

Jackson, Hylton [DNR]

From: Jarad Prescott [J.Prescott@trileaf.com]
Sent: Thursday, April 21, 2011 11:43 AM
To: Jackson, Hylton [DNR]
Subject: Northwood Ag - Additional Nitrate Investigation
Attachments: Northwood Ag - Additional Nitrate Investigation Report.pdf

CON 12-15
Doc # 24425

Hylton,

Attached is the report, discussing the additional nitrate investigation that was required following our Phase II investigation. Please review and let us know the direction the DNR would like us to go for any future activities. Please let me know if there are any questions.

Thanks,
Jarad Prescott
Project Manager
Iowa GWP# 2003



ENVIRONMENTAL & PROPERTY CONSULTANTS

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April 7, 2011

Mr. Steve Nielsen
United Suppliers, Inc.
30473 260th Street
Eldora, Iowa 50627

RE: Additional Nitrate Investigation Results
Northwood Ag Products
2106 Central Avenue East
Northwood, Iowa

Mr. Nielsen:

Trileaf Corporation (Trileaf) is pleased to submit the analytical data and summary of observations from the additional nitrate investigation conducted at the Subject Property (Property) in Northwood, Iowa. A site map depicting the location of the boreholes/monitoring wells, analytical results and the soil boring logs are attached.

Statement of Purpose

The purpose of this investigation was to follow up on the findings presented in the January 2011 Phase II Report. During the Phase II investigation, nitrate levels were found to exceed the groundwater statewide standards for nitrates. Following Phase II, the results were submitted to the Iowa Department of Natural Resources (IDNR) for their review.

The IDNR requested a work plan be submitted to delineate the extent of the elevated nitrate levels and try to determine if the elevated nitrates were coming from a source on the Property. A work plan was developed by Trileaf and submitted to the IDNR on February 17, 2011. On March 7, 2011 the IDNR sent a letter stating that they reviewed and agreed with the submitted work plan.

Scope of Work

Receptor Characteristic Verification

As part of the proposed environmental assessment Trileaf created a scaled site map in showing all building structures, operations, monitoring well locations, private well locations, enclosed spaces (above and below ground), topographic relief (general) and surface outfalls to surface water bodies. This map can be found in Appendix 1.

Soil and Groundwater Investigation

Trileaf mobilized an environmental field geologist to the site, to accompany a contracted driller with a hollow stem auger drill capable of drilling and sampling to at least 20 feet below grade surface (bgs). Due to site conditions at the time of field activities, the borings/monitoring wells could only be advanced to 15 feet bgs due to the shallow groundwater and natural sand collapsing into the borings. Trileaf drilled and sampled a total of eight (8) permanent monitoring wells. The locations were selected to allow for the investigation of onsite sources of nitrates (based on soil sampling), and to determine the lateral and vertical extent of nitrates in groundwater (based on groundwater sampling). Locations varied slightly from the work plan, as future development of the Property and access issues with the drill rig dictated the final placement of the wells. The number and placement of monitoring wells are sufficient to determine if on-site or off-site sources exist and to determine if drinking water and non-potable wells in the area are likely to be impacted.

Trileaf collected one (1) soil sample from each soil boring from either the highest PID reading or from the presumed depth of the soil/water interface. Trileaf also collected one groundwater sample from each of the newly installed monitoring wells. In addition to the monitoring wells, water samples will be taken from the two on-site water wells. All soil and groundwater samples were analyzed for Nitrogen (as nitrates).

Upon collection, the soil and groundwater samples were labeled and transported under refrigerated conditions to a state certified laboratory. A chain-of-custody form accompanied the samples to the laboratory.

Subsequent to field activities and receipt of laboratory analyses, Trileaf shall evaluate the data collected and prepare a Phase II assessment report summarizing results of the work outlined in this proposal.

Sampling Procedures

Soil cores were recovered during the borings and were screened in one-foot intervals for total organic vapor concentrations utilizing a photo ionization detector (PID). One soil sample was collected from each borehole, at either the highest PID reading or at the soil/water interface, for analysis. The depths of the soil samples are indicated on the boring logs in Appendix 2. Soil samples were placed in laboratory prepared jars.

A groundwater monitoring well was constructed within each of the borings of two-inch diameter schedule 40 PVC using approximately 5 feet of casing with 10 feet of #10-slot screen (0.010 inch openings) at the base. All monitoring wells were finished as above grade wells, thus having approximately 3 feet of screen above grade to aid in their longevity. The boring log diagrams are included in Appendix 2. Each well was developed by removing 3 well volumes, and the water levels in each monitoring well were allowed to stabilize prior to groundwater sample collection. A new, disposable bailer was utilized to collect the groundwater samples from each well. The groundwater sample was slowly decanted into laboratory prepared sample bottles.

Water samples were also collected from the two on-site private water wells. The south well is still being used for the drinking water at the residence on the Property. The sample from this well was collected before the water entered the water softening system. The north well had been turned off for the winter, so a new disposable bailer was used to collect a water sample from this well. The water samples from both private wells were slowly decanted into laboratory prepared sample bottles.

Both soil and groundwater samples were labeled, placed on ice and taken to Keystone Laboratories, Inc., (Keystone) an Iowa certified laboratory for analysis under standard chain-of-custody protocols. Samples were analyzed for Nitrogen as Nitrates by EPA Method 9056.

Analytical Results for Soil

The soil results were compared against the Iowa Statewide Standards for Contaminants in Soil. The results are tabulated in Table 1.

Table 1: Analytical Results of Soil Samples

Sample Location	Soil Analyte	IDNR Reference Value (Statewide Standard)
	Nitrogen (measured as Nitrates) (mg/kg)	Nitrates (mg/kg)
MW-1	9.1	120,000
MW-2	3.4	
MW-3	<1.0	
MW-4	23.1	
MW-5	1.1	
MW-6	<1.0	
MW-7	1.2	
MW-8	<1.0	

All nitrate concentrations measured in the soil were below the Statewide Standards; however, soil concentrations do increase the closer the samples are to the mixing building/secondary containment. Based on the analytical data, nitrate contaminated soil does not appear to be an issue associated with the Property; however, there does appear to be a source area around the mixing building and secondary containment. Analytical results are included in Appendix 3.

