

# GEL LABORATORIES LLC

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

## Certificate of Analysis

Report Date: December 4, 2015

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

Client Sample ID: 3.1.19.R.1 Project: MJWC00115  
Sample ID: 385070013 Client ID: MJWC001  
Matrix: Soil  
Collect Date: 20-OCT-15 13:40  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 19.9%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Gravimetric Solids</b>												
ASTM D 2216 % Moisture "As Received"												
Moisture		19.9				percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>												
Gammascpec, Gamma, Solid "Dry Weight Corrected"												
Actinium-227	U	-0.00874	+/-0.244	0.468		pCi/g		RXF2	12/03/15	1305	1522383	2
Antimony-125	U	-0.0461	+/-0.0992	0.177		pCi/g						
Cesium-137		1.07	+/-0.109	0.0739	0.100	pCi/g						
Cobalt-60	U	-0.00812	+/-0.0401	0.0765		pCi/g						
Europium-154	U	2.92E-05	+/-0.111	0.211		pCi/g						
Protactinium-231	U	0.773	+/-0.559	0.891		pCi/g						
Radium-226		0.779	+/-0.132	0.111		pCi/g						
Radium-228		1.02	+/-0.277	0.263		pCi/g						
Tin-126	U	0.115	+/-0.139	0.133		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		14.7	+/-3.57	3.83	4.00	pCi/g		KXB2	12/02/15	1120	1525757	3
Beta		19.9	+/-2.73	3.13	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	11/10/15	1319	1521842

The following Analytical Methods were performed:

Method	Description	Analyst Comments
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	

### Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

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## Certificate of Analysis

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

Report Date: December 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.19.R.1  
 Sample ID: 385070013  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 19.9%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		19.9						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.00874	+/-0.244	0.468	0.219	+/-0.244		pCi/g		RXF2	12/03/15	1305	1522383	2
Antimony-125	U	-0.0461	+/-0.0992	0.177	0.0815	+/-0.101		pCi/g						
Bismuth-212	UI	0.00	+/-0.746	1.21	0.560	+/-0.994		pCi/g						
Bismuth-214		0.779	+/-0.132	0.111	0.0499	+/-0.147		pCi/g						
Cesium-137		1.07	+/-0.109	0.0739	0.0336	+/-0.140	0.100	pCi/g						
Cobalt-60	U	-0.00812	+/-0.0401	0.0765	0.033	+/-0.0402		pCi/g						
Europium-154	U	2.92E-05	+/-0.111	0.211	0.0914	+/-0.111		pCi/g						
Lead-212		1.10	+/-0.127	0.111	0.0522	+/-0.161		pCi/g						
Lead-214		0.970	+/-0.202	0.137	0.0635	+/-0.219		pCi/g						
Potassium-40		12.9	+/-1.41	0.581	0.238	+/-1.81		pCi/g						
Protactinium-231	UI	0.00	+/-0.559	0.891	0.416	+/-0.586		pCi/g						
Radium-226		0.779	+/-0.132	0.111	0.0499	+/-0.147		pCi/g						
Radium-228		1.02	+/-0.277	0.263	0.117	+/-0.317		pCi/g						
Thallium-208		0.325	+/-0.0871	0.0669	0.0304	+/-0.0913		pCi/g						
Tin-126	UI	0.00	+/-0.139	0.133	0.0634	+/-0.141		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A, B, solid "Dry Weight Corrected"</i>														
Alpha		14.7	+/-3.57	3.83	1.68	+/-4.57	4.00	pCi/g		KXB2	12/02/15	1120	1525757	3
Beta		19.9	+/-2.73	3.13	1.48	+/-3.90	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	11/10/15	1319	1521842

**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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Report Date: December 17, 2015

Contact: Ms. Laurie Loscy

Project: Soil Radioisotopes

Client Sample ID: 3.1.19.R.1

Sample ID: 385070013

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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 Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.19.R.1  
 Sample ID: 385070013  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 19.9%

Project: MIWC00115  
 Client ID: MIWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		19.9						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammasp. Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.00874	+/-0.244	0.468	0.219	+/-0.244		pCi/g		RXF2	12/03/15	1305	1522383	2
Antimony-125	U	-0.0461	+/-0.0992	0.177	0.0815	+/-0.101		pCi/g						
Bismuth-212	UI	0.00	+/-0.746	1.21	0.560	+/-0.994		pCi/g						
Bismuth-214		0.779	+/-0.132	0.111	0.0499	+/-0.147		pCi/g						
Cesium-137		1.07	+/-0.109	0.0739	0.0336	+/-0.140	0.100	pCi/g						
Cobalt-60	U	-0.00812	+/-0.0401	0.0765	0.033	+/-0.0402		pCi/g						
Europium-154	U	2.92E-05	+/-0.111	0.211	0.0914	+/-0.111		pCi/g						
Lead-212		1.10	+/-0.127	0.111	0.0522	+/-0.161		pCi/g						
Lead-214		0.970	+/-0.202	0.137	0.0635	+/-0.219		pCi/g						
Potassium-40		12.9	+/-1.41	0.581	0.238	+/-1.81		pCi/g						
Protactinium-231	UI	0.00	+/-0.559	0.891	0.416	+/-0.586		pCi/g						
Radium-226		0.779	+/-0.132	0.111	0.0499	+/-0.147		pCi/g						
Radium-228		1.02	+/-0.277	0.263	0.117	+/-0.317		pCi/g						
Thallium-208		0.325	+/-0.0871	0.0669	0.0304	+/-0.0913		pCi/g						
Tin-126	UI	0.00	+/-0.139	0.133	0.0634	+/-0.141		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		14.7	+/-3.57	3.83	1.68	+/-4.57	4.00	pCi/g		KXB2	12/02/15	1120	1525757	3
Beta		19.9	+/-2.73	3.13	1.48	+/-3.90	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	11/10/15	1319	1521842

**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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Report Date: December 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.19.R.1  
Sample ID: 385070013

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

Report Date: February 10, 2016

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.19.R.2  
 Sample ID: 389296014  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 14-JAN-16  
 Collector: Client  
 Moisture: 21%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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**Gravimetric Solids**

*ASTM D 2216 % Moisture "As Received"*

Moisture		21.0						percent		CXC1	01/14/16	1208	1537312	1
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**Rad Gamma Spec Analysis**

