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

Certificate of Analysis

Report Date: June 7, 2011

PABR00211

PABR001

Project:

Client ID:

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001

Sample ID:

277902001

Matrix:

Water

Collect Date:

09-MAY-11 16:00

Receive Date:

11-MAY-11

Collector:

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF Analyst	Date	Time	Batch	Method
Rad Gamma Spe	ec Analysis									-	
Gammaspec, Ga	ımma, Liguid (Standa	ard List) '	'As Received"								
Radium-228	UI	0.00	+/-29.7	47.9		pCi/L	KXG3 0	6/01/11	1044	1102599	1
Rad Gas Flow P	roportional Counting										
GFPC, Gross Al	pha Liquid "As Rece	eived"									
Alpha	Ö. S	1070	+/-370	530	5.00	pCi/L	VXC2 0	6/01/11	1916	1104018	2
Rad Radium-226	6										
Lucas Cell, Ra2	26, liquid "As Receiv	/ed"									
Radium-226		212	+/-4.56	0.411	1.00	µC1/L	KSD1 0	5/18/11	1250	101441	3
The following A	Analytical Methods v	vere perfo	rmed:								
Method	Description	-				An	alyst Comments				
1	EPA 901.1								(2)		
2	EPA 900.0/SV	V846 9310									
3	EPA 903.1 Mc	odified									

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

Certificate of Analysis

Project:

Client ID:

Report Date: June 7, 2011

PABR00211

PABR001

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Franklin Facility

Client Sample ID: Sample ID:

Outfall 001

277902001

Matrix:

Water

Collect Date:

09-MAY-11 16:00

Receive Date:

11-MAY-11

Collector:

Parameter	Qualifier	Result	DL	RL	Units	DF Ar	alyst Date	Time Batch	Method
Metals Analysis-I	CP-MS				N N N N N N N N N N N N N N N N N N N				
SW846 3005A/60	20A Liquid "As Re	ceived"		9					
Uranium	U	ND	1.68	5.00	ug/L	25 BA	J 06/06/11	1344 1101439	1
The following Pre	p Methods were pe	rformed:							
Method	Description		A	nalyst	Date	Time	Prep Batch	h	
SW846 3005A	ICP-MS 3005	A PREP		/Hi	05/16/11	1000	1101437	-	-
The following An	alytical Methods w	ere performed:							
Method	Description				Ana	alyst Comn	nents		
1	SW846 3005A	/6020A		2	CAL DR JW -LWGHRU-1-W.		100 - 100 - 100 COL		10-20-



Microbac Laboratories, Inc.

Erie Division

1962 Wager Road • Erie, PA 16509 • Phone: 814-825-8533 • Fax: 814-825-9254 Cheri Estes, Managing Director • E-mail: erie@microbac.com • http://www.microbac.com

CERTIFICATE OF ANALYSIS

Work Order Number: 11E1652

Pennsylvania Brine Treatment Attn: Elton Delong, Jr. (Sparky)

5148 Us 322

Franklin, PA 16323

Date Reported

05/25/2011

Date Received

05/10/2011 11E1652

Order Number Account Number

000000016369

ANALYSIS



770 mg/L

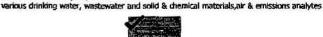
Purchase Order.

Bromide

Subject: Weekly Wastewater Sample

SMP	TEST	METHOD	RESULT UNITS	DATE TIME TECH
Chlorid Solids, Sulfate	Suspended	ASTM D512-89A SM 2540 D SM 4500-SO4 D	ple Time: 15:00 82,000 mg/L <10 mg/L 23 mg/L	05/17/2011 12:00 CAP 05/10/2011 16:05 MAD 05/11/2011 13:40 CMF
02 Oil & G	Grab Sample Sample Date: 05/09/2011 Grease	Sam EPA 1664A	ple Time: 12:30 <5.0 mg/L	05/17/2011 9:00 MAB
Coppe Iron, To Silver		Sam EPA 200.7 EPA 200.7 EPA 200.7	ple Time: 14:25 < 0.100 mg/L < 0.500 mg/L < 0.100 mg/L	05/12/2011 15:54 MWR 05/12/2011 15:54 MWR 05/12/2011 15:54 MWR
04	Composite Sample Sample Date: 05/09/2011	Sam	ple Time: 15:00	

