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\(_\alpha\) 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, GS030527-3MB. 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

[Signature]

6-25-04
Date

Radiochemistry Final Data Review

[Signature]

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  
**Client Project ID:** CSMR1 2135

<table>
<thead>
<tr>
<th>CASN0</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>15262-20-1</td>
<td>Ra-228</td>
<td>0.01 +/- 0.21</td>
<td>0.40</td>
<td>U, M</td>
</tr>
<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>-0.056 +/- 0.045</td>
<td>0.103</td>
<td>U</td>
</tr>
<tr>
<td>14662-66-7</td>
<td>Al-26</td>
<td>0.009 +/- 0.039</td>
<td>0.084</td>
<td>U</td>
</tr>
<tr>
<td>14589-10-2</td>
<td>Am-241</td>
<td>0.004 +/- 0.068</td>
<td>0.122</td>
<td>U</td>
</tr>
<tr>
<td>13965-02-4</td>
<td>Be-7</td>
<td>0.18 +/- 0.42</td>
<td>0.72</td>
<td>U</td>
</tr>
<tr>
<td>14813-40-6</td>
<td>Bi-212</td>
<td>0.19 +/- 0.72</td>
<td>1.31</td>
<td>U</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>0.03 +/- 0.13</td>
<td>0.24</td>
<td>U, J</td>
</tr>
<tr>
<td>14109-32-1</td>
<td>Cd-109</td>
<td>0.28 +/- 0.50</td>
<td>0.85</td>
<td>U</td>
</tr>
<tr>
<td>13982-30-4</td>
<td>Ce-138</td>
<td>-0.022 +/- 0.029</td>
<td>0.056</td>
<td>U</td>
</tr>
<tr>
<td>14762-78-8</td>
<td>Ce-144</td>
<td>-0.07 +/- 0.19</td>
<td>0.35</td>
<td>U</td>
</tr>
<tr>
<td>14093-03-9</td>
<td>Co-56</td>
<td>0.022 +/- 0.094</td>
<td>0.175</td>
<td>U</td>
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<tr>
<td>13981-50-5</td>
<td>Co-57</td>
<td>0.004 +/- 0.023</td>
<td>0.041</td>
<td>U</td>
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<tr>
<td>13981-36-9</td>
<td>Co-58</td>
<td>0.007 +/- 0.050</td>
<td>0.093</td>
<td>U</td>
</tr>
<tr>
<td>10196-40-0</td>
<td>Cr-60</td>
<td>-0.024 +/- 0.066</td>
<td>0.139</td>
<td>U</td>
</tr>
<tr>
<td>14392-02-0</td>
<td>Cr-51</td>
<td>1.2 +/- 3.8</td>
<td>6.6</td>
<td>U</td>
</tr>
</tbody>
</table>

**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 quantification.  
- **SI** - Nuclide identification and/or quantification 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.

**Data Package ID:** GSS0405169-1

**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A  
**File Name:** 040925D07A
## Gamma Spectroscopy Results
### PAI 713 Rev 8
#### Method Blank Results

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13967-70-3</td>
<td>Cs-134</td>
<td>-0.016 +/- 0.054</td>
<td>0.104</td>
<td>U</td>
</tr>
<tr>
<td>10045-97-3</td>
<td>Cs-137</td>
<td>0.045 +/- 0.053</td>
<td>0.085</td>
<td>U</td>
</tr>
<tr>
<td>14583-23-9</td>
<td>Eu-152</td>
<td>0.04 +/- 0.26</td>
<td>0.52</td>
<td>U</td>
</tr>
<tr>
<td>15585-10-1</td>
<td>Eu-154</td>
<td>0.14 +/- 0.29</td>
<td>0.51</td>
<td>U</td>
</tr>
<tr>
<td>14391-16-3</td>
<td>Eu-155</td>
<td>-0.043 +/- 0.075</td>
<td>0.147</td>
<td>U</td>
</tr>
<tr>
<td>14596-12-4</td>
<td>Fe-59</td>
<td>0.043 +/- 0.085</td>
<td>0.151</td>
<td>U</td>
</tr>
<tr>
<td>10043-66-0</td>
<td>I-131</td>
<td>-0.016 +/- 0.041</td>
<td>0.080</td>
<td>U</td>
</tr>
<tr>
<td>13966-00-2</td>
<td>K-40</td>
<td>0.48 +/- 0.90</td>
<td>1.56</td>
<td>U</td>
</tr>
<tr>
<td>13966-31-9</td>
<td>Mn-54</td>
<td>0.003 +/- 0.055</td>
<td>0.104</td>
<td>U</td>
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<tr>
<td>13965-32-0</td>
<td>Na-22</td>
<td>-0.008 +/- 0.063</td>
<td>0.128</td>
<td>U</td>
</tr>
<tr>
<td>14581-63-1</td>
<td>Nb-94</td>
<td>-0.048 +/- 0.056</td>
<td>0.116</td>
<td>U</td>
</tr>
<tr>
<td>13967-75-5</td>
<td>Nb-95</td>
<td>0 +/- 0.060</td>
<td>0.111</td>
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</tr>
<tr>
<td>15100-29-4</td>
<td>Pa-234m</td>
<td>-3 +/- 10</td>
<td>20</td>
<td>U</td>
</tr>
<tr>
<td>15092-94-1</td>
<td>Pb-212</td>
<td>-0.051 +/- 0.072</td>
<td>0.136</td>
<td>U</td>
</tr>
<tr>
<td>15087-28-4</td>
<td>Pb-214</td>
<td>0.06 +/- 0.10</td>
<td>0.17</td>
<td>U,J</td>
</tr>
</tbody>
</table>

### Comments:

- **Qualifiers/Flags:**
  - **U** - Result is less than the sample specific MDC or less than the associated TPU.
  - **Y1** - Chemical Yield is outside default limits.
  - **Y2** - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.
  - **LT** - Result is less than Requested MDC.
  - **SQ** - Spectral quality prevents accurate quantification.
  - **SI** - Nuclide identification is tentative.
  - **TI** - Nuclide identification is tentative.
  - **R** - Requested MDC not met.
  - **B** - Analyte concentration greater than MDC.
  - **B3** - Analyte concentration greater than MDC but less than Requested MDC.

### Data Package ID:
**GSS0405169-1**

---

Date Printed: Friday, June 25, 2004

Paragon Analytics

LIMS Version: 6.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Method Blank Results**

**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 27-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-Jun-04

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13667-48-1</td>
<td>Ru-106</td>
<td>0.24 +/- 0.54</td>
<td>0.94</td>
<td>U</td>
</tr>
<tr>
<td>14683-10-4</td>
<td>Sb-124</td>
<td>0.024 +/- 0.050</td>
<td>0.096</td>
<td>U</td>
</tr>
<tr>
<td>14234-35-6</td>
<td>Sb-125</td>
<td>-0.063 +/- 0.095</td>
<td>0.201</td>
<td>U</td>
</tr>
<tr>
<td>13967-63-0</td>
<td>Sc-46</td>
<td>-0.022 +/- 0.041</td>
<td>0.086</td>
<td>U</td>
</tr>
<tr>
<td>15523-47-9</td>
<td>Th-227</td>
<td>0.21 +/- 0.21</td>
<td>0.092</td>
<td>U</td>
</tr>
<tr>
<td>15005-10-8</td>
<td>Th-234</td>
<td>0.29 +/- 0.46</td>
<td>0.34</td>
<td>U</td>
</tr>
<tr>
<td>14913-50-9</td>
<td>Ti-208</td>
<td>-0.047 +/- 0.062</td>
<td>0.88</td>
<td>U</td>
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<tr>
<td>15117-96-1</td>
<td>U-235</td>
<td>-0.11 +/- 0.21</td>
<td>0.124</td>
<td>U</td>
</tr>
<tr>
<td>13982-39-3</td>
<td>Zn-65</td>
<td>0.07 +/- 0.13</td>
<td>0.39</td>
<td>U</td>
</tr>
</tbody>
</table>

**Comments:**

Qualifier/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.

**Data Package ID:** GSO40527-1

**Date Printed:** Friday, June 25, 2004

**Paragon Analytics**  
**LIMS Version:** 5.037A
# 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

<table>
<thead>
<tr>
<th>Sample Matrix: SOIL</th>
<th>Prep SOP: PAI 739 Rev 8</th>
<th>Prep Batch: GS040527-3</th>
<th>QCBatchID: GS040527-3-1</th>
<th>Final Aliquot: 215 g</th>
<th>Result Units: pCi/g</th>
<th>File Name: 040925D07B</th>
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</thead>
<tbody>
<tr>
<td>Date Collected: 27-May-04</td>
<td>Date Prepared: 27-May-04</td>
<td>Date Analyzed: 18-Jun-04</td>
<td>Count Time: 60 minutes</td>
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<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13682-63-3</td>
<td>Ra-226</td>
<td>0.08 +/- 0.13</td>
<td>0.22</td>
<td>U</td>
</tr>
</tbody>
</table>

**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.

**Data Package ID:** GS0405169-1

Date Printed: Friday, June 25, 2004
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
Laboratory Control Sample(s)

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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Results +/- 2s TPU</th>
<th>MDC</th>
<th>Spike Added</th>
<th>% Rec</th>
<th>Control Limits</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>14696-10-2</td>
<td>Am-241</td>
<td>442 +/- 52</td>
<td>2</td>
<td>470</td>
<td>93.9</td>
<td>85 - 115</td>
<td>P</td>
</tr>
<tr>
<td>10198-40-0</td>
<td>Cu-60</td>
<td>192 +/- 22</td>
<td>1</td>
<td>180</td>
<td>106</td>
<td>85 - 115</td>
<td>P</td>
</tr>
<tr>
<td>10045-97-3</td>
<td>Cs-137</td>
<td>188 +/- 22</td>
<td>1</td>
<td>176</td>
<td>105</td>
<td>85 - 115</td>
<td>P</td>
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**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 Allquot:** 215 g  
**Result Units:** pCi/lg  
**File Name:** 040505D06A

---

**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.
- **V2** - 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 the reported 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 6 half lives.

