

Bentonite Performance Minerals, LLC
 Permit 267C – Appendix D
 Supporting Information-2.6



MIDCONTINENT
 TESTING LABORATORIES, LLC

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com

Sample Site: WSL04 S. Pond
 Sampled: 03/23/15 at 01:30 PM
 by Tyler Tetrault
 Sample Matrix: Water

Lab ID#: 20150325108
 Received: 03/24/15 at 11:47 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	95.3	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 03/25/15
pH	7.16	S.U.	1			SM 4500-H+ B	JAM 03/26/15
Total Dissolved Solids	86.0	mg/L	100ml	8.28	50.0	SM 2540 C	TMN 03/25/15
Total Suspended Solids	12.0	mg/L	100ml	1.53	10.0	SM 2540 D	TMN 03/25/15
Turbidity	11.0	NTU	1	0.019	0.200	EPA 180.1	JAM 03/25/15
Non-Metallics							
Bicarbonate	39.3	mg/L	1	0.513	10.0	SM 2320 B	JAM 03/26/15
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 03/26/15
Chloride (Cl-)	1.89	mg/L	1	0.193	0.500	SM 4500-Cl E	BLL 03/26/15
Fluoride	0.256	mg/L	1	0.003	0.050	SM 4500 F-C	GRT 03/25/15
Nitrogen, Ammonia (NH3)	0.079	mg/L	1	0.003	0.050	SM 4500-NH3 D	JAM 03/25/15
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.010	0.050	SM 4500-NO3 F	BLL 03/25/15
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.004	0.050	SM 4500-NO2 B	BLL 03/25/15
Oxygen (O2), Dissolved	9.23	mg/L	100ml			EPA 380.1	KLS 03/24/15
Sulfate (SO4)	< 10.0	mg/L	1	0.679	1.00	SM 4500-SO4 E	BLL 03/25/15
Metals - Dissolved							
Calcium (Ca)	6.34	mg/L	1	0.038	1.00	SM 3111 B	GRT 03/25/15
Magnesium (Mg)	1.87	mg/L	1	0.025	0.500	SM 3111 B	GRT 03/25/15
Potassium (K)	8.58	mg/L	1	0.046	0.500	SM 3111 B	GRT 03/25/15
Sodium (Na)	6.52	mg/L	1	0.147	0.500	SM 3111 B	GRT 03/25/15
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.00062	0.005	EPA 200.8	TNA 03/25/15
Boron (B)	0.083	mg/L	10	0.005	0.020	EPA 200.8	TNA 03/25/15
Cadmium (Cd)	< 0.001	mg/L	10	0.00018	0.001	EPA 200.8	TNA 03/25/15
Chromium (Cr)	< 0.001	mg/L	10	0.00004	0.001	EPA 200.8 DRC	TNA 03/25/15
Molybdenum (Mo)	0.002	mg/L	10	0.00008	0.001	EPA 200.8	TNA 03/25/15
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 03/25/15

BPM 134

Report of Analysis for: **BPM Minerals- Belle Fourche**

Sample Site: **WSL04 S. Pond**

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Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
<u>Anion - Cation Balance</u>							
Anions	0.919	meq/L	1			Calculation	GAM 03/27/15
Anion - Cation Balance	3.08	%	1			Calculation	GAM 03/27/15
Cations	0.978	meq/L	1			Calculation	GAM 03/27/15

Report Approved By:



Report Approved On: 3/27/2015 6:23:20 AM



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Sample Site: **WSL04 S. Pond**
 Sampled: **04/22/14 at 02:45 PM**
 by Jennifer Hartman
 Sample Matrix: **Water**

Lab ID#: **20140425104**
 Received: **04/23/14 at 10:00 AM**
 by Greg McDougall
 Account: **W1372 - BPM Minerals- Belle Fourche**

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	64.4	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 04/25/14
pH	7.10	s.u.	1			SM 4500-H+ B	JAM 04/25/14
Total Dissolved Solids	131	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 04/28/14
Total Suspended Solids	14.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 04/24/14
Turbidity	52.0	NTU	2	0.038	0.400	EPA 180.1	JAM 04/24/14
Non-Metallics							
Bicarbonate	17.6	mg/L	1	0.513	10.0	SM 2320 B	JAM 04/25/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 04/25/14
Chloride (Cl-)	4.61	mg/L	1	0.254	0.500	SM 4500-Cl E	EJF 04/25/14
Fluoride	0.123	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 04/24/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 04/28/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	EJF 04/24/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	EJF 04/24/14
Oxygen (O2), Dissolved	7.45	mg/L	100ml			EPA 380.1	KLS 04/23/14
Sulfate (SO4)	12.0	mg/L	1	0.263	1.00	SM 4500-SO4 E	EJF 04/25/14
Metals - Dissolved							
Calcium (Ca)	3.64	mg/L	1	0.133	1.00	SM 3111 B	GRT 04/25/14
Magnesium (Mg)	1.71	mg/L	1	0.030	0.500	SM 3111 B	GRT 04/28/14
Potassium (K)	5.90	mg/L	1	0.025	0.500	SM 3111 B	GRT 04/28/14
Sodium (Na)	5.06	mg/L	1	0.092	0.500	SM 3111 B	GRT 04/25/14
Metals - Total							
Arsenic (As)	0.007	mg/L	10	0.0006	0.005	EPA 200.8	TNA 04/25/14
Boron (B)	0.239	mg/L	10	0.005	0.020	EPA 200.8	TNA 04/25/14
Cadmium (Cd)	0.005	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Chromium (Cr)	0.004	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 04/25/14
Molybdenum (Mo)	0.005	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 04/25/14