*Gamma with Ingrowth "Dry Weight Corrected"*

Actinium-227	U	0.0926	+/-0.307	0.597	0.278	+/-0.310		pCi/g		RXF2	02/05/16	0856	1537546	2
Antimony-125	U	0.060	+/-0.138	0.266	0.122	+/-0.140		pCi/g						
Bismuth-212	UI	0.00	+/-1.19	1.78	0.827	+/-1.47		pCi/g						
Bismuth-214		0.722	+/-0.197	0.175	0.0794	+/-0.206		pCi/g						
Cesium-137		1.46	+/-0.152	0.0917	0.0411	+/-0.193	0.100	pCi/g						
Cobalt-60	U	-0.0033	+/-0.0361	0.0752	0.0299	+/-0.0361		pCi/g						
Europium-154	U	0.0518	+/-0.163	0.339	0.149	+/-0.165		pCi/g						
Lead-212		0.818	+/-0.231	0.157	0.074	+/-0.242		pCi/g						
Lead-214		1.22	+/-0.207	0.391	0.189	+/-0.232		pCi/g						
Potassium-40		13.7	+/-1.74	0.721	0.285	+/-2.09		pCi/g						
Protactinium-231	U	-0.00463	+/-0.664	1.16	0.537	+/-0.664		pCi/g						
Radium-226		0.722	+/-0.197	0.175	0.0794	+/-0.206		pCi/g						
Radium-228		1.19	+/-0.267	0.344	0.152	+/-0.309		pCi/g						
Thallium-208		0.335	+/-0.105	0.0929	0.0422	+/-0.108		pCi/g						
Tin-126	UI	0.00	+/-0.134	0.200	0.0945	+/-0.135		pCi/g						

*Gammascpec, Gamma, Solid "Dry Weight Corrected"*

Actinium-227	U	-0.116	+/-0.279	0.498	0.233	+/-0.285		pCi/g		RXF2	01/18/16	1124	1537545	3
Antimony-125	U	-0.00536	+/-0.119	0.214	0.099	+/-0.119		pCi/g						
Bismuth-212	UI	0.00	+/-0.810	1.29	0.599	+/-0.953		pCi/g						
Bismuth-214		0.849	+/-0.161	0.124	0.056	+/-0.176		pCi/g						
Cesium-137		1.51	+/-0.129	0.0771	0.035	+/-0.181	0.100	pCi/g						
Cobalt-60	U	0.0135	+/-0.035	0.0755	0.0321	+/-0.0356		pCi/g						
Europium-154	U	-0.108	+/-0.104	0.166	0.0679	+/-0.116		pCi/g						
Lead-212		1.17	+/-0.131	0.126	0.0594	+/-0.173		pCi/g						
Lead-214		0.967	+/-0.186	0.160	0.0747	+/-0.205		pCi/g						
Potassium-40		14.0	+/-1.58	0.710	0.300	+/-2.02		pCi/g						
Protactinium-231	UI	0.00	+/-0.912	0.923	0.429	+/-0.966		pCi/g						
Radium-226		0.849	+/-0.161	0.124	0.056	+/-0.176		pCi/g						
Radium-228		0.898	+/-0.347	0.286	0.128	+/-0.371		pCi/g						
Thallium-208		0.222	+/-0.0855	0.0724	0.033	+/-0.0875		pCi/g						
Tin-126	UI	0.00	+/-0.120	0.154	0.074	+/-0.121		pCi/g						

**Rad Gas Flow Proportional Counting**

*GFPC, Gross A/B, solid "Dry Weight Corrected"*

Alpha		7.32	+/-3.21	3.70	1.47	+/-3.51	4.00	pCi/g		KXB2	01/26/16	1225	1539462	4
Beta		17.8	+/-3.00	2.86	1.28	+/-3.95	10.0	pCi/g						

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Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.1.19.R.2  
Sample ID: 389296014

Report Date: February 10, 2016

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1208	1537312

### 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	DOE HASL 300, 4.5.2 3/Ga-01-R
4	EPA 900.0/SW846 9310/SM 7110B Modified

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).

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Company : MJW Corporation  
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 Suite 112  
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 Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.20.R.1	Project: MJWC00115
Sample ID: 385070014	Client ID: MJWC001
Matrix: Soil	
Collect Date: 20-OCT-15 10:00	
Receive Date: 05-NOV-15	
Collector: Client	
Moisture: 17.1%	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Gravimetric Solids</b>												
ASTM D 2216 % Moisture "As Received"												
Moisture		17.1				percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>												
Gammascpec, Gamma, Solid "Dry Weight Corrected"												
Actinium-227	U	-0.0414	+/-0.268	0.502		pCi/g		RXF2	12/03/15	1305	1522383	2
Antimony-125	U	0.0855	+/-0.0966	0.196		pCi/g						
Cesium-137		0.414	+/-0.089	0.0777	0.100	pCi/g						
Cobalt-60	U	0.0164	+/-0.0362	0.078		pCi/g						
Europium-154	U	0.0284	+/-0.128	0.256		pCi/g						
Protactinium-231	U	0.326	+/-0.607	0.921		pCi/g						
Radium-226		0.833	+/-0.172	0.143		pCi/g						
Radium-228		1.03	+/-0.249	0.234		pCi/g						
Tin-126	U	0.157	+/-0.123	0.162		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		15.1	+/-3.49	3.10	4.00	pCi/g		KXB2	12/02/15	1120	1525757	3
Beta		21.6	+/-2.76	3.03	10.0	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	CXC1	11/10/15	1319	1521842

The following Analytical Methods were performed:

Method	Description	Analyst Comments
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	

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

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Report Date: December 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.20.R.1  
 Sample ID: 385070014  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 17.1%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		17.1						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammasec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0414	+/-0.268	0.502	0.235	+/-0.269		pCi/g		RXF2	12/03/15	1305	1522383	2
Antimony-125	U	0.0855	+/-0.0966	0.196	0.0903	+/-0.104		pCi/g						
Bismuth-212	UI	0.00	+/-0.844	1.24	0.569	+/-1.08		pCi/g						
Bismuth-214		0.833	+/-0.172	0.143	0.0653	+/-0.186		pCi/g						
Cesium-137		0.414	+/-0.089	0.0777	0.0353	+/-0.0953	0.100	pCi/g						
Cobalt-60	U	0.0164	+/-0.0362	0.078	0.0334	+/-0.037		pCi/g						
Europium-154	U	0.0284	+/-0.128	0.256	0.113	+/-0.129		pCi/g						
Lead-212		1.02	+/-0.137	0.128	0.0607	+/-0.161		pCi/g						
Lead-214		1.00	+/-0.211	0.326	0.157	+/-0.227		pCi/g						
Potassium-40		12.5	+/-1.39	0.685	0.287	+/-1.78		pCi/g						
Protactinium-231	U	0.326	+/-0.607	0.921	0.429	+/-0.611		pCi/g						
Radium-226		0.833	+/-0.172	0.143	0.0653	+/-0.186		pCi/g						
Radium-228		1.03	+/-0.249	0.234	0.102	+/-0.293		pCi/g						
Thallium-208		0.309	+/-0.0722	0.0634	0.0285	+/-0.0768		pCi/g						
Tin-126	UI	0.00	+/-0.123	0.162	0.0776	+/-0.124		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		15.1	+/-3.49	3.10	1.30	+/-4.57	4.00	pCi/g		KXB2	12/02/15	1120	1525757	3
Beta		21.6	+/-2.76	3.03	1.43	+/-4.09	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	11/10/15	1319	1521842

**The following Analytical Methods were performed**

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASI, 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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Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228

Report Date: December 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.20.R.1  
Sample ID: 385070014

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lo	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: December 17, 2015

