

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 5, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.22.1
 Sample ID: 387031009
 Matrix: Soil
 Collect Date: 02-DEC-15
 Receive Date: 08-DEC-15
 Collector: Client
 Moisture: 18.7%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		18.7						percent		DRS1	12/09/15	1310	1529593	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0677	+/-0.158	0.291	0.138	+/-0.161		pCi/g		RXF2	01/04/16	1203	1529721	2
Antimony-125	UI	0.00	+/-0.0651	0.126	0.0597	+/-0.0708		pCi/g						
Bismuth-212		0.839	+/-0.568	0.678	0.316	+/-0.575		pCi/g						
Bismuth-214		0.887	+/-0.108	0.0939	0.044	+/-0.131		pCi/g						
Cesium-137		0.0617	+/-0.0524	0.0502	0.0234	+/-0.0526	0.100	pCi/g						
Cobalt-60	U	0.0155	+/-0.027	0.0544	0.0245	+/-0.0279		pCi/g						
Europium-154	U	-0.0309	+/-0.0771	0.138	0.0619	+/-0.0784		pCi/g						
Lead-212		1.27	+/-0.0893	0.0679	0.0324	+/-0.194		pCi/g						
Lead-214		1.30	+/-0.124	0.239	0.117	+/-0.176		pCi/g						
Potassium-40		14.8	+/-1.10	0.480	0.213	+/-1.71		pCi/g						
Protactinium-231	UI	0.00	+/-0.419	0.588	0.279	+/-0.464		pCi/g						
Radium-226		0.887	+/-0.108	0.0939	0.044	+/-0.131		pCi/g						
Radium-228		1.07	+/-0.223	0.187	0.086	+/-0.279		pCi/g						
Thallium-208		0.386	+/-0.0565	0.0442	0.0206	+/-0.0653		pCi/g						
Tin-126	U	0.0165	+/-0.0766	0.0856	0.0417	+/-0.079		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A.B, solid "Dry Weight Corrected"</i>														
Alpha		14.6	+/-3.50	3.98	1.79	+/-4.50	4.00	pCi/g		JXB7	01/04/16	0929	1532748	3
Beta		19.7	+/-2.97	3.58	1.71	+/-4.25	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	DRS1	12/09/15	1310	1529593

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4 5 2 3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Client Sample ID: SN1B.22.1
Sample ID: 387031009

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Company : MJW Technical Services
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Report Date: February 13, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.22.1
 Sample ID: 390909009
 Matrix: Soil
 Collect Date: 02-DEC-15
 Receive Date: 08-DEC-15
 Collector: Client
 Moisture: 18.7%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	UI	0.00	+/-0.512	0.563	0.265	+/-0.558		pCi/g		MXR1	02/10/16	0627	1543538	1
Antimony-125	U	0.0134	+/-0.112	0.206	0.095	+/-0.112		pCi/g						
Bismuth-212	UI	0.00	+/-0.674	1.27	0.584	+/-0.756		pCi/g						
Bismuth-214		0.977	+/-0.177	0.144	0.0656	+/-0.194		pCi/g						
Cesium-137		0.0905	+/-0.070	0.0837	0.0382	+/-0.0704	0.100	pCi/g						
Cobalt-60	U	0.00249	+/-0.0434	0.085	0.0369	+/-0.0434		pCi/g						
Europium-154	U	0.0204	+/-0.120	0.238	0.104	+/-0.120		pCi/g						
Lead-212		1.23	+/-0.135	0.112	0.0526	+/-0.166		pCi/g						
Lead-214		1.20	+/-0.189	0.359	0.174	+/-0.211		pCi/g						
Potassium-40		15.3	+/-1.75	0.834	0.362	+/-2.24		pCi/g						
Protactinium-231	UI	0.00	+/-0.778	0.963	0.449	+/-0.792		pCi/g						
Radium-226		0.977	+/-0.177	0.144	0.0656	+/-0.194		pCi/g						
Radium-228		1.11	+/-0.297	0.329	0.149	+/-0.334		pCi/g						
Thallium-208		0.369	+/-0.084	0.0723	0.0328	+/-0.0894		pCi/g						
Tin-126	UI	0.00	+/-0.147	0.153	0.073	+/-0.149		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	DRS1	12/09/15	1310	1543525

The following Analytical Methods were performed

Method	Description
I	DOE HASL 300, 4.5 2.3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

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Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.22.1
Sample ID: 390909009

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test										Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: January 14, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.23.1
 Sample ID: 387686009
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 11.4%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		11.4						percent		CXC1	12/17/15	1415	1532052	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238	U	0.0384	+/-0.0758	0.128	0.0393	+/-0.0759	1.00	pCi/g		HAKB	01/11/16	0932	1532467	2
Plutonium-239/240	U	0.0212	+/-0.0582	0.101	0.0257	+/-0.0583	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	-0.0037	+/-0.0555	0.130	0.0371	+/-0.0556	1.00	pCi/g		HAKB	01/07/16	1206	1532463	3
Uranium-233/234		0.628	+/-0.195	0.0985	0.0268	+/-0.222	1.00	pCi/g						
Uranium-235/236		0.0905	+/-0.0846	0.0988	0.0269	+/-0.086	1.00	pCi/g						
Uranium-238		0.654	+/-0.197	0.0717	0.0134	+/-0.226	1.00	pCi/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237		0.165	+/-0.329	0.534	0.145	+/-0.329	1.00	pCi/g		HAKB	01/07/16	1409	1532466	4
<i>Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		1.19	+/-0.707	0.748	0.249	+/-0.735	1.00	pCi/g		HAKB	01/07/16	1206	1532462	5
Thorium-229	U	0.00326	+/-0.242	0.537	0.146	+/-0.242	1.00	pCi/g						
Thorium-230		1.30	+/-0.659	0.244	0.00	+/-0.693	1.00	pCi/g						
Thorium-232		0.568	+/-0.451	0.243	0.00	+/-0.461	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241	U	-0.0115	+/-0.0347	0.0976	0.0248	+/-0.0348	1.00	pCi/g		HAKB	01/11/16	1427	1532464	6
Curium-242	U	-0.00434	+/-0.0374	0.0867	0.0162	+/-0.0375	1.00	pCi/g						
Curium-243/244	U	-0.0114	+/-0.0343	0.0965	0.0245	+/-0.0344	1.00	pCi/g						
Curium-245/246	U	-0.00878	+/-0.0388	0.101	0.0232	+/-0.0389	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	1.32	+/-7.29	12.5	6.08	+/-7.29	15.0	pCi/g		HAKB	01/13/16	0922	1532468	7
Rad Gamma Spec Analysis														
<i>Gamma I129, Solid "Dry Weight Corrected"</i>														
Iodine-129	U	-0.0534	+/-0.229	0.386	0.181	+/-0.230	1.00	pCi/g		MJH1	01/11/16	1843	1533088	8
<i>Gammasespec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.212	+/-0.273	0.491	0.229	+/-0.291		pCi/g		RXF2	01/11/16	0914	1532065	9
Antimony-125	U	-0.00882	+/-0.0877	0.172	0.0785	+/-0.0878		pCi/g						
Bismuth-212	UI	0.00	+/-0.916	1.31	0.607	+/-1.26		pCi/g						
Bismuth-214		0.811	+/-0.176	0.126	0.0571	+/-0.190		pCi/g						
Cesium-137		0.109	+/-0.0696	0.0721	0.0326	+/-0.0703	0.100	pCi/g						
Cobalt-60	U	-0.0104	+/-0.0383	0.0716	0.0303	+/-0.0386		pCi/g						
Europium-154	U	-0.0504	+/-0.143	0.260	0.115	+/-0.145		pCi/g						
Lead-212		0.864	+/-0.125	0.112	0.0528	+/-0.150		pCi/g						
Lead-214		0.894	+/-0.183	0.134	0.0617	+/-0.200		pCi/g						

