



CON: 12-15

Doc # 23060

## STATE OF IOWA

CHESTER J. CULVER, GOVERNOR  
PATTY JUDGE, LT. GOVERNORDEPARTMENT OF NATURAL RESOURCES  
RICHARD A. LEOPOLD, DIRECTOR

September 1, 2010

Mr. Larry Hunt  
59853 Jacquat Drive  
Emerson, Iowa 51533Re: Former Emerson Farm Supply Site Investigation Results, Mills County Parcel ID  
097290000000000, South Avenue, Emerson, Iowa

Dear Mr. Hunt:

The Iowa Department of Natural Resources, Contaminated Sites Section, (Department) has completed the environmental site investigation at the former Emerson Farm Supply located in Emerson, Iowa, the location is shown on Figure 1. Five groundwater and nine soil samples were collected and analyzed for nitrate + nitrite. All nine soil samples and three of the groundwater samples were sent to the University of Iowa Hygienic Laboratory (UHL) and analyzed using EPA Method 353.2. Samples were not collected at GP-04 as too much equipment was in the way.

The results for the groundwater samples are consistent with other samples collected during an earlier environmental investigation adding support that the Former Emerson Farm Supply is the source for the high nitrate levels in City of Emerson's Municipal Well No. 3. The results are shown in Table 1 with the locations shown on Figure 2. The maximum contaminant level for nitrate in drinking water is 10 mg/L.

Table 1

Groundwater Sample Results for Nitrate + Nitrite in mg/L

Location	GP-01	GP-02	GP-03	GP-04	GP-05	GP-06
HACH DR2800*	27.8	46.8	27.6	NA	71.8	0.4
UHL	27	46	28	NA	NA	NA

\*HACH DR2800 - Portable sample analysis using HACH Method 10206 (TNT)

NA - Not analyzed

The groundwater samples were collected from the open soil borings at a depth of eight feet except GP-06 which the groundwater samples was collected from four feet deep. The levels of nitrate along with the shallow collection depth indicate the soils at the Former Emerson Farm Supply are still acting as a source for groundwater contamination.

Nine soil samples were collected from five of the six locations noted on Figure 2 and analyzed for nitrate + nitrite. Two soil samples were collected from each location (GP-01, GP-02, GP-03 and GP-05), one from the zero to four feet deep strata and the other

from the four to eight feet deep strata. Only one soil sample was collected from GP-06 at the zero to four feet strata, the soil probe hit refusal at four feet deep so the deeper soil samples was not collected.

Table 2

Soil Samples Results for Nitrate + Nitrite in mg/kg

Location	GP-01	GP-02	GP-03	GP-04	GP-05	GP-06
0 - 4 Feet Deep	5.6	5.5	<5.0	NA	5.1	42
4 - 8 Feet Deep	12	12	14	NA	12	NA

NA - Not analyzed

The nitrate soil standard in the Iowa Land Recycling Program is 120,000 mg/kg; however, this site is under the authority of IAC-567-133 which does not have specific standards for contaminants in the soil. In IAC-567-133 it is stated that if the level of a contaminant in the soil causes groundwater to become contaminated above a standard then the soil must be cleaned up.

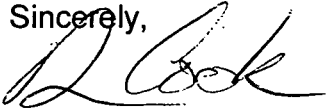
The Department feels the remaining nitrate in the soil is leftover from past handling practices and significant levels of nitrates were not found during this investigation. Levels in the soil were most likely much higher in the past in order to produce the current groundwater plume. Soil sample results show most of the nitrates in the shallow soil have been utilized by plants, naturally broke down, or leached into the groundwater and the levels should continue to decrease in the future. Even though the nitrate in the soil continues to leach into the groundwater the levels found are not high enough to require any removal efforts at this time.

