

PCS 84069

Buell, Thomas

From: Buell, Thomas
Sent: Friday, April 9, 2021 2:10 PM
To: Ron Yoder
Subject: Sampling Results - March 14 Stormwater
Attachments: 20210317-001 - March 14 surface water.pdf; 3-14-2021_-_PCS_-_84069
_-_DEQ_Memo_-_Internal_-_SITE_VISIT.pdf

Ron:
Please see the attached sample results from March 14, 2021. I've also attached our trip report from that day when describes observations and sample locations.

Please let me know if you have any questions.
Thanks,
Tom

Tom Buell
DIVISION ADMINISTRATOR, MONITORING AND REMEDIATION DIVISION

Nebraska Department of Environment and Energy
P.O. Box 98922
Lincoln, Nebraska 68509-8922
DIRECT: (402) 471-4270 / MAIN OFFICE (402) 471-2186



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
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Report Date: 2021-04-07**Final Report****South Dakota Agricultural Laboratories has examined the sample of**

Limfinite Package Id : 20210317-001
Lab Sample Id : 21PE001927
Customer Sample Id : AltEN-Site 3
Sample Description : Water
Date Collected : 2021-03-14
Date Received : 2021-03-17
Cooler Temp :

RESULTS

ANALYTE	UNIT	AS RECEIVED	LOD	DETECTION LIMIT	METHOD	DATE OF EXTRACTION	DATE OF ANALYSIS
Abamectin	ppb	ND	3	10	LC-MS/MS	2021-03-18	2021-03-19
Acetamprid	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Azoxystrobin	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Brassinazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Clothianidin	ppb	ND	2.5	8	LC-MS/MS	2021-03-18	2021-03-18
Cyproconazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Desthio-Prothioconazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Difenoconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Dimoxystrobin	ppb	ND	3	8	LC-MS/MS	2021-03-18	2021-03-18
Dinotefuron	ppb	ND	1.2	4	LC-MS/MS	2021-03-18	2021-03-18
Epoxiconazole	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-20
Fluconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Fluoxastrobin	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Glufosinate	ppb	ND	3	10	LC-MS/MS	2021-03-29	2021-04-05
Glyphosate	ppb	40.8	3	10	LC-MS/MS	2021-03-29	2021-04-05
Imidacloprid	ppb	ND	1.2	4	LC-MS/MS	2021-03-18	2021-03-18
Ipconazole	ppb	ND	2	6	LC-MS/MS	2021-03-18	2021-03-20
Isavuconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Metconazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Nitenpyram	ppb	ND	2.5	8	LC-MS/MS	2021-03-18	2021-03-18
Orysastrobin	ppb	ND	2	7	LC-MS/MS	2021-03-18	2021-03-18
Picoxystrobin	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Propiconazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Prothioconazole	ppb	ND	2	6	LC-MS/MS	2021-03-18	2021-03-20
Pyraclostrobin	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Ravuconazole	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-20
Sulfonic Acid Prothioconazole	ppb	ND	3	8	LC-MS/MS	2021-03-18	2021-03-20
Tebuconazole	ppb	6.11	2	5	LC-MS/MS	2021-03-18	2021-03-20
Tetraconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Thiabendazole	ppb	46.7	2	5	LC-MS/MS	2021-03-18	2021-03-20

Thiacloprid	ppb	ND	2	6	LC-MS/MS	2021-03-18	2021-03-18
Thiamethoxam	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Trifloxystrobin	ppb	ND	1	5	LC-MS/MS	2021-03-18	2021-03-18
Uniconazole	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-20
Voriconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20