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 Project: Soil Radioisotopes
 Client Sample ID: SN1B.23.1
 Sample ID: 387686009

Report Date: January 14, 2016

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPC	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Potassium-40		14.2	+/-1.50	0.558	0.223	+/-1.93		pCi/g						
Protactinium-231	U	-0.325	+/-0.621	0.965	0.450	+/-0.642		pCi/g						
Radium-226		0.811	+/-0.176	0.126	0.0571	+/-0.190		pCi/g						
Radium-228		0.679	+/-0.212	0.216	0.093	+/-0.233		pCi/g						
Thallium-208		0.204	+/-0.0841	0.0641	0.0289	+/-0.0859		pCi/g						
Tin-126	U	0.0751	+/-0.102	0.180	0.0865	+/-0.108		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		8.26	+/-3.43	3.80	1.52	+/-3.82	4.00	pCi/g		KXB2	01/07/16	1210	1534691	10
Beta		24.5	+/-3.88	3.80	1.73	+/-5.20	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90	U	-0.239	+/-0.880	1.78	0.772	+/-0.880	2.00	pCi/g		KSD1	01/06/16	1538	1534449	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist, Solid "Dry Weight Corrected"</i>														
Tritium	U	0.951	+/-2.00	3.41	1.64	+/-2.00	6.00	pCi/g		TXJ1	01/05/16	1648	1533791	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14	U	0.205	+/-1.10	1.89	0.915	+/-1.10	2.00	pCi/g		TXJ1	01/12/16	2013	1533783	13
<i>Liquid Scint Te99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-0.707	+/-1.44	2.59	1.24	+/-1.44	5.00	pCi/g		MYM	01/12/16	0621	1534428	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-01	CXC1	12/17/15	1415	1532052

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, I-01 Modified
9	DOE HASL 300, 4 5 2 3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RPS01 Rev. 1 Modified
12	EPA 906.0 Modified
13	EPA EERF C-01 Modified

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Project: Soil Radioisotopes
Client Sample ID: SNIB.23.1
Sample ID: 387686009

Report Date: January 14, 2016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
14	DOE EML HASL-300, Tc-02-RC Modified													

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer	ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1532467	70.1	(15%-125%)
Uranium-232 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	71.2	(15%-125%)
Uranium-235/236 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	78.1	(15%-125%)
Americium-243 Tracer	Alphaspec Np237, Solid "Dry Weight Corrected"	1532466	70.2	(15%-125%)
Actinium-227 Tracer	Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"	1532462	89	(15%-125%)
Americium-243 Tracer	Am241, Cm Solid "Dry Weight Corrected"	1532464	75	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid "Dry Weight Corrected"	1532468	70.1	(15%-125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"	1534449	70.7	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "Dry Weight Corrected"	1534428	94.2	(15%-125%)

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Report Date: February 13, 2016

Client Sample ID: SNIB.23.1
 Sample ID: 390909010
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 11.4%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.0107	+/-0.203	0.402	0.188	+/-0.203		pCi/g		MXR1	02/10/16	0627	1543538	I
Antimony-125	U	-0.0117	+/-0.0754	0.144	0.0657	+/-0.0756		pCi/g						
Bismuth-212	UI	0.00	+/-0.578	1.07	0.494	+/-0.785		pCi/g						
Bismuth-214		0.697	+/-0.119	0.113	0.0514	+/-0.133		pCi/g						
Cesium-137		0.102	+/-0.0571	0.0604	0.0274	+/-0.0577	0.100	pCi/g						
Cobalt-60	U	-0.00193	+/-0.030	0.0585	0.0249	+/-0.0301		pCi/g						
Europium-154	U	-0.0349	+/-0.093	0.169	0.0728	+/-0.0944		pCi/g						
Lead-212		0.648	+/-0.113	0.113	0.0536	+/-0.129		pCi/g						
Lead-214		0.823	+/-0.198	0.121	0.0563	+/-0.211		pCi/g						
Potassium-40		12.8	+/-1.29	0.523	0.218	+/-1.70		pCi/g						
Protactinium-231	UI	0.00	+/-0.725	0.737	0.342	+/-0.755		pCi/g						
Radium-226		0.697	+/-0.119	0.113	0.0514	+/-0.133		pCi/g						
Radium-228		0.748	+/-0.224	0.213	0.0943	+/-0.252		pCi/g						
Thallium-208		0.217	+/-0.0614	0.0585	0.0267	+/-0.0642		pCi/g						
Tin-126	UI	0.00	+/-0.141	0.122	0.0581	+/-0.143		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GI-RAD-A-021	CXCI	12/17/15	1415	1543525

The following Analytical Methods were performed

Method	Description
I	DOE HASL 300, 4.5 2.3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Project: Soil Radioisotopes
Client Sample ID: SNIB.23.1
Sample ID: 390909010

Report Date: February 13, 2016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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 Address : 15 Hazelwood Drive
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Report Date: January 14, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SNIB.23.2
 Sample ID: 387686010
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 8.89%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		8.89						percent		CXC1	12/17/15	1415	1532052	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238		0.0367	+/-0.0722	0.100	0.0187	+/-0.0724	1.00	pCi/g		HAKB	01/07/16	1208	1532467	2
Plutonium-239/240	U	0.0375	+/-0.0852	0.146	0.0419	+/-0.0854	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	-0.00329	+/-0.0494	0.115	0.033	+/-0.0495	1.00	pCi/g		HAKB	01/07/16	1206	1532463	3
Uranium-233/234		0.653	+/-0.201	0.117	0.0358	+/-0.229	1.00	pCi/g						
Uranium-235/236		0.0381	+/-0.0605	0.0837	0.0192	+/-0.0608	1.00	pCi/g						
Uranium-238		1.02	+/-0.245	0.0722	0.0135	+/-0.299	1.00	pCi/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	0.0886	+/-0.244	0.423	0.108	+/-0.244	1.00	pCi/g		HAKB	01/07/16	1409	1532466	4
<i>Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		1.20	+/-0.740	0.804	0.267	+/-0.770	1.00	pCi/g		HAKB	01/07/16	1206	1532462	5
Thorium-229		0.176	+/-0.301	0.264	0.00	+/-0.303	1.00	pCi/g						
Thorium-230		0.484	+/-0.460	0.485	0.111	+/-0.467	1.00	pCi/g						
Thorium-232		0.765	+/-0.545	0.419	0.0784	+/-0.560	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241	U	0.00648	+/-0.0678	0.141	0.036	+/-0.0679	1.00	pCi/g		HAKB	01/08/16	0856	1532464	6
Curium-242	U	-0.0124	+/-0.0549	0.143	0.0328	+/-0.055	1.00	pCi/g						
Curium-243/244	U	0.00641	+/-0.067	0.140	0.0356	+/-0.0671	1.00	pCi/g						
Curium-245/246		0.053	+/-0.0908	0.0795	0.00	+/-0.0912	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	-4.69	+/-6.88	12.1	5.88	+/-6.88	15.0	pCi/g		HAKB	01/13/16	1009	1532468	7
Rad Gamma Spec Analysis														
<i>Gamma I129, Solid "Dry Weight Corrected"</i>														
Iodine-129	U	0.0442	+/-0.202	0.367	0.169	+/-0.203	1.00	pCi/g		MJH1	01/11/16	1843	1533088	8
<i>Gammasespec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.169	+/-0.270	0.491	0.228	+/-0.282		pCi/g		RXF2	01/11/16	0915	1532065	9
Antimony-125	U	0.082	+/-0.0966	0.205	0.0945	+/-0.104		pCi/g						
Bismuth-212		0.903	+/-0.550	0.960	0.429	+/-0.558		pCi/g						
Bismuth-214		0.805	+/-0.192	0.136	0.0616	+/-0.205		pCi/g						
Cesium-137	U	0.00806	+/-0.0399	0.0783	0.0354	+/-0.0401	0.100	pCi/g						
Cobalt-60	U	0.0283	+/-0.041	0.0914	0.0399	+/-0.043		pCi/g						
Europtium-154	U	-0.0748	+/-0.134	0.234	0.101	+/-0.139		pCi/g						
Lead-212		0.815	+/-0.125	0.105	0.0489	+/-0.146		pCi/g						
Lead-214		0.817	+/-0.191	0.136	0.0623	+/-0.205		pCi/g						