Client Sample ID: 3.1.20.R.1  
 Sample ID: 385070014  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 17.1%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		17.1						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0414	+/-0.268	0.502	0.235	+/-0.269		pCi/g		RXF2	12/03/15	1305	1522383	2
Antimony-125	U	0.0855	+/-0.0966	0.196	0.0903	+/-0.104		pCi/g						
Bismuth-212	UI	0.00	+/-0.844	1.24	0.569	+/-1.08		pCi/g						
Bismuth-214		0.833	+/-0.172	0.143	0.0653	+/-0.186		pCi/g						
Cesium-137		0.414	+/-0.089	0.0777	0.0353	+/-0.0953	0.100	pCi/g						
Cobalt-60	U	0.0164	+/-0.0362	0.078	0.0334	+/-0.037		pCi/g						
Europium-154	U	0.0284	+/-0.128	0.256	0.113	+/-0.129		pCi/g						
Lead-212		1.02	+/-0.137	0.128	0.0607	+/-0.161		pCi/g						
Lead-214		1.00	+/-0.211	0.326	0.157	+/-0.227		pCi/g						
Potassium-40		12.5	+/-1.39	0.685	0.287	+/-1.78		pCi/g						
Protactinium-231	U	0.326	+/-0.607	0.921	0.429	+/-0.611		pCi/g						
Radium-226		0.833	+/-0.172	0.143	0.0653	+/-0.186		pCi/g						
Radium-228		1.03	+/-0.249	0.234	0.102	+/-0.293		pCi/g						
Thallium-208		0.309	+/-0.0722	0.0634	0.0285	+/-0.0768		pCi/g						
Tin-126	UI	0.00	+/-0.123	0.162	0.0776	+/-0.124		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		15.1	+/-3.49	3.10	1.30	+/-4.57	4.00	pCi/g		KXB2	12/02/15	1120	1525757	3
Beta		21.6	+/-2.76	3.03	1.43	+/-4.09	10.0	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	CXC1	11/10/15	1319	1521842

**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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# 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: December 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.20.R.1  
Sample ID: 385070014

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 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Project: MJWC00115  
 Client ID: MJWC001

Client Sample ID: 3.1.21.R.1  
 Sample ID: 385070015  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 19.5%

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		19.5						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.181	+/-0.316	0.601	0.284	+/-0.327		pCi/g		RXF2	12/03/15	1321	1522383	2
Antimony-125	U	-0.0507	+/-0.113	0.206	0.0954	+/-0.115		pCi/g						
Bismuth-212	U	0.427	+/-0.688	1.33	0.618	+/-0.715		pCi/g						
Bismuth-214		0.649	+/-0.195	0.161	0.0742	+/-0.202		pCi/g						
Cesium-137		0.824	+/-0.112	0.086	0.0394	+/-0.130	0.100	pCi/g						
Cobalt-60	U	-0.00202	+/-0.038	0.0739	0.0315	+/-0.0381		pCi/g						
Eurprium-154	U	0.0258	+/-0.163	0.272	0.121	+/-0.163		pCi/g						
Lead-212		1.33	+/-0.146	0.125	0.0591	+/-0.182		pCi/g						
Lead-214		0.942	+/-0.189	0.164	0.0768	+/-0.204		pCi/g						
Potassium-40		13.0	+/-1.41	0.449	0.170	+/-1.79		pCi/g						
Protactinium-231	U	0.232	+/-0.665	1.09	0.515	+/-0.675		pCi/g						
Radium-226		0.649	+/-0.195	0.161	0.0742	+/-0.202		pCi/g						
Radium-228		0.857	+/-0.408	0.270	0.120	+/-0.424		pCi/g						
Thallium-208		0.257	+/-0.0692	0.0679	0.0307	+/-0.0724		pCi/g						
Tin-126	UI	0.00	+/-0.127	0.171	0.0821	+/-0.129		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		8.73	+/-2.97	3.65	1.59	+/-3.41	4.00	pCi/g		KXB2	12/02/15	1123	1525757	3
Beta		23.0	+/-3.05	3.31	1.55	+/-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	CXC1	11/10/15	1319	1521842

**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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# 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: December 17, 2015

Contact: Ms. Laurie Losey

Project: Soil Radioisotopes

Client Sample ID: 3.1.21.R.1  
Sample ID: 385070015

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RI	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 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.21.R.1  
 Sample ID: 385070015  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 19.5%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		19.5						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.181	+/-0.316	0.601	0.284	+/-0.327		pCi/g		RXF2	12/03/15	1321	1522383	2
Antimony-125	U	-0.0507	+/-0.113	0.206	0.0954	+/-0.115		pCi/g						
Bismuth-212	U	0.427	+/-0.688	1.33	0.618	+/-0.715		pCi/g						
Bismuth-214		0.649	+/-0.195	0.161	0.0742	+/-0.202		pCi/g						
Cesium-137		0.824	+/-0.112	0.086	0.0394	+/-0.130	0.100	pCi/g						
Cobalt-60	U	-0.00202	+/-0.038	0.0739	0.0315	+/-0.0381		pCi/g						
Europtium-154	U	0.0258	+/-0.163	0.272	0.121	+/-0.163		pCi/g						
Lead-212		1.33	+/-0.146	0.125	0.0591	+/-0.182		pCi/g						
Lead-214		0.942	+/-0.189	0.164	0.0768	+/-0.204		pCi/g						
Potassium-40		13.0	+/-1.41	0.449	0.170	+/-1.79		pCi/g						
Protactinium-231	U	0.232	+/-0.665	1.09	0.515	+/-0.675		pCi/g						
Radium-226		0.649	+/-0.195	0.161	0.0742	+/-0.202		pCi/g						
Radium-228		0.857	+/-0.408	0.270	0.120	+/-0.424		pCi/g						
Thallium-208		0.257	+/-0.0692	0.0679	0.0307	+/-0.0724		pCi/g						
Tin-126	UI	0.00	+/-0.127	0.171	0.0821	+/-0.129		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		8.73	+/-2.97	3.65	1.59	+/-3.41	4.00	pCi/g		KXB2	12/02/15	1123	1525757	3
Beta		23.0	+/-3.05	3.31	1.55	+/-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	CXC1	11/10/15	1319	1521842

**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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# 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 17, 2015

