STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

RECORD OF DECISION

In the Matter of the Determination of Need for an Environmental Assessment Worksheet for the Pineland Sands Nolte/Offutt Water Appropriations

FINDINGS OF FACT, CONCLUSIONS, AND ORDER

PROCEDURAL BACKGROUND

1. On February 5, 2015, the Commissioner of the Department of Natural Resources (DNR) issued an Order for preparation of a discretionary Environmental Assessment Worksheet (EAW) to RD Offutt Company (RD Offutt) for a project that consisted of applications for 21 groundwater appropriation permits and a request for 33 preliminary well assessments. If granted, the permits would have resulted in the conversion of approximately 7,000 acres of pine forest, historically managed for timber production, to irrigated agriculture.
2. RD Offutt appealed the DNR's February 5, 2015 Order to the Minnesota Court of Appeals and requested that the Court vacate the DNR's February 5, 2015 Order.
3. While the appeal was pending, RD Offutt submitted two letters to the DNR, dated April 7, 2015 and April 22, 2015, withdrawing all of the preliminary well assessments and some of the permit applications.
4. On May 12, 2015, the DNR filed a motion to dismiss RD Offutt's appeal as moot because RD Offutt's Project changes were substantial changes requiring the DNR to determine whether RD Offutt's Project, as modified, required the preparation of an EAW.
5. On June 2, 2015, the Minnesota Court of Appeals found RD Offutt's appeal to be moot because RD Offutt had so modified its project that DNR was required to make a new determination on the need for an EAW. The Court of Appeals dismissed RD Offutt's appeal.
6. Due to the withdrawal of all but 18 permit applications (Modified Project), the DNR vacated the February 5, 2015 order for the discretionary EAW on June 19, 2015.
7. On June 19, 2015, the DNR ordered preparation of a discretionary EAW for the remaining 18 permit applications associated with the Modified Project.
8. RD Offutt withdrew an additional 13 permit applications on or about June 19, 2015, and confirmed this withdrawal of permit applications on September 8, 2015, leaving 5 water appropriation permit applications pending before the DNR.
9. On September 10, 2015, the DNR vacated the June 19, 2015 order for a discretionary EAW.
10. On September 10, 2015, the DNR entered into a Memorandum of Understanding with RD Offutt in which the scope of a Pineland Sands Special Study was developed. The intent of the study was

to study land and water impacts from the conversion of forested land to irrigated agriculture in the Pineland Sands Area.

11. On or about November 19, 2015, the Minnesota Environmental Quality Board (EQB) received a petition requesting the preparation of an Environmental Assessment Worksheet (EAW) for the proposed RD Offutt Expansion in the Pineland Sands Aquifer Area, located in Wadena, Hubbard, Becker and Cass Counties, Minnesota.

12. The EQB designated the DNR as Responsible Governmental Unit (RGU) to make the decision on the need for an EAW. Minn. Stat. § 116D.04, subd, 2a(c) and Minn. R. 4410.0500, subp. 1. Pursuant to the requirements of Minn. R. 4410.1100, subp. 5, the petition was transmitted to the DNR for a determination of the need for an EAW. Notice of the assignment of the petition to the DNR was published in the EQB Monitor on December 7, 2015.

13. On February 12, 2016, the DNR, as RGU, determined that an EAW would not be prepared for the proposed RD Offutt Expansion Project, in Hubbard, Becker, Cass and Wadena Counties, Minnesota, and denied the petition. The denial was based on a significant reduction of proposed water appropriation by the RD Offutt combined with an agreement between DNR and the RD Offutt to support a special study of potential cumulative effects within the Pineland Sands Area.

14. Additional details concerning the procedural history of discretionary environmental review and environmental review petitions covering RD Offutt's water appropriation in the Pineland Sands area can be found in the February 12, 2016 Record of Decision for denial of the citizen petition.

15. On or about January 25, 2018 RD Offutt submitted three applications for new water appropriation permits (2018-0255, 2018-0257 and 2018-0259). RD Offutt also submitted four water appropriation amendment requests and on or about March 13, 2018 (2013-0878, 2013-0879, 2013-0880 and 2013-0881.

16. On or about May 1, 2018, the EQB received a petition requesting the preparation of an EAW for the proposed RD Offutt Expansion in the Pineland Sands Aquifer Area, located in Hubbard, Cass, Becker, Ottertail, Todd, Crow Wing Morrison and Wadena Counties, Minnesota.

17. The EQB again designated the DNR as RGU to make the decision on the need for an EAW. Minn. Stat. § 116D.04, subd, 2a(c) and Minn. R. 4410.0500, subp. 1. Pursuant to the requirements of Minn. R. 4410.1100, subp. 5, the petition was transmitted to the DNR for a determination of the need for an EAW. Notice of the assignment of the petition to the DNR was published in the EQB Monitor on May 14, 2018.

