

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 2, 2011

Company : Pennsylvania Brine Treatment
 Address : 5148 US 322
 Franklin, Pennsylvania 16323
 Contact: Mr. Sparky DeLong
 Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001	Project: PABR00311
Sample ID: 277604001	Client ID: PABR001
Matrix: Water	
Collect Date: 05-MAY-11 05:00	
Receive Date: 06-MAY-11	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	1.34	4.00	ug/L	20	PRB	05/26/11	0455	1099749	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	05/10/11	0730	1099748

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

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Report Date: June 2, 2011

Company : Pennsylvania Brine Treatment
 Address : 5148 US 322

 Franklin, Pennsylvania 16323
 Contact: Mr. Sparky DeLong
 Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001	Project: PABR00311
Sample ID: 277604001	Client ID: PABR001
Matrix: Water	
Collect Date: 05-MAY-11 05:00	
Receive Date: 06-MAY-11	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Liquid (Standard List) "As Received"												
Radium-228	U	5.11	+/-18.7	33.1		pCi/L		KXG3	06/01/11	1043	1102599	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	-74	+/-157	310	5.00	pCi/L		VXC2	06/01/11	1915	1104018	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		17.8	+/-1.65	0.437	1.00	pCi/L		KSD1	05/12/11	1200	1100065	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	



ENVIRONMENTAL
SERVICE LABORATORIES, INC.
1803 Philadelphia St., Indiana, PA 15701
(724) 463-TEST (724) 465-4209

Report of Analysis

Name: Pennsylvania Brine Treatment INC.
Attn: Mr. Steve Davis
5148 US 322
Franklin, Pa 16323

Sample ID#: 11 16822
Sample Type: Waste Water
Sampler: CLIENT (Client)
Client Sample ID: Roadspreading

Sample Start Date: 4/27/2011 8:30 AM
Receipt Date: 5/4/2011 8:24 AM
Report Date: 5/5/2011

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Bromide	AJD	05/04	n/a	2610.00	mg/l	D	D1246-99	100.00

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

D - Indicates an identified compound in an analysis that has been diluted

Approved By:

Laboratory Supervisor

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 17, 2011

Company : Pennsylvania Brine Treatment
 Address : 5148 US 322

 Franklin, Pennsylvania 16323
 Contact: Mr. Sparky DeLong
 Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001	Project: PABR00311
Sample ID: 278547001	Client ID: PABR001
Matrix: Water	
Collect Date: 18-MAY-11 11:30	
Receive Date: 20-MAY-11	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammasec, Gamma, Liquid (Standard List) "As Received"												
Radium-228	U	20.2	+/-22.6	32.6		pCi/L		KXG3	06/13/11	1342	1109035	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	73.2	+/-188	331	5.00	pCi/L		DXF3	06/15/11	1909	1111534	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		88.6	+/-3.73	0.585	1.00	pCi/L		KSD1	05/23/11	1550	1104475	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	

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Certificate of Analysis

Report Date: June 17, 2011

Company : Pennsylvania Brine Treatment
 Address : 5148 US 322

 Franklin, Pennsylvania 16323
 Contact: Mr. Sparky DeLong
 Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001	Project: PABR00311
Sample ID: 278547001	Client ID: PABR001
Matrix: Water	
Collect Date: 18-MAY-11 11:30	
Receive Date: 20-MAY-11	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	1.68	5.00	ug/L	25	SKJ	06/16/11	1522	1104705	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYHI	05/25/11	0930	1104704

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

Report of Analysis

Name: Pennsylvania Brine Treatment INC.
Attn: Mr. Steve Davis
5148 US 322
Franklin, Pa 16323

Sample Start Date: 5/18/2011 5:30 AM
Sample End Date: 5/18/2011 11:30 AM
Receipt Date: 5/19/2011 10:56 AM
Report Date: 5/27/2011

Sample ID#: 11 19090
Sample Type: Waste Water
Sample Source: Comp
Sampler: CLIENT (Client)
Client Sample ID: 203

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Acidity to pH=8.3	BF	05/25	n/a	ND	mg/l as CaCO ₃	n/a	SM2310B	2
Alkalinity to pH=4.5	SR	05/20	n/a	387	mg/l as CaCO ₃	n/a	SM2320B	20
Bromide	AJD	05/23	n/a	2080.00	mg/l	D	D1246-99	100.00
Chloride	BF	05/20	n/a	88687.9	mg/l	n/a	SM4500CIC	5.0
Sulfate ASTM	ZTR	05/23	n/a	ND	mg/l	n/a	D516-02	5
Osmotic Pressure	LL	05/24	n/a	3980	mOs/kg	n/a	OSP	1000
Total Dissolved Solids (TDS)	LAW	05/24	n/a	186600	mg/l	n/a	SM2540C	25