Contact: Ms. Laurie Losey

Project: Soil Radioisotopes

Client Sample ID: 3.1.21.R.1  
Sample ID: 385070015

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

Report Date: February 10, 2016

Client Sample ID: 3.1.21.R.2  
 Sample ID: 389303001  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 14-JAN-16  
 Collector: Client  
 Moisture: 20.5%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		20.5						percent		CXC1	01/14/16	1202	1537321	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.128	+/-0.236	0.430	0.199	+/-0.244		pCi/g		RXF2	02/05/16	0641	1537551	2
Antimony-125	U	-0.127	+/-0.111	0.181	0.0825	+/-0.126		pCi/g						
Bismuth-212	UI	0.00	+/-0.887	1.50	0.699	+/-1.25		pCi/g						
Bismuth-214		0.733	+/-0.167	0.145	0.0659	+/-0.178		pCi/g						
Cesium-137		1.24	+/-0.122	0.0765	0.0345	+/-0.157	0.100	pCi/g						
Cobalt-60	U	-0.038	+/-0.0351	0.0529	0.0206	+/-0.0391		pCi/g						
Europium-154	U	0.0486	+/-0.139	0.259	0.114	+/-0.141		pCi/g						
Lead-212		1.07	+/-0.116	0.100	0.0469	+/-0.185		pCi/g						
Lead-214		0.908	+/-0.148	0.153	0.0711	+/-0.172		pCi/g						
Potassium-40		12.3	+/-1.44	0.681	0.283	+/-1.81		pCi/g						
Protactinium-231		1.05	+/-0.787	0.841	0.389	+/-0.825		pCi/g						
Radium-226		0.733	+/-0.167	0.145	0.0659	+/-0.178		pCi/g						
Radium-228		0.835	+/-0.307	0.224	0.0964	+/-0.333		pCi/g						
Thallium-208		0.309	+/-0.0688	0.0771	0.0353	+/-0.0737		pCi/g						
Tin-126	UI	0.00	+/-0.131	0.113	0.0543	+/-0.132		pCi/g						
<i>Gammascpec. Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0269	+/-0.308	0.569	0.265	+/-0.309		pCi/g		RXF2	01/18/16	0935	1537548	3
Antimony-125	U	0.0419	+/-0.135	0.254	0.117	+/-0.136		pCi/g						
Bismuth-212	UI	0.00	+/-0.938	1.39	0.630	+/-1.01		pCi/g						
Bismuth-214		0.824	+/-0.185	0.166	0.0745	+/-0.197		pCi/g						
Cesium-137		1.02	+/-0.153	0.100	0.0454	+/-0.174	0.100	pCi/g						
Cobalt-60	U	-0.026	+/-0.0503	0.0928	0.0389	+/-0.0518		pCi/g						
Europium-154	U	-0.0303	+/-0.129	0.251	0.105	+/-0.130		pCi/g						
Lead-212		0.977	+/-0.134	0.136	0.064	+/-0.155		pCi/g						
Lead-214		0.875	+/-0.182	0.342	0.164	+/-0.194		pCi/g						
Potassium-40		11.8	+/-1.67	0.701	0.277	+/-2.05		pCi/g						
Protactinium-231	U	0.202	+/-0.680	1.14	0.531	+/-0.688		pCi/g						
Radium-226		0.824	+/-0.185	0.166	0.0745	+/-0.197		pCi/g						
Radium-228		0.769	+/-0.313	0.333	0.146	+/-0.327		pCi/g						
Thallium-208		0.326	+/-0.0958	0.0754	0.0334	+/-0.0996		pCi/g						
Tin-126	U	0.0757	+/-0.192	0.232	0.111	+/-0.193		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		13.3	+/-4.01	3.78	1.52	+/-4.77	4.00	pCi/g		JXB7	01/26/16	1140	1539464	4
Beta		24.1	+/-3.57	3.40	1.55	+/-4.94	10.0	pCi/g						

# 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: 3.1.21.R.2  
Sample ID: 389303001

Report Date: February 10, 2016

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1202	1537321

### 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	DOE HASL 300.4 5.2 3/Ga-01-R
4	EPA 900.0/SW846 9310/SM 7110B Modified

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: December 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.22.R.1  
 Sample ID: 385070016  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 19%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### Gravimetric Solids

*ASTM D 2216 % Moisture "As Received"*

Moisture		19.0						percent		CXC1	11/10/15	1319	1521842	1
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### Rad Gamma Spec Analysis

*Gammasec. Gamma, Solid "Dry Weight Corrected"*

Actinium-227	U	-0.051	+/-0.245	0.455	0.214	+/-0.246		pCi/g		RXF2	12/03/15	1306	1522383	2
Antimony-125	U	0.0519	+/-0.0931	0.181	0.084	+/-0.0961		pCi/g						
Bismuth-212	UI	0.00	+/-0.763	1.13	0.524	+/-1.00		pCi/g						
Bismuth-214		0.875	+/-0.143	0.117	0.0535	+/-0.161		pCi/g						
Cesium-137		1.15	+/-0.121	0.0595	0.0268	+/-0.155	0.100	pCi/g						
Cobalt-60	U	-0.00936	+/-0.0338	0.0641	0.0274	+/-0.0341		pCi/g						
Europium-154	U	-0.0211	+/-0.110	0.180	0.0771	+/-0.110		pCi/g						
Lead-212		1.02	+/-0.123	0.103	0.0485	+/-0.158		pCi/g						
Lead-214		0.971	+/-0.194	0.129	0.0597	+/-0.212		pCi/g						
Potassium-40		11.4	+/-1.35	0.618	0.263	+/-1.69		pCi/g						
Protactinium-231	UI	0.00	+/-0.795	0.872	0.409	+/-0.842		pCi/g						
Radium-226		0.875	+/-0.143	0.117	0.0535	+/-0.161		pCi/g						
Radium-228		0.927	+/-0.258	0.245	0.110	+/-0.292		pCi/g						
Thallium-208		0.293	+/-0.0704	0.059	0.0268	+/-0.0745		pCi/g						
Tin-126	UI	0.00	+/-0.109	0.133	0.0638	+/-0.110		pCi/g						

### Rad Gas Flow Proportional Counting

*GFPC, Gross A/B, solid "Dry Weight Corrected"*

Alpha		14.9	+/-3.20	2.53	1.04	+/-4.29	4.00	pCi/g		KXB2	12/02/15	1123	1525757	3
Beta		25.4	+/-3.09	3.20	1.50	+/-4.68	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	11/10/15	1319	1521842

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASI, 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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# 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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.22.R.1  
Sample ID: 385070016

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 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.22.R.1  
 Sample ID: 385070016  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 19%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		19.0						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.051	+/-0.245	0.455	0.214	+/-0.246		pCi/g		RXF2	12/03/15	1306	1522383	2
Antimony-125	U	0.0519	+/-0.0931	0.181	0.084	+/-0.0961		pCi/g						
Bismuth-212	UI	0.00	+/-0.763	1.13	0.524	+/-1.00		pCi/g						
Bismuth-214		0.875	+/-0.143	0.117	0.0535	+/-0.161		pCi/g						
Cesium-137		1.15	+/-0.121	0.0595	0.0268	+/-0.155	0.100	pCi/g						
Cobalt-60	U	-0.00936	+/-0.0338	0.0641	0.0274	+/-0.0341		pCi/g						
Europium-154	U	-0.0211	+/-0.110	0.180	0.0771	+/-0.110		pCi/g						
Lead-212		1.02	+/-0.123	0.103	0.0485	+/-0.158		pCi/g						
Lead-214		0.971	+/-0.194	0.129	0.0597	+/-0.212		pCi/g						
Potassium-40		11.4	+/-1.35	0.618	0.263	+/-1.69		pCi/g						
Protactinium-231	UI	0.00	+/-0.795	0.872	0.409	+/-0.842		pCi/g						
Radium-226		0.875	+/-0.143	0.117	0.0535	+/-0.161		pCi/g						
Radium-228		0.927	+/-0.258	0.245	0.110	+/-0.292		pCi/g						
Thallium-208		0.293	+/-0.0704	0.059	0.0268	+/-0.0745		pCi/g						
Tin-126	UI	0.00	+/-0.109	0.133	0.0638	+/-0.110		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		14.9	+/-3.20	2.53	1.04	+/-4.29	4.00	pCi/g		KXB2	12/02/15	1123	1525757	3
Beta		25.4	+/-3.09	3.20	1.50	+/-4.68	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	11/10/15	1319	1521842

