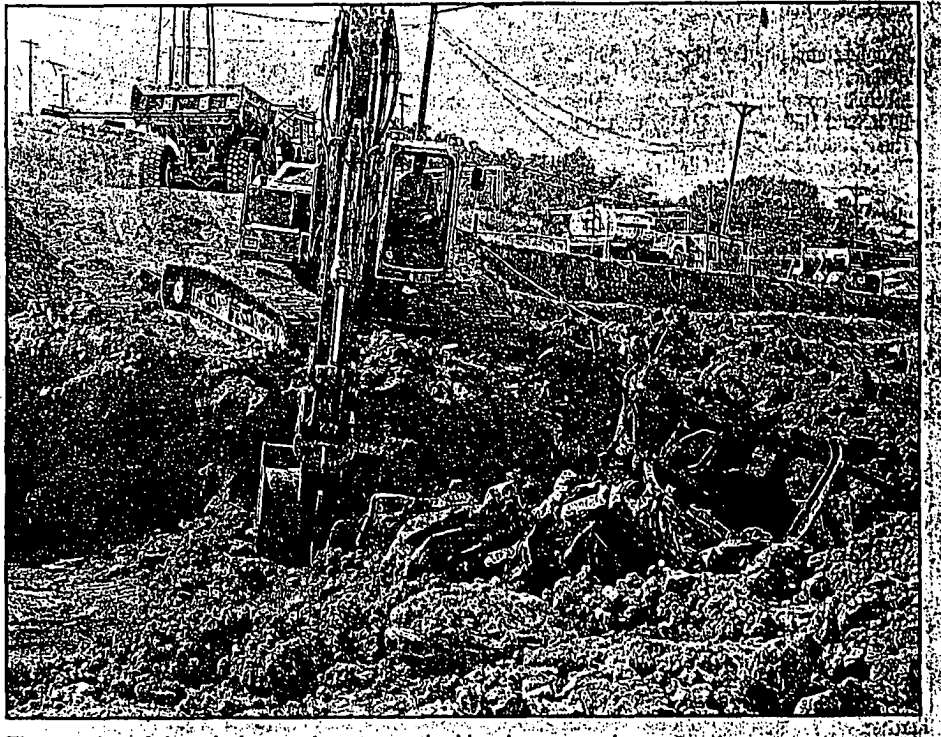
NEWS FROM THE HILL

In the 1950s and 1960s residual materials including thorium, polonium-210 and some actinium-227 contaminated materials were disposed of at the PRS site. It is estimated that between 10,000 and 15,000 used drums were crushed and buried in the ravine. These drums had been used to store thorium, but were empty when buried. Today, large numbers of drum fragments have been removed during the environmental restoration of the site.

It is reported that drums were loaded on a flatbed truck during the repackaging of thorium from one drum to another drum. Thorium is a corrosive material, hence the reason for repackaging. The truck was expected to have been buried in the early 1960s and to have been contaminated.

After the truck was unearthed this week it was tested for contamination. No contamination was detected either on the metals parts of the truck, or in the soil surrounding the truck. The truck was discovered in the northwest area of the site, approximately 15-20 feet down. The truck was discovered when heavy equipment operators were in the process of digging a ramp on which they could operate their equipment.

If you have questions about the Miamisburg Closure Project contact Jane Greenwalt, DOE at 673-4568 or Lynette Bennett, Manager of External Communications for CH2M HILL Mound, Inc. at 865-5519. If you have stories to share, please submit them to lbennett@ch2m.com or write Lynette Bennett, Manager of External Communications, CH2M HILL Mound, Inc., PO Box 3030, Miamisburg, Ohio 45343-3030.



The remains of the missing truck are unearthed by cleanup workers.