Comments:

ND=Not Detected

Note: DEP Certification #s 32-00382
D - Indicates an identified compound in an analysis that has been diluted

Approved By: _____

Laboratory Supervisor



Report of Analysis

Name:	Pennsylvania Brine Treatment INC. Attn: Mr. Steve Davis 5148 US 322 Franklin, Pa 16323	Sample ID#:	11 19089
		Sample Type:	Waste Water
		Sample Source:	Comp
Sample Start Date:	5/18/2011 5:30 AM	Sampler:	CLIENT (Client)
Sample End Date:	5/18/2011 11:30 AM	Client Sample ID:	202
Receipt Date:	5/19/2011 10:56 AM		
Report Date:	5/26/2011		

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Barium - ICP	GJT	05/24	n/a	155.429	mg/l	n/a	200.7/6010	0.005
Iron - ICP	GJT	05/23	n/a	0.375	mg/l	n/a	200.7/6010	0.010

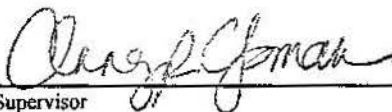
Comments:

ND=Not Detected

Note: DEP Certification #s 32-00382

Approved By: _____

Laboratory Supervisor



Certificate of Analysis

Report Date: June 24, 2011

Company : Pennsylvania Brine Treatment
Address : 5148 US 322

Franklin, Pennsylvania 16323
Contact: Mr. Sparky DeLong
Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001 Project: PABR00311
Sample ID: 279292001 Client ID: PABR001
Matrix: Water
Collect Date: 02-JUN-11 05:00
Receive Date: 03-JUN-11
Collector: Client

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Liquid (Standard List) "As Received"												
Radium-228	U	-7.07	+/-12.8	18.8		pCi/L		KXG3	06/16/11	1123	1109035	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	-15.8	+/-122	231	5.00	pCi/L		CAS2	06/22/11	1415	1110079	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.68	+/-0.519	0.306	1.00	pCi/L		KSDJ	06/20/11	1245	1109688	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	

Certificate of Analysis

Report Date: June 24, 2011

Company : Pennsylvania Brine Treatment
 Address : 5148 US 322
 Franklin, Pennsylvania 16323
 Contact: Mr. Sparky DeLong
 Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001 Project: PABR00311
 Sample ID: 279292001 Client ID: PABR001
 Matrix: Water
 Collect Date: 02-JUN-11 05:00
 Receive Date: 03-JUN-11
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	+/-0.0346	0.670	2.00	ug/L	10 SKJ	06/23/11	0623	1108783	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYHI	06/07/11	0930	1108782

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	



Report of Analysis

Name: Pennsylvania Brine Treatment INC.
Attn: Mr. Steve Davis
5148 US 322
Franklin, Pa 16323

Sample Start Date: 6/1/2011 11:00 PM
Sample End Date: 6/2/2011 5:00 AM
Receipt Date: 6/2/2011 11:05 AM
Report Date: 6/20/2011

Sample ID#: 11 20934
Sample Type: Waste Water
Sample Source: Composite
Sampler: CLIENT (Client)
Client Sample ID: 203

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Acidity to pH=8.3	BF	06/06	n/a	ND	mg/l as CaCO3	n/a	SM2310B	2
Alkalinity to pH=4.5	SR	06/14	n/a	273	mg/l as CaCO3	n/a	SM2320B	20
Bromide	AJD	06/10	n/a	1200.00	mg/l	D	D1246-99	100.00
Chloride	BF	06/17	n/a	59869.7	mg/l	n/a	SM4500CIC	5.0
Sulfate ASTM	ZTR	06/10	n/a	800	mg/l	D	D516-02	250
Osmotic Pressure	LL	06/07	n/a	2990	mOs/kg	n/a	OSP	1000
Total Dissolved Solids (TDS)	BF	06/09	n/a	130100	mg/l	n/a	SM2540C	25

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382
D - Indicates an identified compound in an analysis that has been diluted

Approved By:

Laboratory Supervisor

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 24, 2011

Company : Pennsylvania Brine Treatment
Address : 5148 US 322

Franklin, Pennsylvania 16323
Contact: Mr. Sparky DeLong
Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001
Sample ID: 279403001
Matrix: Water
Collect Date: 06-JUN-11 16:00
Receive Date: 07-JUN-11
Collector: Client

Project: PABR00311
Client ID: PABR001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	+/-0.0281	0.670	2.00	ug/L	10 SKJ	06/23/11	0723	1109616	I