**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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.1.22.R.1  
Sample ID: 385070016

Report Date: December 17, 2015

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Ic	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 10, 2016

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.22.R.2  
 Sample ID: 389303002  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 14-JAN-16  
 Collector: Client  
 Moisture: 19.4%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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**Gravimetric Solids**

*ASTM D 2216 % Moisture "As Received"*

Moisture		19.4						percent		CXC1	01/14/16	1202	1537321	1
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**Rad Gamma Spec Analysis**

*Gamma with Ingrowth "Dry Weight Corrected"*

Actinium-227	U	0.133	+/-0.371	0.693	0.321	+/-0.376		pCi/g		RXF2	02/05/16	0715	1537551	2
Antimony-125	U	-0.0714	+/-0.154	0.277	0.125	+/-0.157		pCi/g						
Bismuth-212	U	0.475	+/-1.08	1.83	0.821	+/-1.10		pCi/g						
Bismuth-214		0.821	+/-0.239	0.195	0.0857	+/-0.248		pCi/g						
Cesium-137		1.37	+/-0.178	0.111	0.0488	+/-0.209	0.100	pCi/g						
Cobalt-60	U	0.0299	+/-0.0619	0.140	0.0587	+/-0.0633		pCi/g						
Europium-154	U	-0.0619	+/-0.148	0.285	0.112	+/-0.151		pCi/g						
Lead-212		0.891	+/-0.182	0.172	0.0807	+/-0.196		pCi/g						
Lead-214		0.774	+/-0.230	0.224	0.103	+/-0.239		pCi/g						
Potassium-40		11.8	+/-1.97	1.21	0.494	+/-2.22		pCi/g						
Protactinium-231	UI	0.00	+/-0.720	1.44	0.668	+/-0.827		pCi/g						
Radium-226		0.821	+/-0.239	0.195	0.0857	+/-0.248		pCi/g						
Radium-228		1.02	+/-0.449	0.319	0.130	+/-0.466		pCi/g						
Thallium-208		0.359	+/-0.119	0.0914	0.0398	+/-0.122		pCi/g						
Tin-126	UI	0.00	+/-0.168	0.186	0.0884	+/-0.168		pCi/g						

*Gamma spec, Gamma, Solid "Dry Weight Corrected"*

Actinium-227	U	0.0982	+/-0.337	0.637	0.299	+/-0.341		pCi/g		RXF2	01/18/16	0935	1537548	3
Antimony-125	U	-0.0112	+/-0.123	0.233	0.107	+/-0.123		pCi/g						
Bismuth-212	UI	0.00	+/-0.771	1.49	0.688	+/-1.13		pCi/g						
Bismuth-214		0.529	+/-0.192	0.170	0.0774	+/-0.197		pCi/g						
Cesium-137		1.27	+/-0.155	0.101	0.0461	+/-0.190	0.100	pCi/g						
Cobalt-60	U	-0.04	+/-0.052	0.0861	0.0361	+/-0.0551		pCi/g						
Europium-154	U	-0.0655	+/-0.162	0.289	0.126	+/-0.165		pCi/g						
Lead-212		0.832	+/-0.174	0.169	0.0803	+/-0.191		pCi/g						
Lead-214		0.815	+/-0.223	0.195	0.0909	+/-0.236		pCi/g						
Potassium-40		12.9	+/-1.59	0.593	0.228	+/-1.93		pCi/g						
Protactinium-231	U	0.505	+/-1.05	1.26	0.593	+/-1.05		pCi/g						
Radium-226		0.529	+/-0.192	0.170	0.0774	+/-0.197		pCi/g						
Radium-228		1.14	+/-0.354	0.265	0.114	+/-0.390		pCi/g						
Thallium-208		0.284	+/-0.0985	0.0937	0.043	+/-0.102		pCi/g						
Tin-126	UI	0.00	+/-0.143	0.200	0.0957	+/-0.145		pCi/g						

**Rad Gas Flow Proportional Counting**

*GFPC, Gross A B, solid "Dry Weight Corrected"*

Alpha		16.8	+/-4.32	3.86	1.59	+/-5.47	4.00	pCi/g		KXB2	01/26/16	1225	1539462	4
Beta		30.8	+/-3.49	2.56	1.15	+/-5.50	10.0	pCi/g						

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## Certificate of Analysis

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

Report Date: February 10, 2016

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.22.R.2  
Sample ID: 389303002

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1202	1537321

### 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	DOE HASL 300, 4.5.2 3/Ga-01-R
4	EPA 900 0/SW846 9310/SM 7110B Modified

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).



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## Certificate of Analysis

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

Report Date: December 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.23.R.1  
 Sample ID: 385070017  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 21.9%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		21.9						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0379	+/-0.295	0.556	0.261	+/-0.296		pCi/g		RXF2	12/03/15	1306	1522383	2
Antimony-125	U	0.000438	+/-0.130	0.250	0.116	+/-0.130		pCi/g						
Bismuth-212		1.73	+/-1.34	1.05	0.457	+/-1.35		pCi/g						
Bismuth-214		0.855	+/-0.189	0.175	0.0786	+/-0.202		pCi/g						
Cesium-137		1.39	+/-0.155	0.116	0.0528	+/-0.192	0.100	pCi/g						
Cobalt-60	U	0.0434	+/-0.0402	0.104	0.0436	+/-0.0449		pCi/g						
Europium-154	UI	0.00	+/-0.168	0.373	0.163	+/-0.192		pCi/g						
Lead-212		1.11	+/-0.130	0.120	0.0563	+/-0.178		pCi/g						
Lead-214		1.16	+/-0.236	0.180	0.0837	+/-0.257		pCi/g						
Potassium-40		14.1	+/-1.82	1.06	0.447	+/-2.22		pCi/g						
Protactinium-231	U	0.407	+/-0.672	1.18	0.553	+/-0.703		pCi/g						
Radium-226		0.855	+/-0.189	0.175	0.0786	+/-0.202		pCi/g						
Radium-228		0.797	+/-0.383	0.355	0.155	+/-0.397		pCi/g						
Thallium-208		0.361	+/-0.104	0.0873	0.0392	+/-0.108		pCi/g						
Tin-126	UI	0.00	+/-0.0769	0.136	0.0659	+/-0.131		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		12.4	+/-3.09	2.55	1.02	+/-3.91	4.00	pCi/g		KXB2	12/02/15	1123	1525757	3
Beta		22.8	+/-3.44	4.23	2.01	+/-4.71	10.0	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	CXC1	11/10/15	1319	1521842

**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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.23.R.1  
Sample ID: 385070017