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
<u>Anion - Cation Balance</u>							
Anions	0.675	meq/L	1			Calculation	GAM 04/28/14
Anion - Cation Balance	1.32	%	1			Calculation	GAM 04/28/14
Cations	0.693	meq/L	1			Calculation	GAM 04/28/14

Approved By: 

Approved On: 4/29/2014 8:24:26 AM



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Sample Site: WSL04 S. Pond
 Sampled: 07/17/14 at 10:45 AM
 by Tyler Tetrault
 Sample Matrix: Water

Lab ID#: 20140718304
 Received: 07/17/14 at 01:45 PM
 by Eric Fuehrer
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	79.3	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 07/18/14
pH	7.52	S.U.	1			SM 4500-H+ B	JAM 07/18/14
Total Dissolved Solids	65.0	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 07/18/14
Total Suspended Solids	< 10.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 07/18/14
Turbidity	4.30	NTU	1	0.019	0.200	EPA 180.1	JAM 07/17/14
Non-Metallics							
Bicarbonate	34.3	mg/L	1	0.513	10.0	SM 2320 B	JAM 07/18/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 07/18/14
Chloride (Cl-)	0.540	mg/L	1	0.254	0.500	SM 4500-Cl E	BLL 07/18/14
Fluoride	0.247	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 07/17/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 07/18/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 07/18/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 07/18/14
Oxygen (O2), Dissolved	8.02	mg/L	100ml			EPA 360.1	KLS 07/17/14
Sulfate (SO4)	8.75	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 07/18/14
Metals - Dissolved							
Calcium (Ca)	4.69	mg/L	1	0.133	1.00	SM 3111 B	GRT 07/21/14
Magnesium (Mg)	1.68	mg/L	1	0.030	0.500	SM 3111 B	GRT 07/21/14
Potassium (K)	5.44	mg/L	1	0.025	0.500	SM 3111 B	GRT 07/18/14
Sodium (Na)	6.66	mg/L	1	0.092	0.500	SM 3111 B	GRT 07/18/14
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.0006	0.005	EPA 200.8	TNA 07/18/14
Boron (B)	0.098	mg/L	10	0.005	0.020	EPA 200.8	TNA 07/18/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/18/14
Chromium (Cr)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 07/18/14
Molybdenum (Mo)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/18/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 07/18/14

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	0.799	meq/L	1			Calculation	GAM 07/21/14
Anion - Cation Balance	1.68	%	1			Calculation	GAM 07/21/14
Cations	0.826	meq/L	1			Calculation	GAM 07/21/14

Approved By: 

Approved On: 7/21/2014 3:18:21 PM



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Sample Site: WSL04 S. Pond
 Sampled: 11/06/14 at 11:55 AM
 by Jennifer Hartman
 Sample Matrix: Water

Lab ID#: 20141110210
 Received: 11/07/14 at 11:58 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	138	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 11/10/14
pH	7.42	S.U.	1			SM 4500-H+ B	JAM 11/10/14
Total Dissolved Solids	124	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 11/10/14
Total Suspended Solids	23.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 11/10/14
Turbidity	23.0	NTU	1	0.019	0.200	EPA 180.1	JAM 11/07/14
Non-Metallics							
Bicarbonate	70.1	mg/L	1	0.513	10.0	SM 2320 B	JAM 11/10/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 11/10/14
Chloride (Cl-)	1.24	mg/L	1	0.254	0.500	SM 4500-Cl E	BLL 11/10/14
Fluoride	0.464	mg/L	1	0.004	0.050	SM 4500 F-C	TNA 11/10/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 11/10/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 11/11/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 11/10/14
Oxygen (O2), Dissolved	7.60	mg/L	100ml			EPA 360.1	KLS 11/10/14
Sulfate (SO4)	6.06	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 11/10/14
Metals - Dissolved							
Calcium (Ca)	7.95	mg/L	2	0.265	2.00	SM 3111 B	GRT 11/12/14
Magnesium (Mg)	2.92	mg/L	1	0.030	0.500	SM 3111 B	GRT 11/11/14
Potassium (K)	12.8	mg/L	2	0.050	1.00	SM 3111 B	GRT 11/10/14
Sodium (Na)	9.43	mg/L	1	0.176	0.500	SM 3111 B	GRT 11/10/14
Metals - Total							
Arsenic (As)	0.006	mg/L	10	0.0006	0.005	EPA 200.8	TNA 11/10/14
Boron (B)	0.136	mg/L	10	0.005	0.020	EPA 200.8	TNA 11/10/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Chromium (Cr)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 11/10/14
Molybdenum (Mo)	0.004	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 11/10/14

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	1.34	meq/L	1			Calculation	GAM 11/12/14
Anion - Cation Balance	1.44	%	1			Calculation	GAM 11/12/14
Cations	1.37	meq/L	1			Calculation	GAM 11/12/14

Approved By: 

Approved On: 11/12/2014 1:54:16 PM



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Sample Site: WSL04 E. Pond
 Sampled: 03/23/15 at 12:45 PM
 by Tyler Tetrault
 Sample Matrix: Water

