CERTIFICATION DESIGN LETTER FOR THE AREA 2, PHASE I FORMER INACTIVE FLYASH PILE, SOUTH FIELD, CAROLINA AREA, EAST-WEST CONSTRUCTION ROAD AND EQUIPMENT WHEEL WASH FACILITY

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT
FERNALD, OHIO

APRIL 2002

U.S. DEPARTMENT OF ENERGY
FERNALD AREA OFFICE

20400-RP-0005
REVISION 0
PCN 1

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REVISION SUMMARY

Revision	Date	Description of Revision
0	11-6-02	Initial controlled issuance.
PCN 1	4-1-02	Incorporation of precertification data as Appendix B to complete the Certification Design Letter.

APPENDIX B

PRECERTIFICATION DATA

APPENDIX B
PRECERTIFICATION DATA

This appendix contains results from real-time precertification scanning conducted in Area 2, Phase I.

The real-time scans were conducted in two phases. The first phase was conducted primarily with the with a sodium iodide (NaI) detector, collecting readings in total counts per second (TCPS) as well as for total uranium, thorium-232 and radium-226. In perimeter areas, tree cover sometimes prohibited the use of the NaI/GPS system, and HPGe shots were taken as part of the Phase 1 work. One map is provided for the total counts and for each analyte, with the highest value noted on each map.

The second phase was conducted to check the highest total count reading and the highest analyte reading that exceeded 3 times the FRL (potential hot spot) for each NaI batch file. The concentric circles, shown on the second phase maps, correspond to HPGe measurements that verified a hot spot identified through physical sampling. Additionally, there was a hot spot identified during Phase 2 measurements that lies just east of the concentric circles.

TABLE B-1

Location	Northing	Easting	Detector Height	Ra-226 (pCi/g)	Th-232 (pCi/g)	Total U (ug/g)
A2P1-HS-4-A-G	477736.9	1348228.7	100cm	1.08	1.14	12.6
A2P1-HS-5-B-G	477736.9	1348228.7	31cm	1.18	1.17	13.7
A2P1-P2-10-1B-G	478049	1348147	31cm	1.671	1.2	11.3
A2P1-P2-11-1B-G	478057	1348128	31cm	1.899	1.21	13.2
A2P1-P2-12-1B-G	478052	1348111	31cm	1.713	1.04	9.85
A2P1-P2-13-1B-G	478097	1347987	31cm	1.857	1.21	10.5
A2P1-P2-14-1B-G	478111	1347995	31cm	1.749	1.13	11.2
A2P1-P2-15-1B-G	478137	1347849	31cm	1.445	0.873	12.3
A2P1-P2-16-1B-G	478161	1347818	31cm	1.382	0.908	7.26
A2P1-P2-17-1B-G	478168	1347808	31cm	1.382	0.844	7.98
A2P1-P2-18B-G	477719.1	1347881.9	31cm	0.998	0.82	11.5
A2P1-P2-19B-G	477742.4	1347861	31cm	1.151	0.763	7.73
A2P1-P2-20B-G	477585.8	1347943.2	31cm	1.09	0.969	11.6
A2P1-P2-21B-G	477632.8	1347849.2	31cm	1.196	1	16.2
A2P1-P2-22B-G	477651.4	1347787.8	31cm	1.14	1.06	8.95
A2P1-P2-23B-G	477138.9	1347821.9	31cm	0.952	0.874	< 11.3
A2P1-P2-24B-G-D	477138.9	1347821.9	31cm	0.923	0.824	6.26
A2P1-P2-25B-G	477407	1347524.6	31cm	0.939	0.76	< 4.3
A2P1-P2-26B-G	477960.8	1347434.7	31cm	1	0.737	8.84
A2P1-P2-27B-G	477771.6	1347645.8	31cm	1.2	1.08	14.4
A2P1-P2-28B-G	478079.2	1347849.1	31cm	1.51	0.872	17.7
A2P1-P2-29B-G	477442.8	1347370.3	31cm	1.01	0.794	< 4.7
A2P1-P2-30B-G	477287.5	1347386.4	31cm	0.958	0.751	< 4.6
A2P1-P2-31B-G	477463.1	1347365.7	31cm	0.947	0.818	7.78
A2P1-P2-32B-G	478133.8	1347622.1	31cm	1.45	0.868	15.3
A2P1-P2-33B-G	478174.4	1347348.3	31cm	1.21	0.967	< 4.8
A2P1-P2-34B-G	477557.2	1347889.5	31cm	1.18	1.05	< 12.2
A2P1-P2-35B-G	477583.7	1347749.9	31cm	1.267	0.968	8.84
A2P1-P2-36B-G	477365.8	1348104	31cm	1.15	1.1	9.99
A2P1-P2-37B-G	477418.8	1347525.2	31cm	0.973	0.84	6.32
A2P1-P2-38B-G	476884.7	1348247.5	31cm	0.856	0.62	9.45
A2P1-P2-39B-G	477061.4	1348214.5	31cm	0.78	0.652	18.8
A2P1-P2-40B-G	477421.8	1348042.4	31cm	0.938	0.732	9
A2P1-P2-42B-G	477763.9	1348305.4	31cm	1.75	1.11	62.7

