

## Health Physics Sample Records

**Sample ID:** 142479

**Type:** RLSSS

**Type Detail:** SAND

**Status:** APPROVED

**Rasterized:** ☒

**Description:** 140603BD 7 , CAMP MESA # 4

### Common

**Resp Org:** P4000 - PROJECT MANAGEMENT

**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 09:30

**Comments:**

### Origin

**Mat. Size/Volume:** 1487 GRAMS

**Docmnt/MO/Act #:**

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

**Description:** CAMP MESA # 4

### Collection

**Sample Tech:** DYNES, WILLIAM J

**Sample Date:** 06/03/14 12:35

**Count Time:** 900 (secs.)

**Tritium Req:** No

**Sample Size/Volume:** 1487 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: 142479

Type: RLSSS
















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Status: APPROVED

Rasterized: 

Description: 140603BD 7 , CAMP MESA # 4

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
B_1L_marinelli_sand_	30364	1487	GR		.000		PARK, MICHAEL C	06/05/14 15:43		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	0.00001372	1.87E-6		82.776%	40				
0 TL-208	NT	6.397E-7	1.287E-7		3.859%	208				
0 PB-212	NT	7.195E-7	1.341E-7		4.341%	212				
0 BI-214	NT	5.619E-7	1.515E-7		3.390%	214				
0 PB-214	NT	9.337E-7	2.353E-7		5.633%	214				
0 BE-7	AP	1.1585E-6			0.000%	7				
0 MN-54	AP	1.9281E-7			0.000%	54				
0 MN-56	AP	4.3195E-8			0.000%	56				
0 CO-57	AP	1.2835E-7			0.000%	57				
0 CO-58	AP	1.1082E-7			0.000%	58				
0 CO-60	AP	1.544E-7			0.000%	60				
0 SB-124	AP	1.4082E-7			0.000%	124				
0 SB-125	FP	2.0987E-7			0.000%	125				
0 CS-134	FP	6.2681E-8			0.000%	134				
0 CS-137	FP	1.4589E-7			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 14:41

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:


## Health Physics Sample Records

Sample ID: **142479**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140603BD 7 , CAMP MESA # 4

### Review/Approve

#### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 14:43

Comments: 338 keV energy peak is from Ac-228

#### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

#### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 14:43

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          5-JUN-2014 15:39      *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<          *
*-----*
* Title      : 140603BD 7 , CAMP MESA # 4          *
* ID         : 30364                               Acquisition date: 5-JUN-2014 15:36:48. *
* Start Time : 5-JUN-2014 15:36:00.                Counting System   : U2GSP          *
* Stop Time  : 5-JUN-2014 15:36:00.                IHPS Sample Number: 142479         *
* Quantity   : 1.48700E+03 GR                      Analysis Library  : HP_NATURAL        *
* Geometry   : B_1L_marinelli_sand_1              Operator: MICHAEL PARK          *
*-----*
*          >>>> B #42-TP11663A  PARAMETERS <<<<          *
*-----*
* Elapsed Live Time : 0 00:03:00.44  Calibration      : 5-JUN-2014 08:35:          *
* Elapsed Real Time : 0 00:03:00.47  Energy Offset   : -4.96372E-01          *
* Deadtime          : 0.0%            Energy Slope    : 5.00067E-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	77.53	31	37	1.46	156.03	154	9	40.9	1.56E+00	BI-214 PB-212 PB-214
1	238.46	56	12	1.44	477.86	472	10	18.6	2.67E+00	PB-212
1	295.25	26	4	1.43	591.42	587	10	25.2	3.40E-01	PB-214
1	338.24	22	5	1.76	677.38	674	7	25.1	8.31E-02	
1	351.80	41	8	1.88	704.51	697	15	22.8	1.22E+00	PB-214
1	583.12	30	2	2.06	1167.08	1162	10	20.1	1.83E-01	TL-208
1	609.09	21	3	1.22	1219.03	1214	8	27.0	6.57E-01	BI-214
1	1460.87	61	3	2.29	2922.43	2917	10	13.6	1.23E+00	K-40

Summary of Nuclide Activity  
Sample ID : 30364

Page : 2  
Acquisition date : 5-JUN-2014 15:36:48

Total number of lines in spectrum 8  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 8 100.00%

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	1.372E-05	1.372E-05	0.187E-05	13.60	A
TL-208	3.05M	1.66	3.862E-07	6.397E-07	1.287E-07	20.12	A
PB-212	10.64H	1.00	7.177E-07	7.195E-07	1.341E-07	18.64	A
BI-214	19.90M	1.08	5.187E-07	5.619E-07	1.515E-07	26.97	A
PB-214	26.80M	1.06	8.798E-07	9.337E-07	2.353E-07	25.20	A
Total Activity :			1.622E-05	1.657E-05			

Grand Total Activity : 1.622E-05 1.657E-05

Flags: "K" = Keyline not found "M" = Manually accepted  
"E" = Manually edited "A" = Nuclide specific abn. limit