Analytical Results for Groundwater

The groundwater results were compared against the Iowa Statewide Standards for Contaminants in Soil and Groundwater. The results are tabulated in Table 2.

Table 2: Analytical Results of Groundwater Samples

Sample Location	Groundwater Analyte	IDNR Reference Value (Statewide Standard)
	Nitrogen (measured as Nitrates) (mg/L)	Nitrates (mg/L)
MW-1	13.5	10
MW-2	34.2	
MW-3	9.1	
MW-4	59.0	
MW-5	13.1	
MW-6	2.0	
MW-7	4.4	
MW-8	4.0	
North Well	17.1	
South Well	2.6	

All eight monitoring wells and the two on-site private wells were sampled and analyzed for nitrates. As can be seen from the summary in the table, nitrate concentrations exceeded the Iowa Statewide Standards in MW-1, MW-2, MW-4, MW-5 and the North Well. Nitrate concentrations in MW-3 were also very close to the Statewide Standards. Results indicate that there are detectable background concentrations of nitrates in the groundwater; however, the closer the sample is to the mixing building and secondary containment, the higher the nitrate concentrations. These findings directly coincide with the soil concentrations, indicating there is a nitrates source located around the mixing building and secondary containment. Analytical results are included in Appendix 3.

Discussion

Analytical results for groundwater from MW-1, MW-2, MW-4, MW-5 and the North Well exhibited nitrate levels above the Iowa Department of Natural Resources Statewide Standards cleanup values. Therefore, contamination currently located in the subsurface of the Property poses an environmental concern.

Limitations

Trileaf conducted this limited subsurface investigation to obtain additional information regarding nitrate contamination at the above referenced site. The investigation was limited to specific areas of the Property; therefore, contamination in areas that were not investigated may exist. In addition, higher concentrations of analytes may exist elsewhere on the Property, or analytes might exist in the samples that were not detected by the selected laboratory analyses.

Recommendations

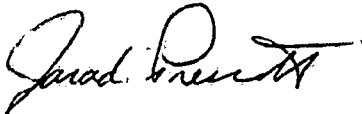
Based on the above discussion, field observations and analytical results, Trileaf recommends the following actions:

- Disconnect the residence from the South Well, and connect to the city's water supply via the new water line run to the Property last fall.
- Place signage in the area of the North and South Well stating the water is for "Non-Potable Uses Only".
- Sample all 8 groundwater monitoring wells and two private wells again in 6 months to determine if concentrations are in a steady or declining state. If concentrations are steady, Trileaf would recommend placing an environmental covenant on the Property restricting the installation of Drinking Water Wells to attempt to clear the site with the Iowa Department of Natural Resources.

Please note that these are strictly Trileaf's recommendations based on Trileaf's professional experience and judgment. Upon review of the IDNR, the state may have additional suggestions or scope for work outside what Trileaf has proposed.

Trileaf appreciated the opportunity to assist with this important project. Should you have any questions, or require additional information, please contact me at (515) 986-5151 or by e-mail at j.prescott@trileaf.com.

