COMPILATION OF SOIL SAMPLE DATA SEAWAY SOUTHSIDE AREA

(EAST OF ASHLAND 1 FINAL STATUS SURVEY UNITS 24 AND 31)

FUSRAP ASHLAND 1 REMEDIAL ACTION
TONAWANDA, NEW YORK

CONTRACT NO. DACW 41-01-D-0031, PRAC,
TASK ORDER NO. DN02

February 2003

IT CORPORATION

U.S. ARMY CORPS OF ENGINEERS
BUFFALO DISTRICT OFFICE

FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM

200.1e

Seaway_04.02_0017_a

BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, AND ENVIRONMENTAL REVIEW
COMMENT SHEET

Complete and Return to: [redacted]

Project: FUSRAP Compilation of Surface Soil Sample Data Seaway Southside Area

Reviewer/Section: [redacted] Argonne National Laboratory **Date:** 6 March, 2003

COMMENT NUMBER	SECTION	COMMENT	RESPONSE
1	General	The title of the report "Compilation of Surface Soil Sample Data…" implies that all the samples were collected from the surface. Many of the soil samples discussed in the report were collected from subsurface intervals. Additionally, in the second paragraph of the Introduction, the text states that samples were collected on the "Seaway Industrial Park property where a subsurface layer or lens of MED impacted material was encountered during excavation". Suggest revising the title of the report by deleting the word surface. Additionally, in Table 1 suggest revising the depth column or providing a footnote for clarification.	Title of report will be changed to "Compilation of Soil Sample Data Seaway Southside Area (East of Ashland 1 Final Status Survey Units 24 and 31), Tonawanda, New York". Table 1 will be revised to indicate the sample depths.
2	General	It is my understanding that the "Seaway Southside Area" includes all the areas east of the Ashland 1 site including the areas east and north of the remediated Seaway Area D property. However, the report does not include the samples collected on the Seaway Industrial Park east and north of the FSS class 1 units for Seaway Area D. I know that these data are included in two other reports. For clarification, I would recommend revising the report title to "Compilation of Soil Sample Data Seaway Southside Area (East of Ashland 1 Final Status Survey Units 31 and 24), Tonawanda, New York".	See Response #1.
3	1.0	In the second sentence of paragraph two of the Introduction, "Unit" should be "Units". In the third sentence of paragraph two "is exceeds" should be "that exceed". In the third sentence of paragraph two suggest changing "site-specific threshold" to "site-specific cleanup criteria".	Comment noted. Text will be changed.
4	Figure 1	The gamma walkover data collected east of FSS Unit 31and shown in Figure 1 are not discussed in the report. Recommend providing a short paragraph about these data that includes when the survey was conducted. In the legend of Figure 1, suggest adding "Gamma Walkover Data" above the color-coded circles and rate measurements.	Comment noted. Text will be added to identify the dates of these walkovers. "Gamma Walkover Data" will be added to the figure.

BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, AND ENVIRONMENTAL REVIEW
COMMENT SHEET

Complete and Return to: [redacted]

Project: FUSRAP Compilation of Surface Soil Sample Data Seaway Southside Area

Reviewer/Section: [redacted] Argonne National Laboratory **Date:** 6 March, 2003

COMMENT NUMBER	SECTION	COMMENT	RESPONSE
5	Figure 1 and Table 1	Samples A1-SC-SC-0839 and A1-SC-SC-0842, collected in the buffer zone east of FSS Unit 31, are included in the report. In previous discussions, it was my understanding that samples collected in late February and early March 2002 were used to guide the excavation and have subsequently been removed. If these two samples are listed in the report should the other samples collected in the same general vicinity and during the same time period also be included (e.g., A1-SL-SC-0843, A1-SC-SC-0844, A1-SC-SC-0835, and A1-SC-SC-0836)?	Sample A1-SC-SC-0839 remains in place due to its location on a wall where no further excavation took place. A1-SC-SC-0842 was presented on the drawing because no definitive information was found to indicate that it had been removed. Regarding the other samples cited (A1-SL-SC-0843, A1-SC-SC-0844, A1-SC-SC-0835, and A1-SC-SC-0836) review of Daily QC Reports and SEC drawings indicate that these soil samples were removed during excavation activities in February 2002.
USACE Comments			
1		There are two pink lines on Figure 1. One is identified as the property boundary. The other is not identified.	The line identified as Property Line is the Ashland 1 eastern property line. The second line indicates the eastern boundary of a 60' wide easement granted to the New York Central & Hudson River Railroad. It is embedded in the CAD survey drawings. The line will be removed to eliminate any confusion.
2		"The location of TP 402 was selected to confirm subsurface conditions reported at a former soil boring location (B03R008) drilled for the Remedial Investigation Report for the Tonawanda Site by Bechtel. Radiological analysis of soil collected from 5.0 feet to 6.0 feet below grade at this borehole indicated Th-230 at 78.0 pCi/g." The 78 refers to the RI, not the test pit sample, but I'm not sure this is clear.	The Th-230 result (78 pCi/g) cited was from a soil sample collected from the borehole installed by Bechtel as part of the Remedial Investigation. The Th-230 result (603 pCi/g) for soil collected from testpit TP 402 (A1-SL-TP-0065) is presented in Table 1. A sentence will be added to direct a reader to the table for the testpit soil result.
3		Please number pages	Comment noted. The document will be paginated.

BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, AND ENVIRONMENTAL REVIEW
COMMENT SHEET

Complete and Return to: [redacted]

Project: FUSRAP Compilation of Surface Soil Sample Data Seaway Southside Area

Reviewer/Section: [redacted] Argonne National Laboratory **Date:** 6 March, 2003

COMMENT NUMBER	SECTION	COMMENT	RESPONSE
4	Section 1.0, 2nd para., 6th line	Change "is" to "which".	Comment noted. Text will be changed.

Compilation of Soil Sample Data
Seaway Southside Area
(East of Ashland 1 Final Status Survey Units 24 and 31)
Tonawanda, New York

1.0 Introduction

The U. S. Army Corps of Engineers (USACE) Buffalo District was designated by USACE Headquarters to remediate radiologically contaminated sites located in the Town of Tonawanda, New York. Remediation of the Ashland 1 site is part of the USACE's Formerly Utilized Sites Remediation Action Program (FUSRAP), which was established by the Department of Energy (DOE) to identify, investigate and cleanup or control sites previously used by the Atomic Energy Commission (AEC) and its predecessor, the Manhattan Engineer District (MED). IT Corporation (IT), now Shaw Environmental & Infrastructure, has been designated the Remedial Action Contractor for the Ashland 1 and Seaway D Site.

The purpose of this report is to present data collected from the Seaway Southside Area during remedial action operations conducted at the Ashland 1 site. Samples were collected on the Seaway Industrial Park property from an area located to the east of Final Status Survey (FSS) Unit 31 and 24 where a subsurface layer or lens of MED impacted material was encountered during excavation. The material contains concentrations of Thorium–230 that exceeds the site-specific cleanup criteria of 40 picocuries per gram (pCi/g) as outlined in the Ashland 1, Ashland 2 and Seaway Area D Record of Decision (ROD).

To prepare this submittal, the Ashland 1 project records were reviewed to determine the extent of the remedial action on the Ashland and adjacent Seaway properties. Records consulted included:

- Daily Quality Control Reports documenting day-to-day excavation activities,
- Review of project photographs,
- Excavation diagrams and gamma walkover maps prepared by Safety and Ecology Corporation (SEC),
- Civil and FSS survey maps prepared by Niagara Boundary,
- Analytical testing results from gamma spectroscopy analysis performed at SEC's onsite laboratory, and,
- Field notes from project personnel involved in the remedial effort.

As the remedial effort performed earlier at the Seaway Area D has already been documented and submitted to the USACE, no review of that report was made.

2.0 Findings

Excavation in Final Status Survey (FSS) Unit 24 began on August 23, 2001 and was completed on November 9, 2001. Excavation in FSS Unit 31 proceeded between February 11 and March 27, 2002. Under direction of the USACE, excavation limits of both units were extended beyond the eastern Ashland property line onto the adjacent Seaway property in order to remove MED related material and to establish a buffer zone beyond the Ashland property line. For Final Status Survey purposes, the boundary for both FSS units was established at the property line between the Ashland and Seaway parcels. Gamma crosswalk surveys and FSS soil sampling have verified remediation on the Ashland portion of these units. However, an unspecified volume of MED-related material remains on the adjacent Seaway property.

2.1 Buffer Zone Adjacent to Survey Unit-31

Review of the Ashland project records indicates that the buffer area on the Seaway landfill property, adjacent to Survey Units (SU) 31 and 24, has an indeterminate amount of MED-related material remaining in place (Figure 1). Initially, excavation proceeded up to the Ashland property line where MED-related material extended onto the Seaway property adjacent to the SU-31 area. In January of 2001, IT requested direction from USACE as to whether the material should be removed beyond the property line. The USACE directed that three (3) testpits be completed to determine whether the material was present in the subsurface beyond the property line. The testpits were excavated on June 4, 2001. Discrete soil samples (A1-SL-TP-063 through 065 from TP 400 – 402 respectively) collected at depths of approximately 4.5 feet to 5 feet below grade exhibited Th-230 concentrations exceeding ROD criteria. Testpits TP 400 and TP 401 were located on the west side of the Seaway access roadway. TP 402 was installed on the east side of the road. The location of TP 402 was selected to confirm subsurface conditions reported at a former soil boring location (B03R008) drilled for the Remedial Investigation Report for the Tonawanda Site by Bechtel. Radiological analysis of soil collected from 5.0 feet to 6.0 feet below grade at this borehole indicated Th-230 at 78.0 pCi/g.

Subsequent excavation performed in the buffer area resulted in the removal of material evaluated by TP 400 and TP 401. The area at TP 402 (A1-SL-TP-0065) was not subject to further excavation. Radiological results of the soil sample collected at TP 402 are presented in Table 1.

