



03-3040.30
December 13, 2007

Mr. David Horton, Project Manager
U.S. Army Joint Munitions Command
1 Rock Island Arsenal
Rock Island IL 61299-6000

RE: Backfill Authorization Request for Survey Unit No. 1

Dear Mr. Horton;

Cabrera Services, Inc. (CABRERA) requests authorization to backfill the open excavation in survey unit (SU) 1 within the DRMO area at the Naval Station Great Lakes. Results of the surveys and sampling performed within SU 1 have been shown to meet the criteria outlined in the *Public Private Venture Area Remediation, Addendum to Work Plan for the Remediation of the Recreation and Center Tank Areas and Site-Wide Final Status Survey (hereafter referred to as the Work Plan Addendum [WPA])*, dated May 2007. (CABRERA 2007a) as well as the recently developed derived concentration guideline level (DCGL) of 4 picocuries per gram (pCi/g) above background for thorium-232 (^{232}Th).

Summary of Results

The survey and sampling approach provided in the WPA was designed in accordance with the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* for Class 1 final status surveys (FSS). Systematic soil samples on a specified grid, performance of a 100% gamma walkover survey (GWS), and collection of biased soil samples, as required, were all performed. Areas that were identified as suspected or confirmed as elevated in previous investigations at the site were test pitted, and surveyed. Excavation was directed using a 2x2 NaI detector. Those areas that exhibited readings of approximately 2x background were remediated. Following remediation the areas were re-surveyed and biased samples were collected to confirm successful remediation.



A summary of all SU 1 soil sample results is also attached, with summary statistics for the systematic and biased samples provided in Table 1 and Table 2, respectively. All soil sample results were shown to be below the DCGL_W of 4 pCi/g for ²³²Th. The GWS identified areas of elevated activity within the excavation footprint for follow-up biased sampling. However, analysis of these biased samples (Table 2) did not identify ²³²Th activity above DCGL_W. Therefore, no DCGL_{EMC} concerns were identified.

Table 1. Systematic Sample Summary Statistics for SU 1.
(All values in pCi/g)

Survey Unit	Mean	Median	Max	Standard Deviation
SU-1	0.31	0.18	0.99	0.35

Table 2. Results of SU 1 Biased Samples

Sample ID	²³² Th (pCi/g)	2-σ Uncertainty (pCi/g)	Comments
SU1-B-59	0.77	.23	Concentration below DCGL.

Summary and Conclusion

The results of the data for SU 1 presented above have all been shown to be below the DCGL_W of 4 pCi/g for ²³²Th. As such, CABRERA requests authorization to backfill the open excavation to grade in SU 1.

This data serves as a partial FSS package and will be incorporated into the complete FSS data package for SU 1, which will be assembled after all excavation activities are complete.

Should you have questions or comments, please contact me at 314.703.6784

Sincerely,

//SIGNED//

John Eberlin, PMP
Project Manager
Cabrera Services, Inc.

Attachment
cc: Project File



ATTACHMENTS

Gamma Walkover Survey Results Maps for SU 1 Excavation

Onsite Gamma Spec Lab Data Summary



SU 1 Onsite Gamma Spec Lab Data Summary (all Results in pCi/g)