18. Based on the pending water appropriation permit applications at the time (2018-0255, 2018-0257 and 2018-0259) DNR made a preliminary determination to order a discretionary EAW because of the potential cumulative effect of increased nitrate contamination of groundwater from conversion of naturally vegetated land to irrigated agricultural fields. On July 23, 2018 and prior to making a decision on the petition DNR notified RD Offutt of its intent to order a discretionary EAW as required by Minn. Stat. § 116D.04, subd. 17.

19. On July 31, 2018, RD Offutt submitted a letter to the DNR withdrawing water appropriation permit applications 2018-0255, 2018-0257 and 2018-0259. This withdrawal substantially changed the governmental approvals pending before the DNR that were subject to the petition.

20. Based on RD Offutt's decision to withdraw the water appropriation permit applications, the on April 10, 2019, DNR determined that an EAW would not be prepared for the proposed RD

Offutt Expansion Project, in Hubbard, Becker, Cass and Wadena Counties, Minnesota, as requested by the petition submitted to the EQB.

21. Additional details concerning the procedural history of 2016 discretionary environmental review of RD Offutt's water appropriation in the Pineland Sands area can be found in the April 10, 2019 Record of Decision for denial of the citizen petition.

FINDINGS OF FACT

22. On or about December 11, 2017 the DNR received three water appropriation permit applications from Mr. Tim Nolte for property located in Wadena County. Mr. Nolte's contract for deed indicated that he had acquired the property from RD Offutt and that the sale was conditioned on his agreement to regularly rent the property to RD Offutt for cropping. It was also a condition of the sale that Mr. Nolte obtain water appropriation permits from the DNR and make them available to RD Offutt for cropping.

23. On or about June 24, 2019 the EQB received a Citizen's Petition for preparation of an EAW. The EQB assigned DNR as the RGU for consideration and decision on the petition.

24. Pursuant to Minn. R. 4410.1100, subp. 2, a petition must contain the following information:

    a. a description of the proposed project;

    b. the proposer of the project;

    c. the name, address, and telephone number of the representative of the petitioners;

    d. a brief description of the potential environmental effects which may result from the project; and

    e. material evidence indicating that, because of the nature and location of the project, there may be potential for significant environmental effects.

25. The project identified in the petition is: "Mr. Tim Nolte's/RD Offutt Company's continued potato field expansions using DNR water appropriations (page 10), forest-to-field conversions and chemical applications in and around the Pineland Sands Area." Page 10 of the petition identified the RD Offutt's four water appropriation amendment applications numbers and well index reports that identified the three wells that are proposed for use under the Tim Nolte water appropriation permit applications.

26. The petition alleges that this project may have the potential for the following environmental effects:

    a. The Nolte/RD Offutt Continued Potato Field Expansion Project has resulted in deforestation which has negatively impacted the existing wildlife and ecosystem of the area.

    b. The Nolte/RD Offutt Continued Potato Field Expansion Project will contribute to the degradation of the Pineland Sands Aquifer.

    c. The Pineland Sands Nolte/Offutt Water Appropriation Project will, due to expanded deforestation, contribute to the worsening of the rising temperatures and lowering oxygen levels in the Straight River Groundwater Management Area (GWMA).

d. The Pineland Sands Nolte/Offutt Water Appropriation Project will result in nitrate contamination of groundwater, due to the application of nitrogen-based fertilizers in center pivot irrigation systems.

e. The Pineland Sands Nolte/Offutt Water Appropriation Project will result in degradation of area trout streams and degradation or dewatering of wetland habitat in the Pineland Sands area.

f. The Pineland Sands Nolte/Offutt Water Appropriation Project will cause health impacts due to increasing usage to synthetic chemicals, including fungicides.

g. The Pineland Sands Nolte/Offutt Water Appropriation Project will result negative impacts to water availability due to the usage of water from deeper aquifers.