2.2 Survey Unit-31 Buffer Zone “Lens”

Excavation of the area east of SU-31 exposed a “lens” of material in the eastern sidewall that was characterized by soil sampling in April 2002. A total of 12 soil samples were collected by advancing a soil auger approximately 6 inches horizontally into the contaminated layer. Four (4) samples were collected on April 2, 2002. An additional eight (8) soil samples were obtained on April 23, 2002 following dewatering of the adjacent floor area. All samples were analyzed by gamma spectroscopy at the on-site

lab. A total of nine (9) samples (A1-SL-SC-0878 through 0881 and A1-SL-SC-0901 through 0905) were found to have Thorium-230 concentrations that exceeded the cleanup criteria of 40 pCi/g (Table 1). These impacted sample locations are bounded to the north by A1-SL-SC-0907 (Th-230: < 10.0 pCi/g) and to the south by A1-SL-SC-0896 (Th-230: < 10.5 pCi/g) and A1-SL-SC-0906 (Th-230: < 10.5 pCi/g).

According to sample log sheets completed at the time of sampling, the lens is described as being approximately 12 to 18 inches thick and is comprised of black to reddish granular material mixed with clay. The lens appears to taper to less than 6 inches at its north and south ends. Due to the paucity of data concerning the lens' geometry or areal extent beneath the Seaway property, accurate quantification of the volume of material remaining in the lens was not possible.

Shortly after collection of the second set of lens samples, the USACE directed that site activities cease and the Ashland 1 project undergo demobilization until further funding could be secured. As a result, no further investigative or remedial work was performed in the buffer zone area after April 23, 2002.

Gamma walkover data shown on Figure 1 was acquired from the buffer zone on two different dates. The north end of the zone, northwest of sample location A1-SL-SC-0831, was walked on March 19, 2002 and the remaining portion was walked April 24, 2002.

2.3 Survey Unit-24

The excavated footprint of the buffer zone extended east beyond the SU-24 boundary line and onto the Seaway property. Surface soil samples collected in this area (A1-SL-SC-0865 through 0867 and A1-SL-SC–0897 through 0900) were submitted for on-site gamma spectroscopy and were found to be below the site-specific cleanup criteria. In April 2002, direction was given by USACE to install a minimum of three test trenches along the SU-24/Seaway Landfill property line to determine investigate for the presence of MED material east of the SU-24 boundary line. This scope of work was only partially completed due to the demobilization effort that commenced on May 1, 2002. Surface soil samples were collected as described above. However, no subsurface samples were collected from the sloped areas adjacent to SU-24's northeast corner.

Figure 1 shows the location of soil samples collected in the buffer zone area and gamma walkover data acquired prior to demobilization. Sample identification, date of collection, location coordinates, static counts and analytical results are presented in Table 1.

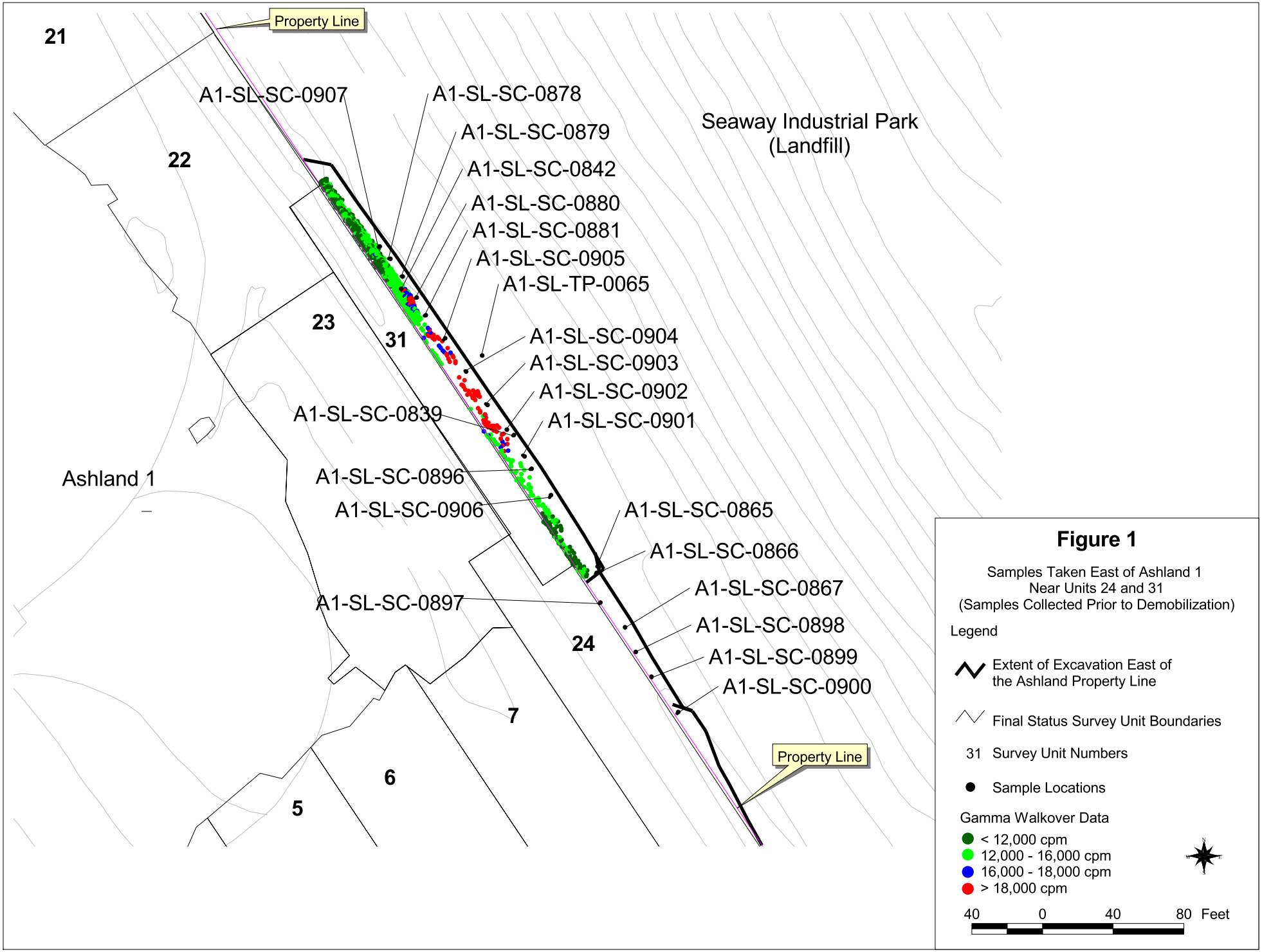
Property Line
21
22
23
31
24
7
6
5
Ashland 1
Seaway Industrial Park
(Landfill)
A1-SL-SC-0907
A1-SL-SC-0878
A1-SL-SC-0879
A1-SL-SC-0842
A1-SL-SC-0880
A1-SL-SC-0881
A1-SL-SC-0905
A1-SL-TP-0065
A1-SL-SC-0904
A1-SL-SC-0903
A1-SL-SC-0902
A1-SL-SC-0901
A1-SL-SC-0839
A1-SL-SC-0896
A1-SL-SC-0906
A1-SL-SC-0865
A1-SL-SC-0866
A1-SL-SC-0867
A1-SL-SC-0897
A1-SL-SC-0898
A1-SL-SC-0899
A1-SL-SC-0900
Property Line
Figure 1
Samples Taken East of Ashland 1
Near Units 24 and 31
(Samples Collected Prior to Demobilization)
Legend
Extent of Excavation East of the Ashland Property Line
Final Status Survey Unit Boundaries
31 Survey Unit Numbers
Sample Locations
Gamma Walkover Data
< 12,000 cpm
12,000 - 16,000 cpm
16,000 - 18,000 cpm
> 18,000 cpm
40 0 40 80 Feet

Table 1 Seaway Southside Area East of FSS Units 24 & 31

SAMPLE ID	DATE	NORTH	EAST	DEPTH	CPM	Th-230 (pCi/g)	U-238 (pCi/g)	Ra-226 (pCi/g)	Comment
A1-SL-SC-0839	2/25/2002	1090821	410021	0-6"	120421	1853.7	154.5	10.6	
A1-SL-SC-0842	3/6/2002	1090904	409957	0-6"	15239	82.5	27.8	1.3	
A1-SL-SC-0865	3/20/2002	1090746	410069	0-6"	16388	<6.0	2	0.2	
A1-SL-SC-0866	3/20/2002	1090743	410068	0-6"	15388	13	3	0.3	
A1-SL-SC-0867	3/20/2002	1090712	410084	0-6"	16278	25	3	0.4	
A1-SL-SC-0878	4/2/2002	1090921	409951	6"	20246	149	23	1.9	From Lens*
A1-SL-SC-0879	4/2/2002	1090911	409958	6"	25173	753	62	4.7	From Lens*
A1-SL-SC-0880	4/2/2002	1090899	409966	6"	20246	629	68	4.1	From Lens*
A1-SL-SC-0881	4/2/2002	1090889	409971	6"	53096	742	69	4.8	From Lens*
A1-SL-SC-0896	4/23/2002	1090802	410031	6"	18030	<10.5	2	0.2	From Lens*
A1-SL-SC-0897	4/23/2002	1090726	410070	0-6"	6283	<6.1	<0.9	0.1	
A1-SL-SC-0898	4/23/2002	1090698	410090	0-6"	8633	<6.5	1.6	0.2	
A1-SL-SC-0899	4/23/2002	1090684	410099	0-6"	6255	<10.4	1.2	0.2	
A1-SL-SC-0900	4/23/2002	1090664	410114	0-6"	8654	<8.9	<1.1	0.1	
A1-SL-SC-0901	4/23/2002	1090809	410027	6"	75742	979	89	9.1	From Lens*
A1-SL-SC-0902	4/23/2002	1090824	410017	6"	76475	1762	136	9.3	From Lens*
A1-SL-SC-0903	4/23/2002	1090838	410006	6"	79502	1563	167	14.0	From Lens*
A1-SL-SC-0904	4/23/2002	1090857	409994	6"	80308	1442	220	13.7	From Lens*
A1-SL-SC-0905	4/23/2002	1090876	409982	6"	76224	648	69	4.1	From Lens*
A1-SL-SC-0906	4/23/2002	1090787	410042	6"	13971	<10.5	2	0.2	From Lens*
A1-SL-SC-0907	4/23/2002	1090928	409945	6"	13602	<10.0	2	0.2	From Lens*
A1-SL-TP-0065	6/4/2001	1090866	410003	4.5' - 5.0'	*31823	603	49	4.5	East of Seaway Rd.

