



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-A
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188572
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	318 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	72.3 ppm	13 Jul 2023	TMM
Ammonium	24.0 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.19 wt. %	7 Aug 2023	BBH
Nitrogen	0.31 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-B
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188573
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	320 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	32.4 ppm	13 Jul 2023	TMM
Ammonium	1.8 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.47 wt. %		
Nitrogen	0.32 wt %		

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-C
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188574
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	319 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	35.5 ppm	13 Jul 2023	TMM
Ammonium	2.5 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.51 wt. %		
Nitrogen	0.32 wt %		

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-D
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188575
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	315 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	41.9 ppm	13 Jul 2023	TMM
Ammonium	1.8 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.51 wt. %		
Nitrogen	0.32 wt %		

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-E
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188576
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	312 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	32.2 ppm	13 Jul 2023	TMM
Ammonium	0.4 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.72 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-F
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188577
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	287 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	36.9 ppm	13 Jul 2023	TMM
Ammonium	1.8 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.67 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-G
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188578
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	302 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	39.6 ppm	13 Jul 2023	TMM
Ammonium	6.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.69 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-H
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188579
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	295 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	41.3 ppm	13 Jul 2023	TMM
Ammonium	3.7 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.67 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B1-I
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188580
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	314 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	28.0 ppm	13 Jul 2023	TMM
Ammonium	3.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.58 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-A
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188581
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	304 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	29.4 ppm	13 Jul 2023	TMM
Ammonium	5.1 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.39 wt. %	7 Aug 2023	BBH
Nitrogen	0.32 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-B
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188582
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	310 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	15.5 ppm	13 Jul 2023	TMM
Ammonium	1.4 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.30 wt. %	7 Aug 2023	BBH
Nitrogen	0.30 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-C
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188583
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	297 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	26.6 ppm	13 Jul 2023	TMM
Ammonium	5.0 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.48 wt. %	7 Aug 2023	BBH
Nitrogen	0.32 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-D
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188584
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	312 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	42.0 ppm	13 Jul 2023	TMM
Ammonium	2.0 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.67 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-E
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188585
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	288 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	35.7 ppm	13 Jul 2023	TMM
Ammonium	2.6 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.61 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-F
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188586
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	304 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	30.9 ppm	13 Jul 2023	TMM
Ammonium	3.1 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.64 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-G
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188587
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	302 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	40.8 ppm	13 Jul 2023	TMM
Ammonium	3.5 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.71 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-H
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188588
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	300 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	36.8 ppm	13 Jul 2023	TMM
Ammonium	4.7 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.73 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B2-I
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188589
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	303 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	32.9 ppm	13 Jul 2023	TMM
Ammonium	1.7 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.67 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-A
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188590
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	292 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	28.3 ppm	13 Jul 2023	TMM
Ammonium	1.0 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.55 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-B
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188591
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	313 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	27.3 ppm	13 Jul 2023	TMM
Ammonium	3.4 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.57 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-C
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188592
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	305 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	28.0 ppm	13 Jul 2023	TMM
Ammonium	1.0 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.69 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-D
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188593
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	307 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	33.5 ppm	13 Jul 2023	TMM
Ammonium	3.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.80 wt. %	7 Aug 2023	BBH
Nitrogen	0.35 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-E
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188594
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	308 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	25.2 ppm	13 Jul 2023	TMM
Ammonium	3.0 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.81 wt. %	7 Aug 2023	BBH
Nitrogen	0.35 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-F
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188595
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	301 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	34.5 ppm	13 Jul 2023	TMM