**Data Package ID:** GS0405169-1

Date Printed: Friday, June 25, 2004  
Paragon Analytics  
LIMS Version: 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Laboratory Control Sample(s)**

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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Results +/- 2s TPU</th>
<th>MDC</th>
<th>Spike Added</th>
<th>% Rec</th>
<th>Control Limits</th>
<th>Lab Qualifier</th>
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</thead>
<tbody>
<tr>
<td>13882-63-3</td>
<td>Ra-226</td>
<td>465 +/- 54</td>
<td>2</td>
<td>471</td>
<td>98.6</td>
<td>85 - 115</td>
<td>P,M3</td>
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</table>

**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 27-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-Jun-04  
**Prep Batch:** GS040527-3  
**QC Batch ID:** GS040527-3-1  
**Run ID:** GS040527-3A  
**Count Time:** 30 minutes  
**Final Aliquot:** 215 g  
**Result Units:** pCi/g  
**File Name:** 040998D08A

## 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%. Qualitative Yield is assumed.
- **Y2** - Chemical Yield outside control 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.
- **M5** - The requested MDC was not met, but the reported 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:** GS0405169-1

**Date Printed:** Friday, June 25, 2004
# 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

<table>
<thead>
<tr>
<th>CASINO</th>
<th>Analyte</th>
<th>Sample Matrix: SOIL</th>
<th>Prep SOP: PAI 739 Rev 8</th>
<th>Prep Batch: GS040527-3</th>
<th>QCBatchID: GS040527-3-1</th>
<th>Final Aliquot: 125 g</th>
<th>Prep Basis: Dry Weight</th>
<th>Moisture(%)</th>
<th>NA</th>
<th>Result Units: pCi/g</th>
<th>File Name: GS040527-3A</th>
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<tbody>
<tr>
<td>15826-26-1</td>
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<td>2.03 +/- 0.56</td>
<td>2.25 +/- 0.84</td>
<td>0.22</td>
<td>2.13</td>
<td>M3,G</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>-0.07 +/- 0.14</td>
<td>0.05 +/- 0.19</td>
<td>0.51</td>
<td>2.13</td>
<td>U,G</td>
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<td></td>
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</tr>
<tr>
<td>14682-66-7</td>
<td>Al-26</td>
<td>-0.01 +/- 0.18</td>
<td>-0.14 +/- 0.22</td>
<td>0.47</td>
<td>2.13</td>
<td>U,G</td>
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<tr>
<td>14596-10-2</td>
<td>Am-241</td>
<td>-0.58 +/- 0.51</td>
<td>0.04 +/- 0.30</td>
<td>1.05</td>
<td>2.13</td>
<td>U,G</td>
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<tr>
<td>13966-02-4</td>
<td>Be-7</td>
<td>0.2 +/- 1.6</td>
<td>0 +/- 2.0</td>
<td>0.08</td>
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<td>U,G</td>
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<tr>
<td>14913-48-8</td>
<td>Bi-212</td>
<td>2.9 +/- 2.2</td>
<td>2.5 +/- 3.4</td>
<td>0.09</td>
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<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>1.46 +/- 0.47</td>
<td>1.71 +/- 0.58</td>
<td>0.34</td>
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<td>G,J</td>
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<tr>
<td>14109-32-1</td>
<td>Cd-109</td>
<td>2.5 +/- 2.8</td>
<td>4.3 +/- 3.2</td>
<td>0.42</td>
<td>2.13</td>
<td>U,G</td>
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</tr>
<tr>
<td>13982-30-4</td>
<td>Ce-139</td>
<td>0.04 +/- 0.11</td>
<td>0 +/- 0.13</td>
<td>0.23</td>
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<td>U,G</td>
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<tr>
<td>14762-78-8</td>
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<td>-0.04 +/- 0.82</td>
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<td>0.17</td>
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<tr>
<td>14093-03-9</td>
<td>Co-58</td>
<td>0.54 +/- 0.47</td>
<td>0.34 +/- 0.54</td>
<td>0.27</td>
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<td>U,G</td>
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<td>13981-50-5</td>
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<tr>
<td>13981-38-9</td>
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<td>10199-40-0</td>
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<tr>
<td>14392-02-0</td>
<td>Cr-51</td>
<td>-24 +/- 26</td>
<td>-13 +/- 33</td>
<td>0.25</td>
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<td>U,G</td>
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<tr>
<td>13987-70-9</td>
<td>Cs-134</td>
<td>0.12 +/- 0.22</td>
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<tr>
<td>10045-97-3</td>
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<td>0.03 +/- 0.17</td>
<td>0.25</td>
<td>2.13</td>
<td>U,G</td>
<td></td>
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</tbody>
</table>

## Comments:

- **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 Requested MDC, greater than sample specific MDC  
- **D** - DER is greater than Control Limit of 2.13  
- **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 quantification.  
- **SI** - Nuclide identification and/or quantification is tentative.  
- **TI** - Nuclide identification is tentative.  
- **R** - Nuclide has exceeded 8 halfives.  
- **G** - Sample density differs by more than 15% of LCS density.

## Data Package ID:
GS0405169-1

**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A  
**Page 1 of 4**
# Gamma Spectroscopy Results

## PAI 713 Rev 8

### Duplicate Sample Results (DER)

<table>
<thead>
<tr>
<th>Field ID:</th>
<th>IC1008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab ID:</td>
<td>0405169-1DUP</td>
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</tbody>
</table>

**Library:** FANP_NEW HO  
**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

| 14683-23-6 | Eu-182 | 0.50 +/- 0.72 | 0.8 +/- 1.0 | 0.26 | 2.13 | U,G |
| 15585-10-1 | Eu-154 | 0.32 +/- 0.60 | 1.3 +/- 1.1 | 0.73 | 2.13 | U,G |
| 14391-16-3 | Eu-155 | -0.20 +/- 0.36 | 0.12 +/- 0.32 | 0.85 | 2.13 | U,G |
| 14594-12-4 | Fe-59 | 0.17 +/- 0.60 | 0.12 +/- 0.64 | 0.07 | 2.13 | U,G |
| 10043-06-0 | I-131 | -4.2 +/- 5.5 | 2.5 +/- 6.9 | 0.77 | 2.13 | U,G |
| 13986-00-2 | K-40 | 20.7 +/- 4.0 | 15.2 +/- 4.9 | 0.88 | 2.13 | G |
| 13986-31-8 | Mn-54 | 0.04 +/- 0.16 | 0.16 +/- 0.20 | 0.45 | 2.13 | U,G |
| 13987-32-0 | Na-22 | 0.01 +/- 0.15 | -0.19 +/- 0.23 | 0.74 | 2.13 | U,G |
| 14681-03-1 | Nb-94 | 0.01 +/- 0.13 | -0.01 +/- 0.19 | 0.09 | 2.13 | U,G |
| 13987-05-6 | Nb-95 | 0.13 +/- 0.22 | 0.33 +/- 0.31 | 0.54 | 2.13 | U,G |
| 15103-28-4 | 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 |
| 15097-29-8 | Pb-214 | 1.62 +/- 0.38 | 1.50 +/- 0.42 | 0.22 | 2.13 | G,G |
| 13987-48-1 | 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 | Sc-46 | -0.09 +/- 0.30 | 0.08 +/- 0.32 | 0.40 | 2.13 | U,G |
| 13987-03-0 | Tl-207 | -0.11 +/- 0.20 | -0.11 +/- 0.27 | 0.61 | 2.13 | U,G |
| 15627-49-9 | Th-227 | -2.7 +/- 1.2 | -0.48 +/- 0.81 | 1.54 | 2.13 | U,W,G |
| 15685-10-6 | Th-234 | 1.4 +/- 2.4 | 1.9 +/- 2.8 | 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  
- **C** - DER is greater than Control Limit of 2.13  
- **LT** - Result is less than Requested 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.  
- **SL** - Nuclide Identification and/or quantitation is tentative.  
- **TI** - Nuclide identification is tentative.  
- **R** - Nuclide has exceeded 8 half-lifes.  
- **G** - Sample density differs by more than 15% of LCS density.

