

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

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AN EQUAL OPPORTUNITY EMPLOYER

Page: 1 of 4

Barry Botnen
UND-Energy & Environmental
15 N. 23rd St.
Grand Forks ND 58201

Report Date: 23 Aug 21
Lab Number: 21-W2932
Work Order #: 82-2129
Account #: 007033
Date Sampled: 13 Aug 21 8:00
Date Received: 13 Aug 21 11:38
Sampled By: Client

Project Name: North Dakota Carbon Safe
Sample Description: NDCS-MPC-WS-2

Temp at Receipt: 9.2C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	13 Aug 21	RAA
pH	* 7.9	units	N/A	SM4500-H+-B-11	13 Aug 21 18:00	RAA
Conductivity (EC)	1296	umhos/cm	N/A	SM2510B-11	13 Aug 21 18:00	RAA
Total Alkalinity	492	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Bicarbonate	492	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Carbonate	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Hydroxide	< 20	mg/l CaCO3	20	SM2320B-11	13 Aug 21 18:00	RAA
Tot Dis Solids(Summation)	792	mg/l	12.5	SM1030-F	20 Aug 21 9:28	Calculated
Percent Sodium of Cations	56.9	%	NA	N/A	19 Aug 21 14:04	Calculated
Total Hardness as CaCO3	293	mg/l	NA	SM2340B-11	19 Aug 21 14:04	Calculated
Hardness in grains/gallon	17.1	gr/gal	NA	SM2340-B	19 Aug 21 14:04	Calculated
Cation Summation	14.9	meq/L	NA	SM1030-F	19 Aug 21 14:06	Calculated
Anion Summation	14.1	meq/L	NA	SM1030-F	20 Aug 21 9:28	Calculated
Percent Error	2.77	%	NA	SM1030-F	20 Aug 21 9:28	Calculated
Sodium Adsorption Ratio	4.93		NA	USDA 20b	19 Aug 21 14:04	Calculated
Bromide	< 0.5 @	mg/l	0.100	EPA 300.0	18 Aug 21 14:58	RMV
Total Organic Carbon	5.4	mg/l	0.5	SM5310C-11	13 Aug 21 21:34	NAS
Dissolved Organic Carbon	5.4	mg/l	0.5	SM5310C-96	13 Aug 21 21:34	NAS
Fluoride	0.29	mg/l	0.10	SM4500-F-C	13 Aug 21 18:00	RAA
Sulfate	191	mg/l	5.00	ASTM D516-11	16 Aug 21 13:53	EV
Chloride	8.8	mg/l	2.0	SM4500-Cl-E-11	16 Aug 21 14:24	SD
Nitrate-Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	20 Aug 21 9:28	EV
Nitrite as N	< 0.2	mg/l	0.20	EPA 353.2	13 Aug 21 14:52	SD
Phosphorus as P - Total	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 10:00	EMS

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix # = Due to concentration of other analytes
! = Due to sample quantity + = Due to internal standard response

CERTIFICATION: ND # ND-00016

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Sample Description: NDCS-MPC-WS-2

Temp at Receipt: 9.2C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Phosphorus as P-Dissolved	< 0.2	mg/l	0.20	EPA 365.1	20 Aug 21 10:00	EMS
Mercury - Total	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 11:43	MDE
Mercury - Dissolved	< 0.0002	mg/l	0.0002	EPA 245.1	18 Aug 21 12:58	MDE
Total Dissolved Solids	838	mg/l	10	USGS I1750-85	13 Aug 21 15:00	RAA
Calcium - Total	68.8	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Magnesium - Total	29.4	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Sodium - Total	194	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Potassium - Total	4.6	mg/l	1.0	6010D	19 Aug 21 12:04	SZ
Lithium - Total	0.051	mg/l	0.020	6010D	17 Aug 21 8:51	SZ
Aluminum - Total	< 0.1	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Iron - Total	0.98	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Silicon - Total	9.15	mg/l	0.10	6010D	17 Aug 21 11:40	SZ
Strontium - Total	1.15	mg/l	0.10	6010D	16 Aug 21 12:31	SZ
Zinc - Total	< 0.05	mg/l	0.05	6010D	16 Aug 21 12:31	SZ
Boron - Total	0.36	mg/l	0.10	6010D	20 Aug 21 10:34	SZ
Calcium - Dissolved	67.6	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Magnesium - Dissolved	28.9	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Sodium - Dissolved	206	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Potassium - Dissolved	4.8	mg/l	1.0	6010D	19 Aug 21 14:04	SZ
Lithium - Dissolved	0.050	mg/l	0.020	6010D	17 Aug 21 9:51	SZ
Aluminum - Dissolved	< 0.1	mg/l	0.10	6010D	19 Aug 21 14:06	MDE
Iron - Dissolved	0.94	mg/l	0.10	6010D	19 Aug 21 14:06	MDE
Silicon - Dissolved	9.12	mg/l	0.10	6010D	17 Aug 21 12:40	SZ
Strontium - Dissolved	1.17	mg/l	0.10	6010D	19 Aug 21 14:06	MDE
Zinc - Dissolved	< 0.05	mg/l	0.05	6010D	19 Aug 21 14:06	MDE

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Temp at Receipt: 9.2C ROI

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Boron - Dissolved	0.38	mg/l	0.10	6010D	20 Aug 21 11:34	SZ
Antimony - Total	< 0.001	mg/l	0.0010	6020B	20 Aug 21 11:16	MDE
Arsenic - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Barium - Total	0.0776	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Beryllium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Cadmium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Chromium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Cobalt - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Copper - Total	0.0029	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Lead - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Manganese - Total	0.1527	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Molybdenum - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Nickel - Total	0.0026	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Selenium - Total	< 0.005	mg/l	0.0050	6020B	20 Aug 21 11:16	MDE
Silver - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Thallium - Total	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 11:16	MDE
Vanadium - Total	< 0.002	mg/l	0.0020	6020B	20 Aug 21 11:16	MDE
Antimony - Dissolved	< 0.001	mg/l	0.0010	6020B	20 Aug 21 12:22	MDE
Arsenic - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Barium - Dissolved	0.0719	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Beryllium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Cadmium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Chromium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Cobalt - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Copper - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

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Project Name: North Dakota Carbon Safe
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	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Lead - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Manganese - Dissolved	0.1232	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Molybdenum - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Nickel - Dissolved	0.0023	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE
Selenium - Dissolved	< 0.005	mg/l	0.0050	6020B	20 Aug 21 12:22	MDE
Silver - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Thallium - Dissolved	< 0.0005	mg/l	0.0005	6020B	20 Aug 21 12:22	MDE
Vanadium - Dissolved	< 0.002	mg/l	0.0020	6020B	20 Aug 21 12:22	MDE

* Holding time exceeded

Approved by:

Claudette K. Carroll

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

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