Filename	Sample Size	Units	Date Started	Time Started	²²⁸ Ac- (²³² Th)	2σ Uncert	MDA
Class 1 FSS Samples							
SU1-1-PR	1492	grams	12/4/2007	11:00	<MDA	N/A	0.34
SU1-2-PR	1639	grams	12/4/2007	12:45	0.42	.11	0.16
SU1-3-PR	1287	grams	12/4/2007	13:13	<MDA	N/A	0.32
SU1-4-PR	1445	grams	12/4/2007	13:33	<MDA	N/A	0.30
SU1-5-PR	1556	grams	12/5/2007	7:45	0.69	0.12	0.22
SU1-6-PR	1578	grams	12/5/2007	9:49	0.25	0.09	0.14
SU1-7-PR	2074	grams	12/5/2007	9:28	0.69	0.11	0.19
SU1-8-PR	2185	grams	12/5/2007	8:46	<MDA	N/A	0.20
SU1-9-PR	1796	grams	12/5/2007	9:10	0.69	0.11	0.19
SU1-10-PR	1662	grams	12/5/2007	10:10	0.38	0.09	0.16
SU1-10-PR-FD	1594	grams	12/5/2007	10:31	0.35	0.09	0.14
SU1-11-PR	1860	grams	12/5/2007	11:08	0.66	0.12	0.15
SU1-12-PR	1424	grams	12/5/2007	12:49	<MDA	N/A	0.31
SU1-13-PR	1665	grams	12/5/2007	12:31	<MDA	N/A	0.34
SU1-14-PR	1370	grams	12/5/2007	11:28	0.99	0.16	0.27
SU1-15-PR	1759	grams	12/5/2007	11:46	0.71	0.10	0.24
SU1-16-PR	1248	grams	12/5/2007	12:10	<MDA	N/A	0.40
SU1-17-PR	1940	grams	12/5/2007	13:07	0.41	0.09	0.15
SU1-18-PR	1370	grams	12/5/2007	13:24	<MDA	N/A	0.41
SU1-19-PR	1570	grams	12/5/2007	13:43	0.82	0.12	0.21
SU1-20-PR	1465	grams	12/5/2007	14:01	<MDA	N/A	0.28
SU1-20-PR-FD	1699	grams	12/5/2007	14:20	<MDA	N/A	0.25
SU1-21-PR	1193	grams	12/5/2007	14:39	<MDA	N/A	0.47
Biased Samples							
SU1-B-59	1393		12/7/2007	11:22	0.77	.23	0.46
Notes: 1. SU# = Survey Unit 2. PR = post-remediation 3. FD = field duplicate 4. B = bias 5. MDA = Minimum Detectable Activity							



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December 13, 2007

Mr. David Horton, Project Manager
U.S. Army Joint Munitions Command
1 Rock Island Arsenal
Rock Island IL 61299-6000

RE: Backfill Authorization Request for Survey Unit No. 3

Dear Mr. Horton;

Cabrera Services, Inc. (CABRERA) requests authorization to backfill the open excavation in survey unit (SU) 3 within the DRMO area at the Naval Station Great Lakes. Results of the surveys and sampling performed within SU 3 have been shown to meet the criteria outlined in the *Public Private Venture Area Remediation, Addendum to Work Plan for the Remediation of the Recreation and Center Tank Areas and Site-Wide Final Status Survey (hereafter referred to as the Work Plan Addendum [WPA])*, dated May 2007. (CABRERA 2007a) as well as the recently developed derived concentration guideline level (DCGL) of 4 picocuries per gram (pCi/g) above background for thorium-232 (^{232}Th).

Summary of Results

The survey and sampling approach provided in the WPA was designed in accordance with the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* for Class 1 final status surveys (FSS). Systematic soil samples on a specified grid, performance of a 100% gamma walkover survey (GWS), and collection of biased soil samples, as required, were all performed. Areas that were identified as suspected or confirmed as elevated in previous investigations at the site were test pitted, and surveyed. Excavation was directed using a 2x2 NaI detector. Those areas that exhibited readings of approximately 2x background were remediated. Following remediation the areas were re-surveyed and biased samples were collected to confirm successful remediation. None of the excavations in SU-3 contained systematic sample locations, as such the systematic data is provided to give an overall understanding of the survey unit and are not directly used to determine that the excavation is candidate for backfill.

A summary of all SU 3 soil sample results is attached, with summary statistics for the systematic and biased samples provided in



Table 1 and Table 2, respectively. All soil sample results were shown to be below the DCGL_w of 4 pCi/g for ²³²Th. Biased samples (Table 2) taken within the excavation did not identify ²³²Th activity above DCGL_w. Therefore, no DCGL_{EMC} concerns were identified.



Table 1. Systematic Sample Summary Statistics for SU 3.
(All values in pCi/g)

Survey Unit	Mean	Median	Max	Standard Deviation
SU-3	0.90	0.84	1.70	0.27

Table 2. Results of SU 3 Biased Samples

Sample ID	²³² Th (pCi/g)	2- σ Uncertainty (pCi/g)	Comments
SU3B-045 PR	0.97	0.16	Concentration below DCGL.
SU3B-046 PR	0.70	0.13	Concentration below DCGL.
SU3B-048 PR	0.67	0.12	Concentration below DCGL.
SU3B-049 PR	3.90	0.21	Concentration below DCGL.
SU3B-050 PR	1.20	0.13	Concentration below DCGL.