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EPA 300.0





05/12/2011 12:44 OST

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

Certificate of Analysis

Project:

Client ID:

Report Date: June 17, 2011

PABR00211

PABR001

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001

Sample ID:

278665001

Matrix:

Water

Collect Date:

23-MAY-11 16:00

Receive Date:

24-MAY-11

Collector:

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analys	t Date	Time	Batch	Method
Rad Gamma Spe	c Analysis	- 50 5 5 5										
Gammaspec, Gar	mma, Liquid (Stand	ard List) '	'As Received"									
Radium-228	Ü	-1.07	+/-13.7	23.3		pCi/L		KXG3	06/15/11	1636	109035	1
Rad Gas Flow Pi	roportional Counting	3										
GFPC, Gross Al	pha Liquid "As Reco	eived"										
Alpha	υ	-52	+/-93.1	181	5.00	pCi/L		DXF3	06/15/11	1910 1	111534	2
Rad Radium-226	3						140					
Lucas Cell, Ra22	26, liquid "As Recei	ved"										
Radium-226		6.41	+/-0.801	0.198	1.00	pCi/L		KSD1	06/07/11	1455 1	106798	3
The following A	nalytical Methods v	vere perfo	ormed:									
Method	Description		· · · · · · · · ·			An	alyst Co	mments	;			
1	EPA 901.1	W					70.				- 13 - 75	
2	EPA 900.0/SV	V846 9310										
3	EPA 903.1 M	odified										



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Erie Division

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CERTIFICATE OF ANALYSIS

Work Order Number: 11E2911

Pennsylvania Brine Treatment Attn: Elton Delong, Jr. (Sparky) 5148 Us 322 Franklin, PA 16323

Date Reported

06/30/2011

Date Received Order Number

05/24/2011 11E2911

Account Number

000000016369



Purchase Order:

Subject: Weekly Wastewater Sample

ANALYSIS

SMP	TEST	METHOD	RESULT	UNITS	DATE	TIME	TECH	NOTES
01 Cc	omposite Sample							
with a read with a mercia	imple Date: 05/23/20)11 · · · · · · · · · · · · · · · · · ·	Sample Time: 13:	30	M. A		Company Tanàna	
Acidity	SPERIOR & LONGO LA SEPTILIO PERIORE LA CALLA	SM 2310 B	<7.0	mg/L	06/07/11	10.20	CP3	O-04
Alkalinity	As CaCO3	SM 2320B	86	1,75	05/25/11	9:20	CP3	
Chioride		ASTM D512-89A	49,000	mg/L	05/31/11	11:00	CAP	
Solids, D	Dissolved	SM 2540C	110,000	mg/L	05/25/11	16:00	CMF	
Solids, S	Suspended	SM 2540 D	< 10	mg/L	05/24/11	16:25	MAD	
Sutfate		SM 4500-SO4 D	180	mg/L	05/25/11	14:45	CMF	
02 Gr	ab Sample	and months Arabic also shells			778887 - N-277 0 (4) - 15 d			Silver Marie I
Company of the control of the contro	imple Date: 05/23/20	111	Sample Time: 13:	:30		451.0		
Oil & Gre	The state of the s	EPA 1664A	THE POST IN CONTRACT OF	mg/L	06/06/11	7:00	CAP	
SSV2,6 1 ISCUSSO, 1, 10 U.S.O.	DIXTORES ST. CHARTES CHARTES A SERVICE AND A SERVICE		CATALOGUES CONTROL TANGENS AND A	erro. Hesselle va	EST COMERCES	PREMIAN O	20% \S. 4657	Service Company of the Company of th
₩ 03 Cc	omposite Sample		AND THE STATE OF T					100
Sa	imple Date: 05/23/20)11 Barrier (1997)	Sample Time: 13	:30			73.37	and April
Barium	Alleman (Salatan Brasil Marian) Alleman (Salatan Salatan Salat	EPA 200.7	19.1	mg/L	06/06/11	8:45	MWR	AND THE PROPERTY OF THE PARTY O
Copper		EPA 200.7	< 0.100	mg/L	06/01/11	15:36	MWR	
Iron, Tota	al	EPA 200.7	< 0.500	mg/L	06/01/11	15:36	MWR	
Silver		EPA 200.7	< 0.100	mg/L	06/01/11	15:36	MWR	
Strontium	n	EPA 200.7	1,100	mg/L	06/07/11	15:11	MWR	
na co	omposite Sample	ALC:			97 000 000 100 000 000		TT/W	
	imple Date: 05/23/20		Sample Time: 13	:30				
Bromide		EPA 300.0	490	ALDERSON AND THE CO	05/26/11	0:00	OST	William William

