Water Committee Meeting
Wednesday, January 4, 2023 6:00 PM
Lower Platte North NRD Office
P.O. Box 126
Wahoo, NE 68066

1. UNFINISHED BUSINESS

2. REGULATORY

2.A. GROUND WATER MANAGEMENT AREA

2.A.1. Well Permit Program

2.A.1.a. Well Permits Approved

2.A.1.b. Wells Permits Approved: #

2.A.1.c. **Landowner**	2.A.1.d. **Number of Wells**	2.A.1.e. **Number of New Irrigated Acres**	
2.A.1.i. RDC Inc.	2.A.1.j. 1	2.A.1.k. 0	
2.A.1.o.	2.A.1.p.	2.A.1.q.	
2.A.1.u.	2.A.1.v.	2.A.1.w.	
2.A.1.aa.	2.A.1.bb.	2.A.1.cc.	
2.A.1.gg.	2.A.1.hh.	2.A.1.ii.	

2.A.1.mm.

2.A.1.nn.
2.A.1.oo.
2.A.1.pp.
2.A.1.qq.
2.A.1.rr.
2.A.1.ss. The total number of approved permits for 2022 is #

Location of Approved Well Permits for 2022: Correct as of ####

2.A.1.tt. **County**	2.A.1.uu. **Irrigation - New**	2.A.1.vv. **Irrigation - Replacement**	
2.A.1.bbb. **Butler**	2.A.1.ccc.	2.A.1.ddd.	

2.A.1.jjj. **Colfax**	2.A.1.kkk.	2.A.1.lll.	
2.A.1.rrr. **Dodge**	2.A.1.sss.	2.A.1.ttt.	
2.A.1.zzz. **Boone**	2.A.1.aaaa.	2.A.1.bbbb.	
2.A.1.hhhh. **Madison**	2.A.1.iiii.	2.A.1.jjjj.	
2.A.1.pppp. **Platte**	2.A.1.qqqq.	2.A.1.rrrr.	
2.A.1.xxxx. **Saunders**	2.A.1.yyyy.	2.A.1.zzzz.	
2.A.1.fffff. **Total**	2.A.1.ggggg.	2.A.1.hhhhh.	

2.A.2. Phase Area Update

The committee and staff had a lengthy discussion on nitrogen management and the best options for moving forward. Staff showed the committee the different options for boundaries with the question of why some years more samples were collected. The staff does spot checks yearly and extensive sampling periodically. The staff did extensive sampling work in 2001-03, 2011-12 and 2019-20. The committee felt staff should do extensive sampling in Summer 2023 and re-discuss boundaries after the analysis is complete.

The committee discussed health issues and making people aware of the water quality issues in private domestic wells. Phase 4 could be the long-term solution but short-term options should be considered, like RO units. This topic will be discussed later on in the Water Resources Agenda.

The committee and staff discussed soil sample analysis results and discrepancies. If Phase 4 is moved forward, what minimum amount of nitrogen application will be needed, as producers are supposed to follow UNL nitrogen recommendation equation. One current soil sample showed 190 pounds of residue carryover in one part of the field while another area was around 42 pounds. A different field with high organic matter showed 140 pounds of nitrogen credits. When staff works with these individuals, what will be the right recommendation?

The committee and staff discussed a public meeting in February or March with local producers to explain what is being considered would be appropriate. They thought if producers' wives could attend it would be helpful, so they could understand the situation.

The committee realized that the reporting date would have to be adjusted, so staff

could work with current soil sampling analysis. A pledge by the producer with a nitrogen plan would put practices on paper, that the producer might be willing to change.

Shown below are the requirements for Phase Four Water Quality Management Area. Options 3, 4 and 5 boundaries would meet the requirements for moving forward. (Options attached)

Section I Groundwater Quality Management Area - Phase Four

Rule 1 Phase Four Criteria

When levels of nitrate-nitrogen exceed 15.01 parts per million, or levels of other human induced non-point source contaminants exceed 100% of the MCL or LHAL, a Phase Four area will be declared. Within the same aquifer; boundary setting for Phase Four Areas will be initiated when: water quality analytical results within a minimum 9 square mile area are at identified trigger levels for a minimum of 2 sampling events. The area must contain a minimum of 10 registered wells and contaminant trigger levels must be exceeded in over 50% of the wells. When irrigation wells are not available, other wells may be used. Initial investigation by the District will be to determine if the contamination is a result of point-source or non-point source pollution. If non-point source pollution is found to be the reason, more intensive investigation for boundary setting will ensue. If a Wellhead Protection Area should be established due to non-point source pollution, the District may set boundaries that are less than 9 square miles. After the establishment of a Phase Four Area, if non-point source contamination levels should decline, two consecutive sampling events below the trigger levels are needed before the Area could be placed in Phase Three, Phase Two or Phase One.

Rule 2 Continuation of Phase One, Two and Three Rules

A continuation of Phase One Rules as defined in Section E, Rules 1-6, Section F, Rule 2, Phase Two Rules as defined in Section G, Rules 3, 4, 5, 8, 9, 10 and 11, Phase Three Rules as defined in Section H, Rule 4.

Rule 3 Fertilizer Application On All Soils

Split application of commercial nitrogen fertilizer is required with 80 pounds maximum applied before May 1.

Rule 4 Nitrogen Recommendations

Nitrogen applications must not exceed District Recommendations. Application data may be required to verify the amount of nitrogen that is applied to the field(s) within the management area.

Rule 5 Well Metering

Flow meters are required on all high capacity wells.

Rule 6 Acre-Inch Allocations

A rolling acre-inch allocation, in 3-year increments, will be put into place by the District and will be based on the aquifer subarea, crop planted, irrigation distribution system, percent decline of the aquifer, water use of the aquifer, climatic conditions, net corn crop requirements, and discretionary factors.

Rule 7 Staff Assistance

NRD Staff will work directly with individuals on Best Management Practices. Staff may spot check fields before May 1 by collecting a soil sample to monitor Rule 3.

Questions?

- Boundaries
  - Is there one boundary we want to start with or does staff do extensive sampling in the whole area in Summer 2023 with the boundary finalized on November 1?
- Reporting Date
  - Make dual dates of April 1 and December 15 or just have one date in the spring? This would be just for Phase 4 at this time until rules are changed. All Phases?
  - Changing dates would require updates on the online reporting.
- Fertilizer Minimum
  - Phase Report 1 and 2 are attached, showing the difference in recommendations compared to current applications.
  - How do we handle the differences as the rules require following recommendation by staff?
  - UNL Equation?
- Soil Samping Timing
  - Should staff sample a few fields in the fall and then the spring?
  - Will need current soil sample analysis to make recommendations.
- Livestock Manure Application
  - How involved do we want to get?
- Economics?
  - Yield loss and documentation.
- Public Meeting and Hearing
  - Public meeting in February or March with a hearing in October to finalize rules and boundaries.
- Cost-sharing practices are being promoted.
  - If we start November 1, extending $1000 on flow meters to April 1, 2024?
- Producers set up a nitrogen plan to reduce nitrogen loading.
  - This has been done in other watersheds to have producers commit to changing practices.

2.A.3. Motion to move forward?

2.A.4. Richland - Schuyler Phase 3 Area

2.A.5. 2022 is the seventh year of this Phase 3 Area. This Phase 3 area went into effect September 1, 2015. The 55 sections of this area first went into a Phase 2 Area in 2004. The ten sections that were in Phase 2 are now in Phase 3. As such, the 2020, 2021 and 2022 numbers (at bottom of table) are for 65 sections.

2.A.6. Year	2.A.7. Nitrate-nitrogen Range	2.A.8. Percent 2.A.9. Nitrate-nitrogen 2.A.10. 0 to 8.0 ppm	2.A.11. Percent 2.A.12. Nitrate-nitrogen 2.A.13. 8.01 to 10.00 ppm

2.A.20. 2004	2.A.21. 0 to 47 ppm	2.A.22. 30% (42 of 139)	2.A.23. 10% (14 of 139)
2.A.26. 2005	2.A.27. 0 to 120 ppm	2.A.28. 31.3% (74 of 236)	2.A.29. 10.2% (24 of 236)
2.A.32. 2006	2.A.33. 0 to 53 ppm	2.A.34. 28% (50 of 181)	2.A.35. 14% (26 of 181)
2.A.38. 2007	2.A.39. 0 to 99 ppm	2.A.40. 32% (75 of 231)	2.A.41. 10% (22 of 231)
2.A.44. 2008	2.A.45. 0 to 46 ppm	2.A.46. 28% (53 of 190)	2.A.47. 12% (23 of 190)
2.A.50. 2009	2.A.51. 0 to 57 ppm	2.A.52. 33% (72 of 216)	2.A.53. 6% (13 of 216)
2.A.56. 2010	2.A.57. 0 to 57.5 ppm	2.A.58. 31% (70 of 229)	2.A.59. 7% (15 of 229)
2.A.62. 2011	2.A.63. 0 to 65.8 ppm	2.A.64. 28% (67 of 241)	2.A.65. 9% (21 of 241)
2.A.68. 2012	2.A.69. 0 to 52.6 ppm	2.A.70. 29% (70 of 241)	2.A.71. 9% (21 of 241)
2.A.74. 2013	2.A.75. 0 to 94.0 ppm	2.A.76. 25% (63 of 252)	2.A.77. 9% (23 of 252)
2.A.80. 2014	2.A.81. 0 to 101.0 ppm	2.A.82. 27% (68 of 251)	2.A.83. 9% (22 of 251)
2.A.86. 2015	2.A.87. 0 to 53.3 ppm	2.A.88. 23% (55 of 238)	2.A.89. 12% (29 of 238)
2.A.92. 2016	2.A.93. 0 to 50.5 ppm	2.A.94. 25% (58 of 228)	2.A.95. 10% (22 of 228)
2.A.98. 2017	2.A.99. 0 to 53.4 ppm	2.A.100. 25% (60 of 238)	2.A.101. 6% (14 of 238)
2.A.104. 2018	2.A.105. 0 to 56.9 ppm	2.A.106. 26.5% (50 of 189)	2.A.107. 6.3% (12 of 189)
2.A.110. 2019	2.A.111. 0 to 39.4 ppm	2.A.112. 25% (53 of 209)	2.A.113. 11% (22 of 209)
2.A.116. 2020	2.A.117. 0 to 50.8 ppm	2.A.118. 26% (69 of 261)	2.A.119. 6% (15 of 261)
2.A.122. 2021	2.A.123. 0 to 43.0	2.A.124. 25.5% (67 of 263)	2.A.125. 8.4% (22 of 263)
2.A.128. 2022	2.A.129. 0 to 58.5 ppm	2.A.130. 23.0% (57 of 248)	2.A.131. 6.45% (16 of 248)

2.A.134. Bellwood Phase 2 Area

2.A.135. 2022 is the twentieth year for this Phase 2 Area.

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.	2.A	2.A	2.A	2.A	2.A
2.	2.A	2.A	2.A	2.A	2.A

2.A.265. LPNNRD Operator Certification
Attached is a list of classes for 2023.

Does the Committee want to move forward on issuing Cease and Desist Orders to owners/operators that have let their Nitrogen/Irrigation Certification Card lapse? The process would be sending certified letters to individuals notifying them of the violation and when the hearing would take place.

Another option would be changing the rule that a NRD issued card is required to purchase fertilizer. Jovan commented that this could be a rule that the NRD could implement. The concern would be enforcement and cooperation with fertilizer dealers.

The Committee felt that obtaining a Nitrogen/Irrigation Certification Card should be enforced, as this rule obligation by the NRD is not that time-consuming. The class is a pro-active approach by the NRD to present best management practices that a producer could use within their operation. There was some discussion about local or state control on nitrogen management. A hearing is scheduled for Tuesday March 28 for individuals who are not in compliance,

Attached is a draft example of the letter that was sent out on Thursday, January 5.

2.A.266. Groundwater Management Plan - LPNNRD

Discussion at the Water Committee Retreat that the 1994 Management plan should be updated and condensed. Does the Committee want to have an outside firm write and assemble or should staff attempt to do it in-house? Advantages of having an outside firm is the perception and at public meetings they can facilitate with all parties. The disadvantage is the cost to the District, which could be 20 to 50 thousand.

The Committee would like a sub-committee of 2 Water Committee members and 2 staff to review the plan for condensing and decide what would be the best action to update. The Committee will decide on members after new Committee alignments.

The following items were brought up with no discussion in committee.
Other items discussed at the Retreat:

- Adjusting Water Quality Triggers levels
    - Considering starting Phase Two at 5 PPM?
- Water Flow Meters Districtwide
    - Allocations?

2.A.267. Cost Share Programs

2.A.267.a. Soil Moisture Sensors

Attached is an approved application and invoice from Brian Sanderson. The application allows for 50% up to $750 for Advanced Soil Moisture Sensor Technology.

2.A.267.b. Flow Meter Maintenance Program

Staff explained how meter maintenance worked and with batteries dying in-season made water use accuracy a challenge. If the NRD was going to cost-share more meters and potentially have other areas with allocations, this could become more of an issue. Some producers like the convenience of remote meter reading with pivot and nozzle controls. Idea discussed was to replace batteries with a 2-year rotation instead of 4. More discussion will occur at future Committee meetings.

Flow meter maintenance and batteries. The meters with batteries seem to have more issues, with some batteries dying in season, so no accurate reading is obtained. Either don't allow them at all or require that remote access be given to NRD staff with warning text or email.

Tri City meter maintenance is scheduled to maintain the meters in the northwest part of the district. They have had a late start due to training new employees and the cold snap that we just experienced.Typically they start right after harvest. Currently in the third year of the meter maintenance cycle. They document and take pictures of the meter and its reading. On

mechanical meters, they re-grease the bearings; check if the bearings are still good; make sure the cable isn't stripped or rounded off, it ties into the register and makes the dials/tumblers turn. They make sure the propeller isn't damaged; the magnets aren't cracked or damaged; replace the gasket; no vibrational damage; no water damage. On battery powered flow meters, they simply replace the battery and replace the dry packs.

Site visits are paid by the LPNNRD. $60.00 per mechanical site visit and $75.00 for electronic meter site visit. If the meter is damaged and needs further repair, they can repair the flow meter in the field and that bill is between Tri City and the producer/owner. Currently, on the battery powered meters, the LPNNRD absorbs the cost of the battery and then invoices the producer/owner for reimbursement. At the moment, this isn't a tall task because there are only 100 electronically powered meters in the district. If this number grows exponentially, it would be cumbersome to staff time to track down the reimbursements.

Flow meter reporting: Reporting deadline was December 15th. As of 12/28/22, we have had 750 meter readings reported to us (including livestock). Nearly 400 flow meter readings are still needed from irrigation wells. Postcards were sent out earlier this year in Mid-September, which was suggested last year. A reminder email was sent out to the producers, who had given us an email in the past.