QUALITY ASSURANCE

ANALYTE	UNIT	DUPLICATE	SPIKE RECOVERY	MATRIX BLANK	PROCESS BLANK	INSTRUMENT BLANK
Abamectin	ppb	ND	95.0	ND	ND	ND
Acetamprid	ppb	21PE001928	122	ND	ND	ND
Azoxystrobin	ppb	ND	101	ND	ND	ND
Brassinazole	ppb	ND	109	ND	ND	ND
Clothianidin	ppb	21PE001928	112	ND	ND	ND
Cyproconazole	ppb	ND	117	ND	ND	ND
Desthio-Prothioconazole	ppb	ND	122	ND	ND	ND
Difenoconazole	ppb	ND	117	ND	ND	ND
Dimoxystrobin	ppb	ND	123	ND	ND	ND
Dinotefuron	ppb	21PE001928	108	ND	ND	ND
Epoxiconazole	ppb	ND	103	ND	ND	ND
Fluconazole	ppb	ND	119	ND	ND	ND
Fluoxastrobin	ppb	ND	111	ND	ND	ND
Glufosinate	ppb	21PE001928	91.4	ND	ND	ND
Glyphosate	ppb	21PE001928	124	ND	ND	ND
Imidacloprid	ppb	21PE001928	124	ND	ND	ND
Ipconazole	ppb	ND	97.4	ND	ND	ND
Isavuconazole	ppb	ND	112	ND	ND	ND
Metconazole	ppb	ND	123	ND	ND	ND
Nitenpyram	ppb	21PE001928	112	ND	ND	ND
Orysastrobin	ppb	ND	87.2	ND	ND	ND
Picoxystrobin	ppb	ND	108	ND	ND	ND
Propiconazole	ppb	ND	113	ND	ND	ND
Prothioconazole	ppb	ND	111	ND	ND	ND
Pyraclostrobin	ppb	ND	124	ND	ND	ND
Ravuconazole	ppb	ND	116	ND	ND	ND
Sulfonic Acid Prothioconazole	ppb	ND	104	ND	ND	ND
Tebuconazole	ppb	5.45	108	ND	ND	ND
Tetraconazole	ppb	ND	115	ND	ND	ND
Thiabendazole	ppb	37.1	99.4	ND	ND	ND
Thiacloprid	ppb	21PE001928	122	ND	ND	ND
Thiamethoxam	ppb	21PE001928	123	ND	ND	ND
Trifloxystrobin	ppb	ND	123	ND	ND	ND
Uniconazole	ppb	ND	117	ND	ND	ND
Voriconazole	ppb	ND	104	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, Orysastrobin, 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:

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1335 Western Avenue
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Report Date: 2021-04-07**Final Report****South Dakota Agricultural Laboratories has examined the sample of**

Limfinite Package Id : 20210317-001
Lab Sample Id : 21PE001928
Customer Sample Id : AltEN-Site 5
Sample Description : Water
Date Collected : 2021-03-14
Date Received : 2021-03-17
Cooler Temp :

RESULTS

ANALYTE	UNIT	AS RECEIVED	LOD	DETECTION LIMIT	METHOD	DATE OF EXTRACTION	DATE OF ANALYSIS
Abamectin	ppb	ND	3	10	LC-MS/MS	2021-03-18	2021-03-19
Acetamprid	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Azoxystrobin	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Brassinazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Clothianidin	ppb	455	2.5	8	LC-MS/MS	2021-03-18	2021-03-18
Cyproconazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Desthio-Prothioconazole	ppb	11.6	2	5	LC-MS/MS	2021-03-18	2021-03-20
Difenoconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Dimoxystrobin	ppb	ND	3	8	LC-MS/MS	2021-03-18	2021-03-18
Dinotefuron	ppb	ND	1.2	4	LC-MS/MS	2021-03-18	2021-03-18
Epoxiconazole	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-20
Fluconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Fluoxastrobin	ppb	11.8	1	3	LC-MS/MS	2021-03-18	2021-03-18
Glufosinate	ppb	ND	3	10	LC-MS/MS	2021-03-29	2021-04-05
Glyphosate	ppb	38.1	3	10	LC-MS/MS	2021-03-29	2021-04-05
Imidacloprid	ppb	J1.33	1.2	4	LC-MS/MS	2021-03-18	2021-03-18
Ipconazole	ppb	J3.48	2	6	LC-MS/MS	2021-03-18	2021-03-20
Isavuconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Metconazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Nitenpyram	ppb	ND	2.5	8	LC-MS/MS	2021-03-18	2021-03-18
Orysastrobin	ppb	ND	2	7	LC-MS/MS	2021-03-18	2021-03-18
Picoxystrobin	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Propiconazole	ppb	ND	2	5	LC-MS/MS	2021-03-18	2021-03-20
Prothioconazole	ppb	ND	2	6	LC-MS/MS	2021-03-18	2021-03-20
Pyraclostrobin	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-18
Ravuconazole	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-20
Sulfonic Acid Prothioconazole	ppb	ND	3	8	LC-MS/MS	2021-03-18	2021-03-20
Tebuconazole	ppb	34.7	2	5	LC-MS/MS	2021-03-18	2021-03-20
Tetraconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20
Thiabendazole	ppb	253	2	5	LC-MS/MS	2021-03-18	2021-03-20