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes
 Client Sample ID: SN1B.23.2
 Sample ID: 387686010

Report Date: January 14, 2016

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Potassium-40		12.7	+/-1.54	0.750	0.317	+/-1.88		pCi/g						
Protactinium-231	U	0.00	+/-0.577	1.11	0.521	+/-0.703		pCi/g						
Radium-226		0.805	+/-0.192	0.136	0.0616	+/-0.205		pCi/g						
Radium-228		0.880	+/-0.299	0.231	0.0994	+/-0.328		pCi/g						
Thallium-208		0.253	+/-0.0849	0.0633	0.0282	+/-0.0879		pCi/g						
Tin-126	U	0.00	+/-0.192	0.134	0.063	+/-0.193		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		12.9	+/-3.88	3.98	1.65	+/-4.60	4.00	pCi/g		KXB2	01/07/16	1210	1534691	10
Beta		26.7	+/-3.33	2.33	1.03	+/-4.97	10.0	pCi/g						
<i>GFPC, Sr-90, solid "Dry Weight Corrected"</i>														
Strontium-90	U	-0.615	+/-0.756	1.61	0.712	+/-0.756	2.00	pCi/g		KSD1	01/06/16	1538	1534449	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist, Solid "Dry Weight Corrected"</i>														
Tritium		1.81	+/-2.00	3.35	1.62	+/-2.00	6.00	pCi/g		TXJ1	01/05/16	1821	1533791	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14	U	-0.427	+/-1.03	1.82	0.880	+/-1.03	2.00	pCi/g		TXJ1	01/12/16	2045	1533783	13
<i>Liquid Scint Tc-99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-0.759	+/-1.58	2.83	1.36	+/-1.58	5.00	pCi/g		MYM	01/12/16	0637	1534428	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1532052

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, J-01 Modified
9	DOE HASL 300, 4 5 2 3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RP501 Rev 1 Modified
12	EPA 906.0 Modified
13	EPA EERF C-01 Modified

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Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.23.2
Sample ID: 387686010

Report Date: January 14, 2016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
14		DOE EML HASL-300, Te-02-RC Modified												

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer	ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1532467	72.1	(15%-125%)
Uranium-232 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	75.8	(15%-125%)
Uranium-235/236 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	86.6	(15%-125%)
Americium-243 Tracer	Alphaspec Np237, Solid "Dry Weight Corrected"	1532466	76.8	(15%-125%)
Actinium-227 Tracer	Alphaspec Th229 + 228.230.232 Solid "Dry Weight Corrected"	1532462	82.4	(15%-125%)
Americium-243 Tracer	Am241, Cm Solid "Dry Weight Corrected"	1532464	53.5	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid "Dry Weight Corrected"	1532468	72.1	(15%-125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"	1534449	81.4	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "Dry Weight Corrected"	1534428	94.4	(15%-125%)

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Report Date: February 13, 2016

Client Sample ID: SN1B,23.2
 Sample ID: 390909011
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 8.89%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.204	+/-0.293	0.612	0.284	+/-0.309		pCi/g		MXR1	02/10/16	0627	1543538	1
Antimony-125	U	-0.00424	+/-0.128	0.243	0.111	+/-0.128		pCi/g						
Bismuth-212	UI	0.00	+/-0.719	1.58	0.719	+/-0.799		pCi/g						
Bismuth-214		0.812	+/-0.238	0.164	0.0728	+/-0.247		pCi/g						
Cesium-137	UI	0.00	+/-0.0522	0.115	0.0521	+/-0.0583	0.100	pCi/g						
Cobalt-60	U	0.00635	+/-0.0513	0.106	0.0447	+/-0.0514		pCi/g						
Europium-154	U	0.0455	+/-0.182	0.367	0.161	+/-0.183		pCi/g						
Lead-212		0.869	+/-0.149	0.136	0.0636	+/-0.171		pCi/g						
Lead-214		1.24	+/-0.223	0.393	0.189	+/-0.245		pCi/g						
Potassium-40		12.1	+/-1.71	1.39	0.614	+/-1.99		pCi/g						
Protactinium-231	UI	0.00	+/-1.03	1.04	0.477	+/-1.05		pCi/g						
Radium-226		0.812	+/-0.238	0.164	0.0728	+/-0.247		pCi/g						
Radium-228		0.976	+/-0.311	0.313	0.134	+/-0.328		pCi/g						
Thallium-208		0.249	+/-0.094	0.0789	0.0347	+/-0.0963		pCi/g						
Tin-126	UI	0.00	+/-0.115	0.152	0.0726	+/-0.117		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1543525

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5 2.3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.23.2
Sample ID: 390909011

Report Date: February 13, 2016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Report Date: January 14, 2016