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TABLE B-1

Location	Northing	Easting	Detector Height	Ra-226 (pCi/g)	Th-232 (pCi/g)	Total U (ug/g)
A2P1-P2-43B-G	477938.3	1347936	31cm	1.43	1.11	13.3
A2P1-P2-44B-G	477261	1348144.8	31cm	1.05	0.969	11.6
A2P1-P2-45B-G	477204.3	1348159.7	31cm	1.07	0.617	10.1
A2P1-P2-46A-G	477763.9	1348305.4	100cm	1.07	1	52.1
A2P1-P2-47A-G-D	477763.9	1348305.4	100cm	1.02	0.981	48.5
A2P1-P2-48B-G	477780.9	1348312.5	31cm	1.03	0.923	9.9
A2P1-P2-49B-G	477770.3	1348289.3	31cm	1.11	1.02	23.4
A2P1-P2-50B-G	477747.7	1348300.5	31cm	1.1	1.05	27.9
A2P1-P2-51B-G	477758.5	1348323.4	31cm	1.12	0.976	6.65
A2P1-P2-52B-G	477777.8	1348292.1	31cm	1.06	0.94	17
A2P1-P2-53B-G	477773.7	1348283.7	31cm	1.06	0.984	13.6
A2P1-P2-54B-G	477764.7	1348287.4	31cm	1.01	0.971	15.5
A2P1-P2-55B-G	477749.1	1348294.8	31cm	1.1	1.1	11.5
A2P1-P2-56B-G	477740.3	1348299.3	31cm	1.18	1.12	21
A2P1-P2-57B-G	477745	1348308.5	31cm	1.33	1.31	16.2
A2P1-P2-64B-G	477733.73	1348294.16	31cm	1.505	1.1	17.1
A2P1-P2-65B-G	477742.44	1348290.37	31cm	1.04	1.03	13.3
A2P1-P2-66B-G	477625.2	1348239	31cm	0.873	0.699	8.29
A2P1-P2-7B-G	478058.7	1348261.8	31cm	1.785	1.08	15
A2P1-P2-9-1B-G	478015	1348178	31cm	1.206	0.816	10.2

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A2P1, Phase I

Total Gross Counts per Second
Single Spectrum (NaI)
Field of View to Scale
NaI Batch#: RSS1- 670-671, 673, 675, 679-683, 685-692;
RSS2- 237a, 238-240; Gator- 119-121
HPGe DET#: 30687,30716,30904,31144,31204,31265
Measurement Dates: 11/19/99 thru 03/22/02

N

NaI TCPS	
0.00 to 3000.00	
3000.00 to 5000.00	
5000.00 to 15000.00	
15000.00 to 18000.00	
18000.00 to 99999.00	