27. As material evidence, the Petition contained:

a. A letter from the office of Minnesota State Representative Jean Wagenius, Minnesota House of Representatives, dated August 29, 2013 regarding the Winnemucca Farms Project.

b. Two comment letters regarding the Winnemucca Farms Cass County Potato Farm Environmental Assessment Worksheet, one each provided by the Minnesota Pollution Control Agency (MPCA) and the DNR.

c. News articles,

i. "DNR halts pines-to-potatoes conversion in central Minnesota,"

ii. "RD Offutt reduces its Pineland Sands water permit applications to five," and

iii. "No small potatoes: Dept of Natural Resources requires EAW for pinelands to spud fields project,"

d. DNR Record of Decision for the Determination of Need for an EAW for the RD Offutt Expansion in the Pineland Sands Aquifer Area, dated February 12, 2016

e. DNR Record of Decision for the Determination of Need for an EAW of the RD Offutt Continued Potato Field Expansion in the Pineland sands Aquifer Area dated April 10, 2019.

f. Listing of designated trout streams per Minnesota Rules chapter 6264.0050 Subp. 4.

g. Court of Appeals of Minnesota Opinion: Trout Unlimited, Inc.., et al., Appellants, v. The Minnesota Department of Agriculture, Respondent. March 7, 1995.

h. Minnesota Department of Agriculture, Byron #1 Field Study Groundwater Monitoring Report, January 2019.

i. Extracted pages from the DNR Straight River Groundwater Management Area Plan, March 2017

j. State Agency Factsheets:

i. MPCA Factsheet: "Straight River Watershed Unit, Crow Wing River Watershed Monitoring and Assessment Report," January 2014

ii. Minnesota Department of Agriculture (MDA) factsheet regarding updated Township Testing Program, "Township Testing Program Update – February 2017"

iii. MDA factsheet, "Hubbard County: Overview of Nitrate Levels in Private Wells (2016)" January, 2017

iv. U.S. Geological Survey (USGS) factsheet: "Estimated Agricultural Use for Clorothalonil, 2002-2012"

v. New Jersey Department of Health and Senior Services factsheet: "Hazardous Substance Fact Sheet: Chlorothalonil," April 1998

k. Area Maps depicting wells from the Minnesota Department of Health (MDH) Minnesota Well Index

l. Material Safety Data Sheets:

i. Echo 720 Agricultural Fungicide

ii. Vapam HL Soil Fumigant, Metam 426, Etc

m. MDH Memo Dated March 31, 2015, Subject: Analysis of the Park Rapids TW (792199) Pumping Test, October 9-24, 2014, Confined Outwash Aquifer

n. Online resources:

i. MNopedia, "Treaty of Washington, 1855."

ii. Unknown web source. "How Investing in Regenerative Agriculture Can Help Stem Climate Change Profitably." Published December 12, 2018.

o. Letter between Leggette, Brashears and Graham, Inc. and Mr. Brian Hiles, PE, regarding Phase 2 Hydrogeologic Study Aquifer Pumpting Test Results for the City of Park Rapids, MN

28. Minn. Stat. § 116D.04, subd. 2a(c) requires the RGU to prepare an EAW where a petition signed by not less than 100 individuals who reside or own property in the state "demonstrates that, because of the nature or location of a proposed action, there may be potential for significant environmental effects." *See also,* Minn. R. 4410.1100, subp. 6 and *Carl Bolander & Sons Co. v. Minneapolis*, 448 N.W. 2d N.W. 2d 804, 810 (Minn. Ct. App. 1992).

29. Both Minnesota Statutes and Minnesota Rules describe what an RGU must consider in response to a petition when it determines whether, because of the nature and location of the project, there may be a potential for significant environmental effect and thus requiring an EAW. Minn. Stat. § 116D.04, subd. 2a(c). The factors that must be considered are the nature and location of the project and the criteria for potentially significant environmental effects described in Minn. R. 4410.1700, subp. 7. *Id.* and Minn. R. 4410.1100, subp. 6.

30. The RGU shall deny the petition if the evidence presented fails to demonstrate that the project may have the potential for significant environmental effects. In considering the evidence, the RGU must take into account the following factors:

a. type, extent, and reversibility of environmental effects;

b. cumulative potential effects of related or anticipated future projects;

c. the extent to which environmental effects are subject to mitigation by ongoing public regulatory authority; and

d. the extent to which environmental effects can be anticipated and controlled as a result of other available environmental studies undertaken by public agencies or the project proposer, including other Environmental Impact Statements (EISs).

Minn. R. 4410.1100, subp. 6 and Minn. R. 4410.1700, subp. 7.

31. An RGU is not required to undertake environmental review on the basis of speculative information. *Reserve Mining Co. v. Herbst*, 256 N.W. 2d 808, 829-30 (1977).

32. The Pineland Sands Area is a 785-square mile area located in northwestern and north central Minnesota (see attached figure 2019 Citizens Petition EAW). The area is a large expanse of surficial glacial outwash ranging from fine sand to fine gravel. The Pineland Sands Area includes portions of Becker, Cass, Hubbard, and Wadena Counties. The DNR determined that the Pineland Sands Area was a suitable environmentally relevant area as part of ordering the discretionary EAWs identified in paragraphs 1 and 7 above. The Pineland Sands Area is the extent of the geographic area that DNR used to consider the environmental effects identified in this petition.

