

# Health Physics Sample Records

Sample ID: 142503

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: ☐

Description: 14060614BD 03 NORTH LAYDOWN #5

## 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: 06/09/14 08:14

Comments:

## Origin

Mat. Size/Volume: 2196 GRAMS

Docmnt/MO/Act #:

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

Description: NORTH LAYDOWN # 5

## Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 06/06/14 08:45

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 2196 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: COUNT TO MDA

Material Loc:


# Health Physics Sample Records

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Rasterized: 

Description: 14060614BD 03 NORTH LAYDOWN #5

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_	30420	2196	GR		.000		NEEBE, DAVID J	06/09/14 20:28		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	0.00001074	1.21E-6		82.622%	40				
0 TL-208	NT	3.063E-7	5.37E-8		2.356%	208				
0 PB-212	NT	3.241E-7	8.35E-8		2.493%	212				
0 BI-214	NT	7.438E-7	1.148E-7		5.722%	214				
0 PB-214	NT	3.433E-7	1.547E-7		2.641%	214				
0 AC-228	NT	5.414E-7	1.699E-7		4.165%	228				
0 BE-7	AP	7.072E-7			0.000%	7				
0 MN-54	AP	1.0838E-7			0.000%	54				
0 MN-56	AP	7.0661E-8			0.000%	56				
0 CO-57	AP	7.2284E-8			0.000%	57				
0 CO-58	AP	6.1205E-8			0.000%	58				
0 CO-60	AP	9.1628E-8			0.000%	60				
0 SB-124	AP	4.6848E-8			0.000%	124				
0 SB-125	FP	1.6609E-7			0.000%	125				
0 CS-134	FP	5.9418E-8			0.000%	134				
0 CS-137	FP	1.0514E-7			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/11/14 07:40

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

Sample ID: **142503**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 14060614BD 03 NORTH LAYDOWN #5

**Review/Approve**

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/11/14 07:43

Comments: the FWHM for the 65 keV peak is > 3.0; the 284 keV peak is not due to any plant-produced nuclide

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/11/14 07:43

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          9-JUN-2014 20:18  *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<<          *
*-----*
* Title      : 14060614BD 03 NORTH LAYDOWN #5          *
* ID         : 30420          Acquisition date: 9-JUN-2014 20:15:16. *
* Start Time: 9-JUN-2014 20:15:00.          *
* Stop Time : 9-JUN-2014 20:15:00.          Counting System   : U2GSP          *
* Quantity  : 2.19600E+03 GR          IHPS Sample Number: 142503          *
* Geometry  : A_1L_marinelli_sand_1          Analysis Library  : HP_NATURAL          *
*          Operator: DAVID NEEBE          *
*-----*
*          >>>> A #41-TP11679B  PARAMETERS <<<<<          *
*-----*
* Elapsed Live Time : 0 00:03:00.41 Calibration : 9-JUN-2014 19:32:          *
* Elapsed Real Time : 0 00:03:00.47 Energy Offset : 2.30553E-01          *
* Deadtime          : 0.0%          Energy Slope : 4.99505E-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	64.92	41	34	4.33	129.51	126	11	30.6	4.12E+00	
1	77.18	33	52	1.38	154.05	151	7	39.9	7.05E+00	BI-214
										PB-212
										PB-214
1	238.43	43	19	1.59	476.87	471	10	25.8	2.09E+00	PB-212
1	283.58	13	4	1.93	567.27	565	6	32.5	2.21E+00	
1	295.49	17	12	1.58	591.12	586	10	45.1	6.31E-01	PB-214
1	351.86	51	10	0.91	703.96	701	8	17.7	2.33E-01	PB-214
1	583.05	30	0	1.87	1166.83	1162	9	17.5	6.77E-02	TL-208
1	609.24	51	3	1.61	1219.26	1214	11	15.4	2.55E-01	BI-214
1	911.07	17	4	1.57	1823.57	1819	8	31.4	8.87E-01	AC-228
1	1460.79	89	3	1.89	2924.23	2918	12	11.3	5.44E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30420

Page : 2  
Acquisition date : 9-JUN-2014 20:15:16

Total number of lines in spectrum 10  
Number of unidentified lines 2  
Number of lines tentatively identified by NID 8 80.00%

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	1.074E-05	1.074E-05	0.121E-05	11.26	A
TL-208	3.05M	1.47	2.084E-07	3.063E-07	0.537E-07	17.53	A
PB-212	10.64H	1.00	3.234E-07	3.241E-07	0.835E-07	25.76	A
BI-214	19.90M	1.06	6.993E-07	7.438E-07	1.148E-07	15.44	A
PB-214	26.80M	1.05	3.279E-07	3.433E-07	1.547E-07	45.07	A
AC-228	6.13H	1.00	5.396E-07	5.414E-07	1.699E-07	31.39	A
Total Activity :			1.284E-05	1.300E-05			

Grand Total Activity : 1.284E-05 1.300E-05

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

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

Unidentified Energy Lines  
Sample ID : 30420

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It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	64.92	41	34	4.33	129.51	126	11	2.26E-01	30.6	1.19E+00	
1	283.58	13	4	1.93	567.27	565	6	7.35E-02	32.5	1.90E+00	

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30420

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Acquisition date : 9-JUN-2014 20:15:16

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	89	10.67*	5.314E-01	1.074E-05	1.074E-05	11.26
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	30	86.00*	1.128E+00	2.084E-07	3.063E-07	17.53
	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	33	17.70	1.785E+00	7.144E-07	7.157E-07	39.87
	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	43	43.60*	2.083E+00	3.234E-07	3.241E-07	25.76
	300.03	-----	3.34	1.834E+00	-----	Line Not Found	-----
BI-214	76.86	33	0.58	1.785E+00	2.180E-05	2.319E-05	39.87
	79.29	-----	0.97	1.869E+00	-----	Line Not Found	-----
	609.31	51	46.10*	1.084E+00	6.993E-07	7.438E-07	15.44
	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	33	11.00	1.785E+00	1.149E-06	1.203E-06	39.87
	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	17	19.20*	1.851E+00	3.279E-07	3.433E-07	45.07
	351.87	51	37.10	1.662E+00	5.688E-07	5.955E-07	17.72
	785.83	-----	1.09	8.495E-01	-----	Line Not Found	-----
	839.00	-----	0.59	7.964E-01	-----	Line Not Found	-----



Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected uCi/GR	Decay Corr uCi/GR	1-Sigma %Error
AC-228	89.96	-----	3.40	2.201E+00	-----	Line Not Found	-----
	93.35	-----	5.60	2.279E+00	-----	Line Not Found	-----
	99.55	-----	1.30	2.389E+00	-----	Line Not Found	-----
	105.36	-----	2.00	2.463E+00	-----	Line Not Found	-----
	108.99	-----	0.67	2.496E+00	-----	Line Not Found	-----
	129.03	-----	2.90	2.562E+00	-----	Line Not Found	-----
	153.89	-----	0.84	2.496E+00	-----	Line Not Found	-----
	209.39	-----	4.10	2.221E+00	-----	Line Not Found	-----
	216.24	-----	0.80	2.187E+00	-----	Line Not Found	-----
	270.26	-----	3.80	1.948E+00	-----	Line Not Found	-----
	328.07	-----	3.50	1.738E+00	-----	Line Not Found	-----
	338.42	-----	12.40	1.704E+00	-----	Line Not Found	-----
	340.94	-----	0.52	1.696E+00	-----	Line Not Found	-----
	409.62	-----	2.20	1.499E+00	-----	Line Not Found	-----
	463.10	-----	4.60	1.368E+00	-----	Line Not Found	-----
	562.65	-----	1.01	1.164E+00	-----	Line Not Found	-----
	581.52	-----	3.00	1.131E+00	-----	Line Not Found	-----
	726.63	-----	0.87	9.173E-01	-----	Line Not Found	-----
	755.28	-----	1.32	8.833E-01	-----	Line Not Found	-----
	772.28	-----	1.09	8.641E-01	-----	Line Not Found	-----
	782.12	-----	0.59	8.534E-01	-----	Line Not Found	-----
	794.79	-----	4.60	8.400E-01	-----	Line Not Found	-----
	830.59	-----	0.63	8.043E-01	-----	Line Not Found	-----
	835.60	-----	1.71	7.996E-01	-----	Line Not Found	-----
	840.44	-----	0.94	7.951E-01	-----	Line Not Found	-----
	904.29	-----	0.89	7.403E-01	-----	Line Not Found	-----
	911.16	17	29.00*	7.350E-01	5.396E-07	5.414E-07	31.39
	964.64	-----	5.80	6.962E-01	-----	Line Not Found	-----
	968.97	-----	17.40	6.933E-01	-----	Line Not Found	-----
	1246.60	-----	0.57	5.673E-01	-----	Line Not Found	-----
	1459.19	-----	1.06	5.315E-01	-----	Line Not Found	-----
	1496.00	-----	1.05	5.296E-01	-----	Line Not Found	-----
	1501.44	-----	0.58	5.294E-01	-----	Line Not Found	-----
	1580.30	-----	0.71	5.295E-01	-----	Line Not Found	-----
	1588.23	-----	3.60	5.298E-01	-----	Line Not Found	-----
	1630.47	-----	1.95	5.324E-01	-----	Line Not Found	-----
	1638.10	-----	0.54	5.330E-01	-----	Line Not Found	-----

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30420

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Acquisition date : 9-JUN-2014 20:15:16

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	6.	477.61	7.0720E-07
MN-54	5.	834.83	1.0838E-07
MN-56	1.	846.81	7.0661E-08
CO-57	19.	122.06	7.2284E-08
CO-58	1.	810.79	6.1205E-08
CO-60	1.	1332.50	9.1628E-08
SB-124	1.	602.73	4.6848E-08
SB-125	3.	427.88	1.6609E-07
CS-134	2.	604.71	5.9418E-08
CS-137	5.	661.66	1.0514E-07