* - Soil sample collected approximately 6" horizontally into lens.

Location:	ASHLAND 1		
Site WBS:		Date Entered:	02/28/2002
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol	W/D	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SP0445	02/25/02	02/26/02	99AS0168	S.E.C.	761.0	DRY	SOIL	TH-230	421.67	16.12	PCI/G	GAMMASPEC	34.40
A1SP0445	02/25/02	02/26/02	99AS0168	S.E.C.	761.0	DRY	SOIL	PA-231	9.97	0.36	PCI/G	GAMMASPEC	0.58
A1SP0445	02/25/02	02/26/02	99AS0168	S.E.C.	761.0	DRY	SOIL	U-238	33.11	1.33	PCI/G	GAMMASPEC	4.68
A1SP0445	02/25/02	02/26/02	99AS0168	S.E.C.	761.0	DRY	SOIL	AM-241	0.93	0.00	PCI/G	GAMMASPEC	0.93
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	K-40	1.27	0.00	PCI/G	GAMMASPEC	1.27
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	CS-137	0.06	0.00	PCI/G	GAMMASPEC	0.06
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	RA-226	2.20	0.06	PCI/G	GAMMASPEC	0.04
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	AC-227	6.77	0.16	PCI/G	GAMMASPEC	0.10
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	RA-228	0.74	0.03	PCI/G	GAMMASPEC	0.09
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	TH-228	0.74	0.03	PCI/G	GAMMASPEC	0.09
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	TH-232	0.74	0.03	PCI/G	GAMMASPEC	0.09
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	TH-230	327.93	12.87	PCI/G	GAMMASPEC	30.00
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	PA-231	7.97	0.30	PCI/G	GAMMASPEC	0.50
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	U-238	28.34	1.19	PCI/G	GAMMASPEC	4.10
A1SP0444	02/25/02	02/26/02	99AS0168	S.E.C.	756.0	DRY	SOIL	AM-241	0.84	0.00	PCI/G	GAMMASPEC	0.84
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	K-40	1.66	0.00	PCI/G	GAMMASPEC	1.66
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	CS-137	0.22	0.02	PCI/G	GAMMASPEC	0.08
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	RA-226	10.58	0.30	PCI/G	GAMMASPEC	0.10
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	AC-227	22.96	0.52	PCI/G	GAMMASPEC	0.24
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	RA-228	0.87	0.05	PCI/G	GAMMASPEC	0.20
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	TH-228	0.87	0.05	PCI/G	GAMMASPEC	0.20
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	TH-232	0.87	0.05	PCI/G	GAMMASPEC	0.20
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	TH-230	1853.65	66.83	PCI/G	GAMMASPEC	70.20
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	PA-231	24.97	0.89	PCI/G	GAMMASPEC	1.17
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	U-238	154.54	5.03	PCI/G	GAMMASPEC	9.92
A1SC0839	02/25/02	02/26/02	99AS0168	S.E.C.	448.0	DRY	SOIL	AM-241	2.03	0.00	PCI/G	GAMMASPEC	2.03
A1SC0838	02/25/02	02/26/02	99AS0168	S.E.C.	625.0	DRY	SOIL	K-40	1.29	0.00	PCI/G	GAMMASPEC	1.29

[redacted]

Date: 2-28-02

Location:	ASHLAND 1		
Site WBS:		Date Entered:	03/14/2002
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	W/D	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	K-40	0.99	0.00	PCI/G	GAMMASPEC	0.99
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	CS-137	0.04	0.01	PCI/G	GAMMASPEC	0.03
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	RA-226	1.25	0.04	PCI/G	GAMMASPEC	0.03
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	AC-227	0.83	0.03	PCI/G	GAMMASPEC	0.04
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	RA-228	0.55	0.02	PCI/G	GAMMASPEC	0.07
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	TH-228	0.55	0.02	PCI/G	GAMMASPEC	0.07
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	TH-232	0.55	0.02	PCI/G	GAMMASPEC	0.07
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	TH-230	82.49	4.34	PCI/G	GAMMASPEC	15.70
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	PA-231	1.08	0.06	PCI/G	GAMMASPEC	0.25
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	U-238	27.78	1.11	PCI/G	GAMMASPEC	2.43
A1SC0842	03/06/02	03/12/02	99AS0171	S.E.C.	682.0	DRY	SOIL	AM-241	0.66	0.00	PCI/G	GAMMASPEC	0.66
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	K-40	0.43	0.00	PCI/G	GAMMASPEC	0.43
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	CS-137	0.03	0.00	PCI/G	GAMMASPEC	0.03
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	RA-226	0.25	0.01	PCI/G	GAMMASPEC	0.01
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	AC-227	0.04	0.00	PCI/G	GAMMASPEC	0.04
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	RA-228	0.23	0.01	PCI/G	GAMMASPEC	0.04
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	TH-228	0.23	0.01	PCI/G	GAMMASPEC	0.04
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	TH-232	0.23	0.01	PCI/G	GAMMASPEC	0.04
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	TH-230	7.80	0.00	PCI/G	GAMMASPEC	7.80
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	PA-231	0.20	0.00	PCI/G	GAMMASPEC	0.20
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	U-238	1.02	0.30	PCI/G	GAMMASPEC	0.96
A1TP0092	03/07/02	03/11/02	99AS0171	S.E.C.	971.0	DRY	SOIL	AM-241	0.20	0.00	PCI/G	GAMMASPEC	0.20
A1TP0089	03/07/02	03/11/02	99AS0171	S.E.C.	792.0	DRY	SOIL	K-40	1.00	0.00	PCI/G	GAMMASPEC	1.00
A1TP0089	03/07/02	03/11/02	99AS0171	S.E.C.	792.0	DRY	SOIL	CS-137	0.04	0.00	PCI/G	GAMMASPEC	0.04
A1TP0089	03/07/02	03/11/02	99AS0171	S.E.C.	792.0	DRY	SOIL	RA-226	0.17	0.01	PCI/G	GAMMASPEC	0.02
A1TP0089	03/07/02	03/11/02	99AS0171	S.E.C.	792.0	DRY	SOIL	AC-227	0.05	0.00	PCI/G	GAMMASPEC	0.05
A1TP0089	03/07/02	03/11/02	99AS0171	S.E.C.	792.0	DRY	SOIL	RA-228	0.37	0.02	PCI/G	GAMMASPEC	0.05

Approved by: [redacted] Date: 3-14-02

Location:	ASHLAND 1		
Site WBS:		Date Entered:	3/25/02
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	W/D	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SC0848	03/04/02	03/20/02	99AS0173	S.E.C.	841.0	DRY	SOIL	AM-241	0.04	0.00	PCI/G	GAMMASPEC	0.04
A1LCSFQC	01/01/02	03/21/02	99AS0173	S.E.C.	832.0	DRY	QCSPIKE	CS-137	62.25	2.93	PCI/G	GAMMASPEC	2.16
A1LCSFQC	01/01/02	03/21/02	99AS0173	S.E.C.	832.0	DRY	QCSPIKE	AM-241	217.47	11.12	PCI/G	GAMMASPEC	11.00
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	K-40	0.14	0.00	PCI/G	GAMMASPEC	0.14
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	CS-137	0.01	0.00	PCI/G	GAMMASPEC	0.01
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	RA-226	0.06	0.00	PCI/G	GAMMASPEC	0.00
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	AC-227	0.01	0.00	PCI/G	GAMMASPEC	0.01
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	RA-228	0.10	0.00	PCI/G	GAMMASPEC	0.01
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	TH-228	0.10	0.00	PCI/G	GAMMASPEC	0.01
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	TH-232	0.10	0.00	PCI/G	GAMMASPEC	0.01
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	TH-230	1.62	0.00	PCI/G	GAMMASPEC	1.62
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	PA-231	0.04	0.00	PCI/G	GAMMASPEC	0.04
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	U-238	0.21	0.06	PCI/G	GAMMASPEC	0.22
A1SC0849	03/06/02	03/21/02	99AS0173	S.E.C.	795.0	DRY	SOIL	AM-241	0.04	0.00	PCI/G	GAMMASPEC	0.04
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	K-40	0.97	0.00	pCi/GRAMS	GAMMASPEC	0.97
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	CS-137	0.03	0.01	pCi/GRAMS	GAMMASPEC	0.03
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	RA-226	0.28	0.01	pCi/GRAMS	GAMMASPEC	0.02
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	AC-227	0.14	0.01	pCi/GRAMS	GAMMASPEC	0.02
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	RA-228	0.35	0.02	pCi/GRAMS	GAMMASPEC	0.04
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	TH-228	0.35	0.02	pCi/GRAMS	GAMMASPEC	0.04
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	TH-232	0.35	0.02	pCi/GRAMS	GAMMASPEC	0.04
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	TH-230	12.69	1.56	pCi/GRAMS	GAMMASPEC	8.17
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	PA-231	0.20	0.03	pCi/GRAMS	GAMMASPEC	0.17
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	U-238	2.54	0.26	pCi/GRAMS	GAMMASPEC	1.19
A1SC0866	03/20/02	03/22/02	99AS0173	S.E.C.	751.0	DRY	SOIL	AM-241	0.32	0.00	pCi/GRAMS	GAMMASPEC	0.32
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	K-40	0.96	0.00	pCi/GRAMS	GAMMASPEC	0.96
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	CS-137	0.02	0.01	pCi/GRAMS	GAMMASPEC	0.02