In conclusion, the nitrate groundwater plume impacting Municipal Well No. 3 has been shown to originate from the Former Emerson Farm Supply site, however levels found in well No. 3 should start to decrease as fertilizer is no longer handled at the farm supply facility. Also, the City of Emerson has installed a nitrate removal system to remove the nitrates from the water supply until the nitrate level falls below the maximum contaminant level. Therefore, no further environmental actions are required at this time. This determination should not be construed to be an endorsement by the Department that a hazardous condition does not exist on the property. Instead, it is a conclusion by the Department that available information (without regard to the quality or quantity of that information) does not suggest the likely existence of significant hazardous condition on the property. Furthermore, this determination does not constitute an endorsement by the Department as to the appropriateness of any proposed use of the property. If such an endorsement is sought, the property may be enrolled in the Iowa Land Recycling Program, which would involve a thorough investigation and assessment of risks associated with possible uses of the property.

If the farm supply facility is no longer actively doing business the Department highly recommends that the bulk pesticide tanks be removed from the site. Any accidental spillage of the pesticides would require additional environmental activities at your expense.

If you have any questions or need further information please feel free to call or e-mail at (515) 281-4171 or dan.cook @dnr.iowa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Cook", written over a horizontal line.

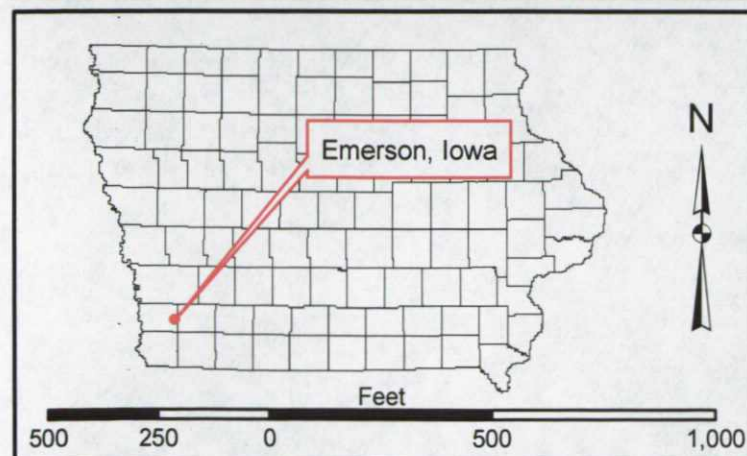
Daniel Cook  
Environmental Specialist Senior  
Contaminated Sites

encl: Site Location, Figure 1  
Sample Locations, Figure 2  
UHL Results of Analysis Reports

c: James Pray Brown Winick Attorneys at Law, 666 Grand Avenue, Suite 2000  
Des Moines, Iowa 50309-2510

Iowa DNR Field Office 4





Iowa Department of Natural  
Resources

Emerson Farm Supply Investigation  
Emerson, Mills County, Iowa

Site Location  
Figure 1





Feet  
50 25 0 50 100

Iowa Department of Natural  
Resources

Emerson Farm Supply Investigation  
Emerson, Mills County, Iowa

● Sample Locations  
Figure 2

# Hygienic Laboratory

*The University of Iowa*

**Date of report:** 05-26-2010

DANIEL COOK  
 IDNR CONTAMINATED SITES  
 WALLACE STATE OFFICE BLDG  
 502 EAST NINTH STREET  
 DES MOINES IA 50319-0034

Sample Number	2010014897
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 09:30
Collection Site	emerson farm supply
Collection Town	Emerson
Description	water
Reference	GP-01
Collector	COOK DANIEL
Phone	(515) 281-4171
Purchase Order	

### Comments

*Upon arrival, sample met container and preservation requirements for the analysis requested;  
EXCEPT: sample temperature exceeds 6 degrees celsius.  
Please review carefully your sample results for additional analyte comments or method exceptions.*

## Results of Analyses

**Nitrate + Nitrite as Nitrate N (Water)**

Analyte	Concentration mg/L	Quantitation Limit mg/L
Nitrate + Nitrite Nitrogen as N	27	0.10

Date Analyzed: 05-11-2010

**Analyzed at: Ankeny**

Analyst: JE

**Method: EPA 353.2**

Verified: TAB

### Description of units used within this report

mg/L - Milligrams per Liter

**Quant Limit** - Lowest concentration reliably measured

The results of this report relate only to the items analyzed. This report shall not be reproduced except in full without the written approval of the laboratory.