Client Sample ID: SN1B.23.5
 Sample ID: 387686011
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 11.9%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		11.9						percent		CXC1	12/17/15	1415	1532052	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238		0.0349	+/-0.0686	0.0951	0.0178	+/-0.0688	1.00	pCi/g		HAKB	01/07/16	1208	1532467	2
Plutonium-239/240	U	-0.0563	+/-0.0671	0.202	0.0712	+/-0.0671	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232		0.0517	+/-0.0914	0.153	0.049	+/-0.0918	1.00	pCi/g		HAKB	01/07/16	1206	1532463	3
Uranium-233/234		0.679	+/-0.195	0.0859	0.0219	+/-0.225	1.00	pCi/g						
Uranium-235/236		0.0604	+/-0.069	0.0861	0.0219	+/-0.0697	1.00	pCi/g						
Uranium-238		0.773	+/-0.206	0.0422	0.00	+/-0.243	1.00	pCi/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	0.160	+/-0.502	0.949	0.328	+/-0.502	1.00	pCi/g		HAKB	01/07/16	1409	1532466	4
<i>Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		1.36	+/-0.717	0.677	0.217	+/-0.756	1.00	pCi/g		HAKB	01/07/16	1206	1532462	5
Thorium-229	U	0.101	+/-0.278	0.482	0.123	+/-0.279	1.00	pCi/g						
Thorium-230		0.671	+/-0.492	0.436	0.0999	+/-0.505	1.00	pCi/g						
Thorium-232		0.549	+/-0.437	0.235	0.00	+/-0.447	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241	U	-0.043	+/-0.0606	0.198	0.0608	+/-0.0608	1.00	pCi/g		HAKB	01/08/16	0856	1532464	6
Curium-242		0.0286	+/-0.0804	0.0857	0.00	+/-0.0805	1.00	pCi/g						
Curium-243/244		0.108	+/-0.124	0.155	0.0393	+/-0.125	1.00	pCi/g						
Curium-245/246		0.0586	+/-0.100	0.0879	0.00	+/-0.101	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	2.27	+/-6.46	11.0	5.37	+/-6.48	15.0	pCi/g		HAKB	01/13/16	1056	1532468	7
Rad Gamma Spec Analysis														
<i>Gamma I129, Solid "Dry Weight Corrected"</i>														
Iodine-129	UI	0.00	+/-0.218	0.449	0.204	+/-0.240	1.00	pCi/g		MJH1	01/11/16	1844	1533088	8
<i>Gammaspect, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0974	+/-0.277	0.522	0.246	+/-0.281		pCi/g		RXF2	01/11/16	0915	1532065	9
Antimony-125	U	0.0461	+/-0.0904	0.183	0.0842	+/-0.0928		pCi/g						
Bismuth-212		1.05	+/-0.555	0.858	0.380	+/-0.564		pCi/g						
Bismuth-214		0.838	+/-0.181	0.123	0.0552	+/-0.194		pCi/g						
Cesium-137		0.0733	+/-0.0584	0.0711	0.032	+/-0.0587	0.100	pCi/g						
Cobalt-60	U	0.00534	+/-0.040	0.0805	0.0349	+/-0.0401		pCi/g						
Europium-154	U	-0.0436	+/-0.156	0.244	0.107	+/-0.157		pCi/g						
Lead-212		0.757	+/-0.128	0.112	0.0529	+/-0.141		pCi/g						

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Certificate of Analysis

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 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes
 Client Sample ID: SNIB.23.5
 Sample ID: 387686011

Report Date: January 14, 2016

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Lead-214		0.993	+/-0.210	0.321	0.156	+/-0.224		pCi/g						
Potassium-40		12.6	+/-1.40	0.479	0.186	+/-1.79		pCi/g						
Protactinium-231	U	0.130	+/-0.619	0.938	0.438	+/-0.622		pCi/g						
Radium-226		0.838	+/-0.181	0.123	0.0552	+/-0.194		pCi/g						
Radium-228		0.730	+/-0.279	0.316	0.143	+/-0.295		pCi/g						
Thallium-208		0.312	+/-0.0843	0.080	0.0367	+/-0.0884		pCi/g						
Tin-126	UI	0.00	+/-0.165	0.185	0.0882	+/-0.166		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		13.5	+/-4.09	3.91	1.57	+/-4.82	4.00	pCi/g		KXB2	01/07/16	1211	1534691	10
Beta		20.0	+/-2.94	2.27	0.999	+/-4.04	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90		1.22	+/-1.18	1.91	0.809	+/-1.20	2.00	pCi/g		KSD1	01/06/16	1541	1534449	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist, Solid "Dry Weight Corrected"</i>														
Tritium		2.71	+/-2.19	3.64	1.75	+/-2.19	6.00	pCi/g		TXJ1	01/05/16	1953	1533791	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14	U	-0.801	+/-1.07	1.90	0.920	+/-1.07	2.00	pCi/g		TXJ1	01/12/16	2116	1533783	13
<i>Liquid Scint Tc99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-0.317	+/-1.67	2.97	1.42	+/-1.67	5.00	pCi/g		MYM	01/12/16	0653	1534428	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1532052

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300.I-01 Modified
9	DOE HASL 300, 4 5.2.3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RP501 Rev 1 Modified
12	EPA 906.0 Modified

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Project: Soil Radioisotopes
Client Sample ID: SN1B.23.5
Sample ID: 387686011

Report Date: January 14, 2016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
13	EPA EERF C-01 Modified													
14	DOE EML HASL-300, Tc-02-RC Modified													

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer	ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1532467	78.6	(15%-125%)
Uranium-232 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	81.3	(15%-125%)
Uranium-235/236 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	81.5	(15%-125%)
Americium-243 Tracer	Alphaspec Np237, Solid "Dry Weight Corrected"	1532466	62.4	(15%-125%)
Actinium-227 Tracer	Alphaspec Th229 + 228.230.232 Solid "Dry Weight Corrected"	1532462	82.6	(15%-125%)
Americium-243 Tracer	Am241, Cm Solid "Dry Weight Corrected"	1532464	46.6	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid "Dry Weight Corrected"	1532468	78.6	(15%-125%)
Strontium Carrier	GFPc, Sr90, solid "Dry Weight Corrected"	1534449	60	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "Dry Weight Corrected"	1534428	96.3	(15%-125%)

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
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Report Date: February 13, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.23.5
 Sample ID: 390909012
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 11.9%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.0589	+/-0.247	0.488	0.228	+/-0.248		pCi/g		MXR1	02/10/16	0638	1543538	1
Antimony-125	UI	0.00	+/-0.137	0.208	0.0966	+/-0.145		pCi/g						
Bismuth-212	UI	0.00	+/-0.678	1.16	0.530	+/-0.797		pCi/g						
Bismuth-214		0.780	+/-0.167	0.137	0.0624	+/-0.179		pCi/g						
Cesium-137		0.124	+/-0.0869	0.0789	0.0359	+/-0.0875	0.100	pCi/g						
Cobalt-60	U	-0.00393	+/-0.0387	0.0753	0.0322	+/-0.0387		pCi/g						
Europium-154	UI	0.00	+/-0.107	0.222	0.0962	+/-0.117		pCi/g						
Lead-212		0.663	+/-0.129	0.123	0.0582	+/-0.140		pCi/g						
Lead-214		0.973	+/-0.203	0.140	0.0648	+/-0.217		pCi/g						
Potassium-40		12.3	+/-1.38	0.479	0.186	+/-1.76		pCi/g						
Protactinium-231	U	0.347	+/-0.544	1.01	0.475	+/-0.571		pCi/g						
Radium-226		0.780	+/-0.167	0.137	0.0624	+/-0.179		pCi/g						
Radium-228		0.738	+/-0.216	0.230	0.100	+/-0.236		pCi/g						
Thallium-208		0.285	+/-0.082	0.0766	0.0351	+/-0.0855		pCi/g						
Tin-126	U	0.0867	+/-0.158	0.221	0.106	+/-0.163		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1543525

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2 3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.23.5
Sample ID: 390909012