Approved [redacted] Date: 2-5-03

Location:	ASHLAND 1		
Site WBS:		Date Entered:	3/25/02
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	W/D	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	RA-226	0.23	0.01	pCi/GRAMS	GAMMASPEC	0.02
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	AC-227	0.06	0.00	pCi/GRAMS	GAMMASPEC	0.02
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	RA-228	0.34	0.02	pCi/GRAMS	GAMMASPEC	0.05
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	TH-228	0.34	0.02	pCi/GRAMS	GAMMASPEC	0.05
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	TH-232	0.34	0.02	pCi/GRAMS	GAMMASPEC	0.05
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	TH-230	5.59	1.12	pCi/GRAMS	GAMMASPEC	5.97
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	PA-231	0.09	0.02	pCi/GRAMS	GAMMASPEC	0.15
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	U-238	1.66	0.21	pCi/GRAMS	GAMMASPEC	0.87
A1SC0865	03/20/02	03/22/02	99AS0173	S.E.C.	780.0	DRY	SOIL	AM-241	0.28	0.00	pCi/GRAMS	GAMMASPEC	0.28
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	K-40	0.98	0.00	pCi/GRAMS	GAMMASPEC	0.98
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	CS-137	0.04	0.00	pCi/GRAMS	GAMMASPEC	0.04
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	RA-226	0.14	0.01	pCi/GRAMS	GAMMASPEC	0.01
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	AC-227	0.05	0.00	pCi/GRAMS	GAMMASPEC	0.05
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	RA-228	0.34	0.02	pCi/GRAMS	GAMMASPEC	0.04
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	TH-228	0.34	0.02	pCi/GRAMS	GAMMASPEC	0.04
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	TH-232	0.34	0.02	pCi/GRAMS	GAMMASPEC	0.04
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	TH-230	9.12	0.00	pCi/GRAMS	GAMMASPEC	9.12
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	PA-231	0.24	0.00	pCi/GRAMS	GAMMASPEC	0.24
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	U-238	1.02	0.41	pCi/GRAMS	GAMMASPEC	1.32
A1SC0870	03/20/02	03/22/02	99AS0173	S.E.C.	786.0	DRY	SOIL	AM-241	0.23	0.00	pCi/GRAMS	GAMMASPEC	0.23
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	K-40	0.97	0.00	pCi/GRAMS	GAMMASPEC	0.97
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	CS-137	0.04	0.01	pCi/GRAMS	GAMMASPEC	0.03
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	RA-226	2.07	0.06	pCi/GRAMS	GAMMASPEC	0.03
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	AC-227	2.31	0.06	pCi/GRAMS	GAMMASPEC	0.05
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	RA-228	0.76	0.03	pCi/GRAMS	GAMMASPEC	0.08
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	TH-228	0.76	0.03	pCi/GRAMS	GAMMASPEC	0.08
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	TH-232	0.76	0.03	pCi/GRAMS	GAMMASPEC	0.08

[redacted]

Date: 2-6-03

Location:	ASHLAND 1		
Site WBS:		Date Entered:	3/25/02
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	WID	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	TH-230	316.98	12.20	pCi/GRAMS	GAMMASPEC	24.50
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	PA-231	2.93	0.12	pCi/GRAMS	GAMMASPEC	0.32
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	U-238	50.77	1.83	pCi/GRAMS	GAMMASPEC	3.85
A1SC0868	03/20/02	03/22/02	99AS0173	S.E.C.	687.0	DRY	SOIL	AM-241	0.92	0.00	pCi/GRAMS	GAMMASPEC	0.92
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	K-40	0.90	0.00	pCi/GRAMS	GAMMASPEC	0.90
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	CS-137	0.07	0.01	pCi/GRAMS	GAMMASPEC	0.02
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	RA-226	0.36	0.01	pCi/GRAMS	GAMMASPEC	0.02
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	AC-227	0.23	0.01	pCi/GRAMS	GAMMASPEC	0.02
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	RA-228	0.34	0.01	pCi/GRAMS	GAMMASPEC	0.04
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	TH-228	0.34	0.01	pCi/GRAMS	GAMMASPEC	0.04
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	TH-232	0.34	0.01	pCi/GRAMS	GAMMASPEC	0.04
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	TH-230	25.44	1.96	pCi/GRAMS	GAMMASPEC	8.57
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	PA-231	0.28	0.03	pCi/GRAMS	GAMMASPEC	0.18
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	U-238	2.60	0.27	pCi/GRAMS	GAMMASPEC	1.31
A1SC0867	03/20/02	03/22/02	99AS0173	S.E.C.	803.0	DRY	SOIL	AM-241	0.34	0.00	pCi/GRAMS	GAMMASPEC	0.34
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	K-40	0.93	0.00	pCi/GRAMS	GAMMASPEC	0.93
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	CS-137	0.07	0.01	pCi/GRAMS	GAMMASPEC	0.03
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	RA-226	0.38	0.01	pCi/GRAMS	GAMMASPEC	0.02
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	AC-227	0.31	0.01	pCi/GRAMS	GAMMASPEC	0.03
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	RA-228	0.39	0.02	pCi/GRAMS	GAMMASPEC	0.05
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	TH-228	0.39	0.02	pCi/GRAMS	GAMMASPEC	0.05
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	TH-232	0.39	0.02	pCi/GRAMS	GAMMASPEC	0.05
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	TH-230	30.65	2.21	pCi/GRAMS	GAMMASPEC	9.17
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	PA-231	0.26	0.03	pCi/GRAMS	GAMMASPEC	0.20
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	U-238	4.08	0.32	pCi/GRAMS	GAMMASPEC	1.43
A1SC0871	03/20/02	03/22/02	99AS0173	S.E.C.	727.0	DRY	SOIL	AM-241	0.38	0.00	pCi/GRAMS	GAMMASPEC	0.38
A1P[redacted]	[redacted]	[redacted]	99AS0173	S.E.C.	926.0	DRY	BLANK	K-40	0.96	0.00	PCI/G	GAMMASPEC	0.96

Appro[redacted] Date: 2-5-03

Location:	ASHLAND 1		
Site WBS:		Date Entered:	4/10/02
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	W/D	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1TESTQC	09/09/98	04/04/02	99AS0176	S.E.C.	514.0	DRY	QCSPIKE	AM-241	0.43	0.00	PCI/G	GAMMASPEC	0.43
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	K-40	1.20	0.00	PCI/G	GAMMASPEC	1.20
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	CS-137	0.30	0.02	PCI/G	GAMMASPEC	0.06
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	RA-226	4.05	0.11	PCI/G	GAMMASPEC	0.05
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	AC-227	4.86	0.12	PCI/G	GAMMASPEC	0.08
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	RA-228	0.86	0.04	PCI/G	GAMMASPEC	0.13
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	TH-228	0.86	0.04	PCI/G	GAMMASPEC	0.13
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	TH-232	0.86	0.04	PCI/G	GAMMASPEC	0.13
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	TH-230	629.44	23.34	PCI/G	GAMMASPEC	35.60
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	PA-231	6.16	0.24	PCI/G	GAMMASPEC	0.48
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	U-238	67.98	2.50	PCI/G	GAMMASPEC	5.60
A1SC0880	04/02/02	04/04/02	99AS0176	S.E.C.	510.0	DRY	SOIL	AM-241	1.37	0.00	PCI/G	GAMMASPEC	1.37
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	K-40	1.22	0.00	PCI/G	GAMMASPEC	1.22
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	CS-137	0.48	0.03	PCI/G	GAMMASPEC	0.06
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	RA-226	4.71	0.13	PCI/G	GAMMASPEC	0.05
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	AC-227	5.60	0.14	PCI/G	GAMMASPEC	0.08
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	RA-228	0.97	0.04	PCI/G	GAMMASPEC	0.14
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	TH-228	0.97	0.04	PCI/G	GAMMASPEC	0.14
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	TH-232	0.97	0.04	PCI/G	GAMMASPEC	0.14
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	TH-230	753.31	27.61	PCI/G	GAMMASPEC	37.10
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	PA-231	6.58	0.25	PCI/G	GAMMASPEC	0.52
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	U-238	62.36	2.35	PCI/G	GAMMASPEC	5.81
A1SC0879	04/02/02	04/04/02	99AS0176	S.E.C.	515.0	DRY	SOIL	AM-241	1.43	0.00	PCI/G	GAMMASPEC	1.43
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	K-40	1.09	0.00	PCI/G	GAMMASPEC	1.09
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	CS-137	0.29	0.02	PCI/G	GAMMASPEC	0.05
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	RA-226	4.79	0.13	PCI/G	GAMMASPEC	0.05
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	AC-227	5.71	0.14	PCI/G	GAMMASPEC	0.08