Summary and Conclusion

The results of the data for SU 3 presented above have all been shown to be below the DCGL_w of 4 pCi/g for ²³²Th. As such, CABRERA requests authorization to backfill the open excavation to grade in SU 3.

This data serves as a partial FSS package and will be incorporated into the complete FSS data package for SU 3, which will be assembled after all excavation activities are complete.

Should you have questions or comments, please contact me at 314.703.6784

Sincerely,

//SIGNED//

John Eberlin, PMP
Project Manager
Cabrera Services, Inc.

Attachment

cc: Project File



ATTACHMENTS

Gamma Walkover Survey Results Maps for SU 3 Excavation

Onsite Gamma Spec Lab Data Summary



SU 3 Onsite Gamma Spec Lab Data Summary (all Results in pCi/g)

Filename	Sample Size	Units	Date Started	Time Started	²²⁸ Ac- (²³² Th)	2σ Uncert	MDA
Class 1 FSS Samples							
SU3-42-1	1358	grams	8/2/2007	16:10	0.69	0.13	0.23
SU3-42-2	1154	grams	8/2/2007	16:27	0.94	0.14	0.28
SU3-43-1	872	grams	8/2/2007	19:50	1.70	0.23	0.44
SU3-43-2	1467	grams	8/2/2007	20:07	0.88	0.12	0.27
SU3-44-1	1127	grams	8/3/2007	14:41	1.21	0.16	0.32
SU3-44-2	1563	grams	8/3/2007	14:58	0.76	0.12	0.25
SU3-45-1	1153	grams	8/2/2007	21:03	1.07	0.18	0.28
SU3-45-4	1374	grams	8/2/2007	21:20	0.93	0.16	0.26
SU3-46-1	1181	grams	8/2/2007	12:51	0.66	0.14	0.25
SU3-46-3	1503	grams	8/2/2007	13:08	0.56	0.13	0.22
SU3-47-1	1394	grams	8/2/2007	22:12	0.84	0.12	0.28
SU3-47-3	1158	grams	8/2/2007	22:28	0.84	0.16	0.24
SU3-48-1	1117	grams	8/2/2007	16:46	1.01	0.15	0.26
SU3-48-3	1107	grams	8/2/2007	17:04	1.24	0.16	0.29
SU3-49-1	1507	grams	8/2/2007	14:36	0.57	0.12	0.20
SU3-49-3	1360	grams	8/2/2007	14:54	1.06	0.17	0.28
SU3-50-1	1312	grams	8/1/2007	19:43	0.72	0.17	0.27
SU3-50-4	1268	grams	8/1/2007	20:01	0.96	0.14	0.25
SU3-51-1	1349	grams	8/2/2007	18:01	0.93	0.16	0.26
SU3-51-3	1334	grams	8/2/2007	18:20	0.94	0.16	0.25
SU3-52-1	1228	grams	8/2/2007	14:03	1.12	0.17	0.25
SU3-52-2	1199	grams	8/2/2007	14:20	1.36	0.19	0.32
SU3-53-1	1481	grams	8/2/2007	12:12	0.84	0.14	0.22
SU3-53-3	1378	grams	8/2/2007	12:29	0.77	0.14	0.23
SU3-54-1	1102	grams	8/2/2007	18:37	0.87	0.17	0.32
SU3-54-3	1367	grams	8/2/2007	18:54	0.77	0.15	0.26
SU3-55-1	1291	grams	8/2/2007	21:37	1.59	0.16	0.25
SU3-55-3	1310	grams	8/2/2007	21:54	0.68	0.15	0.30
SU3-56-1	1198	grams	8/2/2007	19:12	0.79	0.00	0.26
SU3-56-4	1493	grams	8/2/2007	19:30	0.70	0.15	0.24
SU3-57-1	1394	grams	8/2/2007	15:12	0.71	0.13	0.23
SU3-57-3	1143	grams	8/2/2007	15:30	0.85	0.17	0.34
SU3-58-1	1327	grams	8/2/2007	20:25	0.62	0.11	0.22
SU3-58-3	1234	grams	8/2/2007	20:42	0.93	0.16	0.24
SU3-59-1	1138	grams	8/3/2007	16:31	0.56	0.13	0.22
SU3-59-3	1500	grams	8/3/2007	16:48	0.58	0.12	0.25