Lab ID#: 20150325107
 Received: 03/24/15 at 11:47 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	140	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 03/25/15
pH	7.40	S.U.	1			SM 4500-H+ B	JAM 03/26/15
Total Dissolved Solids	92.0	mg/L	100ml	8.28	50.0	SM 2540 C	TMN 03/25/15
Total Suspended Solids	42.0	mg/L	100ml	1.53	10.0	SM 2540 D	TMN 03/25/15
Turbidity	24.0	NTU	1	0.019	0.200	EPA 180.1	JAM 03/25/15
Non-Metallics							
Bicarbonate	54.7	mg/L	1	0.513	10.0	SM 2320 B	JAM 03/26/15
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 03/26/15
Chloride (Cl-)	2.36	mg/L	1	0.193	0.500	SM 4500-Cl E	BLL 03/26/15
Fluoride	0.310	mg/L	1	0.003	0.050	SM 4500 F-C	GRT 03/25/15
Nitrogen, Ammonia (NH3)	0.064	mg/L	1	0.003	0.050	SM 4500-NH3 D	JAM 03/25/15
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.010	0.050	SM 4500-NO3 F	BLL 03/25/15
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.004	0.050	SM 4500-NO2 B	BLL 03/25/15
Oxygen (O2), Dissolved	9.24	mg/L	100ml			EPA 360.1	KLS 03/24/15
Sulfate (SO4)	15.7	mg/L	1	0.679	1.00	SM 4500-SO4 E	BLL 03/25/15
Metals - Dissolved							
Calcium (Ca)	7.01	mg/L	1	0.038	1.00	SM 3111 B	GRT 03/25/15
Magnesium (Mg)	2.68	mg/L	1	0.025	0.500	SM 3111 B	GRT 03/25/15
Potassium (K)	6.02	mg/L	1	0.046	0.500	SM 3111 B	GRT 03/25/15
Sodium (Na)	16.3	mg/L	1	0.147	0.500	SM 3111 B	GRT 03/25/15
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.00062	0.005	EPA 200.8	TNA 03/25/15
Boron (B)	0.115	mg/L	10	0.005	0.020	EPA 200.8	TNA 03/25/15
Cadmium (Cd)	< 0.001	mg/L	10	0.00018	0.001	EPA 200.8	TNA 03/25/15
Chromium (Cr)	< 0.001	mg/L	10	0.00004	0.001	EPA 200.8 DRC	TNA 03/25/15
Molybdenum (Mo)	0.001	mg/L	10	0.00008	0.001	EPA 200.8	TNA 03/25/15
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 03/25/15

Report of Analysis for: **BPM Minerals- Belle Fourche**

Sample Site: **WSL04 E. Pond**

Page 2 of 2

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	1.31	meq/L	1			Calculation	GAM 03/27/15
Anion - Cation Balance	4.67	%	1			Calculation	GAM 03/27/15
Cations	1.43	meq/L	1			Calculation	GAM 03/27/15

Report Approved By:



Report Approved On: 3/27/2015 6:23:20 AM



MIDCONTINENT
 TESTING LABORATORIES, INC.

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com


Sample Site: WSL04 E. Pond
 Sampled: 04/22/14 at 02:28 PM
 by Jennifer Hartman
 Sample Matrix: Water

Lab ID#: 20140425103
 Received: 04/23/14 at 10:00 AM
 by Greg McDougall
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	97.7	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 04/25/14
pH	7.09	s.u.	1			SM 4500-H+ B	JAM 04/25/14
Total Dissolved Solids	166	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 04/26/14
Total Suspended Solids	14.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 04/24/14
Turbidity	62.0	NTU	2	0.038	0.400	EPA 180.1	JAM 04/24/14
Non-Metallics							
Bicarbonate	21.3	mg/L	1	0.513	10.0	SM 2320 B	JAM 04/25/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 04/25/14
Chloride (Cl-)	3.80	mg/L	1	0.254	0.500	SM 4500-Cl E	EJF 04/25/14
Fluoride	0.122	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 04/24/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 04/28/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	EJF 04/24/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	EJF 04/24/14
Oxygen (O2), Dissolved	7.21	mg/L	100ml			EPA 380.1	KLS 04/23/14
Sulfate (SO4)	27.3	mg/L	1	0.263	1.00	SM 4500-SO4 E	EJF 04/25/14
Metals - Dissolved							
Calcium (Ca)	5.24	mg/L	1	0.133	1.00	SM 3111 B	GRT 04/25/14
Magnesium (Mg)	2.67	mg/L	1	0.030	0.500	SM 3111 B	GRT 04/28/14
Potassium (K)	5.52	mg/L	1	0.025	0.500	SM 3111 B	GRT 04/28/14
Sodium (Na)	10.2	mg/L	1	0.092	0.500	SM 3111 B	GRT 04/25/14
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.0006	0.005	EPA 200.8	TNA 04/25/14
Boron (B)	0.077	mg/L	10	0.005	0.020	EPA 200.8	TNA 04/25/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Chromium (Cr)	0.006	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 04/25/14
Molybdenum (Mo)	0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 04/25/14

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Anion - Cation Balance							
Anions	1.03	meq/L	1			Calculation	GAM 04/28/14
Anion - Cation Balance	1.65	%	1			Calculation	GAM 04/28/14
Cations	1.07	meq/L	1			Calculation	GAM 04/28/14

Approved By: 

Approved On: 4/29/2014 8:24:26 AM



MIDCONTINENT
 TESTING LABORATORIES, INC.