**Data Package ID:** GS0405169-1
# Gamma Spectroscopy Results

## PAI 713 Rev 8

### Duplicate Sample Results (DER)

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

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<thead>
<tr>
<th>Field ID:</th>
<th>IC1008</th>
<th>Lab ID:</th>
<th>0405169-10UP</th>
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<tbody>
<tr>
<td>Library:</td>
<td>FANP_NEW HO</td>
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</table>

<table>
<thead>
<tr>
<th>Sample Matrix:</th>
<th>SOIL</th>
<th>Prep SOP:</th>
<th>PAI 739 Rev 8</th>
<th>QC Batch ID:</th>
<th>GS040527-3-1</th>
<th>Prep Batch:</th>
<th>GS040527-3</th>
<th>Final Alquot:</th>
<th>125 g</th>
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<td>Prep Time:</td>
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<tr>
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<th>03-May-04</th>
<th>Date Prepared:</th>
<th>27-May-04</th>
<th>Date Analyzed:</th>
<th>18-Jun-04</th>
<th>Count Time:</th>
<th>30 minutes</th>
<th>Report Basis:</th>
<th>Dry Weight</th>
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<table>
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<tr>
<th>14518-60-0</th>
<th>Ti-208</th>
<th>0.77 +/- 0.21</th>
<th>0.90 +/- 0.30</th>
<th>0.34</th>
<th>2.13</th>
<th>G</th>
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<tbody>
<tr>
<td>15117-96-1</td>
<td>U-235</td>
<td>-0.43 +/- 0.66</td>
<td>-0.46 +/- 0.79</td>
<td>0.03</td>
<td>2.13</td>
<td>U,G</td>
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<tr>
<td>13882-93-3</td>
<td>Zn-65</td>
<td>-0.61 +/- 0.33</td>
<td>-0.65 +/- 0.49</td>
<td>0.69</td>
<td>2.13</td>
<td>U,G</td>
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</tbody>
</table>

### 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 Requested 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 Propagation Uncertainty (see PAI SOP 74.3)
- **DER:** Duplicate Error Ratio
- **BDL:** Below Detection Limit
- **NR:** Not Reported

**SQ:** Spectral quality prevents accurate quantification.  
**SI:** Nuclide identification and/or quantification 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: GS0405169-1

**Date Printed:** Friday, June 25, 2004
Gamma Spectroscopy Results

PAI 713 Rev 8
Duplicate Sample Results (DER)

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

Field ID: IC1006
Lab ID: 0405169-1DUP
Library: RA-220

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<th>Duplicate Result +/- 2 s TPU</th>
<th>DER</th>
<th>Control Limit</th>
<th>Lab Qualifiers</th>
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<tr>
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<td>Ra-226</td>
<td>2.14 +/- 0.44</td>
<td>2.00 +/- 0.46</td>
<td>0.22</td>
<td>2.13</td>
<td>M3,G</td>
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</tbody>
</table>

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 Requested 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

Data Package ID: GSS0405169-1

Date Printed: Friday, June 25, 2004

Paragon Analytics
LIMS Version: 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Results**

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
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<tbody>
<tr>
<td>15262-20-1</td>
<td>Ra-229</td>
<td>2.03 +/- 0.56</td>
<td>0.98</td>
<td>M3,G</td>
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<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>-0.07 +/- 0.14</td>
<td>0.26</td>
<td>U,G</td>
</tr>
<tr>
<td>14692-66-7</td>
<td>Al-26</td>
<td>-0.01 +/- 0.18</td>
<td>0.32</td>
<td>U,G</td>
</tr>
<tr>
<td>14596-10-2</td>
<td>Am-241</td>
<td>-0.58 +/- 0.51</td>
<td>0.33</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-02-4</td>
<td>Be-7</td>
<td>0.2 +/- 1.6</td>
<td>2.7</td>
<td>U,G</td>
</tr>
<tr>
<td>14913-49-0</td>
<td>Bi-212</td>
<td>2.8 +/- 2.2</td>
<td>3.4</td>
<td>U,G</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>1.46 +/- 0.47</td>
<td>0.62</td>
<td>G,J</td>
</tr>
<tr>
<td>14109-32-1</td>
<td>Cd-109</td>
<td>2.5 +/- 2.8</td>
<td>4.5</td>
<td>U,G</td>
</tr>
<tr>
<td>13982-30-4</td>
<td>Ce-139</td>
<td>0.04 +/- 0.11</td>
<td>0.19</td>
<td>U,G</td>
</tr>
<tr>
<td>14752-78-8</td>
<td>Ce-144</td>
<td>-0.04 +/- 0.62</td>
<td>1.09</td>
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</tr>
<tr>
<td>14093-03-9</td>
<td>Co-56</td>
<td>0.54 +/- 0.47</td>
<td>0.75</td>
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<td>13981-50-5</td>
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<td>0.145</td>
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<tr>
<td>13981-39-9</td>
<td>Co-58</td>
<td>-0.12 +/- 0.23</td>
<td>0.42</td>
<td>U,G</td>
</tr>
<tr>
<td>10190-40-0</td>
<td>Co-50</td>
<td>0.01 +/- 0.19</td>
<td>0.33</td>
<td>U,G</td>
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<tr>
<td>14392-02-0</td>
<td>Cr-51</td>
<td>-24 +/- 26</td>
<td>48</td>
<td>U,G</td>
</tr>
</tbody>
</table>

**Comments:**

- **Qualifiers/Flags:**
  - U - Results less than the sample specific MDC or less than the associated TPU
  - Y1 - Chemical Yield is in control at 100-115%. 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.
  - M4 - 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

- **Data Package ID:** GSS0405169-1

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**Date Printed:** Friday, June 25, 2004

**Paragon Analytics**

**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Results**

- **Sample Matrix:** SOIL  
- **Prep SOP:** PAI 739 Rev 8  
- **Date Collected:** 03-May-04  
- **Date Prepared:** 27-May-04  
- **Date Analyzed:** 16-Jun-04  
- **Prep Batch:** GS040527-3  
- **QCBatchID:** GS040527-3-1  
- **Run ID:** GS040527-3A  
- **Count Time:** 30 minutes  
- **Report Basis:** Dry Weight

<table>
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<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
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<tbody>
<tr>
<td>13967-70-9</td>
<td>Cs-134</td>
<td>0.12 +/- 0.22</td>
<td>0.36</td>
<td>U,G</td>
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<tr>
<td>10045-07-3</td>
<td>Cs-137</td>
<td>-0.03 +/- 0.14</td>
<td>0.26</td>
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<td>14596-12-4</td>
<td>Fe-59</td>
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<tr>
<td>10043-56-0</td>
<td>I-131</td>
<td>-4.2 +/- 5.5</td>
<td>10.0</td>
<td>U,G</td>
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<tr>
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<td>K-40</td>
<td>20.7 +/- 4.0</td>
<td>3.4</td>
<td>G</td>
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<tr>
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<td>Mn-54</td>
<td>0.04 +/- 0.16</td>
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<td>Na-22</td>
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<td>0.27</td>
<td>U,G</td>
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<td>14681-63-1</td>
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<td>0.23</td>
<td>U,G</td>
</tr>
<tr>
<td>13957-76-5</td>
<td>Nb-95</td>
<td>0.13 +/- 0.22</td>
<td>0.35</td>
<td>U,G</td>
</tr>
<tr>
<td>15100-28-4</td>
<td>Pa-234m</td>
<td>-12 +/- 27</td>
<td>49</td>
<td>U,G</td>
</tr>
<tr>
<td>15002-04-1</td>
<td>Pb-212</td>
<td>2.52 +/- 0.44</td>
<td>0.37</td>
<td>G</td>
</tr>
<tr>
<td>15057-28-4</td>
<td>Pb-214</td>
<td>1.62 +/- 0.38</td>
<td>0.52</td>
<td>G,J</td>
</tr>
</tbody>
</table>

**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 100-115%. Quantitative Yield is assumed.  
  - **Y2** - Chemical Yield outside default limits.  
  - **LT** - Result is less than Requested MDC, greater than sample specific MDC.  
  - **M5** - The requested MDC was not met, but the reported activity is greater than the reported MDC.  
  - **M** - The requested MDC was not met.

- **Abbreviations:**
  - **TNU** - Total Propagated Uncertainty (see PAI SOP 743)  
  - **MDC** - Minimum Detectable Concentration (see PAI SOP 708)  
  - **BDL** - Below Detection Limit

**Data Package ID:** GS0405169-1

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**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A  
**Page 2 of 28**
## 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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13957-48-1</td>
<td>Ru-106</td>
<td>-1.2 +/- 1.4</td>
<td>2.5</td>
<td>U,G</td>
</tr>
<tr>
<td>14683-10-4</td>
<td>Sb-124</td>
<td>-0.09 +/- 0.27</td>
<td>0.47</td>
<td>U,G</td>
</tr>
<tr>
<td>14234-35-6</td>
<td>Sb-125</td>
<td>-0.09 +/- 0.30</td>
<td>0.54</td>
<td>U,G</td>
</tr>
<tr>
<td>13957-83-0</td>
<td>Sc-46</td>
<td>-0.11 +/- 0.20</td>
<td>0.36</td>
<td>U,G</td>
</tr>
<tr>
<td>15623-47-9</td>
<td>Th-227</td>
<td>-2.7 +/- 1.2</td>
<td>2.2</td>
<td>U,G</td>
</tr>
<tr>
<td>15605-10-8</td>
<td>Th-234</td>
<td>1.4 +/- 2.4</td>
<td>4.1</td>
<td>U,G</td>
</tr>
<tr>
<td>14913-60-9</td>
<td>Ti-208</td>
<td>0.77 +/- 0.21</td>
<td>0.25</td>
<td>G</td>
</tr>
<tr>
<td>15117-88-1</td>
<td>U-235</td>
<td>-0.43 +/- 0.66</td>
<td>1.17</td>
<td>U,G</td>
</tr>
<tr>
<td>13982-39-3</td>
<td>Zn-65</td>
<td>-0.61 +/- 0.63</td>
<td>1.17</td>
<td>U,G</td>
</tr>
</tbody>
</table>

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

### 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, but the reported activity is greater than the reported MDC.
- M3 - 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

**Data Package ID:** GS0405169-1

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**Date Printed:** Friday, June 25, 2004

PARAGON ANALYTICS

LIMS Version: 5.037A

Page 3 of 28
# 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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13982-63-3</td>
<td>Ra-226</td>
<td>2.14 +/- 0.44</td>
<td>0.68</td>
<td>M3,G</td>
</tr>
</tbody>
</table>