Filename	Sample Size	Units	Date Started	Time Started	^{228}Ac - (^{232}Th)	2 σ Uncert	MDA
Biased Samples							
SU3B-045 PR	1405	grams	11/29/2007	11:04	0.97	0.16	0.21
SU3B-046 PR	1667	grams	12/3/2007	13:44	0.70	0.13	0.21
SU3B-048 PR	1741	grams	12/3/2007	14:22	0.67	0.12	0.22
SU3B-049 PR	1727	grams	12/3/2007	12:57	3.90	0.21	0.31
SU3B-050 PR	1683	grams	12/3/2007	13:23	1.20	0.13	0.22
Notes: 1. SU# = Survey Unit 2. PR = post-remediation 3. FD = field duplicate 4. B = bias							
MDA = Minimum Detectable Activity							



03-3040.30
December 13, 2007

Mr. David Horton, Project Manager
U.S. Army Joint Munitions Command
1 Rock Island Arsenal
Rock Island IL 61299-6000

RE: Backfill Authorization Request for Survey Unit No. 4

Dear Mr. Horton;

Cabrera Services, Inc. (CABRERA) requests authorization to backfill the open excavation in survey unit (SU) 4 within the DRMO area at the Naval Station Great Lakes. Results of the surveys and sampling performed within SU 4 have been shown to meet the criteria outlined in the *Public Private Venture Area Remediation, Addendum to Work Plan for the Remediation of the Recreation and Center Tank Areas and Site-Wide Final Status Survey (hereafter referred to as the Work Plan Addendum [WPA])*, dated May 2007. (CABRERA 2007a) as well as the recently developed derived concentration guideline level (DCGL) of 4 picocuries per gram (pCi/g) above background for thorium-232 (^{232}Th).

Summary of Results

The survey and sampling approach provided in the WPA was designed in accordance with the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* for Class 1 final status surveys (FSS). Systematic soil samples on a specified grid, performance of a 100% gamma walkover survey (GWS), and collection of biased soil samples, as required, were all performed. Areas that were identified as suspected or confirmed as elevated in previous investigations at the site were test pitted, and surveyed. Excavation was directed using a 2x2 NaI detector. Those areas that exhibited readings of approximately 2x background were remediated. Following remediation the areas were re-surveyed and biased samples were collected to confirm successful remediation. None of the excavations in SU-4 contained systematic sample locations; as such the systematic data is provided to give an overall understanding of the survey unit and are not directly used to determine that the excavation is candidate for backfill.

A summary of all SU 4 soil sample results is attached, with summary statistics for the systematic and biased samples provided in



Table 1 and Table 2, respectively. All soil sample results were shown to be below the DCGL_W of 4 pCi/g for ²³²Th. Biased samples (Table 2) taken within the excavation did not identify ²³²Th activity above DCGL_W. Therefore, no DCGL_{EMC} concerns were identified.

Table 1. Systematic Sample Summary Statistics for SU 4.
(All values in pCi/g)

Survey Unit	Mean	Median	Max	Standard Deviation
SU-4	0.81	0.8	1.63	0.34

Table 2. Results of SU 4 Biased Samples

Sample ID	²³² Th (pCi/g)	2-σ Uncertainty (pCi/g)	Comments
SU4B-047 PR	1.08	0.16	Concentration below DCGL.
SU4B-053 PR	0.82	0.17	Concentration below DCGL.

Summary and Conclusion

The results of the data for SU 4 presented above have all been shown to be below the DCGL_W of 4 pCi/g for ²³²Th. As such, CABRERA requests authorization to backfill the open excavation to grade in SU 4.

This data serves as a partial FSS package and will be incorporated into the complete FSS data package for SU 4, which will be assembled after all excavation activities are complete.

Should you have questions or comments, please contact me at 314.703.6784

Sincerely,

//SIGNED//

John Eberlin, PMP
Project Manager
Cabrera Services, Inc.

