



Paragon Analytics

Radiochemistry Case Narrative Gamma Spectroscopy

New Horizons

CSMRI / 2135

Paragon Work Order 0405169

1. This report consists of analysis results for seven soil samples received by Paragon Analytics on 5/19/04. The analysis results for these samples are reported on a 'dry weight' basis in units of pCi/gram.
2. These samples were prepared according to Paragon Analytics procedure PA SOP739R8.
3. The samples were analyzed for the presence of gamma emitting radionuclides according to Paragon Analytics procedure PA SOP713R8. The analyses were completed on 6/18/04.
4. Duplicate analysis results above the DER warning limit of 1.42 have been flagged as "W" for Warn. For gamma spectroscopic analysis, SOP 715R13 states that 75% of the nuclides must be within the 2-sigma control limit to meet DER requirements. Elevated DER values may be attributable to sample inhomogeneity.
5. Activity concentrations above the calculated MDC are reported in some instances where minimum nuclide identification criteria are not met. Such tentative identifications result when the software attempts to calculate net activity concentrations for analytes where either one or both of the following criteria are not satisfied: the 'diagnostic' peak for a nuclide must be identified above the critical level, or the minimum library peak abundance must be attained. Nuclides not meeting these requirements have been flagged with a "TI" qualifier.
6. There are cases where the sample density is less than the associated calibration standard density. Cases that exceed the limit of +/- 15% of the density of the calibration standard are flagged with a 'G', denoting a significant density difference between the sample and calibration standard. Consequently, the results may be biased high for the flagged results in this workorder. If requested, Paragon Analytics will perform a transmission spike in order to estimate a magnitude of this bias. The results are reported without further qualification.
7. Paragon Analytics has found there to be a significant low bias to Pb-214 and Bi-214 results when using a mixed nuclide gamma source for efficiency calibrations. The magnitude of this bias has been determined to be approximately 32% for Bi-214, and 23% for Pb-214. Therefore, any reported results for Pb-214 and Bi-214 are flagged with a "J" qualifier, indicating the activity values to be an estimated value. Results are reported without further qualification.
8. Paragon Analytics follows the convention outlined in ANSI N42.23 for reporting significant digits in the TPU and MDC results. ANSI N42.23 states that the TPU result should be rounded to two significant digits and that the MDC result should be rounded to the same decimal place as the TPU result. In practice, this could result in an MDC result with a

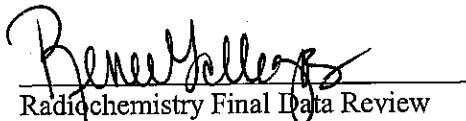
reported value of 0 for samples with significant activity, including the batch laboratory control sample.

9. In cases where Cd-109 is identified at a level greater than the MDC, an "SI" flag is assigned denoting spectral interference. This interference occurs with the K_{β} x-rays of Pb, which occur at an energy of 87 keV.
10. Due to elevated activity and subsequent elevated background from the Compton Continuum in samples H236 and SDA064 (PA ID's 0405169-9 and -13), the requested MDC of 0.2 pCi/gram for Ra-228 was not met. As there is significant activity in this sample, results are reported without further qualification.
11. The requested MDC of 0.2 pCi/g for Ra-228 was not met for several of these samples. As the measured Ra-228 activity in these samples is above the achieved MDC. The requested MDC of 0.2 pCi/g for Ra-226 was not met for all samples in this workorder. The measured Ra-226 and Ra-228 activity in these samples is above the achieved MDC, indicated by a "M3" qualifier. The results are submitted without further qualification.
12. The requested MDC of 0.2 pCi/g for Ra-228 was not met for the method blank, GS040527-3MB. Per project manager instruction, the method blank was counted for the same count time as the samples. The results are submitted without further qualification.
13. There are cases where the magnitude of negative activity is greater than the 2-sigma TPU. Under typical conditions, where background data is normally distributed and analyzed by paired observations, this event is likely to occur at least 2.5% of the time. Review of the data does not indicate a problem with the instrument or reporting systems and results are reported without further qualification.
14. No problems were encountered with either the client samples or the associated quality control samples. All quality control criteria were met.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, Paragon Analytics certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.


Radiochemistry Instrument Technician

6-25-04
Date


Radiochemistry Final Data Review

6/25/04
Date

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Lab ID: GS040527-3MB

Sample Matrix: SOIL

Prep Batch: GS040527-3

Final Aliquot: 215 g

Prep SOP: PAI 739 Rev 8

QCBatchID: GS040527-3-1

Result Units: pCi/g

Date Collected: 27-May-04

Run ID: GS040527-3A

File Name: 040925D07A

Date Prepared: 27-May-04

Count Time: 60 minutes

Library: FANP_NEW HO

Date Analyzed: 18-Jun-04

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	0.01 +/- 0.21	0.40	U,M
14391-76-5	Ag-110m	-0.058 +/- 0.045	0.103	U
14682-66-7	Al-26	0.009 +/- 0.039	0.084	U
14596-10-2	Am-241	0.004 +/- 0.068	0.122	U
13966-02-4	Be-7	0.18 +/- 0.42	0.72	U
14913-49-6	Bi-212	0.19 +/- 0.72	1.31	U
14733-03-0	Bi-214	0.03 +/- 0.13	0.24	U,J
14109-32-1	Cd-109	0.28 +/- 0.50	0.85	U
13982-30-4	Ce-139	-0.022 +/- 0.029	0.056	U
14762-78-8	Ce-144	-0.07 +/- 0.19	0.35	U
14093-03-9	Co-56	0.022 +/- 0.094	0.175	U
13981-50-5	Co-57	0.004 +/- 0.023	0.041	U
13981-38-9	Co-58	0.007 +/- 0.050	0.093	U
10198-40-0	Co-60	-0.024 +/- 0.066	0.139	U
14392-02-0	Cr-51	1.2 +/- 3.8	6.6	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC or less than the associated TPU
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- SQ - Spectral quality prevents accurate quantitation.
- SI - Nuclide identification and/or quantitation is tentative.
- TI - Nuclide identification is tentative.
- R - Nuclide has exceeded 8 half-lives.
- M - Requested MDC not met.
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMR! 2135