**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

**Data Package ID:** GSS0405169-1

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**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A  
**Page 4 of 28**
# Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Duplicate Results**

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>15262-20-1</td>
<td>Ra-228</td>
<td>2.25 +/- 0.84</td>
<td>1.17</td>
<td>M3,G</td>
</tr>
<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>0.05 +/- 0.19</td>
<td>0.34</td>
<td>U,G</td>
</tr>
<tr>
<td>14682-66-7</td>
<td>Al-26</td>
<td>-0.14 +/- 0.22</td>
<td>0.52</td>
<td>U,G</td>
</tr>
<tr>
<td>14556-10-2</td>
<td>Am-241</td>
<td>0.04 +/- 0.30</td>
<td>0.52</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-02-4</td>
<td>Be-7</td>
<td>0 +/- 2.0</td>
<td>3.9</td>
<td>U,G</td>
</tr>
<tr>
<td>14913-49-6</td>
<td>Bi-212</td>
<td>2.5 +/- 3.4</td>
<td>5.6</td>
<td>U,G</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>1.71 +/- 0.58</td>
<td>0.61</td>
<td>G,J</td>
</tr>
<tr>
<td>14109-32-1</td>
<td>Cd-109</td>
<td>4.3 +/- 3.2</td>
<td>4.9</td>
<td>U,G</td>
</tr>
<tr>
<td>13982-30-4</td>
<td>Ce-139</td>
<td>0 +/- 0.13</td>
<td>0.23</td>
<td>U,G</td>
</tr>
<tr>
<td>14762-78-8</td>
<td>Ce-144</td>
<td>0.13 +/- 0.79</td>
<td>1.40</td>
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</tr>
<tr>
<td>14093-03-9</td>
<td>Co-55</td>
<td>0.34 +/- 0.54</td>
<td>0.91</td>
<td>U,G</td>
</tr>
<tr>
<td>13881-50-5</td>
<td>Co-57</td>
<td>-0.096 +/- 0.093</td>
<td>0.184</td>
<td>U,G</td>
</tr>
<tr>
<td>13981-38-9</td>
<td>Ca-58</td>
<td>0.06 +/- 0.24</td>
<td>0.45</td>
<td>U,G</td>
</tr>
</tbody>
</table>

**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

**Abbreviations:**

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

**Data Package ID:** GSS0405169-1

**Date Printed:** Friday, June 25, 2004

**Paragon Analytics**

**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Duplicate Results**

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>10198-40-0</td>
<td>Co-60</td>
<td>0 +/- 0.21</td>
<td>0.42</td>
<td>U,G</td>
</tr>
<tr>
<td>14392-02-0</td>
<td>Cr-51</td>
<td>-13 +/- 0.33</td>
<td>64</td>
<td>U,G</td>
</tr>
<tr>
<td>13967-70-9</td>
<td>Cs-134</td>
<td>0.01 +/- 0.17</td>
<td>0.31</td>
<td>U,G</td>
</tr>
<tr>
<td>10045-97-3</td>
<td>Cs-137</td>
<td>0.03 +/- 0.17</td>
<td>0.32</td>
<td>U,G</td>
</tr>
<tr>
<td>14983-23-9</td>
<td>Eu-152</td>
<td>0.6 +/- 1.0</td>
<td>1.7</td>
<td>U,G</td>
</tr>
<tr>
<td>15585-10-1</td>
<td>Eu-154</td>
<td>1.3 +/- 1.1</td>
<td>1.6</td>
<td>U,G</td>
</tr>
<tr>
<td>14981-16-3</td>
<td>Eu-155</td>
<td>0.12 +/- 0.32</td>
<td>0.56</td>
<td>U,G</td>
</tr>
<tr>
<td>14986-12-4</td>
<td>Fe-59</td>
<td>0.12 +/- 0.54</td>
<td>1.23</td>
<td>U,G</td>
</tr>
<tr>
<td>10043-66-0</td>
<td>I-131</td>
<td>2.6 +/- 6.9</td>
<td>12.2</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-00-2</td>
<td>K-40</td>
<td>15.2 +/- 4.9</td>
<td>4.3</td>
<td>G</td>
</tr>
<tr>
<td>13966-31-9</td>
<td>Mn-54</td>
<td>0.16 +/- 0.20</td>
<td>0.32</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-32-0</td>
<td>Na-22</td>
<td>-0.19 +/- 0.23</td>
<td>0.51</td>
<td>U,G</td>
</tr>
<tr>
<td>14881-63-1</td>
<td>Nb-94</td>
<td>-0.01 +/- 0.19</td>
<td>0.35</td>
<td>U,G</td>
</tr>
</tbody>
</table>

**Comments:**

- **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

**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

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**Date Printed:** Friday, June 25, 2004

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**Paragon Analytics**  
**LIMS Version:** 5.037A
## Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Duplicate Results**

### General Information
- **Lab Name:** Paragon Analytics
- **Work Order Number:** 0405169
- **Client Name:** New Horizons
- **Client Project ID:** CSMR1 2135
- **Sample Matrix:** SOIL
- **Prep SOP:** PAI 739 Rev 8
- **Date Collected:** 03-May-04
- **Date Prepared:** 27-May-04
- **Date Analyzed:** 16-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 Allot:** 125 g
- **Prep Basis:** Dry Weight
- **Moisture(%):** NA
- **Result Units:** pCi/g
- **File Name:** 040523D07A

### CASNO | Target Nuclide | Result +/- 2 s TPU | MDC | Lab Qualifier
--- | --- | --- | --- | ---
13867-76-5 | 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 | 3.5 | U,G
14698-10-4 | Sb-124 | -0.02 +/- 0.27 | 0.52 | U,G
14234-35-6 | Sb-125 | 0.06 +/- 0.32 | 0.59 | U,G
13967-53-0 | Sc-46 | -0.11 +/- 0.27 | 0.58 | 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 | Ti-208 | 0.90 +/- 0.30 | 0.30 | G
15157-96-1 | 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 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 quantification.
- **SI** - Nuclide identification and/or quantification 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)
- **SDL** - Below Detection Limit

### Data Package ID: GSS0405169-1

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**Date Printed:** Friday, June 25, 2004

*Paragon Analytics*  
*LIMS Version: 5.037A*
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Duplicate Results**

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

| Lab ID: 0405169-1DUP | Date Collected: 03-May-04 | QCBatchID: GS040527-3-1 |
| | Date Prepared: 27-May-04 | Run ID: GS040527-3A |
| | Date Analyzed: 16-Jun-04 | 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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13852-63-3</td>
<td>Ra-226</td>
<td>2.00 +/- 0.46</td>
<td>0.84</td>
<td>M3,G</td>
</tr>
</tbody>
</table>

**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

**Abbreviations:**

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

**Data Package ID:** GS0405169-1

**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**

**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Results**

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<tr>
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<th>MDC</th>
<th>Lab Qualifier</th>
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</thead>
<tbody>
<tr>
<td>15262-20-1</td>
<td>Ra-228</td>
<td>1.40 +/- 0.53</td>
<td>1.16</td>
<td>M,S,G</td>
</tr>
<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>0.03 +/- 0.14</td>
<td>0.25</td>
<td>U,G</td>
</tr>
<tr>
<td>14582-66-7</td>
<td>At-26</td>
<td>0.06 +/- 0.15</td>
<td>0.26</td>
<td>U,G</td>
</tr>
<tr>
<td>14598-10-2</td>
<td>Am-241</td>
<td>0.19 +/- 0.49</td>
<td>0.82</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-02-4</td>
<td>Be-7</td>
<td>0.4 +/- 1.4</td>
<td>2.4</td>
<td>U,G</td>
</tr>
<tr>
<td>14913-49-6</td>
<td>Bi-212</td>
<td>1.7 +/- 1.9</td>
<td>3.0</td>
<td>U,G</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>4.09 +/- 0.69</td>
<td>0.63</td>
<td>G,J</td>
</tr>
<tr>
<td>14109-32-1</td>
<td>Cd-109</td>
<td>2.9 +/- 3.0</td>
<td>4.9</td>
<td>U,G</td>
</tr>
<tr>
<td>13892-30-4</td>
<td>Co-139</td>
<td>0.10 +/- 0.12</td>
<td>0.19</td>
<td>U,G</td>
</tr>
<tr>
<td>14757-78-8</td>
<td>Co-144</td>
<td>-0.27 +/- 0.72</td>
<td>1.28</td>
<td>U,G</td>
</tr>
<tr>
<td>14093-03-8</td>
<td>Co-56</td>
<td>0.44 +/- 0.51</td>
<td>0.84</td>
<td>U,G</td>
</tr>
<tr>
<td>13861-50-5</td>
<td>Co-57</td>
<td>-0.119 +/- 0.085</td>
<td>0.156</td>
<td>U,G</td>
</tr>
<tr>
<td>13981-38-9</td>
<td>Co-58</td>
<td>-0.04 +/- 0.20</td>
<td>0.38</td>
<td>U,G</td>
</tr>
<tr>
<td>10188-40-0</td>
<td>Co-60</td>
<td>0.09 +/- 0.16</td>
<td>0.27</td>
<td>U,G</td>
</tr>
<tr>
<td>14392-02-0</td>
<td>Cr-51</td>
<td>-6 +/- 24</td>
<td>43</td>
<td>U,G</td>
</tr>
</tbody>
</table>

**Comments:**

Qualifier/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.