Municipalities, industries, and livestock that are required to report also have had reminders sent out to them (this list included approximately 175 wells). They have until January 31st to report their usage.

District Approved flow meter list:

Attached is the current list

Install requirements on all mechanical flow meters: without straightening vanes, 10 upstream pipe diameters from any bend or valve and 1-2 downstream from any bend or valve. With bolts in straightening vanes, 5 upstream pipe diameters and 1-2 downstream. With in-line flow straightener, 1.5 pipe diameters upstream and 1-2 downstream.

On ARAD group installs, they should install to the specs of the manufacturer/flow meter manual.

Mechanical Meters:

Advantages- no power needed; can be maintained; accurate if operating correctly; preventative maintenance once every four years helps to ensure they are operating smoothly and calculating correctly.

Disadvantages- no easy way of using telemetry or having it tied into the producers' pivot panel so they can connect it to an app on their phone to see how much they are pumping. If it is installed too close to a well head that is powered by an engine it could be susceptible to vibrational damage. If this occurs, relocating the mechanical meter is the only solution to ensure that no more damage occurs and the meter records accurately.

Electronic meters:
Advantages- can use telemetry and the producer can visualize if the pivot/well is operating correctly and they can see how much that they are applying virtually without being at the site.

Disadvantages- Needs power to record data; an unknown is how long the sensor is good for? Is this calculation correct? If using direct power from the pivot panel or another source of electricity, the battery can be used as a back up. Batteries are changed on a four-year basis. I have had phone calls saying their batteries have died; there is no way of knowing what they pumped. If connected to a direct source of power, how are we to know that it was plugged in at the beginning or end of the season? If power is lost in either form, the totalizer will not count or be updated when reconnected. If a well is allocated, it could open a loophole. Electronics and water are not a good combination.

Staff suggestions for the district approved list:

-McCrometer propeller meter with mechanical register; no battery powered/electric digital screens.
-No on any battery/external powered flow meter; -No to battery powered meters (looking down the road if 3,000 meters need to be installed.) How useful will the information be if a battery dies and we don't know what was pumped, especially in drought years with allocations. If the producer says they are going to use external power and have the battery as a backup, how is the staff going to keep up with these "checkups"?
-ARAD Group & Carlon; for subsurface drip; industrial; livestock (these meters are typically indoors and not exposed to the elements of mother nature.
-Geyser propeller meter; no digital screens.
- Or if we do allow digital powered propeller meters/sensor meters, they must be powered externally and if they are found not working or fail to report to the NRD that the meter isn't working they could be subjected to a reduction in their allocation.

Questions for Committee:
1. Prop Meters with mechanical totalizer (McCrometer/Geyser)
2. Prop Meters with Digital readouts (McCrometer)

3. Electromagnetic meters with digital readouts (Valley 3000, Lindsay Growsmart, Sparling)- A water suitability sample will be required to show water quality results before choosing this meter. It needs to have low concentrations of Iron and Manganese and other dissolved solids in order to allow it to be installed. The producer must also allow the NRD remote access to see if the battery/external power is hooked to the meter and for the NRD to see if the meter is functioning. If not reported to the NRD, the producer would get a warning for non-compliance. After that, if the well is in an allocated area, the well could be subjected to a reduction in its allocation. 1",2",3"?

4. Turbine Meters (ARAD Group and Carlon)- for subsurface drip, livestock , industrial uses.

2.B. GROUND WATER QUALITY SAMPLING

Attached is a map showing the results from sampling that NRD staff conducted in the summer of 2022. The purpose of the sampling is to see if the results can identify why some areas within the Schulyer-Richland Area had lower nitrate results. The map does have some interesting results with higher uranium and the potential of surface and groundwater connections.

Dan Snow - UNL Water Center comments are shown below.

"It seems likely that several wells close to the river draw on groundwater with active denitrification, while others show iron reduction (possibly releasing uranium).

Nitrate reduces to nitrogen gas (N2) through the following pathway through microbial denitrification: NO3-> NO2-> N2O-> N2. Detecting nitrite (NO2) and nitrous oxide (N2O in some wells is a good indicator of active microbial denitrification. 15N in residual nitrate will be enriched (increased) along with 18O during microbial denitrification.

Iron reduction occurs when most of the nitrate is used up and sulfate reduction followed by methanogenesis happens under even more reducing conditions."

Questions for Committee and Board?

The NRD sometimes test low nitrates in a water sample, but finds out later that another contaminant is high. Should we offer testing for other potential contaminants? Costs?

A state cost-share program for Reverse Osmosis Units (RO) is being offered through NDEE. One of the requirements is certified laboratory results for nitrates to be eligible. In the past, the NRD has assisted District residents with obtaining nitrate water sample results.

Lower Elkhorn NRD is offering cost-share on RO units, if not approved by state program grant. (attached)

The committee agreed that staff should continue to assist people with nitrate water sampling for domestic wells and to make them aware that other contaminants might be in the water, even if nitrates are low. The Committee would like to discuss a

cost-share program for Reverse Osmoisis Units (RO) for individuals at budget time.

2.C. LIVESTOCK WASTE PERMITS

2.D. The LPNNRD has received # 1 livestock permit applications from DEQ since the last Water Committee meeting.
The Board did pass a motion to stay neutral on livestock facilities and the NRD responsibility is for the permitting of high capacity wells. Manure application is usually treated as any commercial fertilizer, where soil sampling and manure analysis are conducted and handled by NDEE.

2.E. **Name**	2.F. **Livestock**	2.G. **Type of Permit**	2.H. **Legal Description**
2.J. Rick Wendt	2.K. Cattle	2.L. Construction	2.M. NW1/4 34-19-2E
2.O.	2.P.	2.Q.	2.R.
2.T.	2.U.	2.V.	2.W.
2.Y.	2.Z.	2.AA.	2.BB.

Description of permit application
Rick Wendt is expanding his operation from 299 to 3500 head of cattle with an average weight of 700 pounds.
Attached are comments from LPNNRD.

3. GROUND WATER PROGRAMS

3.A. DECOMMISSIONED WELL PROGRAM

3.A.1. Well Estimates

3.A.2. 1 new wells has been reviewed and approved for decommissioning since the last Committee meeting.

3.A.3. **Well Owner**	3.A.4. **Type of Well**	3.A.5. **Cost Share Estimate**	3.A.6. **County**
3.A.7. Jonathan Howell	3.A.8. Stock	3.A.9. $1,203.00	3.A.10. Saunders
3.A.11.	3.A.12.	3.A.13.	3.A.14.
3.A.15.	3.A.16.	3.A.17.	3.A.18.

3.A.19. Plugged Wells

3.A.20. 1 wells have been plugged, reviewed, and ready for cost share payment approval this month.

3.A.21. **Well Owner**	3.A.22. **Type of Well**	3.A.23. **Cost Share Estimate**	3.A.24. **Cou nty**
3.A.25. David Proskovec	3.A.26. Irrigati on	3.A.27. $737. 44	3.A.28. But er
3.A.29.	3.A.30.	3.A.31.	3.A.32.
3.A.33.	3.A.34.	3.A.35.	3.A.36.

3.B. LOWER PLATTE NORTH NRD GROUND WATER STUDIES

Attached is the RFQ for Hydrological Assessment Geodatabase, which was part of the WSF grant received in November 2022. This is a step that was overlooked to complete the necessary data to develop the groundwater model. This RFA was sent out or emailed to firms on Thursday, January 5, 2023.

3.B.1. Eastern Nebraska Water Resources Assessment (ENWRA)

An invoice for $30,000 is attached from ENWRA for dues per contract. This year LPNNRD is eligible to receive $9150 for well monitoring equipment and test holes. The plan is to unitize this money for equipment in the new monitoring well north of Richland along with updating older data loggers. A check will be mailed in January.

3.B.2. Lower Platte River Consortium

The next meeting will be January 17, 2023 at 10 am, planned for the NEDNR building at Fallbrook in Lincoln.

Attached is the Drought Map from December 29. What are the thoughts of the Committee on moving forward on drought information or scenarios?

The committee thought staff should continue to inform people about water conservation.

4. SURFACE WATER PROGRAMS

5. OTHER

5.A. COMMENTS FROM THE PUBLIC


31-18-2E
2019-15.3
2020-16.5
32-18-2E
2019-13.8
2020-16.6
2021-17.7
33-18-2E
2019-14.9
2020-15.6
2021-16
34-18-2E
2019-16.4
2020-9.89
35-18-2E
2019-8.1
2020-10.2
36-18-2E
2019-8.17
2020-8.98
31-18-3E
2019-11.8
2020-12.1
32-18-3E
2020-16.7
33-18-3E
2019-15.6
2020-14.2
34-18-3E
2019-2.73
2020-12.1
2020-11.8
6-17-2E
2020-22.4
2020-22.8
5-17-2E
2019-15.1
2020-13.4
4-17-2E
2019-13.1
2020-13.3
3-17-2E
2019-15.8
2020-15.8
2021-16.3
2-17-2E
2019-13.5
2022-17.1
1-17-2E
2019-14.5
2020-15
6-17-3E
2019-16.5
2020-17.4
5-17-3E
2019-14.5
2020-14
4-17-3E
2019-6.82
2019-6.81
2020-14.7
3-17-3E
2019-17.3
2020-13.9
7-17-2E
2020-24.2
8-17-2E
2019-23.2
2020-13.9
9-17-2E
2019-9.15
2020-59.3
2020-9.88
2021-14.3
2022-84.9
10-17-2E
2019-17.2
2020-25.4
2020-28.8
11-17-2E
2019-15.6
2020-16
2021-16.8
12-17-2E
2020-14.1
7-17-3E
2019-14.3
2020-11.8
8-17-3E
2019-13.1
2020-13.1
2020-10.1
2020-13.4
9-17-3E
N/A
10-17-3E
2020-1.96
2020-16.1
11-17-3E
N/A
18-17-2E
2019-15.1
2020-14
17-17-2E
2019-27.5
2019-32.9
2020-43.8
2022-44.1
2022-43.9
16-17-2E
2019-28.6
2020-28.3
15-17-2E
2020-9.65
14-17-2E
2020-18.4
2021-21.2
13-17-2E
2019-0.69
2020-5.14
18-17-3E
2019-11
2020-1.49
17-17-3E
2019-0
2019-4.33
2019-4.32
2020-7.16
2020-1.11
16-17-3E
2020-10.5
15-17-3E
2018-28.1
2018-28.1
2019-26.9
2020-24.2
2021-22.3
2021-26
2022-18.4
2022-19.4
14-17-3E
2019-6.45
2020-5.7
13-17-3E
2019-23.3
2020-2.91
18-17-4E
N/A
17-17-4E
2020-6.68
19-17-2E
2019-15.6
2020-16.1
20-17-2E
2019-5.31
2020-7.18
2021-4.55
21-17-2E
2019-9.78
2019-7.09
2020-22.4
22-17-2E
2019-29.1
2020-31.3
23-17-2E
2019-0.08
2019-0
2020-21.8
24-17-2E
2019-2.57
2020-17.2
19-17-3E
2019-13
2020-15.4
20-17-3E
2019-8.56
2020-20.7
2022-31.2
21-17-3E
2019-27
2020-10.7
22-17-3E
2020-15.5
30-17-2E
N/A
29-17-2E
N/A
28-17-2E
N/A
27-17-2E
2019-9.69
2019-0
2020-0
2021-0
26-17-2E
2020-9.92
25-17-2E
2019-12.9
2020-11.9
2021-12.8
2021-13.2
2022-15
30-17-3E
2019-0.79
2019-11.9
2019-18.5
2020-22.1
29-17-3E
2019-26.4
28-17-3E
2019-11.7
2020-10.6
27-17-3E
2020-9.49
Wells sampled by NRD Staff.
[redacted]
Rd 11
Rd E
Cedar St
HIGHWAY 30

Option 1 (Highlighted in Blue)					
	Percetnage of wells				Average
	0 to 8	8 to 10	10 to 15	15 or greater	Nitrate
2019 (36)	19.44%	11.11%	25.00%	44.44%	14.01
2020 (42)	2.38%	11.90%	40.48%	45.24%	16.69
2021 (7)	14.29%	0.00%	14.29%	71.43%	15.26

	Percentage of wells				Average
	0 to 8	8 to 10	10 to 15	15 or greater	Nitrate
2019 (45)	26.67%	8.89%	24.44%	40.00%	13.2
2020 (56)	8.93%	8.93%	35.71%	46.43%	15.83
2021 (10)	20.00%	0.00%	10.00%	70.00%	15.62

	Percentage of wells				Average
	0 to 8	8 to 10	10 to 15	15 or greater	Nitrate
2019 (45)	26.67%	4.44%	26.67%	42.22%	13.74
2020 (52)	9.62%	9.62%	30.77%	50.00%	16.24
2021 (12)	16.67%	0.00%	25.00%	58.33%	15.18

	Percentage of wells				Average
	0 to 8	8 to 10	10 to 15	15 or greater	Nitrate
2019 (28)	21.43%	14.29%	17.86%	46.43%	13.86
2020 (31)	6.45%	12.90%	22.58%	58.06%	17.67
2021 (7)	14.29%	0.00%	14.29%	71.43%	15.26

	Percentage of wells				Average
	0 to 8	8 to 10	10 to 15	15 or greater	Nitrate
2019 (24)	8.33%	16.67%	17.86%	46.43%	16.03
2020 (28)	6.45%	12.90%	22.58%	58.06%	17.99
2021 (7)	14.29%	0.00%	14.29%	71.43%	15.26

FERTILIZER DATA

Hide Outlier Yield, Nitrates, and Water from Chart Scores:	☐
Water Nitrate Results:	15.8
Crop Planted:	Corn
Yield Goal (bu/ac):	225
Total Nitrogen Needed:	270
Nitrogen From Water:	24.67
Residual Nitrogen:	49.00
Organic Matter:	28.00
Nitrogen From Past Crop:	45
Nitrogen From Manure:	
Nitrogen Available:	146.67
Nitrogen Recommendation:	123.33

FIELD DATA

Actual Nitrogen Applied:	200
Actual Yield:	200
Inhibitor Used:	☐
Split Application:	☐
Beginning Flow Measurement:	
Ending Flow Measurement:	
Inches of Water Applied:	6.79
Metered/Measured:	Metered
Date:	12/13/2022
Pesticides Applied:	
Pesticides Applied per Acre:	

FERTILIZER DATA

Hide Outlier Yield, Nitrates, and Water from Chart Scores:	☐
Water Nitrate Results:	16.3
Crop Planted:	Corn
Yield Goal (bu/ac):	200
Total Nitrogen Needed:	240
Nitrogen From Water:	37.49
Residual Nitrogen:	65.00
Organic Matter:	140.00
Nitrogen From Past Crop:	65
Nitrogen From Manure:	
Nitrogen Available:	307.49
Nitrogen Recommendation:	-67.49

FIELD DATA

Actual Nitrogen Applied:	130
Actual Yield:	207
Inhibitor Used:	☐
Split Application:	☑
Beginning Flow Measurement:	
Ending Flow Measurement:	
Inches of Water Applied:	10
Metered/Measured:	Measured
Date:	12/29/2022
Pesticides Applied:	none
Pesticides Applied per Acre:	

2023 Certification Classes
For Nitrogen and Water Management

Class	Date & Time	Location
1	Friday, January 13th @ 10:00 a.m.	David City – Butler County Events Center
2	Thursday, January 26th @ 3:30 p.m.	Fremont – Dodge County Extension Office ❶
3	Tuesday, January 31st @ 10:00 a.m.	ENREC (near Mead)
4	Thursday, February 2nd @ 1:00 p.m.	Columbus – Agriculture Park (upstairs)
5	Thursday, February 9th @ 9:00 a.m.	ENREC (near Mead) ❷
6	Wednesday, February 15th @ 1:00 p.m.	Lindsay – Village Office
7	Tuesday, February 21st @ 1:00 p.m.	David City – Butler County Events Center
8	Monday, February 27th @ 10:00 a.m.	Fremont – Dodge County Extension Office
9	Tuesday, March 14th @ 6:00 p.m.	ENREC (near Mead)
10	Thursday, March 23rd @ 6:00 p.m.	Columbus – Agriculture Park (upstairs)

❶ Corn Expo at Christensen Field. This class follows, at Dodge County Extension Office.