HPGe shown for coverage only

RTIMP DWG Title: A2P1_P1_TC.srf
Project Name: A2P1 PreCert
Project #: 20400-PSP-0003
Prepared By: Brian McDaniel/11058
Date Prepared: 03/25/02
Support Data: A2P1_P1_NaI.xls;
A2P1_P1_HPGE_100cm.xls;
A2P1_NWU_HPGe_for_A2P1.xls;
A2P1_NWU_NaI_for_A2P1.xls

A2P1, Phase I

Moisture Corrected Total Uranium
Two Spectra Average (NaI)
Field of View to Scale
NaI Batch#: RSS1- 670-671, 673, 675, 679-683, 685-692;
RSS2- 237a, 238-240; Gator- 119-121
HPGe DET#: 30687,30716,30904,31144,31204,31265
Measurement Dates: 11/19/99 thru 03/22/02

NaI Total U (ppm)
-220.80 to 246.00
246.00 to 721.00
721.00 to 9999.00

HPGe @100cm Total U FRL=82ppm
0.00 to 164.00
164.00 to 400.00
400.00 to 9999.00

HPGe @100cm Total U FRL=20ppm
0.00 to 20.00
20.00 to 400.00
400.00 to 9999.00

RTIMP DWG Title: A2P1_P1_TU.srf
Project Name: A2P1 PreCert
Project #: 20400-PSP-0003
Prepared By: Brian McDaniel/11058
Date Prepared: 03/25/02
Support Data: A2P1_P1_NaI.xls;
A2P1_P1_HPGE_100cm.xls;
A2P1_NWU_HPGe_for_A2P1.xls;
A2P1_NWU_NaI_for_A2P1.xls

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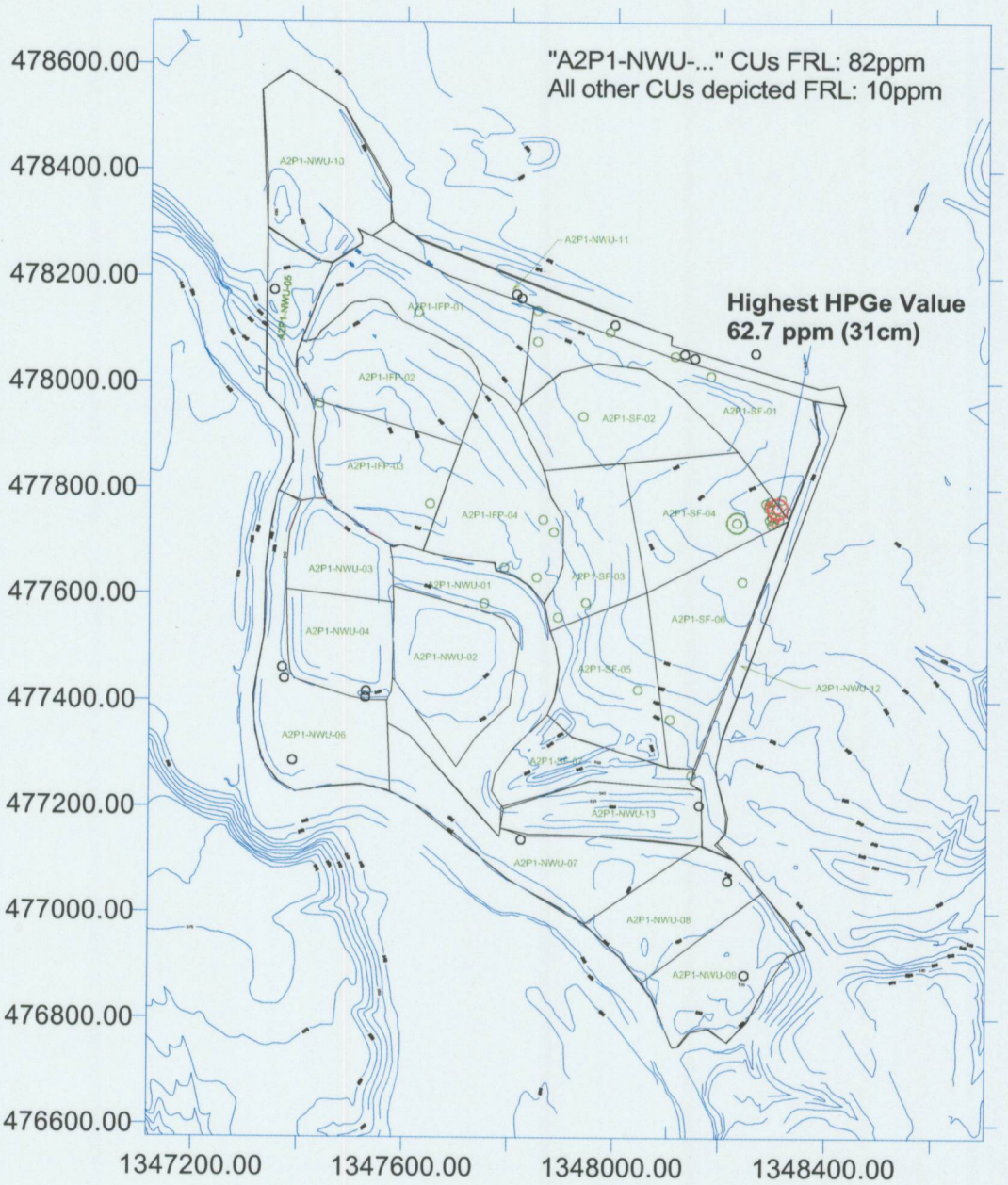
FIGURE 1-1. LOCATION OF PADDYS RUN, SSOD AND PPDD