Approved by [redacted] Date: 2-5-03

Location:	ASHLAND 1		
Site WBS:		Date Entered:	4/10/02
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	W/D	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	RA-228	0.82	0.03	PCI/G	GAMMASPEC	0.12
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	TH-228	0.82	0.03	PCI/G	GAMMASPEC	0.12
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	TH-232	0.82	0.03	PCI/G	GAMMASPEC	0.12
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	TH-230	741.94	27.03	PCI/G	GAMMASPEC	36.20
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	PA-231	7.19	0.26	PCI/G	GAMMASPEC	0.48
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	U-238	69.23	2.48	PCI/G	GAMMASPEC	5.52
A1SC0881	04/02/02	04/04/02	99AS0176	S.E.C.	622.0	DRY	SOIL	AM-241	1.36	0.00	PCI/G	GAMMASPEC	1.36
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	K-40	1.05	0.00	PCI/G	GAMMASPEC	1.05
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	CS-137	0.29	0.02	PCI/G	GAMMASPEC	0.04
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	RA-226	1.87	0.05	PCI/G	GAMMASPEC	0.04
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	AC-227	1.41	0.04	PCI/G	GAMMASPEC	0.05
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	RA-228	0.69	0.03	PCI/G	GAMMASPEC	0.08
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	TH-228	0.69	0.03	PCI/G	GAMMASPEC	0.08
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	TH-232	0.69	0.03	PCI/G	GAMMASPEC	0.08
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	TH-230	149.26	6.73	PCI/G	GAMMASPEC	18.90
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	PA-231	1.74	0.08	PCI/G	GAMMASPEC	0.29
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	U-238	22.87	1.02	PCI/G	GAMMASPEC	2.91
A1SC0878	04/02/02	04/05/02	99AS0176	S.E.C.	624.0	DRY	SOIL	AM-241	0.78	0.00	PCI/G	GAMMASPEC	0.78
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	K-40	0.94	0.00	PCI/G	GAMMASPEC	0.94
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	CS-137	0.04	0.00	PCI/G	GAMMASPEC	0.04
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	RA-226	0.18	0.01	PCI/G	GAMMASPEC	0.02
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	AC-227	0.05	0.00	PCI/G	GAMMASPEC	0.05
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	RA-228	0.34	0.02	PCI/G	GAMMASPEC	0.04
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	TH-228	0.34	0.02	PCI/G	GAMMASPEC	0.04
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	TH-232	0.34	0.02	PCI/G	GAMMASPEC	0.04
A1FS1606	11/01/01	04/05/02	99AS0176	S.E.C.	819.0	DRY	SOIL	TH-230	10.10	0.00	PCI/G	GAMMASPEC	10.10
A1FS1[redacted]	[redacted]	[redacted]	[redacted]	S.E.C.	819.0	DRY	SOIL	PA-231	0.25	0.00	PCI/G	GAMMASPEC	0.25

Approve[redacted] Date: 2-5-03

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*****************************************************************************
****      G A M M A   S P E C T R U M   A N A L Y S I S              *****
*****************************************************************************

'ilename: C:\PCNT2K\CAMFILES\SOIL\SL05019.CNF

:eport Generated On                 :  4/29/02 10:15:09 AM

:ample Title                        : SOIL SAMPLES
:pectrum Description                :
:ample Identification               : A1SC0896
:ample Type                         : SL
:ample Geometry                     : 500 MARINELLI

'eak Locate Threshold               :  3.00
'eak Locate Range (in channels)     :     1 -  4096
'eak Area Range (in channels)       :     1 -  4096
:dentification Energy Tolerance     :    1.500 keV

:ample Size                         :  7.410E+002 GRAM

:ample Taken On                     :  4/23/02 10:05:00 AM
\cquisition Started                 :  4/29/02  9:14:12 AM

:ive Time                           :     3600.0 seconds
'eal Time                           :     3633.3 seconds
)ead Time                           :        0.92 %


          Energy Calibration Used Done On        :  3/01/02
          Efficiency Calibration Used Done On    :  3/01/02
          Efficiency Geometry ID                 : 500 MARINELLI
```

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*****************************************************************
***  I N T E R F E R E N C E   C O R R E C T E D   R E P O R T  *****
*****************************************************************
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Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/GRAM)	Wt mean Activity Uncertainty
RA-226	0.997	2.413468E-001	8.633371E-003
AC-228	0.997	3.921720E-001	1.798551E-002
U-238	0.789	1.252122E+000	4.741160E-001

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

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*****************************************************************
***              N U C L I D E   M D A   R E P O R T          *****
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Detector Name: DET01
Sample Geometry: 500 MARINELLI
Sample Title: SOIL SAMPLES
Nuclide Library Used: C:\GENIE2K\CAMFILES\ASHLAND.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GRAM)	Nuclide MDA (pCi/GRAM)
	K-40	1460.81	10.67	9.29E-001	9.29E-001
	CS-137	661.65	85.21	4.34E-002	4.34E-002
+	RA-226	186.21*	3.28	6.90E-002	1.76E-002
		295.21*	19.20	1.76E-002	
		351.92*	37.20	1.76E-002	
		609.31*	46.30	5.35E-002	
		1120.29	15.10	4.62E-001	
		1764.49	15.80	1.17E-001	
	AC-227	236.00	11.50	6.03E-002	6.03E-002
		256.20	6.30	6.56E-002	
		329.70	2.90	2.78E-001	
		401.81	6.50	1.80E-001	
		404.84	2.90	4.26E-001	
+	AC-228	338.32*	11.40	4.72E-002	4.72E-002
		583.14*	30.25	5.97E-002	
		911.07*	27.70	1.39E-001	
		969.11*	16.60	1.91E-001	
	TH-230	67.67	0.37	1.05E+001	1.05E+001
	PA-231	283.67	1.60	3.25E-001	2.78E-001
		302.65	2.30	2.78E-001	
+	U-238	63.29*	3.80	1.54E+000	1.54E+000
		1001.03	0.84	5.76E+000	
	AM-241	59.54	35.90	2.71E-001	2.71E-001

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

Location:	ASHLAND 1		
Site WBS:		Date Entered:	4/26/02
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	WID	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	RA-226	0.21	0.01	PCI/G	GAMMASPEC	0.02
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	AC-227	0.04	0.00	PCI/G	GAMMASPEC	0.02
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	RA-228	0.35	0.02	PCI/G	GAMMASPEC	0.04
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	TH-228	0.35	0.02	PCI/G	GAMMASPEC	0.04
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	TH-232	0.35	0.02	PCI/G	GAMMASPEC	0.04
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	TH-230	2.20	1.46	PCI/G	GAMMASPEC	8.77
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	PA-231	0.29	0.00	PCI/G	GAMMASPEC	0.29
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	U-238	21.07	0.84	PCI/G	GAMMASPEC	1.45
A1SC0909	04/23/02	04/24/02	99AS0179	S.E.C.	706.0	DRY	SOIL	AM-241	0.42	0.00	PCI/G	GAMMASPEC	0.42
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	K-40	0.96	0.00	PCI/G	GAMMASPEC	0.96
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	CS-137	0.02	0.01	PCI/G	GAMMASPEC	0.02
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	RA-226	0.18	0.01	PCI/G	GAMMASPEC	0.02
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	AC-227	0.05	0.00	PCI/G	GAMMASPEC	0.02
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	RA-228	0.32	0.02	PCI/G	GAMMASPEC	0.04
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	TH-228	0.32	0.02	PCI/G	GAMMASPEC	0.04
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	TH-232	0.32	0.02	PCI/G	GAMMASPEC	0.04
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	TH-230	10.40	0.00	PCI/G	GAMMASPEC	10.40
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	PA-231	0.27	0.00	PCI/G	GAMMASPEC	0.27
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	U-238	1.23	0.36	PCI/G	GAMMASPEC	1.15
A1SC0899	04/23/02	04/24/02	99AS0179	S.E.C.	776.0	DRY	SOIL	AM-241	0.26	0.00	PCI/G	GAMMASPEC	0.26
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	K-40	0.93	0.00	PCI/G	GAMMASPEC	0.93
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	CS-137	0.04	0.00	PCI/G	GAMMASPEC	0.04
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	RA-226	0.14	0.01	PCI/G	GAMMASPEC	0.01
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	AC-227	0.05	0.00	PCI/G	GAMMASPEC	0.05
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	RA-228	0.28	0.01	PCI/G	GAMMASPEC	0.04
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	TH-228	0.28	0.01	PCI/G	GAMMASPEC	0.04
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	TH-232	0.28	0.01	PCI/G	GAMMASPEC	0.04

Approved [redacted] Date: 2-5-03

Location:	ASHLAND 1		
Site WBS:		Date Entered:	4/26/02
Work Order Number:			
Project Number:	1189		
Environmental Cat:	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	WET	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	TH-230	8.94	0.00	PCI/G	GAMMASPEC	8.94
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	PA-231	0.24	0.00	PCI/G	GAMMASPEC	0.24
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	U-238	0.60	0.32	PCI/G	GAMMASPEC	1.05
A1SC0900	04/23/02	04/24/02	99AS0179	S.E.C.	808.0	DRY	SOIL	AM-241	0.23	0.00	PCI/G	GAMMASPEC	0.23
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	K-40	0.92	0.00	PCI/G	GAMMASPEC	0.92
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	CS-137	0.04	0.01	PCI/G	GAMMASPEC	0.03
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	RA-226	0.18	0.01	PCI/G	GAMMASPEC	0.02
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	AC-227	0.05	0.00	PCI/G	GAMMASPEC	0.02
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	RA-228	0.32	0.01	PCI/G	GAMMASPEC	0.04
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	TH-228	0.32	0.01	PCI/G	GAMMASPEC	0.04
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	TH-232	0.32	0.01	PCI/G	GAMMASPEC	0.04
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	TH-230	3.93	1.11	PCI/G	GAMMASPEC	6.54
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	PA-231	0.26	0.00	PCI/G	GAMMASPEC	0.26
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	U-238	1.57	0.21	PCI/G	GAMMASPEC	1.09
A1SC0898	04/23/02	04/24/02	99AS0179	S.E.C.	812.0	DRY	SOIL	AM-241	0.26	0.00	PCI/G	GAMMASPEC	0.26
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	K-40	0.63	0.00	PCI/G	GAMMASPEC	0.63
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	CS-137	0.00	0.00	PCI/G	GAMMASPEC	0.01
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	RA-226	0.07	0.00	PCI/G	GAMMASPEC	0.01
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	AC-227	0.03	0.00	PCI/G	GAMMASPEC	0.03
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	RA-228	0.14	0.01	PCI/G	GAMMASPEC	0.03
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	TH-228	0.14	0.01	PCI/G	GAMMASPEC	0.03
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	TH-232	0.14	0.01	PCI/G	GAMMASPEC	0.03
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	TH-230	6.07	0.00	PCI/G	GAMMASPEC	6.07
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	PA-231	0.16	0.00	PCI/G	GAMMASPEC	0.16
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	U-238	0.94	0.00	PCI/G	GAMMASPEC	0.94
A1SC0897	04/23/02	04/24/02	99AS0179	S.E.C.	1017.0	DRY	SOIL	AM-241	0.15	0.00	PCI/G	GAMMASPEC	0.15
A1SC9900	[redacted]	[redacted]	[redacted]	S.E.C.	802.0	DRY	SOIL	K-40	0.96	0.00	PCI/G	GAMMASPEC	0.96

Approved by: [redacted] Date: 2-5-03

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*************************************************************************
****        G A M M A   S P E C T R U M   A N A L Y S I S          *****
*************************************************************************


'ilename: C:\PCNT2K\CAMFILES\SOIL\SL05023.CNF

.eport Generated On                 :  4/29/02  3:24:30 PM

ample Title                         : SOIL SAMPLES
pectrum Description                 :
ample Identification                : A1SC0901
ample Type                          : SL
ample Geometry                      : 500 MARINELLI

'eak Locate Threshold               :  3.00
'eak Locate Range (in channels)     :     1 -  4096
'eak Area Range (in channels)       :     1 -  4096
dentification Energy Tolerance      :    1.500 keV

ample Size                          :  4.460E+002 GRAM

ample Taken On                      :  4/23/02 10:20:00 AM
cquisition Started                  :  4/29/02  2:23:18 PM

ive Time                            :     3600.0 seconds
eal Time                            :     3645.0 seconds
ead Time                            :        1.23 %


          Energy Calibration Used Done On        :  3/01/02
          Efficiency Calibration Used Done On    :  3/01/02
          Efficiency Geometry ID                 : 500 MARINELLI
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****
INTERFERENCE CORRECTED REPORT *****
****

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/GRAM)	Wt mean Activity Uncertainty
CS-137	1.000	3.062794E-001	2.435377E-002
RA-226	0.999	9.104958E+000	2.393594E-001
AC-227	0.995	7.482919E+000	1.823899E-001
AC-228	0.998	9.967274E-001	4.590910E-002
TH-230	0.993	9.789059E+002	3.585837E+001
PA-231	0.997	8.927740E+000	3.377120E-001
U-238	0.994	8.881208E+001	3.318920E+000

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