Sincerely,
Trileaf Corporation

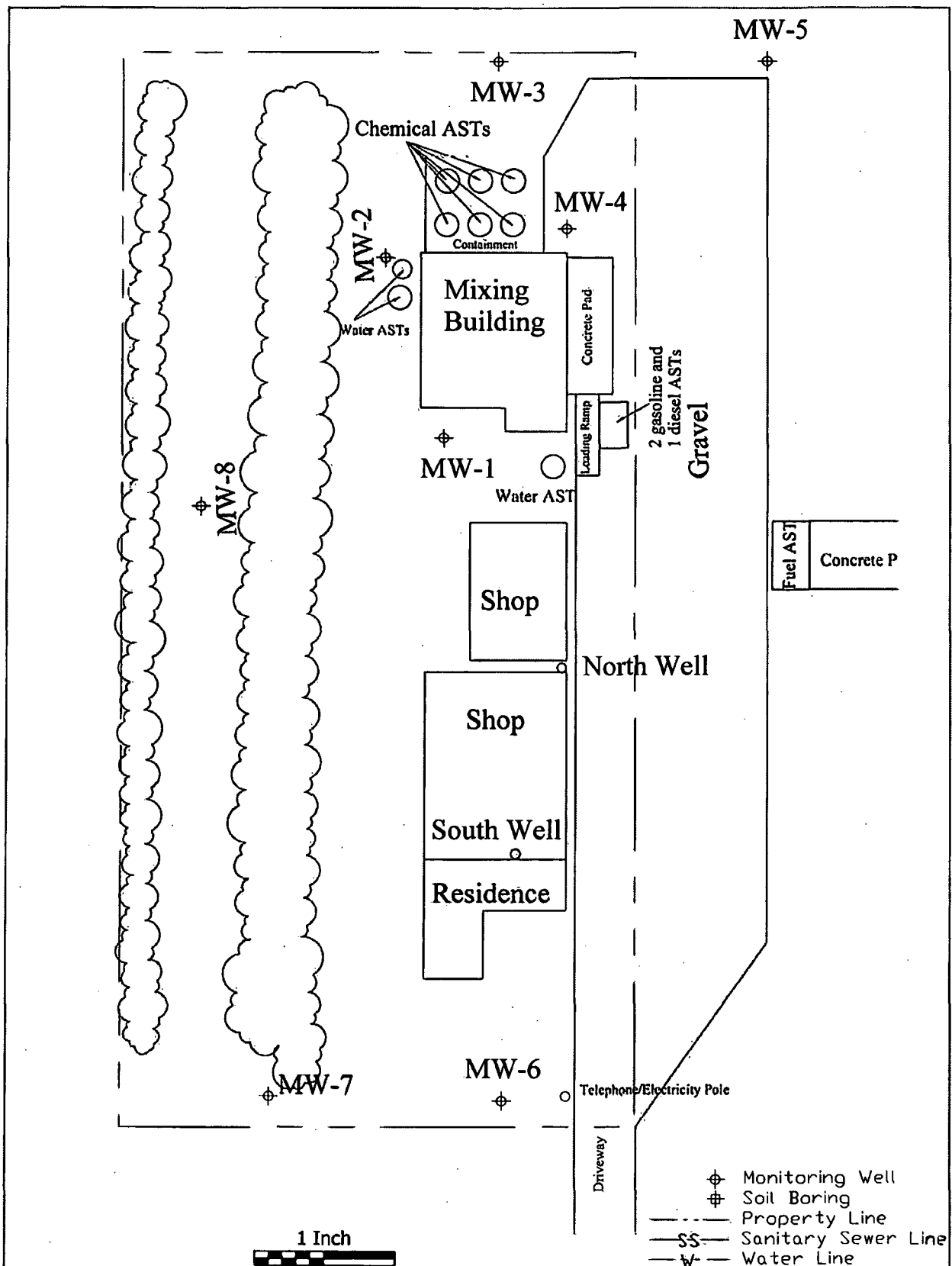


Jarad Prescott
Project Manager
Iowa CGWP# 2003

Enclosures

Cc: Hylton Jackson – Iowa Department of Natural Resources

Appendix 1
Site Map



Scaled Site Plan

Northwood Ag
2106 Central Avenue
Northwood, Iowa

Drawn By: EJM
Scale: 1"=60'
Reviewed By: EJM
Date: 4/6/11

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DWG. #
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Appendix 2
Boring Logs/Monitoring Well Diagrams

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

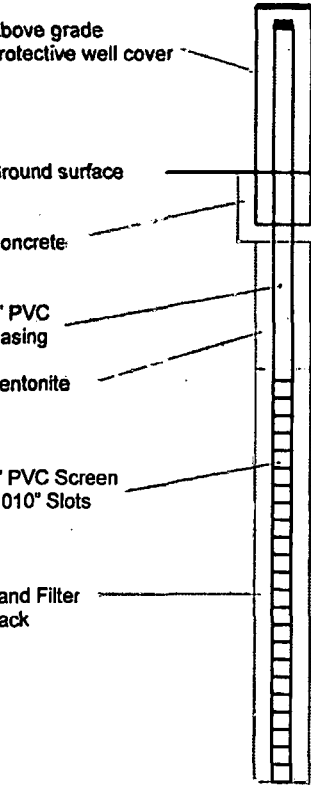
Boring/Well Number: MW-1	Facility Name: Northwood Ag Products	Facility Street Address: 2106 Central Avenue Northwood, IA
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Boring Depth (ft) X Diameter (in): 15' x 8.5"	Drilling Method: HS
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Well Contractor Name: J C Drilling Registration Number: 1986	Logged by: Bryn Hendricks & Eric Mueggenberg
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Ground Surface Elevation (ASL): 100.62 ft	Top of Casing Elevation (ASL): 102.8 ft
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Date: 3-22-11 Start Time: 14:35	Date: 3-22-11 End Time: 15:02	
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Depth (feet)	Well Construction Details	Blow Count if applicable	Sample		PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
			No.	Type*		
0-1		NA	1	SS	0.0	0' – 3' CLAY Very dark brown, with sand (CL)
2			2	SS	0.0	
3v			3	SS	0.0	
4			4	SS	0.0	3' – 10' SAND Brown, fine-coarse, with gravel (SW)
5			5	SS	0.0	
6			6	SS	0.0	
7			7	SS	0.0	10' – 11' SAND Brown, fine-medium (SW)
8			8	SS	0.0	
9			9	SS	1.9	
10			10	SS	1.5	11' – 12' SAND Brown, fine-coarse (SW)
11			11	SS	1.2	
12			12	SS	1.8	
12-13**			13	SS	2.1	12' – 15' SAND Brown, fine-coarse, with gravel (SW)
14			14	SS	1.9	
14-15			15	SS	0.9	
Bottom of Screen: 14.37' below grade						
Bottom of Boring: 15' below grade						

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11				
Water Levels (ASL)	Level:	97.57 ft				
Static Water Level Symbol v	Time:					

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number: MW-2		Facility Name: Northwood Ag Products		Facility Street Address: 2106 Central Avenue Northwood, IA	
Boring Depth (ft) X Diameter (in): 15' x 8.5"				Drilling Method: HS	
Well Contractor Name: J C Drilling				Logged by: Bryn Hendricks	
Registration Number: 1986					
Ground Surface Elevation (ASL): 100.82 ft			Top of Casing Elevation (ASL): 103.04 ft		
Date: 3-22-11		Date: 3-22-11			
Start Time: 14:05		End Time: 14:30			

Depth (feet)	Well Construction Details	Blow Count if applicable	Sample No.	Type*	PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
0-1		NA	1	SS	0.0	0' - 3' CLAY , Dark brown, with sand & gravel (CL)
2			2	SS	0.0	
3			3	SS	0.0	
4			4	SS	0.0	3' - 4' CLAY , Sandy, with gravel (CL)
5v			5	SS	0.0	4' - 10' SAND , Fine-coarse, with gravel (SW)
5-6**			6	SS	0.0	
7			7	SS	0.0	10' - 11' SAND , Fine-medium (SW)
8			8	SS	0.0	
9			9	SS	0.0	11' - 15' SAND , Fine-coarse (SW)
10			10	SS	0.0	
11			11	SS	0.0	
12			12	SS	0.0	
13			13	SS	0.0	
14			14	SS	0.0	
14-15			15	SS	0.0	

