

Health Physics Sample Records

Sample ID: 142485

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140603BD 14 CAMP MESA # 16

Common

Resp Org: P4000 - PROJECT MANAGEMEN

Cross Ref Sample ID:

Priority: N

Contact: COOPER, TERRY L

Survey No:

Reference ID:

Accounting Subcode:

Unknown Mat: NO

Hazardous Mat: NO

Comments: COUNT TO MDA

Reviewed: DYNES, WILLIAM J

Date: 06/05/14 11:14

Comments:

Origin

Mat. Size/Volume: 1384 GRAMS

Docmnt/MO/Act #:

Proposed Ship Date: 00/00/00 00:00

Description: CAMP MESA # 16

Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 06/03/14 13:24

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 1384 GRAMS

Instructions: COUNT TO MDA

Comments: COUNT TO MDA

RLSSS

Exempt: No

Evaluated: No

Chem Notification: No

State Permit: No

Offsite Analysis: No

Effluent Permit: No

Container Surveyed: No

Cleared For Release: Yes

Container Evaluated: Yes

Form 212 Ready:

Location

Unit: NON-UNIT RE

Area: MS

Elev: 100

Room:

Depth: (in.)

Equip ID:

Stored By: ,

Date: 00/00/00 00:00

Sample Loc:

Other:

Material Loc:

Health Physics Sample Records

Sample ID: **142485**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140603BD 14 CAMP MESA # 16

Analysis

| Geometry | MCA ID | Quant. | Units | Method | FP/AP | Lab | Analysis By | Date | Mod ID | Mod Date |
|----------------------|--------|--------|-------|--------|-------|-----|-----------------|----------------|--------|----------|
| A_1L_marinelli_sand_ | 30375 | 1384 | GR | | .000 | | PARK, MICHAEL C | 06/05/14 16:28 | | |

| Isotope | Mode | Activity | Activity Uncert. | LLD/MDA | % Abund. | Atom. No. | Comments | Mod Id | Mod Date |
|----------|------|------------|------------------|-------------------------------------|----------|-----------|----------|--------|----------|
| 0 K-40 | NT | 0.00001571 | 1.76E-6 | <input type="checkbox"/> | 89.755% | 40 | | | |
| 0 TL-208 | NT | 2.773E-7 | 7.76E-8 | <input type="checkbox"/> | 1.584% | 208 | | | |
| 0 PB-212 | NT | 6.49E-7 | 1.588E-7 | <input type="checkbox"/> | 3.708% | 212 | | | |
| 0 BI-214 | NT | 3.46E-7 | 1.177E-7 | <input type="checkbox"/> | 1.977% | 214 | | | |
| 0 PB-214 | NT | 5.209E-7 | 1.304E-7 | <input type="checkbox"/> | 2.976% | 214 | | | |
| 0 BE-7 | AP | 9.3678E-7 | | <input checked="" type="checkbox"/> | 0.000% | 7 | | | |
| 0 MN-54 | AP | 2.1128E-7 | | <input checked="" type="checkbox"/> | 0.000% | 54 | | | |
| 0 MN-56 | AP | 3.7864E-8 | | <input checked="" type="checkbox"/> | 0.000% | 56 | | | |
| 0 CO-57 | AP | 9.3818E-8 | | <input checked="" type="checkbox"/> | 0.000% | 57 | | | |
| 0 CO-58 | AP | 1.2255E-7 | | <input checked="" type="checkbox"/> | 0.000% | 58 | | | |
| 0 CO-60 | AP | 1.427E-7 | | <input checked="" type="checkbox"/> | 0.000% | 60 | | | |
| 0 SB-124 | AP | 5.8514E-8 | | <input checked="" type="checkbox"/> | 0.000% | 124 | | | |
| 0 SB-125 | FP | 2.7566E-7 | | <input checked="" type="checkbox"/> | 0.000% | 125 | | | |
| 0 CS-134 | FP | 4.0837E-8 | | <input checked="" type="checkbox"/> | 0.000% | 134 | | | |
| 0 CS-137 | FP | 1.3612E-7 | | <input checked="" type="checkbox"/> | 0.000% | 137 | | | |

Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 15:43

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

Health Physics Sample Records

Sample ID: 142485

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140603BD 14 CAMP MESA # 16

Review/Approve

HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 15:43

Comments:

Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 15:43

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          5-JUN-2014 16:24 *
*-----*
*                >>>> SAMPLE PARAMETERS <<<<<                *
*-----*
* Title       : 140603BD 14 CAMP MESA # 16                        *
* ID          : 30375                      Acquisition date: 5-JUN-2014 16:21:45. *
* Start Time: 5-JUN-2014 16:21:00.                    *
* Stop Time: 5-JUN-2014 16:21:00.                    Counting System : U2GSP *
* Quantity   : 1.38400E+03 GR                      IHPS Sample Number: 142485 *
* Geometry   : A_1L_marinelli_sand_1              Analysis Library : HP_NATURAL *
*                               Operator: MICHAEL PARK *
*-----*
*                >>>> A #41-TP11679B PARAMETERS <<<<<                *
*-----*
* Elapsed Live Time : 0 00:03:00.41 Calibration : 5-JUN-2014 08:09: *
* Elapsed Real Time : 0 00:03:00.45 Energy Offset : 2.12659E-01 *
* Deadtime          : 0.0% Energy Slope : 4.99528E-01 *
* Activity Mult Factor: 1.00000E+00 Energy Tolerance: 1.00000 *
* Half Life Ratio   : 8.00000 Sensitivity : 5.00000 *
*-----*
*****