Abbreviations:
- **TBU**: Total Propagated Uncertainty (see PAI SOP 743)
- **MDC**: Minimum Detectable Concentration (see PAI SOP 709)
- **BOL**: Below Detection Limit

**Data Package ID:** GSS0405169-1

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**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Results**

**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 04-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-Jun-04  
**Prep Batch:** GS040527-3  
**Run ID:** GS040527-3A  
**Final Aliquot:** 134 g  
**Moisture(%):** NA  
**Result Units:** pCi/g  
**File Name:** 040973D10A

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<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
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<tbody>
<tr>
<td>13967-70-9</td>
<td>Cs-134</td>
<td>0.4 +/- 1.5</td>
<td>2.4</td>
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<td>13966-00-2</td>
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<td>21.8 +/- 4.1</td>
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<td>Mn-54</td>
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<td>0.29</td>
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<tr>
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<td>Na-22</td>
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<td>15087-28-4</td>
<td>Pb-214</td>
<td>4.57 +/- 0.67</td>
<td>0.52</td>
<td>G,J</td>
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</tbody>
</table>

**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 700)
- **BDL** - Below Detection Limit

**Data Package ID:** GS0405169-1
Gamma Spectroscopy Results

PAI 713 Rev 8
Sample Results

Lab Name: Paragon Analytics
Work Order Number: 04G5169
Client Name: New Horizons
ClientProject ID: CSMRI 2135

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

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<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
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<tbody>
<tr>
<td>13967-48-1</td>
<td>Ru-106</td>
<td>-0.5 +/- 1.3</td>
<td>2.3</td>
<td>U,G</td>
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<tr>
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<td>Sb-125</td>
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<td>Th-234</td>
<td>1.9 +/- 2.2</td>
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<td>U,G</td>
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<tr>
<td>14913-50-9</td>
<td>Ti-208</td>
<td>0.68 +/- 0.20</td>
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<td>15117-96-1</td>
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<td>0.34 +/- 0.65</td>
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<td>Zn-65</td>
<td>0.54 +/- 0.69</td>
<td>1.13</td>
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</tbody>
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Comments:

Qualifiers/Page:
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:
TGU - Total Propagated Uncertainty (see PAI SOP 743)
MDC - Minimum Detectable Concentration (see PAI SOP 709)
BDL - Below Detection Limit

Data Package ID: GSS0405169-1

Paragon Analytics
LIMS Version: 5.037A
## Gamma Spectroscopy Results

### PAI 713 Rev 8

**Sample Results**

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<td>Library:</td>
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**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 04-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-Jun-04

<table>
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<th>CAS NO</th>
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<th>Lab Qualifier</th>
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<tbody>
<tr>
<td>13982-63-3</td>
<td>Ra-226</td>
<td>5.98 +/- 0.82</td>
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<td>M3,G</td>
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**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

---

### 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.
- M5 - 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 708)
- BDL - Below Detection Limit

**Data Package ID:** GS0405169-1

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**Date Printed:** Friday, June 25, 2004

**Paragon Analytics**

**LIMS Version:** 5.037A
## Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Results**

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<th>MDC</th>
<th>Lab Qualifier</th>
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<td>Be-7</td>
<td>1.8 +/- 1.9</td>
<td>3.1</td>
<td>U,G</td>
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<tr>
<td>14913-49-6</td>
<td>Bi-212</td>
<td>2.9 +/- 2.3</td>
<td>3.6</td>
<td>U,G</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>11.6 +/- 2.2</td>
<td>2.4</td>
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<tr>
<td>14106-32-1</td>
<td>Cd-109</td>
<td>21.5 +/- 5.1</td>
<td>6.2</td>
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<tr>
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<tr>
<td>14762-78-8</td>
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<td>14093-03-9</td>
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<td>Co-60</td>
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<td>14392-02-0</td>
<td>Cr-51</td>
<td>10 +/- 30</td>
<td>50</td>
<td>U,G</td>
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</tbody>
</table>

### 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 700)
  - SDL - Below Detection Limit

- **Final Allotment:** 145 g
  - Prep Basis: Dry Weight
  - Moisture(%): NA
  - Result Units: pCi/g

---

**Data Package ID:** GSS0405169-1
## Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Results**

### Sample Matrix: SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 04-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-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: 145 g  
**Prep Basis:** Dry Weight  
**Moisture (%):** NA  
**Result Units:** pCi/g

### CASNO	Target Nuclide	Result +/- 2 s TPU	MDC	Lab Qualifier

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<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
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<tbody>
<tr>
<td>13967-70-9</td>
<td>Cs-134</td>
<td>-0.30 +/- 0.25</td>
<td>0.47</td>
<td>U,G</td>
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<tr>
<td>10045-97-3</td>
<td>Cs-137</td>
<td>-0.01 +/- 0.17</td>
<td>0.29</td>
<td>U,G</td>
</tr>
<tr>
<td>14683-23-8</td>
<td>Eu-152</td>
<td>2.5 +/- 1.2</td>
<td>1.7</td>
<td>G,TI</td>
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<tr>
<td>15585-10-1</td>
<td>Eu-154</td>
<td>1.02 +/- 0.35</td>
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<td>Fe-59</td>
<td>0.16 +/- 0.61</td>
<td>1.05</td>
<td>U,G</td>
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<tr>
<td>10043-66-0</td>
<td>I-131</td>
<td>1.9 +/- 5.8</td>
<td>9.7</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-00-2</td>
<td>K-40</td>
<td>26.4 +/- 4.7</td>
<td>3.9</td>
<td>G</td>
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<tr>
<td>13966-31-9</td>
<td>Mn-54</td>
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<td>U,G</td>
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<td>13966-32-0</td>
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<td>15067-28-4</td>
<td>Pb-214</td>
<td>14.6 +/- 1.8</td>
<td>0.6</td>
<td>G,J</td>
</tr>
</tbody>
</table>

### 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 quantification.
  - SI - Nuclide Identification and/or quantification is tentative.
  - TI - Nuclide identification is tentative.
  - R - Nuclide has exceeded 8 half lives.
  - G - Sample density differs by more than 10% 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: GS0405169-1

**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A
## 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: | IC1026  
| Lab ID: | 0405169-5  
| Library: | FANP_NEW HO |

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

<table>
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<th>CASNO</th>
<th>Target Nuclide</th>
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<td>Ru-105</td>
<td>-1.2 +/- 1.4</td>
<td>2.5</td>
<td>U,G</td>
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<tr>
<td>14683-10-4</td>
<td>Sb-124</td>
<td>-0.46 +/- 0.29</td>
<td>0.88</td>
<td>U,G</td>
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<td>8.6</td>
<td>U,G</td>
</tr>
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<td>14913-50-9</td>
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<td>13982-39-3</td>
<td>Zn-65</td>
<td>-1.71 +/- 0.91</td>
<td>1.65</td>
<td>U,G</td>
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### 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, 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)  
- SDL - Below Detection Limit

**Data Package ID:** GS0405169-1

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**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A  
**Page 11 of 28**
# 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

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<thead>
<tr>
<th>CASNO</th>
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<th>MDC</th>
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<tr>
<td>13982-63-3</td>
<td>Ra-226</td>
<td>18.4 +/- 2.2</td>
<td>0.7</td>
<td>M3,G</td>
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**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 04-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-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:** 145 g  
**Prop Basis:** Dry Weight  
**Moisture (%):** NA  
**Result Units:** pCi/g  
**File Name:** 040974D10B

---

**Comments:**

Qualifiers/Flags:
- **U** - Result is less than the sample specific MDC or less than the associated TPU
- **Y** - 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

**Data Package ID:** GSS0405169-1

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**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Results**

**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 Allotment:** 140 g  
**Prep Basis:** Dry Weight  
**Moisture:** NA  
**Result Units:** pCi/g  
**File Name:** 040976D10A

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>15262-20-1</td>
<td>Ra-226</td>
<td>1.19 +/- 0.48</td>
<td>0.97</td>
<td>M3,G</td>
</tr>
<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>0.17 +/- 0.20</td>
<td>0.33</td>
<td>U,G</td>
</tr>
<tr>
<td>14682-66-7</td>
<td>Al-26</td>
<td>0.09 +/- 0.15</td>
<td>0.25</td>
<td>U,G</td>
</tr>
<tr>
<td>14595-10-2</td>
<td>Am-241</td>
<td>0.22 +/- 0.59</td>
<td>0.99</td>
<td>U,G</td>
</tr>
<tr>
<td>13985-02-4</td>
<td>Be-7</td>
<td>-1.8 +/- 1.7</td>
<td>2.9</td>
<td>U,G</td>
</tr>
<tr>
<td>14913-49-6</td>
<td>Bi-212</td>
<td>0.4 +/- 2.0</td>
<td>3.3</td>
<td>U,G</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>27.3 +/- 3.3</td>
<td>0.5</td>
<td>G,J</td>
</tr>
<tr>
<td>14108-32-1</td>
<td>Cd-109</td>
<td>40.3 +/- 6.8</td>
<td>7.2</td>
<td>G,Si</td>
</tr>
<tr>
<td>13982-30-4</td>
<td>Ce-139</td>
<td>-0.06 +/- 0.14</td>
<td>0.23</td>
<td>U,G</td>
</tr>
<tr>
<td>14762-78-8</td>
<td>Ce-144</td>
<td>0.27 +/- 0.81</td>
<td>1.35</td>
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</tr>
<tr>
<td>14093-03-9</td>
<td>Co-56</td>
<td>-0.7 +/- 1.1</td>
<td>1.8</td>
<td>U,G</td>
</tr>
<tr>
<td>13981-50-5</td>
<td>Co-57</td>
<td>0.11 +/- 0.11</td>
<td>0.17</td>
<td>U,G</td>
</tr>
<tr>
<td>13981-38-9</td>
<td>Co-58</td>
<td>-0.32 +/- 0.29</td>
<td>0.51</td>
<td>U,G</td>
</tr>
<tr>
<td>10198-40-0</td>
<td>Co-60</td>
<td>-0.13 +/- 0.19</td>
<td>0.33</td>
<td>U,G</td>
</tr>
<tr>
<td>14302-02-0</td>
<td>Cr-51</td>
<td>-15 +/- 27</td>
<td>46</td>
<td>U,G</td>
</tr>
</tbody>
</table>