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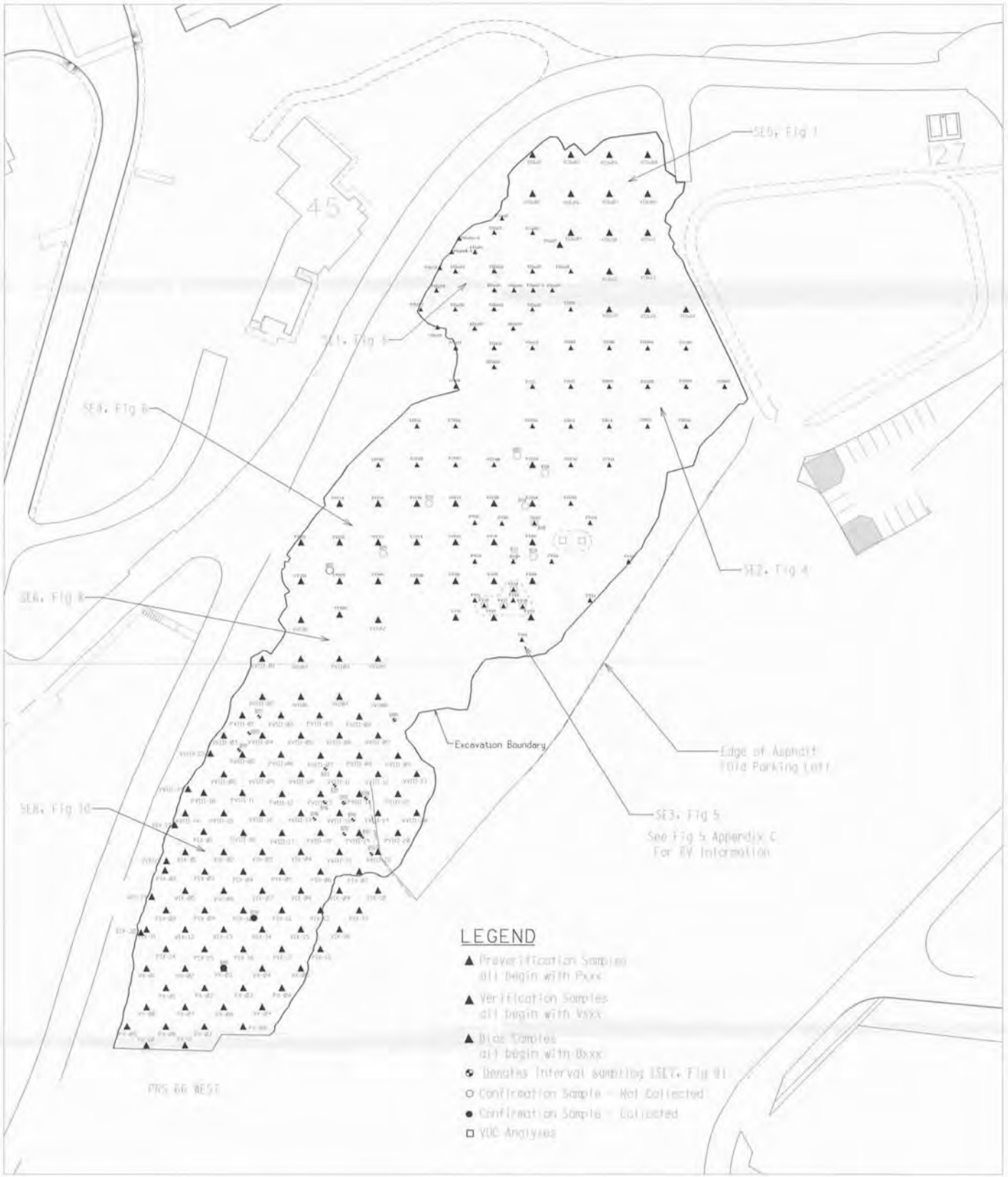
ATTACHMENT C

PHOTOGRAPH DOCUMENTATION

PRS 66 restoration facing north. Building 45 on left side of photo.

C1/1



0 25 50 100 150 200 240
Scale in Feet

MOUND
Environmental Restoration Geographic Information System

FIGURE 11
PRS 66
SAMPLE LOCATIONS

UNCLASSIFIED
oscreport.dgn
STE
ER-GIS
Graphic
MO-REL-07/15/05
MSTATION

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