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11				
Water Levels (ASL)	Level:	97.62 ft				
Static Water Level Symbol v	Time:					

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

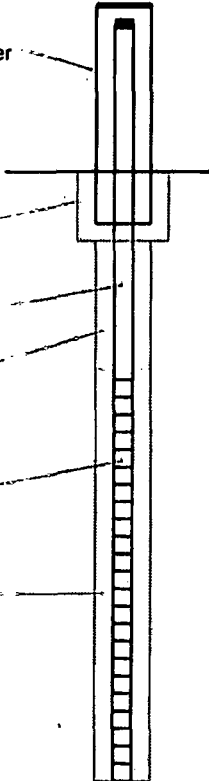
Boring/Well Number: MW-3	Facility Name: Northwood Ag Products	Facility Street Address: 2106 Central Avenue Northwood, IA
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Boring Depth (ft) X Diameter (in): 15' x 8.5"	Drilling Method: HS
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Well Contractor Name: J C Drilling Registration Number: 1986	Logged by: Bryn Hendricks & Eric Mueggenberg
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Ground Surface Elevation (ASL): 100 ft	Top of Casing Elevation (ASL): 103.12 ft
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Date: 3-22-11 Start Time: 15:50	Date: 3-22-11 End Time: 16:30
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Depth (feet)	Well Construction Details	Blow Count if applicable	Sample		PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
			No.	Type*		
0-1		NA	1	SS	0.0	1' – 3' <u>CLAY</u> , Very dark brown, with sand & roots (CL)
2			2	SS	0.0	
3			3	SS	0.0	
3-4v**			4	SS	0.0	3' – 4' <u>CLAY</u> , Light brown, very sandy (CL)
5			5	SS	0.0	
6			6	SS	0.0	4' – 9' <u>SAND</u> , Fine-coarse, trace gravel (SW)
7			7	SS	0.0	
8			8	SS	0.0	
9			9	SS	0.0	9' – 13' <u>SAND</u> , Brown, fine-medium (SW)
10			10	SS	0.0	
11			11	SS	0.0	
12			12	SS	0.0	13' – 15' <u>SAND</u> , Fine-coarse, trace gravel (SW)
13			13	SS	0.0	
14			14	SS	0.0	
14-15			15	SS	0.0	
Water level @ about 3.5'						
Bottom of Screen: 14.03' below grade						
Bottom of Boring: 15' below grade						

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11				
Water Levels (ASL)	Level:	97.57 ft				
Static Water Level Symbol v	Time:					

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number: MW-4		Facility Name: Northwood Ag Products		Facility Street Address: 2106 Central Avenue Northwood, IA	
Boring Depth (ft) X Diameter (in): 15' x 8.5"				Drilling Method: HS	
Well Contractor Name: J C Drilling				Logged by:	
Registration Number: 1986				Bryn Hendricks & Eric Mueggenberg	
Ground Surface Elevation (ASL): 101.07 ft			Top of Casing Elevation (ASL): 103.28 ft		
Date: 3-22-11		Date: 3-22-11			
Start Time: 15:15		End Time: 15:45			

Depth (feet)	Well Construction Details	Blow Count if applicable	Sample No. Type*	PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
0-1		NA	1 SS	0.0	0' - 2' CLAY Dark brown, with sand (CL)
2			2 SS	0.0	
3			3 SS	0.0	2' - 3' CLAY , Brown, very sandy (CL)
4			4 SS	0.0	
4-5v**			5 SS	0.0	3' - 4' CLAY , Brown-gray, with sand (CL)
6			6 SS	0.0	
7			7 SS	0.0	
8			8 SS	0.0	4' - 15' SAND , Brown, fine-coarse, with gravel (SW)
9			9 SS	0.0	
10			10 SS	0.0	
11			11 SS	0.0	
12			12 SS	0.0	
13			13 SS	0.0	
14			14 SS	0.0	
14-15			15 SS	0.0	
Water level @ about 4.5' Bottom of Screen: 14.77' below grade Bottom of Boring: 15' below grade					

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11				
Water Levels (ASL)	Level:	97.52 ft				
Static Water Level Symbol v	Time:					

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

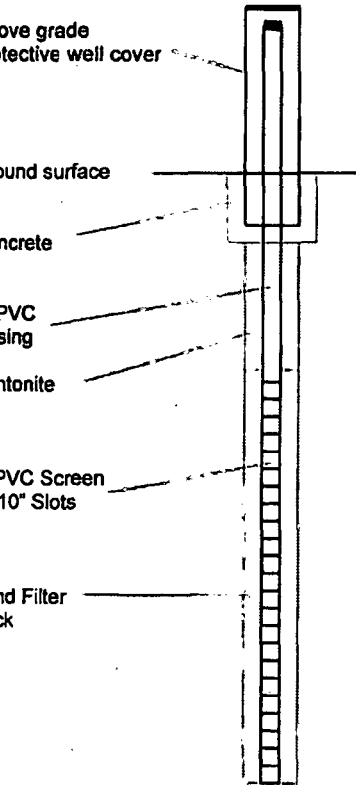
Boring/Well Number: MW-5	Facility Name: Northwood Ag Products	Facility Street Address: 2106 Central Avenue Northwood, IA
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Boring Depth (ft) X Diameter (in): 15' x 8.5"	Drilling Method: HS
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Well Contractor Name: J C Drilling Registration Number: 1986	Logged by: Bryn Hendricks & Eric Mueggenberg
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Ground Surface Elevation (ASL): 100.67 ft	Top of Casing Elevation (ASL): 102.94 ft
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Date: 3-22-11 Start Time: 16:40	Date: 3-23-11 End Time: 8:30	
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Depth (feet)	Well Construction Details	Blow Count if applicable	Sample		PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
			No.	Type*		
0-1		NA	1	SS	0.0	0' - 2' CLAY , Very dark brown, with sand (CL)
2			2	SS	0.0	
3			3	SS	0.0	2' - 4' CLAY , Brown, very sandy (CL)
3-4v**			4	SS	0.0	
5			5	SS	0.0	4' - 15' SAND , Fine-coarse, trace gravel (SW)
6			6	SS	0.0	
7			7	SS	0.0	
8			8	SS	0.0	
9			9	SS	0.0	
10			10	SS	0.0	Storm came with lightning; drilling was discontinued until following morning.
11			11	SS	0.0	
12			12	SS	0.0	
13			13	SS	0.0	
14			14	SS	0.0	
14-15			15	SS	0.0	
Water level @ about 3.5'						
Bottom of Screen:						
13.18' below grade						
Bottom of Boring: 15' below grade						