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com

Sample Site: WSL04 E. Pond
 Sampled: 07/17/14 at 09:45 AM
 by Tyler Tetraut
 Sample Matrix: Water

Lab ID#: 20140718301
 Received: 07/17/14 at 01:45 PM
 by Eric Fuehrer
 Account: W1372 - BPM Minerals- Belle
 Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	107	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 07/18/14
pH	7.85	S.U.	1			SM 4500-H+ B	JAM 07/18/14
Total Dissolved Solids	93.0	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 07/18/14
Total Suspended Solids	< 10.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 07/18/14
Turbidity	7.20	NTU	1	0.019	0.200	EPA 180.1	JAM 07/17/14
Non-Metallics							
Bicarbonate	43.8	mg/L	1	0.513	10.0	SM 2320 B	JAM 07/18/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 07/18/14
Chloride (Cl-)	0.670	mg/L	1	0.254	0.500	SM 4500-Cl E	BLL 07/18/14
Fluoride	0.301	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 07/17/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 07/18/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 07/18/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 07/18/14
Oxygen (O2), Dissolved	7.71	mg/L	100ml			EPA 360.1	KLS 07/17/14
Sulfate (SO4)	15.6	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 07/18/14
Metals - Dissolved							
Calcium (Ca)	5.73	mg/L	1	0.133	1.00	SM 3111 B	GRT 07/18/14
Magnesium (Mg)	1.69	mg/L	1	0.030	0.500	SM 3111 B	GRT 07/21/14
Potassium (K)	3.85	mg/L	1	0.025	0.500	SM 3111 B	GRT 07/18/14
Sodium (Na)	13.5	mg/L	1	0.092	0.500	SM 3111 B	GRT 07/18/14
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.0006	0.005	EPA 200.8	TNA 07/18/14
Boron (B)	0.126	mg/L	10	0.005	0.020	EPA 200.8	TNA 07/18/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/21/14
Chromium (Cr)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 07/18/14
Molybdenum (Mo)	0.003	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/18/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 07/21/14

Report of Analysis for: **BPM Minerals- Belle Fourche**

Sample Site: **WSL04 E. Pond**

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
<u>Anion - Cation Balance</u>							
Anions	1.08	meq/L	1			Calculation	GAM 07/21/14
Anion - Cation Balance	2.65	%	1			Calculation	GAM 07/21/14
Cations	1.14	meq/L	1			Calculation	GAM 07/21/14

Approved By: 

Approved On: 7/21/2014 3:18:21 PM



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 (605) 348-0111 -- www.thechemistrylab.com

Sample Site: WSL04 E. Pond
 Sampled: 11/06/14 at 10:40 AM
 by Jennifer Hartman
 Sample Matrix: Water

Lab ID#: 20141110207
 Received: 11/07/14 at 11:58 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	167	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 11/10/14
pH	7.16	S.U.	1			SM 4500-H+ B	JAM 11/10/14
Total Dissolved Solids	140	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 11/10/14
Total Suspended Solids	50.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 11/10/14
Turbidity	33.0	NTU	1	0.019	0.200	EPA 180.1	JAM 11/07/14
Non-Metallics							
Bicarbonate	72.4	mg/L	1	0.513	10.0	SM 2320 B	JAM 11/10/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 11/10/14
Chloride (Cl-)	2.17	mg/L	1	0.254	0.500	SM 4500-Cl E	BLL 11/10/14
Fluoride	0.427	mg/L	1	0.004	0.050	SM 4500 F-C	TNA 11/10/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 11/10/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 11/11/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 11/10/14
Oxygen (O2), Dissolved	6.64	mg/L	100ml			EPA 360.1	KLS 11/10/14
Sulfate (SO4)	15.8	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 11/10/14
Metals - Dissolved							
Calcium (Ca)	7.67	mg/L	2	0.265	2.00	SM 3111 B	GRT 11/12/14
Magnesium (Mg)	3.01	mg/L	1	0.030	0.500	SM 3111 B	GRT 11/11/14
Potassium (K)	7.04	mg/L	1	0.025	0.500	SM 3111 B	GRT 11/10/14
Sodium (Na)	20.4	mg/L	1	0.176	0.500	SM 3111 B	GRT 11/11/14
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.0006	0.005	EPA 200.8	TNA 11/10/14
Boron (B)	0.145	mg/L	10	0.005	0.020	EPA 200.8	TNA 11/10/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Chromium (Cr)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 11/10/14
Molybdenum (Mo)	0.002	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 11/10/14

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	1.60	meq/L	1			Calculation	GAM 11/12/14
Anion - Cation Balance	3.02	%	1			Calculation	GAM 11/12/14
Cations	1.70	meq/L	1			Calculation	GAM 11/12/14

Approved By: 

Approved On: 11/12/2014 1:54:16 PM



MIDCONTINENT
 TESTING LABORATORIES, INC.

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com

Sample Site: WSL04 W. Pond
 Sampled: 03/23/15 at 01:15 PM
 by Tyler Tetrault
 Sample Matrix: Water

