

NEBRASKA

Good Life. Great Resources.

DEPT. OF ENVIRONMENT AND ENERGY

Ron Yoder
Senior Associate Vice Chancellor
300 Agriculture Hall
Lincoln, NE 68583-0708

RE: University of Nebraska Eastern Nebraska Research and Extension Center
Facility ID: 84069
Program ID: NE0137634
Subject: Public Water Supply Sampling Results

Dear Mr. Yoder:

The Nebraska Department of Environment and Energy (NDEE) is conducting drinking water well sampling near Mead, Nebraska related to an environmental investigation at the AltEn, LLC facility. On February 26, 2021, NDEE sampled two Public Water Supply Wells on your property. The NDEE appreciates your participation in this investigation.

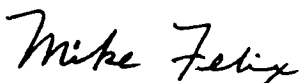
Enclosed are the laboratory results for groundwater samples "21PE001402" and "21PE001403" collected from the two easternmost wells on your property. The samples were tested for various types of pesticide associated with the seed treatment of field corn. The first column of the laboratory report identifies each chemical that was tested for. The third column provides the numeric results of the chemical in units of Parts Per Billion (ppb) which is also equivalent to micrograms per liter, or ug/L. A result followed by a result of "ND" indicates that the chemical was not detected.

The results indicate that there were no pesticides detected in the samples collected from your wells.

If you have any questions regarding any potential health effects associated with exposure to these pesticides, please contact Sue Dempsey at (402) 471-0510 or sue.dempsey@nebraska.gov. If you have any questions regarding the laboratory data enclosed, please contact Zoe DeGrande or me at (402) 471-2186 or zoe.degrande@nebraska.gov or mike.felix@nebraska.gov.

Thank you again for your assistance.

Sincerely,



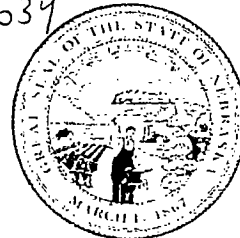
Mike Felix
Section Supervisor
Superfund/VCP Section
Monitoring and Remediation Division

Enclosures

cc: Sue Dempsey, Nebraska Department of Health and Human Services w/enclosure

84069
NE0137634

MAR 25 2021



Pete Ricketts, Governor



20210023186

Performed By:

South Dakota Agricultural Laboratories
 1335 Western Avenue
 Brookings, South Dakota 57006
 Phone: 605-692-7325
 E-Mail: regina.wixon@sdaglabs.com

Collected By:

Nebraska Dept. of Environment & Energy-David
 Schum
 245 Fallbrook Blvd
 Lincoln, NE 68521
 Phone: 402-471-4709
 E-Mail: david.schumacher@nebraska.gov

Report Date: 2021-03-15**Final Report****South Dakota Agricultural Laboratories has examined the sample of**

Limfinite Package Id : 20210301-009
 Lab Sample Id : 21PE001402
 Customer Sample Id : UNL - Well #9
 Sample Description : WATER
 Date Collected : 2021-02-26
 Date Received : 2021-03-01

RESULTS

| ANALYTE | UNIT | AS RECEIVED | DETECTION LIMIT | METHOD | DATE OF EXTRACTION | DATE OF ANALYSIS |
|-------------------------------|------|-------------|--------------------|----------|-----------------------|---------------------|
| Abamectin | ppb | ND | 10 | LC-MS/MS | 2021-03-12 | 2021-03-12 |
| Acetamprid | ppb | ND | 3 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Azoxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Brassinazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Clothianidin | ppb | ND | 8 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Cyproconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Desthio-Prothioconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Difenoconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Dimoxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Dinotefuron | ppb | ND | 4 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Epoxiconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Fluconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Fluoxastrobins | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Glufosinate | ppb | ND | 10 | LC-MS/MS | 2021-03-02 | 2021-03-05 |
| Glyphosate | ppb | ND | 10 | LC-MS/MS | 2021-03-02 | 2021-03-05 |
| Imidacloprid | ppb | ND | 4 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Ipconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Isavuconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Metconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Nitenpyram | ppb | ND | 8 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Orysastrobins | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Picoxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Propiconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Prothioconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Pyraclostrobins | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Ravuconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Sulfonic Acid Prothioconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Tebuconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |

| | | | | | | |
|-----------------|-----|----|---|----------|------------|------------|
| Tetraconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Thiabendazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Thiacloprid | ppb | ND | 6 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Thiamethoxam | ppb | ND | 3 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Trifloxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Uniconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Voriconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |

QUALITY ASSURANCE

| ANALYTE | UNIT | DUPLICATE | SPIKE RECOVERY | MATRIX BLANK | PROCESS BLANK | INSTRUMENT BLANK |
|-------------------------------|------|------------|-------------------|-----------------|------------------|---------------------|
| Abamectin | ppb | 21PE001399 | 81.1 | ND | ND | ND |
| Acetamprid | ppb | 21PE001400 | 111 | ND | ND | ND |
| Azoxystrobin | ppb | 21PE001401 | 100 | ND | ND | ND |
| Brassinazole | ppb | 21PE001401 | 125 | ND | ND | ND |
| Clothianidin | ppb | 21PE001400 | 98.8 | ND | ND | ND |
| Cyproconazole | ppb | 21PE001401 | 118 | ND | ND | ND |
| Desthio-Prothioconazole | ppb | 21PE001401 | 111 | ND | ND | ND |
| Difenoconazole | ppb | 21PE001401 | 87.8 | ND | ND | ND |
| Dimoxystrobin | ppb | 21PE001401 | 127 | ND | ND | ND |
| Dinotefuron | ppb | 21PE001400 | 109 | ND | ND | ND |
| Epoxiconazole | ppb | 21PE001401 | 101 | ND | ND | ND |
| Fluconazole | ppb | 21PE001401 | 125 | ND | ND | ND |
| Fluoxastrobin | ppb | 21PE001401 | 106 | ND | ND | ND |
| Glufosinate | ppb | 21PE001399 | 87.5 | ND | ND | ND |
| Glyphosate | ppb | 21PE001399 | 78.8 | ND | ND | ND |
| Imidacloprid | ppb | 21PE001400 | 100 | ND | ND | ND |
| Ipconazole | ppb | 21PE001401 | 99.7 | ND | ND | ND |
| Isavuconazole | ppb | 21PE001401 | 102 | ND | ND | ND |
| Metconazole | ppb | 21PE001401 | 109 | ND | ND | ND |
| Nitenpyram | ppb | 21PE001400 | 113 | ND | ND | ND |
| Orysastrobin | ppb | 21PE001401 | 107 | ND | ND | ND |
| Picoxystrobin | ppb | 21PE001401 | 86.9 | ND | ND | ND |
| Propiconazole | ppb | 21PE001401 | 93.1 | ND | ND | ND |
| Prothioconazole | ppb | 21PE001401 | 103 | ND | ND | ND |
| Pyraclostrobin | ppb | 21PE001401 | 79.0 | ND | ND | ND |
| Ravuconazole | ppb | 21PE001401 | 112 | ND | ND | ND |
| Sulfonic Acid Prothioconazole | ppb | 21PE001401 | 109 | ND | ND | ND |
| Tebuconazole | ppb | 21PE001401 | 122 | ND | ND | ND |
| Tetraconazole | ppb | 21PE001401 | 120 | ND | ND | ND |
| Thiabendazole | ppb | 21PE001401 | 102 | ND | ND | ND |
| Thiacloprid | ppb | 21PE001400 | 108 | ND | ND | ND |
| Thiamethoxam | ppb | 21PE001400 | 111 | ND | ND | ND |
| Trifloxystrobin | ppb | 21PE001401 | 55.0 | ND | ND | ND |
| Uniconazole | ppb | 21PE001401 | 96.9 | ND | ND | ND |
| Voriconazole | ppb | 21PE001401 | 85.8 | ND | ND | ND |

Comments:

Definitions:

ppb - parts per billion

Detection Limit - Lowest concentration that can be quantitatively reported with confidence

ND - Not Detected above the limit of quantification

Duplicate - Concentration found in repeat sample analysis

Spike Recovery - Recovery based on a known amount of active ingredient spiked into a similar-matrix, blank sample

Matrix Blank - A similar-matrix, blank sample is evaluated

Process Blank - A sample without any matrix (soil, vegetation etc) is processed through the sample analysis procedure

Instrument Blank - Injection solvent is run to demonstrate no carryover between injections on the instrument

BRIEF METHOD DESCRIPTION

Strobins in Water - Purpose and Scope

Strobins are fairly polar and are usually determined by LC-MS/MS. The limits of detection for the strobins are 1 ppb for limit of detection and 5 ppb for limit of quantitation.

Strobins in Water - References

J. Klein and L. Alder, JAOACI 86(5): 101501037 (2003)

Strobins in Water - Basic Principles

Strobin water samples are extracted into aqueous methanol followed by filtration and preparation for LC-MS/MS.

This SOP is for the determination of Strobins in soil, water and vegetation. The limits of detection for soil, water and vegetation range from 1 ppb to 2 ppb. The limit of quantitation is 5 ppb for soil, water and vegetation.

The Strobins include: Fluoxastrobin, Trifloxystrobin, Oryzastrobin, Pyraclostrobin, Azoxystrobin, Picoxystrobin and Dimoxystrobin.

Azoles in soil, vegetation and water - Purpose and Scope

Azoles are not ionic and are soluble in many organic solvents. Several of them are volatile enough for gas chromatography, but in this laboratory, LC-MS/MS has been used for azole analysis. The limits of detection for the azoles are 1 ppb for limit of detection and 5 ppb for limit of quantitation.

Azoles in soil, vegetation and water - References

Analytical Methods for Pesticides and Plant Growth Regulators. (G. Zweig, ed.) Vol.X, pp. 347 19.1.2.2 Klein and Alder. JAOAC. 86(5): 1015-37 (2003). 19.1.2.3 Ramsteiner et al. JAOAC. 57(1): 192-201 (1974).