A2P1, Phase 2

Moisture Corrected Total Uranium
Field of View to Scale
HPGe DET#: 30687,30904,31204
Measurement Dates: 02/15/02 thru 03/22/02

N



HPGe @ 31cm Total U FRL=82ppm	HPGe @ 31cm Total U FRL=10ppm	HPGe @ 100cm Total U FRL=10ppm
0.00 to 164.00	0.00 to 20.00	0.00 to 20.00
164.00 to 928.00	20.00 to 928.00	20.00 to 400.00
928.00 to 9999.00	928.00 to 9999.00	400.00 to 9999.00

RTIMP DWG Title: A2P1_P2_TU.srf
Project Name: A2P1 PreCert
Project #: 20400-PSP-0003
Prepared By: Brian McDaniel/11058
Date Prepared: 03/26/02
Support Data:
A2P1_P2_HPGe_FRL10_31cm.xls;
A2P1_P2_HPGe_FRL82_31cm.xls;
A2P1_P2_HPGe_100cm.xls

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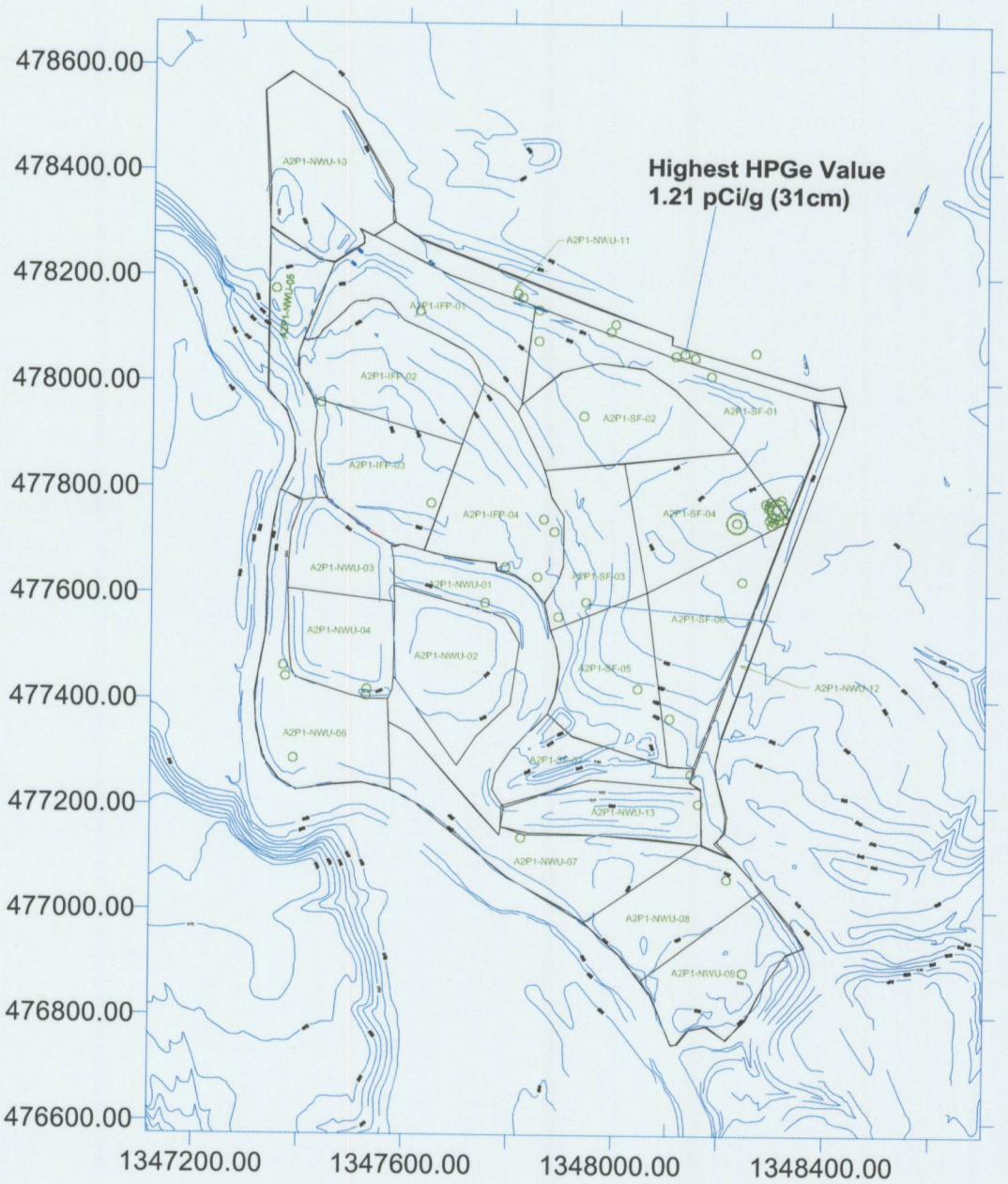
A2P1, Phase 2

N

Moisture Corrected Thorium-232
Field of View to Scale
HPGe DET#: 30687,30904,31204
Measurement Dates: 02/15/02 thru 03/22/02



