



November 17, 2016

Ms. Rachel Browder
U.S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Boulevard
Arlington, TX 76011

SUBJECT: ORISE CONTRACT NO. DE-SC0014664
LETTER REPORT FOR ANALYTICAL RESULTS FOR SEVEN SOIL SAMPLES
ASSOCIATED WITH THE HILL AIR FORCE BASE, LITTLE MOUNTAIN
TEST ANNEX WR111 SITE, UTAH
[TAC NO. 030-28641/2017-001] [DOCKET NO. 30-28641](RFTA NO. 17-001)
DCN: 5298-LR-02-0

Dear Ms. Browder:

The Oak Ridge Institute for Science and Education (ORISE), managed by ORAU for DOE, received seven soil samples on August 25, 2016 from the Little Mountain Test Annex WR111 site Hill AFB, Utah. The samples were received in good condition. The seven samples were initially analyzed by gamma spectroscopy, the results of which were provided in a separate report. At your request, six samples were analyzed for thorium-230 by alpha spectrometry to confirm the gamma results. These analytical data, along with the procedure references, are presented in the attached reports.

Quality Control (QC) requirements were met for these analyses. The QC files are available for your review upon request.

Please feel free to contact me at 865.576.9184 or Forrest Smith at 865.574.9802 with any questions or comments.

Sincerely,


Wade Ivey, Manager Laboratory
ORAU

WPI:WFS:km:lw

Enclosures

Electronic distribution: T. Carter, NRC S. Roberts, ORAU T. Vitkus, ORAU
 E. Bailey, ORAU D. Hagemeyer, ORAU
 File code: 5298; Lab code: 11791

Distribution approval and concurrence:	Initials
Quality Review	AB
Technical Review	DR

Report Date: November 15, 2016

Project Name: Hill AFB

Project #: 201211791

COC #: 1608-009

SDG #: 201211791-1

Analyst: smithw

Batch #: AS0383

Receipt Date: 8/25/2016

Collection Date: 8/24/2016

Count Date: 11/10/2016

SOP (Rev. #): AP11 (9)

Client								
Sample ID	Lab Sample ID	Analyte	Result	TPU (2s)	MDC	Units	Yield	Qualifier
Hill-S-01	11791S0001	TH-228	3.42	0.39	0.05	pCi/g	0.8863	
Hill-S-01	11791S0001	TH-230	1.34	0.17	0.03	pCi/g	0.8863	
Hill-S-01	11791S0001	TH-232	3.41	0.39	0.01	pCi/g	0.8863	
	11791S0001Dup	TH-228	3.14	0.37	0.06	pCi/g	0.9389	
	11791S0001Dup	TH-230	1.14	0.15	0.01	pCi/g	0.9389	
	11791S0001Dup	TH-232	3.07	0.36	0.01	pCi/g	0.9389	
Hill-S-02	11791S0002	TH-228	2.62	0.31	0.05	pCi/g	0.9197	
Hill-S-02	11791S0002	TH-230	1.09	0.15	0.03	pCi/g	0.9197	
Hill-S-02	11791S0002	TH-232	2.66	0.31	0.02	pCi/g	0.9197	
Hill-S-03	11791S0003	TH-228	3.53	0.40	0.07	pCi/g	0.8919	
Hill-S-03	11791S0003	TH-230	1.42	0.18	0.03	pCi/g	0.8919	
Hill-S-03	11791S0003	TH-232	3.47	0.39	0.01	pCi/g	0.8919	
Hill-S-04	11791S0004	TH-228	2.79	0.32	0.05	pCi/g	0.9139	
Hill-S-04	11791S0004	TH-230	2.04	0.24	0.02	pCi/g	0.9139	
Hill-S-04	11791S0004	TH-232	2.74	0.32	0.02	pCi/g	0.9139	
Hill-S-05	11791S0005	TH-228	2.50	0.30	0.06	pCi/g	0.9330	
Hill-S-05	11791S0005	TH-230	2.23	0.27	0.04	pCi/g	0.9330	
Hill-S-05	11791S0005	TH-232	2.34	0.28	0.03	pCi/g	0.9330	
Hill-S-06	11791S0006	TH-228	1.97	0.24	0.06	pCi/g	0.9483	
Hill-S-06	11791S0006	TH-230	1.54	0.19	0.02	pCi/g	0.9483	
Hill-S-06	11791S0006	TH-232	1.95	0.24	0.02	pCi/g	0.9483	
	BLK0383S	TH-228	-0.017	0.040	0.115	pCi/g	0.8452	U
	BLK0383S	TH-230	0.029	0.030	0.060	pCi/g	0.8452	U
	BLK0383S	TH-232	0.0000	0.0082	0.0125	pCi/g	0.8452	U
	LCS0383S	TH-228	4.92	0.55	0.06	pCi/sample	0.8884	
	LCS0383S	TH-230	6.76	0.75	0.02	pCi/sample	0.8884	
	LCS0383S	TH-232	4.82	0.54	0.01	pCi/sample	0.8884	

SampleCode	Isotope	Known Activity (pCi)	Known Uncertainty (1 s)	Meas./Known Activity Ratio
LCS0383S	TH-230	6.26	0.27	1.08

Qualifier Flags:

U = Analyte not detected (< MDC)

TPU = Total Propagated Uncertainty

MDC = Minimum Detectable Concentration

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Duplicate

<u>SampleCode</u>	<u>Isotope</u>	<u>Error Ratio</u>
11791S0001Dup	TH-228	1.04
11791S0001Dup	TH-230	1.69
11791S0001Dup	TH-232	1.30

Qualifier Flags:

U = Analyte not detected (< MDC)

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MDC = Minimum Detectable Concentration

Report Date: November 15, 2016

AS Electronically Reviewed By:

William Smith- 11/15/2016 13:35

Electronically Validated By:

Roxanne Nagle- 11/15/2016 14:41

Electronically Approved By:



William Smith 11/15/2016 15:01

Qualifier Flags:

U = Analyte not detected (< MDC)

TPU = Total Propagated Uncertainty

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