Attachment

cc: Project File



ATTACHMENTS

Gamma Walkover Survey Results Maps for SU 4 Excavation

Onsite Gamma Spec Lab Data Summary



SU 4 Onsite Gamma Spec Lab Data Summary (all Results in pCi/g)

Filename	Sample Size	Units	Date Started	Time Started	²²⁸ Ac- (²³² Th)	2σ Uncert	MDA
Class 1 FSS Samples							
SU4-62-1	961	grams	8/2/2007	9:05	0.54	0.15	0.28
SU4-62-2	1004	grams	8/2/2007	9:23	0.45	0.14	0.20
SU4-64-1	1334	grams	8/3/2007	11:41	0.96	0.14	0.24
SU4-64-2	1100	grams	8/3/2007	11:57	1.63	0.20	0.29
SU4-65-1	841	grams	8/2/2007	9:40	1.11	0.18	0.25
SU4-65-3	1176	grams	8/2/2007	9:57	1.18	0.17	0.21
SU4-66-1	1144	grams	7/31/2007	17:11	0.50	0.11	0.24
SU4-66-3	1576	grams	7/31/2007	17:32	0.79	0.11	0.21
SU4-67-1	1448	grams	8/3/2007	17:48	0.94	0.15	0.25
SU4-67-2	1522	grams	8/3/2007	18:06	1.03	0.15	0.29
SU4-68-1	892	grams	8/4/2007	11:18	0.68	0.16	0.26
SU4-68-2	1215	grams	8/4/2007	11:34	1.04	0.17	0.28
SU4-69-1	1010	grams	8/3/2007	11:05	0.27	0.12	0.21
SU4-69-3	1383	grams	8/3/2007	11:23	0.71	0.15	0.24
SU4-70-1	1278	grams	8/2/2007	8:19	0.99	0.17	0.31
SU4-70-3	1424	grams	8/2/2007	8:47	1.27	0.16	0.22
SU4-71-1	1168	grams	8/2/2007	7:46	0.81	0.16	0.30
SU4-71-4	1599	grams	8/2/2007	8:03	0.74	0.12	0.22
SU4-72-1	1233	grams	8/1/2007	23:22	0.92	0.15	0.25
SU4-72-4	1328	grams	8/2/2007	7:28	1.04	0.18	0.30
SU4-73-1	879	grams	8/2/2007	13:27	0.78	0.17	0.33
SU4-73-3	1396	grams	8/2/2007	13:44	0.51	0.13	0.26
SU4-74-1	1194	grams	8/3/2007	9:23	0.59	0.14	0.28
SU4-74-3	863	grams	8/3/2007	9:40	0.95	0.19	0.33
SU4-75-1	807	grams	8/1/2007	17:53	<MDA	N/A	0.66
SU4-75-2	1212	grams	8/1/2007	18:10	0.75	0.14	0.22
SU4-76-1	1356	grams	8/1/2007	22:12	1.61	0.17	0.28
SU4-76-2	1339	grams	8/1/2007	22:29	0.92	0.13	0.28
SU4-77-1	1587	grams	8/1/2007	17:16	0.68	0.13	0.21
SU4-77-4	1575	grams	8/1/2007	17:36	0.97	0.13	0.29
SU4-78-1	1041	grams	8/1/2007	18:27	0.66	0.15	0.31
SU4-78-2	1560	grams	8/1/2007	18:50	0.94	0.12	0.24
SU4-79-1	1207	grams	8/2/2007	10:51	1.05	0.15	0.25
SU4-79-3	1405	grams	8/2/2007	11:12	1.24	0.16	0.29
SU4-80-1	1140	grams	8/1/2007	19:09	<MDA	N/A	0.48
SU4-80-4	1317	grams	8/1/2007	19:26	0.99	0.16	0.27
SU4-81-1	1225	grams	8/2/2007	11:33	0.45	0.15	0.26
SU4-81-4	1346	grams	8/2/2007	11:55	0.80	0.15	0.27
SU4-82-1	1366	grams	8/1/2007	21:13	0.69	0.12	0.22
SU4-82-3	1335	grams	8/1/2007	21:34	0.99	0.15	0.23
SU4-83-1	1218	grams	8/3/2007	12:15	0.34	0.13	0.22
SU4-83-4	1213	grams	8/3/2007	13:32	0.67	0.14	0.24



