

Health Physics Sample Records

Sample ID: 142448

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140528BD 18 STAR 18-20 Dirt Sample

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: 05/30/14 08:58

Comments:

Origin

Mat. Size/Volume: 2129 ml

Docmnt/MO/Act #:

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

Description: STAR 18 SOIL SAMPLE

Collection

Sample Tech: DYNES, WILLIAM J

Sample Date: 05/29/14 08:02

Count Time: 900 (secs.)

Tritium Req: No

Sample Size/Volume: 2129 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: No

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

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Status: APPROVED

Rasterized:

Description: 140528BD 18 STAR 18-20 Dirt Sample

Analysis

Geometry	MCA ID	Quant.	Units	Method	FP/AP	Lab	Analysis By	Date	Mod ID	Mod Date
B_1L_marinelli_sand_	30296	2129	GR		.000		PARK, MICHAEL C	06/02/14 09:58		

Isotope	Mode	Activity	Activity Uncert.	LLD/MDA	% Abund.	Atom. No.	Comments	Mod Id	Mod Date
0	K-40	NT	0.0000131E-15	1.57E-6					
					64.455%	40			
0	TL-208	NT	5.339E-7	9.12E-8					
					2.611%	208			
0	PB-212	NT	7.192E-7	1.677E-7					
					3.517%	212			
0	BI-214	NT	8.644E-7	1.268E-7					
					4.227%	214			
0	PB-214	NT	9.076E-7	2.203E-7					
					4.438%	214			
0	RA-226	NT	3.996E-6	1.464E-6					
					19.542%	226			
0	U-235	NT	2.473E-7	9.06E-8					
					1.209%	235			
0	BE-7	AP	8.7061E-7						
					0.000%	7			
0	MN-54	AP	1.1135E-7						
					0.000%	54			
0	MN-56	AP	1.5116E-7						
					0.000%	56			
0	CO-57	AP	1.0675E-7						
					0.000%	57			
0	CO-58	AP	8.4656E-8						
					0.000%	58			
0	CO-60	AP	3.965E-8						
					0.000%	60			
0	SB-124	AP	8.3775E-8						
					0.000%	124			
0	SB-125	FP	3.1326E-7						
					0.000%	125			
0	CS-134	FP	9.6174E-8						
					0.000%	134			
0	CS-137	FP	9.924E-8						
					0.000%	137			

Analysis Review

Re-Analyze: No

Lic Rad Mat Present: No

Reviewed: COOPER, TERRY L

Date: 06/10/14 10:18

Hp Eng Rvw Req'd: Yes

Rad Mat Present: Yes

HP Notified Name:

Comments:

Health Physics Sample Records

Sample ID: 142448

Type: RLSSS

Type Detail: SAND

Status: APPROVED

Rasterized:

Description: 140528BD 18 STAR 18-20 Dirt Sample

Review/Approve

HP Eng Review

Reviewed: COOPER, TERRY L

Date: 06/10/14 10:19

Comments: U-235 likely mis-Id from Ra-226 energy peak; peak at 429 keV is not due to plant-produced nuclide

Disposition

Disposition: OTHER

Result: Sample contains only natural isotopes

Remarks:

Final Approval

Approved: COOPER, TERRY L

Date: 06/10/14 10:19

Comments:

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*****
*          SONGS                      HEALTH PHYSICS REPORT          2-JUN-2014 09:54
*-----*
*                >>>> SAMPLE PARAMETERS <<<<<
*
* Title       : 140528BD 18 STAR 18-20 DIRT SAMPLE
*
* ID          : 30296                      Acquisition date: 2-JUN-2014 09:51:46.
* Start Time : 2-JUN-2014 09:51:00.
* Stop Time  : 2-JUN-2014 09:51:00.      Counting System   : U2GSP
* Quantity   : 2.12900E+03 GR             IHPS Sample Number: 142448
* Geometry   : B_1L_marinelli_sand_1     Analysis Library  : HP_NATURAL
*                               Operator: MICHAEL PARK
*-----*
*                >>>> B #42-TP11663A PARAMETERS <<<<<
*
* Elapsed Live Time : 0 00:03:00.40      Calibration       : 1-JUN-2014 20:28:
* Elapsed Real Time : 0 00:03:00.46      Energy Offset    : -5.64750E-02
* Deadtime          : 0.0%                Energy Slope     : 4.99765E-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	77.67	64	101	3.50	155.53	148	16	38.3	4.45E+00	BI-214 PB-212 PB-214
1	186.28	38	30	1.94	372.85	367	14	36.6	1.72E+00	U-235 RA-226
1	238.69	80	79	1.39	477.71	474	11	23.3	4.21E+00	PB-212
1	295.47	37	9	2.15	591.32	587	12	24.3	9.90E-01	PB-214
1	352.36	42	20	2.09	705.16	698	13	26.2	3.90E+00	PB-214
1	429.43	13	10	1.78	859.37	852	14	58.6	8.57E-01	
1	582.83	37	0	2.21	1166.32	1161	12	17.1	4.63E-01	TL-208
1	609.06	46	0	1.98	1218.79	1212	11	14.7	4.18E-01	BI-214
1	1460.28	84	3	1.99	2922.04	2916	12	11.9	7.67E-01	K-40