33. Minnesota Rules 4410.0200 Subpart 65 defines a "Project" as a governmental action, the results of which would cause physical manipulation of the environment. The petition identifies the Project as Mr. Tim Nolte's/RD Offutt Company's continued potato field expansions using DNR water appropriations and forest-to-field conversions and chemical applications in and around the Pineland Sands Area.

34. An action can only be considered a "Project" under Minnesota Rule chapter 4410 if the action requires a governmental approval. DNR approval authority for the project identified in the petition is limited to water appropriation. There are fifteen pending water appropriation applications within the Pineland Sands Area (see attached figure 2019 Citizens Petition EAW). Seven of these applications are for amendments to existing water appropriation permits. Two of these applications are permit transfer requests. The remaining six applications are for new water appropriations.

35. Water appropriation applications submitted by Mr. Tim Nolte (Nolte Project) include:

- 2017-4235 (new) – 21.2 million gallons per year (MGY) for irrigation of 65 acres
- 2017-4236 (new) – 32.6 MGY for irrigation of 100 acres
- 2017-4237 (new) – 45 MGY for irrigation of 138 acres

36. Water appropriation requests submitted the RD Offutt Company (RD Offutt Project) include:

- 2013-0878 (amendment) – 7.4 MGY increase in water
- 2013-0879 (amendment) – 2.5 MGY increase in water
- 2013-0880 (amendment) – 7.3 MGY increase in water
- 2013-0881 (amendment) – 6.1 MGY increase in water

37. The other water appropriation requests (Other Projects) include:

- 1988-1145 (amendment) – 7.0 MGY increase in water
- 1991-1252 (amendment) – 95 acre increase in irrigation area
- 2014-1911 (amendment) – administrative, no change in water use
- 2017-2918 (new) – 35 MGY for irrigation of 130 acres

- 2019-0916 (new) – 40 MGY for irrigation of 135 acres
- 2019-0918 (new) – 40 MGY for irrigation of 135 acres

38. Pending water appropriation amendment requests 1988-1145, 1991-1254, and 2014-1911 associated with the Other Projects do not propose forest to field conversions.

39. Pending water appropriation request 2017-2918 of the Other Projects proposes irrigation in an area that was forested in 2010, but portions of the property have now been harvested and other portions are regenerating forest. The application identifies the proposed irrigation is for an organic farm.

40. Pending water appropriation requests 2019-0916 and 2019-0918 of the Other Projects were both submitted by Alex Bishop to irrigate property that was formerly enrolled in the Conservation Reserve Program (CRP). The majority of the property is an existing field with some tree removal potentially needed to construct the irrigation system.

41. The applications identified in ¶37 do not appear to be part of the project that was identified in the petition. The Other Projects that these applications represent may have or may not have been forest-to-field conversions at a previous point in time and would not be subject to environmental review. Minn. R. 4410.4600, subp. 2.

42. The four amendment applications associated with the RD Offutt Project were previously considered as part of different citizen's petition (¶¶ 14 – 20). Decisions on these applications were not made prior to receipt of the 2019 Citizen's Petition. The DNR had previously determined that this project did not have the potential for significant environmental effects and denied the petition. The basis for this decision was that the proposed water use was a small amount for establishing cover crops and that establishing cover crops is a recognized mitigation for increasing soil health and reducing nitrate leaching.

43. Minnesota Rules 4410.0200, subpart 60 defines a phased action as one that "involves two or more projects to be undertaken by the same proposer that a... [responsible governmental unit] ... determines: will have environmental effects on the same geographic area; and are substantially certain to be undertaken sequentially over a limited period of time."

44. The three groundwater appropriation permits requested by the Nolte Project are within a single aquifer (the Pineland Sands Aquifer), are within a single geographic area (the Pineland Sands Area), and are reasonably certain to occur over a limited period of time. Thus, the three groundwater appropriation permit applications covered by the Nolte Project constitute a phased action within the meaning of Minn. R. 4410.1000, subp. 4 and Minn. R. 4410.0200, subp. 60.

45. The authority to issue all water appropriation permits is vested in the DNR commissioner. Minn. Stat. §§ 103G.255 through 103G.315.

46. In approving water appropriation permits, the DNR commissioner must consider the impact of a groundwater appropriation on surface water bodies, water quality, and ecosystem health. Minn. Stat. § 103G.287 subd. 2 and 3.

47. There are a number of domestic wells and communities in Becker, Cass, Hubbard, and Wadena Counties that rely on the Pineland Sands Aquifer for their drinking water supply.

48. The DNR commissioner has jurisdiction over the issuance of all ground water appropriations including whether to issue those groundwater appropriation permits required for the Nolte Project.