❷ Workshop, 9:00 a.m. to 3:00 p.m. – Cover Crop, Soil Health [Lunch provided]

LOWER PLATTE NORTH
Natural Resources District
PO Box 126 511 Commercial Park Road Wahoo, NE 68066
Phone 402.443.4675 Fax 402.443.5339
lpnnrd@lpnnrd.org www.lpnnrd.org

January 5, 2023

Name
Address.
City, State, Zip
Nitrogen Certification Number _____ Expiration Date _____

RE: Failure to obtain LPN Nitrogen/Irrigation Certification
Possible Cease and Desist from Irrigating and Purchasing Nitrogen Fertilizer

Producer Name:

You are receiving another letter because by Lower Platte North Natural Resources District (LPNNRD) records you have allowed your Nitrogen/Irrigation Certification Card to lapse, that is required by LPNNRD Groundwater Rules and Regulation. It is our understanding that you are either an owner or operator of tillable land within Lower Platte North District and in the past have attended a class or completed the requirement online at the LPNNRD website.

Show below describes the requirement from the LPNNRD Groundwater Rules and Regulations established in 1997.

Rule 2 Natural Resources District Certification

All operators in Phase One areas within the LPNNRD District, who use any type of fertilizer, either commercial or organic, are required to obtain a NRD certification once every 4 years by attending a NRD education classes or by passing a take home test designed by LPNNRD or another applicable agency such as another NRD. Certification will be consistent with the LPNNRD District's chemigation program and applicable to the State FIFRA program.

Rule 3 Natural Resources District Operator Certification

The LPNNRD District will be designated a Level One Quantity Area and operators of irrigation, municipal, and industrial well systems are required to obtain and maintain NRD certification by attending NRD education classes or by passing a take home test designed by LPNNRD and in agreement with inputs from other applicable agencies once every four (4) years.

Hearing information on back

Hearings will begin at 5:00 pm on March 28, 2023, at the Lower Platte North NRD office in Wahoo, NE. If you can meet this requirement 48 hours prior to the hearing, then you must contact staff at the Lower Platte North NRD office. You can contact the office staff at 402-443-4675 for obtaining the necessary information. If class attendance or other options are completed, then a hearing will not be necessary and a cease and desist will not be issued. If requirement is not met, then a cease and desist will be issued and it will prohibit the use of fertilizer and irrigation. Pursuant to state statute, you have ten (10) days to issue a written request for a Hearing before the District wherein you can present evidence as to why an Order to Cease and Desist should not be issued.

Options to meet this requirement before **March 24, 2023**:

- Attend Nitrogen/Irrigation Certification Class
  - Class Schedule Enclosed for January – March 2023
- Online LPN Certification Test
  - https://lpnnrd.org/nitrogen-certification-water-conservation-classes/
- LPN Take Home Test
  - Request a test from LPNNRD Staff at 402-443-4675

These classes are intended to open lines of communication with NRD and UNL staff, to discuss issues arising within the NRD and get up-to-date information on nitrogen and irrigation management. Every year these classes give producers updated information and educate producers on best management practices. The current year water levels are always important and especially with the current drought. Articles lately have talked about nitrates and health issues, so keeping current on what the NRD is doing, is important. The LPNNRD had the foresight the need to require these classes in 1997, as water quality and quantity is always a concern for everyone.

If you are no longer an operator within LPNNRD and feel this does not apply to you, it is your responsibility to contact staff at the NRD office. If you have any questions, please contact staff at LPNNRD at (402)443-4675.

Sincerely,

Eric Gottschalk
LPNNRD General Manager

Daryl Andersen
Water Resources Manager

Enclosure: Nitrogen/Irrigation Certification Class Schedule

Hearing information on back

Soil Moisture Sensor Incentive Program
Advanced Sensor Technology

Lower Platte North Natural Resources District
PO Box 126, 511 Commercial Park Road
Wahoo, Nebraska 68066-0126
Phone (402) 443-4675
www.lpnnrd.org

Landowner/Tenant: BRIAN SANDERSON Date 3-15-22

Address: 1525 COUNTY ROAD R City COLON Zip 68018

Phone#: 402- 443-7081 Email: bsanderson1@gmail.com

Field Information:
Quarter SW Section 14 Township 16N Range 7E County SAUNDERS

Equipment Brand METOS / SENTEK

Allow LPNNRD access to information on soil moisture sensor data? Yes ☑ No ☐

LPNNRD Staff Approval Daryl Andersen **Date** 4/14/2022
(LPN Board approval is required before staff approval signature)

Cost Share Assistance for Advanced Sensor Technology
The Lower Platte North NRD has limited funding available to assist growers in the purchase of soil moisture sensor technology. The assistance is limited to lands operated within the boundaries of the Lower Platte North NRD. The Lower Platte North NRD has funding to offer 50% reimbursement up to $750 of the actual cost of the purchase of soil moisture sensors and dataloggers. There are a variety of technologies available and the Lower Platte North NRD can provide guidance in helping the grower determine which product is right for his operation.

Criteria
Application deadline will be March 15, 2022
One application per producer or entity to spread out the cost share.

- Priority Selection
  1. 1st - Special Quantity Sub-Areas
  2. 2nd - Phase Areas
  3. 3rd - District wide
- One-time cost-share
- Invoice required for cost-share money will be dispersed.

As limited funds are committed for the year, a new application if not approved is required for the following year.

METOS® USA

Invoice

3239 Monier Cir, Suite #3,
Rancho Cordova, CA 95742
e-mail:salesUSA@metos.at
Phone: 559-545-1020

Date	Invoice #
3/31/2022	2288

Bill To	Ship To
Brian Sanderson 1525 County Road R Colon, NE 68018	Brian Sanderson 1525 County Road R Colon, NE 68018

S.O. No.	P.O. No.	Terms	Project
0243		Net 30	

Item	Description	Order...	Prev. Inv...	Backor...	Invoiced	U/M	Rate	Amount
700035	µMETOS® BASE-NBIOT A31006FB	1	0	0	1		555.39	555.39T
00919	Drill & Drop Probe, 90cm (36") Moisture, SDI-12 DD034918	1	0	0	1		1,185.00	1,185.00T
SIM1.1	LTE/CatM/2MB/Verizon/connectivity for 1 month . Billing period:April-December 2022	1	0		1		1.70	1.70
Freight and ...	Freight and handling TRK#1ZA7W8840316521483	1	0		1		65.00	65.00
	Sales Tax						7.50%	130.53

Total	$1,937.62
Payments/Credits	$0.00
Balance Due	$1,937.62

Approved List of Propeller Flow Meters
Lower Platte North Natural Resources District (LPNNRD)
Effective: April 11, 2022

Approved List of Propeller Flow Meters and Required Conditions

LPNNRD requirements for all propeller flow meters:

- Anti-reverse flow feature to prevent backflow.
- Follow manufactures installation recommendations taking into account in-pipe jetting or non-jetting flow conditions. (Correct installation of the flow meter is critical to getting an accurate reading. Most meters require a straight pipe before and after the flow meter that is at least equivalent to five times the pipe diameter in order to obtain an accurate flow measurement. Doing the installation correctly the first time saves money in the long run).
- Straightening vanes are required according to manufacturer's installation recommendations for in-pipe jetting or non-jetting flow conditions.
- Meter must be positioned to ensure water totally fills the pipe, such as a level pipe or positioned on a riser.
- Meter must be configured: to inside and outside diameter of the pipe, material of the pipe, meter used that will operate within minimum and maximum output flow rates of the well, horizontal or vertical installations, and unobstructed straight run distance upstream and downstream of meter and in most cases straightening vanes (or other flow straightener) will be necessary.
- Meter totalizes flow in acre inches and flow meter dial is in gallons per minute.
- A flow meter must be dedicated to each individual well. (Exceptions will be made if several wells are used to provide enough water to operate a single irrigation system such as a pivot or gated pipe. In these situations a flow meter placed at the central location where all water can be metered is acceptable).

Manufacturer	Model	Notes
McCrometer	McPropeller	All propeller models
Sparling	Propeller saddle meter	Model 312 propeller meter
ARAD Group	Saddle Water meter	Meter for irrigation applications
Geyser	Saddle meter	All propeller models for Farmland Irrigation

LPNNRD prefers the following added features for all propeller flow meters:

- Over-run bearing (or extra bearing) for smother operation and to extend life of the meter
- Canopy cover to protect meter

LPNNRD will inspect systems for proper installation of flow meter

DOMESTIC WELL WATER TREATMENT SYSTEM COST-SHARE PROGRAM

Purpose: *This program is intended to assist with funding the installation of a water treatment system on eligible domestic wells.*

Eligible Participants: Active, registered domestic wells within the LENRD. If the domestic well is not currently registered, it must be registered at the well owner's expense prior to cost share approval. Well must be sampled through the LENRD's domestic well sampling program. Cost share program is for a one-time purchase of a water treatment system through this program.

Eligible Components:

- Equipment and installation costs for a water treatment system

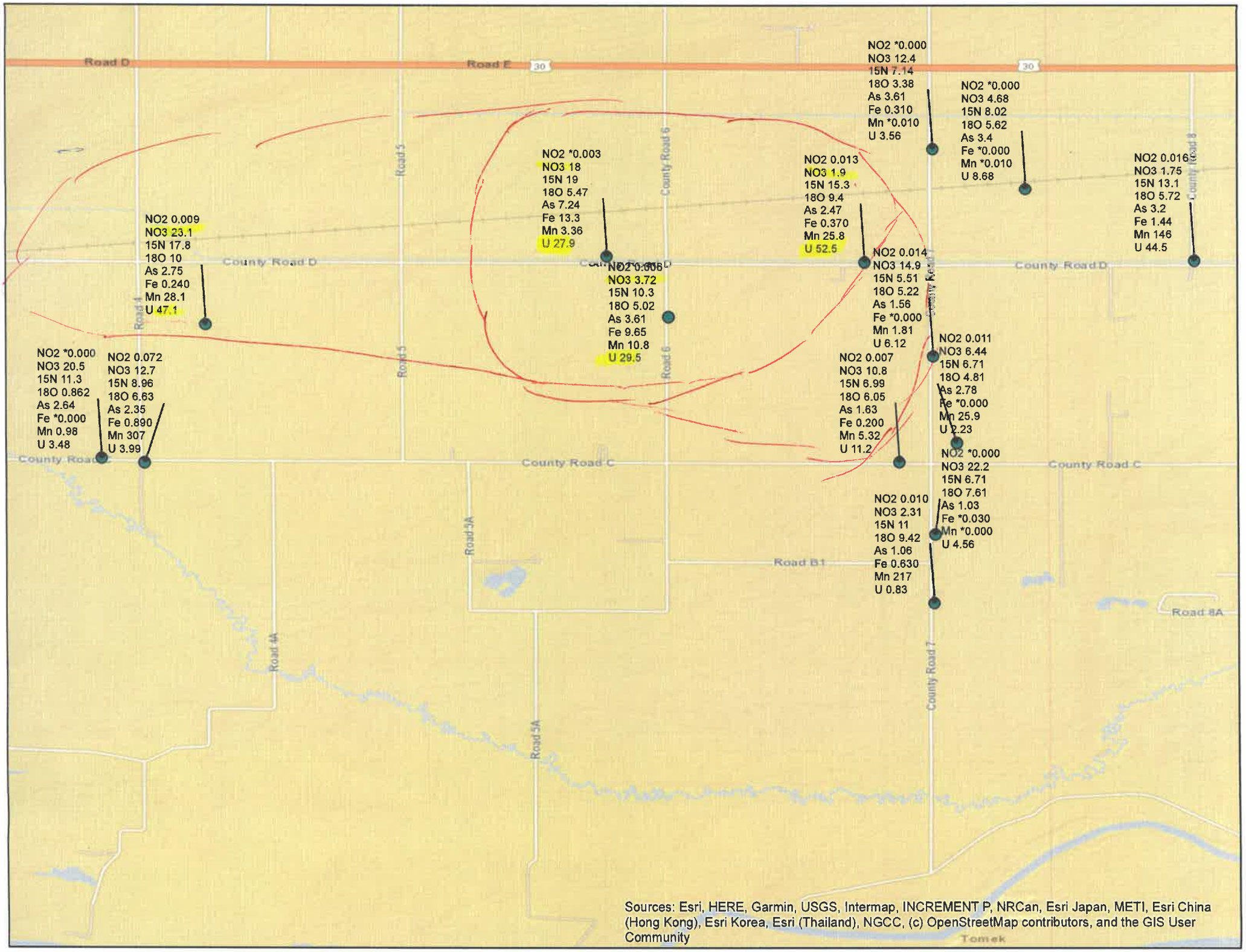
In-Eligible Components:

- Maintenance costs and follow up sampling

Requirements:

1. Well must be registered and active with the Nebraska Department of Natural Resources
2. Well owners must first apply for and utilize ARPA funding if available and eligible.
3. If ineligible for ARPA funding, or funding is exhausted, well owners may apply for LENRD cost share program.
4. The sample results must be 5 ppm or greater for nitrate, or test positive for pesticides.
5. The application must be approved by the LENRD prior to the purchase and installation of the equipment.
6. Equipment must remove nitrate and pesticides and be approved by the LENRD. Installation must be conducted by a reputable installer.
7. Following installation, well owners are encouraged to conduct follow-up sampling at their own expense.
8. After receiving water treatment system cost share, the domestic well is no longer eligible for the LENRD's water sampling program.

