

THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-19: PAOC-8

Sample ID				8-F-6-C				8-F-6-C				8-F-9-C				8-F-9-C			
GEL Laboratory ID				522489001				1204662781				522489002				1204663121			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Duplicate				Normal				Duplicate			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion ¹	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.016	0.017	U	0.048	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML	Am-241	0.05	1.25	0.005	0.013	U	0.024	0.019	0.013		0.016	NA	NA	NA	NA	NA	NA	NA	NA
HASL 300 Am-05-RC Mod	Cf-252	0.05	4.12	0.002	0.007	U	0.012	0.001	0.006	U	0.010	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	0.002	0.009	U	0.017	-0.007	0.011	U	0.024	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML	Pu-238	0.05	1.52	0.000	0.010	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HASL 300 Pu-	Pu-239/240	0.05	1.37	0.007	0.012	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML	U-233/234		7.8 ²	0.645	0.077		0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HASL 300 U-02-RC Mod	U-235/236	0.05	4.82	0.053	0.025		0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 ²	0.585	0.073		0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	0.049	0.138	U	0.264	-0.034	0.232	U	0.397
300, 4.5.2.3/Ga-	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.033	U	0.067	0.016	0.035	U	0.072
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	-0.006	0.043	U	0.078	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	0.289	0.568	U	0.966	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	-0.392	0.317	U	0.548	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

NA = Not Analyzed

U = Analyte Not Identified >MDC

NMED RCB- New Mexico Environmental Department (NMED), Radiation Control Bureau (RCB)

MDC - Minimum Detectable Concentration

Bolded Values Represent Reported Concentrations > MDC¹- NMED RCB Release Criterion and Required MDC Issued by NMED RCB in Letter to Thermo Eberline LLC dated December 6, 2019² - Release Criteria for U-234 and U-238 Adopted Based NUREG/CR-5512, Volume 3 DandD Screening Methodology scaled to a 15 mrem/yr TEDE

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Table 3-19: PAOC-8

Sample ID				8-F-9-C			
GEL Laboratory ID				1204667413			
Collection Date				09/21/20			
Substrate				Concrete			
Building Surface				Floor			
QC Code				Duplicate			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion ¹	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy							
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA
DOE EML	Am-241	0.05	1.25	NA	NA	NA	NA
HASL 300 Am-05-RC Mod	CF-252	0.05	4.12	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA
DOE EML	Pu-238	0.05	1.52	NA	NA	NA	NA
HASL 300 Pu-	Pu-239/240	0.05	1.37	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 ²	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA
	U-238		8.4 ²	NA	NA	NA	NA
Gamma Spectroscopy							
DOE HASL	Am-241	0.05	1.25	NA	NA	NA	NA
300, 4.5.2.3/Ga-	Cs-137	1	6.6	NA	NA	NA	NA
Gas Flow Proportional Counting							
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA
Liquid Scintillation Counting							
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.419	0.319	U	0.533

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Table 3-19: PAOC-8

Sample ID				8F-1-C				8F-2-C				8F-3-C				8F-4-C			
GEL Laboratory ID				582885006				582885007				52885008				52885011			
Collection Date				4/7/2022				4/7/2022				4/7/2022				4/7/2022			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion ¹	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML	Am-241	0.05	1.25	0.005	0.011	U	0.017	-0.010	0.011	U	0.031	0.003	0.009	U	0.015	-0.002	0.016	U	0.035
HASL 300 Am-05-RC Mod	CF-252	0.05	4.12	-0.002	0.008	U	0.019	-0.002	0.008	U	0.020	0.002	0.007	U	0.007	-0.006	0.015	U	0.037
	Cm-243/244	0.05	2.5	-0.012	0.012	U	0.032	0.007	0.016	U	0.029	-0.006	0.011	U	0.027	0.006	0.016	U	0.027
DOE EML	Pu-238	0.05	1.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HASL 300 Pu-	Pu-239/240	0.05	1.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML	U-233/234		7.8 ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HASL 300 U-02-RC Mod	U-235/236	0.05	4.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-238		8.4 ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Spectroscopy																			
DOE HASL	Am-241	0.05	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
300, 4.5.2.3/Ga-	Cs-137	1	6.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EPA EERF C-01 Modified	C-14	1	6.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

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Sample ID				8F-5-C				8F-7-C				8F-8-C				8F-1-C-R			
GEL Laboratory ID				582885009				582885015				582885016				582885009			
Collection Date				4/7/2022				4/7/2022				4/7/2022				4/7/2022			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion ¹	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML	Am-241	0.05	1.25	0.002	0.022	U	0.043	-0.007	0.011	U	0.025	0.002	0.014	U	0.027	0.005	0.016	U	0.029
HASL 300 Am-05-RC Mod	CF-252	0.05	4.12	0.003	0.010	U	0.010	-0.002	0.005	U	0.012	0.005	0.009	U	0.008	-0.002	0.007	U	0.018
	Cm-243/244	0.05	2.5	-0.002	0.013	U	0.030	-0.003	0.012	U	0.024	0.003	0.012	U	0.023	-0.008	0.009	U	0.027
DOE EML	Pu-238	0.05	1.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HASL 300 Pu-	Pu-239/240	0.05	1.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML	U-233/234		7.8 ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HASL 300 U-02-RC Mod	U-235/236	0.05	4.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-238		8.4 ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Spectroscopy																			
DOE HASL	Am-241	0.05	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
300, 4.5.2.3/Ga-	Cs-137	1	6.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EPA EERF C-01 Modified	C-14	1	6.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Sample ID				8F-2-C-R				8F-4-C-R				8F-5-C-R			
GEL Laboratory ID				582885010				582885013				582885014			
Collection Date				4/7/2022				4/7/2022				4/7/2022			
Substrate				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion ¹	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy															
ASTM C 1475-00 Modified	Np-237	0.05	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML	Am-241	0.05	1.25	-0.005	0.013	U	0.031	0.014	0.021	U	0.031	0.012	0.018	U	0.028
HASL 300 Am-05-RC Mod	CF-252	0.05	4.12	0.001	0.010	U	0.019	-0.003	0.011	U	0.027	0.004	0.013	U	0.021
	Cm-243/244	0.05	2.5	-0.006	0.015	U	0.034	0.007	0.020	U	0.035	0.000	0.013	U	0.028
DOE EML	Pu-238	0.05	1.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HASL 300 Pu-	Pu-239/240	0.05	1.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML	U-233/234		7.8 ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
HASL 300 U-02-RC Mod	U-235/236	0.05	4.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-238		8.4 ²	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Spectroscopy															
DOE HASL	Am-241	0.05	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
300, 4.5.2.3/Ga-	Cs-137	1	6.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gas Flow Proportional Counting															
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liquid Scintillation Counting															
EPA 906.0 Modified	Tritium	1	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EPA EERF C-01 Modified	C-14	1	6.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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