Lab ID#: 20150325109
 Received: 03/24/15 at 11:47 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle
 Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	81.1	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 03/25/15
pH	6.76	S.U.	1			SM 4500-H+ B	JAM 03/26/15
Total Dissolved Solids	177	mg/L	100ml	8.28	50.0	SM 2540 C	TMN 03/25/15
Total Suspended Solids	59.0	mg/L	100ml	1.53	10.0	SM 2540 D	TMN 03/25/15
Turbidity	110	NTU	10	0.191	2.00	EPA 180.1	JAM 03/25/15
Non-Metallics							
Bicarbonate	23.5	mg/L	1	0.513	10.0	SM 2320 B	JAM 03/26/15
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 03/26/15
Chloride (Cl-)	13.9	mg/L	1	0.193	0.500	SM 4500-Cl E	BLL 03/26/15
Fluoride	0.106	mg/L	1	0.003	0.050	SM 4500 F-C	GRT 03/25/15
Nitrogen, Ammonia (NH3)	0.089	mg/L	1	0.003	0.050	SM 4500-NH3 D	JAM 03/25/15
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.010	0.050	SM 4500-NO3 F	BLL 03/25/15
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.004	0.050	SM 4500-NO2 B	BLL 03/25/15
Oxygen (O2), Dissolved	9.03	mg/L	100ml			EPA 360.1	KLS 03/24/15
Sulfate (SO4)	4.97	mg/L	1	0.679	1.00	SM 4500-SO4 E	BLL 03/25/15
Metals - Dissolved							
Calcium (Ca)	3.54	mg/L	1	0.038	1.00	SM 3111 B	GRT 03/25/15
Magnesium (Mg)	1.90	mg/L	1	0.025	0.500	SM 3111 B	GRT 03/25/15
Potassium (K)	10.6	mg/L	2	0.091	1.00	SM 3111 B	GRT 03/25/15
Sodium (Na)	6.28	mg/L	1	0.147	0.500	SM 3111 B	GRT 03/25/15
Metals - Total							
Arsenic (As)	0.008	mg/L	10	0.00062	0.005	EPA 200.8	TNA 03/25/15
Boron (B)	0.102	mg/L	10	0.005	0.020	EPA 200.8	TNA 03/25/15
Cadmium (Cd)	< 0.001	mg/L	10	0.00018	0.001	EPA 200.8	TNA 03/25/15
Chromium (Cr)	< 0.001	mg/L	10	0.00004	0.001	EPA 200.8 DRC	TNA 03/25/15
Molybdenum (Mo)	0.001	mg/L	10	0.00008	0.001	EPA 200.8	TNA 03/25/15
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 03/25/15

Report of Analysis for: **BPM Minerals- Belle Fourche**

Sample Site: **WSL04 W. Pond**

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Anion - Cation Balance							
Anions	0.886	meq/L	1			Calculation	GAM 03/27/15
Anion - Cation Balance	-0.213	%	1			Calculation	GAM 03/27/15
Cations	0.883	meq/L	1			Calculation	GAM 03/27/15

Report Approved By:



Report Approved On: 3/27/2015 6:23:20 AM



2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com


Sample Site: WSL04 W. Pond
 Sampled: 04/22/14 at 02:15 PM
 by Jennifer Hartman
 Sample Matrix: Water

Lab ID#: 20140425102
 Received: 04/23/14 at 10:00 AM
 by Greg McDougall
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	57.6	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 04/25/14
pH	7.08	s.u.	1			SM 4500-H+ B	JAM 04/25/14
Total Dissolved Solids	107	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 04/26/14
Total Suspended Solids	< 10.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 04/24/14
Turbidity	32.0	NTU	1	0.019	0.200	EPA 180.1	JAM 04/24/14
Non-Metallics							
Bicarbonate	14.5	mg/L	1	0.513	10.0	SM 2320 B	JAM 04/25/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 04/25/14
Chloride (Cl-)	4.74	mg/L	1	0.254	0.500	SM 4500-Cl E	EJF 04/25/14
Fluoride	0.063	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 04/24/14
Nitrogen, Ammonia (NH3)	0.077	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 04/28/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	EJF 04/24/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	EJF 04/24/14
Oxygen (O2), Dissolved	7.54	mg/L	100ml			EPA 360.1	KLS 04/23/14
Sulfate (SO4)	7.17	mg/L	1	0.263	1.00	SM 4500-SO4 E	EJF 04/25/14
Metals - Dissolved							
Calcium (Ca)	2.03	mg/L	1	0.133	1.00	SM 3111 B	GRT 04/25/14
Magnesium (Mg)	1.16	mg/L	1	0.030	0.500	SM 3111 B	GRT 04/25/14
Potassium (K)	7.09	mg/L	1	0.025	0.500	SM 3111 B	GRT 04/28/14
Sodium (Na)	3.84	mg/L	1	0.092	0.500	SM 3111 B	GRT 04/28/14
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.0006	0.005	EPA 200.8	TNA 04/25/14
Boron (B)	0.058	mg/L	10	0.005	0.020	EPA 200.8	TNA 04/25/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Chromium (Cr)	0.002	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 04/25/14
Molybdenum (Mo)	0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 04/25/14

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
<u>Anion - Cation Balance</u>							
Anions	0.524	meq/L	1			Calculation	GAM 04/28/14
Anion - Cation Balance	1.99	%	1			Calculation	GAM 04/28/14
Cations	0.545	meq/L	1			Calculation	GAM 04/28/14

Approved By: 

Approved On: 4/29/2014 8:24:26 AM



MIDCONTINENT
 TESTING LABORATORIES, INC

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 -- www.thechemistrylab.com


Sample Site: WSL04 W. Pond
 Sampled: 07/17/14 at 10:15 AM
 by Tyler Tetrault
 Sample Matrix: Water