Cost-Share: 50% of the total cost, not to exceed $800. One time use program.


Road D
Road E
30
30
NO2 *0.000
NO3 12.4
15N 7.14
18O 3.38
As 3.61
Fe 0.310
Mn *0.010
U 3.56
NO2 *0.000
NO3 4.68
15N 8.02
18O 5.62
As 3.4
Fe *0.000
Mn *0.010
U 8.68
NO2 0.016
NO3 1.75
15N 13.1
18O 5.72
As 3.2
Fe 1.44
Mn 146
U 44.5
NO2 *0.003
NO3 18
15N 19
18O 5.47
As 7.24
Fe 13.3
Mn 3.36
U 27.9
NO2 0.013
NO3 1.9
15N 15.3
18O 9.4
As 2.47
Fe 0.370
Mn 25.8
U 52.5
NO2 0.009
NO3 23.1
15N 17.8
18O 10
As 2.75
Fe 0.240
Mn 28.1
U 47.1
NO2 0.008
NO3 3.72
15N 10.3
18O 5.02
As 3.61
Fe 9.65
Mn 10.8
U 29.5
NO2 0.014
NO3 14.9
15N 5.51
18O 5.22
As 1.56
Fe *0.000
Mn 1.81
U 6.12
NO2 0.011
NO3 6.44
15N 6.71
18O 4.81
As 2.78
Fe *0.000
Mn 25.9
U 2.23
NO2 *0.000
NO3 20.5
15N 11.3
18O 0.862
As 2.64
Fe *0.000
Mn 0.98
U 3.48
NO2 0.072
NO3 12.7
15N 8.96
18O 6.63
As 2.35
Fe 0.890
Mn 307
U 3.99
NO2 0.007
NO3 10.8
15N 6.99
18O 6.05
As 1.63
Fe 0.200
Mn 5.32
U 11.2
NO2 *0.000
NO3 22.2
15N 6.71
18O 7.61
As 1.03
Fe *0.030
Mn *0.000
U 4.56
NO2 0.010
NO3 2.31
15N 11
18O 9.42
As 1.06
Fe 0.630
Mn 217
U 0.83
County Road D
County Road C
Road 5
Road 6
Road 5A
Road 4A
Road B1
Road 8A
County Road 7
Tomek
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

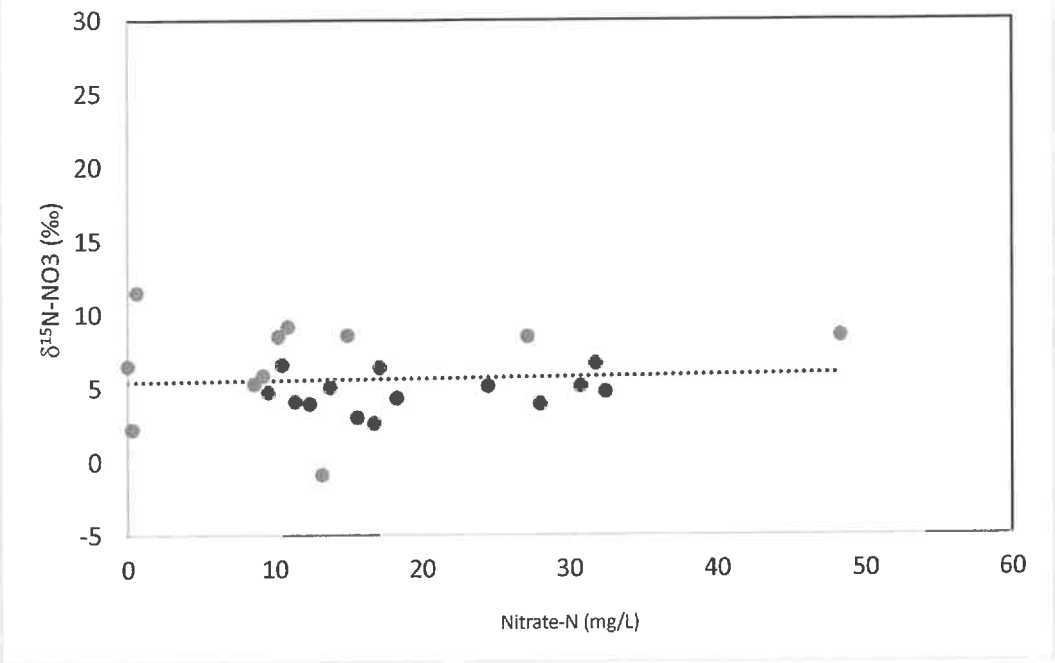


Figure 8. Relationship between well water nitrate concentrations and δ 15N-NO3 composition.

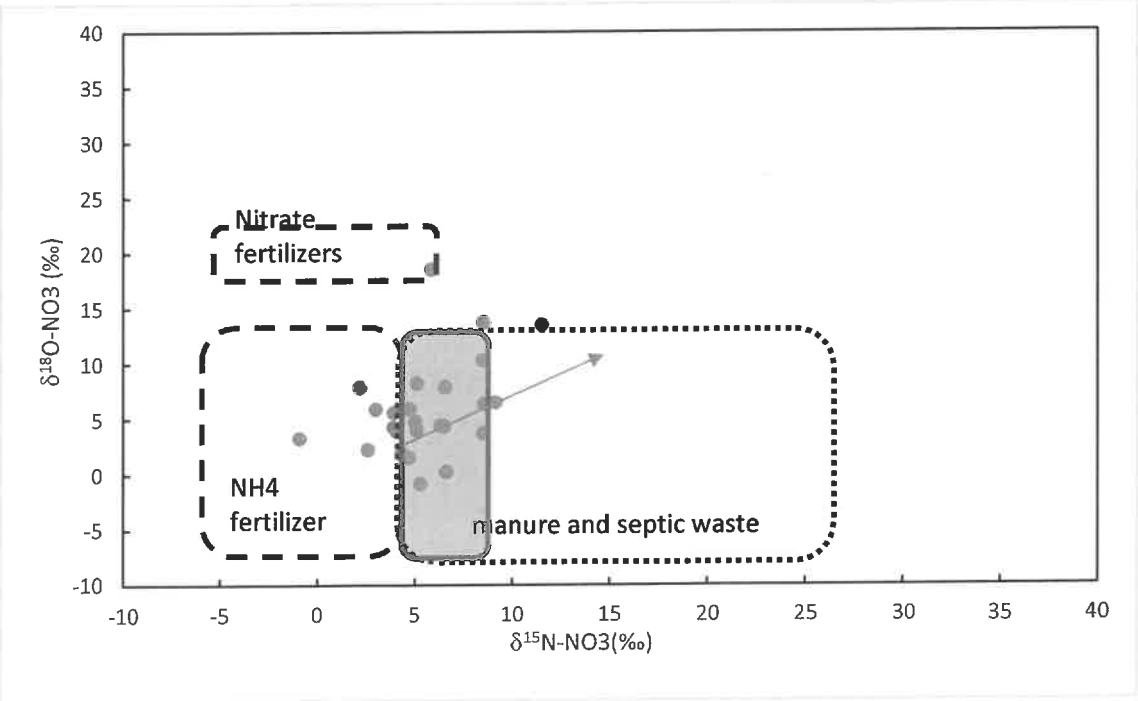


Figure 9. Variation of well water nitrogen and oxygen isotope composition compared to ranges for different nitrogen sources shown in Figure 3. Grey area represents the range for soil nitrogen and mixed sources of inorganic and organic nitrogen sources, and the arrow shows the expected trend from denitrification.

LOWER PLATTE NORTH
Natural Resources District
PO Box 126 511 Commercial Park Road Wahoo, NE 68066
Phone 402.443.4675 Fax 402.443.5339
lpnnrd@lpnnrd.org www.lpnnrd.org

12/7/2022

Patrick Ducey/Kevin Franzluebbers
Nebraska Dept. of Environmental and Energy
PO Box 98922
Lincoln, NE 68509-8922

RE: Rick Wendt Livestock Concentrated Animal Feeding Operation
NDEQIDs 68222
Program ID LWC 43-1099

Dear Mr. Ducey and Mr. Franzluebbers,

The Lower Platte North Natural Resource District (LPNNRD) would like to make sure the field application sites have the appropriate protection with buffer and/or filter strips. The NRD is still concern if enough acres, shown in the plan, can handle the amount of nutrients from the holding pond proposed at the construction site.

On the water quantity issue this site is located within a special quantity management area. The application does not show any new wells, so it is assumed that an existing well that is under 50 GPM would be utilized. No high capacity well permit has been approved by the LPNNRD Board or application received in the NRD office. Increasing the number of head from 299 to 3500 the water consumption could increase to 22,000,000 million gallons of water yearly, which is equivalent to 6.09 acres inches on a 135 acres field. The NRD has enclosed attachments of water quantity information. From this area.

Attachment A -5 pages from LPNNRD Groundwater Rules and Regulations
Attachment B – 5 pages of maps from UNL Conservation and Survey District study of this area
Attachment C -2 maps on AEM flights showing the resistivity of aquifer material
Well Log A – Showing a map with a well location and data logger information from the last 2 years

Thanks,

Daryl Andersen

Daryl Andersen
Water Resources Manager
Lower Platte North Natural Resources District

Attachment A

Section U Controls in Special Quantity Subareas

Rule 1 Designation of Special Quantity Subarea

The District may designate a Management Area for the protection of groundwater quantity in a portion or portions of the District where additional controls are necessary for the protection of groundwater quantity in that area. Such management area shall be known as a Special Quantity Subarea. Additional controls are necessary where the existing action level triggers established in Sections J, K, and L are insufficient to meet the groundwater management objective or the goals of the groundwater management objectives in the Special Quantity Subarea. Such additional controls are in the public interest and for the promotion of the health and welfare of the District because they will minimize pumping conflicts and protect groundwater supplies in the Special Quantity Subarea without imposing unnecessary controls in other portions of the District. Regulation of a Special Quantity Subarea is also grounded on the dynamic hydrologic, geologic, climatic, and soil conditions throughout the District. Because of these varying conditions, the uniform application throughout the management area of one or more controls would fail to carry out the intent of the Nebraska Ground Water Management and Protection Act in a reasonably effective and equitable manner. As a result, the District imposes the controls for each Special Quantity Subarea described in Section U, Rule 2 as set forth in each in the following Rules respectively.

Rule 2 Standard Controls

Rule 2.1 Only Written Good Cause Variances Allowed

There shall be no new high capacity water wells in the Special Quantity Subarea without a Written Good Cause Variance. There shall be no increase in the consumptive use of Ground Water withdrawals for agricultural purposes from new water wells used for irrigation in the area from a new well, without a Written Good Cause Variance. An applicant for a Written Good Cause Variance that is also subject to this Section shall, in addition to the requirements provided for in the preceding rules, meet the requirements set forth in Section U. The District will follow the procedural requirements set forth in Section U when processing a Written Good Cause Variance under this Section.

Rule 2.2 Expansion of Acres from Existing Wells

New groundwater irrigated acres from an existing water well or wells in series shall be allowed in the Special Quantity Subarea. The applicant shall follow the rules set forth in Section J, Rule 11. Controls may be more stringent including, but not limited to, the number of allowable acres, water allowances and irrigation systems. The Board shall thereafter establish the controls by December 15 of each calendar year. If the Board fails to adopt different controls by December 15, the previous controls will remain in effect. The Board has the right from the conditional variance permits approval to adopt a different rolling allocation than the allocations set within the Quantity Sub-areas.

Rule 2.3 Best Management Practices

Any Landowner withdrawing Groundwater for agricultural purposes from any water well or for the benefit of any irrigated acres in the Special Quantity Subarea shall implement the following best management practices: The Landowner shall not irrigate from any water well or for the benefit of any irrigated acres in the Special Quantity Subarea unless the irrigation is for beneficial use for agricultural purposes. A Landowner must annually notify the District by telephone or in writing before irrigating for agricultural purposes from September 15 to April 15. This section shall not prohibit irrigation when necessary for compliance with a National Pollutant Discharge Elimination System permit issued to a confined animal feeding operation.

Attachment K

Rule 2.4 Mandatory Educational Requirements

There shall be mandatory educational requirements for Landowners withdrawing Groundwater for agricultural purposes from any water well or for the benefit of any irrigated acres in the Special Quantity Subarea. The requirements shall be designed to stabilize or reduce the incidence of Groundwater depletion and reduce conflicts between Groundwater users. The Board shall establish the initial education requirements when establishing the Special Quantity Subarea. The Board shall thereafter establish the applicable educational requirements by December 15 for the following calendar year. The standard educational requirements shall be no less than one hour per year and no more than five hours per year.

Rule 2.5 Well Metering

All Landowners withdrawing Groundwater from a high capacity well, those wells pumping greater than 50 gallons per minute, in the Special Quantity Subarea must install a District approved Flow Meter for measuring Groundwater withdrawals. The General Provisions of the Rules and Regulations pertaining to Flow Meters shall apply to Landowners and devices subject to this Section. A report of Groundwater withdrawal is also required and must be postmarked or otherwise submitted to the District by December 15 of the same year. If December 15 is a non-business day, the report must be postmarked by the next following business day.

Rule 2.6 Domestic Wells

New or replacement water wells to be used for domestic purposes in the Special Quantity Subarea shall be constructed to such a depth that they are less likely to be affected by seasonal water level declines caused by other water wells in the same area. Any person who installs a new or replacement water well for domestic purposes in the Special Quantity Subarea shall submit a certification from the water well contractor that the well was constructed in compliance with this section. The certification shall be submitted to the District within 90 days of completing construction.

Rule 2.7 Level One, Two, and Three Management Areas

Each Special Quantity Subarea shall be also governed by the applicable Level One, Two, or Three controls as enumerated in Sections J, K and L of the Rules and Regulations. The applicable controls governing each Special Quantity Subarea shall be based upon which Management Area the respective Subarea is located. The Special Quantity Subarea standard controls of Section U, Rule 2 shall supersede the Level One, Two, and Three controls where the two are in express conflict.

Rule 2.8 Mandatory Acre Certification

All Landowners with irrigation within a Special Quantity Subarea must maintain current, and accurate, irrigated acre certification with the District.

Rule 2.9 Static Water Level Measurements

The Board shall set a policy by December 15 for the taking of Static Water Levels, semi-annually, from a high capacity irrigation well withdrawing groundwater in the Special Quantity Subarea. The first measurement shall take place between March 15 and April 15 of each calendar year with the second measurement taking place between July 15 and August 15 of each calendar year. If the Board fails to adopt different controls by December 15, the previous controls will remain in effect. LPNNRD shall obtain written permission from the landowner to allow LPNNRD personnel to measure their well at the discretion of the District on form "Landowner Waiver for Static Water Level Measurements".