Lab ID: GS040527-3MB

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 27-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 60 minutes

Final Aliquot: 215 g
Result Units: pCi/g
File Name: 040925D07A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	-0.016 +/- 0.054	0.104	U
10045-97-3	Cs-137	0.045 +/- 0.053	0.085	U
14683-23-9	Eu-152	0.04 +/- 0.26	0.52	U
15585-10-1	Eu-154	0.14 +/- 0.29	0.51	U
14391-16-3	Eu-155	-0.043 +/- 0.075	0.147	U
14596-12-4	Fe-59	0.043 +/- 0.085	0.151	U
10043-66-0	I-131	-0.016 +/- 0.041	0.080	U
13966-00-2	K-40	0.48 +/- 0.90	1.56	U
13966-31-9	Mn-54	0.003 +/- 0.055	0.104	U
13966-32-0	Na-22	-0.008 +/- 0.063	0.128	U
14681-63-1	Nb-94	-0.048 +/- 0.056	0.116	U
13967-76-5	Nb-95	0 +/- 0.060	0.111	U
15100-28-4	Pa-234m	-3 +/- 10	20	U
15092-94-1	Pb-212	-0.051 +/- 0.072	0.138	U
15067-28-4	Pb-214	0.06 +/- 0.10	0.17	U,J

Comments:

Qualifiers/Flags:

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Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Lab ID: GS040527-3MB

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1

Final Aliquot: 215 g
Result Units: pCi/g
File Name: 040925D07A

Date Collected: 27-May-04

Run ID: GS040527-3A

Date Prepared: 27-May-04

Count Time: 60 minutes

Date Analyzed: 18-Jun-04

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	0.24 +/- 0.54	0.94	U
14683-10-4	Sb-124	0.024 +/- 0.050	0.086	U
14234-35-6	Sb-125	-0.063 +/- 0.095	0.201	U
13967-63-0	Sc-46	-0.022 +/- 0.041	0.092	U
15623-47-9	Th-227	0.21 +/- 0.21	0.34	U
15065-10-8	Th-234	0.29 +/- 0.46	0.88	U
14913-50-9	Tl-208	-0.047 +/- 0.062	0.124	U
15117-96-1	U-235	-0.11 +/- 0.21	0.39	U
13982-39-3	Zn-65	0.07 +/- 0.13	0.23	U

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
M - Requested MDC not met.
B - Analyte concentration greater than MDC.
B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Method Blank Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Lab ID: GS040527-3MB

Sample Matrix: SOIL

Prep Batch: GS040527-3

Final Aliquot: 215 g

Prep SOP: PAI 739 Rev 8

QC Batch ID: GS040527-3-1

Result Units: pCi/g

Date Collected: 27-May-04

Run ID: GS040527-3A

File Name: 040925D07B

Date Prepared: 27-May-04

Count Time: 60 minutes

Library: RA-226

Date Analyzed: 18-Jun-04

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	0.08 +/- 0.13	0.22	U

Comments:

Qualifiers/Flags:

- U - Result is less than the sample specific MDC or less than the associated TPU
- Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
- Y2 - Chemical Yield outside default limits.
- LT - Result is less than Requested MDC, greater than sample specific MDC.
- SQ - Spectral quality prevents accurate quantitation.
- SI - Nuclide identification and/or quantitation is tentative.
- T1 - Nuclide identification is tentative.
- R - Nuclide has exceeded 8 half-lives.
- M - Requested MDC not met.
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- MDC - Minimum Detectable Concentration (see PAI SOP 709)
- BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Lab ID: GS040527-3ALCS

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1

Final Aliquot: 215 g
Result Units: pCi/g
File Name: 040995D08A

Date Collected: 27-May-04

Run ID: GS040527-3A

Date Prepared: 27-May-04

Count Time: 30 minutes

Date Analyzed: 18-Jun-04

Library: ANALYTICAL

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
14596-10-2	Am-241	442 +/- 52	2	470	93.9	85 - 115	P
10198-40-0	Co-60	192 +/- 22	1	180	106	85 - 115	P
10045-97-3	Cs-137	186 +/- 22	1	176	106	85 - 115	P

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

LT - Result is less than Requested MDC, greater than sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS Recovery within control limits.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide Identification is tentative.

R - Nuclide has exceeded 8 half-lives.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Laboratory Control Sample(s)

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Lab ID: GS040527-3LCS

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 27-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes

Final Aliquot: 215 g
Result Units: pCi/g
File Name: 040996D08A

Library: RA-226

CASNO	Target Nuclide	Results +/- 2s TPU	MDC	Spike Added	% Rec	Control Limits	Lab Qualifier
13982-63-3	Ra-226	465 +/- 54	2	471	98.6	85 - 115	P,M3

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
LT - Result is less than Requested MDC, greater than sample specific MDC.
Y1 - Chemical Yield is In control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
L - LCS Recovery below lower control limit.
H - LCS Recovery above upper control limit.
P - LCS Recovery within control limits.
M - The requested MDC was not met.
M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1DUP

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 125 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040923D07A

Library: FANP_NEW HO

CASNO	Analyte	Sample Result +/- 2 s TPU	Duplicate Result +/- 2 s TPU	DER	Control Limit	Lab Qualifiers
15262-20-1	Ra-228	2.03 +/- 0.56	2.25 +/- 0.84	0.22	2.13	M3,G
14391-76-5	Ag-110m	-0.07 +/- 0.14	0.05 +/- 0.19	0.51	2.13	U,G
14682-66-7	Al-26	-0.01 +/- 0.18	-0.14 +/- 0.22	0.47	2.13	U,G
14596-10-2	Am-241	-0.58 +/- 0.51	0.04 +/- 0.30	1.05	2.13	U,G
13966-02-4	Be-7	0.2 +/- 1.6	0 +/- 2.0	0.08	2.13	U,G
14913-49-6	Bi-212	2.9 +/- 2.2	2.5 +/- 3.4	0.09	2.13	U,G
14733-03-0	Bi-214	1.46 +/- 0.47	1.71 +/- 0.58	0.34	2.13	G,J
14109-32-1	Cd-109	2.5 +/- 2.8	4.3 +/- 3.2	0.42	2.13	U,G
13982-30-4	Ce-139	0.04 +/- 0.11	0 +/- 0.13	0.23	2.13	U,G
14762-78-8	Ce-144	-0.04 +/- 0.62	0.13 +/- 0.79	0.17	2.13	U,G
14093-03-9	Co-56	0.54 +/- 0.47	0.34 +/- 0.54	0.27	2.13	U,G
13981-50-5	Co-57	-0.011 +/- 0.083	-0.096 +/- 0.093	0.68	2.13	U,G
13981-38-9	Co-58	-0.12 +/- 0.23	0.06 +/- 0.24	0.52	2.13	U,G
10198-40-0	Co-60	0.01 +/- 0.19	0 +/- 0.21	0.03	2.13	U,G
14392-02-0	Cr-51	-24 +/- 26	-13 +/- 33	0.25	2.13	U,G
13967-70-9	Cs-134	0.12 +/- 0.22	0.01 +/- 0.17	0.38	2.13	U,G
10045-97-3	Cs-137	-0.03 +/- 0.14	0.03 +/- 0.17	0.25	2.13	U,G