Lab ID#: 20140718303
 Received: 07/17/14 at 01:45 PM
 by Eric Fuehrer
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	68.6	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 07/18/14
pH	6.90	S.U.	1			SM 4500-H+ B	JAM 07/18/14
Total Dissolved Solids	133	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 07/18/14
Total Suspended Solids	21.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 07/18/14
Turbidity	46.0	NTU	2	0.038	0.400	EPA 180.1	JAM 07/17/14
Non-Metallics							
Bicarbonate	19.8	mg/L	1	0.513	10.0	SM 2320 B	JAM 07/18/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 07/18/14
Chloride (Cl-)	6.10	mg/L	1	0.254	0.500	SM 4500-Cl E	BLL 07/18/14
Fluoride	0.158	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 07/17/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 07/18/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 07/18/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 07/18/14
Oxygen (O2), Dissolved	7.40	mg/L	100ml			EPA 360.1	KLS 07/17/14
Sulfate (SO4)	7.48	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 07/18/14
Metals - Dissolved							
Calcium (Ca)	1.76	mg/L	1	0.133	1.00	SM 3111 B	GRT 07/18/14
Magnesium (Mg)	1.15	mg/L	1	0.030	0.500	SM 3111 B	GRT 07/21/14
Potassium (K)	9.67	mg/L	1	0.025	0.500	SM 3111 B	GRT 07/18/14
Sodium (Na)	5.85	mg/L	1	0.092	0.500	SM 3111 B	GRT 07/18/14
Metals - Total							
Arsenic (As)	0.008	mg/L	10	0.0006	0.005	EPA 200.8	TNA 07/18/14
Boron (B)	0.101	mg/L	10	0.005	0.020	EPA 200.8	TNA 07/18/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/18/14
Chromium (Cr)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 07/18/14
Molybdenum (Mo)	0.002	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/18/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 07/18/14

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	0.713	meq/L	1			Calculation	GAM 07/21/14
Anion - Cation Balance	-0.924	%	1			Calculation	GAM 07/21/14
Cations	0.700	meq/L	1			Calculation	GAM 07/21/14

Approved By: 

Approved On: 7/21/2014 3:18:21 PM



2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 -- www.thechemistrylab.com

Sample Site: WSL04 W. Pond
 Sampled: 11/06/14 at 11:30 AM
 by Jennifer Hartman
 Sample Matrix: Water

Lab ID#: 20141110209
 Received: 11/07/14 at 11:58 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	103	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 11/10/14
pH	6.54	S.U.	1			SM 4500-H+ B	JAM 11/10/14
Total Dissolved Solids	478	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 11/10/14
Total Suspended Solids	191	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 11/10/14
Turbidity	425	NTU	25	0.477	5.00	EPA 180.1	JAM 11/07/14
Non-Metallics							
Bicarbonate	29.3	mg/L	1	0.513	10.0	SM 2320 B	JAM 11/10/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 11/10/14
Chloride (Cl-)	26.8	mg/L	4	1.02	2.00	SM 4500-Cl E	BLL 11/10/14
Fluoride	0.143	mg/L	1	0.004	0.050	SM 4500 F-C	TNA 11/10/14
Nitrogen, Ammonia (NH3)	0.707	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 11/10/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 11/11/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 11/10/14
Oxygen (O2), Dissolved	5.68	mg/L	100ml			EPA 360.1	KLS 11/10/14
Sulfate (SO4)	13.4	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 11/10/14
Metals - Dissolved							
Calcium (Ca)	5.51	mg/L	1	0.133	1.00	SM 3111 B	GRT 11/10/14
Magnesium (Mg)	4.62	mg/L	1	0.030	0.500	SM 3111 B	GRT 11/10/14
Potassium (K)	15.9	mg/L	3	0.075	1.50	SM 3111 B	GRT 11/10/14
Sodium (Na)	8.40	mg/L	1	0.176	0.500	SM 3111 B	GRT 11/12/14
Metals - Total							
Arsenic (As)	0.019	mg/L	10	0.0006	0.005	EPA 200.8	TNA 11/10/14
Boron (B)	0.158	mg/L	10	0.005	0.020	EPA 200.8	TNA 11/10/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Chromium (Cr)	0.009	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 11/10/14
Molybdenum (Mo)	0.005	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 11/10/14

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	1.52	meq/L	1			Calculation	GAM 11/12/14
Anion - Cation Balance	-1.90	%	1			Calculation	GAM 11/12/14
Cations	1.47	meq/L	1			Calculation	GAM 11/12/14

Approved By: 

Approved On: 11/12/2014 1:54:16 PM



MIDCONTINENT
 TESTING LABORATORIES, INC.

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com

Sample Site: WSL04 N. Pond
 Sampled: 03/23/15 at 01:00 PM
 by Tyler Tetrault
 Sample Matrix: Water