Attachment A

Rule 3 Butler/Saunders County Special Quantity Subarea

Rule 3.1 Standard Controls

The Standard Controls described in Rule 2 shall apply in the Butler/Saunders County Special Quantity Subarea described in Rule 5.1. District approved Flow Meters required under Rule 2.5 shall be properly installed according to manufacturer's recommendation by May 1, 2015. No Landowner shall operate an irrigation well after May 1, 2015 unless it is in compliance with this requirement.

Rule 3.2 Allocation

The use of Groundwater for agricultural purposes from any water well for irrigation or for the benefit of any Irrigated Acre in the Special Quantity Subarea shall be subject to an Allocation. Allocations shall be based upon a 3 year Rolling Allocation. The Board shall establish the initial annual allocation when establishing the Special Quantity Subarea. The Board shall thereafter establish the Rolling Allocation by December 15 of each calendar year. The Rolling Allocation shall specify the total number of acre-inches of irrigation water per irrigated acre for the rolling term. If the Board fails to adopt a Rolling Allocation by December 15, the Rolling Allocation for the following rolling three year term shall be 27 acre-inches per irrigated acre in this Special Quantity Subarea (the equivalent of 9 acre-inches per year of the rolling term). Rolling Allocations for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.

Rule 3.3 Timing and/or Rotation of Water Use

The timing of water use or applications shall be controlled by the District to restrict pumping during certain times of the day or to establish a rotation so high capacity wells are not all pumping at the same time. The Board may establish timing or rotation restrictions when establishing the Quantity Subarea and shall establish new timing or rotation restrictions by December 15 of each calendar year. Timing or rotation restrictions for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.

Rule 4 Colfax/Platte County Special Quantity Subarea

Rule 4.1 Standard Controls

The Standard Controls described in Rule 2 shall apply in the Colfax/Platte County Special Quantity Subarea described in Rule 5.2. District approved Flow Meters required under Rule 2.5 shall be properly installed according to manufacturer's recommendation by May 1, 2016. No Landowner shall operate an irrigation well after May 1, 2016 unless it is in compliance with this requirement.

Rule 4.2 Allocation

The use of Groundwater for agricultural purposes from any water well for irrigation or for the benefit of any Irrigated Acre in the Special Quantity Subarea shall be subject to an Allocation. Allocations shall be based upon a 3 year Rolling Allocation. The Board shall establish the initial annual allocation when establishing the Quantity Subarea. The Board shall thereafter establish the Rolling Allocation by December 15 of each calendar year. The Rolling Allocation shall specify the total number of acre-inches of irrigation water per irrigated acre for the rolling term. If the Board fails to adopt a Rolling Allocation by December 15, the Rolling Allocation for the following rolling three year term shall be 27 acre-inches per irrigated acre in this Special Quantity Subarea (the equivalent of 9 acre-inches per year of the rolling term). Rolling Allocations for any and all wells may be amended, reduced, increased, or made subject to limitations or conditions by the Board upon notice and hearing.

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Attachment A

Rule 5 Designation of Special Quantity Subareas in the District

Rule 5.1 Butler/Saunders County

The Butler/Saunders County Special Quantity Subarea shall consist of Sections 1, 12, 13, 24, 25, and 36 in Township 15 North, Range 3 East; Sections 1-36 in Township 15 North, Range 4 East; Sections 4-9 and 16-36 in Township 15 North, Range 5 East; Sections 25 and 36 in Township 16 North, Range 3 East; Sections 25-36 in Township 16 North, Range 4 East; and Sections 30-32 in Township 16 North, Range 5 East in Butler and Saunders Counties. (See attached map as Exhibit "B" for reference.)

Rule 5.2 Colfax/Platte County

The Colfax/Platte County Special Quantity Subarea shall consist of Sections 1-12 in Township 18 North, Range 1 West; Sections 1-12 in Township 18 North, Range 1 East; Sections 3-10 in Township 18 North, Range 2 East; Sections 1-12 in Township 19 North, Range 2 West; Sections 1-16, 21-28, and 33-36 in Township 19 North, Range 1 West; Sections 1-36 in Township 19 North, Range 1 East; and Sections 3-10, 15-22, and 27-34 in Township 19 North, Range 2 East in Colfax and Platte Counties. (See attached map as Exhibit "B" for reference.)

Section V Penalties for Violations in a Special Quantity Subarea

Rule 1 Additional Penalty

In addition to or in lieu of the authority in Section B, and notwithstanding any other provision of these Rules and Regulations, the District may impose a penalty on any person who violates any control required or any Variance granted under this Section. Such penalties include, but are not limited to, a reduction (in whole or in part) in any Rolling Allocation of Groundwater applicable to the person, or additional educational requirements for the person.

Rule 2 Enforcement

The General Manager shall initiate enforcement by sending a notice to the person by Certified Mail. The person shall have 10 days from receiving the notice to request a hearing in writing to the District. If requested, the Board shall hold a hearing. Following the hearing, or if no hearing is requested, the Board shall determine the appropriate penalty under the circumstances.

Rule 3 Annual Reduction Formula

If, at the termination of the three year rolling term, any groundwater user has exceeded the Rolling Allocation by more than one-half (0.5) inches per acre, the Rolling Allocation for the following three year term shall be reduced by the amount the groundwater user exceeded his Rolling Allocation times a factor of 6 (e.g. an excess by one acre-inch shall result in a six acre-inch reduction in the users Rolling Allocation for the following three year term). For purposes of calculation of the reduction, all fractional figures shall be rounded to the nearest whole number.

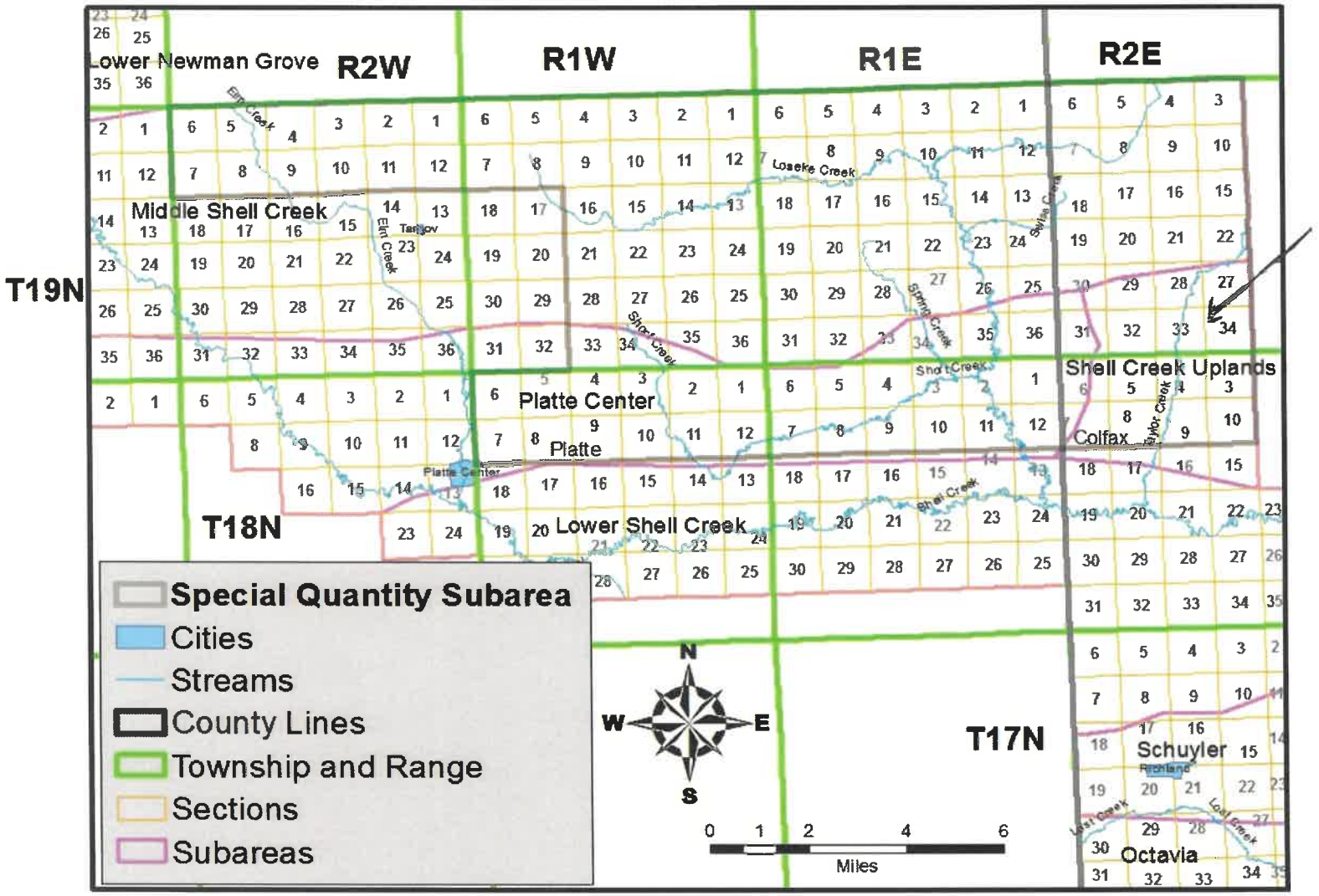
If any groundwater user fails to follow any timing and/or rotation restrictions imposed by the District the user shall have his Rolling Allocation reduced up to 6 acre inches for each offense.

Rule 4 Penalty for Tampering

Any person who tampers, obstructs, modifies, or takes any action for the purpose of producing an inaccurate or incorrect Flow Meter reading or who takes any other action that would prevent the District from obtaining an accurate estimate of actual groundwater use shall be subject to a permanent revocation of the groundwater users variances, well permits, future allocations, and/or the rescission of all Certified Irrigated Acres attributable to the violator. Notice and hearing shall be provided to such groundwater users before the District takes any action under this Rule.