Comments:

Duplicate Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- D - DER is greater than Control Limit of 2.13
- LT - Result is less than Request MDC, greater than sample specific MDC
- M - Requested MDC not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits

Abbreviations:

- TPU - Total Propagated Uncertainty (see PAI SOP 743)
- DER - Duplicate Error Ratio
- BDL - Below Detection Limit
- NR - Not Reported

- SQ - Spectral quality prevents accurate quantitation.
- SI - Nuclide identification and/or quantitation is tentative.
- TI - Nuclide identification is tentative.
- R - Nuclide has exceeded 8 half-lives.
- G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1DUP

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 125 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040923D07A

Library: FANP_NEW HO

14683-23-9	Eu-152	0.50 +/- 0.72	0.8 +/- 1.0	0.26	2.13	U,G
15585-10-1	Eu-154	0.32 +/- 0.80	1.3 +/- 1.1	0.73	2.13	U,G
14391-16-3	Eu-155	-0.20 +/- 0.36	0.12 +/- 0.32	0.65	2.13	U,G
14596-12-4	Fe-59	0.17 +/- 0.60	0.12 +/- 0.64	0.07	2.13	U,G
10043-66-0	I-131	-4.2 +/- 5.5	2.5 +/- 6.9	0.77	2.13	U,G
13966-00-2	K-40	20.7 +/- 4.0	15.2 +/- 4.9	0.88	2.13	G
13966-31-9	Mn-54	0.04 +/- 0.16	0.16 +/- 0.20	0.45	2.13	U,G
13966-32-0	Na-22	0.01 +/- 0.15	-0.19 +/- 0.23	0.74	2.13	U,G
14681-63-1	Nb-94	0.01 +/- 0.13	-0.01 +/- 0.19	0.09	2.13	U,G
13967-76-5	Nb-95	0.13 +/- 0.22	0.33 +/- 0.31	0.54	2.13	U,G
15100-28-4	Pa-234m	-12 +/- 27	-29 +/- 31	0.41	2.13	U,G
15092-94-1	Pb-212	2.52 +/- 0.44	2.42 +/- 0.55	0.13	2.13	G
15067-28-4	Pb-214	1.62 +/- 0.38	1.50 +/- 0.42	0.22	2.13	G,J
13967-48-1	Ru-106	-1.2 +/- 1.4	-0.6 +/- 1.8	0.28	2.13	U,G
14683-10-4	Sb-124	-0.09 +/- 0.27	-0.02 +/- 0.27	0.19	2.13	U,G
14234-35-6	Sb-125	-0.09 +/- 0.30	0.08 +/- 0.32	0.40	2.13	U,G
13967-63-0	Sc-46	-0.11 +/- 0.20	-0.11 +/- 0.27	0.01	2.13	U,G
15623-47-9	Th-227	-2.7 +/- 1.2	-0.48 +/- 0.81	1.54	2.13	U,W,G
15065-10-8	Th-234	1.4 +/- 2.4	1.9 +/- 1.8	0.16	2.13	U,G

Comments:

Duplicate Qualifiers/Flags:

- U - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
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- LT - Result is less than Request MDC, greater than sample specific MDC
- M - Requested MDC not met.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
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- N - Matrix Spike Recovery outside control limits

Abbreviations:

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- DER - Duplicate Error Ratio
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- NR - Not Reported

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- SI - Nuclide Identification and/or quantitation is tentative.
- TI - Nuclide identification is tentative.
- R - Nuclide has exceeded 8 half-lives.
- G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008

Lab ID: 0405169-1DUP

Sample Matrix: SOIL

Prep SOP: PAI 739 Rev 8

Date Collected: 03-May-04

Date Prepared: 27-May-04

Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3

QCBatchID: GS040527-3-1

Run ID: GS040527-3A

Count Time: 30 minutes

Report Basis: Dry Weight

Final Allquot: 125 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: 040923D07A

Library: FANP_NEW HO

14913-50-9	Tl-208	0.77 +/- 0.21	0.90 +/- 0.30	0.34	2.13	G
15117-96-1	U-235	-0.43 +/- 0.66	-0.40 +/- 0.79	0.03	2.13	U,G
13982-39-3	Zn-65	-0.61 +/- 0.63	-0.05 +/- 0.49	0.69	2.13	U,G

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Duplicate Sample Results (DER)

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008

Lab ID: 0405169-1DUP

Sample Matrix: SOIL

Prep SOP: PAI 739 Rev 8

Date Collected: 03-May-04

Date Prepared: 27-May-04

Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3

QCBatchID: GS040527-3-1

Run ID: GS040527-3A

Count Time: 30 minutes

Report Basis: Dry Weight

Final Aliquot: 125 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: 040923D07B

Library: RA-226

CASNO	Analyte	Sample Result +/- 2 s TPU	Duplicate Result +/- 2 s TPU	DER	Control Limit	Lab Qualifiers
13982-63-3	Ra-226	2.14 +/- 0.44	2.00 +/- 0.46	0.22	2.13	M3,G

Comments:

Duplicate Qualifiers/Flags:

U - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

LT - Result is less than Request MDC, greater than sample specific MDC

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

T1 - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

DER - Duplicate Error Ratio

BDL - Below Detection Limit

NR - Not Reported

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

Client Project ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 121 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040972D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	2.03 +/- 0.56	0.98	M3,G
14391-76-5	Ag-110m	-0.07 +/- 0.14	0.26	U,G
14682-66-7	Al-26	-0.01 +/- 0.18	0.32	U,G
14596-10-2	Am-241	-0.58 +/- 0.51	0.93	U,G
13966-02-4	Be-7	0.2 +/- 1.6	2.7	U,G
14913-49-6	Bi-212	2.9 +/- 2.2	3.4	U,G
14733-03-0	Bi-214	1.46 +/- 0.47	0.62	G,J
14109-32-1	Cd-109	2.5 +/- 2.8	4.5	U,G
13982-30-4	Ce-139	0.04 +/- 0.11	0.19	U,G
14762-78-8	Ce-144	-0.04 +/- 0.62	1.09	U,G
14093-03-9	Co-56	0.54 +/- 0.47	0.75	U,G
13981-50-5	Co-57	-0.011 +/- 0.083	0.145	U,G
13981-38-9	Co-58	-0.12 +/- 0.23	0.42	U,G
10198-40-0	Co-60	0.01 +/- 0.19	0.33	U,G
14392-02-0	Cr-51	-24 +/- 26	48	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 121 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040972D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	0.12 +/- 0.22	0.36	U,G
10045-97-3	Cs-137	-0.03 +/- 0.14	0.26	U,G
14683-23-9	Eu-152	0.50 +/- 0.72	1.20	U,G
15585-10-1	Eu-154	0.32 +/- 0.80	1.37	U,G
14391-16-3	Eu-155	-0.20 +/- 0.36	0.64	U,G
14596-12-4	Fe-59	0.17 +/- 0.60	1.04	U,G
10043-66-0	I-131	-4.2 +/- 5.5	10.0	U,G
13966-00-2	K-40	20.7 +/- 4.0	3.4	G
13966-31-9	Mn-54	0.04 +/- 0.16	0.27	U,G
13966-32-0	Na-22	0.01 +/- 0.15	0.27	U,G
14681-63-1	Nb-94	0.01 +/- 0.13	0.23	U,G
13967-76-5	Nb-95	0.13 +/- 0.22	0.36	U,G
15100-28-4	Pa-234m	-12 +/- 27	49	U,G
15092-94-1	Pb-212	2.52 +/- 0.44	0.37	G
15067-28-4	Pb-214	1.62 +/- 0.38	0.52	G,J

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
MS - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 121 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040972D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	-1.2 +/- 1.4	2.5	U,G
14683-10-4	Sb-124	-0.09 +/- 0.27	0.47	U,G
14234-35-6	Sb-125	-0.09 +/- 0.30	0.54	U,G
13967-63-0	Sc-46	-0.11 +/- 0.20	0.36	U,G
15623-47-9	Th-227	-2.7 +/- 1.2	2.2	U,G
15065-10-8	Th-234	1.4 +/- 2.4	4.1	U,G
14913-50-9	Tl-208	0.77 +/- 0.21	0.25	G
15117-96-1	U-235	-0.43 +/- 0.66	1.17	U,G
13982-39-3	Zn-65	-0.61 +/- 0.63	1.17	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide Identification and/or quantitation is tentative.
TI - Nuclide Identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 121 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040972D10B

Library: RA-226

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	2.14 +/- 0.44	0.68	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1DUP

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QC Batch ID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 125 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040923D07A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	2.25 +/- 0.84	1.17	M3,G
14391-76-5	Ag-110m	0.05 +/- 0.19	0.34	U,G
14682-66-7	Al-26	-0.14 +/- 0.22	0.52	U,G
14596-10-2	Am-241	0.04 +/- 0.30	0.52	U,G
13966-02-4	Be-7	0 +/- 2.0	3.9	U,G
14913-49-6	Bi-212	2.5 +/- 3.4	5.6	U,G
14733-03-0	Bi-214	1.71 +/- 0.58	0.61	G,J
14109-32-1	Cd-109	4.3 +/- 3.2	4.9	U,G
13982-30-4	Ce-139	0 +/- 0.13	0.23	U,G
14762-78-8	Ce-144	0.13 +/- 0.79	1.40	U,G
14093-03-9	Co-56	0.34 +/- 0.54	0.91	U,G
13981-50-5	Co-57	-0.096 +/- 0.093	0.184	U,G
13981-38-9	Co-58	0.06 +/- 0.24	0.45	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1DUP

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8

Date Collected: 03-May-04
Date Prepared: 27-May-04

Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1

Run ID: GS040527-3A
Count Time: 30 minutes

Report Basis: Dry Weight

Final Aliquot: 125 g
Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: 040923D07A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
10198-40-0	Co-60	0 +/- 0.21	0.42	U,G
14392-02-0	Cr-51	-13 +/- 33	64	U,G
13967-70-9	Cs-134	0.01 +/- 0.17	0.31	U,G
10045-97-3	Cs-137	0.03 +/- 0.17	0.32	U,G
14683-23-9	Eu-152	0.8 +/- 1.0	1.7	U,G
15585-10-1	Eu-154	1.3 +/- 1.1	1.6	U,G
14391-16-3	Eu-155	0.12 +/- 0.32	0.56	U,G
14596-12-4	Fe-59	0.12 +/- 0.64	1.23	U,G
10043-66-0	I-131	2.5 +/- 6.9	12.2	U,G
13966-00-2	K-40	15.2 +/- 4.9	4.3	G
13966-31-9	Mn-54	0.16 +/- 0.20	0.32	U,G
13966-32-0	Na-22	-0.19 +/- 0.23	0.51	U,G
14681-63-1	Nb-94	-0.01 +/- 0.19	0.35	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1DUP