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 14, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.23.6
 Sample ID: 387686012
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 8.44%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		8.44						percent		CXC1	12/17/15	1415	1532052	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238		0.0312	+/-0.0716	0.114	0.026	+/-0.0718	1.00	pCi/g		HAKB	01/07/16	1208	1532467	2
Plutonium-239/240		0.0205	+/-0.0576	0.0615	0.00	+/-0.0577	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	0.00527	+/-0.0551	0.115	0.0292	+/-0.0551	1.00	pCi/g		HAKB	01/07/16	1206	1532463	3
Uranium-233/234		0.558	+/-0.179	0.0983	0.0281	+/-0.202	1.00	pCi/g						
Uranium-235/236		0.0888	+/-0.0847	0.109	0.0334	+/-0.086	1.00	pCi/g						
Uranium-238		0.652	+/-0.191	0.0776	0.0178	+/-0.220	1.00	pCi/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	-0.0214	+/-0.185	0.428	0.0801	+/-0.185	1.00	pCi/g		HAKB	01/07/16	1409	1532466	4
<i>Alphaspec Th229 - 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		0.484	+/-0.419	0.419	0.0971	+/-0.427	1.00	pCi/g		HAKB	01/07/16	1206	1532462	5
Thorium-229	U	-0.0176	+/-0.152	0.352	0.0658	+/-0.152	1.00	pCi/g						
Thorium-230		1.14	+/-0.594	0.405	0.0929	+/-0.623	1.00	pCi/g						
Thorium-232		0.493	+/-0.407	0.350	0.0655	+/-0.415	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241		0.0419	+/-0.074	0.112	0.0285	+/-0.0743	1.00	pCi/g		HAKB	01/08/16	0856	1532464	6
Curium-242		0.00	+/-0.0413	0.0615	0.00	+/-0.0414	1.00	pCi/g						
Curium-243/244		0.0319	+/-0.0628	0.087	0.0163	+/-0.0629	1.00	pCi/g						
Curium-245/246		0.021	+/-0.0591	0.063	0.00	+/-0.0592	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	-2.57	+/-7.09	12.3	6.01	+/-7.09	15.0	pCi/g		HAKB	01/13/16	1143	1532468	7
Rad Gamma Spec Analysis														
<i>Gamma 1129, Solid "Dry Weight Corrected"</i>														
Iodine-129	UI	0.00	+/-0.143	0.256	0.108	+/-0.144	1.00	pCi/g		MJHI	01/11/16	1844	1533088	8
<i>Gammasespec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.112	+/-0.221	0.417	0.193	+/-0.228		pCi/g		RXF2	01/11/16	0915	1532065	9
Antimony-125	U	-0.00968	+/-0.0887	0.168	0.0765	+/-0.0888		pCi/g						
Bismuth-212	UI	0.00	+/-0.902	1.11	0.505	+/-0.934		pCi/g						
Bismuth-214		0.718	+/-0.168	0.135	0.0615	+/-0.180		pCi/g						
Cesium-137		0.0641	+/-0.0453	0.0653	0.0291	+/-0.0456	0.100	pCi/g						
Cobalt-60	U	0.0262	+/-0.0377	0.0844	0.0367	+/-0.0396		pCi/g						
Europium-154	U	0.0105	+/-0.136	0.252	0.111	+/-0.136		pCi/g						
Lead-212		0.716	+/-0.152	0.119	0.0559	+/-0.163		pCi/g						
Lead-214		0.947	+/-0.172	0.138	0.0639	+/-0.189		pCi/g						

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes
 Client Sample ID: SN1B.23.6
 Sample ID: 387686012

Report Date: January 14, 2016

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Potassium-40		12.7	+/-1.40	0.710	0.300	+/-1.76		pCi/g						
Protactinium-231	U	0.00	+/-0.815	0.817	0.377	+/-0.865		pCi/g						
Radium-226		0.718	+/-0.168	0.135	0.0615	+/-0.180		pCi/g						
Radium-228		0.603	+/-0.249	0.245	0.107	+/-0.265		pCi/g						
Thallium-208		0.0967	+/-0.0706	0.0657	0.0297	+/-0.0712		pCi/g						
Tin-126	U	0.00	+/-0.133	0.161	0.0766	+/-0.134		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		11.7	+/-3.77	3.88	1.61	+/-4.45	4.00	pCi/g		KXB2	01/07/16	1211	1534691	10
Beta		24.5	+/-3.41	3.57	1.66	+/-4.79	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90	U	-0.773	+/-0.756	1.64	0.728	+/-0.756	2.00	pCi/g		KSD1	01/06/16	1538	1534449	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist, Solid "Dry Weight Corrected"</i>														
Tritium	U	0.942	+/-1.96	3.35	1.62	+/-1.96	6.00	pCi/g		TXJ1	01/05/16	2126	1533791	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14	U	-0.227	+/-1.06	1.85	0.893	+/-1.06	2.00	pCi/g		TXJ1	01/12/16	2147	1533783	13
<i>Liquid Scint Tc99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-0.857	+/-1.35	2.44	1.17	+/-1.35	5.00	pCi/g		MYM	01/12/16	0710	1534428	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1532052

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, I-01 Modified
9	DOE HASL 300, 4.5.2.3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
12	EPA 906.0 Modified
13	EPA EERF C-01 Modified

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
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Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.23.6
Sample ID: 387686012

Report Date: January 14, 2016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
14	DOE EML HASL-300, Te-02-RC Modified													

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer	ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1532467	70.2	(15%-125%)
Uranium-232 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	78.7	(15%-125%)
Uranium-235/236 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1532463	78.9	(15%-125%)
Americium-243 Tracer	Alphaspec Np237, Solid "Dry Weight Corrected"	1532466	52.7	(15%-125%)
Actinium-227 Tracer	Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"	1532462	89.3	(15%-125%)
Americium-243 Tracer	Am241, Cm Solid "Dry Weight Corrected"	1532464	58.6	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid "Dry Weight Corrected"	1532468	70.2	(15%-125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"	1534449	81.4	(25%-125%)
Technetium-99m Tracer	Liquid Scint Te99, Solid "Dry Weight Corrected"	1534428	94.7	(15%-125%)

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.23.6
 Sample ID: 390909013
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 8.44%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0157	+/-0.314	0.580	0.269	+/-0.314		pCi/g		MXR1	02/10/16	0639	1543538	1
Antimony-125	U	0.0428	+/-0.111	0.228	0.103	+/-0.112		pCi/g						
Bismuth-212		1.16	+/-0.839	0.874	0.362	+/-0.846		pCi/g						
Bismuth-214		1.17	+/-0.187	0.132	0.0566	+/-0.210		pCi/g						
Cesium-137	U	0.0136	+/-0.0479	0.0958	0.0425	+/-0.0483	0.100	pCi/g						
Cobalt-60	U	0.0359	+/-0.0574	0.129	0.0557	+/-0.0597		pCi/g						
Europium-154	U	-0.122	+/-0.162	0.285	0.118	+/-0.171		pCi/g						
Lead-212		0.752	+/-0.141	0.125	0.0581	+/-0.154		pCi/g						
Lead-214		0.960	+/-0.226	0.376	0.181	+/-0.240		pCi/g						
Potassium-40		13.2	+/-1.81	0.921	0.371	+/-2.14		pCi/g						
Protactinium-231	U	0.236	+/-0.579	1.07	0.494	+/-0.591		pCi/g						
Radium-226		1.17	+/-0.187	0.132	0.0566	+/-0.210		pCi/g						
Radium-228		0.648	+/-0.310	0.377	0.165	+/-0.320		pCi/g						
Thallium-208		0.213	+/-0.106	0.0751	0.0327	+/-0.108		pCi/g						
Tin-126	U	0.0742	+/-0.154	0.161	0.0765	+/-0.154		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1543525

The following Analytical Methods were performed

Method	Description
I	DOE HASL 300, 4.5.2 3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.23.6
Sample ID: 390909013