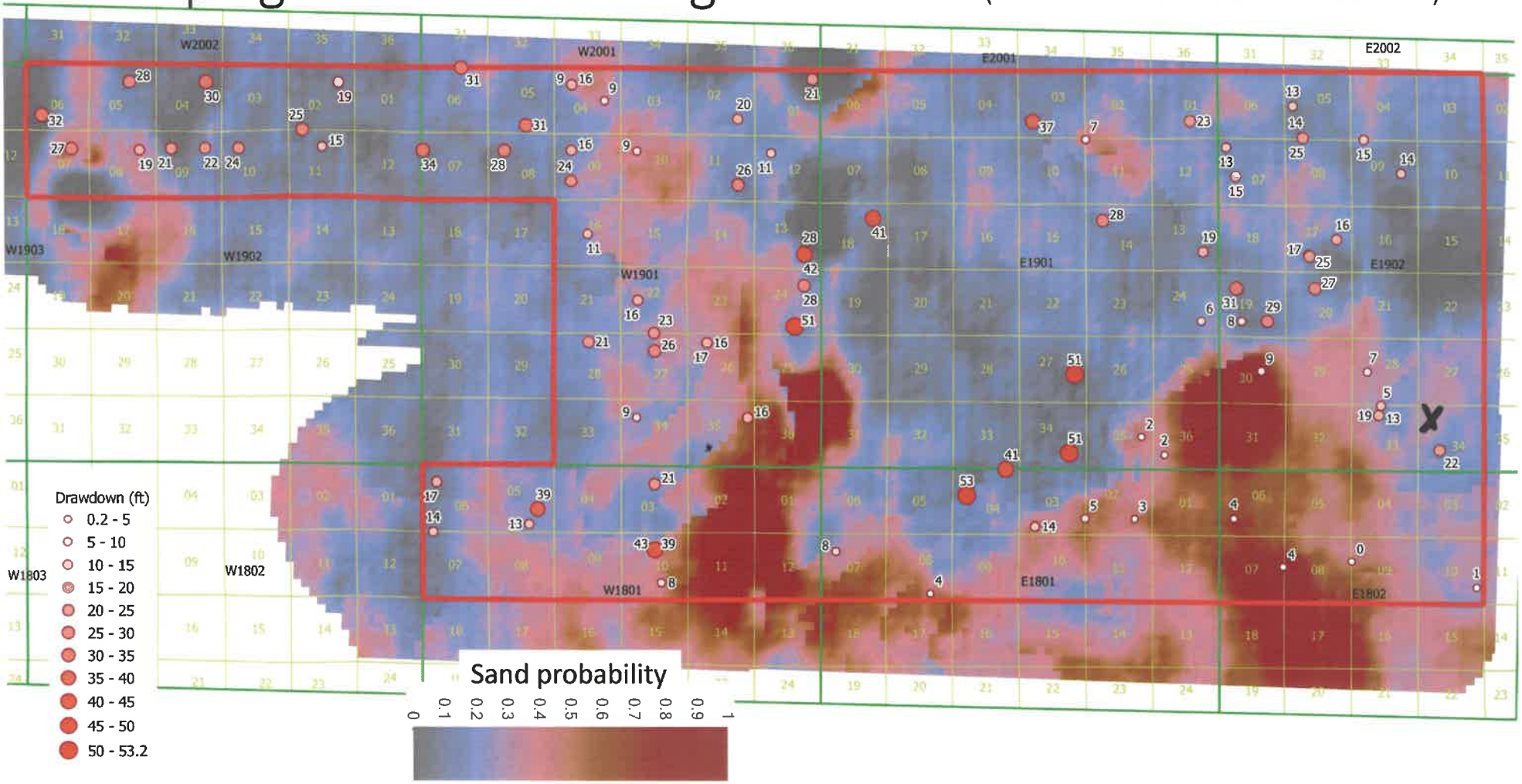
Attachment A

Exhibit B Map of Colfax - Platte Special Quantity Subarea



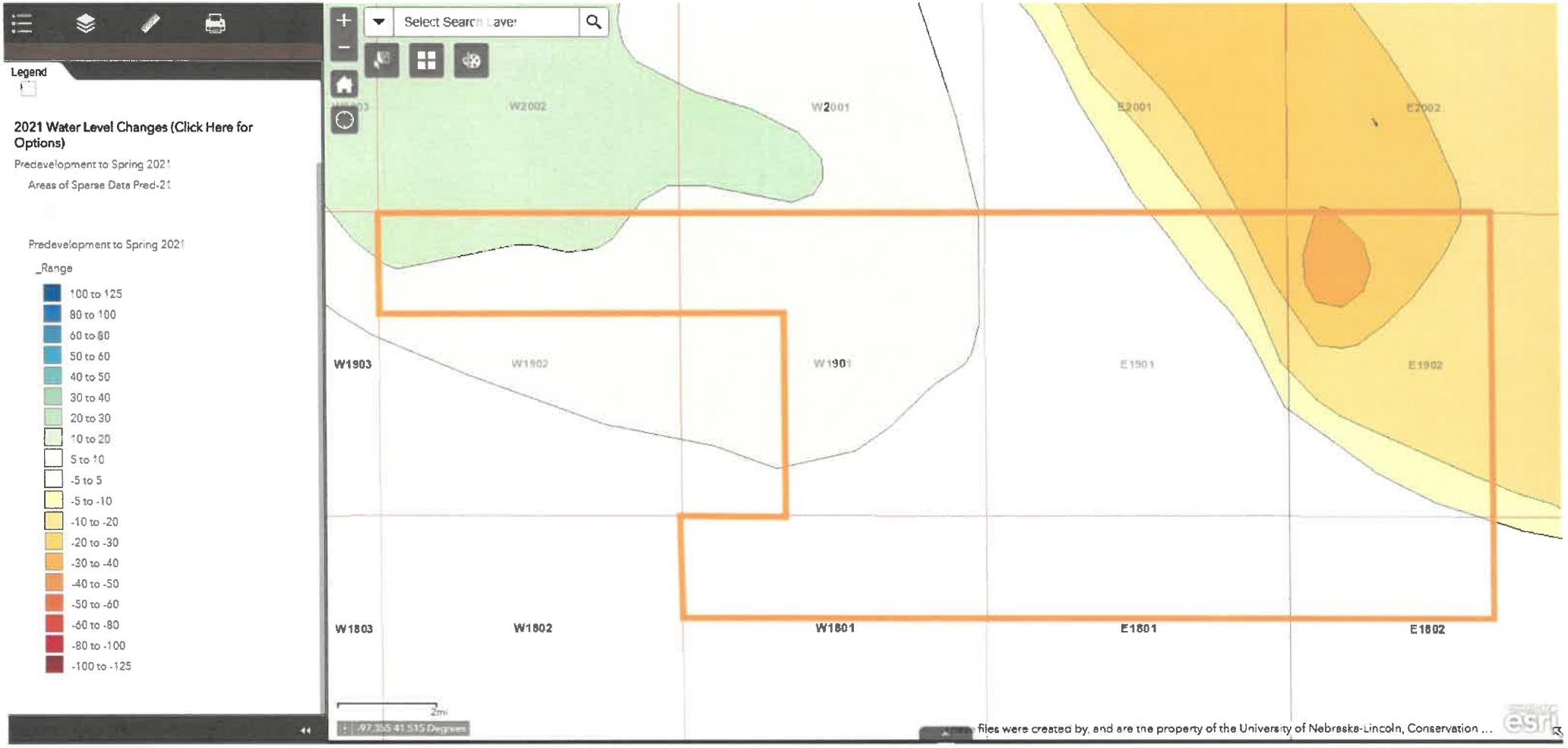
Attachment B

Pumping drawdown in irrigation wells (model slice at water level surface)