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 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.23.R.1  
 Sample ID: 385070017  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 21.9%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		21.9						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec. Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0379	+/-0.295	0.556	0.261	+/-0.296		pCi/g		RXF2	12/03/15	1306	1522383	2
Antimony-125	U	0.000438	+/-0.130	0.250	0.116	+/-0.130		pCi/g						
Bismuth-212		1.73	+/-1.34	1.05	0.457	+/-1.35		pCi/g						
Bismuth-214		0.855	+/-0.189	0.175	0.0786	+/-0.202		pCi/g						
Cesium-137		1.39	+/-0.155	0.116	0.0528	+/-0.192	0.100	pCi/g						
Cobalt-60	U	0.0434	+/-0.0402	0.104	0.0436	+/-0.0449		pCi/g						
Europium-154	UI	0.00	+/-0.168	0.373	0.163	+/-0.192		pCi/g						
Lead-212		1.11	+/-0.130	0.120	0.0563	+/-0.178		pCi/g						
Lead-214		1.16	+/-0.236	0.180	0.0837	+/-0.257		pCi/g						
Potassium-40		14.1	+/-1.82	1.06	0.447	+/-2.22		pCi/g						
Protactinium-231	U	0.407	+/-0.672	1.18	0.553	+/-0.703		pCi/g						
Radium-226		0.855	+/-0.189	0.175	0.0786	+/-0.202		pCi/g						
Radium-228		0.797	+/-0.383	0.355	0.155	+/-0.397		pCi/g						
Thallium-208		0.361	+/-0.104	0.0873	0.0392	+/-0.108		pCi/g						
Tin-126	UI	0.00	+/-0.0769	0.136	0.0659	+/-0.131		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		12.4	+/-3.09	2.55	1.02	+/-3.91	4.00	pCi/g		KXB2	12/02/15	1123	1525757	3
Beta		22.8	+/-3.44	4.23	2.01	+/-4.71	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	11/10/15	1319	1521842

**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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.J.23.R.1  
Sample ID: 385070017

Report Date: December 17, 2015

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

Report Date: February 10, 2016

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.23.R.2  
 Sample ID: 389303003  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 14-JAN-16  
 Collector: Client  
 Moisture: 20.6%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		20.6						percent		CXC1	01/14/16	1202	1537321	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.0473	+/-0.305	0.583	0.272	+/-0.306		pCi/g		RXF2	02/05/16	0716	1537551	2
Antimony-125	U	0.0162	+/-0.118	0.222	0.102	+/-0.118		pCi/g						
Bismuth-212	UI	0.00	+/-0.793	1.35	0.617	+/-0.936		pCi/g						
Bismuth-214		0.875	+/-0.175	0.181	0.0828	+/-0.191		pCi/g						
Cesium-137		1.64	+/-0.161	0.0903	0.0408	+/-0.215	0.100	pCi/g						
Cobalt-60	U	0.00501	+/-0.0408	0.086	0.0358	+/-0.0409		pCi/g						
Europium-154	U	-0.0201	+/-0.136	0.265	0.113	+/-0.136		pCi/g						
Lead-212		1.03	+/-0.136	0.131	0.0615	+/-0.160		pCi/g						
Lead-214		0.958	+/-0.241	0.356	0.172	+/-0.254		pCi/g						
Potassium-40		13.7	+/-1.69	0.677	0.269	+/-2.05		pCi/g						
Protactinium-231	UI	0.00	+/-0.851	1.18	0.553	+/-0.866		pCi/g						
Radium-226		0.875	+/-0.175	0.181	0.0828	+/-0.191		pCi/g						
Radium-228		0.921	+/-0.288	0.277	0.120	+/-0.318		pCi/g						
Thallium-208		0.290	+/-0.0749	0.0767	0.0344	+/-0.0791		pCi/g						
Tin-126	U	0.0186	+/-0.156	0.211	0.101	+/-0.157		pCi/g						
<i>Gammasec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.00968	+/-0.302	0.562	0.264	+/-0.302		pCi/g		RXF2	01/18/16	0936	1537548	3
Antimony-125	U	-0.0441	+/-0.115	0.204	0.0934	+/-0.117		pCi/g						
Bismuth-212	UI	0.00	+/-0.929	1.26	0.580	+/-1.01		pCi/g						
Bismuth-214		0.727	+/-0.161	0.144	0.0655	+/-0.172		pCi/g						
Cesium-137		1.79	+/-0.152	0.0824	0.0374	+/-0.208	0.100	pCi/g						
Cobalt-60	U	0.0229	+/-0.0394	0.0864	0.0372	+/-0.0408		pCi/g						
Europium-154	U	-0.0362	+/-0.119	0.222	0.0949	+/-0.120		pCi/g						
Lead-212		0.822	+/-0.181	0.157	0.0748	+/-0.194		pCi/g						
Lead-214		0.785	+/-0.194	0.324	0.157	+/-0.205		pCi/g						
Potassium-40		12.4	+/-1.42	0.760	0.321	+/-1.78		pCi/g						
Protactinium-231	U	0.394	+/-0.870	1.07	0.500	+/-0.874		pCi/g						
Radium-226		0.727	+/-0.161	0.144	0.0655	+/-0.172		pCi/g						
Radium-228		1.00	+/-0.279	0.222	0.0948	+/-0.315		pCi/g						
Thallium-208		0.283	+/-0.0923	0.0789	0.036	+/-0.0952		pCi/g						
Tin-126	UI	0.00	+/-0.116	0.0981	0.0457	+/-0.117		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		14.4	+/-4.45	3.91	1.51	+/-5.22	4.00	pCi/g		JXB7	01/26/16	1140	1539464	4
Beta		24.2	+/-3.26	2.30	1.01	+/-4.71	10.0	pCi/g						

# 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 10, 2016

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.23.R.2  
Sample ID: 389303003

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1202	1537321

### 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	DOE HASL 300, 4.5.2.3/Ga-01-R
4	EPA 900.0/SW846 9310/SM 7110B Modified

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

Report Date: December 4, 2015

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

Client Sample ID: 3.1.24.R.1	Project: MJWC00115
Sample ID: 385070018	Client ID: MJWC001
Matrix: Soil	
Collect Date: 20-OCT-15 15:35	
Receive Date: 05-NOV-15	
Collector: Client	
Moisture: 18%	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Gravimetric Solids</b>												
ASTM D 2216 % Moisture "As Received"												
Moisture		18.0				percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>												
Gammascpec. Gamma, Solid "Dry Weight Corrected"												
Actinium-227	U	0.200	+/-0.247	0.480		pCi/g		RXF2	12/03/15	1306	1522383	2
Antimony-125	U	-0.0283	+/-0.0879	0.161		pCi/g						
Cesium-137		1.65	+/-0.120	0.0529	0.100	pCi/g						
Cobalt-60	U	0.0239	+/-0.031	0.0651		pCi/g						
Europium-154	U	-0.0407	+/-0.110	0.194		pCi/g						
Protactinium-231	U	0.155	+/-0.552	0.897		pCi/g						
Radium-226		0.939	+/-0.133	0.115		pCi/g						
Radium-228		0.868	+/-0.242	0.205		pCi/g						
Tin-126	UI	0.00	+/-0.134	0.128		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		12.4	+/-3.69	3.42	4.00	pCi/g		KXB2	12/02/15	1125	1525757	3
Beta		21.2	+/-3.25	3.39	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	11/10/15	1319	1521842

The following Analytical Methods were performed:

Method	Description	Analyst Comments
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	

