

**MEMORANDUM OF UNDERSTANDING BETWEEN  
THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES  
AND R.D. OFFUTT COMPANY**

WHEREAS, R.D. Offutt Company (“RDO”) had submitted to the Minnesota Department of Natural Resources (“DNR”) eighteen groundwater appropriation permit applications in the Pineland Sands Aquifer for irrigation of farmland in the Pineland Sands Area.

WHEREAS, the Pineland Sands Area is an approximately 770 square mile area located in northwestern and northcentral Minnesota characterized by 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.

WHEREAS, the Pineland Sands Aquifer is a surficial aquifer located in Becker, Cass, Hubbard, and Wadena Counties. The aquifer is recharged primarily by precipitation. The aquifer is the source of base flow for most rivers, lakes, and streams within the Pineland Sands Area.

WHEREAS, the DNR, on June 19, 2015, issued an order for a Discretionary Environmental Assessment Worksheet (EAW) covering the eighteen groundwater appropriation permit applications (“Ecological and Water Resources Discretionary Environmental Assessment Worksheet Order # 2”).

WHEREAS, RDO has modified its proposed action and is proceeding on the following five groundwater appropriation permit applications (“Pending Applications”):

Permit Application No. 2014-0678  
Permit Application No. 2014-2074  
Permit Application No. 2014-2082  
Permit Application No. 2014-2089  
Permit Application No. 2014-1028

WHEREAS, RDO’s decision to proceed on only five groundwater appropriation permit applications constitutes a substantial change in RDO’s proposed actions for which an EAW had been ordered on June 19, 2015.

WHEREAS, the DNR anticipates ongoing demand for groundwater appropriation permits in the Pineland Sands Aquifer from multiple applicants.

WHEREAS, 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.

WHEREAS, some farming practices may impact groundwater quality.

WHEREAS, RDO and DNR share a mutual concern for the sustainability of the Pineland Sands Aquifer and desire to understand the potential environmental effects of agriculture and other activities on the aquifer and related surface water and terrestrial resources.

WHEREAS, the parties wish to support an effort to collect and analyze additional data on the Pineland Sands Aquifer to aid in future permitting decisions and to better inform themselves and the citizens of Minnesota on potential impacts of proposed and anticipated activities affecting the aquifer and related surface water and terrestrial resources; and

WHEREAS, this Memorandum of Understanding (“MOU”) is entered into between DNR and RDO to agree on their responsibilities with respect to these matters.

NOW, THEREFORE, DNR and RDO agree as follows:

1. **Pending Ecological and Water Resources Discretionary Environmental Assessment Worksheet Order # 2:** Pursuant to the terms of this MOU and in light of the substantial change in RDO’s proposed actions, the DNR, upon execution of this MOU, will issue an order vacating Ecological and Water Resources Discretionary Environmental Assessment Worksheet Order # 2.
2. **The Pending Applications:** DNR has evaluated RDO’s five Pending Applications and has determined that they are “initially deemed complete”. The DNR has determined that these five Pending Applications do not have the potential for significant environmental effects requiring the preparation of an EAW. DNR will process these five Pending Applications through its normal permitting process without requiring further environmental review.
3. **Pineland Sands Study.** The DNR, in consultation with other state and local governmental agencies, will collaborate to initiate and complete a study on several key regions of the Pineland Sands Area (“Pineland Sands Study”) including the area near the DNR’s Badoura Jack Pine Woodlands Scientific and Natural Area (Badoura Area). The study will be conducted according to the scope outlined in Attachment A to this MOU and incorporated herein.
  - a. RDO agrees to support a request for legislative funding to support the Pineland Sands Study.
  - b. DNR will communicate regularly with RDO on the progress and findings relating to the Pineland Sands Study, including providing RDO with contemporaneous copies of all scoping documents and preliminary and draft reports and an opportunity to comment on them. RDO will provide DNR with any comments on the draft documents within thirty (30) days of receiving them.
  - c. RDO will contribute resources to support data collection to advance the portion of the Pineland Sands Study focused on the Badoura Area (Badoura Focused Study). RDO's support for the Badoura Focused Study will be consistent with the scope outlined in Attachment A to this MOU and incorporated herein.