HPGe @ 31cm Thorium-232 (pCi/g)	
0.00	to 3.00
3.00	to 9999.00

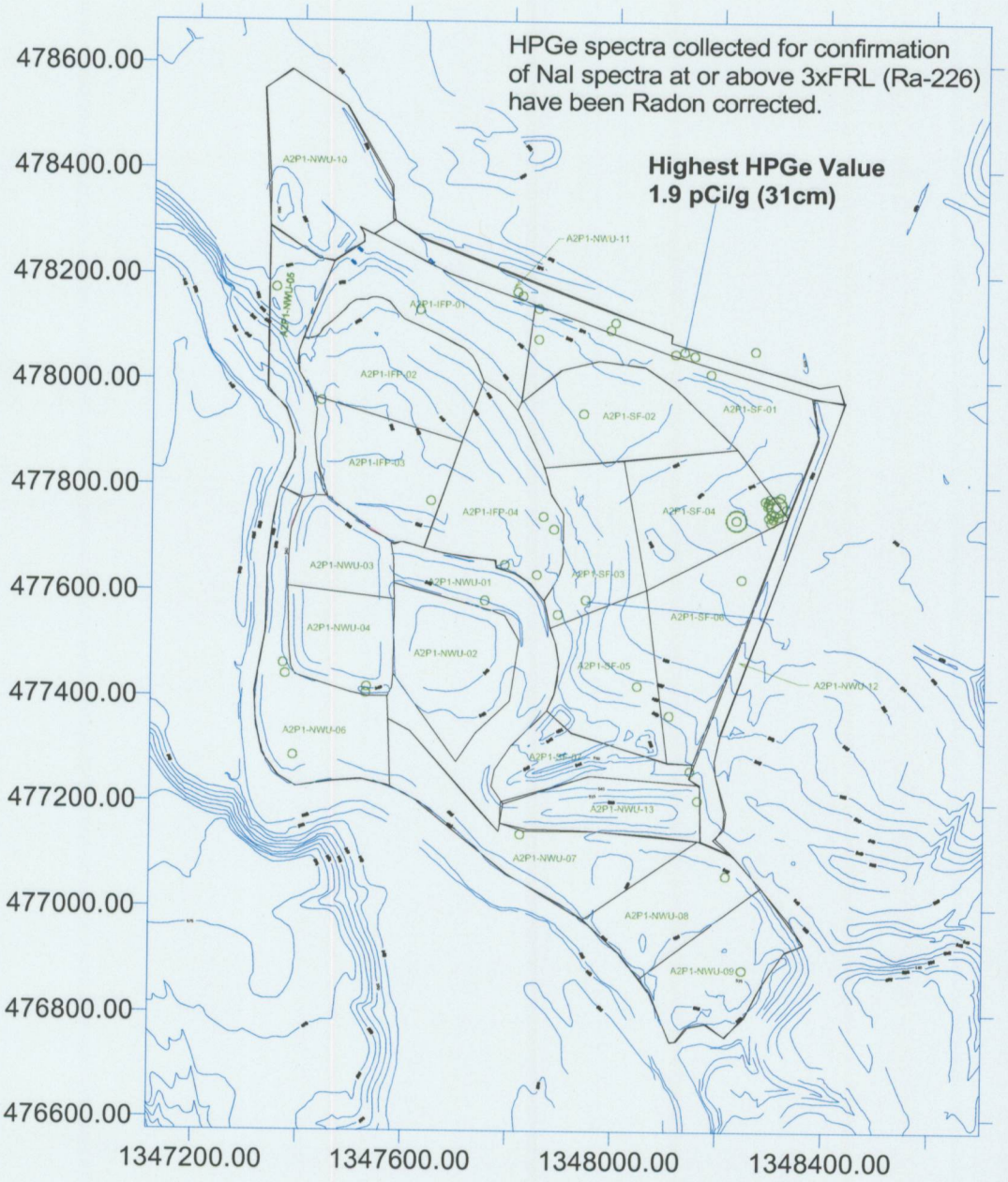
HPGe @ 100cm Thorium-232 (pCi/g)	
0.00	to 3.00
3.00	to 9999.00

RTIMP DWG Title: A2P1_P2_TH.srf
Project Name: A2P1 PreCert
Project #: 20400-PSP-0003
Prepared By: Brian McDaniel/11058
Date Prepared: 03/26/02
Support Data: A2P1_P2_HPGe_31cm.xls; A2P1_P2_HPGe_100cm.xls

A2P1, Phase 2

Moisture Corrected Radium-226
Field of View to Scale
HPGe DET#: 30687,30904,31204
Measurement Dates: 02/15/02 thru 03/22/02

N



HPGe @ 31cm Radium-226 (pCi/g)	
0.00 to 3.40	
3.40 to 9999.00	

HPGe @ 100cm Radium-226 (pCi/g)	
0.00 to 3.40	
3.40 to 9999.00	

RTIMP DWG Title: A2P1_P2_RA.srf
Project Name: A2P1 PreCert
Project #: 20400-PSP-0003
Prepared By: Brian McDaniel/11058
Date Prepared: 03/26/02
Support Data: A2P1_P2_HPGe_31cm.xls; A2P1_P2_HPGe_100cm.xls