Therefore, the commissioner has approval authority over the Project within the meaning of Minn. R. 44l0. l000, subp. 3A. The act of submitting an application for a water appropriation permit is a strong indicator that the applicant intends to use the permit for its intended purpose once the permit is granted. It is reasonable to assume that Mr. Tim Nolte intends to use the requested groundwater appropriation permits, if granted, for crop irrigation in the immediate future.

49. In determining whether to order a discretionary EAW, including in response to a citizens' petition, the governmental unit need only find "that there *may* be the potential for environmental effect." *Carl Bolander & Sons Co. v. Minneapolis,* 448 N.W. 2d N.W. 2d 804, 810 (Minn. Ct. App. 1992) (emphasis in the original) and Minn. R. 4410.1000, subp. 3A.

50. The petition alleges that the Pineland Sands Nolte/Offutt Water Appropriation Project has resulted in deforestation that has negatively impacted the existing wildlife and ecosystem of the area.

51. The Nolte Project would result in the conversion of approximately 303 acres of previously forested timber or naturally vegetated land to irrigated cropped agriculture overlying the Pineland Sands Area. The conversion would be associated with the three new groundwater appropriation permit applications. Review of 2013 and 2017 aerial photography indicate these areas have been used for timber production and have had various amounts of timber harvest, clearing and vegetative removal.

52. Within the Pineland Sands Area, there are several rare native plant communities (NPCs) characterized by jack pine woodland conditions. These include central poor dry pine woodland (FDc12), central dry pine woodland (FDc23), and central rich dry pine woodland (FDc24). As documented in "An Evaluation of the Ecological Significance of the Badoura Woodlands, Hubbard County, Minnesota," these NPCs have been assigned conservation status ranks that reflect their risk of elimination in Minnesota. The conservation status ranks of these communities is as follows: FDc12, imperiled (S2 rank); FDc23, critically imperiled-imperiled (S1S2 rank) and globally imperiled (G2 rank); FDc24, critically imperiled to vulnerable (S1-S3 rank).

53. The DNR NPC database, which is one source of spatial NPC information, identifies 23,506 acres of FDc12, FDc23, and FDc24 communities currently documented in Minnesota. The Pineland Sands Area contains approximately 10,131 acres of these communities, or 43 percent of the known statewide total, although this database does not include an exhaustive source of all NPC occurrences, and may more commonly identify NPCs in state-administered lands.

54. DNR's Forestry Resource Assessment program collects information on changes in forest cover-type. The forest disturbances identified as part of these changes could occur from many sources including timber harvest or land use changes. There have been approximately 69,000 acres of forest disturbance in the Pineland Sands Area from 2000 to 2016.

55. The conversion of 303 acres of land to irrigated agriculture as part of the Nolte Project would have limited impact on the ecosystem and wildlife within the Pineland Sands.

56. The petition alleges that due to expanded deforestation, the Pineland Sands Nolte/Offutt Water Appropriation Project would contribute to the rising temperatures and lowering oxygen levels in the Straight River Ground Water Management Area (GWMA).

57. None of the pending applications associated with the Nolte Project are located in the Straight River watershed.

58. Surface waters in the area, including the Shell River and the Straight River, have been identified as impaired for dissolved oxygen (DO) by the MPCA. According to MPCA, DO levels are influenced by surface water conditions including, but not limited to: elevated nitrogen and phosphorus levels, elevated temperatures, and reduced flow.

59. The Crow Wing River Watershed Restoration and Protection Strategies (WRAPS) Report, published in January 2015, identified and recommended strategies for eliminating impairments of surface waters in the Crow Wing River Watershed. Both the Shell River and Straight River were identified in this report as impaired surface waters in this watershed. Strategies for impairment reduction included, but were not limited to, increasing forest acreage.

60. Potential impacts to water quality related to proposed water appropriations must be considered by the DNR in determining if a proposed water appropriation is sustainable. Minn Stat § 103G.287 Subd 2 and 5.

61. The petition alleges that the Pineland Sands Nolte/Offutt Water Appropriation Project would result in additional irrigation that would result in additional nitrate contamination of groundwater, due to highly permeable soils in the area and the relationship between center-pivot irrigation and nitrate pollution of groundwater.

62. The Minnesota Department of Health (MDH) has implemented the federal Maximum Contaminant Level (MCL) of 10 milligrams per liter (mg/l) of nitrate-nitrogen as a drinking water standard in source water for the safe consumption of drinking water.

63. According to MDH's Minnesota Drinking Water Annual Report for 2014, Park Rapids, located in the Pineland Sands Aquifer, was one of fifteen Community Public Water Supply systems with source water nitrate levels equal to or greater than the federal MCL.