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Certificate of Analysis

Project:

Client ID:

Report Date: June 17, 2011

PABR00211

PABR001

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Franklin Facility

Client Sample ID:

Outfall 001

Sample ID:

278665001

24-MAY-11

Matrix:

Water

Collect Date:

23-MAY-11 16:00

Receive Date: Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	DF A	malyst Date	Time Bato	h Method
Metals Analysis-IO	CP-MS								
SW846 3005A/60	20A Liquid "As Re	ceived"		245					
Uranium	U	ND	0.670	2.00	ug/L	10 5	SKJ 06/17/11	0744 110543	5 1
The following Pre	p Methods were pe	erformed:							
Method	Description		A	analyst	Date	Time	Prep Bato	h	
SW846 3005A	ICP-MS 3005	A PREP	В	XAI	05/31/11	1755	1105434		
The following An	alytical Methods v	vere performed:							
Method	Description				Ana	alyst Com	ments		
1	SW846 3005A	/6020A		Comment	(V)	8			15/100/

SW846 3005A/6020A

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

Project:

Client ID:

Certificate of Analysis

Report Date: July 20, 2011

PABR00211

PABR001

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Franklin Facility

Sample ID:

Client Sample ID: Outfall 001 280539001

Matrix:

Water

Collect Date:

22-JUN-11 15:00

Receive Date:

23-JUN-11

Collector:

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analys	Date	Time	Batch	Method
Rad Gamma Spe	c Analysis											
Gammaspec, Gar	mma, Liquid (Standa	ard List)	'As Received"									
Radium-228	Ŭ	1.21	+/-11.3	19.4		pCi/L		KXG3	07/10/11	0950	118487	1
Rad Gas Flow Pr	roportional Counting					5.						
GFPC, Gross Alp	oha Liquid "As Rece	ived"										
Alpha	U	40.3	+/-133	251	5.00	pCi/L		DXF3	7/03/11	1945	1116813	2
Rad Radium-226												
Lucas Cell, Ra22	6, liquid "As Receiv	red"										
Radium-226	. Fi - 5	1.80	+/-0.394	0.205	1.00	pCi/L		KSD1	07/14/11	1150	1116202	3
The following A	nalytical Methods v	ere perfo	rmed:									
Method	Description					Ana	alyst Co	mments				
1	EPA 901.1										30	
2	EPA 900.0/SV	7846 9310										
3	EPA 903.1 Mg	diffied										

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

Certificate of Analysis

Project:

06/27/11

0900

Client ID:

Report Date: July 20, 2011

PABR00211

1115422

PABR001

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Franklin Facility

Client Sample ID:

Outfall 001

Sample ID:

280539001

Matrix: Collect Date: Water

Receive Date:

22-JUN-11 15:00

Collector:

23-JUN-11 Client

Parameter	Qualifier	Result	DL	RL	Units	DF	Analy	st Date	Time	Batch	Method
Metals Analysis-	ICP-MS										
SW846 3005A/66	020A Liquid "As Re	ceived"									
Uranium	U	ND	0.670	2.00	ug/L	10	SKJ	06/28/11	1836	115423	1
The following Pr	ep Methods were pe	rformed:									
Method	Description	l		Analyst	Date	Tim	e P	rep Batch	1		

SW846 3005A ICP-MS 3005A PREP

The following Analytical Methods were performed:

LYH1

 Method
 Description
 Analyst Comments

 1
 Sw846 3005A/6020A



Microbac Laboratories, Inc.