**Iowa Environmental Laboratory IDs are: Ankeny #397, Iowa City #027, Lakeside #393.**

*If you have any questions please call Client Services at 800/421-IOWA (4692) or 319/335-4500. Thank you.*

Page 1 - End of Report

**Michael D. Wichman, Ph.D.**  
Associate Director

102 Oakdale Campus, #101 OH  
Iowa City, Iowa 52242-5002  
319/335-4500 Fax: 319/335-4555

<http://www.uhl.uiowa.edu>

**Iowa Laboratories Complex**  
2220 S. Ankeny Blvd, Ankeny, Iowa 50023  
515/725-1600 Fax: 515/725-1642



# Hygienic Laboratory

## The University of Iowa

Date of report: 05-26-2010

|||||.....|||||.....|||||.....  
DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014898
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 10:10
Collection Site	emerson farm supply
Collection Town	Emerson
Description	water
Reference	GP-02
Collector	COOK DANIEL
Phone	(515) 281-4171
Purchase Order	

### Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

### Results of Analyses

#### Nitrate + Nitrite as Nitrate N (Water)

Analyte	Concentration mg/L	Quantitation Limit mg/L
Nitrate + Nitrite Nitrogen as N	46	0.10

Date Analyzed: 05-11-2010

Analyzed at: Ankeny

Analyst: JE

Method: EPA 353.2

Verified: TAB

#### Description of units used within this report

mg/L - Milligrams per Liter

Quant Limit - Lowest concentration reliably measured

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If you have any questions please call Client Services at 800/421-IOWA (4692) or 319/335-4500. Thank you.







Date of report: 05-26-2010

DANIEL COOK  
 IDNR CONTAMINATED SITES  
 WALLACE STATE OFFICE BLDG  
 502 EAST NINTH STREET  
 DES MOINES IA 50319-0034

Sample Number	2010014900
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 09:30
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-10
Collector	COOK DANIEL
Phone	
Purchase Order	

## Comments

*Upon arrival, sample met container and preservation requirements for the analysis requested;  
EXCEPT: sample temperature exceeds 6 degrees celsius.  
Please review carefully your sample results for additional analyte comments or method exceptions.*

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	5.6	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

**Method:** EPA 353.2

Verified: LF

### Description of units used within this report

**mg/kg by dry wt - Milligrams per Kilogram by Dry Weight**

**Quant Limit - Lowest concentration reliably measured**

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# Hygienic Laboratory

## The University of Iowa

Date of report: 05-26-2010

|||||.....|||||.....|||||.....|||||.....  
DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014902
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 10:10
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-20
Collector	COOK DANIEL
Phone	
Purchase Order	

### Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	5.5	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

Method: EPA 353.2

Verified: LF

### Description of units used within this report

mg/kg by dry wt - Milligrams per Kilogram by Dry Weight

Quant Limit - Lowest concentration reliably measured

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Iowa Environmental Laboratory IDs are: Ankeny #397, Iowa City #027, Lakeside #393.

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# Hygienic Laboratory

*The University of Iowa*

Date of report: 05-26-2010

|||||.....|||||.....|||||.....|||||.....

DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014903
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 10:10
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-24
Collector	COOK DANIEL
Phone	
Purchase Order	

## Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	12	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

Method: EPA 353.2

Verified: LF

### Description of units used within this report

mg/kg by dry wt - Milligrams per Kilogram by Dry Weight

Quant Limit - Lowest concentration reliably measured

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# Hygienic Laboratory

*The University of Iowa*

Date of report: 05-26-2010

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DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014904
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 12:25
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-30
Collector	COOK DANIEL
Phone	
Purchase Order	

## Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	< 5.0	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

Method: EPA 353.2

Verified: LF

### Description of units used within this report

mg/kg by dry wt - Milligrams per Kilogram by Dry Weight

Quant Limit - Lowest concentration reliably measured

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# Hygienic Laboratory

*The University of Iowa*

Date of report: 05-26-2010

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DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014905
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 12:25
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-34
Collector	COOK DANIEL
Phone	
Purchase Order	

## Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	14	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

Method: EPA 353.2

Verified: LF

### Description of units used within this report

mg/kg by dry wt - Milligrams per Kilogram by Dry Weight

Quant Limit - Lowest concentration reliably measured

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# Hygienic Laboratory

*The University of Iowa*

Date of report: 05-26-2010

|||||.....|||||.....|||||.....  
DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014906
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 11:30
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-50
Collector	COOK DANIEL
Phone	
Purchase Order	

## Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	5.1	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

Method: EPA 353.2

Verified: LF

### Description of units used within this report

mg/kg by dry wt - Milligrams per Kilogram by Dry Weight

Quant Limit - Lowest concentration reliably measured

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# Hygienic Laboratory

## The University of Iowa

Date of report: 05-26-2010

|||||.....|||||.....|||||.....|||||.....  
DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014907
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 11:30
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-54
Collector	COOK DANIEL
Phone	
Purchase Order	

### Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	12	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

Method: EPA 353.2

Verified: LF

### Description of units used within this report

mg/kg by dry wt - Milligrams per Kilogram by Dry Weight

Quant Limit - Lowest concentration reliably measured

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# Hygienic Laboratory

*The University of Iowa*

Date of report: 05-26-2010

|||||.....|||||.....  
DANIEL COOK  
IDNR CONTAMINATED SITES  
WALLACE STATE OFFICE BLDG  
502 EAST NINTH STREET  
DES MOINES IA 50319-0034

Sample Number	2010014908
Date Received	05-07-2010
Project	WMSF
Date Collected	05-05-2010 10:50
Collection Site	emerson farm supply
Collection Town	Emerson
Description	soil
Reference	GP-60
Collector	COOK DANIEL
Phone	
Purchase Order	

## Comments

Upon arrival, sample met container and preservation requirements for the analysis requested;  
*EXCEPT: sample temperature exceeds 6 degrees celsius.*  
Please review carefully your sample results for additional analyte comments or method exceptions.

## Results of Analyses

### Nitrate + Nitrite as N (Soil/Sludge)

Analyte	Concentration mg/kg by dry wt	Quantitation Limit mg/kg by dry wt
Nitrate + Nitrite Nitrogen as N	42	5.0

Date Analyzed: 05-20-2010

Analyzed at: Ankeny

Analyst: BR

Method: EPA 353.2

Verified: LF

### Description of units used within this report

mg/kg by dry wt - Milligrams per Kilogram by Dry Weight

Quant Limit - Lowest concentration reliably measured

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If you have any questions please call Client Services at 800/421-IOWA (4692) or 319/335-4500. Thank you.





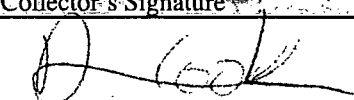
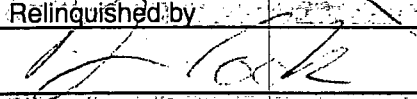
# Hygienic Laboratory

The University of Iowa

## CHAIN-OF-CUSTODY

Purchase Order #

WMSF

Contact Name		Phone		Analysis Requested										Project Name and/or Number					
Daniel Cook		515-281-4171												Emerson Farm Supply					
Company		Fax												Collector's Phone #					
Iowa DNR		515-281-8895												515-281-4171					
Address														Print Collector's Name					
502 E 9th St														Dan Cook					
City		State		Zip												Collector's Signature			
Des Moines		IA		50319															
Sample ID/Description		Date		Time		Sample Matrix												Comments/UHL Sample Number	
						W S Other													
1. GP-34		5/5/10		12:25		X		X											
2. GP-50		5/5/10		11:30		X		X											
3. GP-54		5/5/10		11:30		X		X											
4. GP-60		5/5/10		10:30		X		X											
5.																			
6.																			
7.																			
8.																			
Relinquished by		Date		Time		Comments													
		5/7/2010		1457															
Relinquished by		Date		Time		Comments													
Sample receiving custodian		Date		Time		Sample Receipt Comments													
Rose Joseph		5-7-10		2:57															

102 Oakdale Campus, #H101 OH  
Iowa City, Iowa 52242-5002  
319-335-4500 Fax: 319-335-4555

<http://www.uhl.uiowa.edu>

2220 S. Ankeny Blvd.  
Ankeny, Iowa 50023  
515-725-1600 Fax: 515-725-1642

Yellow - UHL Copy  
Blue - Client Copy  
61945/1-07