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B24.1
 Sample ID: 386431006
 Matrix: Soil
 Collect Date: 24-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 25.8%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		25.8						percent		CXC1	12/01/15	1158	1527021	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0301	+/-0.287	0.521	0.243	+/-0.288		pCi/g		RXF2	12/24/15	0604	1528387	2
Antimony-125	U	-0.0445	+/-0.0945	0.162	0.0731	+/-0.0967		pCi/g						
Bismuth-212	U	0.247	+/-0.643	1.14	0.516	+/-0.653		pCi/g						
Bismuth-214		0.787	+/-0.155	0.148	0.0672	+/-0.168		pCi/g						
Cesium-137		0.289	+/-0.0791	0.0746	0.0335	+/-0.0827	0.100	pCi/g						
Cobalt-60	U	-0.0193	+/-0.0443	0.0804	0.0342	+/-0.0451		pCi/g						
Europium-154	U	0.0472	+/-0.113	0.239	0.103	+/-0.115		pCi/g						
Lead-212		0.986	+/-0.123	0.100	0.0464	+/-0.156		pCi/g						
Lead-214		1.00	+/-0.211	0.154	0.0712	+/-0.229		pCi/g						
Potassium-40		12.5	+/-1.43	0.662	0.271	+/-1.81		pCi/g						
Protactinium-231	UI	0.00	+/-0.750	1.02	0.474	+/-0.759		pCi/g						
Radium-226		0.787	+/-0.155	0.148	0.0672	+/-0.168		pCi/g						
Radium-228		0.782	+/-0.292	0.277	0.122	+/-0.314		pCi/g						
Thallium-208		0.259	+/-0.0826	0.0751	0.0341	+/-0.0855		pCi/g						
Tin-126	UI	0.00	+/-0.0917	0.122	0.0577	+/-0.0934		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		8.63	+/-3.20	3.83	1.64	+/-3.60	4.00	pCi/g		JXB7	12/17/15	1528	1531243	3
Beta		20.7	+/-3.16	3.21	1.48	+/-4.11	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/01/15	1158	1527021

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2.3/Ga-01-R
3	EPA 900.0/SW846.9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B24.1
Sample ID: 386431006

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 5, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B24.1
 Sample ID: 387031010
 Matrix: Soil
 Collect Date: 19-NOV-15
 Receive Date: 08-DEC-15
 Collector: Client
 Moisture: 20.5%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lo	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		20.5						percent		DRS1	12/09/15	1310	1529593	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.04	+/-0.219	0.404	0.192	+/-0.220		pCi/g		RXF2	01/04/16	1203	1529721	2
Antimony-125	U	-0.0653	+/-0.0842	0.144	0.0671	+/-0.0893		pCi/g						
Bismuth-212		0.829	+/-0.564	0.796	0.368	+/-0.570		pCi/g						
Bismuth-214		0.899	+/-0.154	0.113	0.0528	+/-0.174		pCi/g						
Cesium-137		0.0967	+/-0.0422	0.060	0.0278	+/-0.0431	0.100	pCi/g						
Cobalt-60	U	0.0149	+/-0.0275	0.058	0.0255	+/-0.0283		pCi/g						
Europium-154	U	-0.0772	+/-0.106	0.184	0.0825	+/-0.112		pCi/g						
Lead-212		1.03	+/-0.101	0.0961	0.046	+/-0.137		pCi/g						
Lead-214		0.982	+/-0.160	0.124	0.0586	+/-0.182		pCi/g						
Potassium-40		12.8	+/-1.22	0.624	0.277	+/-1.63		pCi/g						
Protactinium-231	UI	0.00	+/-0.603	0.775	0.368	+/-0.625		pCi/g						
Radium-226		0.899	+/-0.154	0.113	0.0528	+/-0.174		pCi/g						
Radium-228		1.12	+/-0.247	0.212	0.0965	+/-0.293		pCi/g						
Thallium-208		0.317	+/-0.0684	0.0518	0.0239	+/-0.074		pCi/g						
Tin-126	UI	0.00	+/-0.0976	0.122	0.0587	+/-0.0995		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		15.9	+/-4.45	3.89	1.55	+/-5.43	4.00	pCi/g		JXB7	01/04/16	0929	1532748	3
Beta		18.9	+/-3.48	3.93	1.82	+/-4.40	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	DRS1	12/09/15	1310	1529593

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2.3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: January 5, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B24.1
Sample ID: 387031010

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SNIB24.1
 Sample ID: 390909014
 Matrix: Soil
 Collect Date: 24-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 24.8%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RI	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.0912	+/-0.290	0.544	0.253	+/-0.293		pCi/g		MXR1	02/12/16	0750	1543886	1
Antimony-125	U	0.0218	+/-0.124	0.210	0.096	+/-0.124		pCi/g						
Bismuth-212	UI	0.00	+/-0.659	1.46	0.674	+/-1.02		pCi/g						
Bismuth-214		0.640	+/-0.143	0.136	0.0611	+/-0.154		pCi/g						
Cesium-137		0.344	+/-0.0732	0.085	0.0384	+/-0.0796	0.100	pCi/g						
Cobalt-60	U	-0.0124	+/-0.0353	0.068	0.0275	+/-0.0358		pCi/g						
Europium-154	U	0.0145	+/-0.131	0.266	0.115	+/-0.132		pCi/g						
Lead-212		1.06	+/-0.147	0.121	0.0565	+/-0.175		pCi/g						
Lead-214		0.961	+/-0.201	0.161	0.0744	+/-0.218		pCi/g						
Potassium-40		12.0	+/-1.49	0.888	0.380	+/-1.81		pCi/g						
Protactinium-231	U	0.206	+/-0.549	1.05	0.487	+/-0.558		pCi/g						
Radium-226		0.640	+/-0.143	0.136	0.0611	+/-0.154		pCi/g						
Radium-228		0.704	+/-0.281	0.152	0.0587	+/-0.298		pCi/g						
Thallium-208		0.334	+/-0.0971	0.0715	0.032	+/-0.102		pCi/g						
Tin-126	UI	0.00	+/-0.169	0.183	0.087	+/-0.169		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	KYW2	02/10/16	1449	1543636

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4 S 2 3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 558-8171 - www.gel.com

Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B24.1
Sample ID: 390909014

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SNIB24.5
 Sample ID: 386515023
 Matrix: Water
 Collect Date: 19-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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Rad Gamma Spec Analysis

Gammasec, Gamma, Liquid (Standard List) "As Received"

Actinium-227	U	-29.9	+/-30.1	50.9	23.9	+/-33.3		pCi/L		MJH1	12/18/15	0710	1529228	1
Antimony-125	U	5.29	+/-10.7	18.2	8.37	+/-11.0		pCi/L						
Bismuth-212	U	-18	+/-58.7	106	48.1	+/-59.2		pCi/L						
Bismuth-214	U	-2.05	+/-9.21	15.1	6.95	+/-9.26		pCi/L						
Cesium-137	U	0.623	+/-3.49	6.79	3.05	+/-3.50	10.0	pCi/L						
Cobalt-60	U	0.255	+/-4.19	8.30	3.61	+/-4.19		pCi/L						
Europium-154	U	-3.95	+/-11.6	21.6	9.31	+/-11.7		pCi/L						
Lead-212	U	0.916	+/-10.5	14.4	6.89	+/-10.5		pCi/L						
Lead-214	U	-4.52	+/-10.4	15.8	7.36	+/-10.6		pCi/L						
Potassium-40	U	-2.97	+/-64.8	115	52.2	+/-64.9		pCi/L						
Protactinium-231	U	37.1	+/-56.8	107	50.5	+/-59.8		pCi/L						
Radium-228	U	-20.2	+/-19.2	26.3	11.7	+/-21.4		pCi/L						
Thallium-208	U	-2.12	+/-5.04	7.98	3.67	+/-5.13		pCi/L						
Tin-126	UL	0.00	+/-10.2	17.6	8.37	+/-11.6		pCi/L						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, liquid "As Received"

