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2600 College Drive, P.O. Box 230

Rice Lake, WI 54868-0230

Monday, July 22, 2013

Mr. Peter Stoltman  
Zoning Technician / Inspector  
Buffalo County  
407 South 2<sup>nd</sup> Street  
P.O. Box 492  
Alma, WI 54610

**VIA EMAIL**

**[peter.stoltman@buffalocounty.com](mailto:peter.stoltman@buffalocounty.com)**

Re: Conditional Use Permit Application  
Badger Bluff Sands LLC Mine Site  
Town of Waumandee, Buffalo County, Wisconsin

Dear Mr. Stoltman:

This Conditional Use Permit (CUP) Application is being submitted on behalf of Badger Bluff Sands LLC for a proposed non-metallic mine and wet processing facility to be located in the Town of Waumandee. The Reclamation Plan is in the process of being completed and will be submitted to the County following review and approval of the CUP Application by the Township and County Highway Department.

Please contact us if you have any questions / comments or require additional information.

Sincerely,

A handwritten signature in cursive script that reads "Sharon J. Masek".

Sharon Masek, P.G., P.H.  
Hydrogeologist

Enclosure

C: Kevin Rich, Badger Bluff Sands LLC





## Application for a Conditional Use Permit for Non-metallic Mineral Mining



(Grayed areas are for Land Resource Staff)

The undersigned applies for a conditional use permit to do work herein described and located as shown in the site maps. The undersigned agrees that all work will be done in accordance with the Buffalo County Zoning Ordinance and all other applicable ordinances of the County of Buffalo and all laws of the State of Wisconsin, applicable to said premises and with the information therein:

Date of Application: July 22, 2013 Permit Issue # \_\_\_\_\_ - \_\_\_\_\_

Application received by: \_\_\_\_\_ (staff signature). Date \_\_\_\_\_

Complete all information as directed. Print or Type.

<b>1. Owner</b> 1.) Gerald and Cheryl Earney 2.) The Mississippi Connection Land and Timber Company, LLC 3.) Marion Earney ** (Life Estate holder on part of Gerald and Cheryl Earney property)			<b>2. Agent/Operator &amp; Contact Person</b> <b>Badger Bluff Sands LLC</b>		
<b>Address</b> 1.) W998 Schoepps Valley Road 2.) 349 W. 24th Street			<b>Street Address</b> <b>349 West 24th Street</b>		
<b>City</b> 1.) Cochrane 2.) Buffalo City	<b>State</b> 1.) WI 2.) WI	<b>Zip</b> 1.) 54622 2.) 54622	<b>City</b> <b>Buffalo City</b>	<b>State</b> <b>WI</b>	<b>Zip</b> <b>54622</b>
<b>Phone:</b> 1.) 608-248-2402 2.) 608-248-2933			<b>Phone:</b> 608-248-2933		
<b>Alternate #:</b> 1.) 715-495-2815 2.) 715-495-1917			<b>Alternate #:</b> 715-495-1917		
<b>Email</b> 1.) caearney@gmail.com 2.) krich367@gmail.com			<b>Email</b> <b>krich367@gmail.com</b>		
<b>Signature</b>  3.) Marion B Earney			<b>Signature</b>  - managing member		

**Written Explanation of Proposal.** (Identify how it complies with criteria for approval for Conditional Use Permits on Section 212 of the Zoning Ordinance.) (Please see attached Supporting Documentation.)

\_\_\_\_\_ (use additional sheets as needed).

**Legal Description.** Provide the complete legal description of the property on which the mine is located. (Please see attached Supporting Documentation.)

Town of \_\_\_\_\_, Section \_\_\_\_\_, Township \_\_\_\_\_ N, Range \_\_\_\_\_ W. \_\_\_\_\_ ¼ \_\_\_\_\_ ¼

Parcel #'s - (Please see attached Supporting Documentation.)

**Product Information.** (acres to report are the total number of active and un-reclaimed acres).

Type of material/s proposed for mining: Industrial Sand

Type of Processing: Excavation and Wet Processing

Total number of acres to be disturbed for mining site: 65 acres (mines + storm water + wet plant)

Total number of phases in the mining operation: 3 Approximate acres in each phase: 1: 4.5, 2: 14.7, 3: 14

Estimated life of the mine: 10 years

Current land use of site: (provide any applicable details) Mine Areas: Forested, Wet Plant: Agriculture (See Fig. 5, Appendix B)

Use of property post mining: (provide any applicable details) The mine areas will be replanted with seedlings to re-establish forests. Areas with steep slopes may be seeded with wild grasses and forbs to establish wildlife areas. The wet plant area will be returned to agricultural use by replacing topsoil and amending, as determined at the time of reclamation.

**Hauling Information.****First Primary Route:** (Briefly describe this route, by direction and roadways utilized to end locations).

\_\_\_\_\_  
\_\_\_\_\_

Loads per day \_\_\_\_\_, Number of trucks used \_\_\_\_\_, Loads per year \_\_\_\_\_ Tons per year \_\_\_\_\_

Town Board Review: Application was mailed to applicable Town Clerk and Town Chairperson \_\_\_\_\_ date;  
by \_\_\_\_\_ staff signature

Describe any action or discussion By Town Board: \_\_\_\_\_

Highway Department Review:

Application was forwarded to Highway Department \_\_\_\_\_ date; by \_\_\_\_\_ staff signature

TIA required: \_\_\_\_\_ (yes/no). HIA required \_\_\_\_\_ (yes/no). Road/s agreement required \_\_\_\_\_ (yes/no)

Highway Department Signature \_\_\_\_\_ Date: \_\_\_\_\_

☐ required TIA received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)☐ required HIA received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)☐ required road agreement received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)☐ required road agreement received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)**Second Primary Route:** (Briefly describe this route, by direction and roadways utilized to end locations).

\_\_\_\_\_  
\_\_\_\_\_

Loads per day \_\_\_\_\_, Number of trucks used \_\_\_\_\_, Loads per year \_\_\_\_\_ Tons per year \_\_\_\_\_

Town Board Review: Application was mailed to applicable Town Clerk and Town Chairperson \_\_\_\_\_ date;  
by \_\_\_\_\_ staff signature

Describe any action or discussion By Town Board: \_\_\_\_\_

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TIA required: \_\_\_\_\_ (yes/no). HIA required \_\_\_\_\_ (yes/no). Road/s agreement required \_\_\_\_\_ (yes/no)

Highway Department Signature \_\_\_\_\_ Date: \_\_\_\_\_

☐ required TIA received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)☐ required HIA received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)☐ required road agreement received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)☐ required road agreement received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)

Use additional sheets for additional haul routes

**Secondary Route:** (Briefly describe this route, by direction and roadways utilized to end locations).

\_\_\_\_\_  
\_\_\_\_\_

Loads per day \_\_\_\_\_, Number of trucks used \_\_\_\_\_, Loads per year \_\_\_\_\_ Tons per year \_\_\_\_\_

Town Board Review: Application was mailed to applicable Town Clerk and Town Chairperson \_\_\_\_\_ date;  
by \_\_\_\_\_ staff signature

Describe any action or discussion By Town Board: \_\_\_\_\_

Highway Department Review:

Application was forwarded to Highway Department \_\_\_\_\_ date; by \_\_\_\_\_ staff signature

TIA required: \_\_\_\_\_ (yes/no). HIA required \_\_\_\_\_ (yes/no). Road/s agreement required \_\_\_\_\_ (yes/no)

Highway Department Signature \_\_\_\_\_ Date: \_\_\_\_\_

☐ required TIA received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)

☐ required HIA received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)

☐ required road agreement received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)

☐ required road agreement received; date \_\_\_\_\_, received by \_\_\_\_\_ (staff signature)

Use additional sheets for additional haul routes

**Maps Required.** (Do the maps show?)

Perimeter of mine boundary (including processing area)	<input type="checkbox"/>	Direction of flow of storm water runoff	<input type="checkbox"/>
Pre/ <del>Post</del> mining contours (reclamation plan)	<input type="checkbox"/>	Adjacent property owners	<input type="checkbox"/>
Residential wells within 3,960 feet	<input type="checkbox"/>	Surface water within 2,640 feet	<input type="checkbox"/>
Existing structures within 2,640 feet	<input type="checkbox"/>	Excavation areas with delineated mine phases	<input type="checkbox"/>
Existing and proposed structures within the mine site	<input type="checkbox"/>	Location of erosion control berms and topsoil	<input type="checkbox"/>
Location of settling ponds	<input type="checkbox"/>	Location of stormwater ponds	<input type="checkbox"/>
Wetland boundaries	<input type="checkbox"/>	Location of material stockpiling	<input type="checkbox"/>

**Nuisance Mitigation Plan** (use additional paper if necessary).

Explain how noise will be regulated/controlled (if applicable) in regard to a mitigation plan. \_\_\_\_\_

Explain how air quality will be regulated/controlled (if applicable) in regard to a mitigation plan. \_\_\_\_\_

Explain how nighttime light will be regulated/controlled (if applicable) in regard to a mitigation plan. \_\_\_\_\_

Explain how odors will be regulated/controlled (if applicable) in regard to a mitigation plan. \_\_\_\_\_

Explain how water quality will be regulated/controlled (if applicable) in regard to a mitigation plan. \_\_\_\_\_

**Conditions placed on all applications are as follows:**

*There will be a list of conditions that will be placed on all nonmetallic mines with this application.*

**Additional conditions proposed by Applicant are as follows:**

*There is an opportunity for the applicant to place conditions on their own mine during the application process.*

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**Certification** (See attached Certification Page for signature.)

I, \_\_\_\_\_, hereby certify that the information herein is true and accurate. I also certify that I am the owner or that I am the agent of an owner who is authorized to apply for a permit on behalf of the owner.

\_\_\_\_\_  
Signature of Owner or Agent

\_\_\_\_\_  
Date Signed

## Application for a Conditional Use Permit for Non-metallic Mineral Mining – Checklist

The following information is required before the application will be accepted and considered complete.

<b>Applicant Check-In</b>		<b>Staff Initials</b>	<b>Date Received</b>
<input type="checkbox"/>	Complete Conditional Use Permit – Nonmetallic Mining permit application, signed and dated by owner and agent		
<input type="checkbox"/>	Complete legal descriptions and parcel address for all subject parcels		
<input type="checkbox"/>	Lease agreement if Operator is not the Property Owner		
<input type="checkbox"/>	Meeting with town board Date: _____		
<input type="checkbox"/>	Pre application meeting with County Staff date: _____		
<input type="checkbox"/>	Six (6) <b><u>folded</u></b> paper copies of application materials and related plans		
<input type="checkbox"/>	One (1) copy of all application materials in digital form		
<input type="checkbox"/>	Written explanation of proposal and how it complies with criteria for approval (see Zoning Ordinance., Section 212 for Conditional Use Permit/s)		
<input type="checkbox"/>	Topographic maps showing the following: perimeter of mine boundary, direction of flow of storm water runoff, location of borings		
<input type="checkbox"/>	Vicinity maps showing the location of the site and following: Adjacent property owners, residential wells within 3,960 feet, surface water within 2,640 feet, existing structures within 2,640 feet, and haul routes to end locations (distance measured from mine boundary)		
<input type="checkbox"/>	Site maps including: excavation areas with delineated mine phases, existing and proposed structures, locations of erosion control berms and topsoil storage, location of settling ponds and storm water ponds, wetland boundaries, and area for material stockpiling.		
<input type="checkbox"/>	Grading, drainage, and erosion control plan or resource management plan		
<input type="checkbox"/>	Description of water requirements and wash plant facilities (if applicable).		
	Are high capacity wells proposed? _____ (yes/no)		
<input type="checkbox"/>	Nuisance mitigation plan		
<input type="checkbox"/>	Conditional Use Application fee paid (see page 6 of this application for fee schedule)		
<input type="checkbox"/>	Town Board(s) Response		
<input type="checkbox"/>	Highway Department Response		
<input type="checkbox"/>	Land Resources Committee Response		
<input type="checkbox"/>	Reclamation Plan		
<input type="checkbox"/>	Other Application materials as required by staff: (specify additional requirements)		

**Project Review Information – Office Use Only --**

Highway Department Contact: \_\_\_\_\_

Phone # - \_\_\_\_\_

Other required information: \_\_\_\_\_ yes/no. Specify additional requirements: \_\_\_\_\_

Town Board Contact: \_\_\_\_\_

Phone # - \_\_\_\_\_

Other required information: \_\_\_\_\_ yes/no. Specify additional requirements: \_\_\_\_\_

Land Resources Department review staff: \_\_\_\_\_

Phone # - \_\_\_\_\_

Other required information: \_\_\_\_\_ yes/no.

Specify additional requirements: \_\_\_\_\_

Application Complete: \_\_\_\_\_ yes/no). (Is the application ready to go to public hearing?)

Date Application is Complete \_\_\_\_\_ Time: \_\_\_\_\_

Land Resources Staff Signature \_\_\_\_\_

Fee Schedule for submitting a CUP Application for a non-metallic mining site.

Mine Site (acres)	Application Fee
1-5	\$500
6-10	\$750
11-15	\$1,000
16-25	\$1,500
26-50	\$2,500
51-100	\$5,000
101-200	\$7,500
201-300	\$10,000
301+	\$13,500
Fee for Processing Plants and Trans-load Facilities \$2,500	

## CERTIFICATION PAGE

### Conditional Use Permit Application

Badger Bluff Sands LLC Mine Site  
Town of Waumandee, Buffalo County, Wisconsin

Prepared for:  
Badger Bluff Sands LLC  
349 West 24<sup>th</sup> Street  
Buffalo City, WI 54622

Prepared by:  
Cooper Engineering Company, Inc.  
2600 College Drive  
Rice Lake, WI 54868

#### Operator Certification:

I, Kevin Rich, hereby certify that the information herein is true and accurate. I also certify that I am the owner or that I am the agent of an owner who is authorized to apply for a permit on behalf of the owner.

Kevin Rich Managing Member 07-21-2013  
Kevin Rich, Managing Member Date Signed





# **Conditional Use Permit Application**

**Badger Bluff Sands LLC Mine Site**

**Town of Waumandee, Buffalo County, Wisconsin**

July 2013

Prepared by:



Cooper Engineering Company, Inc.  
2600 College Drive  
Rice Lake, WI 5486



## **SUPPORTING DOCUMENTATION**

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#### **APPENDICES**

APPENDIX A:	LEASE AGREEMENTS WITH FULL LEGAL DESCRIPTIONS
APPENDIX B:	MAPS
APPENDIX C:	TOWN MEETING MINUTES
APPENDIX D:	TRAFFIC IMPACT ANALYSIS, BRIDGE INFORMATION
APPENDIX E:	SOIL BORINGS, SIEVE DATA
APPENDIX F:	PRELIMINARY STORM WATER DATA
APPENDIX G:	COPY OF HIGH CAPACITY WELL PERMIT APPLICATION



## 1. LAND OWNER / OPERATOR INFORMATION

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### OWNER INFORMATION

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**Name of Owner:**

- a) Gerald & Cheryl Earney
  - b) The Mississippi Connection Land & Timber Company, LLC
  - c) \*\*Marion Earney
- 

**Address:**

- a) W998 Schoepps Valley Road, Cochrane, WI 54622
  - b) 349 West 24<sup>th</sup> Street, Buffalo City, WI 54622
  - c) W1002 Schoepps Valley Road, Cochrane, WI 54622
- 

**Phone:**

- a) 608-248-2402 (Alternate 715-495-2815)
  - b) 608-248-2933 (Alternate: 715-495-1917)
  - c) 608-248-2865
- 

**Email:**

- a) [caearney@gmail.com](mailto:caearney@gmail.com)
  - b) [krich367@gmail.com](mailto:krich367@gmail.com)
  - c) No email
- 

**NOTE:** Gerald and Cheryl Earney and the Mississippi Connection Land & Timber Company, LLC together formed ZEER LLC, a limited liability corporation that is leasing the subject mine property to Badger Bluff Sands LLC (the operator).

\*\*Marion Earney is Gerald Earney's mother and holds a Life Estate on part of the SE ¼, SE ¼, Section 32, T21N, R11W. Marion Earney has signed a joinder of and consent to lease by Life Estate holder form.

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### AGENT / OPERATOR INFORMATION

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**Name of Agent / Operator & Contact Person:**

Badger Bluff Sands LLC (Contact: Kevin Rich)

---

**Address:**

349 West 24<sup>th</sup> Street, Buffalo City, WI 54622

---

**Phone:**

608-248-2933 (Alternate: 715-495-1917)

---

**Email:**

[krich367@gmail.com](mailto:krich367@gmail.com)

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## **2. OPERATION PLAN**

### **a. Written Explanation of Proposal**

#### **i. The location, nature, and size of the proposed use**

This proposal is for a non-metallic mine and wet processing facility to be located on Schoepps Valley Road in the Town of Waumandee, Buffalo County, Wisconsin. The site location is shown on Figure 4 in Appendix B. The material proposed to be mined is industrial sand for gas and / or oil production and potential unknown markets. The mining process will include: removal and stockpiling of topsoil and overburden; excavation of marketable material using backhoes, bulldozers, and possible blasting to assist in the removal of overburden; overland conveyance of the raw material from the excavation areas to the wet processing facility; wet processing (washing and sorting); treatment and recycling of the processing water; on-site stacking and drainage of the wet sand; loading sand onto transport trucks; and hauling wet sand off-site for additional dry processing elsewhere.

#### **ii. The size of the site in relation to the proposed project**

The parcels included in the mine project cover a total of about 82.22 acres. The proposed excavation areas are currently forested land and the proposed wet processing area is presently used for agriculture (see Figure 5 in Appendix B). The operators plan to restore both the mine areas and the processing plant area to their current land uses following reclamation. Attached maps and sketches (Figures 3, 3a, 3b, 3c, and 3d) show the mine properties and the proposed mine layout.

#### **iii. The location of the site with respect to existing or future roads giving access to it**

Mining will occur in three phases as shown on Figure 3 in Appendix B. Mined material will be transported from each excavation area (phase) to the wet plant via overland conveyors. As Phase I is completed and Phase II begins, the conveyor system will cross underneath Schoepps Valley Road through a culvert to be designed and constructed specifically for that purpose. Schoepps Valley Road is the access road to the wet plant and will be used to transport washed sand from the site. A road study and evaluation report was completed for Schoepps Valley Road in November 2013 to determine the impact that hauling sand would have on the town road and preliminary research on the driveway location. Follow-up field work and analysis was completed in June 2013 for the final driveway location.

Copies of these reports are included in Appendix D. There are no known plans for future roads in the area of the proposed Badger Bluff Sands Mine Site.

**iv. Its compatibility with existing uses on land adjacent thereto**

Non-metallic mining is a compatible land use with the current agriculture and forested land uses on and adjacent to the proposed mining site. Non-metallic mining is a Buffalo County conditionally permitted land use in areas that are zoned agriculture, as are the surrounding properties. The proposed final reclamation will return the agricultural areas to farm use, but with less relief, making them more useful to the farmers.

**v. Its harmony with the future development of the district**

There are no known plans for future development in the proposed mine area. This area has been rural agriculture and hunting land for decades. The proposed use and final reclamation will be in harmony with both current and future uses.

**vi. Existing topography, drainage, soils types, and vegetable cover**

The existing topography on the proposed mine site consists of hills and valleys typical to this area of Wisconsin. Existing drainage flows off the hilltops and is directed across the land and through ravines to Schoepps Valley Creek, eventually reaching Waumandee Creek. Vegetation cover varies from agricultural crops to grasslands to forested hills. Soil types on the site consist mainly of silt loam with some loams and loamy terrace escarpments. Some of these soils lie on slopes as steep as 20% – 40%, meaning storm water management for these areas will be critical. A Storm Water Pollution Prevention Plan (SWPPP) will be submitted as part of the Wisconsin DNR's General Permit to Discharge under the Wisconsin Pollutant Discharge Elimination System for Non-metallic Mining Operations. Site maps showing existing topography, drainage, soil types, and vegetative cover can be found in Appendix B (Figures 1, 5, 6, and 11).

**vii. Its relationship to the public interest, the purpose and intent of this ordinance, and substantial justice to all parties concerned**

The proposed non-metallic mining project will provide economic benefit in the creation of jobs for the miners and plant operators. This operation will employ local contractors in assisting with the erection of the wash plant facility and surrounding areas. Trucking facilities will also gain additional work and associated businesses, such as repair stations, fueling stations, and restaurants will see an increase in activity.