```
*****************************************************************
*              N U C L I D E   M D A   R E P O R T              *****
*****************************************************************
```

Detector Name: DET01
Sample Geometry: 500 MARINELLI
Sample Title: SOIL SAMPLES
Nuclide Library Used: C:\GENIE2K\CAMFILES\ASHLAND.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GRAM)	Nuclide MDA (pCi/GRAM)
	K-40	1460.81	10.67	1.36E+000	1.36E+000
+	CS-137	661.65*	85.21	8.28E-002	8.28E-002
+	RA-226	186.21*	3.28	4.81E-001	7.04E-002
		295.21*	19.20	8.65E-002	
		351.92*	37.20	7.04E-002	
		609.31*	46.30	2.33E-001	
		1120.29	15.10	2.52E+000	
		1764.49	15.80	7.60E-001	
+	AC-227	236.00*	11.50	1.08E-001	1.08E-001
		256.20*	6.30	2.17E-001	
		329.70*	2.90	6.74E-001	
		401.81*	6.50	4.68E-001	
		404.84*	2.90	1.05E+000	
+	AC-228	338.32*	11.40	1.88E-001	1.88E-001
		583.14*	30.25	1.99E-001	
		911.07*	27.70	4.40E-001	
		969.11*	16.60	6.38E-001	
+	TH-230	67.67*	0.37	4.83E+001	4.83E+001
+	PA-231	283.67*	1.60	9.50E-001	6.98E-001
		302.65*	2.30	6.98E-001	
+	U-238	63.29*	3.80	7.57E+000	7.57E+000
		1001.03*	0.84	1.47E+001	
	AM-241	59.54	35.90	1.84E+000	1.84E+000

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

```
*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************

Filename: C:\PCNT2K\CAMFILES\SOIL\SL05017.CNF

Report Generated On              :  4/26/02 12:25:13 PM

Sample Title                     : SOIL SAMPLES
Spectrum Description             :
Sample Identification            : A1SC0902
Sample Type                      : SL
Sample Geometry                  : 500 MARINELLI

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.500 keV

Sample Size                      :  4.090E+002 GRAM

Sample Taken On                  :  4/23/02 10:25:00 AM
Acquisition Started              :  4/26/02 11:23:54 AM

Live Time                        :     3600.0 seconds
Real Time                        :     3654.1 seconds
Dead Time                        :        1.48 %


          Energy Calibration Used Done On       :  3/01/02
          Efficiency Calibration Used Done On   :  3/01/02
          Efficiency Geometry ID                : 500 MARINELLI
```

****
I N T E R F E R E N C E C O R R E C T E D R E P O R T *****
****

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/GRAM)	Wt mean Activity Uncertainty
CS-137	1.000	1.665663E-001	1.959335E-002
RA-226	0.998	9.251673E+000	2.576020E-001
AC-227	0.998	1.478475E+001	3.542615E-001
AC-228	0.997	9.419760E-001	4.918216E-002
TH-230	0.997	1.761475E+003	6.341910E+001
PA-231	0.999	1.723958E+001	6.134229E-001
U-238	0.997	1.357528E+002	4.663373E+000

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

```
*****************************************************************
*              N U C L I D E   M D A   R E P O R T              *****
*****************************************************************
```

Detector Name: DET01
Sample Geometry: 500 MARINELLI
Sample Title: SOIL SAMPLES
Nuclide Library Used: C:\GENIE2K\CAMFILES\ASHLAND.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GRAM)	Nuclide MDA (pCi/GRAM)
	K-40	1460.81	10.67	1.38E+000	1.38E+000
+	CS-137	661.65*	85.21	8.73E-002	8.73E-002
+	RA-226	186.21*	3.28	4.20E-001	8.05E-002
		295.21*	19.20	1.03E-001	
		351.92*	37.20	8.05E-002	
		609.31*	46.30	2.45E-001	
		1120.29	15.10	2.58E+000	
		1764.49	15.80	7.71E-001	
+	AC-227	236.00*	11.50	1.35E-001	1.35E-001
		256.20*	6.30	2.76E-001	
		329.70*	2.90	7.81E-001	
		401.81*	6.50	5.07E-001	
		404.84*	2.90	1.13E+000	
+	AC-228	338.32*	11.40	2.17E-001	2.17E-001
		583.14*	30.25	2.26E-001	
		911.07*	27.70	4.41E-001	
		969.11*	16.60	6.90E-001	
+	TH-230	67.67*	0.37	6.38E+001	6.38E+001
+	PA-231	283.67*	1.60	1.14E+000	8.30E-001
		302.65*	2.30	8.30E-001	
+	U-238	63.29*	3.80	1.03E+001	1.03E+001
		1001.03*	0.84	1.49E+001	
	AM-241	59.54	35.90	2.41E+000	2.41E+000

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

```
*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************


Filename: C:\PCNT2K\CAMFILES\SOIL\SL05021.CNF

Report Generated On              :  4/29/02 12:28:43 PM

Sample Title                     : SOIL SAMPLES
Spectrum Description             :
Sample Identification            : A1SC0903
Sample Type                      : SL
Sample Geometry                  : 500 MARINELLI

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.500 keV

Sample Size                      :  4.490E+002 GRAM

Sample Taken On                  :  4/23/02 10:40:00 AM
Acquisition Started              :  4/29/02 11:27:15 AM

Live Time                        :     3600.0 seconds
Real Time                        :     3661.7 seconds
Dead Time                        :        1.69 %