**Notes:**

Counting Uncertainty is 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 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.24.R.1  
 Sample ID: 385070018  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 18%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		18.0						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammaspac, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.200	+/-0.247	0.480	0.230	+/-0.264		pCi/g		RXF2	12/03/15	1306	1522383	2
Antimony-125	U	-0.0283	+/-0.0879	0.161	0.0759	+/-0.0888		pCi/g						
Bismuth-212		0.809	+/-0.648	0.762	0.352	+/-0.653		pCi/g						
Bismuth-214		0.939	+/-0.133	0.115	0.0538	+/-0.156		pCi/g						
Cesium-137		1.65	+/-0.120	0.0529	0.0243	+/-0.186	0.100	pCi/g						
Cobalt-60	U	0.0239	+/-0.031	0.0651	0.0293	+/-0.0328		pCi/g						
Europium-154	U	-0.0407	+/-0.110	0.194	0.0881	+/-0.111		pCi/g						
Lead-212		1.01	+/-0.121	0.0984	0.047	+/-0.144		pCi/g						
Lead-214		1.12	+/-0.168	0.121	0.0572	+/-0.190		pCi/g						
Potassium-40		13.7	+/-1.25	0.562	0.250	+/-1.71		pCi/g						
Protactinium-231	U	0.155	+/-0.552	0.897	0.428	+/-0.558		pCi/g						
Radium-226		0.939	+/-0.133	0.115	0.0538	+/-0.156		pCi/g						
Radium-228		0.868	+/-0.242	0.205	0.0936	+/-0.259		pCi/g						
Thallium-208		0.218	+/-0.0745	0.063	0.0296	+/-0.0768		pCi/g						
Tin-126	UI	0.00	+/-0.134	0.128	0.0613	+/-0.135		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A, B, solid "Dry Weight Corrected"</i>														
Alpha		12.4	+/-3.69	3.42	1.37	+/-4.39	4.00	pCi/g		KXB2	12/02/15	1125	1525757	3
Beta		21.2	+/-3.25	3.39	1.56	+/-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	CXC1	11/10/15	1319	1521842

**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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# 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: December 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.24.R.1  
Sample ID: 385070018

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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## Certificate of Analysis

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

Report Date: December 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.24.R.1  
 Sample ID: 385070018  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 05-NOV-15  
 Collector: Client  
 Moisture: 18%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		18.0						percent		CXCI	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.200	+/-0.247	0.480	0.230	+/-0.264		pCi/g		RXF2	12/03/15	1306	1522383	2
Antimony-125	U	-0.0283	+/-0.0879	0.161	0.0759	+/-0.0888		pCi/g						
Bismuth-212		0.809	+/-0.648	0.762	0.352	+/-0.653		pCi/g						
Bismuth-214		0.939	+/-0.133	0.115	0.0538	+/-0.156		pCi/g						
Cesium-137		1.65	+/-0.120	0.0529	0.0243	+/-0.186	0.100	pCi/g						
Cobalt-60	U	0.0239	+/-0.031	0.0651	0.0293	+/-0.0328		pCi/g						
Europium-154	U	-0.0407	+/-0.110	0.194	0.0881	+/-0.111		pCi/g						
Lead-212		1.01	+/-0.121	0.0984	0.047	+/-0.144		pCi/g						
Lead-214		1.12	+/-0.168	0.121	0.0572	+/-0.190		pCi/g						
Potassium-40		13.7	+/-1.25	0.562	0.250	+/-1.71		pCi/g						
Protactinium-231	U	0.155	+/-0.552	0.897	0.428	+/-0.558		pCi/g						
Radium-226		0.939	+/-0.133	0.115	0.0538	+/-0.156		pCi/g						
Radium-228		0.868	+/-0.242	0.205	0.0936	+/-0.259		pCi/g						
Thallium-208		0.218	+/-0.0745	0.063	0.0296	+/-0.0768		pCi/g						
Tin-126	UI	0.00	+/-0.134	0.128	0.0613	+/-0.135		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		12.4	+/-3.69	3.42	1.37	+/-4.39	4.00	pCi/g		KXB2	12/02/15	1125	1525757	3
Beta		21.2	+/-3.25	3.39	1.56	+/-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	CXCI	11/10/15	1319	1521842

**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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# 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: December 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.24.R.1  
Sample ID: 385070018

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 10, 2016

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.24.R.2  
 Sample ID: 389303004  
 Matrix: Soil  
 Collect Date: 20-OCT-15  
 Receive Date: 14-JAN-16  
 Collector: Client  
 Moisture: 19.7%

Project: MJWC00115  
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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**Gravimetric Solids**

*ASTM D 2216 % Moisture "As Received"*

Moisture		19.7						percent		CXC1	01/14/16	1202	1537321	1
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**Rad Gamma Spec Analysis**

*Gamma with Ingrowth "Dry Weight Corrected"*

Actinium-227	U	-0.0852	+/-0.315	0.579	0.269	+/-0.318		pCi/g		RXF2	02/05/16	0719	1537551	2
Antimony-125	U	0.0205	+/-0.128	0.239	0.110	+/-0.128		pCi/g						
Bismuth-212	U	0.402	+/-0.772	1.36	0.620	+/-0.794		pCi/g						
Bismuth-214		0.857	+/-0.198	0.151	0.0675	+/-0.213		pCi/g						
Cesium-137		1.56	+/-0.170	0.096	0.0435	+/-0.220	0.100	pCi/g						
Cobalt-60	U	0.0153	+/-0.053	0.108	0.0468	+/-0.0534		pCi/g						
Europium-154	U	-0.0163	+/-0.130	0.252	0.106	+/-0.130		pCi/g						
Lead-212		1.04	+/-0.144	0.126	0.0588	+/-0.171		pCi/g						
Lead-214		1.15	+/-0.213	0.373	0.180	+/-0.236		pCi/g						
Potassium-40		13.7	+/-1.64	0.392	0.125	+/-2.02		pCi/g						
Protactinium-231	UI	0.00	+/-0.607	1.16	0.542	+/-0.632		pCi/g						
Radium-226		0.857	+/-0.198	0.151	0.0675	+/-0.213		pCi/g						
Radium-228		1.24	+/-0.353	0.339	0.150	+/-0.399		pCi/g						
Thallium-208		0.284	+/-0.109	0.0776	0.0347	+/-0.112		pCi/g						
Tin-126	U	0.0515	+/-0.135	0.206	0.0985	+/-0.136		pCi/g						

*Gammasp. Gamma, Solid "Dry Weight Corrected"*

Actinium-227	U	0.108	+/-0.363	0.655	0.309	+/-0.366		pCi/g		RXF2	01/18/16	0936	1537548	3
Antimony-125	U	-0.0309	+/-0.142	0.257	0.119	+/-0.142		pCi/g						
Bismuth-212	UI	0.00	+/-0.788	1.44	0.659	+/-0.949		pCi/g						
Bismuth-214		0.686	+/-0.211	0.162	0.0731	+/-0.219		pCi/g						
Cesium-137		1.53	+/-0.168	0.100	0.0456	+/-0.209	0.100	pCi/g						
Cobalt-60	U	0.0154	+/-0.0505	0.0934	0.0399	+/-0.051		pCi/g						
Europium-154	U	0.0257	+/-0.135	0.273	0.118	+/-0.136		pCi/g						
Lead-212		0.939	+/-0.144	0.144	0.0679	+/-0.162		pCi/g						
Lead-214		0.801	+/-0.258	0.180	0.0836	+/-0.266		pCi/g						
Potassium-40		13.2	+/-1.56	0.740	0.303	+/-1.95		pCi/g						
Protactinium-231	U	-0.0837	+/-0.838	1.33	0.628	+/-0.839		pCi/g						
Radium-226		0.686	+/-0.211	0.162	0.0731	+/-0.219		pCi/g						
Radium-228		0.732	+/-0.301	0.306	0.135	+/-0.315		pCi/g						
Thallium-208		0.322	+/-0.0872	0.0821	0.0371	+/-0.0913		pCi/g						
Tin-126	UI	0.00	+/-0.213	0.215	0.102	+/-0.215		pCi/g						

**Rad Gas Flow Proportional Counting**

*GFPC, Gross A-B, solid "Dry Weight Corrected"*

Alpha		11.5	+/-3.78	3.87	1.57	+/-4.37	4.00	pCi/g		JXB7	01/26/16	1140	1539464	4
Beta		22.3	+/-3.36	3.35	1.54	+/-4.56	10.0	pCi/g						

# 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.1.24.R.2  
Sample ID: 389303004

Report Date: February 10, 2016

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1202	1537321

### 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	DOE HASL 300, 4.5.2.3/Ga-01-R
4	EPA 900 0/SW846 9310/SM 7110B Modified

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

Report Date: December 4, 2015

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

Client Sample ID: 3.1.24.R.6	Project: MJWC00115
Sample ID: 385070019	Client ID: MJWC001
Matrix: Water	
Collect Date: 20-OCT-15 16:00	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<b>Gammascpec, Gamma, Liquid (Standard List) "As Received"</b>											
Actinium-227	U	-10.6	+/-26.8	47.1		pCi/L		MJH1	11/17/15	0657 1521915	1
Antimony-125	U	0.696	+/-10.5	19.0		pCi/L					
Cesium-137	U	-1.85	+/-4.78	7.89	10.0	pCi/L					
Cobalt-60	U	3.35	+/-4.73	9.47		pCi/L					
Europium-154	U	-5.74	+/-11.7	19.6		pCi/L					
Protactinium-231	U	27.1	+/-51.0	94.5		pCi/L					
Radium-228	U	-16.5	+/-20.6	29.9		pCi/L					
Tin-126	U	4.94	+/-11.4	19.4		pCi/L					
<b>Rad Gas Flow Proportional Counting</b>											
<b>GFPC, Gross A/B, liquid "As Received"</b>											
Alpha	U	-1.8	+/-1.22	3.58	5.00	pCi/L		JXB7	12/03/15	1129 1525771	2
Beta	U	0.222	+/-2.57	4.69	5.00	pCi/L					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	

**Notes:**

Counting Uncertainty is 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 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.24.R.6  
 Sample ID: 385070019  
 Matrix: Water  
 Collect Date: 20-OCT-15  
 Receive Date: 05-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**

*Gammascpec, Gamma, Liquid (Standard List) "As Received"*

Actinium-227	U	-10.6	+/-26.8	47.1	22.3	+/-27.3		pCi/L		MJH1	11/17/15	0657	1521915	1
Antimony-125	U	0.696	+/-10.5	19.0	8.88	+/-10.5		pCi/L						
Bismuth-212	U	44.1	+/-63.5	108	50.0	+/-66.7		pCi/L						
Bismuth-214	UI	0.00	+/-16.8	17.1	8.04	+/-17.5		pCi/L						
Cesium-137	U	-1.85	+/-4.78	7.89	3.66	+/-4.85	10.0	pCi/L						
Cobalt-60	U	3.35	+/-4.73	9.47	4.31	+/-4.98		pCi/L						
Europium-154	U	-5.74	+/-11.7	19.6	8.61	+/-12.0		pCi/L						
Lead-212	U	6.17	+/-9.46	13.5	6.49	+/-9.87		pCi/L						
Lead-214	UI	0.00	+/-12.9	15.2	7.17	+/-13.9		pCi/L						
Potassium-40	U	-46.1	+/-57.9	89.9	40.7	+/-61.7		pCi/L						
Protactinium-231	U	27.1	+/-51.0	94.5	44.8	+/-52.8		pCi/L						
Radium-228	U	-16.5	+/-20.6	29.9	13.8	+/-22.0		pCi/L						
Thallium-208	UI	0.00	+/-7.38	6.70	3.08	+/-7.39		pCi/L						
Tin-126	U	4.94	+/-11.4	19.4	9.30	+/-11.4		pCi/L						

**Rad Gas Flow Proportional Counting**

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

Alpha	U	-1.8	+/-1.22	3.58	1.46	+/-1.22	5.00	pCi/L		JXB7	12/03/15	1129	1525771	2
Beta	U	0.222	+/-2.57	4.69	2.13	+/-2.57	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: December 17, 2015

Contact: Ms. Laurie Losey  
 Project: Soil Radioisotopes

Client Sample ID: 3.1.24.R.6  
 Sample ID: 385070019  
 Matrix: Water  
 Collect Date: 20-OCT-15  
 Receive Date: 05-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

*Gammascpec. Gamma, Liquid (Standard List) "As Received"*

Actinium-227	U	-10.6	+/-26.8	47.1	22.3	+/-27.3		pCi/L		MJH1	11/17/15	0657	1521915	1
Antimony-125	U	0.696	+/-10.5	19.0	8.88	+/-10.5		pCi/L						
Bismuth-212	U	44.1	+/-63.5	108	50.0	+/-66.7		pCi/L						
Bismuth-214	UI	0.00	+/-16.8	17.1	8.04	+/-17.5		pCi/L						
Cesium-137	U	-1.85	+/-4.78	7.89	3.66	+/-4.85	10.0	pCi/L						
Cobalt-60	U	3.35	+/-4.73	9.47	4.31	+/-4.98		pCi/L						
Europium-154	U	-5.74	+/-11.7	19.6	8.61	+/-12.0		pCi/L						
Lead-212	U	6.17	+/-9.46	13.5	6.49	+/-9.87		pCi/L						
Lead-214	UI	0.00	+/-12.9	15.2	7.17	+/-13.9		pCi/L						
Potassium-40	U	-46.1	+/-57.9	89.9	40.7	+/-61.7		pCi/L						
Protactinium-231	U	27.1	+/-51.0	94.5	44.8	+/-52.8		pCi/L						
Radium-228	U	-16.5	+/-20.6	29.9	13.8	+/-22.0		pCi/L						
Thallium-208	UI	0.00	+/-7.38	6.70	3.08	+/-7.39		pCi/L						
Tin-126	U	4.94	+/-11.4	19.4	9.30	+/-11.4		pCi/L						

### Rad Gas Flow Proportional Counting

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

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Beta	U	0.222	+/-2.57	4.69	2.13	+/-2.57	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).