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 03-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 125 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040923D07A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-76-5	Nb-95	0.33 +/- 0.31	0.47	U,G
15100-28-4	Pa-234m	-29 +/- 31	70	U,G
15092-94-1	Pb-212	2.42 +/- 0.55	0.51	G
15067-28-4	Pb-214	1.50 +/- 0.42	0.51	G,J
13967-48-1	Ru-106	-0.6 +/- 1.8	3.6	U,G
14683-10-4	Sb-124	-0.02 +/- 0.27	0.52	U,G
14234-35-6	Sb-125	0.08 +/- 0.32	0.59	U,G
13967-63-0	Sc-46	-0.11 +/- 0.27	0.56	U,G
15623-47-9	Th-227	-0.48 +/- 0.81	1.56	U,W,G
15065-10-8	Th-234	1.9 +/- 1.8	3.0	U,G
14913-50-9	Tl-208	0.90 +/- 0.30	0.30	G
15117-96-1	U-235	-0.40 +/- 0.79	1.47	U,G
13982-39-3	Zn-65	-0.05 +/- 0.49	0.97	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but thereported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Duplicate Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1008
Lab ID: 0405169-1DUP

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8

Date Collected: 03-May-04

Date Prepared: 27-May-04

Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3

QCBatchID: GS040527-3-1

Run ID: GS040527-3A

Count Time: 30 minutes

Report Basis: Dry Weight

Final Aliquot: 125 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: 040923D07B

Library: RA-226

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	2.00 +/- 0.46	0.64	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M - The requested MDC was not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

W - DER is greater than Warning Limit of 1.42

D - DER is greater than Control Limit of 2.13

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1025
Lab ID: 0405169-3

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 134 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040973D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.40 +/- 0.53	1.16	M3,G
14391-76-5	Ag-110m	0.03 +/- 0.14	0.25	U,G
14682-66-7	Al-26	0.06 +/- 0.15	0.25	U,G
14596-10-2	Am-241	0.19 +/- 0.49	0.82	U,G
13966-02-4	Be-7	0.4 +/- 1.4	2.4	U,G
14913-49-6	Bi-212	1.7 +/- 1.9	3.0	U,G
14733-03-0	Bi-214	4.09 +/- 0.69	0.63	G,J
14109-32-1	Cd-109	2.9 +/- 3.0	4.9	U,G
13982-30-4	Ce-139	0.10 +/- 0.12	0.19	U,G
14762-78-8	Ce-144	-0.27 +/- 0.72	1.26	U,G
14093-03-9	Co-56	0.44 +/- 0.51	0.84	U,G
13981-50-5	Co-57	-0.119 +/- 0.085	0.156	U,G
13981-38-9	Co-58	-0.04 +/- 0.20	0.36	U,G
10198-40-0	Co-60	0.09 +/- 0.16	0.27	U,G
14392-02-0	Cr-51	-6 +/- 24	43	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1025
Lab ID: 0405169-3

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8

Date Collected: 04-May-04

Date Prepared: 27-May-04

Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3

QCBatchID: GS040527-3-1

Run ID: GS040527-3A

Count Time: 30 minutes

Report Basis: Dry Weight

Final Aliquot: 134 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: 040973D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	0.4 +/- 1.5	2.4	U,G
10045-97-3	Cs-137	-0.10 +/- 0.15	0.27	U,G
14683-23-9	Eu-152	0.4 +/- 1.0	1.7	U,G
15585-10-1	Eu-154	-0.46 +/- 0.84	1.54	U,G
14391-16-3	Eu-155	0.41 +/- 0.36	0.57	U,G
14596-12-4	Fe-59	-0.52 +/- 0.61	1.12	U,G
10043-66-0	I-131	0.6 +/- 5.0	8.6	U,G
13966-00-2	K-40	21.8 +/- 4.1	3.4	G
13966-31-9	Mn-54	0.03 +/- 0.17	0.29	U,G
13966-32-0	Na-22	-0.01 +/- 0.18	0.31	U,G
14681-63-1	Nb-94	0.07 +/- 0.14	0.24	U,G
13967-76-5	Nb-95	0.26 +/- 0.27	0.43	U,G
15100-28-4	Pa-234m	3 +/- 25	43	U,G
15092-94-1	Pb-212	1.92 +/- 0.37	0.36	G
15067-28-4	Pb-214	4.57 +/- 0.67	0.52	G,J

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1025
Lab ID: 0405169-3

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QC Batch ID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 134 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040973D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	-0.5 +/- 1.3	2.3	U,G
14683-10-4	Sb-124	0.24 +/- 0.53	3.92	U,G
14234-35-6	Sb-125	-0.14 +/- 0.31	0.55	U,G
13967-63-0	Sc-46	-0.22 +/- 0.21	0.39	U,G
15623-47-9	Th-227	-2.6 +/- 1.2	2.2	U,G
15065-10-8	Th-234	1.9 +/- 2.2	3.6	U,G
14913-50-9	Tl-208	0.68 +/- 0.20	0.25	G
15117-96-1	U-235	0.34 +/- 0.65	1.09	U,G
13982-39-3	Zn-65	0.54 +/- 0.69	1.13	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1025
Lab ID: 0405169-3

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 134 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040973D10B

Library: RA-226

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	5.98 +/- 0.82	0.68	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide Identification and/or quantitation is tentative.
TI - Nuclide Identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID:	IC1028
Lab ID:	0405169-5

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8

Date Collected: 04-May-04
Date Prepared: 27-May-04

Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1

Run ID: GS040527-3A

Count Time: 30 minutes

Report Basis: Dry Weight

Final Aliquot: 145 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: 040974D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.76 +/- 0.66	1.21	M3,G
14391-76-5	Ag-110m	-0.02 +/- 0.16	0.28	U,G
14682-66-7	Al-26	0.01 +/- 0.17	0.31	U,G
14596-10-2	Am-241	-0.18 +/- 0.62	1.06	U,G
13966-02-4	Be-7	1.8 +/- 1.9	3.1	U,G
14913-49-6	Bi-212	2.9 +/- 2.3	3.6	U,G
14733-03-0	Bi-214	11.6 +/- 2.2	2.4	G,J
14109-32-1	Cd-109	21.5 +/- 5.1	6.2	G,SI
13982-30-4	Ce-139	0.03 +/- 0.14	0.24	U,G
14762-78-8	Ce-144	-0.93 +/- 0.89	1.55	U,G
14093-03-9	Co-56	1.75 +/- 0.70	1.00	G
13981-50-5	Co-57	0.09 +/- 0.11	0.18	U,G
13981-38-9	Co-58	-0.16 +/- 0.25	0.44	U,G
10198-40-0	Co-60	0.06 +/- 0.21	0.36	U,G
14392-02-0	Cr-51	10 +/- 30	50	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1028
Lab ID: 0405169-5