Alpha	U	-0.761	+/-1.25	3.48	1.30	+/-1.25	5.00	pCi/L		JXB7	12/21/15	1330	1531188	2
Beta	U	-1.98	+/-2.21	4.68	2.08	+/-2.21	5.00	pCi/L						

The following Analytical Methods were performed

Method	Description
1	EPA 901.1
2	EPA 900.0/SW846.9310

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 14, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.25.1
 Sample ID: 387686013
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 43.1%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		43.1						percent		CXC1	12/17/15	1415	1532052	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.0217	+/-0.376	0.694	0.324	+/-0.376		pCi/g		RXF2	01/11/16	0916	1532065	2
Antimony-125	U	0.0472	+/-0.144	0.268	0.123	+/-0.146		pCi/g						
Bismuth-212	UI	0.00	+/-1.34	1.36	0.612	+/-1.36		pCi/g						
Bismuth-214		1.15	+/-0.244	0.198	0.0898	+/-0.265		pCi/g						
Cesium-137		0.396	+/-0.0905	0.104	0.0467	+/-0.0972	0.100	pCi/g						
Cobalt-60	U	-0.0607	+/-0.0704	0.115	0.0493	+/-0.0757		pCi/g						
Europium-154	U	0.0655	+/-0.184	0.370	0.163	+/-0.186		pCi/g						
Lead-212		1.28	+/-0.167	0.143	0.0669	+/-0.200		pCi/g						
Lead-214		1.76	+/-0.257	0.222	0.103	+/-0.299		pCi/g						
Potassium-40		17.6	+/-2.14	0.980	0.408	+/-2.62		pCi/g						
Protactinium-231	UI	0.00	+/-1.28	1.16	0.533	+/-1.35		pCi/g						
Radium-226		1.15	+/-0.244	0.198	0.0898	+/-0.265		pCi/g						
Radium-228		1.17	+/-0.340	0.351	0.154	+/-0.384		pCi/g						
Thallium-208		0.395	+/-0.0961	0.0949	0.0428	+/-0.102		pCi/g						
Tin-126	UI	0.00	+/-0.124	0.185	0.0871	+/-0.126		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		12.4	+/-4.39	3.98	1.48	+/-5.00	4.00	pCi/g		KXB2	01/07/16	1214	1534691	3
Beta		18.6	+/-4.02	4.75	2.19	+/-4.83	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1532052

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4 5 2 3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: January 14, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.25.1
Sample ID: 387686013

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.25.1
Sample ID: 390909015
Matrix: Soil
Collect Date: 10-DEC-15
Receive Date: 17-DEC-15
Collector: Client
Moisture: 43.1%

Report Date: February 13, 2016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.0488	+/-0.342	0.642	0.299	+/-0.343		pCi/g		MXR1	02/10/16	0640	1543538	1
Antimony-125	U	0.040	+/-0.120	0.231	0.105	+/-0.122		pCi/g						
Bismuth-212	UI	0.00	+/-1.32	1.76	0.811	+/-1.44		pCi/g						
Bismuth-214		1.25	+/-0.199	0.181	0.0815	+/-0.227		pCi/g						
Cesium-137		0.453	+/-0.102	0.113	0.0517	+/-0.109	0.100	pCi/g						
Cobalt-60	U	-0.0312	+/-0.0579	0.094	0.0389	+/-0.0596		pCi/g						
Europium-154	U	-0.0961	+/-0.175	0.314	0.135	+/-0.181		pCi/g						
Lead-212		1.34	+/-0.161	0.149	0.0697	+/-0.194		pCi/g						
Lead-214		1.60	+/-0.252	0.482	0.234	+/-0.285		pCi/g						
Potassium-40		14.5	+/-2.04	0.978	0.409	+/-2.38		pCi/g						
Protactinium-231	UI	0.00	+/-0.737	1.34	0.624	+/-0.831		pCi/g						
Radium-226		1.25	+/-0.199	0.181	0.0815	+/-0.227		pCi/g						
Radium-228		1.21	+/-0.404	0.387	0.172	+/-0.441		pCi/g						
Thallium-208		0.364	+/-0.0914	0.0646	0.0278	+/-0.0968		pCi/g						
Tin-126	UI	0.00	+/-0.154	0.215	0.102	+/-0.155		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1543525

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2 3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.25.1
Sample ID: 390909015

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 14, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.26.1
 Sample ID: 387686014
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 22.2%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.2						percent		CXC1	12/17/15	1415	1532052	1
Rad Gamma Spec Analysis														
<i>Gammaspac, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.107	+/-0.320	0.611	0.288	+/-0.324		pCi/g		RXF2	01/11/16	1056	1532065	2
Antimony-125	U	0.0381	+/-0.106	0.211	0.0973	+/-0.107		pCi/g						
Bismuth-212	UI	0.00	+/-0.968	1.32	0.607	+/-1.05		pCi/g						
Bismuth-214		0.702	+/-0.184	0.145	0.0655	+/-0.194		pCi/g						
Cesium-137		0.167	+/-0.0663	0.093	0.0425	+/-0.0679	0.100	pCi/g						
Cobalt-60	U	0.0073	+/-0.0415	0.0847	0.0361	+/-0.0417		pCi/g						
Europium-154	U	-0.0921	+/-0.167	0.290	0.128	+/-0.172		pCi/g						
Lead-212		0.790	+/-0.164	0.170	0.0811	+/-0.181		pCi/g						
Lead-214		1.11	+/-0.197	0.168	0.0781	+/-0.221		pCi/g						
Potassium-40		13.3	+/-1.59	0.641	0.257	+/-1.96		pCi/g						
Protactinium-231	UI	0.00	+/-0.756	1.01	0.471	+/-0.788		pCi/g						
Radium-226		0.702	+/-0.184	0.145	0.0655	+/-0.194		pCi/g						
Radium-228		0.678	+/-0.289	0.332	0.149	+/-0.305		pCi/g						
Thallium-208		0.236	+/-0.0862	0.081	0.0369	+/-0.0885		pCi/g						
Tm-126	U	0.0894	+/-0.153	0.211	0.101	+/-0.154		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A.B. solid "Dry Weight Corrected"</i>														
Alpha		13.4	+/-4.03	3.96	1.62	+/-4.78	4.00	pCi/g		KXB2	01/07/16	1214	1534691	3
Beta		23.5	+/-3.36	3.28	1.51	+/-4.72	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1532052

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300.4 5 2.3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: January 14, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SNIB.26.1
Sample ID: 387686014

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.26.1
 Sample ID: 390909016
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 22.2%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.0159	+/-0.320	0.559	0.261	+/-0.320		pCi/g		MXR1	02/10/16	0640	1543538	1
Antimony-125	U	0.0877	+/-0.115	0.236	0.110	+/-0.122		pCi/g						
Bismuth-212	UI	0.00	+/-0.889	1.34	0.616	+/-1.05		pCi/g						
Bismuth-214		0.931	+/-0.196	0.148	0.0672	+/-0.212		pCi/g						
Cesium-137		0.130	+/-0.0881	0.0837	0.0379	+/-0.0888	0.100	pCi/g						
Cobalt-60	U	0.00915	+/-0.0502	0.0994	0.0433	+/-0.0504		pCi/g						
Europium-154	U	-0.000921	+/-0.153	0.292	0.129	+/-0.153		pCi/g						
Lead-212		0.891	+/-0.131	0.123	0.0577	+/-0.156		pCi/g						
Lead-214		1.06	+/-0.211	0.171	0.0796	+/-0.232		pCi/g						
Potassium-40		14.3	+/-1.60	0.912	0.393	+/-2.01		pCi/g						
Protactinium-231	U	-0.121	+/-0.624	1.10	0.513	+/-0.627		pCi/g						
Radium-226		0.931	+/-0.196	0.148	0.0672	+/-0.212		pCi/g						
Radium-228		0.707	+/-0.364	0.318	0.142	+/-0.378		pCi/g						
Thallium-208		0.299	+/-0.0922	0.0745	0.0337	+/-0.0958		pCi/g						
Tin-126	U	0.0717	+/-0.136	0.170	0.0811	+/-0.136		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1543525