Summary of Nuclide Activity
Sample ID : 30296

Page : 2
Acquisition date : 2-JUN-2014 09:51:46

Total number of lines in spectrum 9
Number of unidentified lines 1
Number of lines tentatively identified by NID 8 88.89%

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	1.318E-05	1.318E-05	0.157E-05	11.88	A
TL-208	3.05M	1.64	3.250E-07	5.339E-07	0.912E-07	17.08	A
PB-212	10.64H	1.00	7.174E-07	7.192E-07	1.677E-07	23.32	A
BI-214	19.90M	1.08	7.990E-07	8.644E-07	1.268E-07	14.66	A
PB-214	26.80M	1.06	8.560E-07	9.076E-07	2.203E-07	24.27	A
RA-226	1600.00Y	1.00	3.996E-06	3.996E-06	1.464E-06	36.64	A
U-235	7.04E+08Y	1.00	2.473E-07	2.473E-07	0.906E-07	36.64	A
Total Activity :			2.012E-05	2.045E-05			

Grand Total Activity : 2.012E-05 2.045E-05

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

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

Unidentified Energy Lines
Sample ID : 30296

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Acquisition date : 2-JUN-2014 09:51:46

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	%Eff	Flags
1	429.43	13	10	1.78	859.37	852	14	7.25E-02	58.6	1.20E+00	

Flags: "T" = Tentatively associated

Interference Report
Sample ID : 30296

Page : 4
Acquisition date : 2-JUN-2014 09:51:46

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	84	10.67*	4.212E-01	1.318E-05	1.318E-05	11.88
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	37	86.00*	9.202E-01	3.250E-07	5.339E-07	17.08
	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		64	17.70	1.260E+00	2.015E-06	2.020E-06	38.26
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		80	43.60*	1.804E+00	7.174E-07	7.192E-07	23.32
300.03		-----	3.34	1.562E+00	-----	Line Not Found	-----
BI-214	76.86	64	0.58	1.260E+00	6.150E-05	6.653E-05	38.26
	79.29	-----	0.97	1.320E+00	-----	Line Not Found	-----
	609.31	46	46.10*	8.836E-01	7.990E-07	8.644E-07	14.66
	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	-----
	PB-214	1764.49	-----	15.90	4.128E-01	-----	Line Not Found
1847.41		-----	2.12	4.187E-01	-----	Line Not Found	-----
53.17		-----	1.10	2.929E-01	-----	Line Not Found	-----
74.81		-----	6.52	1.150E+00	-----	Line Not Found	-----
77.11		64	11.00	1.260E+00	3.243E-06	3.438E-06	38.26
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		37	19.20*	1.578E+00	8.560E-07	9.076E-07	24.27
351.87	42	37.10	1.394E+00	5.747E-07	6.093E-07	26.19	
785.83	-----	1.09	6.925E-01	-----	Line Not Found	-----	
839.00	-----	0.59	6.497E-01	-----	Line Not Found	-----	

Nuclide Type: natural

Nuclide	Energy	Area	%Abn	%Eff	Uncorrected Decay Corr		1-Sigma %Error
					uCi/GR	uCi/GR	
RA-226	81.07	-----	0.18	1.383E+00	-----	Line Not Found	-----
	186.11	38	3.28*	2.042E+00	3.996E-06	3.996E-06	36.64
U-235	89.96	-----	3.36	1.657E+00	-----	Line Not Found	-----
	93.35	-----	5.50	1.743E+00	-----	Line Not Found	-----
	105.36	-----	1.98	1.973E+00	-----	Line Not Found	-----
	109.18	-----	1.50	2.024E+00	-----	Line Not Found	-----
	143.79	-----	10.50	2.177E+00	-----	Line Not Found	-----
	163.38	-----	4.70	2.133E+00	-----	Line Not Found	-----
	185.74	38	53.00*	2.042E+00	2.473E-07	2.473E-07	36.64
	194.96	-----	0.59	2.003E+00	-----	Line Not Found	-----
	202.13	-----	1.00	1.970E+00	-----	Line Not Found	-----
	205.33	-----	4.70	1.956E+00	-----	Line Not Found	-----

Flag: "*" = Keyline

Minimum Detectable Activity Report
Sample ID : 30296

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Acquisition date : 2-JUN-2014 09:51:46

Nuclide	Bckgnd Sum	Energy (keV)	MDA (uCi/GR)
BE-7	6.	477.61	8.7061E-07
MN-54	3.	834.83	1.1135E-07
MN-56	5.	846.81	1.5116E-07
CO-57	29.	122.06	1.0675E-07
CO-58	1.	810.79	8.4656E-08
CO-60	0.	1173.24	3.9650E-08
SB-124	3.	602.73	8.3775E-08
SB-125	8.	427.88	3.1326E-07
CS-134	4.	604.71	9.6174E-08
CS-137	2.	661.66	9.9240E-08