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8

Date Collected: 04-May-04

Date Prepared: 27-May-04

Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3

QCBatchID: GS040527-3-1

Run ID: GS040527-3A

Count Time: 30 minutes

Report Basis: Dry Weight

Final Aliquot: 145 g

Prep Basis: Dry Weight

Moisture(%): NA

Result Units: pCi/g

File Name: 040974D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	-0.30 +/- 0.26	0.47	U,G
10045-97-3	Cs-137	-0.01 +/- 0.17	0.29	U,G
14683-23-9	Eu-152	2.5 +/- 1.2	1.7	G,TI
15585-10-1	Eu-154	1.02 +/- 0.95	1.51	U,G
14391-16-3	Eu-155	0.38 +/- 0.43	0.71	U,G
14596-12-4	Fe-59	0.16 +/- 0.61	1.05	U,G
10043-66-0	I-131	1.9 +/- 5.8	9.7	U,G
13966-00-2	K-40	26.4 +/- 4.7	3.9	G
13966-31-9	Mn-54	0.03 +/- 0.19	0.32	U,G
13966-32-0	Na-22	-0.16 +/- 0.23	0.41	U,G
14681-63-1	Nb-94	0.04 +/- 0.15	0.25	U,G
13967-76-5	Nb-95	-0.45 +/- 0.43	0.77	U,G
15100-28-4	Pa-234m	11 +/- 30	50	U,G
15092-94-1	Pb-212	2.73 +/- 0.48	0.46	G
15067-28-4	Pb-214	14.6 +/- 1.8	0.6	G,J

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU

Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.

Y2 - Chemical Yield outside default limits.

LT - Result is less than Requested MDC, greater than sample specific MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1028
Lab ID: 0405169-5

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 145 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040974D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	-1.2 +/- 1.4	2.5	U,G
14683-10-4	Sb-124	-0.46 +/- 0.29	0.68	U,G
14234-35-6	Sb-125	0.20 +/- 0.37	0.62	U,G
13967-63-0	Sc-46	0.22 +/- 0.24	0.40	U,G
15623-47-9	Th-227	-3.4 +/- 1.4	2.5	U,G
15065-10-8	Th-234	5.7 +/- 5.3	8.6	U,G
14913-50-9	Tl-208	0.74 +/- 0.22	0.29	G
15117-96-1	U-235	0.60 +/- 0.76	1.24	U,G
13982-39-3	Zn-65	-1.71 +/- 0.91	1.65	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: IC1028
Lab ID: 0405169-5

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 145 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040974D10B

Library: RA-226

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	18.4 +/- 2.2	0.7	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H214
Lab ID: 0405169-7

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 140 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040976D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	1.19 +/- 0.48	0.97	M3,G
14391-76-5	Ag-110m	0.17 +/- 0.20	0.33	U,G
14682-66-7	Al-26	0.09 +/- 0.15	0.25	U,G
14596-10-2	Am-241	0.22 +/- 0.59	0.99	U,G
13966-02-4	Be-7	-1.8 +/- 1.7	2.9	U,G
14913-49-6	Bi-212	0.4 +/- 2.0	3.3	U,G
14733-03-0	Bi-214	27.3 +/- 3.3	0.5	G,J
14109-32-1	Cd-109	40.3 +/- 6.8	7.2	G,SI
13982-30-4	Ce-139	-0.06 +/- 0.14	0.23	U,G
14762-78-8	Ce-144	0.27 +/- 0.81	1.35	U,G
14093-03-9	Co-56	-0.7 +/- 1.1	1.8	U,G
13981-50-5	Co-57	0.11 +/- 0.11	0.17	U,G
13981-38-9	Co-58	-0.32 +/- 0.29	0.51	U,G
10198-40-0	Co-60	-0.13 +/- 0.19	0.33	U,G
14392-02-0	Cr-51	-15 +/- 27	46	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H214
Lab ID: 0405169-7

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 140 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040976D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	0 +/- 2.0	3.4	U,G
10045-97-3	Cs-137	-0.22 +/- 0.20	0.35	U,G
14683-23-9	Eu-152	2.0 +/- 1.1	1.8	G,TI
15585-10-1	Eu-154	-1.0 +/- 1.3	2.2	U,G
14391-16-3	Eu-155	-0.01 +/- 0.41	0.69	U,G
14596-12-4	Fe-59	-0.17 +/- 0.56	0.97	U,G
10043-66-0	I-131	0.5 +/- 5.3	8.9	U,G
13966-00-2	K-40	19.1 +/- 3.5	3.6	G
13966-31-9	Mn-54	0.07 +/- 0.17	0.28	U,G
13966-32-0	Na-22	-0.17 +/- 0.26	0.45	U,G
14681-63-1	Nb-94	0.12 +/- 0.13	0.21	U,G
13967-76-5	Nb-95	-0.97 +/- 0.40	0.70	U,G
15100-28-4	Pa-234m	21 +/- 24	40	U,G
15092-94-1	Pb-212	0.92 +/- 0.26	0.37	G
15067-28-4	Pb-214	30.6 +/- 3.6	0.5	G,J

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H214
Lab ID: 0405169-7

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 140 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040976D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	-0.9 +/- 1.2	2.1	U,G
14683-10-4	Sb-124	-0.28 +/- 0.67	5.36	U,G
14234-35-6	Sb-125	0.25 +/- 0.35	0.57	U,G
13967-63-0	Sc-46	0.13 +/- 0.20	0.34	U,G
15623-47-9	Th-227	0.1 +/- 1.1	1.9	U,G
15065-10-8	Th-234	20.5 +/- 3.3	3.4	G
14913-50-9	Tl-208	0.54 +/- 0.18	0.26	G
15117-96-1	U-235	0.98 +/- 0.84	1.36	U,G
13982-39-3	Zn-65	-2.95 +/- 0.88	1.52	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H214
Lab ID: 0405169-7

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 04-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 60 minutes
Report Basis: Dry Weight

Final Aliquot: 140 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040976D10B

Library: RA-226

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	39.9 +/- 4.7	0.7	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