Erie Division

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CERTIFICATE OF ANALYSIS

Work Order Number: 11F2713

Pennsylvania Brine Treatment Attn: Elton Delong, Jr. (Sparky) 5148 Us 322 Franklin, PA 16323

Date Reported Date Received

07/13/2011 06/22/2011

Order Number

11F2713

Account Number

000000016369



Purchase Order:

Subject: Weekly Wastewater Sample

ANALYSIS

SMP	TEST	METHOD	RESULT UNITS	DATE TIME TECH	NOTES
- today " " topped a	Composite Sample Sample Date; 06/22/20	n1	Sample Time: 15:00		
Chloride	C C. A. F. C. STEMPOLIBERGO CO. C.	ASTM D512-89A	55,000 mg/L	06/28/11 14:30 CMF	erine ili - Califor - M
Solids, Su	spended	SM 2540 D	13 mg/L	06/23/11 10:55 CMF	
Decree control	Grab Sample Sample Date: 06/22/20	011 EPA 1664A	Sample Time: 15:00 < 5 mg/L	07/L1/11 7:00 CAP	100 mm 2 mm
\$ 2 1 000 CANORY	Composite Sample Sample Date: 06/22/20	21.1 EPA 200.7	Sample Time: 15:00 <0.0500 mg/L	06/24/11 12:19 ICP	
7 M 2 St	Composite Sample Sample Date: 06/22/20	EPA 300.0	Sample Time: 15:00 510 mg/L	06/24/11 16:52 OST	,

Order Notes

The technician intials "OST" (Outside Testing) indicate that the Bromide analyses were sub-contracted to Microbac Laboratories, Inc./New York Division. PA DEP ID#68-01385. (W.O. 1106595)

All samples received in proper condition and results conform to ISO 17025 unless otherwise noted

Notes and Definitions

UG /KG MG /L 10 00 UG

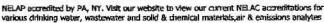
= Milligram per Kilogram (PPM) = Micrograms per Liter (PPB) = Micrograms per Kilogram (PPB) = Milligrams per Liter (PPM) = 1 MG

ND

Bacteria or target analyte not detected
 Colony Forming Unit
 Not detected at or below the reporting limit
 Tentatively identified Compound
 less than (also see "ND")

= Greater than = Estimated, Bacteria count fel outside the method counting range

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Certificate of Analysis

Project:

Client ID:

Report Date: August 5, 2011

PABR00211

PABR001

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001

Sample ID:

281632001

Matrix:

Water

Collect Date:

06-JUL-11 23:08

Receive Date:

11-JUL-11

Collector:

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analys	t Date	Time	Batch	Method
Rad Gamma Spe	ec Analysis								-			
Gammaspec, Ga	mma, Liquid (Standa	ard List)	'As Received"									
Radium-228	U	-2.43	+/-12.7	21.1		pCi/L		KXG3	07/22/11	1011	1122954	I
Rad Gas Flow P	roportional Counting	,				- Ei						
GFPC, Gross Al	pha Liquid "As Rece	eived"										
Alpha	υ	27.8	+/-51.9	94.9	5.00	pCi/L		CAS2	08/03/11	1226	1121309	2
Rad Radium-226	6											
Lucas Cell, Ra2	26, liquid "As Receiv	/ed"										
Radium-226	# 5 S	1.25	+/-0.337	0.257	1.00	pCi/L		K\$D1	08/02/11	1200	1121118	3
The following A	Analytical Methods v	vere perfo	rmed:									
Method	Description					Ana	alyst Co	mments				
1	EPA 901.1											
2	EPA 900.0/SV	V846 9310										
3	EPA 903.1 M	odified										