          Energy Calibration Used Done On       :  3/01/02
          Efficiency Calibration Used Done On   :  3/01/02
          Efficiency Geometry ID                : 500 MARINELLI
```

PEAK ANALYSIS REPORT

Detector Name: DET01
Sample Title: SOIL SAMPLES
Peak Analysis Performed on: 4/29/02 12:28:42 PM
Peak Analysis From Channel: 1
Peak Analysis To Channel: 4096

	Peak No.	ROI start	ROI end	Peak centroid	Energy (keV)	Net Peak Area	Net Area Uncert.	Continuum Counts
	1	94-	109	101.67	24.57	7.31E+003	344.03	7.51E+003
M	2	182-	222	190.90	46.91	1.35E+003	190.79	1.43E+004
m	3	182-	222	205.00	50.45	3.87E+003	233.66	1.63E+004
m	4	182-	222	217.63	53.61	3.44E+002	187.75	1.69E+004
M	5	249-	410	257.80	63.66	1.32E+004	310.57	2.60E+004
m	6	249-	410	275.27	68.04	1.98E+004	346.37	2.66E+004
m	7	249-	410	287.87	71.19	4.33E+003	246.97	2.59E+004
m	8	249-	410	295.77	73.17	6.38E+003	264.72	2.56E+004
m	9	249-	410	303.85	75.19	1.47E+004	318.38	2.51E+004
m	10	249-	410	312.81	77.44	2.31E+004	360.89	2.44E+004
m	11	249-	410	321.85	79.70	9.89E+003	299.71	2.38E+004
m	12	249-	410	328.77	81.43	3.69E+004	431.17	2.31E+004
m	13	249-	410	339.64	84.16	5.95E+004	504.87	2.32E+004
m	14	249-	410	355.82	88.21	1.10E+004	271.79	2.16E+004
m	15	249-	410	364.20	90.31	6.44E+003	241.45	2.12E+004
m	16	249-	410	374.81	92.96	2.77E+004	374.97	2.16E+004
m	17	249-	410	382.84	94.97	2.31E+004	348.61	2.09E+004
m	18	249-	410	395.40	98.12	7.15E+003	246.90	1.91E+004
m	19	249-	410	403.44	100.13	1.90E+003	202.68	1.88E+004
	20	411-	425	415.98	103.27	3.70E+002	392.54	1.52E+004
M	21	450-	502	456.10	113.32	2.90E+003	197.96	1.17E+004
m	22	450-	502	493.54	122.69	3.03E+003	195.63	1.17E+004
	23	572-	590	580.30	144.42	1.52E+004	519.66	1.80E+004
M	24	610-	664	620.82	154.56	1.58E+004	298.56	1.13E+004
m	25	610-	664	638.42	158.97	1.88E+003	168.86	1.14E+004
m	26	610-	664	657.29	163.69	1.30E+003	161.79	1.09E+004
	27	737-	757	747.41	186.26	2.60E+004	526.32	1.40E+004
M	28	817-	856	824.65	205.60	1.79E+003	156.07	8.28E+003
m	29	817-	856	846.19	210.99	2.67E+003	163.92	9.00E+003
M	30	936-	982	947.23	236.29	2.60E+004	335.87	6.38E+003
m	31	936-	982	957.83	238.95	1.38E+003	129.61	6.47E+003
m	32	936-	982	971.25	242.31	1.16E+004	239.03	5.87E+003
M	33	993-	1099	1004.38	250.60	7.99E+002	118.21	5.55E+003
m	34	993-	1099	1028.10	256.54	1.34E+004	250.83	5.46E+003
m	35	993-	1099	1038.36	259.11	6.81E+002	112.14	5.43E+003
m	36	993-	1099	1080.89	269.76	2.51E+004	335.68	5.32E+003
m	37	993-	1099	1087.99	271.54	2.04E+004	306.96	5.23E+003
M	38	1132-	1158	1137.65	283.97	3.16E+003	147.13	3.57E+003
m	39	1132-	1158	1147.40	286.41	3.25E+003	144.79	3.73E+003
M	40	1172-	1229	1183.81	295.53	2.61E+004	325.22	3.67E+003
m	41	1172-	1229	1202.89	300.31	9.02E+003	202.70	3.27E+003
m	42	1172-	1229	1213.25	302.90	5.17E+003	163.66	3.30E+003

Buffer Area East of FS 031

SAMPLE ID	DATE	NORTH	EAST	DEPTH	CPM	Th-230 (pCi/g)	U-238 (pCi/g)	Ra-226 (pCi/g)
A1-SL-SC-0815	2/7/02	1090773	410047	0-6"	12000	<7.0	<0.6	0.2
A1-SL-SC-0816	2/7/02	1090791	410036	0-6"	11251	<13.4	<1.1	0.3
A1-SL-SC-0835	2/21/02	1090811	410018	0-6"	NA	1475.5	150.4	2.2
A1-SL-SC-0836	2/21/02	1090806	410033	0-6"	50715	659.6	42.3	2.7
A1-SL-SC-0837	2/21/02	1090745	410063	0-6"	30211	127.3	11.0	5.5
A1-SL-SC-0838	2/25/02	1090818	410009	0-6"	60712	947.4	100.4	13.2
A1-SL-SC-0839	2/25/02	1090821	410021	0-6"	120421	1853.7	154.5	0.1
A1-SL-SC-0842	3/6/02	1090904	409957	0-6"	15239	82.5	27.8	1.3
A1-SL-SC-0843	3/7/02	1090916	409951	0-6"	16800	150.3	22.2	1.7
A1-SL-SC-0844	3/11/02	1090925	409943	0-6"	16308	251.7	30.8	1.5
A1-SL-SC-0865	3/20/02	1090746	410069	0-6"	16388	<6.0	1.7	0.2
A1-SL-SC-0866	3/20/02	1090743	410068	0-6"	15388	12.7	2.5	0.3
A1-SL-SC-0867	3/20/02	1090712	410064	0-6"	16278	25.4	2.6	0.4
A1-SL-SC-0868	3/20/02	1090868	409982	0-6"	17000	317.0	50.8	2.1
~~A1-SL-SC-0873~~	3/25/02	1090871	409964	0-6"	10241	<8.6	1.4	0.1
~~A1-SL-SC-0874~~	3/25/02	1090862	409972	0-6"	10918	<7.1	<0.9	0.1
~~A1-SL-SC-0875~~	3/26/02	1090797	410008	0-6"	NA	8.3	3.0	0.2
~~A1-SL-SC-0877~~	3/26/02	1090869	409970	0-6"	10381	<7.8	1.2	0.1
A1-SL-SC-0878	4/2/02	1090921	409951	0-6"	20246	149.3	22.9	0.1
A1-SL-SC-0879	4/2/02	1090911	409958	0-6"	25173	753.3	62.4	0.1
A1-SL-SC-0880	4/2/02	1090899	409966	0-6"	20246	629.4	68.0	0.4
A1-SL-SC-0881	4/2/02	1090889	409971	0-6"	53096	741.9	69.2	0.3
A1-SL-SC-0898	4/23/02	1090802	410031	0-6"	18030	<10.5	1.5	0.2
A1-SL-SC-0901	4/23/02	1090809	410027	0-6"	75742	978.9	88.8	9.1
A1-SL-SC-0902	4/23/02	1090824	410017	0-6"	76475	1761.5	135.8	9.3
A1-SL-SC-0903	4/23/02	1090838	410006	0-6"	79502	1562.7	166.9	14.0
A1-SL-SC-0904	4/23/02	1090857	409994	0-6"	80308	1441.7	220.4	13.7
A1-SL-SC-0905	4/23/02	1090876	409982	0-6"	76224	647.9	68.7	4.1
A1-SL-SC-0906	4/23/02	1090787	410042	0-6"	13971	<10.5	1.5	0.2
A1-SL-SC-0907	4/23/02	1090928	409945	0-6"	13602	<10.0	2.0	0.2
A1-SL-TP-0063	6/4/01	1090869	409985	0-6"	*15994	363.0	23.0	2.9
A1-SL-TP-0064	6/5/01	1090851	409999	0-6"	*22546	377.0	26.7	3.5
A1-SL-TP-0065	6/4/01	1090866	410003	0-6"	*31823	603.5	49.0	4.5

L = LENS Sample

Add [0824, 0827, 0829, 0831, 0830]

[0829, 0830, 0831, 0827] Removed by 4/4/02

```
*****************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*****************************************************************************


Filename: C:\PCNT2K\CAMFILES\SOIL\SL05020.CNF

Report Generated On                 :  4/29/02 11:24:03 AM

Sample Title                        : SOIL SAMPLES
Spectrum Description                :
Sample Identification               : A1SC0904
Sample Type                         : SL
Sample Geometry                     : 500 MARINELLI

Peak Locate Threshold               :  3.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.500 keV

Sample Size                         :  4.350E+002 GRAM

Sample Taken On                     :  4/23/02 10:50:00 AM
Acquisition Started                 :  4/29/02 10:22:38 AM

Live Time                           :     3600.0 seconds
Real Time                           :     3658.1 seconds
Dead Time                           :        1.59 %


          Energy Calibration Used Done On        :  3/01/02
          Efficiency Calibration Used Done On    :  3/01/02
          Efficiency Geometry ID                 : 500 MARINELLI
```

```
/*****************************************************
REFERENCE CORRECTED REPORT *****
/*****************************************************
```

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/GRAM)	Wt mean Activity Uncertainty
RA-226	0.999	1.365540E+001	3.639712E-001
AC-227	0.994	1.061787E+001	2.564044E-001
AC-228	0.998	8.818229E-001	4.869623E-002
TH-230	0.992	1.441690E+003	5.206529E+001
PA-231	0.996	1.274325E+001	4.655567E-001
U-238	0.993	2.203928E+002	6.857776E+000

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

****
N U C L I D E M D A R E P O R T *****
****

or Name: DET01
ie Geometry: 500 MARINELLI
ple Title: SOIL SAMPLES
uclide Library Used: C:\GENIE2K\CAMFILES\ASHLAND.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GRAM)	Nuclide MDA (pCi/GRAM)
	K-40	1460.81	10.67	1.44E+000	1.44E+000
	CS-137	661.65	85.21	2.01E-001	2.01E-001
+	RA-226	186.21*	3.28	5.85E-001	8.87E-002
		295.21*	19.20	1.06E-001	
		351.92*	37.20	8.87E-002	
		609.31*	46.30	2.82E-001	
		1120.29	15.10	3.07E+000	
		1764.49	15.80	9.23E-001	
+	AC-227	236.00*	11.50	1.29E-001	1.29E-001
		256.20*	6.30	2.60E-001	
		329.70*	2.90	8.31E-001	
		401.81*	6.50	5.78E-001	
		404.84*	2.90	1.34E+000	
+	AC-228	338.32*	11.40	2.27E-001	2.27E-001
		583.14*	30.25	2.51E-001	
		911.07*	27.70	5.21E-001	
		969.11*	16.60	7.20E-001	
+	TH-230	67.67*	0.37	6.24E+001	6.24E+001
+	PA-231	283.67*	1.60	1.25E+000	8.66E-001
		302.65*	2.30	8.66E-001	
+	U-238	63.29*	3.80	9.52E+000	9.52E+000
		1001.03*	0.84	2.10E+001	
	AM-241	59.54	35.90	2.34E+000	2.34E+000

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

```
*************************************************************************
*****   G A M M A   S P E C T R U M   A N A L Y S I S          *****
*************************************************************************

Filename: C:\PCNT2K\CAMFILES\SOIL\SL05018.CNF

Report Generated On              :  4/26/02  2:25:59 PM

Sample Title                     : SOIL SAMPLES
Spectrum Description             :
Sample Identification            : A1SC0905
Sample Type                      : SL
Sample Geometry                  : 500 MARINELLI

Peak Locate Threshold            :  3.00
Peak Locate Range (in channels)  :     1 -  4096
Peak Area Range (in channels)    :     1 -  4096
Identification Energy Tolerance  :    1.500 keV

Sample Size                      :  6.140E+002 GRAM

Sample Taken On                  :  4/23/02 11:10:00 AM
Acquisition Started              :  4/26/02  1:24:46 PM

Live Time                        :     3600.0 seconds
Real Time                        :     3644.5 seconds
Dead Time                        :        1.22 %