Thiacloprid	ppb	ND	2	6	LC-MS/MS	2021-03-18	2021-03-18
Thiamethoxam	ppb	99.1	1	3	LC-MS/MS	2021-03-18	2021-03-18
Trifloxystrobin	ppb	ND	1	5	LC-MS/MS	2021-03-18	2021-03-18
Uniconazole	ppb	ND	1	3	LC-MS/MS	2021-03-18	2021-03-20
Voriconazole	ppb	ND	1	4	LC-MS/MS	2021-03-18	2021-03-20

QUALITY ASSURANCE

ANALYTE	UNIT	DUPLICATE	SPIKE RECOVERY	MATRIX BLANK	PROCESS BLANK	INSTRUMENT BLANK
Abamectin	ppb	21PE001927	95.0	ND	ND	ND
Acetamprid	ppb	ND	122	ND	ND	ND
Azoxystrobin	ppb	21PE001927	101	ND	ND	ND
Brassinazole	ppb	21PE001927	109	ND	ND	ND
Clothianidin	ppb	345	112	ND	ND	ND
Cyproconazole	ppb	21PE001927	117	ND	ND	ND
Desthio-Prothioconazole	ppb	21PE001927	122	ND	ND	ND
Difenoconazole	ppb	21PE001927	117	ND	ND	ND
Dimoxystrobin	ppb	21PE001927	123	ND	ND	ND
Dinotefuron	ppb	ND	108	ND	ND	ND
Epoxiconazole	ppb	21PE001927	103	ND	ND	ND
Fluconazole	ppb	21PE001927	119	ND	ND	ND
Fluoxastrobin	ppb	21PE001927	111	ND	ND	ND
Glufosinate	ppb	ND	91.4	ND	ND	ND
Glyphosate	ppb	48.9	124	ND	ND	ND
Imidacloprid	ppb	2.10j	124	ND	ND	ND
Ipconazole	ppb	21PE001927	97.4	ND	ND	ND
Isavuconazole	ppb	21PE001927	112	ND	ND	ND
Metconazole	ppb	21PE001927	123	ND	ND	ND
Nitenpyram	ppb	ND	112	ND	ND	ND
Orysastrobin	ppb	21PE001927	87.2	ND	ND	ND
Picoxystrobin	ppb	21PE001927	108	ND	ND	ND
Propiconazole	ppb	21PE001927	113	ND	ND	ND
Prothioconazole	ppb	21PE001927	111	ND	ND	ND
Pyraclostrobin	ppb	21PE001927	124	ND	ND	ND
Ravuconazole	ppb	21PE001927	116	ND	ND	ND
Sulfonic Acid Prothioconazole	ppb	21PE001927	104	ND	ND	ND
Tebuconazole	ppb	21PE001927	108	ND	ND	ND
Tetraconazole	ppb	21PE001927	115	ND	ND	ND
Thiabendazole	ppb	21PE001927	99.4	ND	ND	ND
Thiacloprid	ppb	ND	122	ND	ND	ND
Thiamethoxam	ppb	104	123	ND	ND	ND
Trifloxystrobin	ppb	21PE001927	123	ND	ND	ND
Uniconazole	ppb	21PE001927	117	ND	ND	ND
Voriconazole	ppb	21PE001927	104	ND	ND	ND

Comments:

Definitions:

ppb - parts per billion

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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

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

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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.

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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.

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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.