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11				
Water Levels (ASL)	Level:	97.5 ft				
Static Water Level Symbol v	Time:					

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number: MW-6		Facility Name: Northwood Ag Products		Facility Street Address: 2106 Central Avenue Northwood, IA	
Boring Depth (ft) X Diameter (in): 15' x 8.5"				Drilling Method: HS	
Well Contractor Name: J C Drilling				Logged by:	
Registration Number: 1986				Bryn Hendricks & Eric Mueggenberg	
Ground Surface Elevation (ASL): 99.56 ft			Top of Casing Elevation (ASL): 101.68 ft		
Date: 3-22-11		Date: 3-22-11			
Start Time: 12:20		End Time: 12:48			

Depth (feet)	Well Construction Details	Blow Count if applicable	Sample No.	Type*	PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
0-1		NA	1	SS	0.0	0' - 3' CLAY , Very dark brown, with roots (CL)
2			2	SS	0.0	
3			3	SS	0.0	3' - 3.9' CLAY , Gray, with roots and sand (CL)
4			4	SS	0.0	
5v			5	SS	0.0	3.9' - 14' SAND , Brown, fine-coarse, trace gravel (SW)
5-6**			6	SS	0.0	
7			7	SS	0.0	
8			8	SS	0.0	14' - 15' SAND , Brown, fine-medium (SW)
9			9	SS	0.0	
10			10	SS	0.0	
11			11	SS	0.0	
12			12	SS	0.0	
13			13	SS	0.0	
14			14	SS	0.0	
14-15			15	SS	0.0	
Bottom of Screen: 14.74' below grade Bottom of Boring: 15' below grade						

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11				
Water Levels (ASL)	Level:	97.64 ft				
Static Water Level Symbol v	Time:					

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

Boring/Well Number: MW-7	Facility Name: Northwood Ag Products	Facility Street Address: 2106 Central Avenue Northwood, IA
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Boring Depth (ft) X Diameter (in): 15' x 8.5"	Drilling Method: HS
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Well Contractor Name: J C Drilling Registration Number: 1986	Logged by: Bryn Hendricks
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Ground Surface Elevation (ASL): 100.15 ft	Top of Casing Elevation (ASL): 102.37 ft
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Date: 3-22-11 Start Time: 10:25	Date: 3-22-11 End Time: 11:15
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Depth (feet)	Well Construction Details	Blow Count if applicable	Sample No.	Type*	PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
0-1**		NA	1	SS	1.6	
2	Above grade protective well cover		2	SS	0.0	0' - 1.5' CLAY , Very dark brown, with roots (CL)
3			3	SS	0.0	
4v			4	SS	0.0	1.5' - 2.5' CLAY , Brown (CL)
5	Ground surface		5	SS	0.0	
6			6	SS	0.0	2.5' - 9' SAND , Brown, fine-coarse, with gravel (SW)
7	Concrete		7	SS	0.0	
8			8	SS	0.0	
9	2" PVC Casing		9	SS	0.0	9' - 10' SAND , Brown, coarse, with gravel (SP)
10	Bentonite		10	SS	0.0	
11			11	SS	0.0	10' - 15' SAND , Brown, fine-coarse, with gravel (SW)
12			12	SS	0.0	
13	2" PVC Screen 0.010" Slots		13	SS	0.0	
14			14	SS	0.0	
14-15	Sand Filter Pack		15	SS	0.0	
Bottom of Screen: 13.61' below grade Bottom of Boring: 15' below grade						

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11			
Water Levels (ASL)	Level:	97.57 ft			
Static Water Level Symbol v	Time:				

SOIL BORING LOG AND MONITORING WELL CONSTRUCTION DIAGRAM

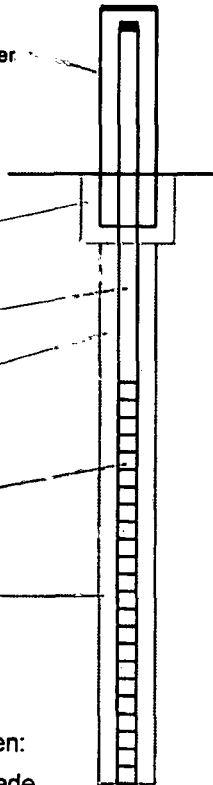
Boring/Well Number: MW-8	Facility Name: Northwood Ag Products	Facility Street Address: 2106 Central Avenue Northwood, IA
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Boring Depth (ft) X Diameter (in): 15' x 8.5"	Drilling Method: HS
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Well Contractor Name: J C Drilling Registration Number: 1986	Logged by: Bryn Hendricks & Eric Mueggenberg
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Ground Surface Elevation (ASL): 100.45 ft	Top of Casing Elevation (ASL): 103.71 ft
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Date: 3-22-11 Start Time: 11:44	Date: 3-22-11 End Time: 12:15
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Depth (feet)	Well Construction Details	Blow Count if applicable	Sample		PID / FID Reading	Rock Formations, Soil, Color and Classifications, Observations (moisture, odor, etc.) First column for USCS
			No.	Type*		
0-1	 Above grade protective well cover Ground surface Concrete 2" PVC Casing Bentonite 2" PVC Screen 0.010" Slots Sand Filter Pack Bottom of Screen: 14.22' below grade Bottom of Boring: 15' below grade	NA	1	SS	0.0	0' - 3' CLAY , Very dark brown, with roots (CL)
2			2	SS	0.0	
3			3	SS	0.0	3' - 4' CLAY & SAND , Brown, with roots (SC)
4			4	SS	0.0	
5v			5	SS	0.0	4' - 15' SAND , Brown, fine-coarse, with gravel (SW)
5-6**			6	SS	0.0	
7			7	SS	0.0	
8			8	SS	0.0	
9			9	SS	0.0	
10			10	SS	0.0	
11			11	SS	0.0	
12			12	SS	0.0	
13			13	SS	0.0	
14			14	SS	0.0	
14-15			15	SS	0.0	