**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.

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

**Data Package ID:** GS0405169-1

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**Date Printed:** Friday, June 25, 2004

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**Paragon Analytics**

**Page 13 of 28**
**Gamma Spectroscopy Results**

**PAI 713 Rev 8**

**Sample Results**

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13957-70-9</td>
<td>Ca-134</td>
<td>0 +/- 2.0</td>
<td>3.4</td>
<td>U,G</td>
</tr>
<tr>
<td>10045-87-3</td>
<td>Ca-137</td>
<td>-0.22 +/- 0.20</td>
<td>0.35</td>
<td>U,G</td>
</tr>
<tr>
<td>14683-23-9</td>
<td>Eu-152</td>
<td>2.0 +/- 1.1</td>
<td>1.8</td>
<td>G,Ti</td>
</tr>
<tr>
<td>15985-10-1</td>
<td>Eu-154</td>
<td>-1.0 +/- 1.3</td>
<td>2.2</td>
<td>U,G</td>
</tr>
<tr>
<td>14391-16-3</td>
<td>Eu-155</td>
<td>-0.01 +/- 0.41</td>
<td>0.69</td>
<td>U,G</td>
</tr>
<tr>
<td>14666-12-4</td>
<td>Fe-59</td>
<td>-0.17 +/- 0.56</td>
<td>0.97</td>
<td>U,G</td>
</tr>
<tr>
<td>10043-86-0</td>
<td>I-131</td>
<td>0.5 +/- 5.3</td>
<td>8.9</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-00-2</td>
<td>K-40</td>
<td>18.1 +/- 3.5</td>
<td>3.6</td>
<td>G</td>
</tr>
<tr>
<td>13966-31-9</td>
<td>Mn-54</td>
<td>0.07 +/- 0.17</td>
<td>0.28</td>
<td>U,G</td>
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<tr>
<td>13966-32-0</td>
<td>Na-22</td>
<td>-0.17 +/- 0.26</td>
<td>0.45</td>
<td>U,G</td>
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<tr>
<td>14681-63-1</td>
<td>Nb-94</td>
<td>0.12 +/- 0.13</td>
<td>0.21</td>
<td>U,G</td>
</tr>
<tr>
<td>13667-76-5</td>
<td>Nb-95</td>
<td>-0.97 +/- 0.40</td>
<td>0.70</td>
<td>U,G</td>
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<tr>
<td>15100-28-4</td>
<td>Pa-234m</td>
<td>21 +/- 24</td>
<td>40</td>
<td>U,G</td>
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<tr>
<td>15092-94-1</td>
<td>Pb-212</td>
<td>0.92 +/- 0.26</td>
<td>0.37</td>
<td>G</td>
</tr>
<tr>
<td>15087-28-4</td>
<td>Pb-214</td>
<td>30.6 +/- 3.6</td>
<td>0.5</td>
<td>G,J</td>
</tr>
</tbody>
</table>

**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)
  - BOL - 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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13967-48-1</td>
<td>Ru-106</td>
<td>-0.9 +/- 1.2</td>
<td>2.1</td>
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<tr>
<td>14683-10-4</td>
<td>Sb-124</td>
<td>-0.28 +/- 0.87</td>
<td>5.38</td>
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<tr>
<td>14234-35-6</td>
<td>Sb-125</td>
<td>0.25 +/- 0.35</td>
<td>0.57</td>
<td>U,G</td>
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<td>13967-63-0</td>
<td>Sc-46</td>
<td>0.13 +/- 0.20</td>
<td>0.34</td>
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<td>15623-47-9</td>
<td>Th-227</td>
<td>0.1 +/- 1.1</td>
<td>1.9</td>
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<tr>
<td>15055-10-8</td>
<td>Th-234</td>
<td>20.5 +/- 3.3</td>
<td>3.4</td>
<td>G</td>
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<tr>
<td>14913-50-0</td>
<td>Ti-208</td>
<td>0.54 +/- 0.18</td>
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<tr>
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<td>U-235</td>
<td>0.98 +/- 0.84</td>
<td>1.35</td>
<td>U,G</td>
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<tr>
<td>13982-39-3</td>
<td>Zn-65</td>
<td>-2.95 +/- 0.88</td>
<td>1.62</td>
<td>U,G</td>
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</tbody>
</table>

**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.

- **Abbreviations:**
  - `TBU` - Total Propagated Uncertainty (see PAI SOP 743)
  - `MDC` - Minimum Detectable Concentration (see PAI SOP 708)
  - `BDL` - Below Detection Limit

- **SG** - Spectral qualify prevents accurate quantification.
- **SI** - Nuclide Identification and/or quantitation is tentative.
- **TI** - Nuclide Identification is tentative.
- **R** - Nuclide has exceeded 9 halflives.
- **G** - Sample density differs by more than 15% of LDS density.

**Data Package ID:** GSS0405169-1

**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A
**Gamma Spectroscopy Results**

**PAI 713 Rev 8**

**Sample Results**

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13982-63-3</td>
<td>Ra-226</td>
<td>39.9 +/- 4.7</td>
<td>0.7</td>
<td>M3,G</td>
</tr>
</tbody>
</table>

**Comments:**

**Qualifiers/Abbreviations:**

- **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.
- **M5** - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- **M** - The requested MDC was not met.

**Abbreviations:**

- **TBU** - Total Propagated Uncertainty (see PAI SOP 743)
- **MDC** - Minimum Detectable Concentration (see PAI SOP 700)
- **SDL** - Below Detection Limit

**Data Package ID:** GSS0405169-1

Date Printed: Friday, June 25, 2004
# Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Results**

**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 05-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-Jun-04

**Prep Batch:** GSO40527-3  
**QC Batch:** GSO40527-3-1  
**Run ID:** GSO40527-3A  
**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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
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<tbody>
<tr>
<td>15262-20-1</td>
<td>Ra-228</td>
<td>0.9 +/- 1.6</td>
<td>3.1</td>
<td>U,M,G</td>
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<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>-0.21 +/- 0.37</td>
<td>0.69</td>
<td>U,G</td>
</tr>
<tr>
<td>14682-66-7</td>
<td>Ac-222</td>
<td>0.03 +/- 0.35</td>
<td>0.64</td>
<td>U,G</td>
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<tr>
<td>14596-10-2</td>
<td>Am-241</td>
<td>0.09 +/- 0.86</td>
<td>1.44</td>
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<tr>
<td>13966-02-4</td>
<td>Be-7</td>
<td>-3.6 +/- 6.8</td>
<td>12.0</td>
<td>U,G</td>
</tr>
<tr>
<td>14913-49-8</td>
<td>Bi-212</td>
<td>-3.7 +/- 5.8</td>
<td>10.5</td>
<td>U,G</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>105 +/- 13</td>
<td>1</td>
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<tr>
<td>14109-32-1</td>
<td>Cd-109</td>
<td>124 +/- 19</td>
<td>16</td>
<td>G,Si</td>
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<tr>
<td>13982-30-4</td>
<td>Ce-139</td>
<td>-0.38 +/- 0.39</td>
<td>0.68</td>
<td>U,G</td>
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<tr>
<td>14762-78-8</td>
<td>Co-144</td>
<td>-0.8 +/- 2.1</td>
<td>3.8</td>
<td>U,G</td>
</tr>
<tr>
<td>14093-03-9</td>
<td>Co-56</td>
<td>17.7 +/- 4.0</td>
<td>4.0</td>
<td>G,Ti</td>
</tr>
<tr>
<td>13981-50-5</td>
<td>Co-57</td>
<td>-0.08 +/- 0.27</td>
<td>0.46</td>
<td>U,G</td>
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<tr>
<td>13981-38-9</td>
<td>Co-58</td>
<td>-0.17 +/- 0.57</td>
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<td>U,G</td>
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<tr>
<td>10198-40-0</td>
<td>Co-60</td>
<td>-0.07 +/- 0.46</td>
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<tr>
<td>14392-02-0</td>
<td>Cr-51</td>
<td>-33 +/- 89</td>
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</tbody>
</table>

**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.
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- **M** - The requested MDC was not met.