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300.4.5.2 3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.26.1
Sample ID: 390909016

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: March 9, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Project: MJWC00115
 Client ID: MJWC001

Client Sample ID: S.N.I.B.26.3
 Sample ID: 392057021
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 19.1%

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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Rad Gamma Spec Analysis

Gamma with Ingrowth "Dry Weight Corrected"

Actinium-227	U	-0.184	+/-0.268	0.464	0.219	+/-0.282		pCi/g		MXR1	03/07/16	1039	1547792	1
Antimony-125	U	0.0234	+/-0.100	0.187	0.0877	+/-0.101		pCi/g						
Bismuth-212		1.06	+/-0.710	0.875	0.403	+/-0.718		pCi/g						
Bismuth-214		1.04	+/-0.159	0.134	0.0623	+/-0.180		pCi/g						
Cesium-137	U	0.0227	+/-0.0459	0.0615	0.0282	+/-0.0459	0.100	pCi/g						
Cobalt-60	U	-0.00337	+/-0.043	0.0794	0.0359	+/-0.043		pCi/g						
Europium-154	U	-0.089	+/-0.122	0.209	0.094	+/-0.128		pCi/g						
Lead-212		1.34	+/-0.131	0.109	0.0518	+/-0.169		pCi/g						
Lead-214		1.19	+/-0.168	0.132	0.0619	+/-0.195		pCi/g						
Potassium-40		20.6	+/-1.79	0.538	0.232	+/-2.53		pCi/g						
Protactinium-231	UI	0.00	+/-0.737	0.829	0.390	+/-0.754		pCi/g						
Radium-226		1.04	+/-0.159	0.134	0.0623	+/-0.180		pCi/g						
Radium-228		1.49	+/-0.267	0.257	0.118	+/-0.358		pCi/g						
Thallium-208		0.354	+/-0.0835	0.0619	0.0286	+/-0.0885		pCi/g						
Tin-126	U	0.0749	+/-0.126	0.178	0.0855	+/-0.127		pCi/g						

Rad Gas Flow Proportional Counting

GFPC. Gross A/B. solid "Dry Weight Corrected"

Alpha		16.9	+/-4.17	3.90	1.64	+/-5.29	4.00	pCi/g		JXB7	03/03/16	1458	1548366	2
Beta		33.0	+/-3.57	3.15	1.46	+/-5.79	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1513	1547785

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2.3/Ga-01-R
2	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery Test

Batch ID Recovery% Acceptable Limits

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: March 9, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: S.N.1.B.26.3
Sample ID: 392057021

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 14, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SNIB.27.1
 Sample ID: 387686015
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 31%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		31.0						percent		CXC1	12/17/15	1415	1532052	1
Rad Gamma Spec Analysis														
<i>Gammasec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.162	+/-0.254	0.459	0.214	+/-0.266		pCi/g		RXF2	01/11/16	1056	1532065	2
Antimony-125	U	0.0601	+/-0.104	0.203	0.0937	+/-0.108		pCi/g						
Bismuth-212		1.15	+/-0.825	0.947	0.423	+/-0.833		pCi/g						
Bismuth-214		0.928	+/-0.166	0.139	0.0631	+/-0.183		pCi/g						
Cesium-137		0.415	+/-0.0931	0.0865	0.0396	+/-0.0988	0.100	pCi/g						
Cobalt-60	U	0.0132	+/-0.0413	0.0852	0.0369	+/-0.0418		pCi/g						
Europium-154	UI	0.00	+/-0.174	0.305	0.137	+/-0.192		pCi/g						
Lead-212		0.980	+/-0.120	0.103	0.0481	+/-0.179		pCi/g						
Lead-214		1.23	+/-0.181	0.145	0.067	+/-0.216		pCi/g						
Potassium-40		15.8	+/-1.66	0.717	0.301	+/-2.17		pCi/g						
Protactinium-231	UI	0.00	+/-0.486	0.959	0.448	+/-0.507		pCi/g						
Radium-226		0.928	+/-0.166	0.139	0.0631	+/-0.183		pCi/g						
Radium-228		0.865	+/-0.291	0.208	0.0881	+/-0.320		pCi/g						
Thallium-208		0.250	+/-0.0901	0.0741	0.0337	+/-0.0926		pCi/g						
Tin-126	UI	0.00	+/-0.0888	0.102	0.0484	+/-0.0917		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		14.8	+/-4.44	3.90	1.52	+/-5.25	4.00	pCi/g		KXB2	01/07/16	1215	1534691	3
Beta		5.67	+/-2.33	3.19	1.44	+/-2.48	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1532052

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2.3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: January 14, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: SN1B.27.1
Sample ID: 387686015

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: February 13, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: SN1B.27.1
 Sample ID: 390909017
 Matrix: Soil
 Collect Date: 10-DEC-15
 Receive Date: 17-DEC-15
 Collector: Client
 Moisture: 31%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.157	+/-0.327	0.581	0.269	+/-0.335		pCi/g		MXR1	02/10/16	0641	1543538	1
Antimony-125	U	-0.00248	+/-0.123	0.229	0.105	+/-0.123		pCi/g						
Bismuth-212	UI	0.00	+/-1.02	1.70	0.783	+/-1.23		pCi/g						
Bismuth-214		1.14	+/-0.219	0.173	0.0782	+/-0.238		pCi/g						
Cesium-137		0.464	+/-0.153	0.0897	0.040	+/-0.158	0.100	pCi/g						
Cobalt-60	U	0.0214	+/-0.0479	0.104	0.0446	+/-0.0489		pCi/g						
Europium-154	U	0.0907	+/-0.169	0.355	0.157	+/-0.174		pCi/g						
Lead-212		0.939	+/-0.135	0.132	0.0615	+/-0.158		pCi/g						
Lead-214		1.09	+/-0.232	0.171	0.0782	+/-0.249		pCi/g						
Potassium-40		14.2	+/-1.85	0.832	0.340	+/-2.21		pCi/g						
Protactinium-231	U	0.388	+/-0.706	1.10	0.507	+/-0.733		pCi/g						
Radium-226		1.14	+/-0.219	0.173	0.0782	+/-0.238		pCi/g						
Radium-228		0.995	+/-0.308	0.355	0.157	+/-0.334		pCi/g						
Thallium-208		0.332	+/-0.102	0.0957	0.0435	+/-0.105		pCi/g						
Tin-126	UI	0.00	+/-0.176	0.213	0.101	+/-0.178		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/17/15	1415	1543525

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Technical Services

Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Contact: Ms. Laurie Losey

Project: Soil Radioisotopes

Client Sample ID: SN1B.27.1

Sample ID: 390909017

Report Date: February 13, 2016

Project: MJWC00115

Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).