Filename	Sample Size	Units	Date Started	Time Started	^{228}Ac - (^{232}Th)	2 σ Uncert	MDA
Biased Samples							
SU4B-047 PR	1629	grams	12/3/2007	14:02	1.08	0.16	0.28
SU4B-053 PR	1669	grams	12/4/2007	7:56	0.82	0.17	0.35
Notes: 1. SU# = Survey Unit 2. PR = post-remediation 3. FD = field duplicate 4. B = bias MDA = Minimum Detectable Activity							



03-3040.30
December 13, 2007

Mr. David Horton, Project Manager
U.S. Army Joint Munitions Command
1 Rock Island Arsenal
Rock Island IL 61299-6000

RE: Backfill Authorization Request for Survey Unit No. 5

Dear Mr. Horton;

Cabrera Services, Inc. (CABRERA) requests authorization to backfill the open excavation in survey unit (SU) 4 within the DRMO area at the Naval Station Great Lakes. Results of the surveys and sampling performed within SU 5 have been shown to meet the criteria outlined in the *Public Private Venture Area Remediation, Addendum to Work Plan for the Remediation of the Recreation and Center Tank Areas and Site-Wide Final Status Survey (hereafter referred to as the Work Plan Addendum [WPA])*, dated May 2007. (CABRERA 2007a) as well as the recently developed derived concentration guideline level (DCGL) of 4 picocuries per gram (pCi/g) above background for thorium-232 (^{232}Th).

Summary of Results

The survey and sampling approach provided in the WPA was designed in accordance with the *Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM)* for Class 1 final status surveys (FSS). Systematic soil samples on a specified grid, performance of a 100% gamma walkover survey (GWS), and collection of biased soil samples, as required, were all performed. Areas that were identified as suspected or confirmed as elevated in previous investigations at the site were test pitted, and surveyed. Excavation was directed using a 2x2 NaI detector. Those areas that exhibited readings of approximately 2x background were remediated. Following remediation the areas were re-surveyed and biased samples were collected to confirm successful remediation. None of the excavations in SU-5 contained systematic sample locations; as such the systematic data is provided to give an overall understanding of the survey unit and are not directly used to determine that the excavation is candidate for backfill.

A summary of all SU 5 soil sample results is attached, with summary statistics for the systematic and biased samples provided in Table 1 and Table 2, respectively. All soil sample results were shown to be below the DCGL_W of 4 pCi/g for ^{232}Th . Biased samples (Table 2) taken within the excavation did not identify ^{232}Th activity above DCGL_W . Therefore, no DCGL_{EMC} concerns were identified.



Table 1. Systematic Sample Summary Statistics for SU 5.
(All values in pCi/g)

Survey Unit	Mean	Median	Max	Standard Deviation
SU-5	0.8	0.79	1.26	0.29

Table 2. Results of SU 5 Biased Samples

Sample ID	²³² Th (pCi/g)	2-σ Uncertainty (pCi/g)	Comments
SU5-B51	1.01	0.15	Concentration below DCGL.
SU5-B52	0.98	0.13	Concentration below DCGL.
SU5-B54	2.39	0.21	Concentration below DCGL.

Summary and Conclusion

The results of the data for SU 5 presented above have all been shown to be below the DCGL_w of 4 pCi/g for ²³²Th. As such, CABRERA requests authorization to backfill the open excavation to grade in SU 5.

This data serves as a partial FSS package and will be incorporated into the complete FSS data package for SU 5, which will be assembled after all excavation activities are complete.

Should you have questions or comments, please contact me at 314.703.6784

Sincerely,

//SIGNED//

John Eberlin, PMP
Project Manager
Cabrera Services, Inc.

Attachment
cc: Project File



ATTACHMENTS

Gamma Walkover Survey Results Maps for SU 5 Excavation

Onsite Gamma Spec Lab Data Summary



SU 5 Onsite Gamma Spec Lab Data Summary (all Results in pCi/g)