- d. RDO may terminate its support for the Badoura Focused Study at any time, with or without cause, upon 30 days written notice to the DNR or upon such other terms as the parties may later negotiate. Such notice shall be directed to the individual identified in paragraph 6 of this MOU for receiving effective notice on the respective party and in the manner therein described.
4. **Amendment**. This MOU contains the entire agreement between the parties with respect to the matters addressed herein and may be amended only by a writing duly executed by both parties.
5. **Binding Agreement/Assignment**. This MOU is binding RDO and DNR and their successors. This agreement may be assigned by a party only after obtaining the prior written consent of the other party to the proposed assignment.
6. **Notice**. Where this MOU provides that a party notify or provide notice to or otherwise communicate with the other, such notice shall be deemed to have been duly given if delivered in writing by electronic mail as follows:

(a) To DNR:

Sherry A. Enzler,  
General Counsel  
500 Lafayette Road  
St. Paul, MN 55155  
651-259-5066  
[sherry.enzler@state.mn.us](mailto:sherry.enzler@state.mn.us)

(b) To RDO:


Paul J. Noah  
General Counsel  
R.D. Offutt Company  
700 S. 7th Street  
P.O. Box 7160  
Fargo, ND 58106-7160  
701-526-9642  
[pnoah@rdoffutt.com](mailto:pnoah@rdoffutt.com)

7. **Governing Law**. This MOU shall be governed by and interpreted and enforced according to the laws of the State of Minnesota in the District Court of the State of Minnesota located in Ramsey County or as it pertains to the decision related to a permit condition in a contested case proceeding governed by Minn. Stat. Ch. 14.

*[Signature page to MOU between RDO and DNR]*

**MINNESOTA DEPARTMENT OF NATURAL RESOURCES**

The Minnesota Department of Natural Resources consents to the terms and conditions of this agreement by its duly authorized representative on this 10<sup>th</sup> day of September 2015.

By:   
**Barb Naramore, Assistant Commissioner**  
Minnesota Department of Natural Resources

**R.D. OFFUTT COMPANY**

R.D. Offutt Company consents to the terms and conditions of this agreement by its duly authorized representative this 10<sup>th</sup> day of September, 2015.

By:   
**Keith McGovern, CEO**  
R.D. Offutt Company

## ATTACHMENT A

### Pineland Sands Land and Water Study Outline – September 10, 2015

#### Study Intent

The land overlying the Pineland Sands Aquifer has been experiencing rapid and large scale conversion to irrigated agriculture. The Potlatch Timber Company is selling off substantial land holdings in the area. Sandy soils that are highly suitable for a variety of irrigated crops mean that much of this land is attractive for conversion to crop land. The Minnesota Department of Natural Resources (DNR) receives water appropriation requests as part of this conversion process, typically after the land has been cleared. Other governmental agencies such as local governments, Minnesota Department of Agriculture (MDA) and the Minnesota Pollution Control Agency (MPCA) may also have some decision making responsibility. The MDNR believes there may be the potential for significant environmental effects from this land conversion and increases in irrigated crop production. There is not sufficient information about these potential effects at the scale that has the potential for conversion. This information is needed to inform future permitting decisions, particularly in portions of the Pineland Sands region with high rates of conversion occurring near concentrations of vulnerable resources such as drinking water supplies, surface water bodies or plant and animal species. The intent of this study is to gather additional information about these potential effects and explore options to avoid or mitigate the effects so that future permitting decisions are properly informed.

This study will be divided into two distinct phases. Phase One will focus on characterizing hydrologic conditions prior to introducing expanded agricultural acres and irrigation withdrawals. This work will be completed in approximately one year. Phase Two will then focus on water quality and quantity trends under selected cropping rotations in partnership with RDO and other local irrigators.

#### Geographic Focus Areas

The Pineland Sands area is a very large with diverse hydrologic setting that would be difficult to assess at a level of detail that would be helpful for decision making. As a result, the study will focus on specific geographic areas that typify agricultural practices and conditions across the Pinelands region. These areas have been identified using existing and proposed water appropriations combined with an assessment of Potlatch land that has been identified by the DNR as being at risk for conversion to irrigated agriculture (see Figure 1). The focus areas include:

- Badoura (Hubbard County)
- McKinley (Cass County)
- North Wadena (Wadena County)

#### Study Questions

- What are the existing conditions of surface water, groundwater, and habitat?
- What level of increased irrigation results in impacts to aquifer level sustainability?
- What will be the water withdrawal impacts to surface water, groundwater and public/private drinking water supplies (quality and quantity) resulting from conventional and non-conventional agricultural cropping rotations and over what time period would the impacts likely occur?
- What amount of groundwater withdrawal results in a negative impact to surface water?
- How would increases in conversion impact Jack Pine forest, fish and wildlife habitat and rare resources (Blandings turtle, hills thistle)?