Azoles in soil, vegetation and water - Basic Principles

Azole soil, vegetation, and water samples can be extracted in aqueous methanol, filtered and prepared for LC-MS/MS analysis.

Neonicotinoids in soil, water and vegetation - Purpose and Scope

Neonicotinoids are a class of neuro-active insecticides chemically similar to nicotine. The limits of detection for the neonicotinoids are 1 ppb for limit of detection and 5 ppb for limit of quantitation.

Neonicotinoids in soil, water and vegetation - References

J. Klein and L. Alder, JAOACI 86(5): 101501037 (2003)

Neonicotinoids in soil, water and vegetation - Basic Principles

Neonicotinoids are fairly polar and are extracted with aqueous acetonitrile, filtered and prepared for LC-MS/MS analysis.

Reviewed and approved by Regina Wixon, Ph.D.

Performed By:

South Dakota Agricultural Laboratories
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 245 Fallbrook Blvd
 Lincoln, NE 68521
 Phone: 402-471-4709
 E-Mail: david.schumacher@nebraska.gov

Report Date: 2021-03-15**Final Report****South Dakota Agricultural Laboratories has examined the sample of**

Limfinite Package Id : 20210301-009
 Lab Sample Id : 21PE001403
 Customer Sample Id : UNL - Well #27
 Sample Description : WATER
 Date Collected : 2021-02-26
 Date Received : 2021-03-01

RESULTS

| ANALYTE | UNIT | AS RECEIVED | DETECTION LIMIT | METHOD | DATE OF EXTRACTION | DATE OF ANALYSIS |
|-------------------------------|------|-------------|--------------------|----------|-----------------------|---------------------|
| Abamectin | ppb | ND | 10 | LC-MS/MS | 2021-03-12 | 2021-03-12 |
| Acetamprid | ppb | ND | 3 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Azoxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Brassinazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Clothianidin | ppb | ND | 8 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Cyproconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Desthio-Prothioconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Difenoconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Dimoxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Dinotefuron | ppb | ND | 4 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Epoxiconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Fluconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Fluoxastrobilin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Glufosinate | ppb | ND | 10 | LC-MS/MS | 2021-03-02 | 2021-03-05 |
| Glyphosate | ppb | ND | 10 | LC-MS/MS | 2021-03-02 | 2021-03-05 |
| Imidacloprid | ppb | ND | 4 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Ipconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Isavuconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Metconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Nitenpyram | ppb | ND | 8 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Oryastrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Picoxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Propiconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Prothioconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Pyraclostrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Ravuconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Sulfonic Acid Prothioconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Tebuconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |

| | | | | | | |
|-----------------|-----|----|---|----------|------------|------------|
| Tetraconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Thiabendazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Thiacloprid | ppb | ND | 6 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Thiamethoxam | ppb | ND | 3 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Trifloxystrobin | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-03 |
| Uniconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |
| Voriconazole | ppb | ND | 5 | LC-MS/MS | 2021-03-02 | 2021-03-02 |

QUALITY ASSURANCE

| ANALYTE | UNIT | DUPLICATE | SPIKE RECOVERY | MATRIX BLANK | PROCESS BLANK | INSTRUMENT BLANK |
|-------------------------------|------|------------|-------------------|-----------------|------------------|---------------------|
| Abamectin | ppb | 21PE001399 | 81.1 | ND | ND | ND |
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| Dimoxystrobin | ppb | 21PE001401 | 127 | ND | ND | ND |
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| Propiconazole | ppb | 21PE001401 | 93.1 | ND | ND | ND |
| Prothioconazole | ppb | 21PE001401 | 103 | ND | ND | ND |
| Pyraclostrobin | ppb | 21PE001401 | 79.0 | ND | ND | ND |
| Ravuconazole | ppb | 21PE001401 | 112 | ND | ND | ND |
| Sulfonic Acid Prothioconazole | ppb | 21PE001401 | 109 | ND | ND | ND |
| Tebuconazole | ppb | 21PE001401 | 122 | ND | ND | ND |
| Tetraconazole | ppb | 21PE001401 | 120 | ND | ND | ND |
| Thiabendazole | ppb | 21PE001401 | 102 | ND | ND | ND |
| Thiacloprid | ppb | 21PE001400 | 108 | ND | ND | ND |
| Thiamethoxam | ppb | 21PE001400 | 111 | ND | ND | ND |
| Trifloxystrobin | ppb | 21PE001401 | 55.0 | ND | ND | ND |
| Uniconazole | ppb | 21PE001401 | 96.9 | ND | ND | ND |
| Voriconazole | ppb | 21PE001401 | 85.8 | ND | ND | ND |

Comments:

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Neonicotinoids in soil, water and vegetation - Basic Principles

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Reviewed and approved by Regina Wixon, Ph.D.