

## Health Physics Sample Records

**Sample ID:** 142483

**Type:** RLSSS

**Type Detail:** SAND

**Status:** APPROVED

**Rasterized:** ☒

**Description:** 140603BD 12, CAMP MESA # 12

### 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 11:06

**Comments:**

### Origin

**Mat. Size/Volume:** 1307 GRAMS

**Docmnt/MO/Act #:**

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

**Description:** CAMP MESA # 12

### Collection

**Sample Tech:** DYNES, WILLIAM J

**Sample Date:** 06/03/14 13:07

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

**Tritium Req:** No

**Sample Size/Volume:** 1616 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: **142483**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: ☐

Description: 140603BD 12, CAMP MESA # 12

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_	30366	1616 GR			.000		PARK, MICHAEL C	06/05/14 15:58		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	0.00001208	1.51E-6	<input type="checkbox"/>	84.585%	40				
0 TL-208	NT	3.244E-7	7.83E-8	<input type="checkbox"/>	2.271%	208				
0 PB-212	NT	3.99E-7	9.58E-8	<input type="checkbox"/>	2.794%	212				
0 BI-214	NT	6.807E-7	1.339E-7	<input type="checkbox"/>	4.766%	214				
0 PB-214	NT	7.974E-7	1.924E-7	<input type="checkbox"/>	5.583%	214				
0 BE-7	AP	7.8032E-7		<input checked="" type="checkbox"/>	0.000%	7				
0 MN-54	AP	1.0734E-7		<input checked="" type="checkbox"/>	0.000%	54				
0 MN-56	AP	1.3432E-7		<input checked="" type="checkbox"/>	0.000%	56				
0 CO-57	AP	9.0831E-8		<input checked="" type="checkbox"/>	0.000%	57				
0 CO-58	AP	1.0495E-7		<input checked="" type="checkbox"/>	0.000%	58				
0 CO-60	AP	4.2469E-8		<input checked="" type="checkbox"/>	0.000%	60				
0 SB-124	AP	9.8772E-8		<input checked="" type="checkbox"/>	0.000%	124				
0 SB-125	FP	2.2821E-7		<input checked="" type="checkbox"/>	0.000%	125				
0 CS-134	FP	1.0528E-7		<input checked="" type="checkbox"/>	0.000%	134				
0 CS-137	FP	1.4197E-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 14:57

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

Sample ID: **142483**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140603BD 12, CAMP MESA # 12

### Review/Approve

#### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 15:35

Comments: 338 keV peak is Ac-228

#### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

#### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 15:35

Comments:

```

*****
*          SONGS                      HEALTH PHYSICS REPORT          5-JUN-2014 15:53  *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<          *
*          *          *          *          *          *          *          *          *
* Title      : 140603BD 12, CAMP MESA # 12          *
*          *          *          *          *          *          *          *          *
* ID         : 30366          Acquisition date: 5-JUN-2014 15:50:45. *
* Start Time: 5-JUN-2014 15:50:00.          *
* Stop Time: 5-JUN-2014 15:50:00.          Counting System   : U2GSP          *
* Quantity  : 1.61600E+03 GR          IHPS Sample Number: 142483          *
* Geometry  : A_1L_marinelli_sand_1          Analysis Library  : HP_NATURAL          *
*          *          *          *          *          *          *          *          *
*          *          *          *          *          *          *          *          *
*          >>>> A #41-TP11679B  PARAMETERS <<<<          *
*          *          *          *          *          *          *          *          *
* Elapsed Live Time : 0 00:03:00.42 Calibration      : 5-JUN-2014 08:09:          *
* Elapsed Real Time : 0 00:03:00.46 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          *
*          *          *          *          *          *          *          *          *
*****

```

# Post-NID Peak Search Report

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	%Err	Fit	Nuclides
1	77.10	31	34	1.00	153.92	151	7	36.1	1.32E+00	BI-214 PB-212 PB-214
1	238.71	39	16	1.14	477.44	474	7	24.0	3.85E+00	PB-212
1	295.14	29	5	1.49	590.41	585	10	24.1	1.19E+00	PB-214
1	337.69	26	0	3.46	675.59	671	10	18.9	1.41E+00	
1	351.82	25	12	1.12	703.88	699	10	34.6	1.21E+00	PB-214
1	583.20	21	2	1.58	1167.08	1163	8	24.1	5.88E-01	TL-208
1	609.25	34	3	1.53	1219.23	1213	11	19.7	1.66E-01	BI-214
1	1460.86	74	3	2.03	2924.06	2919	11	12.5	9.32E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30366

Page : 2  
Acquisition date : 5-JUN-2014 15:50:45

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	1.208E-05	1.208E-05	0.151E-05	12.51	A
TL-208	3.05M	1.64	1.980E-07	3.244E-07	0.783E-07	24.13	A
PB-212	10.64H	1.00	3.981E-07	3.990E-07	0.958E-07	24.02	A
BI-214	19.90M	1.08	6.295E-07	6.807E-07	1.339E-07	19.67	A
PB-214	26.80M	1.06	7.523E-07	7.974E-07	1.924E-07	24.13	A
Total Activity :			1.406E-05	1.429E-05			

Grand Total Activity : 1.406E-05 1.429E-05

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

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

Unidentified Energy Lines  
Sample ID : 30366

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Acquisition date : 5-JUN-2014 15:50:45

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	337.69	26	0	3.46	675.59	671	10	1.44E-01	18.9	1.71E+00	T

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30366

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Acquisition date : 5-JUN-2014 15:50:45

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	74	10.67*	5.314E-01	1.208E-05	1.208E-05	12.51
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	21	86.00*	1.128E+00	1.980E-07	3.244E-07	24.13
	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	31	17.70	1.782E+00	8.991E-07	9.013E-07	36.14
	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	39	43.60*	2.082E+00	3.981E-07	3.990E-07	24.02
	300.03	-----	3.34	1.834E+00	-----	Line Not Found	-----
BI-214	76.86	31	0.58	1.782E+00	2.744E-05	2.967E-05	36.14
	79.29	-----	0.97	1.869E+00	-----	Line Not Found	-----
	609.31	34	46.10*	1.084E+00	6.295E-07	6.807E-07	19.67
	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	31	11.00	1.782E+00	1.447E-06	1.533E-06	36.14
	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	29	19.20*	1.852E+00	7.523E-07	7.974E-07	24.13
	351.87	25	37.10	1.662E+00	3.718E-07	3.940E-07	34.61
	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 : 30366

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Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30366

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Acquisition date : 5-JUN-2014 15:50:45

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	4.	477.61	7.8032E-07
MN-54	2.	834.83	1.0734E-07
MN-56	3.	846.81	1.3432E-07
CO-57	16.	122.06	9.0831E-08
CO-58	2.	810.79	1.0495E-07
CO-60	0.	1173.24	4.2469E-08
SB-124	0.	1690.98	9.8772E-08
SB-125	3.	427.88	2.2821E-07
CS-134	4.	604.71	1.0528E-07
CS-137	5.	661.66	1.4197E-07