T1 - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H236
Lab ID: 0405169-9

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 05-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 134 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040994D08A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	0.9 +/- 1.8	3.1	U,M,G
14391-76-5	Ag-110m	-0.21 +/- 0.37	0.69	U,G
14682-66-7	Al-26	0.03 +/- 0.35	0.64	U,G
14596-10-2	Am-241	0.09 +/- 0.86	1.44	U,G
13966-02-4	Be-7	-3.6 +/- 6.8	12.0	U,G
14913-49-6	Bi-212	-3.7 +/- 5.8	10.5	U,G
14733-03-0	Bi-214	105 +/- 13	1	G,J
14109-32-1	Cd-109	124 +/- 19	16	G,SI
13982-30-4	Ce-139	-0.38 +/- 0.39	0.68	U,G
14762-78-8	Ce-144	-0.8 +/- 2.1	3.6	U,G
14093-03-9	Co-56	17.7 +/- 4.0	4.0	G,TI
13981-50-5	Co-57	-0.08 +/- 0.27	0.46	U,G
13981-38-9	Co-58	-0.17 +/- 0.57	1.01	U,G
10198-40-0	Co-60	-0.07 +/- 0.46	0.83	U,G
14392-02-0	Cr-51	-33 +/- 89	154	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H236
Lab ID: 0405169-9

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 05-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 134 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040994D08A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	-0.21 +/- 0.39	0.70	U,G
10045-97-3	Cs-137	-0.31 +/- 0.55	0.99	U,G
14683-23-9	Eu-152	0.2 +/- 5.4	9.1	U,G
15585-10-1	Eu-154	-1.6 +/- 2.6	4.7	U,G
14391-16-3	Eu-155	0.42 +/- 0.94	1.57	U,G
14596-12-4	Fe-59	-0.7 +/- 1.6	2.9	U,G
10043-66-0	I-131	1 +/- 14	24	U,G
13966-00-2	K-40	13.8 +/- 5.6	7.3	G
13966-31-9	Mn-54	-0.58 +/- 0.69	1.26	U,G
13966-32-0	Na-22	-0.62 +/- 0.51	0.97	U,G
14681-63-1	Nb-94	0.40 +/- 0.30	0.47	U,G
13967-76-5	Nb-95	-92 +/- 18	24	U,G
15100-28-4	Pa-234m	9 +/- 75	129	U,G
15092-94-1	Pb-212	1.97 +/- 0.71	1.03	G
15067-28-4	Pb-214	108 +/- 13	1	G,J

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H236
Lab ID: 0405169-9

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 05-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QC Batch ID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 134 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040994D08A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	-2.4 +/- 3.5	6.4	U,G
14683-10-4	Sb-124	-0.11 +/- 0.62	1.08	U,G
14234-35-6	Sb-125	0.8 +/- 1.2	2.0	U,G
13967-63-0	Sc-46	-0.35 +/- 0.68	1.20	U,G
15623-47-9	Th-227	5.6 +/- 2.3	3.4	G
15065-10-8	Th-234	43.0 +/- 6.9	7.3	G
14913-50-9	Tl-208	0.41 +/- 0.36	0.57	U,G
15117-96-1	U-235	3.2 +/- 2.7	4.4	U,G
13982-39-3	Zn-65	-1.5 +/- 1.5	2.7	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: H236
Lab ID: 0405169-9

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 05-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 134 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040994D08B

Library: RA-226

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	139 +/- 16	2	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

T1 - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: E32
Lab ID: 0405169-11

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 10-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 154 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040977D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	2.7 +/- 1.0	2.0	M3,G
14391-76-5	Ag-110m	0.08 +/- 0.23	0.38	U,G
14682-66-7	Al-26	0.16 +/- 0.24	0.40	U,G
14596-10-2	Am-241	1.8 +/- 1.2	1.8	U,G
13966-02-4	Be-7	0.5 +/- 3.9	6.5	U,G
14913-49-6	Bi-212	2.4 +/- 3.6	5.9	U,G
14733-03-0	Bi-214	63.6 +/- 7.6	0.9	G,J
14109-32-1	Cd-109	78 +/- 13	13	G,SI
13982-30-4	Ce-139	0.06 +/- 0.26	0.44	U,G
14762-78-8	Ce-144	0.3 +/- 1.6	2.6	U,G
14093-03-9	Co-56	-1.6 +/- 1.8	3.1	U,G
13981-50-5	Co-57	0.03 +/- 0.20	0.34	U,G
13981-38-9	Co-58	-0.87 +/- 0.55	0.97	U,G
10198-40-0	Co-60	-0.02 +/- 0.31	0.54	U,G
14392-02-0	Cr-51	-54 +/- 44	76	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: E32
Lab ID: 0405169-11

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 10-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 154 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040977D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	-0.3 +/- 3.9	6.4	U,G
10045-97-3	Cs-137	0.07 +/- 0.37	0.61	U,G
14683-23-9	Eu-152	9.3 +/- 2.5	3.4	G,TI
15585-10-1	Eu-154	-0.4 +/- 2.5	4.2	U,G
14391-16-3	Eu-155	-0.54 +/- 0.80	1.35	U,G
14596-12-4	Fe-59	0.13 +/- 0.99	1.68	U,G
10043-66-0	I-131	-1.2 +/- 5.7	9.8	U,G
13966-00-2	K-40	19.5 +/- 4.7	5.9	G
13966-31-9	Mn-54	0.01 +/- 0.43	0.72	U,G
13966-32-0	Na-22	-0.35 +/- 0.50	0.87	U,G
14681-63-1	Nb-94	0.34 +/- 0.22	0.35	U,G
13967-76-5	Nb-95	-1.40 +/- 0.69	1.20	U,G
15100-28-4	Pa-234m	56 +/- 49	79	U,G
15092-94-1	Pb-212	2.17 +/- 0.56	0.76	G
15067-28-4	Pb-214	66.8 +/- 7.9	0.9	G,J