Abbreviations:
- **TBU** - Total Propagated Uncertainty (see PAI SOP 749)
- **MDC** - Minimum Detectable Concentration (see PAI SOP 700)
- **BDL** - Below Detection Limit

**Data Package ID:** GSO40527-3-1  
**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 6.037A  
**Page 17 of 28**
### Gamma Spectroscopy Results

#### PAI 713 Rev 8

**Sample Results**

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13967-70-9</td>
<td>Cs-134</td>
<td>-0.21 +/- 0.39</td>
<td>0.70</td>
<td>U,G</td>
</tr>
<tr>
<td>10046-97-3</td>
<td>Cs-137</td>
<td>-0.31 +/- 0.55</td>
<td>0.99</td>
<td>U,G</td>
</tr>
<tr>
<td>14683-23-9</td>
<td>Eu-152</td>
<td>0.2 +/- 5.4</td>
<td>9.1</td>
<td>U,G</td>
</tr>
<tr>
<td>15555-10-1</td>
<td>Eu-154</td>
<td>-1.6 +/- 2.6</td>
<td>4.7</td>
<td>U,G</td>
</tr>
<tr>
<td>14391-16-3</td>
<td>Eu-155</td>
<td>0.42 +/- 0.94</td>
<td>1.57</td>
<td>U,G</td>
</tr>
<tr>
<td>14596-12-4</td>
<td>Fe-59</td>
<td>-0.7 +/- 1.6</td>
<td>2.9</td>
<td>U,G</td>
</tr>
<tr>
<td>10043-66-0</td>
<td>I-131</td>
<td>1 +/- 14</td>
<td>24</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-00-2</td>
<td>K-40</td>
<td>13.8 +/- 5.6</td>
<td>7.3</td>
<td>G</td>
</tr>
<tr>
<td>13966-31-9</td>
<td>Mn-54</td>
<td>-0.58 +/- 0.69</td>
<td>1.26</td>
<td>U,G</td>
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<tr>
<td>13966-32-0</td>
<td>Na-22</td>
<td>-0.62 +/- 0.51</td>
<td>0.97</td>
<td>U,G</td>
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<tr>
<td>14681-63-1</td>
<td>Nb-94</td>
<td>0.40 +/- 0.30</td>
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<td>U,G</td>
</tr>
<tr>
<td>15007-78-5</td>
<td>Nb-65</td>
<td>-92 +/- 18</td>
<td>24</td>
<td>U,G</td>
</tr>
<tr>
<td>15100-28-4</td>
<td>Pb-234m</td>
<td>9 +/- 75</td>
<td>129</td>
<td>U,G</td>
</tr>
<tr>
<td>15092-04-1</td>
<td>Pb-212</td>
<td>1.97 +/- 0.71</td>
<td>1.03</td>
<td>G</td>
</tr>
<tr>
<td>15067-28-4</td>
<td>Pb-214</td>
<td>108 +/- 13</td>
<td>1</td>
<td>G,J</td>
</tr>
</tbody>
</table>

#### 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 700)
  - BDOL: Below Detection Limit

- **Data Package ID:** GSS0405169-1

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**Date Printed:** Friday, June 25, 2004

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*Paragon Analytics*

LIMS Version: 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Results**

---

**Sample Matrix:** SOIL  
**Prep SOP:** PAI 730 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

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<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
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<tbody>
<tr>
<td>13967-48-1</td>
<td>Ru-106</td>
<td>-2.4 +/- 3.5</td>
<td>6.4</td>
<td>U,G</td>
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<tr>
<td>14683-10-4</td>
<td>Sb-124</td>
<td>-0.11 +/- 0.82</td>
<td>1.08</td>
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<tr>
<td>14234-35-6</td>
<td>Sb-125</td>
<td>0.6 +/- 1.2</td>
<td>2.0</td>
<td>U,G</td>
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<td>13967-63-0</td>
<td>Sc-46</td>
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<tr>
<td>15623-47-9</td>
<td>Th-227</td>
<td>5.6 +/- 2.3</td>
<td>3.4</td>
<td>G</td>
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<td>15065-10-8</td>
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<td>43.0 +/- 6.9</td>
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<td>14913-50-9</td>
<td>Ti-208</td>
<td>0.41 +/- 0.38</td>
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<td>3.2 +/- 2.7</td>
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<td>U,G</td>
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<td>13982-39-3</td>
<td>Zn-65</td>
<td>-1.5 +/- 1.5</td>
<td>2.7</td>
<td>U,G</td>
</tr>
</tbody>
</table>

---

**Comments:**

- **Qualifiers/Flags:**  
  - **U:** Result is less than the sample specific MDC or less than the associated TPU  
  - **Y2:** Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.  
  - **LT:** Chemical Yield outside default limits.  
  - **LT:** Result is less than Requested MDC, greater than sample specific MDC.  
  - **M:** The requested MDC was not met, but the reported activity is greater than the defined MDC.  
  - **M:** The requested MDC was not met.  
  - **SO:** Spectral quality prevents accurate quantification.  
  - **SI:** Nuclide identification and/or quantification 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 700)  
- **BDL:** Below Detection Limit

**Data Package ID:** GS0405169-1  

---

**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**

**Sample Results**

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13982-63-3</td>
<td>Ra-226</td>
<td>139 +/- 16</td>
<td>2</td>
<td>M3,G</td>
</tr>
</tbody>
</table>

**Comments:**

- **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 742)
- **MDC**: Minimum Detectable Concentration (see PAI SOP 769)
- **BDL**: Below Detection Limit

**Data Package ID:** GSS0405169-1

---

**Lab Name:** Paragon Analytics

**Work Order Number:** 0405169

**Client Name:** New Horizons

**Client Project ID:** CSMRI 2135

**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:** 040964D08B

---

**Date Printed:** Friday, June 25, 2004

**Paragon Analytics**

**LIMS Version:** 5.037A
# 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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
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<tbody>
<tr>
<td>15252-20-1</td>
<td>Ra-228</td>
<td>2.7 +/- 1.0</td>
<td>2.0</td>
<td>M3,G</td>
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<tr>
<td>14391-76-5</td>
<td>Ag-110m</td>
<td>0.06 +/- 0.23</td>
<td>0.38</td>
<td>U,G</td>
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<tr>
<td>14592-65-7</td>
<td>Al-26</td>
<td>0.16 +/- 0.24</td>
<td>0.40</td>
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<td>Am-241</td>
<td>1.8 +/- 1.2</td>
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<td>U,G</td>
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<tr>
<td>13986-02-4</td>
<td>Be-7</td>
<td>0.5 +/- 3.8</td>
<td>6.5</td>
<td>U,G</td>
</tr>
<tr>
<td>14913-49-6</td>
<td>Bi-212</td>
<td>2.4 +/- 3.6</td>
<td>6.8</td>
<td>U,G</td>
</tr>
<tr>
<td>14783-03-0</td>
<td>Bi-214</td>
<td>63.6 +/- 7.5</td>
<td>0.9</td>
<td>G,J</td>
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<tr>
<td>14109-32-1</td>
<td>Cd-109</td>
<td>78 +/- 13</td>
<td>13</td>
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<tr>
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<td>Ce-139</td>
<td>0.06 +/- 0.26</td>
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<td>Ce-144</td>
<td>0.3 +/- 1.5</td>
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<td>14093-03-9</td>
<td>Co-56</td>
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<td>3.1</td>
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<tr>
<td>13981-50-5</td>
<td>Co-57</td>
<td>0.03 +/- 0.20</td>
<td>0.34</td>
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<td>13981-38-9</td>
<td>Co-58</td>
<td>-0.87 +/- 0.55</td>
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<td>Co-60</td>
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<tr>
<td>14362-02-0</td>
<td>Cr-51</td>
<td>-54 +/- 44</td>
<td>76</td>
<td>U,G</td>
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**Sample Matrix:** SOIL  
**Prep SOP:** PAI 735 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 Alquot:** 154 g  
**Prep Basis:** Dry Weight  
**Moisture(%):** NA  
**Result Units:** pCl/g

**Comments:**

<table>
<thead>
<tr>
<th>Qualifiers/Flags:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U</strong> - Result is less than the sample specific MDC or less than the associated TPU.</td>
</tr>
<tr>
<td><strong>Y1</strong> - Chemical Yield is in control at 100-110%. Quantitative Yield is assumed.</td>
</tr>
<tr>
<td><strong>Y2</strong> - Chemical Yield outside default limits.</td>
</tr>
<tr>
<td><strong>LT</strong> - Result is less than Requested MDC, greater than sample specific MDC.</td>
</tr>
<tr>
<td><strong>M3</strong> - The requested MDC was not met, but the reported activity is greater than the reported MDC.</td>
</tr>
<tr>
<td><strong>M</strong> - The requested MDC was not met.</td>
</tr>
</tbody>
</table>

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

**Data Package ID:** GS0405169-1

**Date Printed:** Friday, June 25, 2004  
**Paragon Analytics**  
**LIMS Version:** 5.037A
# 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

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
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<tbody>
<tr>
<td>13967-70-9</td>
<td>Cs-134</td>
<td>-0.3 +/- 3.9</td>
<td>6.4</td>
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<td>0.07 +/- 0.37</td>
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<td>Eu-152</td>
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<td>Eu-154</td>
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<td>4.2</td>
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<tr>
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<td>Fe-59</td>
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<td>I-131</td>
<td>-1.2 +/- 5.7</td>
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<td>13966-00-2</td>
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<td>19.5 +/- 4.7</td>
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<td>13966-31-9</td>
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<td>G</td>
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<tr>
<td>15087-28-4</td>
<td>Pb-214</td>
<td>66.8 +/- 7.9</td>
<td>0.9</td>
<td>G,J</td>
</tr>
</tbody>
</table>

**Comments:**

- **Qualifiers/Abbreviations:**
  - **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, but the reported activity is greater than the reported MDC.
  - **L:** The requested MDC was not met.

- **Abbreviations:**
  - **TPI:** 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 6 halflives.
- **G:** Sample density differs by more than 10% of LCS density.