The mine will be developed and operated in compliance with all applicable local, state, and federal rules and regulations. Necessary permits and approvals will be obtained prior to beginning mining operations. Examples of permits and approvals that may be required include air quality, storm water protection, erosion control, grading, ground water protection, high capacity well installation and operation (See Appendix G), mine reclamation, building permit, blasting permit, etc. The requirement to comply with these various rules and regulations provides protection and substantial justice to all parties concerned. This proposed non-metallic mine meets the purpose and intent of the Buffalo County Zoning Ordinance and is a conditionally approved use in areas of Buffalo County that are zoned agriculture. Approval of the Conditional Use Permit for the proposed Badger Bluff Sands LLC Mine Site complies with the County's Zoning Ordinance.

**b. Site Background and Existing Conditions**

The proposed Badger Bluff Sands LLC non-metallic mine is located in southwestern Wisconsin within the driftless, or unglaciated, area. The geology in this region consists of Cambrian sedimentary rocks, including dolomites and sandstones. The sedimentary rocks range as thick as 1200 to 1500 feet thick and are underlain by crystalline igneous and metamorphic bedrock. The Cambrian sandstone is the target material for the proposed non-metallic mine.

Soil borings were performed on the site in August 2012. Documentation is included in App E. Review of the boring information shows the presence of dolomite at elevations above 1030 to 1050 feet. Sandstone was present beneath the dolomite at elevations of at least 955 feet, possibly lower. The sandstone in this area is likely the Jordan formation, based on general geologic maps of the region. Jordan is a marketable sand due to its size, roundness, hardness, and purity. The identified thickness of sand on the subject site is seventy feet (elevation 1050 to 980).

Groundwater in the area of the proposed mine is at an elevation of approximately 800 feet, well below the proposed final elevation to be mined. Surface water on and near the mine site consists of wetlands and small unnamed streams that converge and eventually empty into larger streams, such as Waumandee Creek, before making their way to the Mississippi River.

The proposed wet plant area is located at a lower elevation than the mine phases. Based on available water well data from local well logs, groundwater at the wet plant site ranges from elevation 680 feet to elevation 720 feet.



Wetlands were delineated on the mine site in the areas that will be disturbed. A copy of the wetland delineation map is attached as Figure 8 in Appendix B. Every effort will be made to avoid wetland impact. However, if there is no practicable alternative and wetland impact is necessary, appropriate permits will be applied for at that time.

**c. Plan of Operations**

Mining at the proposed Badger Bluff Sands LLC Mine Site will begin with site preparation. The area for the wet processing plant will be cleared, storm water ponds will be constructed, and silt fence will be installed. Site preparation will be accomplished by using typical construction equipment such as bulldozers and backhoes. Topsoil and excess material will be used to construct berms along the wet plant boundary. These berms will serve to shield the wet plant visually and reduce off-site noise. In addition, berms will direct storm water to collection areas. The plant pad and settling ponds will be constructed and the plant components will be assembled. Three settling ponds and a fresh water / storm water storage pond are planned. See Figure 3a in Appendix B for layout.

The proposed mine will consist of three distinctly separate phases; Phase I, Phase II, and Phase III as shown on Figure 3 in Appendix B. Phase I and the wet plant area will be located on the north side of Schoepps Valley Road. Phases II and III will be located south of Schoepps Valley Road.

Raw sand will be transported from the mine area to the wet plant via overland conveyors. Conveyors will move the sand more efficiently and with less impact than trucking on this site. The conveyor corridor will be prepared by removing and stockpiling topsoil to construct an access / maintenance road along the conveyor. Storm water ponds will be placed along the corridor as needed to detain or decelerate storm water. A landing area will be constructed at the entrance to each mine phase as that phase is opened. Initially, the conveyor will be constructed between Phase I and the wet plant.

Mining equipment will include bulldozers and backhoes. It is possible that scrapers may also be used to remove topsoil and non-bedrock overburden. Based on known conditions at the site, blasting will likely be required to remove the dolomite overburden and to break up the sandstone for excavation. Front end loaders will be used to load the sandstone into the conveyor for transport to the wet plant. The conveyor will feed the raw sandstone into a sorter that will remove the oversized pieces and then move the sand into the wet plant.

Mining will begin on at the southwest corner of Phase I, where the landing pad will be constructed. Topsoil and overburden will be removed from the lower mine area and used to construct berms along the east and west edges of Phase I. Sand will be excavated throughout the lower center portion of Phase I between elevations 1050 feet and 980 feet. Mining will then move to the northern portion of Phase I. Overburden consisting largely of dolomite is present between the elevations of 1050 and 1120 feet. This overburden will be removed and placed into the previously excavated area. The sand in the north central portion of Phase I will then be mined. The final sections of Phase I to be mined will be the east and west edges. The topsoil and overburden berms will be used in reclamation of the center portion and sand will be excavated along the east and west edges. When all sand has been removed, the mined area will be reclaimed by replacing the overburden and topsoil.

Phase II will be mined next. The conveyor system will be relocated from Phase I to Phase II. The planned conveyor route includes a stream crossing over Schoepps Valley Creek and a culvert crossing beneath Schoepps Valley Road. Both crossings will require Wisconsin Department of Natural Resources permits. Application for those permits will proceed as soon as the Reclamation Plan is approved by Buffalo County. An existing logging trail will provide an access point to Phase II. A storm water pond and a landing pad will be constructed along the west side of the logging trail. Additional storm water detention ponds will be constructed along the natural ravine that exists between the landing pad area and the top of Phase II. Topsoil will be removed from the ravine eastwardly across Phase II and used to construct berms along the southern and eastern edges of the phase, at the upper elevation (1100 feet) of this phase. An additional topsoil berm will be placed on the north edge of the mined area at an elevation of approximately 980 feet. Overburden will be stockpiled in the southeast and southwest portion of this phase. Mining will proceed throughout the center of Phase II from elevations 1050 feet to 980 feet. The overburden stockpiles will then be placed into the excavation and the topsoil berms will removed and used in reclamation. Overburden will be removed from the northern edge of the mine area and placed into the excavated area in order to mine the sand from that area. When all sand has been recovered, the mined area will be reshaped, covered with topsoil, and seeded.

Phase III will be mined from east to west. Topsoil will be stripped and used to construct berms along the outer edges of the phase. A storm water pond will also be constructed along the south edge of this phase. Overburden will be removed from small sections at a time within Phase III and temporarily stockpiled. As mining moves from east to west, the overburden from each section will be placed into the previously

excavated section. Temporary storm water infiltration ponds will be placed as need in the section being mined to detain and infiltrate storm water internally.

The total quantity of marketable sand in the Badger Bluff Sand LLC Mine Site is estimated to be 2.3 million tons. Production of 2,500 tons per day is anticipated and the plant will operate for 200 days per year. The estimated life of the mine is 10 years. Phase I will be completed within twelve months of startup and Phases II and III will each operate for just over four years.

The wet plant is expected to operate Monday through Friday for eighteen hours per day. Up to one hundred loads per day will be transported from the site, with an anticipated average of eighty loads per day.

#### **d. Reclamation**

As described in the operations section above, reclamation of the mined areas will occur contemporaneously with mining. Overburden from one section will be placed into the previously excavated section when possible. Small sections can be covered with topsoil and seeded as soon as they are mined. One benefit of this type of reclamation is that minimal surface area is exposed at any one time. In addition, large quantities of topsoil and overburden do not have to be moved and stored for long periods of time. Each phase of the Badger Bluff Sands LLC Mine will be reclaimed separately due to their locations apart from one another.

Implementation of the proposed reclamation plan will result in the return of agricultural areas to agricultural use. Where possible, slopes will be flattened to improve the fields for farming. The forested areas will be largely replanted to trees, with the exception of some small wildlife ponds and feed plots. Steep final hillsides may be planted in a wildlife mixture for habitat and food. A complete reclamation plan meeting the requirements of Wisconsin Administrative Code Chapter NR 135 and Buffalo County Non-metallic Mining Reclamation Ordinance Chapter 757 will be developed and submitted for Buffalo County review upon approval of the CUP.

#### **e. Wet Plant Operation**

The wet processing plant proposed to be used on the Badger Bluff Sands LLC Mine Site is being designed by KPI-JPC. The plant is a typical sand washing plant where raw product enters the plant and is mixed with water. The slurry is run through cyclones to separate out the undesirable materials and then through hydro-sizers (fractionators) to sort the sand by size. Secondary cyclones again clean and sort the sand and it then runs through a dewatering screen or screws prior to being conveyed onto stockpiles to

gravity drain. The damp sand is then loaded onto trucks and transported off-site to another location for drying.

Wet plants use large volumes of water but the majority of that water is recycled through the system. The proposed plant will use up to 6,000 gallons per minute of water. However, less than 200 gallons per minute of makeup water will be required to be added to the system. The used wash water drains to the settling ponds and the fresh water / storm water pond, where it is then recycled back into the plant. Storm water that falls on the plant area is collected into the fresh water / storm water pond and added to the system. Water draining from beneath the stockpiles is directed back into the system via the settling ponds. Overall, water consumption is limited to water leaving the site in the damp sand and evaporation.

A high capacity water well will be installed at the plant site to provide the necessary wash water. The well will run for short periods of time to feed the fresh water / storm water pond. The system water is pumped from the fresh water / storm water pond, runs through the wet plant, and is recaptured for reuse.

**f. Grading, Drainage, and Erosion Control**

**i. Grading and Drainage**

The area for Phase I currently consists of slopes ranging from about 20% to as steep as 65%. Since the current slope is already steep, it is assumed that there will be greater slopes and high walls after reclamation. These high walls will be properly engineered by a professional to ensure stabilization. During mining, operations shall take place to ensure that all storm water run-off from the site is routed to the storm water pond (see location on Figure 3a in Appendix B), which will be sized to meet / exceed the design criteria of a 10-year, 24-hour Type II storm event.

Currently, the grading for the wet plant is fairly level, with slopes ranging from 0% to 10%. All storm water run-off will be directed to the on-site ponds before leaving the site. The storm water / fresh water pond will be sized to meet / exceed the design criteria of a 10-year, 24-hour Type II storm event. After wet processing operations are complete, the site will be restored to its existing conditions.

Phase II currently consists of slopes ranging from 25% to 65%. As shown on Figure 3c in Appendix B, there is a relative large ravine running through the west side of the mine area, which will initially be used to direct storm water to various

staged ponds to capture all run-off from the mine site. The series of ponds will be analyzed and sized appropriately to accommodate a 10-year, 24-hour Type II storm event. As with Phase I, greater slopes or high walls could be expected after reclamation, and will be properly engineered by a professional to ensure stabilization.

The area for Phase III consists of slopes ranging from 20% to 80%. Figure 3d in Appendix B shows a storm water pond located in the southeast corner of the mine. Storm water run-off will be routed to this pond at the beginning of mining operations until adequate room for an infiltration pond is available within the mining limits. Due to the limited area and existing topography, this phase will be internally drained. Design criteria of a 10-year, 24-hour Type II storm event will be met. Due the existing steep slopes, greater slopes or high walls could be expected after reclamation. They will be properly engineered by a professional to ensure stabilization.

## **ii. Erosion Control**

For the mine site, preliminary erosion control measures are depicted on Figures 3a, 3b, 3c, and 3d in Appendix B. Silt fence will be installed prior to any land disturbance and located at the toes of the berms and down-slope of any land disturbing activities. Ditch checks will be installed in locations of channelized flow to reduce the flow velocity of the storm water run-off. Stone Tracking Pads and a tire washing station will be placed at any point where traffic will egress the mine site to prevent off-site sedimentation (street sweeping will be done as necessary). Mulching and seeding will be done for all topsoil berms and any other areas requiring a vegetative cover. Erosion mat will be utilized on any erodible slopes that require vegetation. Fuel storage areas will be located on-site on level grades with berms or barriers to prevent any storm water run-on or run-off. Absorbent spill clean-up materials and spill kits will be available in the fuel storage areas.

All storm water and erosion controls will be inspected on a weekly basis, within 24 hours of any storm event totaling 0.5-inches or greater, and following snow melt run-off. An inspection report will be completed during each inspection and all completed forms will be kept on-site. All storm water and erosion control measures will be maintained and repaired (if necessary) within 24 hours of identification.

### 3. LEGAL DESCRIPTIONS

The Parcel Identification Numbers and legal descriptions for the project area are listed below. All parcels are in the Town of Waumandee. Complete Legal Descriptions are included with the Lease Agreements in Appendix A.

PIN	Land Owner	Section	Township	Range	¼	¼-¼
034-00813-0000	Gerald and Cheryl Earney	32	21N	11W	SE	NE
034-00814-0000		32	21N	11W	SE	NW
034-00817-0000		32	21N	11W	SE	SW
034-00818-0000		32	21N	11W	SE	SE
034-00832-0000		33	21N	11W	SW	SW
034-00833-0000		33	21N	11W	SW	SW
034-00017-0000	Mississippi Connection Land & Timber Co., LLC	5	20N	11W	NW	NW
034-00018-0000		5	20N	11W	NW	SW
034-00021-0000		5	20N	11W	SW	NW

### 4. HAULING INFORMATION

The Badger Bluff Sands LLC mine will operate in conformance with Buffalo County requirements. Tracking pads will be used at the mine access road and all loads will be covered during transport. Badger Bluff Sands LLC will negotiate any necessary agreements with the Township and County.

#### a. First Primary Route

Route Description: West on Schoepps Valley Road (1.96 miles), South on STH 88 (4.03 miles), North on STH 35 (20.51 miles), South on STH 25 (3.00 miles) to Wabasha, Minnesota. See Figure 4 (Map of Haul Routes) in Appendix B for depiction of haul route.

#### b. Second Primary Route

Route Description: West on Schoepps Valley Road (1.96 miles), South on STH 88 (4.03 miles), South on STH 35 (10.90 miles), West on STH 54 (1.50 miles) to Winona, Minnesota. See Figure 4 (Map of Haul Routes) in Appendix B for depiction of haul route.

#### c. Secondary Route

Route Description: West on Schoepps Valley Road (1.96 miles), North on STH 88 (0.20 miles), West on CTH O (4.32 miles), North on STH 35 (16.78 miles), South on STH 25 (3.00 miles).

miles) to Wabasha, Minnesota. See Figure 4 (Map of Haul Routes) in Appendix B for depiction of haul route.

## 5. MAPS REQUIRED

Completed	Map Requirement	Figure Number
X	Perimeter of mine boundary (including processing area)	1, 2, 3
X	Pre/ <del>Post</del> -mining contours (Reclamation Plan)	1, 3a, 3b, 3c, 3d
X	Residential wells within 3,960 feet	2
X	Existing structures within 2,640 feet	2
X	Existing and proposed structures within the mine site	2
X	Location of settling ponds	3a, 3c, 3d
X	Wetland boundaries	8
X	Direction of flow of storm water run-off	1
X	Adjacent property owners	2
X	Surface water within 2,640 feet	1-11
X	Excavation areas with delineated mine phases	3, 3a, 3c, 3d
X	Location of erosion control berms and topsoil	3a, 3c, 3d
X	Location of storm water ponds	3a, 3c, 3d
X	Location of material stockpiling	3a, 3c, 3d

## 6. NUISANCE MITIGATION PLAN

1. Explain how noise will be regulated/controlled (if applicable) in regard to a mitigation plan.

Noise from the mining activities will be controlled by the use of berms, limited hours of operation, and buffers of trees surrounding the mined areas. All three phases of the proposed mine are located well off the public road, which will also help mitigate noise from operations. If required, white noise backup beepers can be used on mining equipment.

2. Explain how air quality will be regulated/controlled (if applicable) in regard to a mitigation plan.

The mine will require an air permit or exemption, per Wisconsin Department of Natural Resources and US EPA requirements. If an air permit is required, a regular monitoring plan and system will be implemented. A Fugitive Dust Plan will also be

developed and implemented. The plan will include measures such as watering roads during dry conditions and misting stockpiles during windy / dry conditions.

3. Explain how nighttime light will be regulated/controlled (if applicable) in regard to a mitigation plan.

Nighttime light will be controlled by the use of limited hours of operation and installation of full cutoff shrouds on all site lighting. The cutoff shrouds direct light downward rather than allowing it to disperse in all directions.

4. Explain how odors will be regulated/controlled (if applicable) in regard to a mitigation plan.

Odor is not typically a concern at sand mining operations, the sand is inert. The wet plant equipment is electrical, so no exhaust fumes will be generated by the plant. There will be minimal exhaust fumes from diesel engines on mining equipment and transport trucks. Those fumes will be addressed as part of the air permit application.

5. Explain how water quality will be regulated/controlled (if applicable) in regard to a mitigation plan.

Badger Bluff Sands LLC is proposing to collect pre-operations water samples from residential water wells within a quarter mile of the mine site. The sample results will establish baseline conditions in those wells. Well inspections will also be offered to those residents. The separation between the base of the proposed mine and regional groundwater is one hundred and eighty feet. Groundwater wells may not be necessary but will be installed if required by Buffalo County.



## **APPENDIX A**

### **LEASE AGREEMENTS WITH FULL LEGAL DESCRIPTIONS**

## MINING RELATED OPERATIONS, ACCESS ROAD AND UTILITY LEASE AGREEMENT

THIS WASH PLANT SITE AND MINING RELATED OPERATIONS LEASE ("Lease"), is made July 21, 2013 ("Effective Date"), by and between **Gerald D. Earney and Cheryl A. Earney**, husband and wife ("Landlord") and **Badger Bluff Sands LLC**, a Wisconsin limited liability company ("Tenant").

### RECITALS

- A. Landlord is the owner of certain real property located in Buffalo County, Wisconsin legally described on Exhibit A and depicted as Lease Parcel 1A on Exhibit F (the "Land"). The Land is required for a Mining Related Operations Site.
- B. Landlord and Tenant have agreed to enter into this Lease to enable Tenant to occupy and use the Land during the Term (as defined below) as a Mining Related Operations Site and for ingress to and egress from certain lands (the "Mining Lands") subleased by Tenant pursuant to that certain Lease Agreement, made July 21, 2013, by and between Landlord and ZEER LLC (the "Mining Lease"), the interest ZEER LLC in the Mining Lease having been subleased to Tenant pursuant to that certain sublease dated July 21, 2013, and as a means for running utilities to the Land and Mining Lands, on the terms and conditions set forth herein.

### AGREEMENT

NOW, THEREFORE, for valuable consideration, and in consideration of the agreements of the parties hereto, subject to the terms, covenants and agreements hereinafter contained, and intending to be legally bound hereby, the parties hereto agree as follows:

- 1. Lease of Premises.
  - 1.1 Grant. Except as otherwise provided in this Lease, Landlord hereby leases to Tenant and Tenant hereby leases from Landlord the Land, in "as is," "where is" condition with all existing defects whether latent or patent (but subject to the representations and warranties of Landlord set forth herein), for the following purposes: (1) a site for erection, construction and operation of drying, screening, processing (including wash plant operations), and storing of nonmetallic minerals, including Sand (as defined below), overburden or topsoil (collectively the "Mining Related Operations"); (2) vehicular (including large trucks and mining equipment and machinery) ingress to and egress from Schoepps Valley Road (a Town of Waumandee town road) and the lands subject to the Mining Lands; and (3) the provision of utilities to the Land and Mining Lands.
  - 1.2 Definition of Sand. As used in this Lease, the term "Sand" means all silica sand and other nonmetallic minerals, but excluding clay and topsoil.
  - 1.3 Exclusivity. Subject to the approval of appropriate governmental authorities and subject to the provisions of Section 1.4, the rights herein granted to Tenant include the exclusive

right of Tenant to use the Land in accordance with the terms and conditions of this Lease to:

- 1.3.1 Construct, erect, place, operate, maintain, repair, expand, modify and replace on the Land structures, conveyors, screening plants, wash plants, dry plants, storage bins, sand storage piles, overburden storage piles, fuel storage facilities, including above-ground fuel tanks (but excluding underground storage tanks of any type), and other facilities and processes related to the Mining Related Operations;
  - 1.3.2 Construct and maintain a private access road or roads (collectively, "the Access Road") over and across the Land as a means of ingress to and egress from the Mining Lands and Schoepps Valley Road (a Town of Waumandee town road) and to rebuild or repair the same if damaged or destroyed; provided that the Access Road shall not dedicated as a public road;
  - 1.3.3 Park, store, load and unload trucks and other mining equipment and machinery;
  - 1.3.4 Construct and maintain utility lines and facilities necessary to connect to existing utility lines for water, electricity, natural gas and any other utilities necessary for the development and operation of the Mining Lands and the Land, and to rebuild or repair the same if damaged or destroyed (to the extent commercially reasonable, utilities shall be located within the Access Road);
  - 1.3.5 Construct and maintain berms that may be required for Mining Related Operations or pursuant to Tenant Permits;
  - 1.3.6 Construct, maintain and replace such additional improvements and facilities as may be required or convenient to exercise its rights hereunder;
  - 1.3.7 Build ponds as may reasonably necessary to operate on the Land and Mining Lands and to comply with any and all stormwater and other legal requirements; and
  - 1.3.8 Perform any and all other activities reasonably necessary for or related to the Mining Related Operations on the Land and Mining Lands.
- 1.4 Rights retained by Landlord. Landlord shall have the right to harvest any timber on the Land and to use the Land for agricultural and recreational purposes, including hunting, as long as such uses do not interfere with Tenant's activities; and Landlord shall indemnify and hold Tenant harmless from and against all damages and injuries arising from such use. Any activities conducted by or on behalf of Landlord or with Landlord's permission on the Land shall be done at such person's or entities' sole risk and Tenant shall not be liable for any damage to person or property associated therewith except to the extent caused by Tenant's negligence or willful misconduct. Tenant shall provide Landlord

with prior written notice of its intention to clear any portion of the Land of timber in connection with its operations so Landlord will have the opportunity to remove the timber in that area. Should Landlord not remove the timber within 60 days after Landlord's receipt of Tenant's written notice, Tenant may cause removal thereof. If Landlord has not timely removed any such timber, Tenant may remove and sell any timber from the Land. Any such removal by Tenant shall be for Landlord's account and the proceeds received by Tenant from the removal and sale of any such timber shall be remitted to Landlord less all expenses reasonably incurred by Tenant in connection with any such removal and sale, including, without limitation, a ten percent (10%) administration fee to Tenant for arranging for and supervising the removal of the timber.