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Post-NID Peak Search Report

| It | Energy | Area | Bkgnd | FWHM | Channel | Left | Pw | %Err | Fit | Nuclides |
|----|---------|------|-------|------|---------|------|----|------|----------|----------|
| 1 | 238.73 | 54 | 27 | 1.65 | 477.48 | 472 | 13 | 24.5 | 2.66E+00 | PB-212 |
| 1 | 351.71 | 28 | 6 | 1.33 | 703.66 | 698 | 9 | 25.0 | 4.01E-01 | PB-214 |
| 1 | 583.13 | 15 | 2 | 1.60 | 1166.95 | 1163 | 7 | 28.0 | 4.97E-01 | TL-208 |
| 1 | 609.46 | 15 | 3 | 1.44 | 1219.64 | 1215 | 10 | 34.0 | 3.44E-01 | BI-214 |
| 1 | 1460.67 | 82 | 0 | 1.84 | 2923.70 | 2917 | 13 | 11.2 | 6.05E-01 | K-40 |

Summary of Nuclide Activity
Sample ID : 30375

Page : 2
Acquisition date : 5-JUN-2014 16:21:45

Total number of lines in spectrum 5
Number of unidentified lines 0
Number of lines tentatively identified by NID 5 100.00%

Nuclide Type : natural

| Nuclide | Hlife | Decay | Uncorrected uCi/GR | Decay Corr uCi/GR | Decay Corr 1-Sigma Error | 1-Sigma %Error | Flags |
|------------------|-----------|-------|-----------------------|----------------------|-----------------------------|-------------------|-------|
| K-40 | 1.28E+09Y | 1.00 | 1.571E-05 | 1.571E-05 | 0.176E-05 | 11.21 | A |
| TL-208 | 3.05M | 1.64 | 1.694E-07 | 2.773E-07 | 0.776E-07 | 28.00 | A |
| PB-212 | 10.64H | 1.00 | 6.474E-07 | 6.490E-07 | 1.588E-07 | 24.47 | A |
| BI-214 | 19.90M | 1.08 | 3.200E-07 | 3.460E-07 | 1.177E-07 | 34.02 | A |
| PB-214 | 26.80M | 1.06 | 4.915E-07 | 5.209E-07 | 1.304E-07 | 25.04 | KA |
| Total Activity : | | | 1.733E-05 | 1.750E-05 | | | |