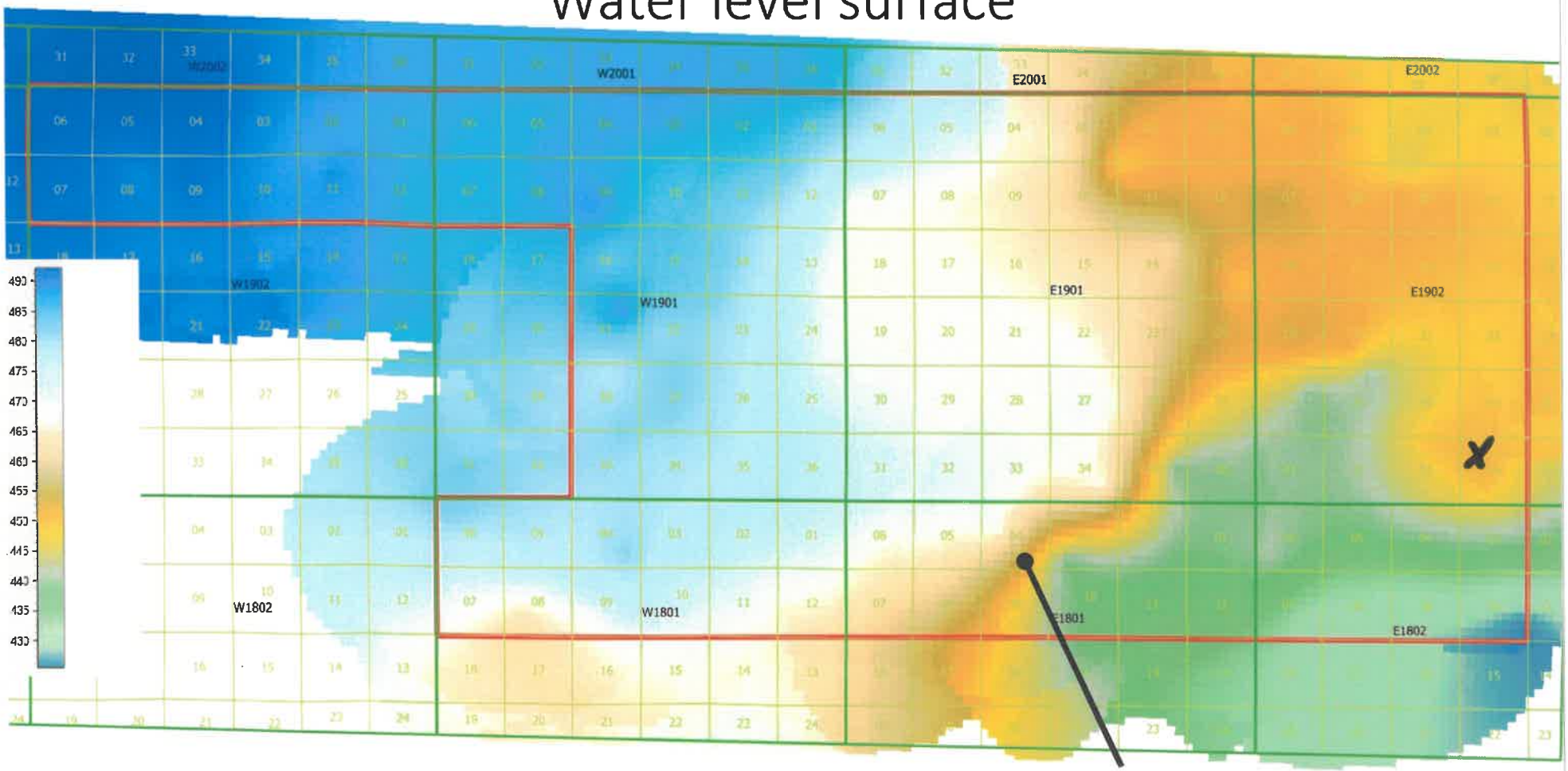
Attachment B

Groundwater-level changes predevelopment to 2021



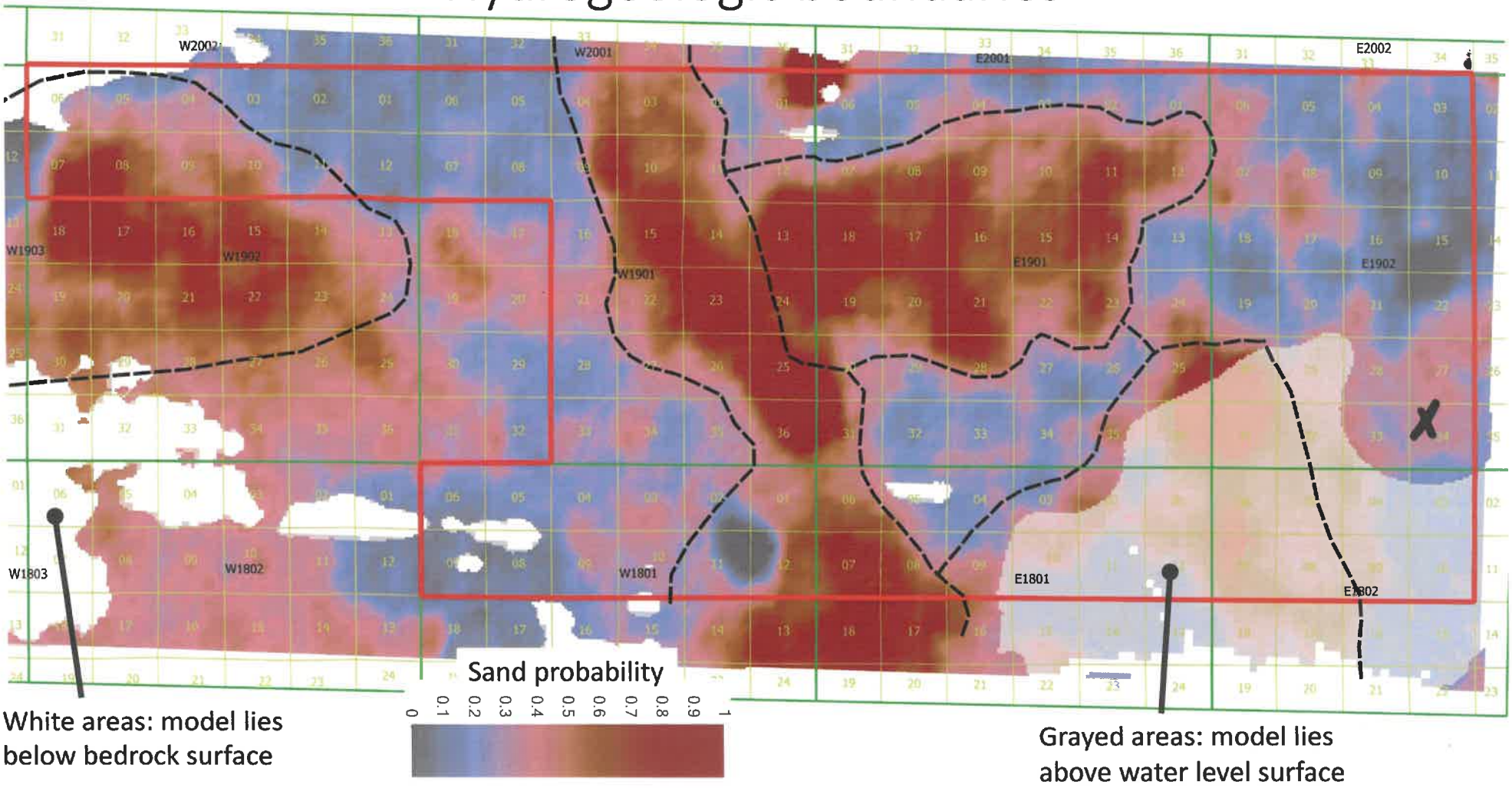
Attachment B

Water level surface



Attachment B

Hydrogeologic boundaries

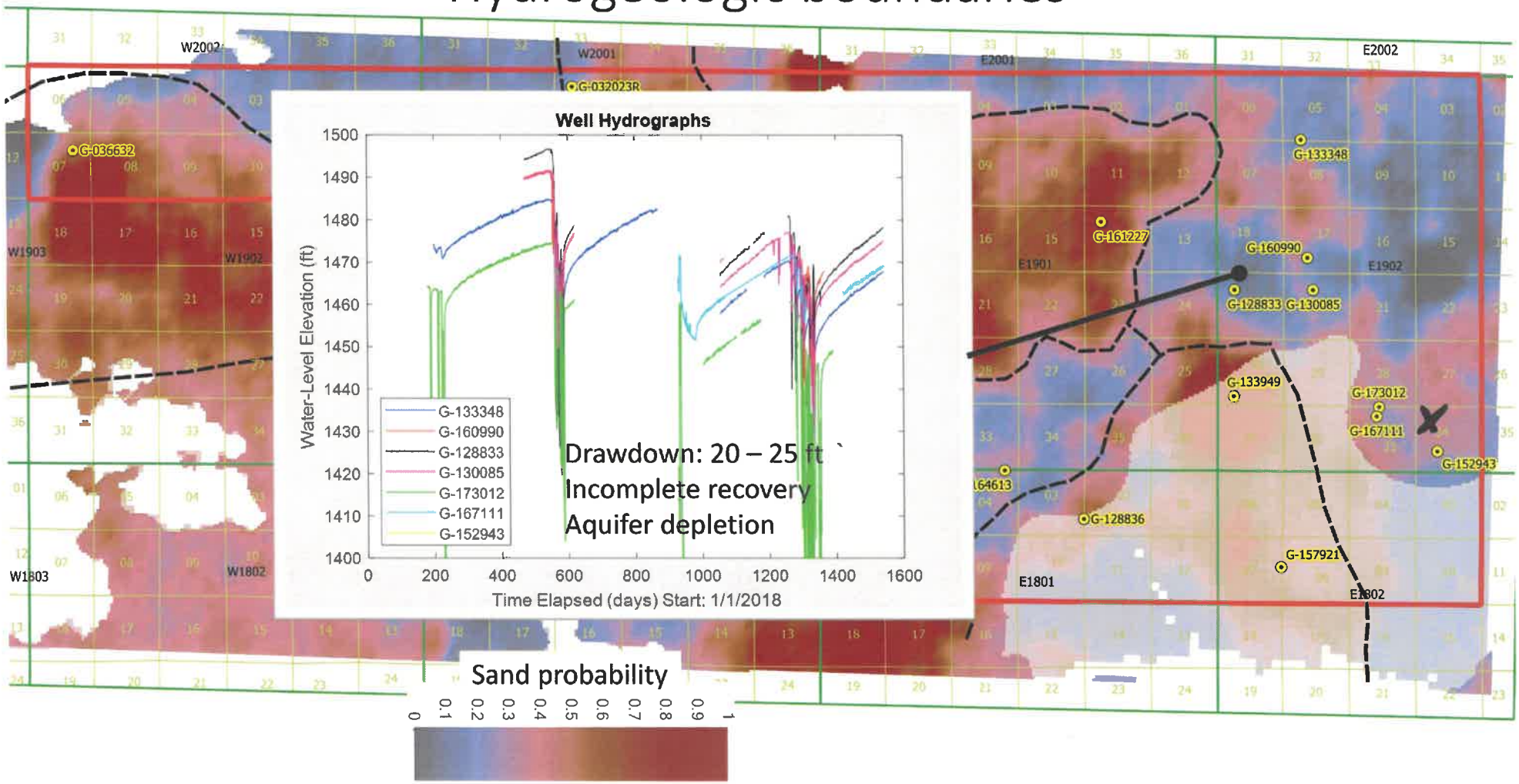


White areas: model lies below bedrock surface

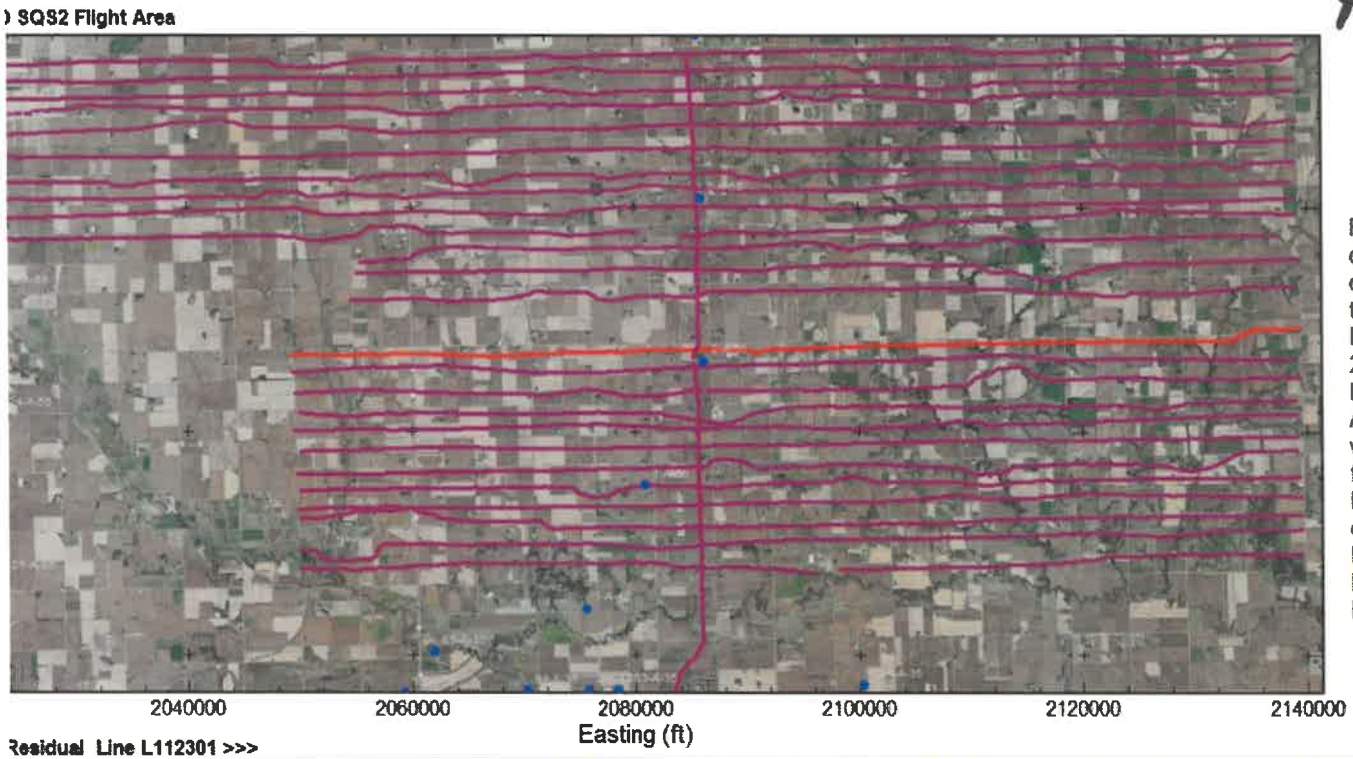
Grayed areas: model lies above water level surface

Attachment B

Hydrogeologic boundaries



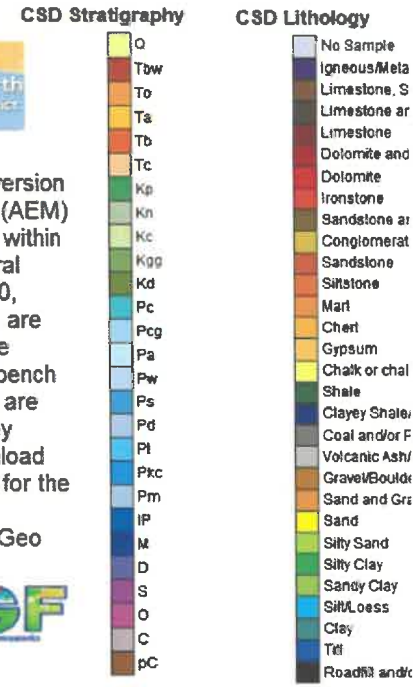
Attachment C

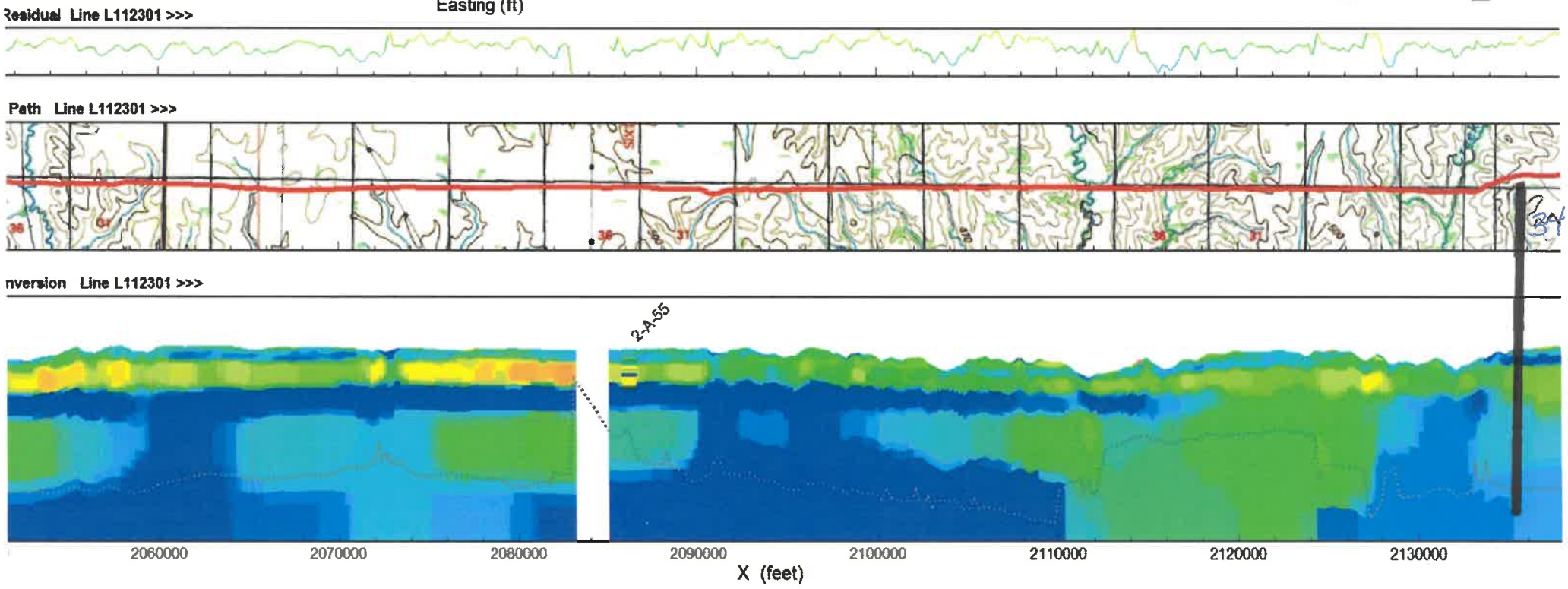


Lower Platte North Natural Resources District

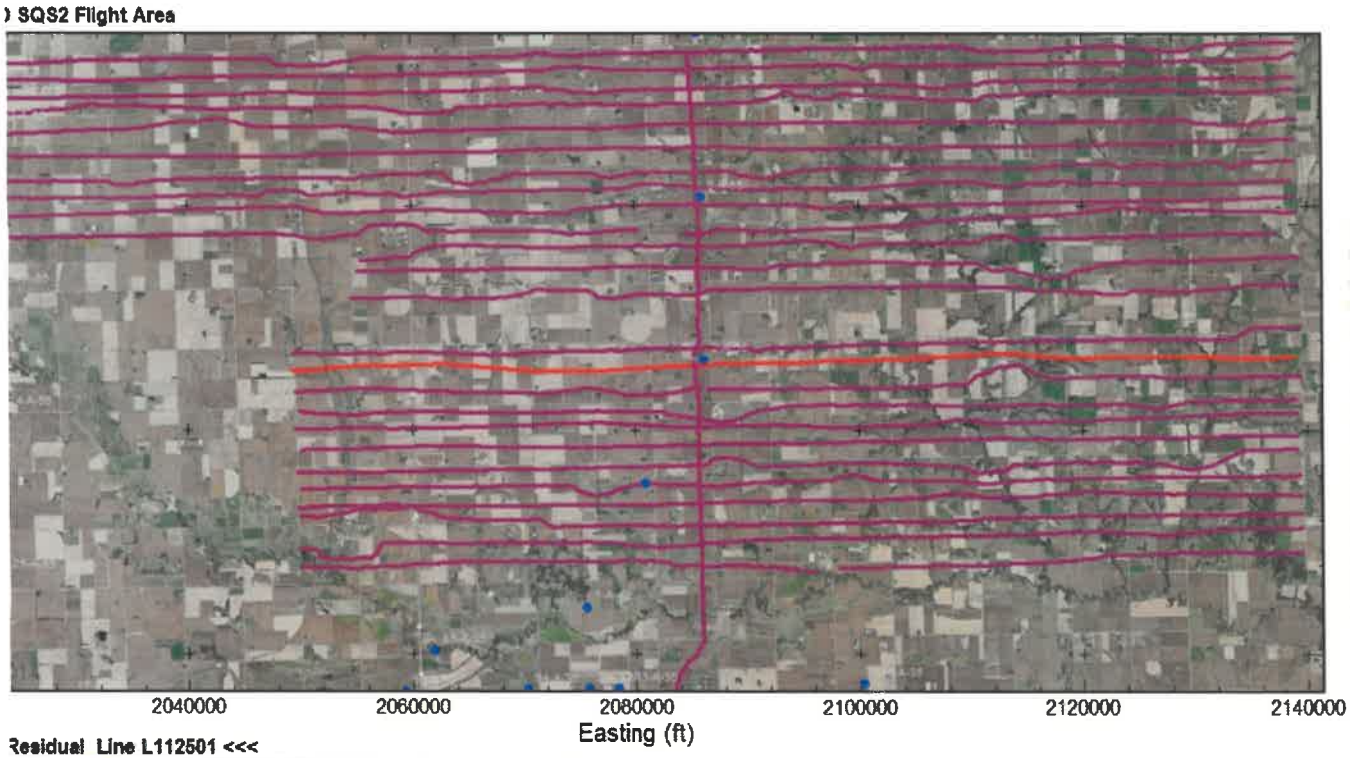
Results of the preliminary inversion of Airborne Electromagnetic (AEM) data collect along flight lines within the Lower Platte North Natural Resources District July 17-20, 2016. The inversions shown are Lateral-Constrained using the Aarhus Geo Software Workbench versions 5.1.0.0. Boreholes are from the Conservation Survey Division public website download on April 22, 2016. Prepared for the Lower Platte North Natural Resources District by Aqua Geo Frameworks, LLC.