* SS (split spoon) HS (hollow stem auger) HA (hand auger) GP (geoprobe) **Depth of Soil Sample

Observations	Date:	3-23-11			
Water Levels (ASL)	Level:	97.59 ft			
Static Water Level Symbol v	Time:				

Appendix 3
Analytical Data

04 April 2011

REC'D APR 07 2011

Eric Mueggenberg
Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes, IA 50111

RE: Soil/Water Sampling
Northwood Ag

Enclosed are the results of analyses for samples received by the laboratory on 03/24/11 11:15. If you have any questions concerning this report, please feel free to contact me at 1-800-858-5227.

ANALYTICAL REPORT FOR SAMPLES

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1 12-13 ft	11C1231-01	Soil	03/22/11 14:55	03/24/11 11:15
MW-1	11C1231-02	Water	03/23/11 09:30	03/24/11 11:15
MW-2 5-6 ft	11C1231-03	Soil	03/22/11 14:25	03/24/11 11:15
MW-2	11C1231-04	Water	03/23/11 00:00	03/24/11 11:15
MW-3 3-4 ft	11C1231-05	Soil	03/22/11 16:20	03/24/11 11:15
MW-3	11C1231-06	Water	03/23/11 09:51	03/24/11 11:15
MW-4 4-5 ft	11C1231-07	Soil	03/22/11 15:45	03/24/11 11:15
MW-4	11C1231-08	Water	03/23/11 09:47	03/24/11 11:15
MW-5 3-4 ft	11C1231-09	Soil	03/22/11 17:00	03/24/11 11:15
MW-5	11C1231-10	Water	03/23/11 09:55	03/24/11 11:15
MW-6 5-6 ft	11C1231-11	Soil	03/22/11 12:35	03/24/11 11:15
MW-6	11C1231-12	Water	03/23/11 09:41	03/24/11 11:15
MW-7 0-1 ft	11C1231-13	Soil	03/22/11 10:35	03/24/11 11:15
MW-7	11C1231-14	Water	03/23/11 09:39	03/24/11 11:15
MW-8 5-6 ft	11C1231-15	Soil	03/22/11 12:00	03/24/11 11:15
MW-8	11C1231-16	Water	03/23/11 09:37	03/24/11 11:15
North Well	11C1231-17	Water	03/23/11 08:54	03/24/11 11:15

The results in this report apply to the samples analyzed in accordance with the Chain-of-Custody record. This analytical report must be reproduced in its entirety.

Page 1 of 25

Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

South Well

11C1231-18

Water

03/23/11 08:15

03/24/11 11:15

Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggengberg

Reported
04/04/11 17:41

MW-1 12-13 ft
11C1231-01 (Soil)

Date Sampled: 3/22/2011 2:55:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	86.9	0.1	%	1	1C12512	03/25/11	03/25/11 12:58M	2540 G	
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Determination of Inorganic Anions

Nitrogen, Nitrate	9.1	1.0	mg/kg dry	1	1D10420	04/01/11	04/01/11 15:43EPA	9056	
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-1

11C1231-02 (Water)

Date Sampled: 3/23/2011 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	13.5	0.5	mg/l	5	IC12811	03/25/11	03/25/11 13:43	EPA 9056	QC-06
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-2 5-6 ft
11C1231-03 (Soil)

Date Sampled: 3/22/2011 2:25:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	87.2	0.1	%	1	1C12512	03/25/11	03/25/11 12:50PM	2540 G
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Determination of Inorganic Anions

Nitrogen, Nitrate	3.4	1.0 mg/kg dry	1	1D10420	04/01/11	04/01/11 16:01	EPA 9056
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Muegggenberg

Reported
04/04/11 17:41

MW-2

11C1231-04 (Water)

Date Sampled: 3/23/2011 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	34.2	0.5	mg/l	5	1C12811	03/25/11	03/25/11 14:01	EPA 9056	QC-06
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Muegggenberg

Reported
04/04/11 17:41

MW-3 3-4 ft
11C1231-05 (Soil)

Date Sampled: 3/22/2011 4:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	77.5	0.1	%	1	1C12512	03/25/11	03/25/11 12:56M	2540 G
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Determination of Inorganic Anions

Nitrogen, Nitrate	ND	1.0	mg/kg dry	1	1D10420	04/01/11	04/01/11 16:21	EPA 9056
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-3

11C1231-06 (Water)

Date Sampled: 3/23/2011 9:51:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	9.1	0.1	mg/l	1	1C12518	03/24/11	03/24/11 19:27	EPA 9056	
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-4 4-5 ft
11C1231-07 (Soil)

Date Sampled: 3/22/2011 3:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	89.8	0.1	%	1	1C12512	03/25/11	03/25/11 12:56M	2540 G
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Determination of Inorganic Anions

Nitrogen, Nitrate	23.1	1.0 mg/kg dry	1	1D10420	04/01/11	04/01/11 16:38EPA	9056
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggengberg

Reported
04/04/11 17:41

MW-4

11C1231-08 (Water)

Date Sampled: 3/23/2011 9:47:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	59.0	1.0	mg/l	10	1C12811	03/25/11	03/25/11 15:32	EPA 9056	QC-06
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-5 3-4 ft
11C1231-09 (Soil)