- 1.5 Governmental Approval. Tenant shall use commercially reasonable efforts to diligently obtain all approvals and permits from any and all governmental authorities, including without limitation, the Town of Waumandee, Buffalo County, Wisconsin; Buffalo County, Wisconsin; and the Wisconsin Department of Natural Resources necessary for Tenant to engage in the Mining Related Operations on the Land (the "Tenant Permits"); provided, that Landlord agrees to reasonably cooperate with Tenant in connection with the same. If Tenant is not able to obtain the Tenant Permits by December 31, 2013 (the "**Contingency Date**") or if Tenant is not satisfied, in Tenant's reasonable discretion, with the results of its due diligence of the Land, Tenant may terminate this Lease by written notice to Landlord. If Tenant does timely terminate this Lease in accordance with this Section 1.5, this Lease and Tenant's tenancy created hereunder shall be terminated, but any obligations arising under Sections 4.4, 4.5, 7.1, 7.2, 7.4, 10.1, 12.3, 20, 25, and 30 prior to such termination or as a result of Tenant's activities on the Land thereafter shall survive such termination.
- 1.6 Termination of All Existing Tenancies. Landlord shall, on or before the Effective Date, terminate all leases, licenses and any other rights to occupy or use the Land, excluding rights arising under utility easements, and provide Tenant with all written instruments evidencing such termination.
- 1.7 Obligations upon Termination. Upon termination of this Lease, Tenant shall: (a) remove all structures, conveyors, screening plants, wash plants, dry plants, storage bins, sand storage piles, overburden storage piles, fuel storage facilities, including above-ground fuel tanks, equipment, and other facilities constructed, erected, placed, or maintained on the Land by Tenant; (b) if requested in writing prior to Lease expiration or earlier termination by Landlord, remove the Access Road; and (c) to the extent the Land is subject to reclamation permit and reclamation plan approved by Buffalo County, carry out all work required by the reclamation permit and reclamation plan or, if there is no such reclamation permit and reclamation plan, then return the Land to as close to its original condition as is practicable.
2. Term/Rent.
  - 2.1 Term. The "**Initial Term**" of this Lease shall be for a period of ten (10) Lease Years in addition to Initial Lease Year (as defined in Section 2.2), commencing on the first day of the first calendar month immediately following the Contingency Date (the

**“Commencement Date”**). If Tenant is not in default of this Lease and if the Lease has not been otherwise terminated, this Lease may be renewed by Tenant for up to two (2) additional terms of five (5) Lease Years (collectively, the **“Renewal Terms”** and each, a **“Renewal Term”**) providing written notification to Landlord of Tenant’s intent to exercise its renewal rights. Said notification to renew this Lease shall be given to Landlord not later than 120 days prior to the last day of the Initial Term or the Renewal Term, as applicable. In the event Tenant fails to provide a timely renewal notice, Landlord shall so notify Tenant, and Tenant shall thereafter have an additional ten (10) days to elect to extend this Lease for a Renewal Term. The terms and conditions of this Lease during the Renewal Terms shall be the same as the terms and conditions of this Lease during the Initial Term, except that the calculation of the Royalty amount applicable to the Renewal Terms shall be determined as provided in Section 2.4, as applicable. Notwithstanding the foregoing, the Term shall be extended until all of Tenant’s obligations pursuant to Section 1.7 have been completed.

2.1.1 Tenant may terminate this Lease during the Initial Term or the Renewal Term in the event that (a) Tenant terminates the Mining Lease as allowed in the Mining Lease; (b) the Mining Related Operations on the Land are prohibited by applicable law, code, ordinance, rule or regulation; or (c) any of the permits or governmental approvals necessary for Tenant to conduct the Mining Related Operations has been terminated or not issued or renewed by the applicable governmental authority through no fault of Tenant. To so terminate this Lease, Tenant shall provide Landlord with not less than ninety (90) days written notice of termination. If Tenant terminates this Lease in accordance with this Section 2.1.1, this Lease and Tenant’s tenancy created hereunder shall be terminated, but any obligations arising under Sections 4.4, 4.5, 7.1, 7.2, 7.4, 10.1, 12.3, 20, 25, and 30 prior to such termination or as a result of Tenant’s activities on the Land thereafter shall survive such termination.

2.1.2 As used herein, **“Term”** means the Initial Term and, if extended, each Renewal Term, and **“during the Term”** and similar phrases refer to the entire period of time this Lease is in effect. Upon expiration of the Term or earlier termination of this Lease, the tenancy of Tenant in the Land shall terminate, and neither party shall have any further obligations to the other except for such obligations as are expressly intended to survive expiration or termination of this Lease.

2.2 Lease Years. The period of time from the Commencement Date until December 31 of the year in which the Commencement Date occurs is the **“Initial Lease Year.”** Each subsequent period from January 1 to December 31 shall be deemed a **“Lease Year.”**

2.3 Rent. Tenant shall pay to Landlord rent for the use of the Land (**“Rent”**) during the Term of this Lease and any renewal thereof. Rent will be calculated based on two components: a per acre component and a per ton component, as follows:

2.3.1 Per Acre Component. The per acre component of the rent for each Lease Year (the "Per Acre Component") shall be calculated by [REDACTED] at the Effective Date times the Per Acre Base Amount times an assumed [REDACTED] acre (which assumption shall not change) [REDACTED].

The number of acres of Land under cultivation at the Effective Date is [REDACTED]. Commencing January 1, 2014, and on every January 1 thereafter, the Per Acre Base Amount for the upcoming Lease Year shall be adjusted to the highest quoted price for [REDACTED]

[REDACTED], but in no event shall it [REDACTED].

[REDACTED] If publication of the Index is discontinued, the parties shall accept comparable statistics on the cost of corn in Buffalo County, Wisconsin, as such statistics are compiled and published by a federal agency, by a recognized trading exchange, or by a recognized financial periodical agreed upon by the parties. If comparable statistics are used in place of the Index, or if the Index figure is published at non-daily intervals, the method of computation shall include all revisions necessary to carry out the intent of this subsection.

2.3.2 Per Ton Component. [REDACTED]

[REDACTED] ton of sand processed in a wash plant on the Land and sold. During any Renewal Term, the per ton component shall be an amount negotiated in good faith between the Landlord and Tenant and may be higher or lower than the per ton amount during the Initial Term. If the Landlord and Tenant cannot agree on the per ton amount during a Renewal Term, then arbitration pursuant to Section 788 of the Wisconsin Statutes shall determine the fair value to be used as the per ton component.

2.3.3 Payment of Per Acre Component. The Per Acre Component shall be prorated for any partial Lease Year and shall be paid on or before December 31 of each Lease Year.

2.3.4 Payment of Per Ton Component. The Per Ton Component Royalty is due and payable on or before the 20th day of each month following the month during which sand which has been processed is sold.

2.3.5 Measurement. All sand processed on the land and sold shall be measured on the Land, or at another location approved by Landlord, in short tons (2,000 lbs.) across scales regularly inspected and certified in a manner approved by Landlord. No sand may be removed from the Land unless its weight is determined and scale tickets and other records are kept in a commercial reasonable manner satisfactory to Landlord. All sand shall be weighted on Advanced Weighing Systems, Inc. equipment or equivalent

equipment (the "Weighing Equipment") approved by Landlord and erected and maintained on the Land by Tenant. If it is commercially reasonable to do so, the Weighing Equipment shall be operated such that records of each load of Sand are electronically transmitted to Landlord. If the records are not electronically transmitted to Landlord, Tenant will no later than the twentieth day of the month following a month in which sand is removed from provide Landlord with a summary of all sand removed from the Land in the prior month. At Landlord's request, Tenant will deliver to Landlord copies of all scale tickets, a printout of all scale transactions, and other records necessary to verify the information set forth on any monthly summary of operations.

2.3.6 Records. Tenant shall keep true and accurate records at its principal office pertaining to the sand processing operations conducted on the Land, and sales of sand processed on the Land, and records thereof shall be made available to Landlord for inspection during Tenant's normal business hours, upon reasonable notice to Tenant. Landlord covenants and agrees that all of the information contained within such records shall be kept confidential by Landlord. The records are to include scale weight tickets and records showing the amount of sand removed from the Land each day. Landlord, by its employees, auditors, engineers, agents, or other representatives, shall be entitled, at Landlord's risk and expense, to examine and inspect upon reasonable prior written notice to Tenant, at all reasonable times during regular working hours, the operations of the mines operated by Tenant to the extent necessary for determining Tenant's compliance with the provisions of and the fulfillment of its obligations under this Lease. If Landlord, its employees, auditors, engineers, agents, or other representatives, examine and inspect Tenant's mines, then Landlord shall indemnify and save harmless Tenant against all loss and liability for injury or death to any person or damage to property arising from any negligence of Landlord or its said representatives occasioned by or associated with the right and privilege granted to Landlord in this subsection.

2.3.7 Reports. Not later than the date which is thirty (30) days after the last day of each calendar year quarter (January, April, July, and October), Tenant shall provide summary reports of operations to Landlord for the preceding calendar year quarter. Such reports shall include accurate records of all sand processed on the Land and sold, along with Tenant's calculation of the Per Ton Component due thereon. If during such period there is no sand processed on the Land and sold for which any Per Ton Component is due hereunder, Tenant must report that to Landlord.

2.4 Payments. All Rent shall be paid in lawful money of the United States of America by check or by wire transfer delivered in the usual course of business to Landlord at such address, or at and to such financial institution as Landlord may from time to time designate by written notice to Tenant. Any financial institution or institutions so

designated to receive either wire transfers or checks shall be deemed the agent of Landlord for the purpose of receiving, collecting, and receipting for such payments.

3. **Title to Land.** Landlord warrants that it owns fee simple title to the Land, which is free and clear of all encumbrances, liens, pledges, security interests and all other claims of third parties, except as listed on Exhibit D attached hereto (which will be completed by the parties prior the Contingency Date). Landlord's ownership of the Land includes all water rights appurtenant thereto. To the best of Landlord's knowledge, the Land is in compliance with all Laws and free from any and all Hazardous Materials.
4. **Mining Related Operations.** Tenant shall conduct its Mining Related Operations on the Land in accordance with all applicable Laws and the terms and conditions provided herein, including but not limited to the following:
  - 4.1 **General Provisions.** Tenant may clear brush and undergrowth from such portions of the Land as may be reasonably necessary to enable Tenant to use the Land as provided in this Lease. Tenant shall have the right to make use of all roadways presently existing on the Land and of ingress and egress through, to and from the Land. Tenant, at Tenant's sole cost and expense, shall have the right and privilege of setting up and erecting any necessary buildings, equipment and machinery on the Land, except that no residence or building used or to be used for residence purposes shall at any time be erected on the Land by Tenant. Subject to rights retained by Landlord, Tenant may use and possess as much of the Land as Tenant may require during the term of this Lease solely for the purposes and uses permitted under this Lease. In the event any mechanic's lien shall at any time be filed against the Land or any part thereof by reason of work, labor, services or materials performed or furnished to Tenant or to anyone holding the Land through or under Tenant, Tenant shall forthwith cause the same to be discharged of record, or, to the extent of a dispute related thereto, bond off such lien during the pendency of a proceeding related thereof; provided, that, such lien shall be discharged of record prior to any foreclosure thereof. If Tenant shall fail to cause such lien forthwith to be discharged or bonded off within thirty (30) days after being notified of the filing thereof, then, in addition to any other right or remedy for Landlord, Landlord may, in Landlord's sole discretion, discharge the same by paying the amount claimed to be due, or by bonding, and the amount so paid by Landlord and all costs and expenses, including reasonable attorneys' fees incurred by Landlord in procuring the discharge of such lien, shall be due and payable in full by Tenant to Landlord on demand.
  - 4.2 **Easements.** Landlord agrees to provide Tenant with easements for utility purposes across any other land owned by Landlord reasonably necessary for Tenant to conduct its operations on the Land; provided, that if such easements are for other than distribution lines (such as for sites for substations, pumping stations, or similar facilities), the terms and conditions of such easements shall be subject to good faith negotiation between Landlord and Tenant.
  - 4.3 **Fencing.** Tenant may erect fencing in order to secure Landlord's operations on the Land. All such fencing shall be installed and maintained at the sole cost of Tenant. Tenant will provide Landlord a key for entrance to the Land.



- 4.4 Additional Operating Provisions. Tenant shall conduct its Mining Related Operations in conformity with the Mining Lease. Tenant shall perform all legally required erosion control. During the term of the Lease, Tenant shall maintain the road authorized by Section 1.3.2 at Tenant's sole expense.
- 4.5 Insurance. Tenant shall comply with the terms and conditions of Exhibit C, effecting the required insurance coverages and endorsements with insurance companies licensed to do business in Wisconsin and naming Landlord as an additional insured. Tenant shall furnish to Landlord certificates of insurance to the effect that the policy or policies of insurance are in force and that same will not be cancelled without at least thirty (30) days notice to the other party. Tenant shall bear the cost of all insurance that it is required to maintain under this Lease. After the first twelve (12) years of the Term, Landlord may by written notice to Tenant increase the required insurance coverages and modify required endorsements as long as such increases and modifications are commercially reasonable and typically required of other Mining Related Operations in the area, which shall be established by Tenant to Landlord's reasonable discretion. Landlord shall carry property casualty insurance on any improvement on the Land and general liability insurance for its activities on the Land and hereby waives and releases, and shall have its insurers waive subrogation, against Tenant for any and all claims covered by such insurance. Landlord's property insurance shall be at least for the full replacement value of such property and Landlord's general liability insurance shall have a combined single limited of at least \$500,000 per occurrence; provided, that if Landlord is timbering the Land or having the Land timbered, either Landlord or such timbering contractor must carry several liability insurance with a combined single limit of at least \$2,000,000 per occurrence.
- 4.6 Dust Control. Tenant is required to manage and control dust and other mining by-products in accordance with the Tenant Permits.
- 4.7 Surveying. All surveys required to carry out the Mining Related Operations shall be obtained by Tenant, at Tenant's expense. As part of any such surveying, Tenant shall cause property corners to be staked or otherwise marked.
5. Rights of Entry. Landlord, its agents and representatives, shall have the right, at any and all reasonable times following reasonable notice to Tenant, to enter upon the Land to inspect and survey the Land and Tenant's Mining Related Operations. In entering upon the Land, Landlord, its agents and representatives shall not interfere with Tenant's activities; and Landlord shall indemnify and hold Tenant harmless from and against all damages and injuries arising from such entry. Entry to the property is subject to safety regulations stipulated by the federal Mining and Health Administration (MSHA) and state Occupational Safety and Health Administration (OSHA).
6. Tenant Defaults. Any of the following shall be deemed to be a Tenant default hereunder (a "Default" or "Event of Default"):
- 6.1 Monetary and Non-Monetary Obligations. Tenant shall: fail to pay any sums due to Landlord (including, without limitation, Tenant's real estate tax obligation as set forth in

Section 7.1) hereunder within ten (10) days of the date due hereunder and such amount remains unpaid five (5) days after written notice of nonpayment from Landlord; fail to maintain any insurance required hereunder within five (5) days after written notice of such failure from Landlord; or fail to perform any other obligations required by Tenant to be performed hereunder, and such failure to perform continues for a period of thirty (30) days following written notice by Landlord to Tenant of such default; provided further that if such default renders the Land or any of the real property owned by Landlord which is within a one mile radius of the Land in violation of any Laws pertaining to health or safety, Tenant shall be obligated to effect a cure as soon as commercially possible also provided that, if such default does not create an unsafe condition as provided herein and effecting a cure for such default takes more than thirty (30) days, Tenant shall effect a cure within such time as may be commercially reasonable.

6.2 Permits. Tenant shall fail to maintain any of the required permits for the Mining Related Operations and same are not reinstated within ninety (90) days.

6.3 Other. If: (i) Tenant makes a general assignment or general arrangement for the benefit of creditors; (ii) a petition for adjudication of bankruptcy or for reorganization or rearrangement is filed by or against Tenant and is not dismissed within thirty (30) days; (iii) a trustee or receiver is appointed to take possession of substantially all of Tenant's assets located at the Land or of Tenant's interest in this Lease and possession is not restored to Tenant within thirty (30) days; or (iv) substantially all of Tenant's assets located at the Land, or if Tenant's interest in this Lease is subjected to attachment, execution or other judicial seizure, which is not discharged within thirty (30) days. If a court of competent jurisdiction determines that any of the acts described in this Section is not a default under this Lease and a trustee is appointed to take possession (or if Tenant remains a debtor-in-possession), and such Trustee or Tenant transfers Tenant's interest under this Lease, then Landlord shall receive, in addition to the royalty payable pursuant to this Lease, the difference between the royalty (or any other consideration) paid in connection with such transfer, assignment or sublease and the royalty payable by Tenant under this Lease.

6.4 Landlord's Remedies upon Default. Upon the occurrence of a Tenant Default;

6.4.1 Termination. In addition to all other claims, rights, and remedies available to Landlord, Landlord may, at its option, at any time thereafter, give written notice to Tenant specifying such event of default and stating that this Lease shall expire and terminate on the date specified in such notice, which date shall be at least twenty (20) days after the giving of such notice, this Lease shall terminate, and Tenant shall surrender the Land to Landlord but shall remain fully liable hereunder for all amounts then unpaid, and shall remove buildings constructed or erected on the Land by Tenant within sixty (60) days of the date of termination. Any such buildings not so removed within said time shall become the property of Landlord.

6.4.2 Cumulative rights. No right or remedy herein conferred upon or reserved to Landlord is intended to be exclusive of any other right or remedy herein or by law provided, but each shall be cumulative and in addition to every other right or remedy given herein or hereafter existing at law or in equity or by Law.

6.4.3 Other remedies of Landlord. Landlord may perform for the account of Tenant any covenant in the performance of which Tenant is in default. Tenant shall pay to Landlord, upon demand, any amount paid by Landlord, including reasonable attorney's fees and interest, in the performance of such covenant and any amounts which Landlord shall have paid by reason of failure of Tenant to comply with any covenant or provision of this Lease, in connection with prosecution or defense of any proceedings instituted by reason of such default of Tenant.

6.5 Interest on Overdue Payments. Any amount required to be paid by Tenant to Landlord hereunder which is overdue for a period of more than five (5) days, shall, at the Landlord's option, bear interest at the rate of ten percent [REDACTED] per annum from the date such payment was due and continuing until paid.