64. Central Sands Private Well Network, an effort coordinated by MDA starting in 2011, has conducted nitrate analysis for private wells within the Central Sands Region, which includes, but is not limited to, Becker, Wadena, Cass, and Hubbard Counties. Of the 113 private wells analyzed in these four counties in 2014 as part of this Network, approximately 11 percent had well water nitrate levels of greater than 3 mg/l indicating nitrate-nitrogen impacts according to MDH. Within the counties of Becker, Wadena, Cass and Hubbard, several wells with elevated nitrate-nitrogen are in the area of Northern Wadena and Southern Hubbard Counties in the area of the proposed Project.

65. The township that the Nolte Project is located in has not participated in the Central Sands Private Well Network sampling. The township directly to the south of the Nolte project (Wing River Township) has participated and 10.3% of the wells tested had a nitrate level exceeding the 10 mg/L health standard for drinking water (see attached figure 2019 Citizens Petition EAW).

66. In order to prevent detrimental effects to the environment related to the contamination of groundwater with nitrates from nitrogen-derived fertilizers as a consequence of agricultural production, the DNR includes conditions in permits on responsible water use, implementation of adequate soil and water conservation measures, and adherence to BMPs, including nitrogen BMPs, which have been included in previous water appropriations permits. The DNR has the authority to impose these conditions as necessary to protect against potential impacts to land and water resources from the high-nitrogen-need crops, such as corn and potatoes, that the Applicant intends to irrigate.

67. The petition alleges the Pineland Sands Nolte/Offutt Water Appropriation Project would result in degradation or dewatering of wetland habitat in the Pineland Sands area.

68. Wells that are associated with the Nolte Project are either located in the Quaternary Water Table Aquifer (QWTA) or the Quaternary Buried Artesian Aquifer (QBAA). The QWTA aquifer wells are typically shallow (less than 100 feet deep) and use water from the surficial (water table) aquifer. Wells located in the QBAA are typically deeper wells which extend into aquifers, (sand or gravel layers), beneath a confining layer of glacial till of greater than ten feet.

69. The wells associated with the Nolte Project are constructed in the QBAA.

70. While buried aquifers (QBAA) are completed under a confining layer of glacial till, there is potential for water to flow between confining layers, in what is termed 'leakiness.' The 'leakiness' of a till is a direct function of its lithology, its thickness, and natural or pumping-induced vertical gradient. In locations where the till is highly leaky, pumping from wells completed in the buried aquifer (QBAA) can cause drawdown in the overlying surficial aquifer.

71. Wells constructed in buried artesian aquifers could either be directly or indirectly hydraulically connected to surface water features in the area. The complexity of glacial deposits makes it difficult to accurately define the locations of buried sand and gravel lenses and their continuity in the subsurface, which in turn makes it difficult to determine what surface water bodies would be impacted without completing more analysis such as aquifer tests.

72. Water appropriation applications are subject to technical review by DNR hydrogeologists as part of determining if the permit should be granted, denied or conditioned. Aquifer tests are commonly required if the technical review identifies uncertainty or concerns about water sustainability, potential water use conflicts, or potential negative impacts to surface waters.

73. The petition alleges that the Pineland Sands Nolte/Offutt Water Appropriation Project would cause health impacts due to increasing usage to synthetic chemicals, including fungicides.

74. MDA regularly monitors groundwater and surface water to better assess the impacts of pesticides to groundwater and surface water resources due to the normal use of pesticides in Minnesota. The MDA established a network of ten water quality monitoring regions, called Pesticide Monitoring Regions, (PMRs), throughout Minnesota for the purposes of collecting, assessing, and reporting monitoring data from both surface and groundwater samples. Cass, Becker, Wadena and Hubbard Counties fall in PMR 4 of MDA's water monitoring program network.

75. Monitoring results conducted by MDA from 2010 to 2014 identified pesticides most likely to be found in groundwater in Cass, Becker, Wadena and Hubbard Counties and PMR 4. These include the following: chlorothalonil, mancozeb, metam sodium, imidacloprid, thiamethoxam, clothianidin, esfenvalerate, metribuzin, and metolachlor.

76. Monitoring Results indicated that herbicides, (metolachlor+degradates and metribuzin+degradates) and insecticides, (imidacloprid and thiamethoxam) were detected from Becker, Wadena and Hubbard Counties in varying concentrations and frequencies from 2010 to 2014 (Table 2). Chlorothalonil and esfenvalerate were not detected in any groundwater samples in PMR 4 from 2010 to 2014.

77. MDA is the lead agency for regulating pesticides in Minnesota. In this role, the MDA collaborates with the U.S. Environmental Protection Agency (USEPA), U.S. Department of Agriculture, University of Minnesota Extension Service, MPCA, MDH, and others to implement

federal and state pesticide laws. Minnesota Statutes Chapter 17 and Minnesota Rules Chapter 1505 are the relevant laws and rules for regulating pesticides in Minnesota.