Filename	Sample Size	Units	Date Started	Time Started	²²⁸ Ac- (²³² Th)	2σ Uncert	MDA
Class 1 FSS Samples							
SU5-101-1	1098	grams	8/1/2007	20:19	0.57	0.15	0.24
SU5-101-2	1359	grams	8/1/2007	20:37	0.85	0.15	0.24
SU5-102-1	1520	grams	7/31/2007	20:33	0.68	0.14	0.20
SU5-102-3	1303	grams	7/31/2007	20:50	1.11	0.17	0.30
SU5-103-1	1277	grams	8/3/2007	15:18	1.10	0.18	0.33
SU5-103-2	1451	grams	8/3/2007	15:38	0.92	0.15	0.24
SU5-104-1	1273	grams	8/3/2007	15:56	1.18	0.17	0.27
SU5-104-2	1327	grams	8/3/2007	16:14	1.07	0.16	0.25
SU5-105-1	1161	grams	8/3/2007	22:12	0.58	0.16	0.26
SU5-105-3	1371	grams	8/3/2007	22:30	0.93	0.16	0.30
SU5-84-1	1539	grams	8/3/2007	17:09	0.78	0.12	0.22
SU5-84-4	1595	grams	8/3/2007	17:29	0.67	0.12	0.20
SU5-85-1	869	grams	8/3/2007	12:49	0.75	0.18	0.23
SU5-85-3	1019	grams	8/3/2007	13:11	1.21	0.00	0.35
SU5-86-1	885	grams	8/3/2007	20:55	0.66	0.21	0.25
SU5-86-3	1403	grams	8/3/2007	21:12	0.55	0.13	0.24
SU5-87-1	1207	grams	8/1/2007	22:46	0.84	0.15	0.23
SU5-87-4	1289	grams	8/1/2007	23:03	1.08	0.16	0.26
SU5-88-1	1263	grams	8/3/2007	10:31	1.15	0.16	0.29
SU5-88-2	1387	grams	8/3/2007	10:47	0.79	0.15	0.30
SU5-89-1	1221	grams	8/4/2007	9:38	0.55	0.12	0.23
SU5-89-2	1230	grams	8/4/2007	9:55	0.68	0.14	0.26
SU5-90-1	968	grams	8/3/2007	21:32	0.58	0.16	0.31
SU5-90-2	1167	grams	8/3/2007	21:49	0.76	0.18	0.29
SU5-91-1	1384	grams	8/7/2007	9:53	0.73	0.14	0.24
SU5-91-3	1430	grams	8/7/2007	10:09	0.65	0.13	0.25
SU5-92-1	1506	grams	7/31/2007	19:55	0.21	0.08	0.16
SU5-92-4	1539	grams	7/31/2007	20:12	0.64	0.12	0.21
SU5-100-1	1170	grams	8/2/2007	10:13	1.26	0.18	0.29
SU5-93-1	1001	grams	8/7/2007	14:24	1.13	0.19	0.35
SU5-93-2	1275	grams	8/7/2007	14:42	1.02	0.17	0.28
SU5-93-3	1527	grams	8/2/2007	10:30	0.94	0.13	0.26
SU5-94-1	1136	grams	7/31/2007	19:13	0.90	0.16	0.29
SU5-94-2	1775	grams	7/31/2007	19:31	0.72	0.12	0.20
SU5-95-1	1128	grams	7/31/2007	21:08	0.95	0.17	0.30
SU5-95-4	1468	grams	7/31/2007	21:25	1.02	0.15	0.23
SU5-96-1	1066	grams	8/3/2007	18:25	0.98	0.18	0.36
SU5-96-2	1455	grams	8/3/2007	18:42	0.81	0.15	0.25
SU5-97-1	949	grams	8/3/2007	22:52	<MDA	N/A	0.51
SU5-97-4	1226	grams	8/3/2007	23:12	0.65	0.15	0.29
SU5-98-1	1056	grams	8/3/2007	14:04	0.00	N/A	0.46
SU5-98-3	1116	grams	8/3/2007	14:23	0.76	0.15	0.27



Filename	Sample Size	Units	Date Started	Time Started	^{228}Ac - (^{232}Th)	2 σ Uncert	MDA
Biased Samples							
SU5-B51	1545	grams	12/4/2007	10:40	1.01	0.15	0.21
SU5-B52	1751	grams	12/3/2007	14:41	0.98	0.13	0.23
SU5-B54	1655	grams	12/4/2007	8:36	2.39	0.21	0.37
Notes: 1. SU# = Survey Unit 2. PR = post-remediation 3. FD = field duplicate 4. B = bias <div>MDA = Minimum Detectable Activity</div>							