- What are cumulative impacts and long-term trends to water quantity, water quality and forest habitat from past, present and future conversion to irrigated agriculture?
- What is a sustainable level of land conversion?

### **Phase One Study Components**

- Each focus area will be assessed to identify existing data as well as surface water features and wells for further investigation. Existing data sources include:
  - Water levels in wells
  - Surface water quantity data
  - Surface and groundwater quality
  - MDA edge-of-field and well sampling for pesticides
  - Existing efforts such as Straight River GWMA, Byron Township study, and others
- A series of aquifer tests will be conducted in each focus area to obtain information on aquifer parameters and interconnections between the buried and surficial Pineland Sands aquifer system.
- Additional data collection and monitoring will be established (soil samples, water quality, stream gauging, wetland assessment, meteorological data, precipitation, evapotranspiration rates, stable isotope, age dating parameters, etc.)
- Existing flow models and data sets will be assessed for use in understanding hydrologic conditions. After this assessment, a hydrologic flow model (e.g., MODFLOW) may need to be developed and calibrated for each focus area.
- Establish baseline conditions and reference locations for future investigations.
- After the flow model has been developed and all data assessed, water quality transport information will be assessed and if possible a model will be developed and calibrated to establish baseline conditions. Water quality transport modeling may be deferred to the second phase of the study depending on what is learned from data collection and flow model as well as the effort needed to develop a useful model.
- GIS analysis will be used to develop conversion scenarios, assess habitat impacts and cumulative impacts.
- Consideration of conversion scenarios to determine water quantity and quality changes. Scenarios will include various crop rotation patterns and farming practices.
- All data will be analyzed and a report developed that discloses the findings and makes recommendations on how this information can be used for future decision making.

### **Phase Two Study Components**

- Specific fields may be identified for development of irrigated agriculture with enhanced monitoring to test the results of the study and learn more about how to reduce impacts from conversion to irrigated agriculture.
- Field monitoring installations would be modeled after the Byron Township Project location.
- At least one site should include a cropping rotation that includes late season potatoes and a selection of other crops typical of this area.
- At least one site should include a cropping rotation that represents a typical rotation without potatoes (i.e. corn and soybeans/edible beans). This is the dominant rotation within the Pinelands region.
- One or more additional sites should include late season potatoes but in a rotation with low impact crops such as Murrowfat peas, small grains, cover crops, and other innovative crops proposed by RDO and local irrigators.
- Modeling of conversion scenarios to evaluate water quantity and quality changes. Modeling scenarios will include various crop rotation patterns and farming practices. This work would be done in cooperation with an existing modeling project at the University of Minnesota-Department of Soil, Water and Climate.

**Study Timing and Cost**

Funding and agency resources to complete the study have not been secured. These will be sought in the 2016 legislative session. Once resources are secured, the development of baseline conditions, predictive modeling, and analysis for phase one is anticipated to take approximately one year and is estimated to cost \$1.5 million. R.D. Offutt is making resources available to initiate and conduct data collection for the Badoura Study Area at several of its nearby fields beginning late summer/early fall, 2015.

The second phase of the study for a particular focus area would occur after the initial phase for that area is substantially complete. The cost of the second phase will be determined when that phase is further developed, but it is anticipated that each site would be similar to the cost of the ongoing Byron Township study.