78. USEPA, in presentation materials from 2008, identified field volatilization of agricultural pesticides, (i.e., the vapors of a pesticide leaving an application site after sprays have settled from both plant and soil surfaces), as a complicated issue which could have health impacts but warrants additional analysis and assessment related to toxicity and exposure issues.

79. MDA has developed guidance and Best Management Practices (BMPs) for the minimization of drift and volatilization in response to citizen concerns about the detections of potato fungicide and other pesticides in air. Such detections may be indicative of drift or volatilization from agricultural, lawn, or garden use of pesticides. Risk evaluation suggested that concentrations were below USEPA levels of concern. However low the concentrations, the MDA developed BMPs to address citizens' concerns and to prevent the potential for any drift and to minimize volatilization of potato pesticides in July 2014.

80. From 2009-2014 in Cass, Becker, Hubbard and Wadena Counties, the MDA investigated fifteen (15) complaints of pesticide drift and issued ten (10) financial penalty actions to the application companies and one (1) non-financial penalty action. As of June 30, 2018, no additional complaint investigations were initiated regarding the misuse of agricultural pesticide in these four counties. No data on complaint investigations was available post June 30, 2018.

81. The petition alleges that the Pineland Sands Nolte/Offutt Water Appropriation Project would result negative impacts to water availability due to the usage of water from deeper aquifers.

82. The DNR is required to consider sustainability of all proposed water appropriations in determining if a permit should be issued or denied. The DNR is authorized to impose conditions on water appropriation permits to ensure water sustainability. A previously issued water appropriation permit can be modified or revoked if it is determined that the appropriation is not sustainable. Minn. Stat. §103G.287, subd. 5.

83. In general, the QWTA and QBAA aquifers in the Pineland Sands Area have robust water availability.

84. The Straight River GWMA Project was developed by the DNR due to a significant increase in groundwater use in the geographic area in the last two decades. The Straight River GWMA was established to support better decision-making on groundwater appropriation permits and support the Park Rapids area's sustainable groundwater use. The Straight River GWMA is located within the Pineland Sands Area and the need for this project demonstrates the increased agricultural irrigation that is occurring in the area.

85. In determining whether to order an EAW, a responsible governmental unit should consider whether, as a result of a proposed project, there may be the potential for cumulative environmental effects caused by the project. A cumulative potential effect is "the effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resource." Minn. R. 4410.0200, subp. 11a.

86. The contribution of the proposed Nolte Project to environmental effects identified in the petition is small. However, these small contributions would result in incremental increases to environmental effects from existing agricultural practices in the Pineland Sands area.

87. Incremental environmental effects from the Nolte Project are not expected to lead to significant environmental deterioration associated with surface water quality, surface water quantity, groundwater availability, chemical use, or deforestation.

88. Nitrate-nitrogen contamination of groundwater in the Pineland Sands Area is currently at a level where some wells in the area are above the drinking water standard. The Nolte Project's incremental contribution of nitrate to groundwater in the area is unknown, but there is the potential for the Nolte Project and other pending new water appropriation requests identified in ¶¶ 39 and 40 to contribute nitrate-nitrogen to the groundwater.

89. The existing nitrate-nitrogen contamination is the result of many factors and small contributions, including irrigated agricultural practices.

90. The DNR has developed, at a concept level, a proposal to study the environmental impacts of land conversion in the Pineland Sands Area. The study would potentially include data collection and analysis regarding groundwater usage and contamination and study the loss of forest habitat due to land conversion. Funding for implementation of the study has not been secured and no work has begun on the study.

CONCLUSIONS

1. DNR has determined that following governmental actions are subject to the petition:
    - RD Offutt Project - water appropriation amendment requests (2013-0878, 2013-0879, 2013-0880, and 2013-0881)
    - Nolte Project - new water appropriation requests (2017-4235, 2017-4236, and 2017-4237)
2. DNR has determined that the Other Projects (applications 1988-1145, 1991-1252, 2014-1911, 2017-2918, 2019-0916 and 2019-0918) are not subject to this petition.
3. DNR concluded that the RD Offutt Project water appropriation amendment requests for establishing cover crops (2013-0878, 2013-0879, 2013-0880, and 2013-0881) do not have the potential for significant environmental effects in response to Citizen's Petition on April 10, 2019. This determination was based on the small increment of nitrate that could be released from establishing cover crops and that cover crops are a recognized management practice to increase soil health and reduce nitrate leaching into groundwater. Information submitted with the current Citizen's Petition and known to DNR have not led a different determination for the RD Offutt Project.
4. When determining whether a proposed project may have the potential for significant environmental effects, the RGU considers the evidence from the petition and other information known to the RGU in the context of the following factors:

    a. *type, extent, and reversibility of environmental effects;*
    b. *cumulative potential effects of related or anticipated future projects;*
    c. *extent to which the environmental effects are subject to mitigation by on-going regulatory authority; and*
    d. *the extent to which environmental effects can be anticipated and controlled as a result of*

other environmental studies undertaken by agencies or the project proposer, including other EISs.