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: E32
Lab ID: 0405169-11

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 10-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QC Batch ID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 154 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040977D10A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	0 +/- 2.0	3.4	U,G
14683-10-4	Sb-124	-0.4 +/- 1.2	9.6	U,G
14234-35-6	Sb-125	0.64 +/- 0.59	1.07	U,G
13967-63-0	Sc-46	-0.36 +/- 0.38	0.66	U,G
15623-47-9	Th-227	-1.8 +/- 2.3	3.8	U,G
15065-10-8	Th-234	50.5 +/- 7.4	6.9	G
14913-50-9	Tl-208	0.95 +/- 0.37	0.55	G
15117-96-1	U-235	4.9 +/- 1.8	2.7	G,Tl
13982-39-3	Zn-65	-7.0 +/- 1.8	2.9	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 6 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: E32
Lab ID: 0405169-11

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 10-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 154 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040977D10B

Library: RA-226

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	88 +/- 10	1	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: SDA064
Lab ID: 0405169-13

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 13-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 167 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040924D07A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
15262-20-1	Ra-228	3.4 +/- 5.0	8.2	U,M,G
14391-76-5	Ag-110m	-0.8 +/- 1.1	1.8	U,G
14682-66-7	Al-26	0.21 +/- 0.92	1.57	U,G
14596-10-2	Am-241	3.5 +/- 2.5	4.0	U,G
13966-02-4	Be-7	41 +/- 18	27	G,TI
14913-49-6	Bi-212	-4 +/- 16	27	U,G
14733-03-0	Bi-214	880 +/- 100	0	G,J
14109-32-1	Cd-109	505 +/- 68	49	G,SI
13982-30-4	Ce-139	0 +/- 1.1	1.8	U,G
14762-78-8	Ce-144	-0.4 +/- 6.6	10.9	U,G
14093-03-9	Co-56	3 +/- 10	17	U,G
13981-50-5	Co-57	0.01 +/- 0.82	1.36	U,G
13981-38-9	Co-58	-0.5 +/- 1.5	2.5	U,G
10198-40-0	Co-60	0.1 +/- 1.3	2.2	U,G
14392-02-0	Cr-51	30 +/- 210	350	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
SI - Nuclide identification and/or quantitation is tentative.
TI - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8

Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: SDA064
Lab ID: 0405169-13

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 13-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 167 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040924D07A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-70-9	Cs-134	0.70 +/- 0.98	1.61	U,G
10045-97-3	Cs-137	0.4 +/- 1.7	2.8	U,G
14683-23-9	Eu-152	-125 +/- 22	33	U,G
15585-10-1	Eu-154	1.6 +/- 6.5	10.9	U,G
14391-16-3	Eu-155	-2.4 +/- 2.6	4.3	U,G
14596-12-4	Fe-59	-2.9 +/- 4.0	6.9	U,G
10043-66-0	I-131	5 +/- 23	38	U,G
13966-00-2	K-40	15 +/- 16	26	U,G
13966-31-9	Mn-54	-4.7 +/- 2.0	3.4	U,G
13966-32-0	Na-22	0.6 +/- 1.3	2.2	U,G
14681-63-1	Nb-94	4.4 +/- 1.2	1.7	G
13967-76-5	Nb-95	-0.6 +/- 2.5	4.2	U,G
15100-28-4	Pa-234m	10 +/- 200	340	U,G
15092-94-1	Pb-212	1.9 +/- 1.8	2.9	U,G
15067-28-4	Pb-214	940 +/- 110	0	G,J

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)

MDC - Minimum Detectable Concentration (see PAI SOP 709)

BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 0405169
Client Name: New Horizons
ClientProject ID: CSMRI 2135

Field ID: SDA064
Lab ID: 0405169-13

Sample Matrix: SOIL
Prep SOP: PAI 739 Rev 8
Date Collected: 13-May-04
Date Prepared: 27-May-04
Date Analyzed: 18-Jun-04

Prep Batch: GS040527-3
QCBatchID: GS040527-3-1
Run ID: GS040527-3A
Count Time: 30 minutes
Report Basis: Dry Weight

Final Aliquot: 167 g
Prep Basis: Dry Weight
Moisture(%): NA
Result Units: pCi/g
File Name: 040924D07A

Library: FANP_NEW HO

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13967-48-1	Ru-106	1.5 +/- 8.8	14.9	U,G
14683-10-4	Sb-124	-0.5 +/- 1.4	2.4	U,G
14234-35-6	Sb-125	2.0 +/- 3.0	5.2	U,G
13967-63-0	Sc-46	0 +/- 1.7	2.9	U,G
15623-47-9	Th-227	14.1 +/- 6.5	10.2	G
15065-10-8	Th-234	22 +/- 11	17	G, TI
14913-50-9	Tl-208	-0.1 +/- 1.5	2.5	U,G
15117-96-1	U-235	5.9 +/- 5.8	9.5	U,G
13982-39-3	Zn-65	-2.8 +/- 4.2	7.2	U,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.

SI - Nuclide identification and/or quantitation is tentative.

TI - Nuclide identification is tentative.

R - Nuclide has exceeded 8 half-lives.

G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics

Work Order Number: 0405169

Client Name: New Horizons

ClientProject ID: CSMRI 2135

Field ID: SDA064	Sample Matrix: SOIL	Prep Batch: GS040527-3	Final Aliquot: 167 g
Lab ID: 0405169-13	Prep SOP: PAI 739 Rev 8	QCBatchID: GS040527-3-1	Prep Basis: Dry Weight
	Date Collected: 13-May-04	Run ID: GS040527-3A	Moisture(%): NA
	Date Prepared: 27-May-04	Count Time: 30 minutes	Result Units: pCi/g
Library: RA-226	Date Analyzed: 18-Jun-04	Report Basis: Dry Weight	File Name: 040924D07B

CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier
13982-63-3	Ra-226	1170 +/- 140	0	M3,G

Comments:

Qualifiers/Flags:

U - Result is less than the sample specific MDC or less than the associated TPU
Y1 - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
Y2 - Chemical Yield outside default limits.
LT - Result is less than Requested MDC, greater than sample specific MDC.
M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
M - The requested MDC was not met.

SQ - Spectral quality prevents accurate quantitation.
S1 - Nuclide identification and/or quantitation is tentative.
T1 - Nuclide identification is tentative.
R - Nuclide has exceeded 8 half-lives.
G - Sample density differs by more than 15% of LCS density.

Abbreviations:

TPU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1