Submitted by the customer:



20210317-001
21PE001927-001928

Pesticide Residue Sample Submission Form

South Dakota Agricultural Laboratories
1335 Western Avenue
Brookings, SD. 57006
(605) 692-7325

20210317-001
21PE001927-1928

AI+EN - Site 3
AI+EN - Site 5

Name: Dave Schumacher *Sample ID: _____
Address: 245 Fallbrook Blvd City: Lincoln State: NE
Zip: 68521 Phone: (402) 471-4709 **Email: david.schumacher@nebraska.gov

*Sample ID must be marked clearly on the sample you submit. **Results will be emailed to the provided email address.

Billing Information: ☐ Check box if billing is the same as the customer information

Name: Nebraska Dept. of Environmental and Energy Address: 245 Fallbrook Blvd.
City: Lincoln State: NE Zip: 68521
Phone: (402) 471-4709 Email: NDEE.accounting@nebraska.gov

Individual tests are \$162 each, unless otherwise marked. Scans are \$212 and include all of the compounds in a particular category. Acceptable samples include Vegetation, Water or Soil. Call to confirm other substrates.

Thank you for choosing South Dakota Agricultural Labs! We do add analytes to our testing regiment throughout the year. If a chemical of interest is not listed, please call us:
(605) 692-7325.

How much sample should you send?

Please send 30g of vegetation or 100g of soil to run an individual test. What does this look like? For vegetation, it would be about a quart sized bag packed full. If more than one test is required, please fill a gallon sized bag. For soil samples, please send 2 cups, if more than one test is required send 4 cups.

Analyses offered

Please turn page over to view the current pesticide analyses.

If you are interested in a screen of active ingredients, please check the box next to the **bold-faced** heading. This will include all active ingredients within the PGR screen for \$212.

Example: PGR Screen ☒

If you are interested in single analyses, please circle the active ingredients. The cost of each individual analyte is \$162 unless otherwise marked.

Example: Mesotrione

Sample(s) Received at SD Ag Labs
Date 2021 03 17
Received by
Alyssa Kennedy

PCS
94069

AltEn Field Observations

March 14, 2021

Dave Bubb

NDEE

Observations started at Approximately 1200 and ended at 1335

This area had received significant rain from the previous day, March 13 and continued through March 14.

Site 3 facing west on west side of Highway 66. Culvert has had the interior balloon, plywood and sandbags removed.



20210023874

Site 3 facing east on west side of Highway 66. Same culvert as previous photo but facing east. Note: Balloon, plywood and sandbags are no longer present. Water temperature: 4.9 degrees C, Dissolved oxygen: 8.6 mg/l, pH: 7.4 St.Units, Conductivity: 429 Umhos/cm, Turbidity: 16.3 NTU's, Dissolved oxygen (percent saturation) 67 percent. Air temperature: 40 degrees F, 100% cloud cover, previous and current rain, east wind at 30 to 50 mph. Water samples were collected at this location.



Site 3 facing east on the east side of Highway 66.



Site is approximately 0.7 miles below Site 2. Private pond is towards the upper right-hand corner of photo. This photo was taken facing west on the west side of County Road 5 and 0.2 miles south of County Road F. Stream flows into pond and leaves the pond via an outfall structure.



Facing east on east side of County Road 5. Same stream as previous photos just on opposite side of the same county road.



Site 2 facing west on west side of County Road 6. Much more water than usual (from previous visits).



Site 2 facing east on east side of County Road 6.



Stream above Site 3 Facing north on the north side of Highway 66. A large pump and berm had previously been installed. Berm had been across the stream just above the horizontal pole. Previous photos showed a large pump with a tractor. Collapsible tubing has also been removed where stream was being pumped from the south.



Same stream as previous photo facing south and on south side of Highway 66.



Site 0.3 miles east of Roads 8 and H facing north.



Site 4 facing west on west side of County Road 8.



Site 5 facing west on west side of County Road 9. Water temperature: 5.7 degrees C, Dissolved oxygen: 4.1 mg/l, pH: 7.5 St.Units, Conductivity: 628 Umhos/cm, Turbidity: 137 NTU's, Dissolved oxygen (percent saturation) 32 percent. Air temperature: 40 degrees F, 100% cloud cover, previous and current rain, east wind at 30 to 50 mph. Water samples were collected at this location.



Facing east from County Road 10. Photo shows standing water to the south of piles of wet cake and north side of the north hoop barn. Note: water flowed across north/south AltEn access road and into ditch along County Road 10.