## 7. Taxes.

7.1 Real Estate Taxes. Tenant shall pay to Landlord before delinquency all real estate taxes on all parcels, or portions thereof, comprising the Land (provided, that Tenant shall have no obligation to pay taxes on any of Landlord's buildings or improvements located thereon) during such times as each parcel is used for Mining Related Operations. For clarification purposes, prior to the time Tenant commences Mining Related Operations on any portion of the Land and after Tenant has completed reclamation of any portion of the Land, Landlord shall be responsible for the real estate taxes associated with such portion of the Land. Landlord shall promptly forward copies of all real estate taxes bill for the Land to Tenant upon receipt of same to facilitate Tenant's payments. Tenant shall be provided all such bills at least thirty (30) days prior to the date such taxes are delinquent and Landlord's failure to provide such bills shall be an absolute defense against Tenant's failure to pay such taxes as required herein. For any years during which Tenant does not conduct Mining Related Operations on a parcel for a portion of such year, real estate taxes and special assessments for those years shall be prorated between Landlord and Tenant on a daily basis.

7.2 Other Taxes. Tenant shall pay before delinquency any and all sales taxes, use taxes, aggregate taxes or other taxes which may be due and payable as a result of the Mining Related Operations. If, at any time during the Term of this Lease, any improvements, personal property, equipment or machinery of Tenant are included within the real property taxes or assessments with respect to the Land, Tenant shall pay the amount of such additional real property taxes or assessments so levied. Landlord will provide Tenant with proof of the payment of such taxes within thirty (30) days of the due date for the same.

- 7.3 **Landlord Improvements.** Notwithstanding the aforementioned, Landlord shall pay all taxes assessed against all improvements on the Land and personal property owned by Landlord.
- 7.4 **Government Programs, Managed Forestland, CRP or other governmental programs; Loss of Agricultural Use Assessment.** Landlord and Tenant shall share equally the costs incurred to remove all or any of the Land from governmental programs as necessary to conduct Mining Related Operations. Tenant will reimburse or make Landlord whole for any costs incurred, additional taxes paid, or penalties incurred as a result of any portion of the Land no longer being subject to agricultural use assessment.
8. **Utility Access.** Landlord makes no representations or warranties to Tenant regarding the availability of water, electricity or other utilities available to the Land for Tenant's Mining Related Operations, either as of the date hereof or in the future.
9. **Compliance With Governmental Regulations.** Tenant shall at all times comply with the terms and conditions of the Tenant Permits. In the event that Tenant violates the terms of the Tenant Permits, Tenant shall indemnify, defend and hold harmless Landlord from any actions commenced against Landlord by reason of Tenant's violations and to pay any fines or penalties which may be levied against the Land or Landlord resulting therefrom.

Tenant shall abide by all State, Federal, and Local statutes, rules and regulations (the foregoing, along with the Tenant Permits, are referred to collectively herein as "Laws") applicable to Tenant's use of the Land, whether in effect as of the date hereof or hereafter enacted. Tenant shall not be in default under this Lease for any violation of Laws unless (i) such violation exposes Landlord or any portion of the Land to any liability or threat of enforcement proceedings; (ii) Tenant fails to cure the violation to the satisfaction of the appropriate governmental authority within any applicable cure period; and (iii) Tenant fails to pay any penalty imposed within any applicable payment period.

Tenant warrants and represents it shall not permit the production or disposal of hazardous wastes or substances (as defined under Federal or State law) in or around the Land in violation of any environmental laws. Tenant's indemnification in the next Article shall be deemed to include any breach of this representation and warranty.

10. **Indemnification.**

- 10.1 **By Tenant.** Tenant covenants and agrees that, except as otherwise stated in this Lease to the contrary, Landlord shall not be liable for any damage or liability of any kind or for any damage or injury to persons or property from any cause whatsoever arising from or during the use, occupation and enjoyment of the Land by Tenant or any person thereon holding under Tenant, including claims arising out of exposure by persons to silica and microscopic fibers in cement and stone dust generated by the Mining Related Operations. Tenant, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save keep harmless and make whole Landlord and Landlord's successors, assigns, agents, employees, partners, coventurers, heirs, trustees,

beneficiaries and affiliates, and each of them (collectively, “**Landlord’s Indemnitees**”), from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys’ fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Landlord and/or Landlord’s Indemnitees in any way relating to or arising out of Tenant’s and/or its successor’s and assigns’ use of the Land after the date of this Lease or the extraction, production or sale of the Sand from, on or at the Land accruing after the date of this Lease by Tenant and/or its successors and assigns, except to the extent caused by the negligence or misconduct of Landlord or any Landlord Indemnatee (as defined below). This indemnification obligation shall survive the termination of this Lease.

10.2 By Landlord. Landlord, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save keep harmless and make whole Tenant and Tenant’s Indemnitees (as defined below), from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys’ fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Tenant and/or Tenant’s Indemnitees in any way relating to or arising out of Landlord’s or any Landlord’s Indemnitees use of the Land or otherwise arising from any act, omission, negligence or misconduct of Landlord or any Landlord Indemnatee, except to the extent caused by the negligence or misconduct of Tenant or any Tenant Indemnatee. This indemnification obligation shall survive the termination of this Lease.

11. Memorandum of Agreement. Landlord and Tenant shall sign a Memorandum of Agreement in the form of Exhibit E which may be filed by Tenant in the office of the Buffalo County Register of Deeds. This Lease shall not be recorded. Upon any termination or other expiration of this Lease, Tenant shall, upon Landlord’s request, and without charge or cost to Landlord, furnish to Landlord a recordable instrument terminating or otherwise releasing any interest of Tenant in the Land in form and substance reasonably satisfactory to Landlord.

12. Hazardous Materials.

12.1 Definition. The terms “**Hazardous Material**” and “**Hazardous Materials**” shall mean and refer to asbestos, radon, urea-formaldehyde, polychlorinated biphenyls (“**PCBs**”), or substances containing PCBs, nuclear fuel or materials, radioactive materials, explosives, known carcinogens, petroleum products and bi-products, and any substance defined as hazardous or toxic or as a contaminant or pollutant in, or the release or disposal of which is regulated by any Environmental Law. The term “**Environmental Law**” shall mean and refer to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (“**CERCLA**”), 42 U.S.C. §9601, et seq.; the Federal Resource Conservation and Recovery Act of 1976 (“**RCRA**”), 42 U.S.C. §6901, et seq.; the Federal Water Pollution Control Act, 33 U.S.C. §1251, et seq.; the Clean Air Act, 42 U.S.C. §7401, et seq.; all as the same may be from time to time amended, and any other federal, state, county, municipal, local or other statute, law, ordinance or regulation that relates to or deals with human health or the environment, including, without limitation, all regulations

promulgated by a regulatory body pursuant to any such statute, law, ordinance or regulation.

- 12.2 Limitation. Landlord covenants and agrees that, except as otherwise stated in this Lease to the contrary, Tenant shall not be liable for any damage or liability of any kind or for any damage or injury to persons or property from any cause whatsoever arising from the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land by Tenant, its agents, contractors, invitees, guests or permittees.
- 12.3 By Tenant. Tenant, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save, keep harmless and make whole Landlord and Landlord's successors, assigns, agents, employees, officers, owners, members, partners, affiliates and contractors, and each of them (collectively, "**Landlord's Indemnitees**"), for, from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Landlord and/or Landlord's Indemnitees in any way relating to or arising out of the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land in violation of Law by Tenant, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land prior to the Effective Date or by Landlord, its officers, directors, members, employees, agents, contractors, invitees, guests or permittees (whether before or after the Effective Date). The obligations of Tenant under this Section 12 shall survive the expiration or earlier termination of this Lease.
- 12.4 By Landlord. Landlord, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save, keep harmless and make whole Tenant and Tenant's successors, assigns, agents, employees, officers, owners, members, partners, affiliates and contractors, and each of them (collectively, "**Tenant's Indemnitees**"), for, from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Tenant and/or Tenant's Indemnitees in any way relating to or arising out of the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land prior to the Effective Date or by Landlord or its officers, directors, members, employees, agents, contractors, invitees, guests or permittees, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land by Tenant, its agents, contractors, invitees, guests or permittees. The obligations of Landlord under this Section 12 shall survive the expiration or earlier termination of this Lease.
13. Assignment. Tenant may assign or sublet all or any portion of its interest in this Lease or in the Land without the consent of Landlord; however, no such assignment or sublease shall be effective until Landlord and the assignee or sublessee have negotiated the term, amount of rent and amount of royalty. Landlord agrees to participate in good faith in

such negotiations. In the event of a sublease by Tenant, Tenant agrees to cooperate in such negotiations and to agree to necessary changes to this Lease that result from such negotiation.

14. **Notices.** All notices required under this Lease shall be sent by U.S. First Class Mail to the following address:

If to Landlord:

Gerald D. Earney and Cheryl A. Earney  
W998 Schoepps Valley Road  
Cochrane, WI 54622

- with a required copy to:

Attorney Bruce J. Brovold  
Kostner, Koslo & Brovold LLC  
108 W. Main Street  
Arcadia, WI 54612-1326

If to Tenant:

Badger Bluff Sands LLC  
Attention: Kevin Rich  
349 West 24th Street  
Buffalo City, WI 54622

- with a required copy to:

Attorney Joseph R. Mirr  
Ruder Ware, L.L.S.C.

Street Address:

402 Graham Ave, Eau Claire, WI 54701

Mailing Address:

P.O. Box 187, Eau Claire, WI 54702-0187

15. **Governing Law.** This Lease shall be governed by the laws of the State of Wisconsin. The invalidity of any term of this Lease shall in no way affect the validity or enforceability of the remaining terms.
16. **No Liens or Encumbrances.** Subject to Section 4.1, Tenant shall keep Landlord's interest in the Land free and clear of all costs, liens and encumbrances; and Landlord may place and maintain in a conspicuous place upon the Land such notice as shall be lawfully necessary to protect Landlord against all such claims, including, specifically, any and all mechanics' lien claims.
17. **No Relationship other than Landlord and Tenant.** Nothing contained in this Lease shall create between Landlord and Tenant, or be relied upon by others as creating, any relationship of partnership, association, joint venture, employer/employee or otherwise. The sole relationship of Landlord and Tenant under this Lease shall be that of a Landlord/vendor and Tenant/vendee.
18. **Amendment.** This Lease may be amended only by a writing signed by both Landlord and Tenant. If such a written amendment is entered into, such written amendment shall

modify only the provisions of this Lease specifically modified and shall be deemed to incorporate by reference, unchanged, all remaining provisions of this Lease.

19. **Entire Agreement.** This Lease and the Exhibits and related agreements contemplated herein contain the entire agreement of Landlord and Tenant and supersede any prior or contemporaneous written or oral agreements among them with respect to the subject matter of this Lease. There are no representations, warranties, agreements, arrangements or understandings, oral or written, between Landlord and Tenant relating to the subject matter contained in this Lease that are not fully expressed in this Lease.
20. **Attorney's Fees.** If any party to this Lease is required to or commences any action or proceeding against the other by reason of any breach or claimed breach of any provision of this Lease, is required to or commences any action or proceeding in any way connected with this Lease or seeks a judicial declaration of rights under this Lease, the party prevailing in such action or proceeding shall be entitled to recover from the other party the prevailing party's reasonable attorneys' fees and costs, including, but not limited to, all expert witness fees, other witness fees and associated expenses, whether or not the proceeding or action proceeds to judgment.
21. **Headings and Captions.** The headings and captions at the beginnings of various Sections of this Lease shall not be construed to be substantive part of this Lease or in any way define, limit, expand or affect any provision of this Lease.
22. **Time of the Essence.** With regard to the performance by Landlord and Tenant of their obligations under this Lease, time is expressly made of the essence.
23. **Counterparts.** This Lease may be signed in two (2) or more counterparts, each of which shall constitute an original, but all of which, taken together, shall be one (1) and the same document.
24. **Nonwaiver of Rights and Breaches.** No failure or delay of Landlord or Tenant in the exercise of any right given to them under this Lease shall constitute a waiver of such right, nor shall any single or partial exercise of any such right preclude other or further exercise of such right or of any other right. The waiver by Landlord or Tenant of any breach of any term or provision of this Lease shall not be deemed to be a waiver of any subsequent breach of any term or provision of this Lease or of any breach of any other provision of this Lease. No waiver under this Lease shall be effective until set forth in writing and executed by the party making the waiver.
25. **Remedies.** In the event of breach of the provisions of this Lease, the nonbreaching party may pursue any remedy provided at law or in equity.
26. **Exculpation.** Tenant agrees to look solely to Landlord's interest in the Land for the recovery of any judgment from Landlord, it being agreed that the persons who are part of the Landlord and the corporation which is part of Landlord and its directors, officers, or shareholders, shall never be personally liable for any such judgment.



27. **Partial Invalidity.** If any term, covenant, condition or provision of this Lease is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired or invalidated thereby.
28. **Force Majeure.** Tenant shall not be liable for any failure or delay in performance under this Lease (including for delay in the payment of money due and payable hereunder) to the extent such failures or delays shall relate to labor disputes (including strikes, lockouts, walkouts, slowdowns, etc.), nonavailability of materials, war or national defense, preemptions, governmental restrictions (including the denial or cancelation of any necessary governmental license or permit), changes in laws, acts of God or other causes beyond the reasonable control of Tenant; provided that Tenant shall commence such performance and continue the same with diligence and continuity immediately after the removal of any of the causes hereinabove specified; provided further that the total collective time for all occasions for which Tenant's performance is excused pursuant to this Section 30 shall be added to the end of the term of this Lease.
29. **No Merger.** The fee simple estate in the Land shall not merge with the Leasehold or any other estate or interest in the Land, and the parties hereto do hereby express their intent to avoid any merger of such interests or estates.
30. **Confidentiality.** The terms and conditions of this Lease shall be forever treated as confidential by Landlord and Tenant and shall not be disclosed to any person, other than to: the individuals who are part of Tenant and their immediate families; the members of the entity which is a part of Tenant; the officers, directors, and management employees of Tenant and its parent companies; and representatives of Landlord and Tenant with a need to know; and in addition thereto Landlord and Tenant's attorneys, accountants, tax consultants and any state and federal taxing authorities. The provisions of this section do not apply to disclosures made in a court of competent jurisdiction or to a governmental agency, when required by subpoena, court order, law or administrative regulation. The provisions of this section do not apply to disclosures made to insurance agents or underwriters for the purpose of obtaining insurance. The provisions of this section will continue in full force and effect even after expiration or termination of this Lease.
31. **Financing.** Tenant may, at any time from time to time, without the consent, approval or input from Landlord, enter into a financing arrangement or arrangements resulting in the encumbrance of all or any portion of its interest in this Lease and Tenant's leasehold estate in the Land by deed of trust, mortgage, security instrument, collateral assignment, or otherwise for the purpose of securing money borrowed from a third party. Landlord agrees to sign any and all documentation reasonably related thereto or reasonably requested by Tenant's lender(s), including, without limitation, to title affidavits and collateral access agreements.
32. **Title Insurance.** Tenant, at any time during the Term, at Tenant's cost and expense, may purchase a leasehold title insurance policy, insuring it against any loss on account of defect, lien or encumbrance in title, guaranteeing the area and boundaries, and showing good title to the Land, including all mineral rights to be vested in Landlord, free and clear

of all defects, liens and encumbrances, easements, restrictions, rights-of-way, roadways, encroachments or other matters of record or other grants which may affect the use of the Land by Tenant. Landlord shall cooperate with Tenant and assist Tenant in obtaining such leasehold title insurance policy, including, without limitation, signing such documents that may be reasonably requested by the title company to issue such leasehold title insurance policy.

33. **SNDA.** In the event all or any portion of the Land is encumbered by a deed of trust, mortgage, security instrument, collateral assignment, or otherwise for the purpose of securing money borrowed by Landlord from a third party, Landlord agrees to provide Tenant, prior to the Commencement Date (and at any time thereafter prior to any new monetary lien is granted against the Land), with a subordination, non-disturbance and attornment agreement between the holder of such encumbrance and Tenant, in form and substance reasonably acceptable to Tenant.
34. **Dispute Resolution.** If a dispute arises under this Agreement that cannot be resolved amicably between the parties, the parties will attempt in good faith to settle such dispute by non-binding mediation using mediation rules (including the selection of a mediator and a mediation site) mutually agreed to by the parties; provided, however, if the parties are not able to so agree within thirty days of the date the dispute arises, the mediation shall be conducted in accordance with chapter 788 of the Wisconsin Statutes.

IN WITNESS WHEREOF, the undersigned have executed this Lease on the date hereinabove written.

LANDLORD:

Gerald D. Earney  
Gerald D. Earney

Cheryl A. Earney  
Cheryl A. Earney

ACKNOWLEDGMENTS

STATE OF WISCONSIN    )  
                                  ) ss:  
COUNTY OF BUFFALO    )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Gerald D. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec 6, 2015

STATE OF WISCONSIN    )  
                                  ) ss:  
COUNTY OF BUFFALO    )

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015

The foregoing instrument was acknowledged before me on July 21, 2013, by **Cheryl A. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015

TENANT:

Badger Bluff Sands LLC, a Wisconsin limited liability company

By: \_\_\_\_\_

Kevin J. Rich, Managing Member

**ACKNOWLEDGMENT**

STATE OF WISCONSIN )

COUNTY OF Buffalo )

) ss:

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich of **Badger Bluff Sands LLC**, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Driver License

\_\_\_\_\_ as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger

\* William J. Bruegger

Notary Public

State of Wisconsin

My Commission Expires Dec. 6, 2015

This instrument prepared on behalf of Landlord by:

William J Bruegger Notary Public-Wisconsin BUFFALO COUNTY My commission Expires Dec 06, 2015
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Attorney Joseph R. Mirr, Ruder Ware, L.L.S.C., Street Address: 402 Graham Ave., Eau Claire, WI 54701, Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187

## **EXHIBIT A**

### **Legal Description**

Real property located in the Town of Waumandee, Buffalo County Wisconsin, described as follows:

**LEASE PARCEL 1A** (wash plant site, stockpile and loading areas)

Current Owner: Gerald and Cheryl Earney (Parts of Parcel ID Numbers: PID 034-00813-0000; PID 034-00814-0000; PID 034-00817-0000; PID 034-00818-0000)

Part of the Southeast Quarter of the Southeast Quarter, part of the Northeast Quarter of the Southeast Quarter, part of the Northwest Quarter of the Southeast Quarter and part of the Southwest Quarter of the Southeast Quarter of Section 32, Township 21 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the South Quarter corner of said Section 32; Thence N28°01'18"E on a survey tie line a distance of 1481.13 feet to the northerly right of way of Schoepps Valley Road and the POINT OF BEGINNING; Thence N39°55'35"E a distance of 559.85 feet; Thence S75°59'02"E a distance of 275.44 feet; Thence N78°23'01"E a distance of 620.32 feet; Thence S11°36'59"E a distance of 583.31 feet to the northerly right of way of Schoepps Valley Road; Thence S78°23'01"W on the northerly right of way of Schoepps Valley Road a distance of 563.90 feet; Thence S78°48'08"W on the northerly right of way of Schoepps Valley Road a distance of 274.20 feet; Thence S78°14'20"W on the northerly right of way of Schoepps Valley Road a distance of 82.90 feet to the beginning of a curve concave to the north; Thence 144.32 feet on the arc of said curve having a radius of 599.96 feet with a chord bearing S85°07'49"W and a chord length of 143.97 feet to the beginning of a curve concave to the northeast; Thence 278.08 feet on the arc of said curve having a radius of 242.00 feet with a chord bearing N55°03'35"W and a chord length of 263.03 feet to the beginning of a curve concave to the southwest; Thence 158.73 feet on the arc of said curve having a radius of 356.35 feet with a chord bearing N34°54'06"W and a chord length of 157.42 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 719,456 square feet or 16.52 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

## EXHIBIT C

### Insurance Requirements and Coverages

Tenant shall procure and maintain, until all of its obligations under this Lease have been discharged, the following insurance against claims for injury to persons or damage to property which may arise from or in connection with Tenant's use of the Land.

The insurance requirements herein are minimum requirements for this Lease and in no way limit the indemnity covenants contained in this Lease.

A. Minimum Scope and Limits of Insurance — Tenant shall provide coverage with limits of liability not less than those stated below.

1. Commercial General Liability — Occurrence Form

The policy shall include bodily injury, property damage, broad form contractual liability and XCU coverage.

- General Aggregate  
\$2,000,000
- Products – Completed Operations Aggregate  
\$2,000,000
- Personal and Advertising Injury  
\$1,000,000
- Each Occurrence  
\$1,000,000
- Damage to Rented Premises (each occurrence)  
\$1,000,000

The policy shall be endorsed to include the following additional insured language: "Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including completed operations."

2. Excess/Umbrella Liability

- General Aggregate \$2,000,000

The policy shall be endorsed to include the following additional insured language: "Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant."

