

### Health Physics Sample Records

Sample ID: 142486

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140603BD 15, CAMP MESA 18

#### Common

Resp Org: P4000 - PROJECT MANAGEMET

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 11:25

Comments:

#### Origin

Mat. Size/Volume: 1323 GRAMS

Docmnt/MO/Act #:

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

Description: CAMP MESA #18

#### Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 06/03/14 12:55

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 1323 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: No

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**

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Description: 140603BD 15, CAMP MESA 18

**Analysis**

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
B_1L_marinelli_sand_	30370	1323	GR		.000		PARK, MICHAEL C	06/05/14 16:13		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments	Mod Id	Mod Date	
0 K-40	NT	0.00001525	1.85E-6	<input type="checkbox"/>	86.809%	40				
0 TL-208	NT	5.171E-7	1.1E-7	<input type="checkbox"/>	2.944%	208				
0 PB-212	NT	5.794E-7	1.195E-7	<input type="checkbox"/>	3.298%	212				
0 BI-214	NT	6.152E-7	1.289E-7	<input type="checkbox"/>	3.502%	214				
0 PB-214	NT	6.057E-7	2.22E-7	<input type="checkbox"/>	3.448%	214				
0 BE-7	AP	9.5655E-7		<input checked="" type="checkbox"/>	0.000%	7				
0 MN-54	AP	1.6639E-7		<input checked="" type="checkbox"/>	0.000%	54				
0 MN-56	AP	9.1276E-8		<input checked="" type="checkbox"/>	0.000%	56				
0 CO-57	AP	8.5284E-8		<input checked="" type="checkbox"/>	0.000%	57				
0 CO-58	AP	3.925E-8		<input checked="" type="checkbox"/>	0.000%	58				
0 CO-60	AP	1.6212E-7		<input checked="" type="checkbox"/>	0.000%	60				
0 SB-124	AP	1.0321E-7		<input checked="" type="checkbox"/>	0.000%	124				
0 SB-125	FP	2.5447E-7		<input checked="" type="checkbox"/>	0.000%	125				
0 CS-134	FP	1.3418E-7		<input checked="" type="checkbox"/>	0.000%	134				
0 CS-137	FP	1.7545E-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 15:44

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

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Sample ID: 142486

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140603BD 15, CAMP MESA 18

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**Review/Approve**

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### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 15:45

Comments:

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### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

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### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 15:45

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          5-JUN-2014 16:08  *
*-----*
*                >>>> SAMPLE PARAMETERS <<<<<                *
*
* Title       : 140603BD 15, CAMP MESA 18                        *
*
* ID          : 30370                      Acquisition date: 5-JUN-2014 16:04:31. *
* Start Time: 5-JUN-2014 16:04:00.                      *
* Stop Time : 5-JUN-2014 16:04:00.                      Counting System : U2GSP      *
* Quantity  : 1.32300E+03 GR                          IHPS Sample Number: 142486 *
* Geometry  : B_1L_marinelli_sand_1                    Analysis Library : HP_NATURAL *
*                               Operator: MICHAEL PARK      *
*-----*
*                >>>> B #42-TP11663A PARAMETERS <<<<<                *
*
* Elapsed Live Time : 0 00:03:30.49 Calibration : 5-JUN-2014 08:35: *
* Elapsed Real Time : 0 00:03:30.53 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
2	238.80	47	19	1.52	478.53	473	24	20.6	2.07E+00	PB-212
2	242.26	22	7	1.52	485.45	473	24	38.1		PB-214
1	295.26	18	8	2.00	591.44	588	10	36.7	1.65E+00	PB-214
1	352.09	27	12	1.67	705.08	698	11	29.6	3.00E-01	PB-214
1	583.21	26	2	2.30	1167.28	1163	9	21.3	3.00E-01	TL-208
1	609.33	24	0	1.89	1219.51	1215	11	21.0	3.68E-01	BI-214
1	1460.78	71	0	2.46	2922.25	2915	13	12.1	9.69E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30370

Page : 2  
Acquisition date : 5-JUN-2014 16:04:31

Total number of lines in spectrum 7  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 7 100.00%

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	1.525E-05	1.525E-05	0.185E-05	12.10	A
TL-208	3.05M	1.63	3.163E-07	5.171E-07	1.100E-07	21.27	A
PB-212	10.64H	1.00	5.779E-07	5.794E-07	1.195E-07	20.63	A
BI-214	19.90M	1.08	5.686E-07	6.152E-07	1.289E-07	20.96	A
PB-214	26.80M	1.06	5.712E-07	6.057E-07	2.220E-07	36.65	A
Total Activity :			1.728E-05	1.756E-05			

Grand Total Activity : 1.728E-05 1.756E-05

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

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

Unidentified Energy Lines  
Sample ID : 30370

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Acquisition date : 5-JUN-2014 16:04:31

None

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30370

Page : 4  
Acquisition date : 5-JUN-2014 16:04:31

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	71	10.67*	4.211E-01	1.525E-05	1.525E-05	12.10
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	26	86.00*	9.196E-01	3.163E-07	5.171E-07	21.27
	763.06	-----	1.64	7.126E-01	-----	Line Not Found	-----
PB-212	860.30	-----	12.00	6.341E-01	-----	Line Not Found	-----
	74.81	-----	10.50	1.150E+00	-----	Line Not Found	-----
	77.11	-----	17.70	1.239E+00	-----	Line Not Found	-----
	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	47	43.60*	1.804E+00	5.779E-07	5.794E-07	20.63
	300.03	-----	3.34	1.562E+00	-----	Line Not Found	-----
BI-214	76.86	-----	0.58	1.229E+00	-----	Line Not Found	-----
	79.29	-----	0.97	1.320E+00	-----	Line Not Found	-----
	609.31	24	46.10*	8.833E-01	5.686E-07	6.152E-07	20.96
	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	-----	11.00	1.239E+00	-----	Line Not Found	-----
	87.19	-----	3.88	1.579E+00	-----	Line Not Found	-----
	90.13	-----	1.15	1.662E+00	-----	Line Not Found	-----
	241.92	22	7.46	1.789E+00	1.567E-06	1.661E-06	38.10
	258.94	-----	0.55	1.718E+00	-----	Line Not Found	-----
	295.09	18	19.20*	1.579E+00	5.712E-07	6.057E-07	36.65
	351.87	27	37.10	1.395E+00	5.111E-07	5.420E-07	29.65
	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 : 30370

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Acquisition date : 5-JUN-2014 16:04:31

Flag: "\*" = Keyline

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	3.	477.61	9.5655E-07
MN-54	3.	834.83	1.6639E-07
MN-56	0.	846.81	9.1276E-08
CO-57	8.	122.06	8.5284E-08
CO-58	0.	810.79	3.9250E-08
CO-60	1.	1332.50	1.6212E-07
SB-124	2.	602.73	1.0321E-07
SB-125	2.	427.88	2.5447E-07
CS-134	4.	604.71	1.3418E-07
CS-137	5.	661.66	1.7545E-07