Date Sampled: 3/22/2011 5:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	86.7	0.1	%	1	1C12512	03/25/11	03/25/11 12:56M	2540 G
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Determination of Inorganic Anions

Nitrogen, Nitrate	1.1	1.0 mg/kg dry	1	1D10420	04/01/11	04/01/11 16:56EPA	9056
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-5

11C1231-10 (Water)

Date Sampled: 3/23/2011 9:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Keystone Laboratories, Inc. - Newton									
Determination of Inorganic Anions									
Nitrogen, Nitrate	13.1	0.5	mg/l	5	1C12811	03/25/11	03/25/11 14:56	EPA 9056	QC-06

Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-6 5-6 ft
11C1231-11 (Soil)

Date Sampled: 3/22/2011 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	84.3	0.1	%	1	1C12512	03/25/11	03/25/11 12:50M	2540 G
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Determination of Inorganic Anions

Nitrogen, Nitrate	ND	1.0 mg/kg dry	1	1D10420	04/01/11	04/01/11 17:14	EPA 9056
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-6

11C1231-12 (Water)

Date Sampled: 3/23/2011 9:41:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	2.0	0.1	mg/l	1	1C12518	03/24/11	03/24/11 20:21	EPA 9056	
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-7 0-1 ft
11C1231-13 (Soil)

Date Sampled: 3/22/2011 10:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	81.6	0.1	%	1	1C12512	03/25/11	03/25/11 12:58M	2540 G
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Determination of Inorganic Anions

Nitrogen, Nitrate	1.2	1.0	mg/kg dry	1	ID10420	04/01/11	04/01/11 17:32EPA	9056
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-7

11C1231-14 (Water)

Date Sampled: 3/23/2011 9:39:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	4.4	0.1	mg/l	1	1C12518	03/24/11	03/24/11 20:39	EPA 9056	
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-8 5-6 ft
11C1231-15 (Soil)

Date Sampled: 3/22/2011 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Conventional Chemistry Parameters

% Solids	85.2	0.1	%	1	IC12512	03/25/11	03/25/11 12:58M	2540 G
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Determination of Inorganic Anions

Nitrogen, Nitrate	ND	1.0 mg/kg dry	1	ID10420	04/01/11	04/01/11 17:51	EPA 9056
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

MW-8

11C1231-16 (Water)

Date Sampled: 3/23/2011 9:37:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Nitrogen, Nitrate	4.0	0.1	mg/l	1	1C12518	03/24/11	03/24/11 20:57	EPA 9056	

Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

North Well
11C1231-17 (Water)

Date Sampled: 3/23/2011 8:54:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	17.1	0.5	mg/l	5	IC12811	03/25/11	03/25/11 15:14	EPA 9056	QC-06
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggengberg

Reported
04/04/11 17:41

South Well
11C1231-18 (Water)

Date Sampled: 3/23/2011 8:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Keystone Laboratories, Inc. - Newton

Determination of Inorganic Anions

Nitrogen, Nitrate	2.6	0.1	mg/l	1	IC12518	03/24/11	03/24/11 21:34	EPA 9056	
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1C12512 - Wet Chem Preparation

Duplicate (1C12512-DUP1)

Source: 11C1185-36

Prepared & Analyzed: 03/25/11

% Solids	91.4	0.1	%		91.6			0.219	20	
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Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

Determination of Inorganic Anions - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1C12518 - General Prep HPLC/IC

Blank (1C12518-BLK1)

Prepared & Analyzed: 03/24/11

Nitrogen, Nitrate ND 0.1 mg/l

LCS (1C12518-BS1)

Prepared & Analyzed: 03/24/11

Nitrogen, Nitrate 5.53 0.1 mg/l 4.98865 111 89-116

Matrix Spike (1C12518-MS1)

Source: 11C1197-01

Prepared & Analyzed: 03/24/11

Nitrogen, Nitrate 5.50 0.1 mg/l 4.98865 ND 110 83-122

Matrix Spike Dup (1C12518-MSD1)

Source: 11C1197-01

Prepared & Analyzed: 03/24/11

Nitrogen, Nitrate 5.46 0.1 mg/l 4.98865 ND 109 83-122 0.730 10

Batch 1C12811 - General Prep HPLC/IC

Blank (1C12811-BLK1)

Prepared & Analyzed: 03/25/11

Nitrogen, Nitrate ND 0.1 mg/l

Matrix Spike (1C12811-MS1)

Source: 11C1231-17

Prepared & Analyzed: 03/25/11

Nitrogen, Nitrate 70.66 1.0 mg/l 49.8865 17.08 107 83-122

Matrix Spike Dup (1C12811-MSD1)

Source: 11C1231-17

Prepared & Analyzed: 03/25/11

Nitrogen, Nitrate 70.98 1.0 mg/l 49.8865 17.08 108 83-122 0.452 10

Batch 1D10420 - General Prep HPLC/IC

Blank (1D10420-BLK1)

Prepared & Analyzed: 04/01/11

Nitrogen, Nitrate ND 1.0 mg/kg wet

Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

Determination of Inorganic Anions - Quality Control

Keystone Laboratories, Inc. - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1D10420 - General Prep HPLC/IC

LCS (1D10420-BS1)

Nitrogen, Nitrate 55.45 1.0 mg/kg wet 49.8865 111 90-115

Prepared & Analyzed: 04/01/11

Matrix Spike (1D10420-MS1)

Nitrogen, Nitrate 66.35 1.0 mg/kg dry 58.5248 ND 113 70-130

Source: 11C1231-15

Prepared & Analyzed: 04/01/11

Matrix Spike Dup (1D10420-MSD1)