See Minn. R. 5510.1100, subp. 6 (directing the RGU to consider the factors set forth in Minn. R. 4410.1700, subp. 7 in determining whether a project may have the potential for significant environmental effect).

5. *Type, extent, and reversibility of environmental effects.*

   The proposed Nolte Project would result in an additional 303 acres of additional irrigated agriculture in the Pineland Sands area and would have limited direct environmental effects on water quality and quantity. Potential environmental effects related to water quantity in surface water or groundwater are reversible.

   Based on the Findings of Fact set forth in Findings 32 through 60 and Findings 67 through 87, the DNR concludes that the Nolte Project and RD Offutt Project would not directly lead to adverse impact on the aquifer, and the state retains the right to modify appropriation permits to assure water sustainability. Any potential environmental effects associated with the proposed projects, including environmental effects to the Pineland Sands Area ecosystem from land conversion, the jack pine habitat, water depletion, water contamination, health impacts dues to pesticide drift, would be limited in extent, temporary, or reversible.

6. *Cumulative potential effects of related or anticipated future projects.*

   The proposed additional 303 acres of irrigated agricultural land associated with the Nolte Project is small in comparison to the total existing irrigated agricultural land within the Pineland Sands Area. However, these additional acres of irrigated agriculture could contribute to additional nitrogen contamination within the Pineland Sands Area.

   The RD Offutt Project proposed to establish cover crops and would have limited potential for leaching additional nitrates into groundwater. Cover crops are a recognized measure to increase soil health and reduce nitrate leaching.

   Based on Findings of Facts 61 through 66 and Findings 88 through 90, nitrate-nitrogen contamination of groundwater in the Pineland Sands Area is a cumulative potential effect from land uses that, if not addressed, could lead to a significant environmental effect.

   Cumulative potential effects due to land conversion would be limited as the fields proposed for irrigation by the Nolte Project. The lands associated with the RD Offutt Project have either already been converted or in the process of conversion.

7. *Extent to which environmental effects are subject to mitigation by on-going public regulatory authority.*

   Based on the Findings of Fact above, the DNR has determined that the alleged potential environmental effects, as described in Finding 67 and 81 are subject to mitigation by ongoing public regulatory authority, as discussed in Findings 72 and 82, under the DNR water appropriations permit.

8. *Extent to which environmental effects can be anticipated and controlled as a result of other environmental studies undertaken by public agencies or the project proposer, or other EISs.*

The following documents provide information that can be used to anticipate and control environmental effects of the RD Offutt Expansion Project in Becker, Hubbard, Cass and Wadena Counties:

State of Minnesota, Department of Natural Resources, Straight River Groundwater Management Plan, March 2017.

State of Minnesota, Minnesota Pollution Control Agency, Crow Wing River Watershed Restoration and Protection Strategy (WRAPS) Report, January 2015.

Ongoing Byron Township Water Quality Study

9. The RGU is required to deny a petition for an EAW if the evidence presented by the petitioner fails to demonstrate the project may have the potential for significant environmental effects. Minn. R. 4410.1100, subp. 6. As demonstrated in Paragraphs 18 through 90, the RD Offutt Project **does not** have the potential for significant environmental effects.
10. The RGU is required to approve a petition for an EAW if the evidence presented by the petitioner or otherwise known to the RGU demonstrates that, because of the nature and location of the project, the project may have the potential for significant environmental effects. As demonstrated in Paragraphs 61 through 66, the Nolte Project **may** have the potential for significant cumulative effects.
11. Any Findings that might be properly termed Conclusions and any Conclusions that might properly be termed Findings are hereby adopted as such.

ORDER

Based on the above Findings of Fact and Conclusions:

The Department of Natural Resources determines that an Environmental Assessment Worksheet **will not** be prepared for the proposed RD Offutt Project water appropriation amendments for establishing cover crops, as requested by the petition submitted to the EQB.

The Department of Natural Resources determines that an Environmental Assessment Worksheet **will** be prepared for the proposed Nolte Project for new irrigated agriculture as requested by the petition submitted to the EQB.

Dated this 29th day of August 2019.

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

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JESS RICHARDS
Assistant Commissioner