Project:

Client ID:

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

Certificate of Analysis

Report Date: August 5, 2011

PABR00211

PABR001

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

Client Sample ID:

PA Brine Treatment - Franklin Facility

Sample ID:

Outfall 001

281632001

Matrix:

Water

Collect Date:

06-JUL-11 23:08

Receive Date:

11-JUL-11

Collector:

Parameter	Qualifier	Result	DL	RL	Units	DF	Analys	t Date	Time	Batch	Method
Metals Analysis-IC	CP-MS										
SW846 3005A/602	20A Liquid "As Re	eceived"									
Uranium	Ū	ND	0.670	2.00	ug/L	10	SKJ	07/18/11	2145	1121184	1
The following Pre	p Methods were pe	erformed:									
Method	Description	1		Analyst	Date	Tim	e Pro	ep Batel	h	*	
SW846 3005A	ICP-MS 3005	A PREP		LYHI	07/14/11	0930	112	1183			
The following An	alytical Methods v	vere performed:									
Method	Description				An	alyst Co	mments				78.
1	SW846 3005/	/6020A				4.00			. 02		1 = 180 = -30



Microbac Laboratories, Inc.

Erie Division

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CERTIFICATE OF ANALYSIS

Work Order Number: 11G2497

Pennsylvania Brine Treatment Attn: Elton Delong, Jr. (Sparky) 5148 Us 322

Franklin, PA 16323

Date Reported Date Received 07/31/2011

Order Number

07/07/2011

Account Number

11G2497 000000016369



Purchase Order:

Subject: Monthly Wastewater Samples

ANALYSIS

SMP	TEST	METHOD	RESULT UNIT	rs date 1	TIME 7	TECH	NOTES
01 (Grab Sample			医坐生 為	1 3	4 4	
200 A C. Company of the Company of t	Sample Date: 07/06/2011	百禄 艾斯伊伊亚二	Sample Time: 7:00				
Oil & Grea	se	EPA 1664A	<5.0 mg/L	07/19/1	7:00	CAP	
02 (Grab Sample					表 杂。	
	Sample Date: 07/06/2011		Sample Time: 7:00	- 4 4 5		1,000	
Barium		EPA 200.7	4.26 mg/L	. 07/11/1	1 19:37	ICP	CALL TO MILE
Copper		EPA 200.7	<0.100 mg/L	. 07/11/1	1 19:35	ICP	
Iron		EPA 200.7	<0.500 mg/l	07/11/1	1 19:35	ICP	
Silver		EPA 200.7	<0.100 mg/l	07/11/1	1 19:35	ICP	
Strontium		EPA 200.7	755 mg/L	07/19/1	1 14:57	MWR	
03 (Grab Sample						
	Sample Date: 07/06/2011		Sample Time: 7:00			ξ de De person	
Acidity		SM 2310 B	11 mg/L	07/20/1	1 13:10	CMF	Carrier and Land
Alkalinity A	s CaCO3	SM 2320B		CaCO3/L 07/20/11	9:00	CMF	
Chloride		ASTM D512-89A	47000 mg/L	07/13/1	1 14:00	CMF	
Solids, Dis	solved	SM 2540C	110000 mg/L	07/12/11	1 13:45	CMF	
Solids, Sus	spended	SM 2540 D	24 mg/I	07/07/1	1 16:30	CMF	
Sulfate		SM 4500-SO4 D	850 mg/1		9:15	CMF	
04 (Grab Sample						
20 A. C.	Sample Date: 107/06/2011		Sample Time: :7:00				
Bromide		EPA 300.0	430 mg/1	07/26/1	1 18:44	OST	otsamue et Escala, Ki

Order Notes

The technician intials "OST" (Outside Testing) indicate that the Bromide analysis were sub-contracted to Microbac Laboratories, Inc./New York Division. PA DEP ID#68-01385. (W.O. 1107213)

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