

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 7, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.1
 Sample ID: 387409003
 Matrix: Soil
 Collect Date: 25-NOV-15
 Receive Date: 10-DEC-15
 Collector: Client
 Moisture: 26.7%

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		26.7						percent		LYT1	12/14/15	1204	1530767	1
Rad Gamma Spec Analysis														
<i>Gammascpec. Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0849	+/-0.266	0.475	0.225	+/-0.269		pCi/g		RXF2	01/06/16	0634	1530779	2
Antimony-125	U	0.0407	+/-0.104	0.195	0.0919	+/-0.105		pCi/g						
Bismuth-212	UI	0.00	+/-0.673	1.11	0.520	+/-0.858		pCi/g						
Bismuth-214		0.793	+/-0.148	0.123	0.0572	+/-0.162		pCi/g						
Cesium-137		1.81	+/-0.137	0.0607	0.0279	+/-0.200	0.100	pCi/g						
Cobalt-60	U	-0.00413	+/-0.0458	0.0718	0.0323	+/-0.0458		pCi/g						
Europium-154	U	-0.041	+/-0.132	0.237	0.109	+/-0.133		pCi/g						
Lead-212		1.08	+/-0.117	0.106	0.0504	+/-0.145		pCi/g						
Lead-214		1.03	+/-0.159	0.135	0.0637	+/-0.180		pCi/g						
Potassium-40		15.6	+/-1.31	0.483	0.206	+/-1.88		pCi/g						
Protactinium-231	UI	0.00	+/-0.554	0.812	0.382	+/-0.569		pCi/g						
Radium-226		0.793	+/-0.148	0.123	0.0572	+/-0.162		pCi/g						
Radium-228		1.03	+/-0.243	0.241	0.110	+/-0.293		pCi/g						
Thallium-208		0.280	+/-0.0658	0.0653	0.0304	+/-0.0698		pCi/g						
Tin-126	UI	0.00	+/-0.0891	0.175	0.0843	+/-0.102		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		13.6	+/-4.31	3.97	1.57	+/-5.10	4.00	pCi/g		KXB2	01/04/16	0902	1532751	3
Beta		25.6	+/-4.04	3.82	1.73	+/-5.41	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	LYT1	12/14/15	1204	1530767

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 7, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.1
Sample ID: 387409003

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) 558-8171 - www.gel.com

Certificate of Analysis

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

Report Date: January 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.1
 Sample ID: 387409003
 Matrix: Soil
 Collect Date: 25-NOV-15
 Receive Date: 10-DEC-15
 Collector: Client
 Moisture: 26.7%

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		26.7						percent		LYT1	12/14/15	1204	1530767	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0849	+/-0.266	0.475	0.225	+/-0.269		pCi/g		RXF2	01/06/16	0634	1530779	2
Antimony-125	U	0.0407	+/-0.104	0.195	0.0919	+/-0.105		pCi/g						
Bismuth-212	UI	0.00	+/-0.673	1.11	0.520	+/-0.858		pCi/g						
Bismuth-214		0.793	+/-0.148	0.123	0.0572	+/-0.162		pCi/g						
Cesium-137		1.81	+/-0.137	0.0607	0.0279	+/-0.200	0.100	pCi/g						
Cobalt-60	U	-0.00413	+/-0.0458	0.0718	0.0323	+/-0.0458		pCi/g						
Europium-154	U	-0.041	+/-0.132	0.237	0.109	+/-0.133		pCi/g						
Lead-212		1.08	+/-0.117	0.106	0.0504	+/-0.145		pCi/g						
Lead-214		1.03	+/-0.159	0.135	0.0637	+/-0.180		pCi/g						
Potassium-40		15.6	+/-1.31	0.483	0.206	+/-1.88		pCi/g						
Protactinium-231	UI	0.00	+/-0.554	0.812	0.382	+/-0.569		pCi/g						
Radium-226		0.793	+/-0.148	0.123	0.0572	+/-0.162		pCi/g						
Radium-228		1.03	+/-0.243	0.241	0.110	+/-0.293		pCi/g						
Thallium-208		0.280	+/-0.0658	0.0653	0.0304	+/-0.0698		pCi/g						
Tin-126	UI	0.00	+/-0.0891	0.175	0.0843	+/-0.102		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		13.6	+/-4.31	3.97	1.57	+/-5.10	4.00	pCi/g		KXB2	01/04/16	0902	1532751	3
Beta		25.6	+/-4.04	3.82	1.73	+/-5.41	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	LYT1	12/14/15	1204	1530767

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 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.1
Sample ID: 387409003

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 7, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.2
 Sample ID: 387409004
 Matrix: Soil
 Collect Date: 25-NOV-15
 Receive Date: 10-DEC-15
 Collector: Client
 Moisture: 23.1%