          Energy Calibration Used Done On        :  3/01/02
          Efficiency Calibration Used Done On    :  3/01/02
          Efficiency Geometry ID                 : 500 MARINELLI
```

****
* I N T E R F E R E N C E C O R R E C T E D R E P O R T *****
****

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/GRAM)	Wt mean Activity Uncertainty
CS-137	1.000	5.226794E-002	9.258991E-003
RA-226	0.998	4.091456E+000	1.136212E-001
AC-227	0.995	5.510194E+000	1.340823E-001
AC-228	0.998	7.169199E-001	3.550134E-002
TH-230	0.993	6.479438E+002	2.384150E+001
PA-231	0.996	6.876761E+000	2.382243E-001
U-238	0.994	6.867226E+001	2.394772E+000

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

```
/*****************************************************************
**              N U C L I D E   M D A   R E P O R T              *****
*****************************************************************
```

Detector Name: DET01
Sample Geometry: 500 MARINELLI
Sample Title: SOIL SAMPLES
Nuclide Library Used: C:\GENIE2K\CAMFILES\ASHLAND.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GRAM)	Nuclide MDA (pCi/GRAM)
	K-40	1460.81	10.67	1.00E+000	1.00E+000
+	CS-137	661.65*	85.21	4.46E-002	4.46E-002
+	RA-226	186.21*	3.28	2.22E-001	4.38E-002
		295.21*	19.20	5.60E-002	
		351.92*	37.20	4.38E-002	
		609.31*	46.30	1.33E-001	
		1120.29	15.10	1.42E+000	
		1764.49	15.80	4.19E-001	
+	AC-227	236.00*	11.50	7.09E-002	7.09E-002
		256.20*	6.30	1.61E-001	
		329.70*	2.90	4.49E-001	
		401.81*	6.50	2.92E-001	
		404.84*	2.90	6.72E-001	
+	AC-228	338.32*	11.40	1.19E-001	1.19E-001
		583.14*	30.25	1.29E-001	
		911.07*	27.70	2.36E-001	
		969.11*	16.60	3.67E-001	
+	TH-230	67.67*	0.37	3.46E+001	3.46E+001
+	PA-231	283.67*	1.60	6.44E-001	4.70E-001
		302.65*	2.30	4.70E-001	
+	U-238	63.29*	3.80	5.26E+000	5.26E+000
		1001.03*	0.84	7.72E+000	
	AM-241	59.54	35.90	1.30E+000	1.30E+000

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

```
*****************************************************************************
*****          G A M M A   S P E C T R U M   A N A L Y S I S          *****
*****************************************************************************

Filename: C:\PCNT2K\CAMFILES\SOIL\SL05022.CNF

Report Generated On                 :  4/29/02  2:17:42 PM

Sample Title                        : SOIL SAMPLES
Spectrum Description                :
Sample Identification               : A1SC0906
Sample Type                         : SL
Sample Geometry                     : 500 MARINELLI

Peak Locate Threshold               :  3.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.500 keV

Sample Size                         :  7.600E+002 GRAM

Sample Taken On                     :  4/23/02 11:20:00 AM
Acquisition Started                 :  4/29/02  1:16:42 PM

Live Time                           :     3600.0 seconds
Real Time                           :     3634.0 seconds
Dead Time                           :        0.94 %


          Energy Calibration Used Done On        :  3/01/02
          Efficiency Calibration Used Done On    :  3/01/02
          Efficiency Geometry ID                 : 500 MARINELLI
```

****
I N T E R F E R E N C E C O R R E C T E D R E P O R T *****
****

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/GRAM)	Wt mean Activity Uncertainty
CS-137	0.999	3.426771E-002	8.399627E-003
RA-226	0.998	2.421443E-001	8.600804E-003
AC-228	0.998	3.830967E-001	1.706019E-002
U-238	0.995	1.501268E+000	2.844258E-001

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

NUCLIDE MDA REPORT

Detector Name: DET01
Sample Geometry: 500 MARINELLI
Sample Title: SOIL SAMPLES
Nuclide Library Used: C:\GENIE2K\CAMFILES\ASHLAND.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GRAM)	Nuclide MDA (pCi/GRAM)
	K-40	1460.81	10.67	9.22E-001	9.22E-001
+	CS-137	661.65*	85.21	2.51E-002	2.51E-002
+	RA-226	186.21*	3.28	7.01E-002	1.80E-002
		295.21*	19.20	1.80E-002	
		351.92*	37.20	1.82E-002	
		609.31*	46.30	4.39E-002	
		1120.29	15.10	4.55E-001	
		1764.49	15.80	1.12E-001	
	AC-227	236.00	11.50	5.85E-002	5.85E-002
		256.20	6.30	6.81E-002	
		329.70	2.90	2.66E-001	
		401.81	6.50	1.83E-001	
		404.84	2.90	4.29E-001	
+	AC-228	338.32*	11.40	3.89E-002	3.89E-002
		583.14*	30.25	7.41E-002	
		911.07*	27.70	1.39E-001	
		969.11*	16.60	1.65E-001	
	TH-230	67.67	0.37	1.05E+001	1.05E+001
	PA-231	283.67	1.60	3.19E-001	2.79E-001
		302.65	2.30	2.79E-001	
+	U-238	63.29*	3.80	9.13E-001	9.13E-001
		1001.03*	0.84	3.37E+000	
	AM-241	59.54	35.90	2.72E-001	2.72E-001

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

```
*************************************************************************
*****        G A M M A   S P E C T R U M   A N A L Y S I S        *****
*************************************************************************


Filename: C:\PCNT2K\CAMFILES\SOIL\SL05016.CNF

Report Generated On                 :  4/26/02 10:28:05 AM

Sample Title                        : SOIL SAMPLES
Spectrum Description                :
Sample Identification               : A1SC0907
Sample Type                         : SL
Sample Geometry                     : 500 MARINELLI

Peak Locate Threshold               :  3.00
Peak Locate Range (in channels)     :     1 -  4096
Peak Area Range (in channels)       :     1 -  4096
Identification Energy Tolerance     :    1.500 keV

Sample Size                         :  7.700E+002 GRAM

Sample Taken On                     :  4/23/02 11:25:00 AM
Acquisition Started                 :  4/26/02  9:27:09 AM

Live Time                           :     3600.0 seconds
Real Time                           :     3632.5 seconds
Dead Time                           :        0.89 %


          Energy Calibration Used Done On        :  3/01/02
          Efficiency Calibration Used Done On    :  3/01/02
          Efficiency Geometry ID                 : 500 MARINELLI
```

```
*****************************************************************
*  I N T E R F E R E N C E   C O R R E C T E D   R E P O R T  *****
*****************************************************************
```

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/GRAM)	Wt mean Activity Uncertainty
CS-137	1.000	3.225798E-002	7.671951E-003
RA-226	1.000	1.822182E-001	6.864028E-003
AC-228	0.996	2.948532E-001	1.509110E-002
U-238	0.790	2.011554E+000	4.591953E-001

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000 sigma

NUCLIDE MDA REPORT

Detector Name: DET01
Sample Geometry: 500 MARINELLI
Sample Title: SOIL SAMPLES
Nuclide Library Used: C:\GENIE2K\CAMFILES\ASHLAND.NLB

	Nuclide Name	Energy (keV)	Yield (%)	Line MDA (pCi/GRAM)	Nuclide MDA (pCi/GRAM)
	K-40	1460.81	10.67	9.78E-001	9.78E-001
+	CS-137	661.65*	85.21	2.26E-002	2.26E-002
+	RA-226	186.21*	3.28	6.70E-002	1.61E-002
		295.21*	19.20	1.69E-002	
		351.92*	37.20	1.61E-002	
		609.31*	46.30	4.96E-002	
		1120.29	15.10	4.41E-001	
		1764.49	15.80	9.44E-002	
	AC-227	236.00	11.50	5.55E-002	5.55E-002
		256.20	6.30	6.45E-002	
		329.70	2.90	2.55E-001	
		401.81	6.50	1.67E-001	
		404.84	2.90	4.02E-001	
+	AC-228	338.32*	11.40	4.17E-002	4.17E-002
		583.14*	30.25	5.82E-002	
		911.07*	27.70	1.37E-001	
		969.11*	16.60	1.89E-001	
	TH-230	67.67	0.37	9.96E+000	9.96E+000
	PA-231	283.67	1.60	3.07E-001	2.63E-001
		302.65	2.30	2.63E-001	
+	U-238	63.29*	3.80	1.45E+000	1.45E+000
		1001.03	0.84	6.09E+000	
	AM-241	59.54	35.90	2.62E-001	2.62E-001

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

Location	ASHLAND 1		
Site WBS		Date Entered:	6/7/01
Work Order Number			
Project Number	1189		
Environmental Cat	RA		

Sample ID	Date Collected	Date Analyzed	SDG ID	LAB ID	Vol.	H/O	Sample Type	Analyte	Result	Error	Units	Analytical Method	MDA
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	K-40	1.40	0.00	PCI/G	GAMMASPEC	1.40
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	CS-137	0.86	0.05	PCI/G	GAMMASPEC	0.05
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	RA-226	4.46	0.12	PCI/G	GAMMASPEC	0.06
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	AC-227	7.79	0.18	PCI/G	GAMMASPEC	0.13
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	RA-228	0.78	0.03	PCI/G	GAMMASPEC	0.12
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	TH-228	0.78	0.03	PCI/G	GAMMASPEC	0.12
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	TH-232	0.78	0.03	PCI/G	GAMMASPEC	0.12
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	TH-230	603.45	22.61	PCI/G	GAMMASPEC	37.90
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	PA-231	9.20	0.35	PCI/G	GAMMASPEC	0.73
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	U-238	48.95	1.90	PCI/G	GAMMASPEC	5.35
A1TP0065	06/04/01	06/05/01	99AS0138	S.E.C.	574.0	DRY	SOIL	AM-241	1.10	0.00	PCI/G	GAMMASPEC	1.10

Approved by: [redacted] Date: 2-5-03