Ammonium	5.1 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.87 wt. %	7 Aug 2023	BBH
Nitrogen	0.35 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-G
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188596
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	313 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	44.2 ppm	13 Jul 2023	TMM
Ammonium	1.6 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.93 wt. %	7 Aug 2023	BBH
Nitrogen	0.36 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-H
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188597
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	304 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	41.1 ppm	13 Jul 2023	TMM
Ammonium	1.9 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.91 wt. %	7 Aug 2023	BBH
Nitrogen	0.35 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B3-I
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188598
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	306 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	46.9 ppm	13 Jul 2023	TMM
Ammonium	4.9 ppm N-NH4	14 Jul 2023	TMM
Carbon	4.03 wt. %	7 Aug 2023	BBH
Nitrogen	0.37 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-A
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188599
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	299 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	36.3 ppm	13 Jul 2023	TMM
Ammonium	5.5 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.65 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-B
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188600
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	298 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	34.9 ppm	13 Jul 2023	TMM
Ammonium	0.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.63 wt. %	7 Aug 2023	BBH
Nitrogen	0.35 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-C
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188601
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	300 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	43.3 ppm	13 Jul 2023	TMM
Ammonium	1.6 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.63 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-D
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188602
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	305 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	33.6 ppm	13 Jul 2023	TMM
Ammonium	1.1 ppm N-NH4	14 Jul 2023	TMM
Carbon	4.01 wt. %	7 Aug 2023	BBH
Nitrogen	0.36 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-E
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188603
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	308 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	50.4 ppm	13 Jul 2023	TMM
Ammonium	1.5 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.76 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-F
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188604
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	310 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	45.7 ppm	13 Jul 2023	TMM
Ammonium	0.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.89 wt. %	7 Aug 2023	BBH
Nitrogen	0.36 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-G
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188605
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	310 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	54.1 ppm	13 Jul 2023	TMM
Ammonium	0.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	4.05 wt. %	7 Aug 2023	BBH
Nitrogen	0.36 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-H
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188606
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	315 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	57.0 ppm	13 Jul 2023	TMM
Ammonium	6.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	4.04 wt. %	7 Aug 2023	BBH
Nitrogen	0.37 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B4-I
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188607
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	306 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	50.9 ppm	13 Jul 2023	TMM
Ammonium	2.4 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.85 wt. %	7 Aug 2023	BBH
Nitrogen	0.36 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-A
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188608
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	311 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	51.0 ppm	13 Jul 2023	TMM
Ammonium	0.6 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.63 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-B
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188609
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	317 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	31.2 ppm	13 Jul 2023	TMM
Ammonium	1.3 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.66 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-C
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188610
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	318 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	31.6 ppm	13 Jul 2023	TMM
Ammonium	2.9 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.62 wt. %	7 Aug 2023	BBH
Nitrogen	0.32 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-D
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188611
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	294 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	25.3 ppm	13 Jul 2023	TMM
Ammonium	1.7 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.65 wt. %	7 Aug 2023	BBH
Nitrogen	0.34 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-E
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188612
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	295 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	29.5 ppm	13 Jul 2023	TMM
Ammonium	2.0 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.68 wt. %	7 Aug 2023	BBH
Nitrogen	0.33 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-F
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188613
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	305 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	34.9 ppm	13 Jul 2023	TMM
Ammonium	1.5 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.70 wt. %	7 Aug 2023	BBH
Nitrogen	0.35 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-G
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188614
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	306 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	27.7 ppm	13 Jul 2023	TMM
Ammonium	1.9 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.94 wt. %	7 Aug 2023	BBH
Nitrogen	0.35 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-H
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188615
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	306 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	26.8 ppm	13 Jul 2023	TMM
Ammonium	1.6 ppm N-NH4	14 Jul 2023	TMM
Carbon	4.06 wt. %	7 Aug 2023	BBH
Nitrogen	0.36 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.



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

1201 Lincoln Highway ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

NIC JELINSKI
U OF MN - SOIL WATER CLIMATE
439 BORLAUG HALL
1991 UPPER BUFORD CIRCLE
ST PAUL MN 55108-6028

Report Date: 9 Aug 2023
Work Order #: 202311-01723
Account #: 043745
Purchase Order Number: CREDIT CARD

Date Received: 12 Jul 2023

Soil Sample Identification: B5-I
Farmer Name: Cardboard mulch research plots
Field ID: K1E pre-planting
Soil Laboratory Number: 23-A188616
Sample Depth: 0-6

ANALYSES	Results	Date Analyzed	Analyst
Bray-I Phosphorus	308 ppm	13 Jul 2023	TMM
Nitrate-Nitrogen	27.7 ppm	13 Jul 2023	TMM
Ammonium	0.6 ppm N-NH4	14 Jul 2023	TMM
Carbon	3.95 wt. %	7 Aug 2023	BBH
Nitrogen	0.36 wt %	7 Aug 2023	BBH

Analyses done in accordance with NCR-13 Methods. Phosphorus determined colorimetrically.