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		23.1						percent		LYT1	12/14/15	1204	1530767	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.0233	+/-0.233	0.453	0.213	+/-0.233		pCi/g		RXF2	01/06/16	0645	1530779	2
Antimony-125	U	-0.0269	+/-0.101	0.184	0.0854	+/-0.102		pCi/g						
Bismuth-212	UI	0.00	+/-0.787	1.35	0.630	+/-1.14		pCi/g						
Bismuth-214		0.752	+/-0.157	0.108	0.0486	+/-0.169		pCi/g						
Cesium-137		0.644	+/-0.101	0.0693	0.0315	+/-0.114	0.100	pCi/g						
Cobalt-60	U	-0.0119	+/-0.0408	0.0639	0.0271	+/-0.0412		pCi/g						
Europium-154	U	-0.0546	+/-0.104	0.187	0.080	+/-0.107		pCi/g						
Lead-212		1.28	+/-0.124	0.103	0.0484	+/-0.214		pCi/g						
Lead-214		1.19	+/-0.162	0.125	0.058	+/-0.199		pCi/g						
Potassium-40		14.5	+/-1.43	0.715	0.309	+/-1.93		pCi/g						
Protactinium-231	UI	0.00	+/-0.759	0.815	0.380	+/-0.796		pCi/g						
Radium-226		0.752	+/-0.157	0.108	0.0486	+/-0.169		pCi/g						
Radium-228		1.11	+/-0.311	0.222	0.0976	+/-0.355		pCi/g						
Thallium-208		0.311	+/-0.0848	0.0599	0.0271	+/-0.0888		pCi/g						
Tin-126	UI	0.00	+/-0.0946	0.0837	0.0398	+/-0.0979		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		14.2	+/-4.64	3.88	1.44	+/-5.36	4.00	pCi/g		KXB2	01/04/16	0902	1532751	3
Beta		18.9	+/-3.61	3.30	1.45	+/-4.34	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	LYT1	12/14/15	1204	1530767

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 900.9/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 7, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.2
Sample ID: 387409004

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 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.2
 Sample ID: 387409004
 Matrix: Soil
 Collect Date: 25-NOV-15
 Receive Date: 10-DEC-15
 Collector: Client
 Moisture: 23.1%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
-----------	-----------	--------	-------------	-----	----	-----	----	-------	----	---------	------	------	-------	------

Gravimetric Solids

ASTM D 2216 % Moisture "As Received"

Moisture		23.1						percent		LYT1	12/14/15	1204	1530767	1
----------	--	------	--	--	--	--	--	---------	--	------	----------	------	---------	---

Rad Gamma Spec Analysis

Gammascpec, Gamma, Solid "Dry Weight Corrected"

Actinium-227	U	0.0233	+/-0.233	0.453	0.213	+/-0.233		pCi/g		RXF2	01/06/16	0645	1530779	2
Antimony-125	U	-0.0269	+/-0.101	0.184	0.0854	+/-0.102		pCi/g						
Bismuth-212	UI	0.00	+/-0.787	1.35	0.630	+/-1.14		pCi/g						
Bismuth-214		0.752	+/-0.157	0.108	0.0486	+/-0.169		pCi/g						
Cesium-137		0.644	+/-0.101	0.0693	0.0315	+/-0.114	0.100	pCi/g						
Cobalt-60	U	-0.0119	+/-0.0408	0.0639	0.0271	+/-0.0412		pCi/g						
Europium-154	U	-0.0546	+/-0.104	0.187	0.080	+/-0.107		pCi/g						
Lead-212		1.28	+/-0.124	0.103	0.0484	+/-0.214		pCi/g						
Lead-214		1.19	+/-0.162	0.125	0.058	+/-0.199		pCi/g						
Potassium-40		14.5	+/-1.43	0.715	0.309	+/-1.93		pCi/g						
Protactinium-231	UI	0.00	+/-0.759	0.815	0.380	+/-0.796		pCi/g						
Radium-226		0.752	+/-0.157	0.108	0.0486	+/-0.169		pCi/g						
Radium-228		1.11	+/-0.311	0.222	0.0976	+/-0.355		pCi/g						
Thallium-208		0.311	+/-0.0848	0.0599	0.0271	+/-0.0888		pCi/g						
Tin-126	UI	0.00	+/-0.0946	0.0837	0.0398	+/-0.0979		pCi/g						

Rad Gas Flow Proportional Counting

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

Alpha		14.2	+/-4.64	3.88	1.44	+/-5.36	4.00	pCi/g		KXB2	01/04/16	0902	1532751	3
Beta		18.9	+/-3.61	3.30	1.45	+/-4.34	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	LYT1	12/14/15	1204	1530767

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 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.4A.R.1.2
Sample ID: 387409004

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).