Lab ID#: 20150325106
 Received: 03/24/15 at 11:47 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle
 Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	134	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 03/25/15
pH	7.00	S.U.	1			SM 4500-H+ B	JAM 03/26/15
Total Dissolved Solids	127	mg/L	100ml	8.28	50.0	SM 2540 C	TMN 03/25/15
Total Suspended Solids	34.0	mg/L	100ml	1.53	10.0	SM 2540 D	TMN 03/25/15
Turbidity	29.0	NTU	1	0.019	0.200	EPA 180.1	JAM 03/25/15
Non-Metallics							
Bicarbonate	44.6	mg/L	1	0.513	10.0	SM 2320 B	JAM 03/26/15
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 03/26/15
Chloride (Cl-)	8.36	mg/L	1	0.193	0.500	SM 4500-Cl E	BLL 03/26/15
Fluoride	0.265	mg/L	1	0.003	0.050	SM 4500 F-C	GRT 03/25/15
Nitrogen, Ammonia (NH3)	0.088	mg/L	1	0.003	0.050	SM 4500-NH3 D	JAM 03/25/15
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.010	0.050	SM 4500-NO3 F	BLL 03/25/15
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.004	0.050	SM 4500-NO2 B	BLL 03/25/15
Oxygen (O2), Dissolved	8.91	mg/L	100ml			EPA 360.1	KLS 03/24/15
Sulfate (SO4)	10.2	mg/L	1	0.679	1.00	SM 4500-SO4 E	BLL 03/25/15
Metals - Dissolved							
Calcium (Ca)	6.41	mg/L	1	0.038	1.00	SM 3111 B	GRT 03/25/15
Magnesium (Mg)	2.70	mg/L	1	0.025	0.500	SM 3111 B	GRT 03/25/15
Potassium (K)	11.9	mg/L	2	0.091	1.00	SM 3111 B	GRT 03/25/15
Sodium (Na)	10.4	mg/L	1	0.147	0.500	SM 3111 B	GRT 03/25/15
Metals - Total							
Arsenic (As)	0.007	mg/L	10	0.00062	0.005	EPA 200.8	TNA 03/25/15
Boron (B)	0.122	mg/L	10	0.005	0.020	EPA 200.8	TNA 03/25/15
Cadmium (Cd)	< 0.001	mg/L	10	0.00018	0.001	EPA 200.8	TNA 03/25/15
Chromium (Cr)	< 0.001	mg/L	10	0.00004	0.001	EPA 200.8 DRC	TNA 03/25/15
Molybdenum (Mo)	0.003	mg/L	10	0.00008	0.001	EPA 200.8	TNA 03/25/15
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 03/25/15

Report of Analysis for: **BPM Minerals- Belle Fourche**

Sample Site: **WSL04 N. Pond**

Page 2 of 2

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
<u>Anion - Cation Balance</u>							
Anions	1.19	meq/L	1			Calculation	GAM 03/27/15
Anion - Cation Balance	4.51	%	1			Calculation	GAM 03/27/15
Cations	1.31	meq/L	1			Calculation	GAM 03/27/15

Report Approved By:



Report Approved On: 3/27/2015 6:23:20 AM



2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com

Sample Site: WSL04 N. Pond
 Sampled: 04/22/14 at 01:27 PM
 by Jennifer Hartman
 Sample Matrix: Water

Lab ID#: 20140425101
 Received: 04/23/14 at 10:00 AM
 by Greg McDougall
 Account: W1372 - BPM Minerals- Belle
 Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	106	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 04/25/14
pH	6.65	s.u.	1			SM 4500-H+ B	JAM 04/25/14
Total Dissolved Solids	155	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 04/26/14
Total Suspended Solids	14.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 04/24/14
Turbidity	54.0	NTU	2	0.038	0.400	EPA 180.1	JAM 04/24/14
Non-Metallics							
Bicarbonate	< 10.0	mg/L	1	0.513	10.0	SM 2320 B	JAM 04/25/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 04/25/14
Chloride (Cl-)	3.76	mg/L	1	0.254	0.500	SM 4500-Cl E	EJF 04/25/14
Fluoride	0.121	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 04/24/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 04/28/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	EJF 04/24/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	EJF 04/24/14
Oxygen (O2), Dissolved	7.15	mg/L	100ml			EPA 360.1	KLS 04/23/14
Sulfate (SO4)	36.6	mg/L	1	0.283	1.00	SM 4500-SO4 E	EJF 04/25/14
Metals - Dissolved							
Calcium (Ca)	5.35	mg/L	1	0.133	1.00	SM 3111 B	GRT 04/28/14
Magnesium (Mg)	2.76	mg/L	1	0.030	0.500	SM 3111 B	GRT 04/28/14
Potassium (K)	7.94	mg/L	1	0.025	0.500	SM 3111 B	GRT 04/28/14
Sodium (Na)	7.30	mg/L	1	0.092	0.500	SM 3111 B	GRT 04/28/14
Metals - Total							
Arsenic (As)	< 0.005	mg/L	10	0.0006	0.005	EPA 200.8	TNA 04/25/14
Boron (B)	0.091	mg/L	10	0.005	0.020	EPA 200.8	TNA 04/25/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Chromium (Cr)	0.005	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 04/25/14
Molybdenum (Mo)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 04/25/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 04/25/14

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	1.04	meq/L	1			Calculation	GAM 04/28/14
Anion - Cation Balance	-1.12	%	1			Calculation	GAM 04/28/14
Cations	1.01	meq/L	1			Calculation	GAM 04/28/14

Approved By: _____



Approved On: 4/29/2014 8:24:26 AM



MIDCONTINENT
 TESTING LABORATORIES, INC.

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 -- www.thechemistrylab.com

Sample Site: WSL04 N. Pond
 Sampled: 07/17/14 at 10:00 AM
 by Tyler Tetrault
 Sample Matrix: Water