Grand Total Activity : 1.733E-05 1.750E-05

Flags: "K" = Keyline not found
"E" = Manually edited

"M" = Manually accepted
"A" = Nuclide specific abn. limit

Unidentified Energy Lines
Sample ID : 30375

Page : 3
Acquisition date : 5-JUN-2014 16:21:45

None

Flags: "T" = Tentatively associated

Interference Report
Sample ID : 30375

Page : 4
Acquisition date : 5-JUN-2014 16:21:45

No interference correction performed

Nuclide Type: natural

| Nuclide | Energy | Area | %Abn | %Eff | Uncorrected Decay Corr | | 1-Sigma %Error |
|---------|---------|-------|-----------|-----------|------------------------|----------------|-------------------|
| | | | | | uCi/GR | uCi/GR | |
| K-40 | 1460.83 | 82 | 10.67* | 5.314E-01 | 1.571E-05 | 1.571E-05 | 11.21 |
| TL-208 | 72.80 | ----- | 2.14 | 1.594E+00 | ----- | Line Not Found | ----- |
| | 74.97 | ----- | 3.60 | 1.692E+00 | ----- | Line Not Found | ----- |
| | 84.79 | ----- | 1.27 | 2.058E+00 | ----- | Line Not Found | ----- |
| | 252.45 | ----- | 0.80 | 2.021E+00 | ----- | Line Not Found | ----- |
| | 277.28 | ----- | 6.80 | 1.920E+00 | ----- | Line Not Found | ----- |
| | 510.61 | ----- | 21.60 | 1.265E+00 | ----- | Line Not Found | ----- |
| | 583.02 | 15 | 86.00* | 1.128E+00 | 1.694E-07 | 2.773E-07 | 28.00 |
| | 763.06 | ----- | 1.64 | 8.744E-01 | ----- | Line Not Found | ----- |
| | 860.30 | ----- | 12.00 | 7.770E-01 | ----- | Line Not Found | ----- |
| | PB-212 | 74.81 | ----- | 10.50 | 1.685E+00 | ----- | Line Not Found |
| 77.11 | | ----- | 17.70 | 1.782E+00 | ----- | Line Not Found | ----- |
| 87.19 | | ----- | 6.27 | 2.129E+00 | ----- | Line Not Found | ----- |
| 90.13 | | ----- | 1.86 | 2.206E+00 | ----- | Line Not Found | ----- |
| 115.12 | | ----- | 0.59 | 2.535E+00 | ----- | Line Not Found | ----- |
| 238.58 | | 54 | 43.60* | 2.082E+00 | 6.474E-07 | 6.490E-07 | 24.47 |
| 300.03 | | ----- | 3.34 | 1.834E+00 | ----- | Line Not Found | ----- |
| BI-214 | | 76.86 | ----- | 0.58 | 1.772E+00 | ----- | Line Not Found |
| | 79.29 | ----- | 0.97 | 1.869E+00 | ----- | Line Not Found | ----- |
| | 609.31 | 15 | 46.10* | 1.084E+00 | 3.200E-07 | 3.460E-07 | 34.02 |
| | 665.44 | ----- | 1.56 | 9.985E-01 | ----- | Line Not Found | ----- |
| | 768.35 | ----- | 4.88 | 8.685E-01 | ----- | Line Not Found | ----- |
| | 806.16 | ----- | 1.23 | 8.283E-01 | ----- | Line Not Found | ----- |
| | 934.04 | ----- | 3.16 | 7.177E-01 | ----- | Line Not Found | ----- |
| | 1120.27 | ----- | 15.00 | 6.114E-01 | ----- | Line Not Found | ----- |
| | 1155.18 | ----- | 1.69 | 5.973E-01 | ----- | Line Not Found | ----- |
| | 1238.11 | ----- | 5.92 | 5.697E-01 | ----- | Line Not Found | ----- |
| | 1280.95 | ----- | 1.47 | 5.585E-01 | ----- | Line Not Found | ----- |
| | 1377.66 | ----- | 4.02 | 5.401E-01 | ----- | Line Not Found | ----- |
| | 1385.30 | ----- | 0.78 | 5.391E-01 | ----- | Line Not Found | ----- |
| | 1401.48 | ----- | 1.39 | 5.370E-01 | ----- | Line Not Found | ----- |
| | 1407.97 | ----- | 2.48 | 5.362E-01 | ----- | Line Not Found | ----- |
| 1509.22 | ----- | 2.19 | 5.292E-01 | ----- | Line Not Found | ----- | |
| 1583.22 | ----- | 0.72 | 5.296E-01 | ----- | Line Not Found | ----- | |
| 1661.26 | ----- | 1.15 | 5.351E-01 | ----- | Line Not Found | ----- | |
| 1729.58 | ----- | 3.05 | 5.442E-01 | ----- | Line Not Found | ----- | |
| 1764.49 | ----- | 15.90 | 5.503E-01 | ----- | Line Not Found | ----- | |
| 1847.41 | ----- | 2.12 | 5.694E-01 | ----- | Line Not Found | ----- | |
| PB-214 | 53.17 | ----- | 1.10 | 5.543E-01 | ----- | Line Not Found | ----- |
| | 74.81 | ----- | 6.52 | 1.685E+00 | ----- | Line Not Found | ----- |
| | 77.11 | ----- | 11.00 | 1.782E+00 | ----- | Line Not Found | ----- |
| | 87.19 | ----- | 3.88 | 2.129E+00 | ----- | Line Not Found | ----- |
| | 90.13 | ----- | 1.15 | 2.206E+00 | ----- | Line Not Found | ----- |
| | 241.92 | ----- | 7.46 | 2.067E+00 | ----- | Line Not Found | ----- |
| | 258.94 | ----- | 0.55 | 1.994E+00 | ----- | Line Not Found | ----- |
| | 295.09 | ----- | 19.20* | 1.852E+00 | ----- | Line Not Found | ----- |
| | 351.87 | 28 | 37.10 | 1.663E+00 | 4.915E-07 | 5.209E-07 | 25.04 |
| | 785.83 | ----- | 1.09 | 8.495E-01 | ----- | Line Not Found | ----- |
| 839.00 | ----- | 0.59 | 7.964E-01 | ----- | Line Not Found | ----- | |

Nuclide Line Activity Report (continued)
Sample ID : 30375

Page : 6
Acquisition date : 5-JUN-2014 16:21:45

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 30375

Page : 7
Acquisition date : 5-JUN-2014 16:21:45

| Nuclide | Bckgnd Sum | Energy (keV) | MDA (uCi/GR) |
|---------|---------------|-----------------|-----------------|
| BE-7 | 4. | 477.61 | 9.3678E-07 |
| MN-54 | 8. | 834.83 | 2.1128E-07 |
| MN-56 | 0. | 846.81 | 3.7864E-08 |
| CO-57 | 12. | 122.06 | 9.3818E-08 |
| CO-58 | 2. | 810.79 | 1.2255E-07 |
| CO-60 | 1. | 1332.50 | 1.4270E-07 |
| SB-124 | 0. | 602.73 | 5.8514E-08 |
| SB-125 | 3. | 427.88 | 2.7566E-07 |
| CS-134 | 0. | 795.87 | 4.0837E-08 |
| CS-137 | 3. | 661.66 | 1.3612E-07 |