Nitrogen, Nitrate 66.34 1.0 mg/kg dry 58.5248 ND 113 70-130 0.0177 20

Source: 11C1231-15

Prepared & Analyzed: 04/01/11

Certified Analyses Included in This Report

Method/Matrix	Analyte	Certifications
EPA 9056 in Soil	Nitrogen, Nitrate	NELAC,KS-NT
EPA 9056 in Water	Nitrogen, Nitrate	NELAC,KS-NT
SM 2540 G in Soil	% Solids	SIA1X

Code	Certifying Authority	Certificate Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2011
KS-NT	Kansas Department of Health and Environment	E-10287	10/30/2011
NELAC	New Jersey Department of Environmental Protection	IA001	06/30/2011
SIA1X	Iowa Department of Natural Resources	95	02/01/2012

Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Mueggenberg

Reported
04/04/11 17:41

Notes and Definitions

- QC-06 Sample was originally analyzed within recommended hold time. However, the sample concentration was over the calibration range. The sample was diluted and reanalyzed outside of the recommended hold time.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Trileaf Corporation
3000 SE Grimes Blvd - Suite 500
Grimes IA, 50111

Project: Soil/Water Sampling
Project Number: Northwood Ag
Project Manager: Eric Muegggenberg

Reported
04/04/11 17:41

Sue Thompson

Sue Thompson
Project Manager I

CHAIN OF CUSTODY RECORD

Keystone
LABORATORIES, INC.

☒ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
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www.keystonelabs.com

☐ 1155 Adams, Suite 120
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PAGE 1 OF 2

PRINT OR TYPE INFORMATION BELOW

SAMPLER: EJM, BMH
SITE NAME: Northwood Ag
ADDRESS: 2106 Central Ave.
CITY/ST/ZIP: Northwood, IA
PHONE: _____

REPORT TO:
NAME: Eric Muegggenberg
COMPANY NAME: Trileaf
ADDRESS: 3000 SE Grimes Blvd, Ste 500
CITY/ST/ZIP: Grimes IA 50111
PHONE: 515-986-5151
FAX: _____

BILL TO:
NAME: _____
COMPANY NAME: _____
ADDRESS: Same
CITY/ST/ZIP: _____
PHONE: _____

Keystone Quote No.: _____
(If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED										LAB USE ONLY	
							EPA 9056										LABORATORY WORK ORDER NO. <u>11C1231</u>	SAMPLE TEMPERATURE UPON RECEIPT: ____ °C
MW-1	3-22	14:55	MW-1 12-13 ft	1	S	G	X											01
MW-1	3-23	9:30		2	GW		X											02
MW-2	3-22	14:25	MW-2 5-6 ft	1	S		X											03
MW-2	3-23			2	GW		X											04
MW-3	3-22	16:20	MW-3 3-4 ft	1	S		X											05
MW-3	3-23	9:51		2	GW		X											06
MW-4	3-22	15:45	MW-4 4-5 ft	1	S		X											07
MW-4	3-23	9:47		2	GW		X											08
MW-5	3-22	17:00	MW-5 3-4 ft	1	S		X											09
MW-5	3-23	9:55		2	GW		X											10

Relinquished by: (Signature) <u>Bryan M. Handricks</u>	Date <u>3-23-11</u> Time <u>5:30 pm</u>	Received by: (Signature) <u>Fridge</u>	Date <u>3-23-11</u> Time <u>17:30</u>	Turn-Around: ☒ Standard ☐ Rush
Contact Lab Prior to Submission				
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature) <u>Bill</u>	Date <u>3/24/11</u> Time <u>11:15 am</u>	Remarks:

CHAIN OF CUSTODY RECORD

Keystone
LABORATORIES, INC.

☒ 600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

☐ 3012 Ansbrough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480
www.keystonelabs.com

☐ 1155 Adams, Suite 120
Kansas City, KS 66103
Phone: 913-321-7856
Fax: 913-321-7937

PAGE 2 OF 2

PRINT OR TYPE INFORMATION BELOW SAMPLER: <u>EDM, BMH</u> SITE NAME: <u>Northwood Ag</u> ADDRESS: <u>2106 Central Ave</u> CITY/ST/ZIP: <u>Northwood, IA</u> PHONE: _____	REPORT TO: NAME: <u>Eric Mueggenberg</u> COMPANY NAME: <u>Trileaf Corporation</u> ADDRESS: <u>3000 SE Grimes Blvd., Suite 500</u> CITY/ST/ZIP: <u>Grimes, IA 50111</u> PHONE: <u>515-986-5151</u> FAX: <u>515-986-5643</u>	BILL TO: NAME: <u>[Signature]</u> COMPANY NAME: <u>Same</u> ADDRESS: _____ CITY/ST/ZIP: _____ PHONE: _____ Keystone Quote No.: _____ (If Applicable)
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CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED										LAB USE ONLY		
							EPA 9056											LABORATORY WORK ORDER NO.	LABORATORY SAMPLE NUMBER
MW-6	3-22	12:35	MW-6 5-6 ft.	1	S	G	X										11		
MW-6	3-23	9:41	MW-6.	2	GW		X										12		
MW-7	3-22	10:35	MW-7 0-1 ft.	1	S		X										13		
MW-7	3-23	9:39	MW-7.	2	GW		X										14		
MW-8	3-22	12:00	MW-8 5-6 ft	1	S		X										15		
MW-8	3-23	9:37	MW-8.	2	GW		X										16		
North North well	3-23	8:54	North well	2	GW		X										17		
South well	3-23	8:15	South well	2	GW	↓	X										18		

Relinquished by: (Signature) <u>Ben M. Hendrick</u>	Date <u>3-23-11</u> Time <u>17:30</u>	Received by: (Signature) <u>Fridge</u>	Date <u>3-23-11</u> Time <u>17:30</u>	Turn-Around: ☒ Standard ☐ Rush Contact Lab Prior to Submission
Relinquished by: (Signature)	Date Time	Received for Lab by: (Signature) <u>Bill</u>	Date <u>3/24/11</u> Time <u>11:15 AM</u>	Remarks: