

## Health Physics Sample Records

**Sample ID:** 142435

**Type:** RLSSS

**Type Detail:** SAND

**Status:** APPROVED

**Rasterized:** ☐

**Description:** 140528BD 06 STAR 6-20 Dirt Sample

### 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:** 05/29/14 11:19

**Comments:**

### Origin

**Mat. Size/Volume:** 1000 ml

**Docmnt/MO/Act #:**

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

**Description:** STAR 02 SOIL SAMPLE

### Collection

**Sample Tech:** DYNES, WILLIAM J

**Sample Date:** 05/28/14 12:58

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

**Tritium Req:** No

**Sample Size/Volume:** 2038 GRAMS

**Instructions:**

**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:** 3" (in.)

**Equip ID:**

**Stored By:** ,

**Date:** 00/00/00 00:00

**Sample Loc:**

**Other:**

**Material Loc:**


# Health Physics Sample Records

Sample ID: 142435

Type: RLSSS



















Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 06 STAR 6-20 Dirt Sample

## Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
A_1L_marinelli_sand_	30272	2038	GR		.000		ABERNATHY, AGNES B	05/29/14 16:28		
Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments		Mod Id	Mod Date
0 K-40	NT	0.00001371	1.47E-6		69.043%	40				
0 TL-208	NT	3.799E-7	7.24E-8		1.913%	208				
0 PB-212	NT	5.981E-7	9.76E-8		3.012%	212				
0 BI-214	NT	4.336E-7	1.183E-7		2.184%	214				
0 PB-214	NT	7.967E-7	2.163E-7		4.012%	214				
0 RA-226	NT	2.895E-6	1.522E-6		14.579%	226				
0 AC-228	NT	8.648E-7	1.896E-7		4.355%	228				
0 U-235	NT	1.791E-7	9.42E-8		0.902%	235				
0 BE-7	AP	7.5817E-7			0.000%	7				
0 MN-54	AP	1.2034E-7			0.000%	54				
0 MN-56	AP	7.407E-8			0.000%	56				
0 CO-57	AP	7.7151E-8			0.000%	57				
0 CO-58	AP	8.3217E-8			0.000%	58				
0 CO-60	AP	3.6289E-8			0.000%	60				
0 SB-124	AP	6.9198E-8			0.000%	124				
0 SB-125	FP	1.8578E-7			0.000%	125				
0 CS-134	FP	8.6877E-8			0.000%	134				
0 CS-137	FP	9.2427E-8			0.000%	137				

## Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 09:38

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

## Health Physics Sample Records

Sample ID: **142435**

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized: 

Description: 140528BD 06 STAR 6-20 Dirt Sample

**Review/Approve**

### HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 09:45

Comments: U-235 is likely a mis-ID for Ra-226

### Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

### Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 09:45

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          29-MAY-2014 16:18      *
*-----*
*          >>>> SAMPLE  PARAMETERS <<<<          *
*          *          *          *          *          *          *          *          *          *
* Title      : 140528BD 06 STAR 6-20 DIRT SAMPLE          *
*          *          *          *          *          *          *          *          *          *
* ID         : 30272          Acquisition date: 29-MAY-2014 16:15:23 *
* Start Time: 29-MAY-2014 16:15:00          *
* Stop Time : 29-MAY-2014 16:15:00          Counting System   : U2GSP          *
* Quantity   : 2.03800E+03 GR          IHPS Sample Number: 142435          *
* Geometry   : A_1L_marinelli_sand_1      Analysis Library  : HP_NATURAL          *
*          :          Operator: AGNES ABERNATHY          *
*-----*
*          >>>> A #41-TP11679B  PARAMETERS <<<<          *
*          *          *          *          *          *          *          *          *          *
* Elapsed Live Time : 0 00:03:00.43 Calibration      : 28-MAY-2014 21:10          *
* Elapsed Real Time  : 0 00:03:00.49 Energy Offset   : 2.58874E-01          *
* Deadtime           : 0.0%          Energy Slope    : 4.99485E-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	77.38	41	44	1.25	154.40	152	6	30.4	5.94E-01	BI-214 PB-212 PB-214
1	186.39	30	52	2.00	372.66	366	13	52.6	1.78E+00	U-235 RA-226
1	238.64	74	27	1.08	477.25	474	7	16.3	2.44E+00	PB-212
1	242.11	35	14	2.05	484.21	481	8	26.2	4.18E-01	PB-214
1	294.93	37	17	1.44	589.95	586	11	27.1	1.17E+00	PB-214
1	352.02	43	5	1.14	704.25	700	9	17.9	8.15E-01	PB-214
1	583.27	33	2	1.43	1167.24	1162	9	19.0	3.15E-01	TL-208
1	609.43	28	8	1.63	1219.61	1213	11	27.3	7.29E-01	BI-214
1	911.19	25	0	1.31	1823.78	1819	10	21.9	8.52E-01	AC-228
1	1460.82	106	6	1.66	2924.20	2918	11	10.7	6.10E-01	K-40

Summary of Nuclide Activity  
Sample ID : 30272

Page : 2  
Acquisition date : 29-MAY-2014 16:15:23

Total number of lines in spectrum 10  
Number of unidentified lines 0  
Number of lines tentatively identified by NID 10 100.00%

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	1.371E-05	1.371E-05	0.147E-05	10.70	A
TL-208	3.05M	1.51	2.518E-07	3.799E-07	0.724E-07	19.05	A
PB-212	10.64H	1.00	5.968E-07	5.981E-07	0.976E-07	16.32	A
BI-214	19.90M	1.07	4.061E-07	4.336E-07	1.183E-07	27.27	A
PB-214	26.80M	1.05	7.588E-07	7.967E-07	2.163E-07	27.14	A
RA-226	1600.00Y	1.00	2.895E-06	2.895E-06	1.522E-06	52.57	A
AC-228	6.13H	1.00	8.617E-07	8.648E-07	1.896E-07	21.92	A
U-235	7.04E+08Y	1.00	1.791E-07	1.791E-07	0.942E-07	52.57	A
Total Activity :			1.966E-05	1.986E-05			

Grand Total Activity : 1.966E-05 1.986E-05

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

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

Unidentified Energy Lines  
Sample ID : 30272

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Acquisition date : 29-MAY-2014 16:15:23

None

Flags: "T" = Tentatively associated

Interference Report  
Sample ID : 30272

Page : 4  
Acquisition date : 29-MAY-2014 16:15:23

No interference correction performed

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma
					uCi/GR	uCi/GR	
K-40	1460.83	106	10.67*	5.314E-01	1.371E-05	1.371E-05	10.70
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	33	86.00*	1.128E+00	2.518E-07	3.799E-07	19.05
PB-212	763.06	-----	1.64	8.744E-01	-----	Line Not Found	-----
	860.30	-----	12.00	7.770E-01	-----	Line Not Found	-----
	74.81	-----	10.50	1.685E+00	-----	Line Not Found	-----
	77.11	41	17.70	1.793E+00	9.568E-07	9.587E-07	30.37
	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	-----
BI-214	238.58	74	43.60*	2.082E+00	5.968E-07	5.981E-07	16.32
	300.03	-----	3.34	1.834E+00	-----	Line Not Found	-----
	76.86	41	0.58	1.793E+00	2.920E-05	3.118E-05	30.37
	79.29	-----	0.97	1.869E+00	-----	Line Not Found	-----
	609.31	28	46.10*	1.084E+00	4.061E-07	4.336E-07	27.27
	665.44	-----	1.56	9.985E-01	-----	Line Not Found	-----
	768.35	-----	4.88	8.685E-01	-----	Line Not Found	-----
PB-214	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	-----
	53.17	-----	1.10	5.543E-01	-----	Line Not Found	-----
	74.81	-----	6.52	1.685E+00	-----	Line Not Found	-----
	77.11	41	11.00	1.793E+00	1.540E-06	1.616E-06	30.37
	87.19	-----	3.88	2.129E+00	-----	Line Not Found	-----
	90.13	-----	1.15	2.206E+00	-----	Line Not Found	-----
PB-214	241.92	35	7.46	2.067E+00	1.685E-06	1.769E-06	26.24
	258.94	-----	0.55	1.994E+00	-----	Line Not Found	-----
	295.09	37	19.20*	1.853E+00	7.588E-07	7.967E-07	27.14
	351.87	43	37.10	1.662E+00	5.113E-07	5.369E-07	17.93
	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 Decay Corr		1-Sigma
					uCi/GR	uCi/GR	%Error
RA-226	81.07	-----	0.18	1.934E+00	-----	Line Not Found	-----
	186.11	30	3.28*	2.337E+00	2.895E-06	2.895E-06	52.57
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	25	29.00*	7.349E-01	8.617E-07	8.648E-07	21.92
	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	-----
U-235	89.96	-----	3.36	2.201E+00	-----	Line Not Found	-----
	93.35	-----	5.50	2.279E+00	-----	Line Not Found	-----
	105.36	-----	1.98	2.463E+00	-----	Line Not Found	-----
	109.18	-----	1.50	2.498E+00	-----	Line Not Found	-----
	143.79	-----	10.50	2.533E+00	-----	Line Not Found	-----
	163.38	-----	4.70	2.453E+00	-----	Line Not Found	-----
	185.74	30	53.00*	2.337E+00	1.791E-07	1.791E-07	52.57
	194.96	-----	0.59	2.294E+00	-----	Line Not Found	-----
	202.13	-----	1.00	2.257E+00	-----	Line Not Found	-----
	205.33	-----	4.70	2.241E+00	-----	Line Not Found	-----

Nuclide Line Activity Report (continued)  
Sample ID : 30272

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Acquisition date : 29-MAY-2014 16:15:23

Flag: "\*" = Keyline

Minimum Detectable Activity Report  
Sample ID : 30272

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Acquisition date : 29-MAY-2014 16:15:23

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	6.	477.61	7.5817E-07
MN-54	5.	834.83	1.2034E-07
MN-56	1.	846.81	7.4070E-08
CO-57	19.	122.06	7.7151E-08
CO-58	2.	810.79	8.3217E-08
CO-60	0.	1332.50	3.6289E-08
SB-124	3.	602.73	6.9198E-08
SB-125	3.	427.88	1.8578E-07
CS-134	5.	604.71	8.6877E-08
CS-137	3.	661.66	9.2427E-08