3. Automobile Liability

Bodily injury and property damage for any owned, hired, and non-owned vehicles used by Tenant in connection with use of the Land.

- Combined Single Limit (CSL) C  
\$1,000,000

The policy shall be endorsed to include the following additional insured language: "Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant."

4. Worker's Compensation and Employers' Liability

- Workers' Compensation As required by Wisconsin State law W
- Employers' Liability As required by Wisconsin State law E

5. Pollution

- \$1,000,000 limit/\$25,000 deductible

The policy shall be endorsed to include the following additional insured language: "Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant."

B. Additional Insurance Requirements: The policies shall include, or be endorsed to include, the following provisions:

1. Each insurance policy required by this Lease shall provide the required coverage and shall not be suspended, voided or canceled except after such insurer has endeavored to provide thirty (30) days prior written notice to Landlord.
2. Each insurance policy required by this Lease shall be endorsed to include a waiver of subrogation against Landlord, as applicable.

C. Acceptability of Insurers: Insurance is to be placed with insurers duly licensed or authorized to do business in the state of Wisconsin and with an "A.M. Best" rating of not less than A-.

Verification of Coverage: Each insurance policy required by this Lease must be in effect at or prior to the Commencement Date under this Lease and remain in effect for the duration of the Agreement. Upon request, each party shall furnish the other party with certificates of insurance (ACORD form or equivalent) as required by this Lease. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. Failure to maintain the insurance policies as required by this Lease or to provide evidence of renewal is a material breach of this Lease.

## **EXHIBIT D**

### **Title Exceptions**

1. Mortgage in favor of Badgerland Financial



## **EXHIBIT D**

### **Title Exceptions**

1. Mortgage in favor of Badgerland Financial

**EXHIBIT E**

**Form of Memorandum of Lease**

**MEMORANDUM OF WASH PLANT SITE AND MINING RELATED OPERATIONS  
LEASE**

WITNESSETH: This is a Memorandum of that certain Mining Related Operations and Access Road Lease Agreement, described below, wherein Landlord demised and leased and does by these presents demise and lease to Tenant those certain premises hereinafter described:

LANDLORD: **Gerald D. Earney and Cheryl A. Earney**

TENANT: **Badger Bluff Sands LLC**, a Wisconsin limited liability company

EFFECTIVE DATE OF LEASE **July 21, 2013**

COMMENCEMENT DATE: The first day of the first calendar month immediately following the Contingency Date

TERM: 10 years expiring on the 10<sup>th</sup> anniversary of the January 1 following Commencement Date, subject to extension for up to two (2) additional 5-year terms

PREMISES: All land, including, without limitation, Sand and improvements located thereon, more particularly described on **Exhibit A** attached hereto and depicted as Lease Parcel 1A on **Exhibit F** attached hereto

The mailing addresses of Landlord and Tenant are as follows:

LANDLORD: Gerald D. Earney and Cheryl A. Earney  
W998 Schoepps Valley Road  
Cochrane, WI 54622

- with a required copy to: Attorney Bruce J. Brovold

Kostner, Koslo & Brovold LLC  
108 W. Main Street

Arcadia, WI 54612-1326

TENANT: Badger Bluff Sands LLC  
Attention: Kevin Rich  
349 West 24th Street  
Buffalo City, WI 54622

- with a required copy  
to:

Attorney Joseph R. Mirr  
Ruder Ware, L.L.S.C.  
Street Address: 402 Graham Ave., Eau Claire, WI 54701  
Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187

LANDLORD:

Gerald D. Earney  
Gerald D. Earney

Cheryl A. Earney  
Cheryl A. Earney

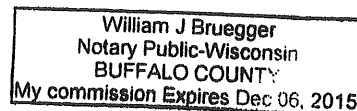
ACKNOWLEDGMENTS

STATE OF WISCONSIN   )  
  ) ss:  
COUNTY OF BUFFALO   )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Gerald D. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec. 6, 2015



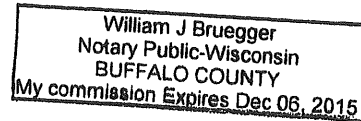
STATE OF WISCONSIN     )  
  ) ss:  
COUNTY OF BUFFALO     )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Cheryl A. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name



TENANT:  
Badger Bluff Sands LLC, a Wisconsin limited liability company

By: Kevin J. Rich  
Kevin J. Rich, Managing Member

**ACKNOWLEDGMENT**

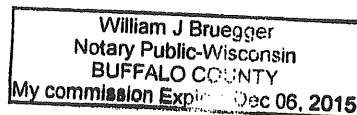
STATE OF WISCONSIN     )  
  ) ss:  
COUNTY OF Buffalo     )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich of **Badger Bluff Sands LLC**, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Driver License

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Expires Dec 6, 2015



This instrument prepared on behalf of Landlord by:

Attorney Joseph R. Mirr, Ruder Ware, L.L.S.C., Street Address: 402 Graham Ave., Eau Claire,  
WI 54701, Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187

## **EXHIBIT F**

### **Survey**

**[to be attached]**

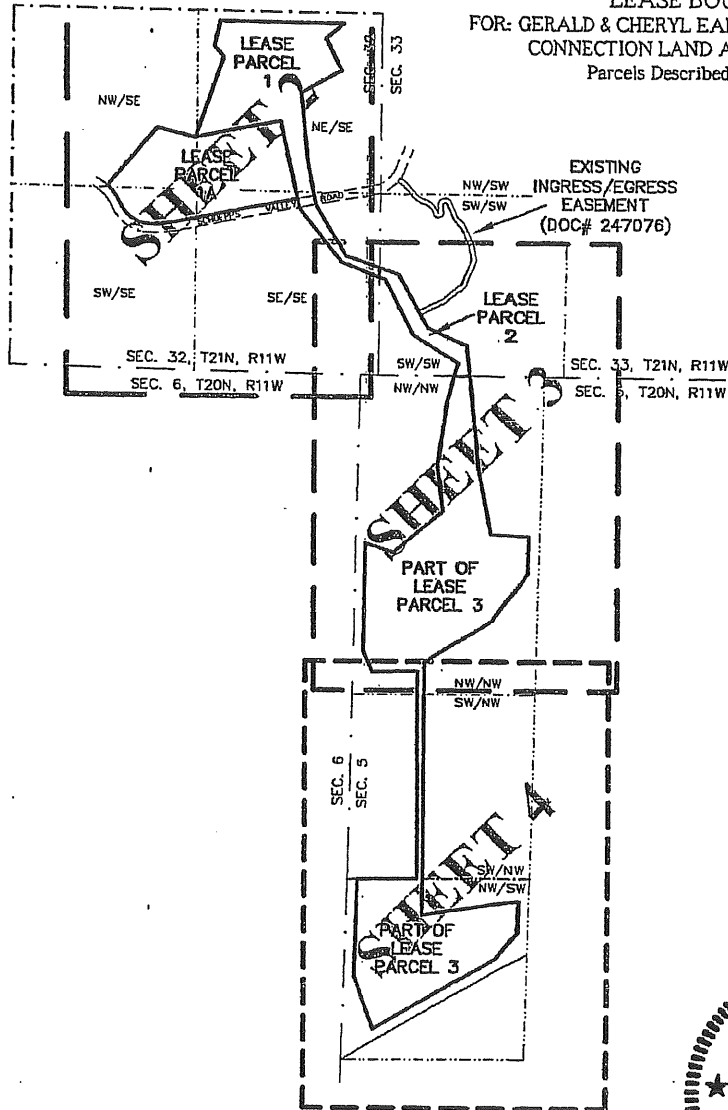
**TAMARAC**  
LAND SURVEYING, LLC  
www.tamaraclandsurveying.com

## MAP OF SURVEY

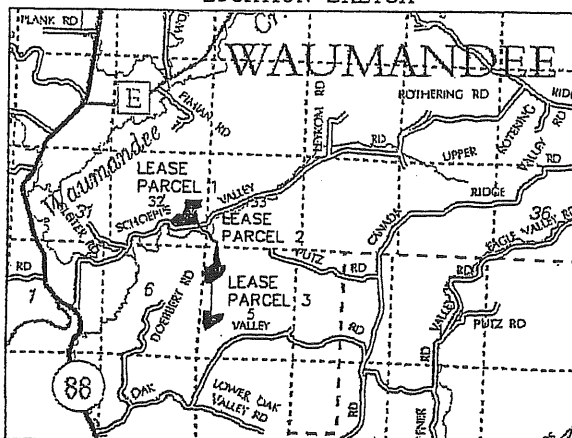
### LEASE BOUNDARIES

FOR: GERALD & CHERYL EARNEY AND THE MISSISSIPPI  
CONNECTION LAND AND TIMBER CO., LLC

Parcels Described on Sheets 5 & 6



### LOCATION SKETCH



### SURVEYOR'S CERTIFICATE:

I, Gregory J. Rich, a Wisconsin Land Surveyor, hereby certify that pursuant to a request from GERALD & CHERYL EARNEY AND THE MISSISSIPPI CONNECTION LAND AND TIMBER CO., LLC, I have surveyed and mapped the above described property and that this MAP OF SURVEY, to my best knowledge, information and belief is a correct representation of the boundary lines surveyed under my direction and supervision. THAT I have fully complied with the Wisconsin Administrative Code AE-7 in surveying and mapping said lands. This survey and the certification thereof was made for the exclusive use of GERALD & CHERYL EARNEY AND THE MISSISSIPPI CONNECTION LAND AND TIMBER CO., LLC. Said certification is not transferable to any other party without the re-certification of the same.

SHEET 1 OF 6

## LEASE AGREEMENT

THIS LEASE AGREEMENT ("Lease"), is made July 21, 2013 ("Effective Date"), by and between The Mississippi Connection Land & Timber Co. LLC, ("Landlord"), and ZEER LLC, a Wisconsin limited liability company, ("Tenant").

### RECITALS

A. Landlord owns certain real property and improvements located in the Town of Waumandee, Buffalo County, Wisconsin legally described on Exhibit A on Exhibit A and depicted as Lease Parcel 3 on Exhibit F (the "Land").

B. Landlord and Tenant have agreed to enter into this Lease to enable Tenant to occupy and use the Land during the Term to extract, process, remove and sell Sand (as hereinafter defined) from the Land on the terms and conditions set forth herein.

### AGREEMENT

NOW, THEREFORE, for valuable consideration, and in consideration of the agreements of the parties hereto, subject to the terms, covenants and agreements hereinafter contained, and intending to be legally bound hereby, the parties hereto agree as follows:

1. Lease of Premises.

1.1 Grant. Except as otherwise provided in this Lease, Landlord hereby leases to Tenant and Tenant hereby leases from Landlord the Land, in "as is," "where is" condition with all existing defects whether latent or patent, for the purpose of exploring for, developing, mining, recovering, extracting, removing, washing, drying, screening, processing, storing, selling and transporting Sand and the exclusive right to use so much of the surface of the Land as may be reasonably necessary for conducting and managing Tenant's use of the Land (collectively the "Mining Operations").

1.2 Definition of Sand. As used herein, "Sand" shall mean all silica sand and other nonmetallic minerals, but excluding clay and topsoil.

1.3 Exclusivity. Subject to the approval of appropriate governmental authorities and the provisions of Section 1.4, the rights herein granted to Tenant include the exclusive right of Tenant to use the Land in accordance with the terms and conditions of this Lease, including, without limitation, to:

1.3.1 Construct, place, operate, maintain, repair, expand, modify and replace on the Land drill rigs, structures, conveyors, drying plants, screening plants, storage bins, fuel storage facilities, including above-ground fuel tanks (but excluding underground storage tanks of any type), and other facilities and processes related to the Mining Operations.



- 1.3.2 Dispose and store on the Land materials separated from the Sand;
- 1.3.3 Construct and maintain access roads, and other means of ingress and egress to and from the Land, and to rebuild or repair the same if damaged or destroyed;
- 1.3.4 Park, store, load and unload trucks;
- 1.3.5 Construct and maintain utility lines and facilities necessary to connect to existing utility lines for water, electricity and natural gas, and to rebuild or repair the same if damaged or destroyed;
- 1.3.6 Construct, maintain and replace such additional improvements and facilities as may be required or convenient to exercise its rights hereunder;
- 1.3.7 Build ponds as may reasonably necessary to operate on the Land and to comply with any and all stormwater and other legal requirements;
- 1.3.8 Drilling a well and installing a well system for water on the Land; and
- 1.3.9 Perform any and all other activities reasonably necessary for or related to the Mining Operations.

1.4 Rights retained by Landlord. Landlord shall have the right to harvest any timber on the Land and to use the Land for agricultural and recreational purposes, including hunting, as long as such uses do not interfere with Tenant's activities; and Landlord shall indemnify and hold Tenant harmless from and against all damages and injuries arising from such use. Any activities conducted by or on behalf of Landlord or with Landlord's permission on the Land shall be done at such person's or entities' sole risk and Tenant shall not be liable for any damage to person or property associated therewith except to the extent caused by Tenant's negligence, or willful misconduct. Tenant shall provide Landlord with prior written notice of its intention to clear any portion of the Land of timber in connection with its operations so Landlord will have the opportunity to remove the timber in that area. Should Landlord not remove the timber within 60 days after Landlord's receipt of Tenant's written notice, Tenant may cause removal thereof. If Landlord has not timely removed any such timber, Tenant may remove and sell any timber from the Land. Any such removal by Tenant shall be for Landlord's account and the proceeds received by Tenant from the removal and sale of any such timber shall be remitted to Landlord less all expenses reasonably incurred by Tenant in connection with any such removal and sale.

1.5 Governmental Approval. Tenant shall use commercially reasonable efforts to diligently obtain all approvals and permits from any and all governmental authorities, including without limitation, the Town of Waumandee;

Buffalo County, Wisconsin; and the Wisconsin Department of Natural Resources necessary for Tenant to engage in the Mining Operations on the Land; provided, that Landlord agrees to reasonably cooperate with Tenant in connection with the same. If Tenant is not able to obtain such approvals and permits by December 31, 2013 (the "Contingency Date") or if Tenant is not satisfied, in Tenant's reasonable discretion, with the results of its due diligence of the Land, Tenant may terminate this Lease by written notice to Landlord. If Tenant does timely terminate this Lease in accordance with this Section 1.5, this Lease and Tenant's tenancy created hereunder shall be terminated, but any obligations arising under Sections 5.4, 5.5, 5.5, 5.5, 11, 15.3, 23, 28, 30, and 33 prior to such termination or as a result of Tenant's activities on the Land thereafter shall survive such termination.

1.6 Wash Plant Site Agreement. The parties hereto acknowledge and agree that in the event that Tenant and Landlord do not enter into that certain Wash Plant Site Agreement (which agreement is currently being negotiated) by December 31, 2013, Tenant shall have the right to terminate this Lease by written notice to Landlord. If Tenant terminates this Lease in accordance with this Section 1.6, this Lease, Tenant's tenancy created hereunder shall be terminated, but any obligations arising under Sections 5.4, 5.5, 5.5, 5.5, 11, 15.3, 23, 28, 30, and 33 prior to such termination or as a result of Tenant's activities on the Land thereafter shall survive such termination.

1.7 Termination of All Existing Tenancies. Landlord shall, on or before the Effective Date, terminate all leases, licenses and any other rights to occupy or use the Land, excluding rights arising under utility easements, and provide Tenant with all written instruments evidencing such termination.

2. Term/Royalty.

2.1 Term. The "**Initial Term**" of this Lease shall be for a period of ten (10) Lease Years in addition to Initial Lease Year (as defined in Section 2.2), commencing on the first day of the first calendar month immediately following the Contingency Date (the "**Commencement Date**"). If Tenant is not in default of this Lease and if the Lease has not been otherwise terminated, this Lease may be renewed by Tenant for up to two (2) additional terms of five (5) Lease Years (collectively, the "**Renewal Terms**" and each, a "**Renewal Term**") providing written notification to Landlord of Tenant's intent to exercise its renewal rights. Said notification to renew this Lease shall be given to Landlord not later than 120 days prior to the last day of the Initial Term or the Renewal Term, as applicable. In the event Tenant fails to provide a timely renewal notice, Landlord shall so notify Tenant, and Tenant shall thereafter have an additional ten (10) days to elect to extend this Lease for a Renewal Term. The terms and conditions of this Lease during the Renewal Terms shall be the same as the terms and conditions of this Lease during the Initial Term.

2.1.1 Tenant may terminate this Lease during the Term in the event that: (a) the available quantity of Sand has been depleted or the cost to mine such Sand does not make the Mining Operations financially

viable, in Tenant's sole discretion; (b) the mining, processing, stockpiling or removal of Sand from the Land is prohibited by applicable law, code, ordinance, rule or regulation; or (c) any of the permits or governmental approvals necessary for Tenant to conduct the Mining Operations has been terminated or not issued or renewed by the applicable governmental authority through no fault of Tenant. To so terminate this Lease, Tenant shall provide Landlord with not less than ninety (90) days written notice of termination. If Tenant terminates this Lease in accordance with this Section 2.1.1, this Lease and Tenant's tenancy created hereunder shall be terminated, but any obligations arising under Sections 5.4, 5.5, 5.5, 5.5, 11, 15.3, 23, 28, 30, and 33 prior to such termination or as a result of Tenant's activities on the Land thereafter shall survive such termination.

2.1.2 As used herein, "**Term**" means the Initial Term and, if extended, each Renewal Term, and "**during the Term**" and similar phrases refer to the entire period of time this Lease is in effect. Upon expiration of the Term or earlier termination of this Lease, the tenancy of Tenant in the Land shall terminate, and neither party shall have any further obligations to the other except for such obligations as are expressly intended to survive expiration or termination of this Lease.

2.2 Lease Years. The period of time from the Commencement Date until December 31 of the year in which the Commencement Date occurs is the "**Initial Lease Year**." Each subsequent period from January 1 to December 31 shall be deemed a "**Lease Year**."

2.3 Rent Payments. Rent hereunder shall be [REDACTED] per Lease Year, prorated for any partial Lease Year.

2.4 Place of Payments. Until notified otherwise in writing, all rent and other payments shall be paid to Landlord and shall be made by check, or if Landlord so requires, by wire transfer delivered in the usual course of business to Landlord the address set forth in Section 17 herein, or at and to such financial institution as Tenant may from time to time designate by written notice to Tenant. Any financial institution or institutions so designated to receive either wire transfers or checks shall be deemed the agent of **Tenant** and Landlord for the purpose of receiving, collecting, and receipting for such payments.

2.5 Audit. [intentionally omitted]

3. **Title to Sand.** Title to all Sand shall transfer to Tenant when it is extracted from the Land. For clarification purposes, Tenant may stockpile extracted Sand from the Land on the Land and such Sand shall be owned by Tenant, not Landlord.

4. **Title to Land.** Landlord warrants that it owns fee simple title to the Land, including, without limitation, all Sand located thereon, which is

free and clear of all encumbrances, liens, pledges, security interests and all other claims of third parties, except as listed on Exhibit D attached hereto (which will be completed by the parties prior the Contingency Date). Landlord's ownership of the Land includes all water rights appurtenant thereto. To the best of Landlord's knowledge, the Land is in compliance with all Laws and free from any and all Hazardous Materials.

5. **Mining Operations.** Tenant shall conduct its Mining Operations on the Land in accordance with all applicable Laws and the terms and conditions provided herein, including but not limited to the following:

- 5.1 **General Provisions.** Tenant may clear brush and undergrowth from such portions of the Land as may be reasonably necessary to explore for materials, to locate pits, quarries and stockpile areas, and to enable Tenant to use the Land as provided in this Lease. Tenant shall have the right to make use of all roadways presently existing on the Land and of ingress and egress through, to and from the Land. Tenant, at Tenant's sole cost and expense, shall have the right and privilege of setting up and erecting any necessary buildings, equipment and machinery on the Land, except that no residence or building used or to be used for residence purposes shall at any time be erected on the Land by Tenant. Subject to rights retained by Landlord, Tenant may use and possess as much of the Land as Tenant may require during the term of this Lease solely for the purposes and uses permitted under this Lease. In the event any mechanic's lien shall at any time be filed against the Land or any part thereof by reason of work, labor, services or materials performed or furnished to Tenant or to anyone holding the Land through or under Tenant, Tenant shall forthwith cause the same to be discharged of record, or, to the extent of a dispute related thereto, bond off such lien during the pendency of a proceeding related thereof; provided, that, such lien shall be discharged of record prior to any foreclosure thereof. If Tenant shall fail to cause such lien forthwith to be discharged or bonded off within thirty (30) days after being notified of the filing thereof, then, in addition to any other right or remedy for Landlord, Landlord may, in Landlord's sole discretion, discharge the same by paying the amount claimed to be due, or by bonding, and the amount so paid by Landlord and all costs and expenses, including reasonable attorneys' fees incurred by Landlord in procuring the discharge of such lien, shall be due and payable in full by Tenant to Landlord on demand. Tenant shall maintain roads on the Land in good condition and repair, at Tenant's expense.