AGF





Attachment 2



Lower Platte North Natural Resources District

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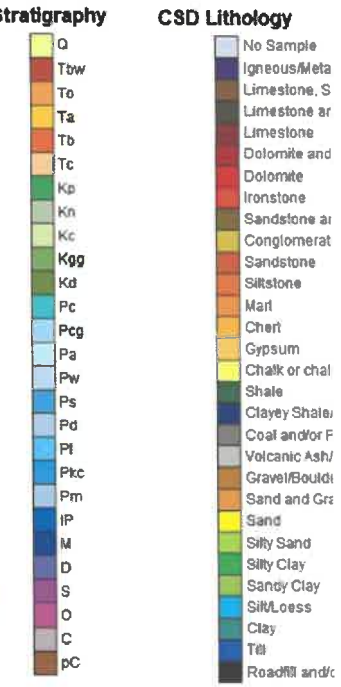
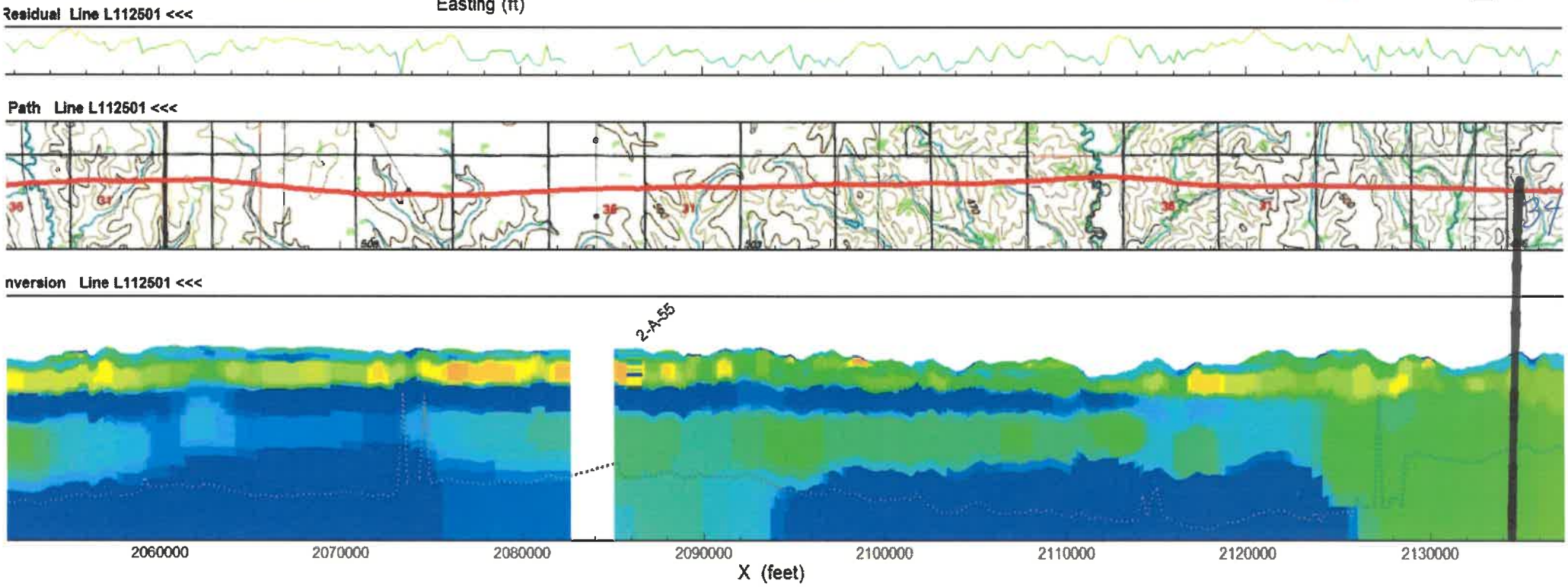
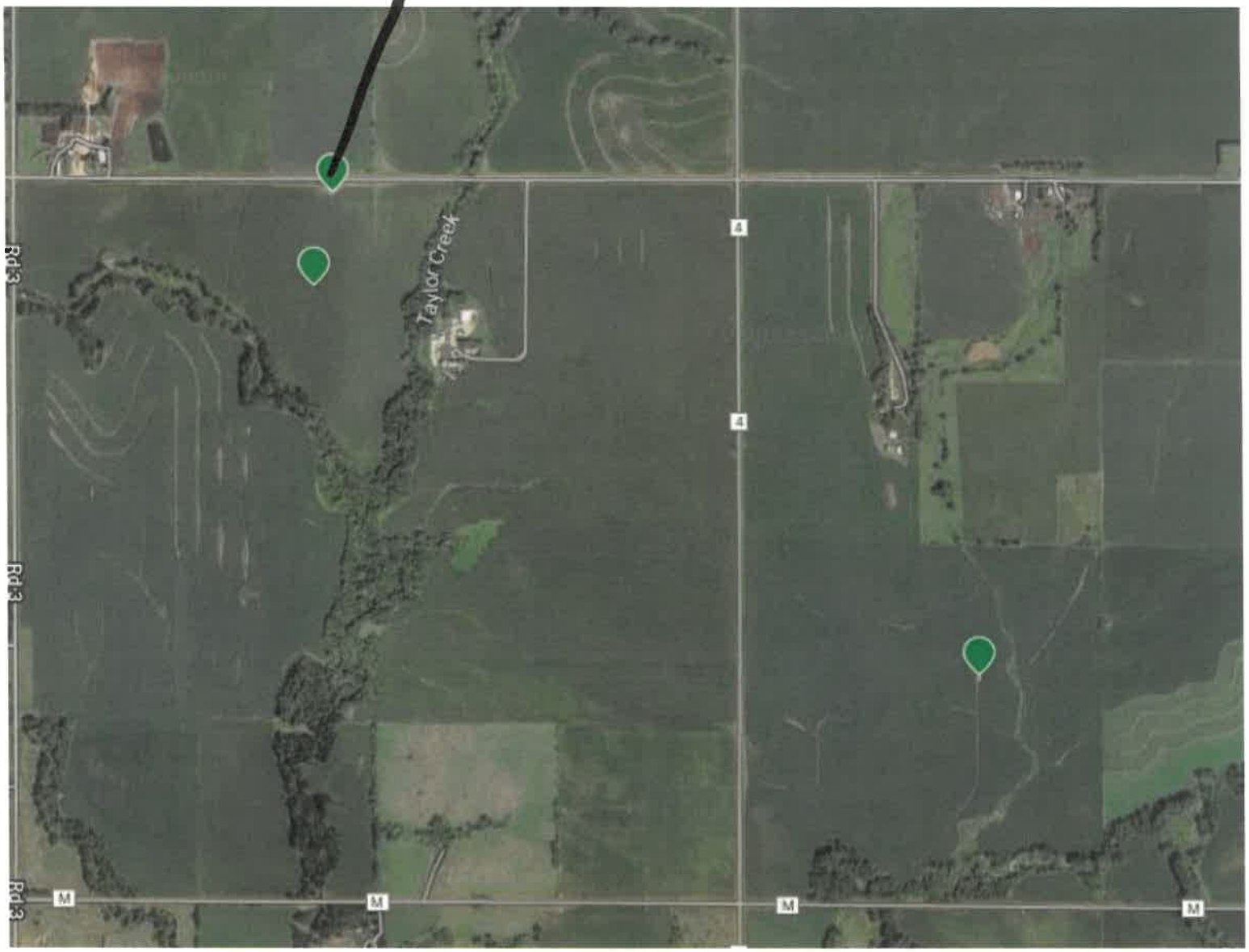
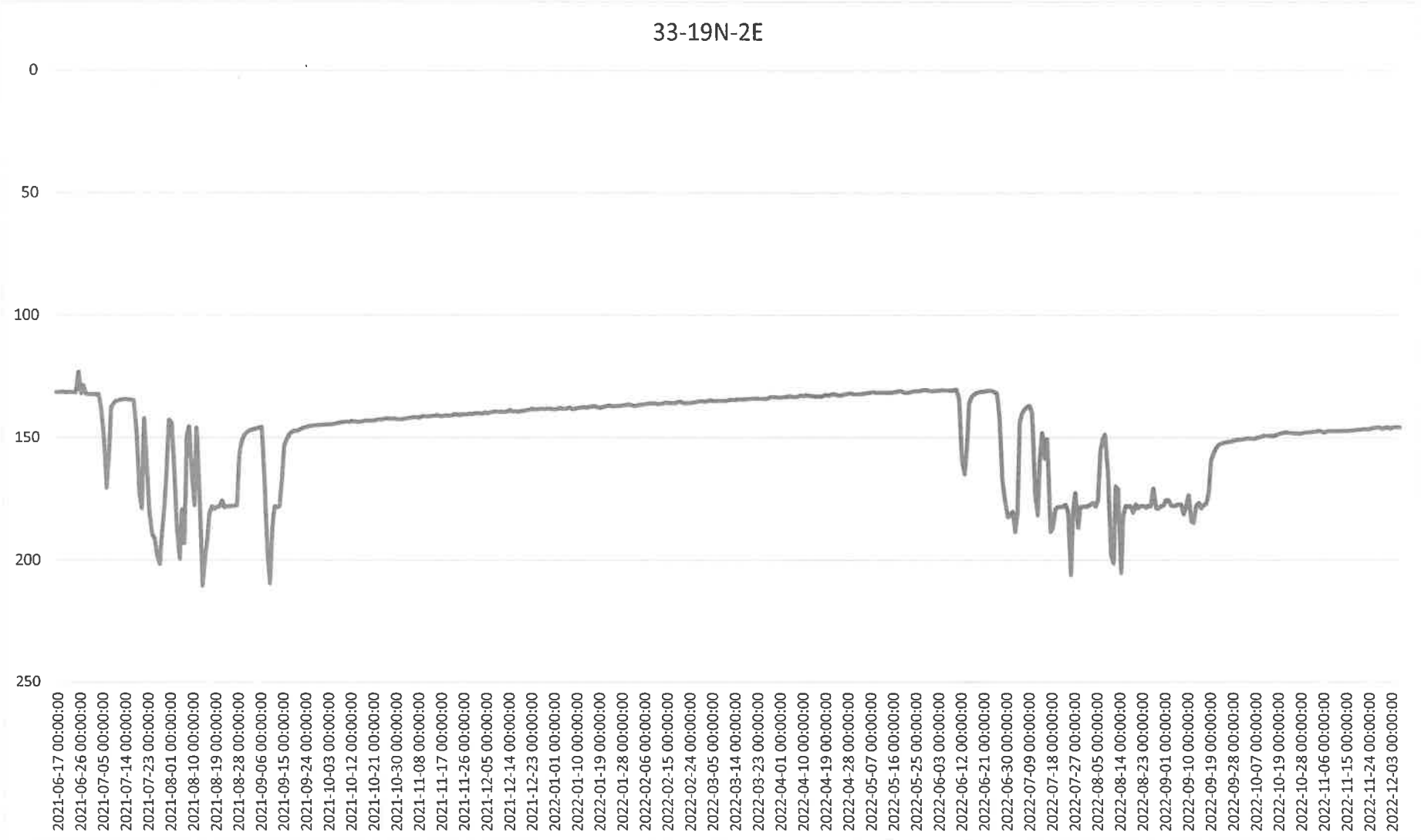




Well Log A



Well Log A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LOWER PLATTE NORTH
Natural Resources District
PO Box 126 511 Commercial Park Road Wahoo, NE 68066
Phone 402.443.4675 Fax 402.443.5339
lpnnrd@lpnnrd.org www.lpnnrd.org

Request for Qualifications
Lower Platte North Natural Resources District
Hydrogeologic Assessment Geodatabase
Due: Friday, January 27, 2023, by 3:00 pm

The Lower Platte North Natural Resources District (LPNNRD) is requesting qualifications from firms specializing in hydrogeology to complete a Hydrogeologic Assessment Geodatabase (Assessment). The Assessment will utilize all available geologic data, including well logs and test holes.

In 2022, LPNNRD constructed 29 hydrogeologic cross sections through LPNNRD as part of a joint project with Papio-Missouri River NRD (PMRNRD) showing the lithology from well logs for a visual comparison to the Airborne Electromagnetic (AEM) profiles; however, the LPNNRD-wide hydrogeologic assessment work, similar to what was completed for Lower Elkhorn NRD (LENRD), PMRNRD, and Lower Platte South NRD, has yet to be completed. With the completion of LPNNRD's Assessment, all Lower Platte River Basin NRDs will have consistently constructed AEM and geologic frameworks. The LPNNRD intends to have the Assessment completed by August 2023 so it can be utilized for future groundwater modeling projects. The LPNNRD received a Water Sustainability Fund (WSF) Grant for $56,000 to conduct this Assessment Project and plan on staying within this budget.

The selected firm must ensure the analysis is consistent with methods used to complete the existing hydrogeologic cross sections and create raster surfaces of the unconsolidated material using ArcGIS Spatial Analyst that are consistent with adjoining NRDs. LPNNRD is requesting that the following map layers are requested to be generated:

- Well and test hole locations and high-capacity well density
- Ground surface topography and locations of major streams and rivers
- Locations of high-capacity wells and registered domestic wells
- Groundwater level data and groundwater surface maps
- Depth to groundwater
- Confined and unconfined Principal Aquifer
- Groundwater connection with surface water (i.e., perennial streams)
- Thickness and extent of saturated sands and gravels
- Well specific capacities and transmissivity of the Principal Aquifer
- Bedrock geology, extent of till, and bedrock surface topography
- District-wide vulnerability to contamination
- Irrigation development risk

Interested parties should submit the following documentation, to be delivered electronically (via email or flash drive) AND one paper copy, to LPNNRD no later than Friday, January 27, 2023, by 3:00 pm:

- Statement of Qualifications to include previous experience with hydrogeologic assessments and AEM frameworks in the Platte River Basin or similar basins with project examples.
- A description of the project team and organizational structure including resumes.
- Describe the project approach detailing how the geologic data will be analyzed and mapped.
- Scope of Work to include:
    - Project Management and Meetings
    - Hydrogeologic Assessment Framework
    - Deliverables
        - Provide the LPNNRD electronic GIS layers.
        - A final ESRI geodatabase and other mapping files.
- Schedule that outlines key milestones based on an August 2023 deadline.

The LPNRD intends to select an applicant at its regularly scheduled Board of Directors meeting on February 13, 2023, based off proposal evaluations from the NRD staff and NRD Water Committee members. The LPNNRD reserves the right to reject any and all proposals, waive minor irregularities in proposals, and/or accept the proposal deemed most beneficial to LPNNRD's interest. This RFQ in no way obligates LPNNRD to enter into any contract for goods or services until such time as written agreement between parties is signed by each parties designated representative.

Questions regarding this RFQ may be directed to Daryl Andersen, dandersen@lpnnrd.org or (402) 443-4675.

Send Paper Copy or deliver to:
Lower Platte North NRD
PO Box 126
511 Commercial Park Road
Wahoo, NE 68066-0126

ENWRA
EASTERN NEBRASKA WATER RESOURCES ASSESSMENT
www.enwra.org

Date: December 30, 2022

Attn: Daryl Andersen
Lower Platte North Natural Resources District
PO Box 126
Wahoo, NE 68066

From: Katie Cameron, ENWRA Project Coordinator

Daryl,
Please find attached the annual ENWRA dues invoice for fiscal year 2023 (FY23). Your District will also receive a check from ENWRA for $9,150 for eastern Nebraska equipment and assessment related expenditures.

Thank you,

Kathleen Cameron, Survey Hydrogeologist/ENWRA Coordinator
kcameron_enwra@lpsnrd.org
(402) 419.4798

Enclosures

ENWRA
PO Box 83581
Lincoln, NE 68501-3581

INVOICE

INVOICE: #3074
Date: December 30, 2022

TO:
Lower Platte North Natural Resources District
PO Box 126
Wahoo, NE 68066
Attn: Daryl Andersen

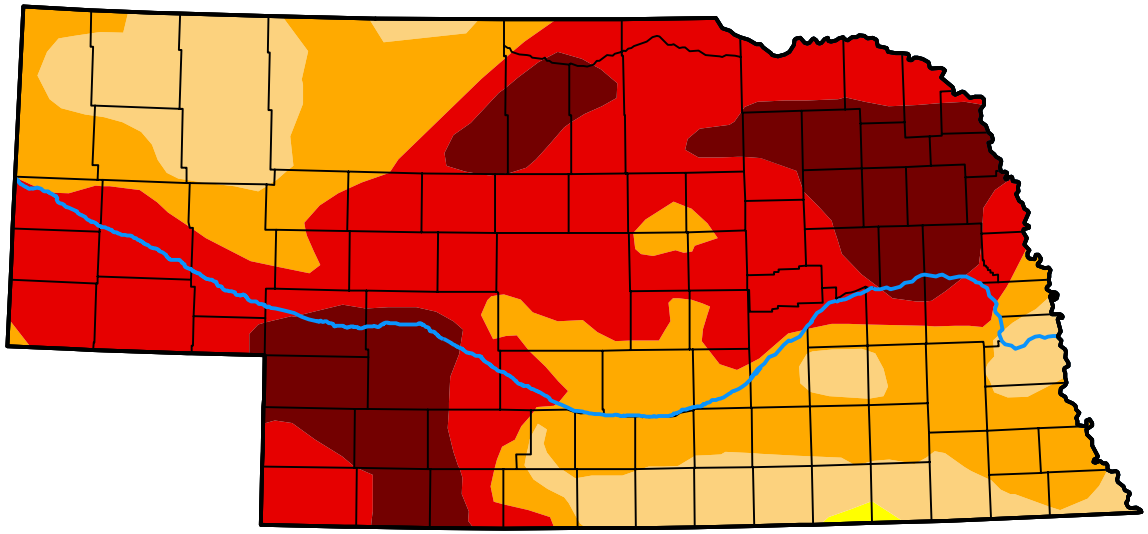
DESCRIPTION	AMOUNT
FY 2023 ENWRA annual dues	$30,000
TOTAL	**$30,000**

Make all checks payable to: **ENWRA**

THANK YOU!

U.S. Drought Monitor

Nebraska



December 27, 2022

(Released Thursday, Dec. 29, 2022)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	99.78	83.95	56.71	17.17
Last Week *12-20-2022*	0.00	100.00	99.78	83.95	56.71	17.17
3 Months Ago *09-27-2022*	0.00	100.00	94.94	74.27	30.52	10.50
Start of Calendar Year *01-04-2022*	18.24	81.76	34.54	13.10	2.91	0.00
Start of Water Year *09-27-2022*	0.00	100.00	94.94	74.27	30.52	10.50
One Year Ago *12-28-2021*	18.35	81.65	34.62	13.10	2.91	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:
Richard Heim
NCEI/NOAA

droughtmonitor.unl.edu