**Data Package ID:** GSS0405169-1

**Date Printed:** Friday, June 25, 2004
# 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

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
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<tbody>
<tr>
<td>13987-48-1</td>
<td>Ru-106</td>
<td>0 +/- 2.0</td>
<td>3.4</td>
<td>U,G</td>
</tr>
<tr>
<td>14863-10-4</td>
<td>Sb-124</td>
<td>-0.4 +/- 1.2</td>
<td>9.6</td>
<td>U,G</td>
</tr>
<tr>
<td>14234-35-6</td>
<td>Sb-125</td>
<td>0.64 +/- 0.59</td>
<td>1.07</td>
<td>U,G</td>
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<tr>
<td>13967-63-0</td>
<td>Sc-46</td>
<td>-0.36 +/- 0.38</td>
<td>0.65</td>
<td>U,G</td>
</tr>
<tr>
<td>15623-47-9</td>
<td>Th-227</td>
<td>-1.8 +/- 2.3</td>
<td>3.8</td>
<td>U,G</td>
</tr>
<tr>
<td>15085-10-8</td>
<td>Th-234</td>
<td>50.5 +/- 7.4</td>
<td>6.9</td>
<td>G</td>
</tr>
<tr>
<td>14913-50-9</td>
<td>Ti-208</td>
<td>0.85 +/- 0.37</td>
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<tr>
<td>15117-96-1</td>
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<td>4.9 +/- 1.8</td>
<td>2.7</td>
<td>G,Ti</td>
</tr>
<tr>
<td>13982-39-3</td>
<td>Zn-65</td>
<td>-7.0 +/- 1.8</td>
<td>2.9</td>
<td>U,G</td>
</tr>
</tbody>
</table>

**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%. Qualitative Yield is assumed.
  - Y2: Chemical Yield outside default limits.
  - LY: Result is less than Requested MDC, greater than sample specific MDC.
  - M: 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 729)
  - BDL: Below Detection Limit

- **Date Printed:** Friday, June 25, 2004
## 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: | E32  
| Lab ID: | 3405169-11  
| Library: | RA-226  

**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev 8  
**Date Collected:** 10-May-04  
**Date Prepared:** 27-May-04  
**Date Analyzed:** 16-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:** 040977010B

<table>
<thead>
<tr>
<th>CASNO</th>
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<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
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<tbody>
<tr>
<td>13982-63-3</td>
<td>Ra-226</td>
<td>88 +/- 10</td>
<td>1</td>
<td>M3,G</td>
</tr>
</tbody>
</table>

### 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 769)
- **BDL** - Below Detection Limit

**Data Package ID:** GS0405169-1

---

**Date Printed:** Friday, June 25, 2004

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**Paragon Analytics**  
**LIMS Version:** 5.037A  
**Page 24 of 28**
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Results**

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

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<th>MDC</th>
<th>Lab Qualifier</th>
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<tbody>
<tr>
<td>15262-20-1</td>
<td>Ra-228</td>
<td>3.4 +/- 5.0</td>
<td>8.2</td>
<td>U,M,G</td>
</tr>
<tr>
<td>14391-76-5</td>
<td>Ap-110m</td>
<td>-0.8 +/- 1.1</td>
<td>1.8</td>
<td>U,G</td>
</tr>
<tr>
<td>14682-60-7</td>
<td>Al-26</td>
<td>0.21 +/- 0.92</td>
<td>1.57</td>
<td>U,G</td>
</tr>
<tr>
<td>14596-10-2</td>
<td>Am-241</td>
<td>3.5 +/- 2.5</td>
<td>4.0</td>
<td>U,G</td>
</tr>
<tr>
<td>13966-02-4</td>
<td>Be-7</td>
<td>41 +/- 18</td>
<td>27</td>
<td>G,TI</td>
</tr>
<tr>
<td>14913-49-8</td>
<td>Bi-212</td>
<td>-4 +/- 16</td>
<td>27</td>
<td>U,G</td>
</tr>
<tr>
<td>14733-03-0</td>
<td>Bi-214</td>
<td>880 +/- 100</td>
<td>0</td>
<td>G,J</td>
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<tr>
<td>14109-21-1</td>
<td>Cd-109</td>
<td>505 +/- 66</td>
<td>49</td>
<td>G,Si</td>
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<tr>
<td>13982-30-4</td>
<td>Ce-139</td>
<td>0 +/- 1.1</td>
<td>1.8</td>
<td>U,G</td>
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<td>14752-78-8</td>
<td>Ce-144</td>
<td>-0.4 +/- 6.6</td>
<td>10.9</td>
<td>U,G</td>
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<tr>
<td>14093-03-9</td>
<td>Co-65</td>
<td>3 +/- 10</td>
<td>17</td>
<td>U,G</td>
</tr>
<tr>
<td>13981-50-5</td>
<td>Co-57</td>
<td>0.01 +/- 0.82</td>
<td>1.36</td>
<td>U,G</td>
</tr>
<tr>
<td>13981-38-9</td>
<td>Co-58</td>
<td>-0.5 +/- 1.5</td>
<td>2.5</td>
<td>U,G</td>
</tr>
<tr>
<td>10198-40-0</td>
<td>Co-60</td>
<td>0.1 +/- 1.3</td>
<td>2.2</td>
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<td>Cr-51</td>
<td>30 +/- 210</td>
<td>350</td>
<td>U,G</td>
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</table>

**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 708)
- **BDL** - Below Detection Limit
- **SQ** - Spectral quality prevents accurate quantification.
- **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 10% of LCS density.

**Data Package ID:** GSS0405169-1

**Date Printed:** Friday, June 25, 2004
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Results**

**Field ID:** SDA084  
**Lab ID:** 0405169-13  
**Library:** FANP_NEW HO  
**Sample Matrix:** SOIL  
**Prep SOP:** PAI 739 Rev B  
**Date Collected:** 13-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 Alquot:** 167 g  
**Prep Basis:** Dry Weight  
**Moisture (%):** NA  
**Result Units:** pCi/g  
**File Name:** 040924D07A

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
<tr>
<td>13967-70-9</td>
<td>Cs-134</td>
<td>0.70 +/- 0.98</td>
<td>1.61</td>
<td>U,G</td>
</tr>
<tr>
<td>10045-97-3</td>
<td>Cs-137</td>
<td>0.4 +/- 1.7</td>
<td>2.8</td>
<td>U,G</td>
</tr>
<tr>
<td>14682-23-9</td>
<td>Eu-152</td>
<td>-125 +/- 22</td>
<td>33</td>
<td>U,G</td>
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<tr>
<td>15585-10-1</td>
<td>Eu-154</td>
<td>1.6 +/- 5.5</td>
<td>10.9</td>
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<td>14391-16-3</td>
<td>Eu-155</td>
<td>-2.4 +/- 2.6</td>
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<td>14596-12-4</td>
<td>Fe-59</td>
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<td>10043-86-0</td>
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<tr>
<td>13966-00-2</td>
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<td>15 +/- 15</td>
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<tr>
<td>13966-31-9</td>
<td>Mn-54</td>
<td>-4.7 +/- 2.0</td>
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<td>13966-32-0</td>
<td>Na-22</td>
<td>0.8 +/- 1.3</td>
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<td>14681-63-1</td>
<td>Nb-94</td>
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<td>13957-75-5</td>
<td>Nb-95</td>
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<td>15100-28-4</td>
<td>Pb-234m</td>
<td>10 +/- 200</td>
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<td>15092-04-1</td>
<td>Pb-212</td>
<td>1.9 +/- 1.5</td>
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<td>15067-28-4</td>
<td>Pb-214</td>
<td>940 +/- 110</td>
<td>0</td>
<td>G,J</td>
</tr>
</tbody>
</table>

**Comments:**

Qualifiers/Ranges:
- **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 requesterd MDC was not met.  

Abbreviations:
- TPU - Total Proxpected Uncertainty (see PAI SOP 743)  
- MDC - Minimum Detectable Concentration (see PAI SOP 789)  
- BDL - Below Detection Limit  

**Data Package ID:** GS0405169-1

Date Printed: Friday, June 25, 2004

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**Paragon Analytics**  
**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

## PAI 713 Rev 8

### Sample Results

<table>
<thead>
<tr>
<th>CASNO</th>
<th>Target Nuclide</th>
<th>Result +/- 2 s TPU</th>
<th>MDC</th>
<th>Lab Qualifier</th>
</tr>
</thead>
<tbody>
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<td>13967-48-1</td>
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<td>1.5 +/- 8.8</td>
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<td>14234-35-8</td>
<td>Sb-125</td>
<td>2.0 +/- 3.0</td>
<td>5.2</td>
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<tr>
<td>13967-63-0</td>
<td>Sc-46</td>
<td>0 +/- 1.7</td>
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<td>Th-227</td>
<td>14.1 +/- 6.5</td>
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<td>15065-10-8</td>
<td>Th-234</td>
<td>22 +/- 11</td>
<td>17</td>
<td>G,Ti</td>
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<td>14913-50-9</td>
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<td>13982-39-3</td>
<td>Zn-65</td>
<td>-2.8 +/- 4.2</td>
<td>7.2</td>
<td>U,G</td>
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</tbody>
</table>

## Comments:

- **Qualifiers/Page:**
  - **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 708)
  - **BDL** - Below Detection Limit

- **Data Package ID:** GSS0405169-1

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**Paragon Analytics**

**Date Printed:** Friday, June 25, 2004

**LIMS Version:** 5.037A
# Gamma Spectroscopy Results

**PAI 713 Rev 8**  
**Sample Results**

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<td>SOIL</td>
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<td>Date Collected:</td>
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<td>18-Jun-04</td>
<td>Final Aliquot:</td>
<td>167 g</td>
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<td>13682-63-3</td>
<td>Ra-226</td>
<td>1170 +/- 140</td>
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<td>M3,G</td>
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</tbody>
</table>

### Comments:

**Qualifiers/Flags:**
- **U** - Result is less than the sample specific MDC or less than the associated TPU
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- **M** - The requested MDC was not met.

**Abbreviations:**
- **TPU** - Total Propagated Uncertainty (see PAI SOP 743)
- **MDC** - Minimum Detectable Concentration (see PAI SOP 705)
- **BDL** - Below Detection Limit

**Data Package ID:** GS0405169-1