- 5.2 **Easements.** Landlord agrees to provide Tenant with any and all easements for utility purposes across any other land owned by Landlord reasonably necessary for Tenant to conduct its operations on the Land.

- 5.3 **Fencing.** Tenant may erect fencing in order to secure Landlord's operations on the Land not presently mined by Tenant and surrounding real property owned or operated by Landlord in accordance with health and safety considerations. All such fencing shall be installed and maintained at the sole cost of Tenant. Tenant will provide Landlord a key for entrance to the Land.

- 5.4 **Additional Operating Provisions.** Tenant shall maintain slopes and setbacks on the Land in accordance with Buffalo County and Town

ordinances. In no event shall Tenant place overburden material on the Land in such a way as to cause any contamination to the groundwater of the Land or surrounding real property.

5.5

Reclamation Plan. Tenant shall comply with the approved reclamation plan for reclaiming the Land as part of Tenant's Mining Operations approved by Wisconsin Department of Natural Resources or Buffalo County (the "**Reclamation Plan**"). The Reclamation Plan shall be revised and if necessary updated not less frequently than annually, and a copy provided to Landlord. Tenant shall reclaim to the extent possible, and in compliance with applicable reclamation laws, ordinances and requirements, whether existing as of the date hereof or at the time of such reclamation, all areas of the Land in which Tenant has stopped Mining Operations within the time period required by the Town of Waumandee, Buffalo County, Wisconsin and by Buffalo County, Wisconsin. All reclamation shall be completed before this Lease and any extension thereof shall terminate and Tenant's equipment and improvements to the Land removed by Tenant, at Tenant's sole cost and expense. A copy of the Reclamation Plan shall be attached hereto as Exhibit B prior to the Contingency Date.

5.6

Insurance. Tenant shall comply with the terms and conditions of Exhibit C, effecting the required insurance coverages and endorsements with insurance companies licensed to do business in Wisconsin and naming Landlord as an additional insured. Tenant shall furnish to Landlord certificates of insurance to the effect that the policy or policies of insurance are in force and that same will not be cancelled without at least thirty (30) days notice to the other party. Tenant shall bear the cost of all insurance that it is required to maintain under this Lease. After the first twelve (12) years of the Term, Landlord may by written notice to Tenant, increase the required insurance coverages and modify required endorsements as long as such increases and modifications are commercially reasonable and typically required of other mining operations in the area, which shall be established by Tenant to Landlord's reasonable discretion. Landlord shall carry property casualty insurance on any improvement on the Land and general liability insurance for its activities on the Land and hereby waives and releases, and shall have its insurers waive subrogation, against Tenant for any and all claims covered by such insurance. Landlord's property insurance shall be at least for the full replacement value of such property and Landlord's general liability insurance shall have a combined single limited of at least \$500,000 per occurrence; provided, that if Landlord is timbering the Land or having the Land timbered, either Landlord or such timbering contractor must carry several liability insurance with a combined single limit of at least \$2,000,000 per occurrence.

5.7

Dust Control. Tenant is required to manage and control dust and other mining by products in accordance with any applicable permits.

5.8

Surveying. All surveys required to carry out the Mining Operations shall be obtained by Tenant, at Tenant's expense. As part of any such surveying, Tenant shall cause property corners to be staked or otherwise marked.

6. **Rights of Entry.** Landlord, its agents and representatives, shall have the right, at any and all reasonable times following reasonable notice to Tenant, to enter upon the Land to inspect and survey the Land and Tenant's Mining Operations. In entering upon the Land, Landlord, its agents and representatives shall not interfere with Tenant's activities; and Landlord shall indemnify and hold Tenant harmless from and against all damages and injuries arising from such entry. Entry to the property is subject to safety regulations stipulated by the federal Mining and Health Administration (MSHA) and state Occupational Safety and Health Administration (OSHA).
7. **Overburden.** Landlord retains ownership control of the overburden on the Land; provided, however, Landlord shall not cause overburden to be removed from the Land until all reclamation has been completed in accordance with the Reclamation Plan. Nothing in the preceding sentence shall preclude Landlord from removing any trees from the Land as set forth in Section 1.4 herein.
8. **Tenant Defaults.** Any of the following shall be deemed to be a Tenant default hereunder (a "**Default**" or "**Event of Default**"):
- 8.1 Monetary and Non-Monetary Obligations. Tenant shall: fail to pay any sums due to Landlord (including, without limitation, Tenant's real estate tax obligation as set forth in Section 9.1) hereunder within ten (10) days of the date due hereunder and such amount remains unpaid five (5) days after written notice of nonpayment from Landlord; fail to maintain any insurance required hereunder within five (5) days after written notice of such failure from Landlord; or fail to perform any of the other obligations required by Tenant to be performed hereunder and such failure to perform continues for a period of thirty (30) days following written notice by Landlord to Tenant of such default; provided further that if such default renders the Land or any of the real property owned by Landlord which is within a one mile radius of the Land in violation of any laws pertaining to health or safety, Tenant shall be obligated to effect a cure as soon as commercially possible, and also provided that, if such default does not create an unsafe condition as provided herein and effecting a cure for such default takes more than thirty (30) days, Tenant shall effect a cure within such time as may be commercially reasonable.
- 8.2 Permits. Subject to the provisions of Section 11, Tenant shall fail to maintain any of the required permits for the Mining Operations and the same are not reinstated within ninety (90) days.
- 8.3 Other. If: (i) Tenant makes a general assignment or general arrangement for the benefit of creditors; (ii) a petition for adjudication of bankruptcy or for reorganization or rearrangement is filed by or against Tenant and is not dismissed within thirty (30) days; (iii) a trustee or receiver is appointed to take possession of substantially all of Tenant's assets located at the Land or of Tenant's interest in this Lease and possession is not restored to Tenant within thirty (30) days; or (iv) substantially all of Tenant's assets located at the Land, or if Tenant's interest in this Lease is subjected to attachment, execution or other judicial seizure, which is not

discharged within thirty (30) days. If a court of competent jurisdiction determines that any of the acts described in this Section is not a default under this Lease and a trustee is appointed to take possession (or if Tenant remains a debtor-in-possession), and such Trustee or Tenant transfers Tenant's interest under this Lease, then Landlord shall receive, in addition to the royalty payable pursuant to this Lease, the difference between the royalty (or any other consideration) paid in connection with such transfer, assignment or sublease and the royalty payable by Tenant under this Lease.

8.4 Landlord's Remedies upon Default. Upon the occurrence of a Tenant Default:

8.4.1 Termination. In addition to all other claims, rights, and remedies available to Landlord, Landlord may, at its option, at any time thereafter, give written notice to Tenant specifying such event of default and stating that this Lease shall expire and terminate on the date specified in such notice, which date shall be at least twenty (20) days after the giving of such notice, this Lease shall terminate, and Tenant shall surrender the Land to Landlord but shall remain fully liable hereunder for all amounts then unpaid, and shall remove buildings constructed or erected on the Land by Tenant within sixty (60) days of the date of termination. Any such buildings not so removed within said time shall become the property of Landlord.

8.4.2 Cumulative rights. No right or remedy herein conferred upon or reserved to Landlord is intended to be exclusive of any other right or remedy herein or by law provided, but each shall be cumulative and in addition to every other right or remedy given herein or hereafter existing at law or in equity or by Law.

8.4.3 Other remedies of Landlord. Landlord may perform for the account of Tenant any covenant in the performance of which Tenant is in default. Tenant shall pay to Landlord, upon demand, any amount paid by Landlord, including reasonable attorney's fees and interest, in the performance of such covenant and any amounts which Landlord shall have paid by reason of failure of Tenant to comply with any covenant or provision of this Lease, in connection with prosecution or defense of any proceedings instituted by reason of such default of Tenant.

8.5 Interest on Overdue Payments. Any amount required to be paid by Tenant to Landlord hereunder which is overdue for a period of more than five (5) days, shall, at the Landlord's option, bear interest at the rate of ten percent (10%) per annum from the date such payment was due and continuing until paid.

9. Taxes.

9.1 Real Estate Taxes. Tenant shall pay before delinquency all real estate taxes on all parcels, or portions thereof, comprising the Land (provided, that Tenant shall have no obligation to pay taxes on any of Landlord's buildings or improvements located thereon) during such times as each parcel is used for Mining Operations. For clarification purposes, prior to the time Tenant commences Mining Operations on any portion of the Land and after Tenant has completed reclamation of any portion of the Land, Landlord shall be responsible for the real estate taxes associated with such portion of the Land. Landlord shall promptly forward copies of all real estate taxes bill for the Land to Tenant upon receipt of same to facilitate Tenant's payments. Tenant shall be provided all such bills at least thirty (30) days prior to the date such taxes are delinquent and Landlord's failure to provide such bills shall be an absolute defense against Tenant's failure to pay such taxes as required herein. For any years during which Tenant does not conduct Mining Operations on a parcel for the entire year, real estate taxes and special assessments for those years shall be prorated between Landlord and Tenant on a daily basis.

9.2 Other Taxes. Tenant shall pay before delinquency any and all sales taxes, use taxes, aggregate taxes or other taxes which may be due and payable as a result of the Mining Operations. If, at any time during the Term of this Lease, any improvements, personal property, equipment or machinery of Tenant are included within the real property taxes or assessments with respect to the Land, Tenant shall pay the amount of such additional real property taxes or assessments so levied. Landlord will provide Tenant with proof of the payment of such taxes within thirty (30) days of the due date for the same.

9.3 Notwithstanding the aforementioned, Landlord shall pay all taxes assessed against all improvements on the Land and personal property owned by Landlord.

9.4 Managed Forestland, CRP or other governmental programs; Loss of Agricultural Use Assessment. Landlord and Tenant shall share equally the costs incurred to remove all or any of the Land from governmental programs as necessary to conduct Mining Operations. Tenant will reimburse or make Landlord whole for any costs incurred, additional taxes paid, or penalties incurred as a result of any portion of the Land no longer being subject to agricultural use assessment.

10. **Utility Access.** Landlord makes no representations or warranties to Tenant regarding the availability of water, electricity or other utilities available to the Land for Tenant's Mining Operations, either as of the date hereof or in the future.

11. **Compliance With Governmental Regulations.** Tenant shall at all times comply with the terms and conditions of all permits and licenses issued for the Mining Operations. In the event that Tenant violates the terms of the permits and licenses, Tenant shall indemnify, defend and hold harmless Landlord from any actions commenced against Landlord by reason of Tenant's violations and to pay any fines or penalties which may be levied against the Land or Landlord resulting therefrom.



Tenant shall abide by all State, Federal, and Local statutes, rules and regulations (the foregoing, along with the Tenant Permits, are referred to collectively herein as "**Laws**") applicable to Tenant's use of the Land, whether in effect as of the date hereof or hereafter enacted. Tenant shall not be in default under this Lease for any violation of Laws unless (i) such violation exposes Landlord or any portion of the Land to any liability or threat of enforcement proceedings; (ii) Tenant fails to cure the violation to the satisfaction of the appropriate governmental authority within any applicable cure period; and (iii) Tenant fails to pay any penalty imposed within any applicable payment period.

Tenant warrants and represents it shall not permit the production or disposal of hazardous wastes or substances (as defined under Federal or State law) in or around the Land in violation of any environmental Laws. Tenant's indemnification in the next Article shall be deemed to include any breach of this representation and warranty.

12. Indemnification.

12.1 By Tenant. Tenant covenants and agrees that, except as otherwise stated in this Lease to the contrary, Landlord shall not be liable for any damage or liability of any kind or for any damage or injury to persons or property from any cause whatsoever arising from or during the use, occupation and enjoyment of the Land by Tenant or any person thereon holding under Tenant, including claims arising out of exposure by persons to silica and microscopic fibers in cement and stone dust generated by the Mining Operations. Tenant, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save keep harmless and make whole Landlord and Landlord's successors, assigns, agents, employees, partners, coventurers, heirs, trustees, beneficiaries and affiliates, and each of them (collectively, "**Landlord's Indemnitees**"), from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Landlord and/or Landlord's Indemnitees in any way relating to or arising out of Tenant's and/or its successor's and assigns' use of the Land after the date of this Lease or the extraction, production or sale of the Sand from, on or at the Land accruing after the date of this Lease by Tenant and/or its successors and assigns, except to the extent caused by the negligence or misconduct of Landlord or any Landlord Indemnitee (as defined below). This indemnification obligation shall survive the termination of this Lease.

12.2 By Landlord. Landlord, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save keep harmless and make whole Tenant and Tenant's Indemnitees (as defined below), from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Tenant and/or Tenant's Indemnitees in any way relating to or arising out of Landlord's or any Landlord's Indemnitees use of the Land or otherwise arising from any act, omission, negligence or misconduct of Landlord or any Landlord Indemnitee,

except to the extent caused by the negligence or misconduct of Tenant or any Tenant Indemnitee. This indemnification obligation shall survive the termination of this Lease.

13. **Possible Release of Land.** Tenant will, at Landlord's written request, release from this Lease those portions of the Land that have been reclaimed as required by the Reclamation Plan, and will execute documents in recordable form to document each such release; provided, however, that no portions of the Land shall be so released if such portion is, or will be during the Term, necessary for uses incidental to Mining Operations, including, without limitation, storage of overburden or Sand, and access roads.

14. **Memorandum of Agreement.** Landlord and Tenant shall sign a Memorandum of Agreement in the form of Exhibit E which may be filed by Tenant in the office of the Buffalo County Register of Deeds. This Lease shall not be recorded. Upon any termination or other expiration of this Lease, Tenant shall, upon Landlord's request, and without charge or cost to Landlord, furnish to Landlord a recordable instrument terminating or otherwise releasing any interest of Tenant in the Land in form and substance reasonably satisfactory to Landlord.

15. Hazardous Materials.

- 15.1 Definition. The terms "Hazardous Material" and "Hazardous Materials" shall mean and refer to asbestos, radon, urea-formaldehyde, polychlorinated biphenyls ("PCBs"), or substances containing PCBs, nuclear fuel or materials, radioactive materials, explosives, known carcinogens, petroleum products and bi-products, and any substance defined as hazardous or toxic or as a contaminant or pollutant in, or the release or disposal of which is regulated by any Environmental Law. The term "Environmental Law" shall mean and refer to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), 42 U.S.C. §9601, et seq.; the Federal Resource Conservation and Recovery Act of 1976 ("RCRA"), 42 U.S.C. §6901, et seq.; the Federal Water Pollution Control Act, 33 U.S.C. §1251, et seq.; the Clean Air Act, 42 U.S.C. §7401, et seq.; all as the same may be from time to time amended, and any other federal, state, county, municipal, local or other statute, law, ordinance or regulation that relates to or deals with human health or the environment, including, without limitation, all regulations promulgated by a regulatory body pursuant to any such statute, law, ordinance or regulation.

- 15.2 Limitation. Landlord covenants and agrees that, except as otherwise stated in this Lease to the contrary, Tenant shall not be liable for any damage or liability of any kind or for any damage or injury to persons or property from any cause whatsoever arising from the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land by Tenant, its agents, contractors, invitees, guests or permittees.

- 15.3 By Tenant. Tenant, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect,

save, keep harmless and make whole Landlord and Landlord's successors, assigns, agents, employees, officers, owners, members, partners, affiliates and contractors, and each of them (collectively, "**Landlord's Indemnitees**"), for, from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Landlord and/or Landlord's Indemnitees in any way relating to or arising out of the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land in violation of Law by Tenant, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land prior to the Effective Date or by Landlord, its officers, directors, members, employees, agents, contractors, invitees, guests or permittees (whether before or after the Effective Date). The obligations of Tenant under this Section 15 shall survive the expiration or earlier termination of this Lease.

15.4

By Landlord. Landlord, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save, keep harmless and make whole Tenant and Tenant's successors, assigns, agents, employees, officers, owners, members, partners, affiliates and contractors, and each of them (collectively, "**Tenant's Indemnitees**"), for, from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Tenant and/or Tenant's Indemnitees in any way relating to or arising out of the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land prior to the Effective Date or by Landlord or its officers, directors, members, employees, agents, contractors, invitees, guests or permittees, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land by Tenant, its agents, contractors, invitees, guests or permittees. The obligations of Landlord under this Section 15 shall survive the expiration or earlier termination of this Lease.

16.

**Assignment.** Tenant may transfer or otherwise assign its interest in this Lease in whole or in part without Landowners' prior written consent. Landlord may transfer the right to receive payments under this Lease to a limited liability company or other entity owned or controlled by Landlord.

17.

**Notices.** All notices required under this Lease shall be sent by U.S. First Class Mail to the following address:

If to Landlord:

The Mississippi Connection Land & Timber Co.  
LLC  
349 W. 24th Street  
Buffalo City, WI 54622

With a required copy to:

James S. Nippes  
Nippes & Healy PLLC  
6360 I-55 North, Suite 250

Jackson, MS 39211

If to Tenant: ZEER LLC  
349 West 24th Street  
Buffalo City, WI 54622

With a required copy to: Attorney Joseph R. Mirr  
Ruder Ware, L.L.S.C.  
Street Address: 402 Graham Ave, Eau Claire, WI 54701  
Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187

18. **Governing Law.** This Lease shall be governed by the laws of the State of Wisconsin. The invalidity of any term of this Lease shall in no way affect the validity or enforceability of the remaining terms.
19. **No Liens or Encumbrances.** Subject to Section 5.1, Tenant shall keep Landlord's interest in the Land free and clear of all costs, liens and encumbrances; and Landlord may place and maintain in a conspicuous place upon the Land such notice as shall be lawfully necessary to protect Landlord against all such claims, including, specifically, any and all mechanics' lien claims.
20. **No Relationship other than Landlord and Tenant.** Nothing contained in this Lease shall create between Landlord and Tenant, or be relied upon by others as creating, any relationship of partnership, association, joint venture, employer/employee or otherwise. The sole relationship of Landlord and Tenant under this Lease shall be that of a Landlord/vendor and Tenant/vendee.
21. **Amendment.** This Lease may be amended only by a writing signed by both Landlord and Tenant. If such a written amendment is entered into, such written amendment shall modify only the provisions of this Lease specifically modified and shall be deemed to incorporate by reference, unchanged, all remaining provisions of this Lease.
22. **Entire Agreement.** This Lease and the Exhibits and related agreements contemplated herein contain the entire agreement of Landlord and Tenant and supersede any prior or contemporaneous written or oral agreements among them with respect to the subject matter of this Lease. There are no representations, warranties, agreements, arrangements or understandings, oral or written, between Landlord and Tenant relating to the subject matter contained in this Lease that are not fully expressed in this Lease.
23. **Attorney's Fees.** If any party to this Lease is required to or commences any action or proceeding against the other by reason of any breach or claimed breach of any provision of this Lease, is required to or commences any action or proceeding in any way connected with this Lease or seeks a judicial declaration of rights under this Lease, the party prevailing in such action or proceeding shall be

entitled to recover from the other party the prevailing party's reasonable attorneys' fees and costs, including, but not limited to, all expert witness fees, other witness fees and associated expenses, whether or not the proceeding or action proceeds to judgment.