**Public Participation**

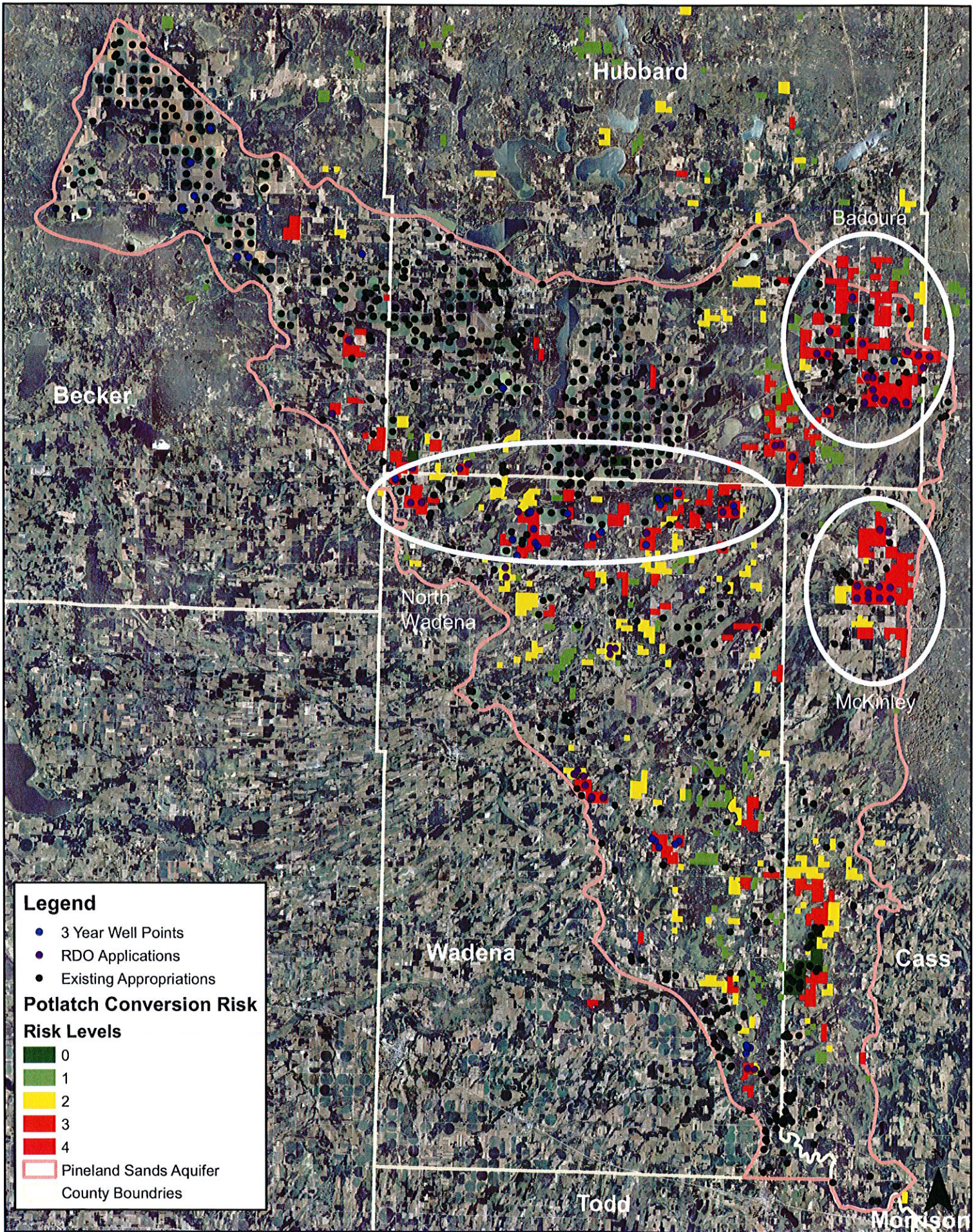
The study will facilitate transparency and public participation through the following components:

- Local governments (counties, cities, and townships) and nearby well owners will be consulted early in development of the study.
- Ongoing progress and updates will be provided on a DNR-managed web page.
- The study results will be provided to the public and an informational meeting will be held in the area.
- The results of the study will be provided to local governments and state agencies for incorporation into other efforts that have additional public engagement opportunities. Examples of these efforts include MPCA WRAPS process, one watershed-one plan efforts, the GRAPS process currently under development at MDH, DNR groundwater strategic plan, local land use planning, and potentially others.

**Revisions to Study**

The scope of this study may be revised by the DNR after consultation with R.D. Offutt, provided that said revisions will not affect the obligations of R.D. Offutt unless the DNR obtains the consent of the R.D. Offutt to said revisions.

# Figure 1. Pineland Sands Focus Areas



0 2.5 5 10 15 20 Miles