Unidentified Energy Lines  
Sample ID : 30364

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Acquisition date : 5-JUN-2014 15:36:48

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	338.24	22	5	1.76	677.38	674	7	1.23E-01	25.1	1.44E+00	T

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30364

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Acquisition date : 5-JUN-2014 15:36:48

No interference correction performed

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
K-40	1460.83	61	10.67*	4.211E-01	1.372E-05	1.372E-05	13.60
TL-208	72.80	-----	2.14	1.070E+00	-----	Line Not Found	-----
	74.97	-----	3.60	1.156E+00	-----	Line Not Found	-----
	84.79	-----	1.27	1.506E+00	-----	Line Not Found	-----
	252.45	-----	0.80	1.745E+00	-----	Line Not Found	-----
	277.28	-----	6.80	1.645E+00	-----	Line Not Found	-----
	510.61	-----	21.60	1.035E+00	-----	Line Not Found	-----
	583.02	30	86.00*	9.198E-01	3.862E-07	6.397E-07	20.12
	763.06	-----	1.64	7.126E-01	-----	Line Not Found	-----
	860.30	-----	12.00	6.341E-01	-----	Line Not Found	-----
PB-212	74.81	-----	10.50	1.150E+00	-----	Line Not Found	-----
	77.11	31	17.70	1.255E+00	1.390E-06	1.394E-06	40.90
	87.19	-----	6.27	1.579E+00	-----	Line Not Found	-----
	90.13	-----	1.86	1.662E+00	-----	Line Not Found	-----
	115.12	-----	0.59	2.085E+00	-----	Line Not Found	-----
	238.58	56	43.60*	1.805E+00	7.177E-07	7.195E-07	18.64
	300.03	-----	3.34	1.562E+00	-----	Line Not Found	-----
BI-214	76.86	31	0.58	1.255E+00	4.242E-05	4.595E-05	40.90
	79.29	-----	0.97	1.320E+00	-----	Line Not Found	-----
	609.31	21	46.10*	8.836E-01	5.187E-07	5.619E-07	26.97
	665.44	-----	1.56	8.131E-01	-----	Line Not Found	-----
	768.35	-----	4.88	7.078E-01	-----	Line Not Found	-----
	806.16	-----	1.23	6.754E-01	-----	Line Not Found	-----
	934.04	-----	3.16	5.861E-01	-----	Line Not Found	-----
	1120.27	-----	15.00	4.982E-01	-----	Line Not Found	-----
	1155.18	-----	1.69	4.860E-01	-----	Line Not Found	-----
	1238.11	-----	5.92	4.615E-01	-----	Line Not Found	-----
	1280.95	-----	1.47	4.510E-01	-----	Line Not Found	-----
	1377.66	-----	4.02	4.323E-01	-----	Line Not Found	-----
	1385.30	-----	0.78	4.311E-01	-----	Line Not Found	-----
	1401.48	-----	1.39	4.287E-01	-----	Line Not Found	-----
	1407.97	-----	2.48	4.277E-01	-----	Line Not Found	-----
	1509.22	-----	2.19	4.165E-01	-----	Line Not Found	-----
	1583.22	-----	0.72	4.120E-01	-----	Line Not Found	-----
	1661.26	-----	1.15	4.103E-01	-----	Line Not Found	-----
	1729.58	-----	3.05	4.114E-01	-----	Line Not Found	-----
	1764.49	-----	15.90	4.128E-01	-----	Line Not Found	-----
	1847.41	-----	2.12	4.187E-01	-----	Line Not Found	-----
PB-214	53.17	-----	1.10	2.929E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.150E+00	-----	Line Not Found	-----
	77.11	31	11.00	1.255E+00	2.237E-06	2.374E-06	40.90
	87.19	-----	3.88	1.579E+00	-----	Line Not Found	-----
	90.13	-----	1.15	1.662E+00	-----	Line Not Found	-----
	241.92	-----	7.46	1.790E+00	-----	Line Not Found	-----
	258.94	-----	0.55	1.718E+00	-----	Line Not Found	-----
	295.09	26	19.20*	1.579E+00	8.798E-07	9.337E-07	25.20
	351.87	41	37.10	1.395E+00	7.935E-07	8.421E-07	22.75
	785.83	-----	1.09	6.925E-01	-----	Line Not Found	-----
	839.00	-----	0.59	6.497E-01	-----	Line Not Found	-----



Nuclide Line Activity Report (continued)  
Sample ID : 30364

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Acquisition date : 5-JUN-2014 15:36:48

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30364

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Acquisition date : 5-JUN-2014 15:36:48

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	5.	477.61	1.1585E-06
MN-54	4.	834.83	1.9281E-07
MN-56	0.	846.81	4.3195E-08
CO-57	20.	122.06	1.2835E-07
CO-58	1.	810.79	1.1082E-07
CO-60	1.	1173.24	1.5440E-07
SB-124	0.	1690.98	1.4082E-07
SB-125	1.	427.88	2.0987E-07
CS-134	0.	604.71	6.2681E-08
CS-137	3.	661.66	1.4589E-07