24. **Headings and Captions.** The headings and captions at the beginnings of various Sections of this Lease shall not be construed to be substantive part of this Lease or in any way define, limit, expand or affect any provision of this Lease.
25. **Time of the Essence.** With regard to the performance by Landlord and Tenant of their obligations under this Lease, time is expressly made of the essence.
26. **Counterparts.** This Lease may be signed in two (2) or more counterparts, each of which shall constitute an original, but all of which, taken together, shall be one (1) and the same document.
27. **Nonwaiver of Rights and Breaches.** No failure or delay of Landlord or Tenant in the exercise of any right given to them under this Lease shall constitute a waiver of such right, nor shall any single or partial exercise of any such right preclude other or further exercise of such right or of any other right. The waiver by Landlord or Tenant of any breach of any term or provision of this Lease shall not be deemed to be a waiver of any subsequent breach of any term or provision of this Lease or of any breach of any other provision of this Lease. No waiver under this Lease shall be effective until set forth in writing and executed by the party making the waiver.
28. **Remedies.** In the event of breach of the provisions of this Lease, the nonbreaching party may pursue any remedy provided at law or in equity.
29. **Exculpation.** Tenant agrees to look solely to Landlord's interest in the Land, for the recovery of any judgment from Landlord, it being agreed that the persons who are part of the Landlord and the corporation which is part of Landlord and its directors, officers, or shareholders, shall never be personally liable for any such judgment.
30. **Partial Invalidity.** If any term, covenant, condition or provision of this Lease is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired or invalidated thereby.
31. **Force Majeure.** Tenant shall not be liable for any failure or delay in performance under this Lease (including for delay in the payment of money due and payable hereunder) to the extent such failures or delays shall relate to labor disputes (including strikes, lockouts, walkouts, slowdowns, etc.), nonavailability of materials, war or national defense, preemptions, governmental restrictions (including the denial or cancelation of any necessary governmental license or permit), changes in laws, acts of God or other causes beyond the reasonable control of Tenant; provided that

Tenant shall commence such performance and continue the same with diligence and continuity immediately after the removal of any of the causes hereinabove specified; provided further that the total collective time for all occasions for which Tenant's performance is excused pursuant to this Section 31 shall be added to the end of the term of this Lease.

32. **No Merger.** The fee simple estate in the Land shall not merge with the Leasehold or any other estate or interest in the Land, and the parties hereto do hereby express their intent to avoid any merger of such interests or estates.

33. **Confidentiality.** The terms and conditions of this Lease shall be forever treated as confidential by Landlord and Tenant and shall not be disclosed to any person, other than to: the individuals who are part of Tenant and their immediate families; the members of the entity which is a part of Tenant; the officers, directors, and management employees of Tenant and its parent companies; and representatives of Landlord and Tenant with a need to know; and in addition thereto Landlord and Tenant's attorneys, accountants, tax consultants and any state and federal taxing authorities. The provisions of this section do not apply to disclosures made in a court of competent jurisdiction or to a governmental agency, when required by subpoena, court order, law or administrative regulation. The provisions of this section will continue in full force and effect even after expiration or termination of this Lease.

34. **Financing.** Tenant may, at any time from time to time, without the consent, approval or input from Landlord, enter into a financing arrangement or arrangements resulting in the encumbrance of all or any portion of its interest in this Lease and Tenant's leasehold estate in the Land by deed of trust, mortgage, security instrument, collateral assignment, or otherwise for the purpose of securing money borrowed from a third party. Landlord agrees to sign any and all documentation reasonably related thereto or reasonably requested by Tenant's lender(s), including, without limitation, to title affidavits and collateral access agreements.

35. **Title Insurance.** Tenant, at any time during the Term, at Tenant's cost and expense, may purchase a leasehold title insurance policy, insuring it against any loss on account of defect, lien or encumbrance in title, guaranteeing the area and boundaries, and showing good title to the Land, including all mineral rights to be vested in Landlord, free and clear of all defects, liens and encumbrances, easements, restrictions, rights-of-way, roadways, encroachments or other matters of record or other grants which may affect the use of the Land by Tenant. Landlord shall cooperate with Tenant and assist Tenant in obtaining such leasehold title insurance policy, including, without limitation, signing such documents that may be reasonably requested by the title company to issue such leasehold title insurance policy.

36. **SNDA.** In the event all or any portion of the Land is encumbered by a deed of trust, mortgage, security instrument, collateral assignment, or otherwise for the purpose of securing money borrowed by Landlord from a third party, Landlord agrees to provide Tenant, prior to the Commencement Date (and at any time thereafter prior to any new monetary lien is granted against the Land), with a

subordination, non-disturbance and attornment agreement between the holder of such encumbrance and Tenant, in form and substance reasonably acceptable to Tenant.

[balance of page is blank]

IN WITNESS WHEREOF, the undersigned have executed this Lease on the date hereinabove written.

LANDLORD:

The Mississippi Connection Land & Timber Co. LLC

By:

Kevin J. Rich  
Kevin Rich

ACKNOWLEDGMENTS

STATE OF WISCONSIN )

) ss:

COUNTY OF BUFFALO )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Kevin J. Rich**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger

\* William J. Bruegger

Notary Public, State of Wisconsin

My Commission Dec 6, 2015

STATE OF Wisconsin )

) ss:

COUNTY OF Buffalo )

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of The Mississippi Connection Land & Timber Co. LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Driver License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger

\* William J. Bruegger

Notary Public

State of Wisconsin

My Commission Dec. 6, 2015

\*Print or type name

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015



TENANT:

ZEER LLC, a Wisconsin limited liability company

By:

Kevin J. Rich  
Kevin J. Rich, its Managing Member

ACKNOWLEDGMENT

STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of ZEER LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Driver License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015

This instrument was drafted on behalf of Tenant by:

Attorney Joseph R. Mirr, of Ruder Ware, L.L.S.C.  
Street Address: 402 Graham Ave, Eau Claire, WI 54701  
Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187  
Telephone number: 715-834-3425

**EXHIBIT A**  
**Legal Description**  
**Page 1 of 2**

Real property located in the Town of Waumandee, Buffalo County Wisconsin, described as follows:

**LEASE PARCEL 3:**

Part of the Northwest Quarter of the Northwest Quarter, part of the Southwest Quarter of the Northwest Quarter and part of the Northwest Quarter of the Southwest Quarter of Section 5, Township 20 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the Southwest corner of Section 33; Thence  $SR9^{\circ}39'04''E$  on the standard line between Section 33, T21 N, R11 W and Section 5, T20N, R 11 W; a distance of 554.06 feet to the POINT OF BEGINNING; Thence continuing  $S89^{\circ}39'04''E$  on said standard line a distance of 103.06 feet; Thence  $S05^{\circ}20'57''E$  a distance of 658.45 feet; Thence  $S11^{\circ}18'32''E$  a distance of 500.05 feet; Thence  $S86^{\circ}43'26''E$  a distance of 253.98 feet; Thence  $S01^{\circ}18'18''W$  a distance of 268.06 feet; Thence  $S34^{\circ}03'47''W$  a distance of 420.30 feet; Thence  $S58^{\circ}01'36''W$  a distance of 570.62 feet; Thence  $S00^{\circ}13'34''W$  a distance of 1842.92 feet; Thence  $N81^{\circ}09'02''E$  a distance of 680.08 feet; Thence  $S01^{\circ}27'51''W$  a distance of 233.02 feet; Thence  $S36^{\circ}08'25''W$  a distance of 233.69 feet; Thence  $S59^{\circ}51'49''W$  a distance of 1015.54 feet; Thence  $N20^{\circ}09'33''W$  a distance of 411.03; Thence  $N01^{\circ}33'26''E$  a distance of 704.00 feet; Thence  $N89^{\circ}37'46''E$  a distance of 432.57 feet; Thence  $N00^{\circ}00'12''E$  a distance of 1514.68 feet; Thence  $S88^{\circ}50'02''W$  a distance of 329.49 feet; Thence  $N23^{\circ}51'18''W$  a distance of 166.87 feet; Thence  $N01^{\circ}13'53''E$  a distance of 781.42 feet; Thence  $S71^{\circ}34'45''E$  a distance of 212.31 feet; Thence  $N49^{\circ}47'58''E$  a distance of 468.03 feet; Thence  $N06^{\circ}56'53''W$  a distance of 337.74 feet; Thence  $N08^{\circ}24'20''E$  a distance of 457.15 feet; Thence  $N15^{\circ}06'13''E$  a distance of 199.37 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 2,030,821 square feet or 46.62 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

-and-

All rights in favor of the property described above as to a 2 rod wide easement located in the Southwest Quarter of the Southwest Quarter and the Northwest Quarter of the Southwest Quarter of Section 33, Township 21 North, Range 11 West, Town of Waumandee, Buffalo County, Wisconsin as set forth in that certain Right-of-Way Easement recorded in the office of the Register of Deeds for Buffalo County, Wisconsin on November 9, 2011, in Volume 490 of Records, Page 347, as document number 247076.

## **EXHIBIT B**

### **Reclamation Plan**

[to be attached prior to the Contingency Date]

**EXHIBIT C**  
**Insurance Requirements and Coverages**

Tenant shall procure and maintain, until all of its obligations under this Lease have been discharged, the following insurance against claims for injury to persons or damage to property which may arise from or in connection with Tenant's use of the Land.

The insurance requirements herein are minimum requirements for this Lease and in no way limit the indemnity covenants contained in this Lease.

A. Minimum Scope and Limits of Insurance — Tenant shall provide coverage with limits of liability not less than those stated below.

1. Commercial General Liability — Occurrence Form

The policy shall include bodily injury, property damage, broad form contractual liability and XCU coverage.

- General Aggregate  
\$2,000,000
- Products – Completed Operations Aggregate  
\$2,000,000
- Personal and Advertising Injury  
\$1,000,000
- Each Occurrence  
\$1,000,000
- Damage to Rented Premises (each occurrence)  
\$1,000,000

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including completed operations.”

2. Excess/Umbrella Liability

- General Aggregate \$2,000,000

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant.”

3. Automobile Liability

Bodily injury and property damage for any owned, hired, and non-owned vehicles used by Tenant in connection with use of the Land.

• Combined Single Limit (CSL) \$1,000,000  
•

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant.”

4. Worker’s Compensation and Employers’ Liability

• Workers’ Compensation As required by  
Wisconsin State law

• Employers’ Liability As required by Wisconsin  
State law  
•

5. Pollution

• \$1,000,000 limit/\$25,000 deductible

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant.”

B. Additional Insurance Requirements: The policies shall include, or be endorsed to include, the following provisions:

1. Each insurance policy required by this Lease shall provide the required coverage and shall not be suspended, voided or canceled except after such insurer has endeavored to provide thirty (30) days prior written notice to Landlord.
2. Each insurance policy required by this Lease shall be endorsed to include a waiver of subrogation against Landlord, as applicable.

C. Acceptability of Insurers: Insurance is to be placed with insurers duly licensed or authorized to do business in the state of Wisconsin and with an “A.M. Best” rating of not less than A-.

Verification of Coverage: Each insurance policy required by this Lease must be in effect at or prior to the Commencement Date under this Lease and remain in effect for the duration of the Agreement. Upon request, each party shall furnish the other party with certificates of insurance (ACORD form or equivalent) as required by this Lease. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. Failure to maintain the insurance policies as required by this Lease or to provide evidence of renewal is a material breach of this Lease.

**EXHIBIT D**

**Title Exceptions**

**Real estate mortgage in favor of Badgerland Financial**

## EXHIBIT E

### Form of Memorandum of Agreement MEMORANDUM OF AGREEMENT

WITNESSETH: This is a Memorandum of that certain Lease Agreement, described below, wherein Landlord demised and leased and does by these presents demise and lease to Tenant those certain premises hereinafter described:

LANDLORD: The Mississippi Connection Land & Timber Co.  
LLC

TENANT: **ZEER LLC**, a Wisconsin limited liability company

EFFECTIVE  
DATE OF LEASE: **July 21, 2013**

COMMENCEMENT DATE: The first day of the first calendar month  
immediately following the Contingency Date

TERM: 10 years, expiring on the 10<sup>th</sup> anniversary of the  
January 1 following Commencement Date, subject to extension for up to two (2)  
additional 5-year terms

PREMISES: All land, including, without limitation, Sand and  
improvements located thereon, more particularly described on **Exhibit A** attached  
hereto and depicted as Lease Parcel 3 on Exhibit F attached hereto

The mailing addresses of  
Landlord and Tenant are as follows:

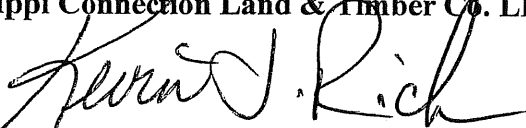
LANDLORD: The Mississippi Connection Land & Timber  
Co. LLC  
349 W. 24th Street  
Buffalo City, WI 54622

With required copies to: James S. Nippes  
Nippes & Healy PLLC  
6360 I-55 North, Suite 250  
Jackson, MS 39211

TENANT: ZEER LLC  
349 W. 24th Street  
Buffalo City, WI 54622

With a required copy to: Attorney Joseph R. Mirr  
Ruder Ware, L.L.S.C.  
Street Address: 402 Graham Ave, Eau Claire, WI 54701  
Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187

**The Mississippi Connection Land & Timber Co. LLC**

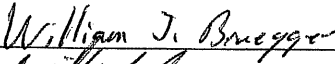
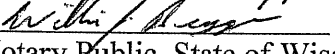
By:   
Kevin Rich

**ACKNOWLEDGMENTS**

STATE OF WISCONSIN )  
 ) ss:  
COUNTY OF BUFFALO )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Kevin J. Rich**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

  
\*   
Notary Public, State of Wisconsin  
My Commission Dec 6, 2015

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015



TENANT:  
ZEER LLC, a Wisconsin limited liability company

By: Kevin J. Rich  
Kevin J. Rich, its Managing Member

ACKNOWLEDGMENT

STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of ZEER LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Driver License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec 6, 2015

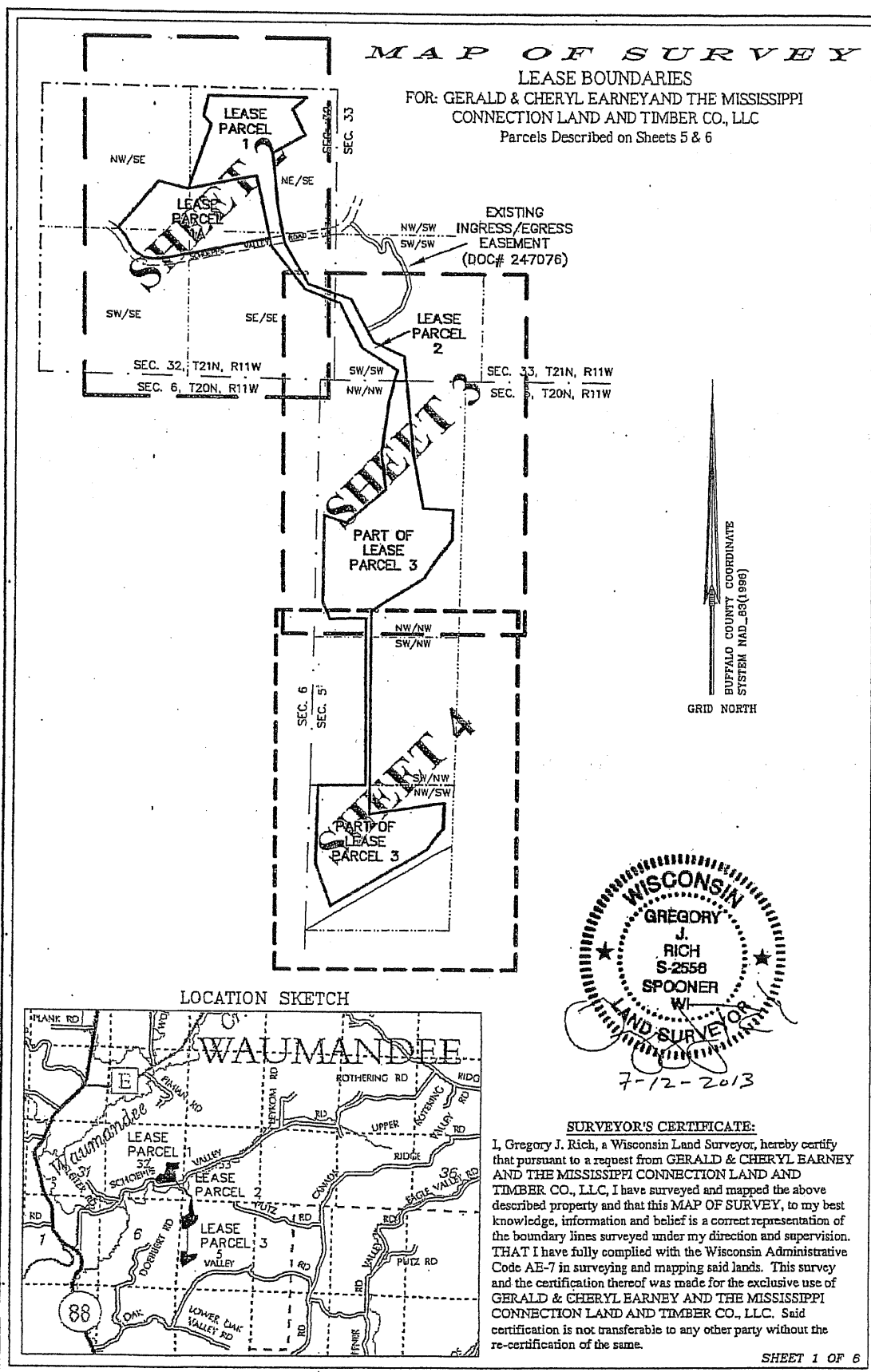
\*Print or type name

William J Bruegger Notary Public-Wisconsin BUFFALO COUNTY My commission Expires Dec 06, 2015
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## **EXHIBIT F**

### **Survey**

**[to be attached]**



## LEASE AGREEMENT

THIS LEASE AGREEMENT ("Lease"), is made July 21, 2013 ("Effective Date"), by and between Gerald D. Earney and Cheryl A. Earney, husband and wife (collectively, "Landlord"), and ZEER LLC, a Wisconsin limited liability company, ("Tenant").

### RECITALS

A. Landlord owns certain real property and improvements located in the Town of Waumandee, Buffalo County, Wisconsin legally described on Exhibit A and depicted as Lease Parcel 1 and Lease Parcel 2 on Exhibit F (the "Land").

B. Landlord and Tenant have agreed to enter into this Lease to enable Tenant to occupy and use the Land during the Term to extract, process, remove and sell Sand (as hereinafter defined) from the Land on the terms and conditions set forth herein.

### AGREEMENT

NOW, THEREFORE, for valuable consideration, and in consideration of the agreements of the parties hereto, subject to the terms, covenants and agreements hereinafter contained, and intending to be legally bound hereby, the parties hereto agree as follows:

1. Lease of Premises.

1.1 Grant. Except as otherwise provided in this Lease, Landlord hereby leases to Tenant and Tenant hereby leases from Landlord the Land, in "as is," "where is" condition with all existing defects whether latent or patent, for the purpose of exploring for, developing, mining, recovering, extracting, removing, washing, drying, screening, processing, storing, selling and transporting Sand and the exclusive right to use so much of the surface of the Land as may be reasonably necessary for conducting and managing Tenant's use of the Land (collectively the "Mining Operations").

1.2 Definition of Sand. As used herein, "Sand" shall mean all silica sand and other nonmetallic minerals, but excluding clay and topsoil.

1.3 Exclusivity. Subject to the approval of appropriate governmental authorities and the provisions of Section 1.4, the rights herein granted to Tenant include the exclusive right of Tenant to use the Land in accordance with the terms and conditions of this Lease, including, without limitation, to:

1.3.1 Construct, place, operate, maintain, repair, expand, modify and replace on the Land drill rigs, structures, conveyors, drying plants, screening plants, storage bins, fuel storage facilities, including above-ground fuel tanks (but excluding underground storage tanks of any type), and other facilities and processes related to the Mining Operations.

- 1.3.2 Dispose and store on the Land materials separated from the Sand;
- 1.3.3 Construct and maintain access roads, and other means of ingress and egress to and from the Land, and to rebuild or repair the same if damaged or destroyed;
- 1.3.4 Park, store, load and unload trucks;
- 1.3.5 Construct and maintain utility lines and facilities necessary to connect to existing utility lines for water, electricity and natural gas, and to rebuild or repair the same if damaged or destroyed;
- 1.3.6 Construct, maintain and replace such additional improvements and facilities as may be required or convenient to exercise its rights hereunder;
- 1.3.7 Build ponds as may reasonably necessary to operate on the Land and to comply with any and all stormwater and other legal requirements;
- 1.3.8 Drilling a well and installing a well system for water on the Land; and
- 1.3.9 Perform any and all other activities reasonably necessary for or related to the Mining Operations.

1.4 Rights retained by Landlord. Landlord shall have the right to harvest any timber on the Land and to use the Land for agricultural and recreational purposes, including hunting, as long as such uses do not interfere with Tenant's activities; and Landlord shall indemnify and hold Tenant harmless from and against all damages and injuries arising from such use. Any activities conducted by or on behalf of Landlord or with Landlord's permission on the Land shall be done at such person's or entities' sole risk and Tenant shall not be liable for any damage to person or property associated therewith except to the extent caused by Tenant's negligence, or willful misconduct. Tenant shall provide Landlord with prior written notice of its intention to clear any portion of the Land of timber in connection with its operations so Landlord will have the opportunity to remove the timber in that area. Should Landlord not remove the timber within 60 days after Landlord's receipt of Tenant's written notice, Tenant may cause removal thereof. If Landlord has not timely removed any such timber, Tenant may remove and sell any timber from the Land. Any such removal by Tenant shall be for Landlord's account and the proceeds received by Tenant from the removal and sale of any such timber shall be remitted to Landlord less all expenses reasonably incurred by Tenant in connection with any such removal and sale.