Lab ID#: 20140718302
 Received: 07/17/14 at 01:45 PM
 by Eric Fuehrer
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	99.0	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 07/18/14
pH	6.75	S.U.	1			SM 4500-H+ B	JAM 07/18/14
Total Dissolved Solids	130	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 07/18/14
Total Suspended Solids	62.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 07/18/14
Turbidity	52.0	NTU	2	0.038	0.400	EPA 180.1	JAM 07/17/14
Non-Metallics							
Bicarbonate	30.7	mg/L	1	0.513	10.0	SM 2320 B	JAM 07/18/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 07/18/14
Chloride (Cl-)	2.97	mg/L	1	0.254	0.500	SM 4500-Cl E	BLL 07/18/14
Fluoride	0.356	mg/L	1	0.004	0.050	SM 4500 F-C	KAC 07/17/14
Nitrogen, Ammonia (NH3)	< 0.050	mg/L	1	0.007	0.050	SM 4500-NH3 D	JAM 07/18/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 07/18/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 07/18/14
Oxygen (O2), Dissolved	7.02	mg/L	100ml			EPA 360.1	KLS 07/17/14
Sulfate (SO4)	16.8	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 07/18/14
Metals - Dissolved							
Calcium (Ca)	3.28	mg/L	1	0.133	1.00	SM 3111 B	GRT 07/18/14
Magnesium (Mg)	1.71	mg/L	1	0.030	0.500	SM 3111 B	GRT 07/21/14
Potassium (K)	10.4	mg/L	2	0.050	1.00	SM 3111 B	GRT 07/18/14
Sodium (Na)	9.58	mg/L	1	0.092	0.500	SM 3111 B	GRT 07/18/14
Metals - Total							
Arsenic (As)	0.009	mg/L	10	0.0006	0.005	EPA 200.8	TNA 07/18/14
Boron (B)	0.139	mg/L	10	0.005	0.020	EPA 200.8	TNA 07/18/14
Cadmium (Cd)	< 0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/18/14
Chromium (Cr)	0.001	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 07/18/14
Molybdenum (Mo)	0.003	mg/L	10	0.0001	0.001	EPA 200.8	TNA 07/18/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 07/18/14

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
<u>Anion - Cation Balance</u>							
Anions	0.955	meq/L	1			Calculation	GAM 07/21/14
Anion - Cation Balance	2.69	%	1			Calculation	GAM 07/21/14
Cations	1.01	meq/L	1			Calculation	GAM 07/21/14

Approved By: 

Approved On: 7/21/2014 3:18:21 PM



2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
 (605) 348-0111 – www.thechemistrylab.com


Sample Site: WSL04 N. Pond
 Sampled: 11/06/14 at 11:00 AM
 by Jennifer Hartman
 Sample Matrix: Water

Lab ID#: 20141110208
 Received: 11/07/14 at 11:58 AM
 by Bobbie Laurenz
 Account: W1372 - BPM Minerals- Belle Fourche

LESLEY ROTH
 BENTONITE PERFORMANCE MINERALS, LLC
 554 US HWY 212
 BELLE FOURCHE, SD 57717

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst/Date
Physical Properties							
Electrical Conductivity	183	µmhos/cm	1	0.237	5.00	SM 2510B	JAM 11/10/14
pH	6.62	S.U.	1			SM 4500-H+ B	JAM 11/10/14
Total Dissolved Solids	679	mg/L	100ml	17.6	50.0	SM 2540 C	TMN 11/10/14
Total Suspended Solids	36.0	mg/L	100ml	3.49	10.0	SM 2540 D	TMN 11/10/14
Turbidity	625	NTU	25	0.477	5.00	EPA 180.1	JAM 11/07/14
Non-Metallics							
Bicarbonate	48.8	mg/L	1	0.513	10.0	SM 2320 B	JAM 11/10/14
Carbonate	0.00	mg/L	1	0.210	5.00	SM 2320 B	JAM 11/10/14
Chloride (Cl-)	37.9	mg/L	10	2.54	5.00	SM 4500-Cl E	BLL 11/10/14
Fluoride	0.381	mg/L	1	0.004	0.050	SM 4500 F-C	TNA 11/10/14
Nitrogen, Ammonia (NH3)	1.78	mg/L	5	0.034	0.250	SM 4500-NH3 D	JAM 11/10/14
Nitrogen, Nitrate (NO3)	< 0.050	mg/L	1	0.014	0.050	SM 4500-NO3 F	BLL 11/11/14
Nitrogen, Nitrite (NO2)	< 0.050	mg/L	1	0.005	0.050	SM 4500-NO2 B	BLL 11/10/14
Oxygen (O2), Dissolved	6.53	mg/L	100ml			EPA 360.1	KLS 11/10/14
Sulfate (SO4)	22.0	mg/L	1	0.263	1.00	SM 4500-SO4 E	BLL 11/10/14
Metals - Dissolved							
Calcium (Ca)	9.47	mg/L	1	0.133	1.00	SM 3111 B	GRT 11/10/14
Magnesium (Mg)	6.69	mg/L	1	0.030	0.500	SM 3111 B	GRT 11/10/14
Potassium (K)	22.3	mg/L	3	0.075	1.50	SM 3111 B	GRT 11/10/14
Sodium (Na)	15.5	mg/L	2	0.352	1.00	SM 3111 B	GRT 11/12/14
Metals - Total							
Arsenic (As)	0.027	mg/L	10	0.0006	0.005	EPA 200.8	TNA 11/10/14
Boron (B)	0.194	mg/L	10	0.005	0.020	EPA 200.8	TNA 11/10/14
Cadmium (Cd)	0.001	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Chromium (Cr)	0.020	mg/L	10	0.0001	0.001	EPA 200.8 DRC	TNA 11/10/14
Molybdenum (Mo)	0.012	mg/L	10	0.0001	0.001	EPA 200.8	TNA 11/10/14
Selenium (Se)	< 0.005	mg/L	10	0.001	0.005	EPA 200.8	TNA 11/10/14

<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Method</u>	<u>Analyst/Date</u>
<u>Anion - Cation Balance</u>							
Anions	2.35	meq/L	1			Calculation	GAM 11/12/14
Anion - Cation Balance	0.445	%	1			Calculation	GAM 11/12/14
Cations	2.37	meq/L	1			Calculation	GAM 11/12/14

Approved By: 

Approved On: 11/12/2014 1:54:16 PM