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	06/10/11	0930	1109615

The following Analytical Methods were performed:

Method	Description	Analyst Comments
I	SW846 3005A/6020A	

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Certificate of Analysis

Report Date: June 24, 2011

Company : Pennsylvania Brine Treatment
Address : 5148 US 322

Contact: Franklin, Pennsylvania 16323
Mr. Sparky DeLong
Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001	Project: PABR00311
Sample ID: 279403001	Client ID: PABR001
Matrix: Water	
Collect Date: 06-JUN-11 16:00	
Receive Date: 07-JUN-11	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Liquid (Standard List) "As Received"												
Radium-228	UI	0.00	+/-22.8	28.1		pCi/L		KXG3	06/22/11	0721	1110967	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	20.3	+/-86.4	160	5.00	pCi/L		CAS2	06/22/11	1415	1110079	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		5.36	+/-0.892	0.452	1.00	pCi/L		KSD1	06/20/11	1245	1109688	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: July 14, 2011

Company : Pennsylvania Brine Treatment
 Address : 5148 US 322

 Franklin, Pennsylvania 16323
 Contact: Mr. Sparky DeLong
 Project: PA Brine Treatment - Josephine Facility

Client Sample ID:	Outfall 001	Project:	PABR00311
Sample ID:	280195001	Client ID:	PABR001
Matrix:	Water		
Collect Date:	14-JUN-11 15:30		
Receive Date:	17-JUN-11		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Liquid (Standard List) "As Received"												
Radium-228	U	11.0	+/-19.8	27.6		pCi/L		KXG3	07/03/11	1327	1116731	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	-77	+/-196	375	5.00	pCi/L		DXF3	06/26/11	1047	1114339	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		3.01	+/-0.674	0.498	1.00	pCi/L		KSD1	07/11/11	1235	1113572	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	



Report of Analysis

Name: Pennsylvania Brine Treatment INC.
Attn: Mr. Steve Davis
5148 US 322
Franklin, Pa 16323

Sample Start Date: 6/14/2011 9:30 AM
Sample End Date: 6/14/2011 3:30 PM
Receipt Date: 6/15/2011 10:34 AM
Report Date: 6/23/2011

Sample ID#: 11 22761
Sample Type: Waste Water
Sample Source: Composite
Sampler: CLIENT (Client)
Client Sample ID: 203

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Acidity to pH=8.3	BF	06/20	n/a	ND	mg/l as CaCO3	n/a	SM2310B	2
Alkalinity to pH=4.5	SR	06/16	n/a	363	mg/l as CaCO3	n/a	SM2320B	20
Bromide	AJD	06/20	n/a	2240.00	mg/l	D	D1246-99	100.00
Chloride	BF	06/17	n/a	84853.3	mg/l	n/a	SM4500CIC	5.0
Sulfate ASTM	ZTR	06/16	n/a	600	mg/l	D	D516-02	125
Osmotic Pressure	LL	06/21	n/a	3810	mOs/kg	n/a	OSP	1000
Total Dissolved Solids (TDS)	LMB	06/20	n/a	181500	mg/l	n/a	SM2540C	25

Comments:

ND=Not Detected

Note: DEP Certification #s 32-00382
D - Indicates an identified compound in an analysis that has been diluted

Approved By: _____

Laboratory Supervisor

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: August 5, 2011

Company : Pennsylvania Brine Treatment
Address : 5148 US 322

Franklin, Pennsylvania 16323
Contact: Mr. Sparky DeLong
Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001
Sample ID: 281631001
Matrix: Water
Collect Date: 06-JUL-11 20:00
Receive Date: 11-JUL-11
Collector: Client

Project: PABR00311
Client ID: PABR001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	0.670	2.00	ug/L	10	SKJ	07/18/11	1529	1120596	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	07/12/11	0900	1120595

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: August 5, 2011

Company : Pennsylvania Brine Treatment
 Address : 5148 US 322
 Franklin, Pennsylvania 16323
 Contact: Mr. Sparky DeLong
 Project: PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001	Project: PABR00311
Sample ID: 281631001	Client ID: PABR001
Matrix: Water	
Collect Date: 06-JUL-11 20:00	
Receive Date: 11-JUL-11	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammaspac, Gamma, Liquid (Standard List) "As Received"												
Radium-228	U	3.94	+/-13.5	23.5		pCi/L		KXG3	07/22/11	1011	1122954	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	36.5	+/-252	455	5.00	pCi/L		CAS2	08/03/11	1226	1121309	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		12.2	+/-1.15	0.216	1.00	pCi/L		KSD1	08/02/11	1200	1121118	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	