1.5 Governmental Approval. Tenant shall use commercially reasonable efforts to diligently obtain all approvals and permits from any and all governmental authorities, including without limitation, the Town of Waumandee; Buffalo County, Wisconsin; and the Wisconsin Department of Natural Resources necessary for Tenant to engage in the Mining Operations on the Land; provided, that Landlord agrees to reasonably cooperate with Tenant in connection with the same. If Tenant is not able to obtain such approvals

and permits by December 31, 2013 (the "Contingency Date") or if Tenant is not satisfied, in Tenant's reasonable discretion, with the results of its due diligence of the Land, Tenant may terminate this Lease by written notice to Landlord. If Tenant does timely terminate this Lease in accordance with this Section 1.5, this Lease and Tenant's tenancy created hereunder shall be terminated, but any obligations arising under Sections 5.4, 5.5, 5.5, 5.5, 11, 15.3, 23, 28, 30, and 33 prior to such termination or as a result of Tenant's activities on the Land thereafter shall survive such termination.

1.6 Wash Plant Site Agreement. The parties hereto acknowledge and agree that in the event that Tenant and Landlord do not enter into that certain Wash Plant Site Agreement (which agreement is currently being negotiated) by December 31, 2013, Tenant shall have the right to terminate this Lease by written notice to Landlord. If Tenant terminates this Lease in accordance with this Section 1.6, this Lease, Tenant's tenancy created hereunder shall be terminated, but any obligations arising under Sections 5.4, 5.5, 5.5, 5.5, 11, 15.3, 23, 28, 30, and 33 prior to such termination or as a result of Tenant's activities on the Land thereafter shall survive such termination.

1.7 Termination of All Existing Tenancies. Landlord shall, on or before the Effective Date, terminate all leases, licenses and any other rights to occupy or use the Land, excluding rights arising under utility easements, and provide Tenant with all written instruments evidencing such termination.

2. Term/Royalty.

2.1 Term. The "**Initial Term**" of this Lease shall be for a period of ten (10) Lease Years in addition to Initial Lease Year (as defined in Section 2.2), commencing on the first day of the first calendar month immediately following the Contingency Date (the "**Commencement Date**"). If Tenant is not in default of this Lease and if the Lease has not been otherwise terminated, this Lease may be renewed by Tenant for up to two (2) additional terms of five (5) Lease Years (collectively, the "**Renewal Terms**" and each, a "**Renewal Term**") providing written notification to Landlord of Tenant's intent to exercise its renewal rights. Said notification to renew this Lease shall be given to Landlord not later than 120 days prior to the last day of the Initial Term or the Renewal Term, as applicable. In the event Tenant fails to provide a timely renewal notice, Landlord shall so notify Tenant, and Tenant shall thereafter have an additional ten (10) days to elect to extend this Lease for a Renewal Term. The terms and conditions of this Lease during the Renewal Terms shall be the same as the terms and conditions of this Lease during the Initial Term.

2.1.1 Tenant may terminate this Lease during the Term in the event that:  
(a) the available quantity of Sand has been depleted or the cost to mine such Sand does not make the Mining Operations financially viable, in Tenant's sole discretion; (b) the mining, processing, stockpiling or removal of Sand from the Land is prohibited by applicable law, code, ordinance, rule or regulation; or (c) any of the permits or governmental approvals necessary for Tenant to conduct the Mining Operations has been terminated or not issued or renewed by the applicable governmental

authority through no fault of Tenant. To so terminate this Lease, Tenant shall provide Landlord with not less than ninety (90) days written notice of termination. If Tenant terminates this Lease in accordance with this Section 2.1.1, this Lease and Tenant's tenancy created hereunder shall be terminated, but any obligations arising under Sections 5.4, 5.5, 5.5, 5.5, 11, 15.3, 23, 28, 30, and 33 prior to such termination or as a result of Tenant's activities on the Land thereafter shall survive such termination.

2.1.2 As used herein, "**Term**" means the Initial Term and, if extended, each Renewal Term, and "**during the Term**" and similar phrases refer to the entire period of time this Lease is in effect. Upon expiration of the Term or earlier termination of this Lease, the tenancy of Tenant in the Land shall terminate, and neither party shall have any further obligations to the other except for such obligations as are expressly intended to survive expiration or termination of this Lease.

2.2 Lease Years. The period of time from the Commencement Date until December 31 of the year in which the Commencement Date occurs is the "**Initial Lease Year.**" Each subsequent period from January 1 to December 31 shall be deemed a "**Lease Year.**"

2.3 Rent Payments. Rent hereunder shall be [REDACTED] Year, prorated for any partial Lease Year.

2.4 Place of Payments. Until notified otherwise in writing, all rent and other payments shall be paid to Landlord and shall be made by check, or if Landlord so requires, by wire transfer delivered in the usual course of business to Landlord the address set forth in Section 17 herein, or at and to such financial institution as Tenant may from time to time designate by written notice to Tenant. Any financial institution or institutions so designated to receive either wire transfers or checks shall be deemed the agent of **Tenant** and Landlord for the purpose of receiving, collecting, and receipting for such payments.

2.5 Audit. [intentionally omitted]

3. **Title to Sand.** Title to all Sand shall transfer to Tenant when it is extracted from the Land. For clarification purposes, Tenant may stockpile extracted Sand from the Land on the Land and such Sand shall be owned by Tenant, not Landlord.

4. **Title to Land.** Landlord warrants that it owns fee simple title to the Land, including, without limitation, all Sand located thereon, which is free and clear of all encumbrances, liens, pledges, security interests and all other claims of third parties, except as listed on Exhibit D attached hereto (which will be completed by the parties prior the Contingency Date). Landlord's ownership of the Land includes all water rights appurtenant thereto. To the best of Landlord's knowledge, the Land is in compliance with all Laws and free from any and all Hazardous Materials.

5. **Mining Operations.** Tenant shall conduct its Mining Operations on the Land in accordance with all applicable Laws and the terms and conditions provided herein, including but not limited to the following:
- 5.1 **General Provisions.** Tenant may clear brush and undergrowth from such portions of the Land as may be reasonably necessary to explore for materials, to locate pits, quarries and stockpile areas, and to enable Tenant to use the Land as provided in this Lease. Tenant shall have the right to make use of all roadways presently existing on the Land and of ingress and egress through, to and from the Land. Tenant, at Tenant's sole cost and expense, shall have the right and privilege of setting up and erecting any necessary buildings, equipment and machinery on the Land, except that no residence or building used or to be used for residence purposes shall at any time be erected on the Land by Tenant. Subject to rights retained by Landlord, Tenant may use and possess as much of the Land as Tenant may require during the term of this Lease solely for the purposes and uses permitted under this Lease. In the event any mechanic's lien shall at any time be filed against the Land or any part thereof by reason of work, labor, services or materials performed or furnished to Tenant or to anyone holding the Land through or under Tenant, Tenant shall forthwith cause the same to be discharged of record, or, to the extent of a dispute related thereto, bond off such lien during the pendency of a proceeding related thereof; provided, that, such lien shall be discharged of record prior to any foreclosure thereof. If Tenant shall fail to cause such lien forthwith to be discharged or bonded off within thirty (30) days after being notified of the filing thereof, then, in addition to any other right or remedy for Landlord, Landlord may, in Landlord's sole discretion, discharge the same by paying the amount claimed to be due, or by bonding, and the amount so paid by Landlord and all costs and expenses, including reasonable attorneys' fees incurred by Landlord in procuring the discharge of such lien, shall be due and payable in full by Tenant to Landlord on demand. Tenant shall maintain roads on the Land in good condition and repair, at Tenant's expense.
- 5.2 **Easements.** Landlord agrees to provide Tenant with any and all easements for utility purposes across any other land owned by Landlord reasonably necessary for Tenant to conduct its operations on the Land.
- 5.3 **Fencing.** Tenant may erect fencing in order to secure Landlord's operations on the Land not presently mined by Tenant and surrounding real property owned or operated by Landlord in accordance with health and safety considerations. All such fencing shall be installed and maintained at the sole cost of Tenant. Tenant will provide Landlord a key for entrance to the Land.
- 5.4 **Additional Operating Provisions.** Tenant shall maintain slopes and setbacks on the Land in accordance with Buffalo County and Town ordinances. In no event shall Tenant place overburden material on the Land in such a way as to cause any contamination to the groundwater of the Land or surrounding real property.
- 5.5 **Reclamation Plan.** Tenant shall comply with the approved reclamation plan for reclaiming the Land as part of Tenant's Mining Operations approved by Wisconsin Department of Natural Resources or Buffalo County (the "**Reclamation Plan**"). The



Reclamation Plan shall be revised and if necessary updated not less frequently than annually, and a copy provided to Landlord. Tenant shall reclaim to the extent possible, and in compliance with applicable reclamation laws, ordinances and requirements, whether existing as of the date hereof or at the time of such reclamation, all areas of the Land in which Tenant has stopped Mining Operations within the time period required by the Town of Waumandee, Buffalo County, Wisconsin and by Buffalo County, Wisconsin. All reclamation shall be completed before this Lease and any extension thereof shall terminate and Tenant's equipment and improvements to the Land removed by Tenant, at Tenant's sole cost and expense. A copy of the Reclamation Plan shall be attached hereto as Exhibit B prior to the Contingency Date.

5.6 Insurance. Tenant shall comply with the terms and conditions of Exhibit C, effecting the required insurance coverages and endorsements with insurance companies licensed to do business in Wisconsin and naming Landlord as an additional insured. Tenant shall furnish to Landlord certificates of insurance to the effect that the policy or policies of insurance are in force and that same will not be cancelled without at least thirty (30) days notice to the other party. Tenant shall bear the cost of all insurance that it is required to maintain under this Lease. After the first twelve (12) years of the Term, Landlord may by written notice to Tenant, increase the required insurance coverages and modify required endorsements as long as such increases and modifications are commercially reasonable and typically required of other mining operations in the area, which shall be established by Tenant to Landlord's reasonable discretion. Landlord shall carry property casualty insurance on any improvement on the Land and general liability insurance for its activities on the Land and hereby waives and releases, and shall have its insurers waive subrogation, against Tenant for any and all claims covered by such insurance. Landlord's property insurance shall be at least for the full replacement value of such property and Landlord's general liability insurance shall have a combined single limited of at least \$500,000 per occurrence; provided, that if Landlord is timbering the Land or having the Land timbered, either Landlord or such timbering contractor must carry several liability insurance with a combined single limit of at least \$2,000,000 per occurrence.

5.7 Dust Control. Tenant is required to manage and control dust and other mining by products in accordance with any applicable permits.

5.8 Surveying. All surveys required to carry out the Mining Operations shall be obtained by Tenant, at Tenant's expense. As part of any such surveying, Tenant shall cause property corners to be staked or otherwise marked.

6. **Rights of Entry.** Landlord, its agents and representatives, shall have the right, at any and all reasonable times following reasonable notice to Tenant, to enter upon the Land to inspect and survey the Land and Tenant's Mining Operations. In entering upon the Land, Landlord, its agents and representatives shall not interfere with Tenant's activities; and Landlord shall indemnify and hold Tenant harmless from and against all damages and injuries arising from such entry. Entry to the property is subject to safety regulations stipulated by the federal Mining and Health Administration (MSHA) and state Occupational Safety and Health Administration (OSHA).

7. **Overburden.** Landlord retains ownership control of the overburden on the Land; provided, however, Landlord shall not cause overburden to be removed from the Land until all reclamation has been completed in accordance with the Reclamation Plan. Nothing in the preceding sentence shall preclude Landlord from removing any trees from the Land as set forth in Section 1.4 herein.
8. **Tenant Defaults.** Any of the following shall be deemed to be a Tenant default hereunder (a “**Default**” or “**Event of Default**”):
- 8.1 Monetary and Non-Monetary Obligations. Tenant shall: fail to pay any sums due to Landlord (including, without limitation, Tenant’s real estate tax obligation as set forth in Section 9.1) hereunder within ten (10) days of the date due hereunder and such amount remains unpaid five (5) days after written notice of nonpayment from Landlord; fail to maintain any insurance required hereunder within five (5) days after written notice of such failure from Landlord; or fail to perform any of the other obligations required by Tenant to be performed hereunder and such failure to perform continues for a period of thirty (30) days following written notice by Landlord to Tenant of such default; provided further that if such default renders the Land or any of the real property owned by Landlord which is within a one mile radius of the Land in violation of any laws pertaining to health or safety, Tenant shall be obligated to effect a cure as soon as commercially possible, and also provided that, if such default does not create an unsafe condition as provided herein and effecting a cure for such default takes more than thirty (30) days, Tenant shall effect a cure within such time as may be commercially reasonable.
- 8.2 Permits. Subject to the provisions of Section 11, Tenant shall fail to maintain any of the required permits for the Mining Operations and the same are not reinstated within ninety (90) days.
- 8.3 Other. If: (i) Tenant makes a general assignment or general arrangement for the benefit of creditors; (ii) a petition for adjudication of bankruptcy or for reorganization or rearrangement is filed by or against Tenant and is not dismissed within thirty (30) days; (iii) a trustee or receiver is appointed to take possession of substantially all of Tenant’s assets located at the Land or of Tenant’s interest in this Lease and possession is not restored to Tenant within thirty (30) days; or (iv) substantially all of Tenant’s assets located at the Land, or if Tenant’s interest in this Lease is subjected to attachment, execution or other judicial seizure, which is not discharged within thirty (30) days. If a court of competent jurisdiction determines that any of the acts described in this Section is not a default under this Lease and a trustee is appointed to take possession (or if Tenant remains a debtor-in-possession), and such Trustee or Tenant transfers Tenant’s interest under this Lease, then Landlord shall receive, in addition to the royalty payable pursuant to this Lease, the difference between the royalty (or any other consideration) paid in connection with such transfer, assignment or sublease and the royalty payable by Tenant under this Lease.
- 8.4 Landlord’s Remedies upon Default. Upon the occurrence of a Tenant Default:

8.4.1 Termination. In addition to all other claims, rights, and remedies available to Landlord, Landlord may, at its option, at any time thereafter, give written notice to Tenant specifying such event of default and stating that this Lease shall expire and terminate on the date specified in such notice, which date shall be at least twenty (20) days after the giving of such notice, this Lease shall terminate, and Tenant shall surrender the Land to Landlord but shall remain fully liable hereunder for all amounts then unpaid, and shall remove buildings constructed or erected on the Land by Tenant within sixty (60) days of the date of termination. Any such buildings not so removed within said time shall become the property of Landlord.

8.4.2 Cumulative rights. No right or remedy herein conferred upon or reserved to Landlord is intended to be exclusive of any other right or remedy herein or by law provided, but each shall be cumulative and in addition to every other right or remedy given herein or hereafter existing at law or in equity or by Law.

8.4.3 Other remedies of Landlord. Landlord may perform for the account of Tenant any covenant in the performance of which Tenant is in default. Tenant shall pay to Landlord, upon demand, any amount paid by Landlord, including reasonable attorney's fees and interest, in the performance of such covenant and any amounts which Landlord shall have paid by reason of failure of Tenant to comply with any covenant or provision of this Lease, in connection with prosecution or defense of any proceedings instituted by reason of such default of Tenant.

8.5 Interest on Overdue Payments. Any amount required to be paid by Tenant to Landlord hereunder which is overdue for a period of more than five (5) days, shall, at the Landlord's option, bear interest at the rate of ten percent [REDACTED] per annum from the date such payment was due and continuing until paid.

9. Taxes.

9.1 Real Estate Taxes. Tenant shall pay before delinquency all real estate taxes on all parcels, or portions thereof, comprising the Land (provided, that Tenant shall have no obligation to pay taxes on any of Landlord's buildings or improvements located thereon) during such times as each parcel is used for Mining Operations. For clarification purposes, prior to the time Tenant commences Mining Operations on any portion of the Land and after Tenant has completed reclamation of any portion of the Land, Landlord shall be responsible for the real estate taxes associated with such portion of the Land. Landlord shall promptly forward copies of all real estate taxes bill for the Land to Tenant upon receipt of same to facilitate Tenant's payments. Tenant shall be provided all such bills at least thirty (30) days prior to the date such taxes are delinquent and Landlord's failure to provide such bills shall be an absolute defense against Tenant's failure to pay

such taxes as required herein. For any years during which Tenant does not conduct Mining Operations on a parcel for the entire year, real estate taxes and special assessments for those years shall be prorated between Landlord and Tenant on a daily basis.

- 9.2 Other Taxes. Tenant shall pay before delinquency any and all sales taxes, use taxes, aggregate taxes or other taxes which may be due and payable as a result of the Mining Operations. If, at any time during the Term of this Lease, any improvements, personal property, equipment or machinery of Tenant are included within the real property taxes or assessments with respect to the Land, Tenant shall pay the amount of such additional real property taxes or assessments so levied. Landlord will provide Tenant with proof of the payment of such taxes within thirty (30) days of the due date for the same.
- 9.3 Notwithstanding the aforementioned, Landlord shall pay all taxes assessed against all improvements on the Land and personal property owned by Landlord.
- 9.4 Managed Forestland, CRP or other governmental programs; Loss of Agricultural Use Assessment. Landlord and Tenant shall share equally the costs incurred to remove all or any of the Land from governmental programs as necessary to conduct Mining Operations. Tenant will reimburse or make Landlord whole for any costs incurred, additional taxes paid, or penalties incurred as a result of any portion of the Land no longer being subject to agricultural use assessment.
10. **Utility Access.** Landlord makes no representations or warranties to Tenant regarding the availability of water, electricity or other utilities available to the Land for Tenant's Mining Operations, either as of the date hereof or in the future.
11. **Compliance With Governmental Regulations.** Tenant shall at all times comply with the terms and conditions of all permits and licenses issued for the Mining Operations. In the event that Tenant violates the terms of the permits and licenses, Tenant shall indemnify, defend and hold harmless Landlord from any actions commenced against Landlord by reason of Tenant's violations and to pay any fines or penalties which may be levied against the Land or Landlord resulting therefrom.

Tenant shall abide by all State, Federal, and Local statutes, rules and regulations (the foregoing, along with the Tenant Permits, are referred to collectively herein as "**Laws**") applicable to Tenant's use of the Land, whether in effect as of the date hereof or hereafter enacted. Tenant shall not be in default under this Lease for any violation of Laws unless (i) such violation exposes Landlord or any portion of the Land to any liability or threat of enforcement proceedings; (ii) Tenant fails to cure the violation to the satisfaction of the appropriate governmental authority within any applicable cure period; and (iii) Tenant fails to pay any penalty imposed within any applicable payment period.

Tenant warrants and represents it shall not permit the production or disposal of hazardous wastes or substances (as defined under Federal or State law) in or around the Land in

violation of any environmental Laws. Tenant's indemnification in the next Article shall be deemed to include any breach of this representation and warranty.

12. Indemnification.

12.1 By Tenant. Tenant covenants and agrees that, except as otherwise stated in this Lease to the contrary, Landlord shall not be liable for any damage or liability of any kind or for any damage or injury to persons or property from any cause whatsoever arising from or during the use, occupation and enjoyment of the Land by Tenant or any person thereon holding under Tenant, including claims arising out of exposure by persons to silica and microscopic fibers in cement and stone dust generated by the Mining Operations. Tenant, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save keep harmless and make whole Landlord and Landlord's successors, assigns, agents, employees, partners, coventurers, heirs, trustees, beneficiaries and affiliates, and each of them (collectively, "**Landlord's Indemnitees**"), from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Landlord and/or Landlord's Indemnitees in any way relating to or arising out of Tenant's and/or its successor's and assigns' use of the Land after the date of this Lease or the extraction, production or sale of the Sand from, on or at the Land accruing after the date of this Lease by Tenant and/or its successors and assigns, except to the extent caused by the negligence or misconduct of Landlord or any Landlord Indemnatee (as defined below). This indemnification obligation shall survive the termination of this Lease.

12.2 By Landlord. Landlord, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save keep harmless and make whole Tenant and Tenant's Indemnitees (as defined below), from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Tenant and/or Tenant's Indemnitees in any way relating to or arising out of Landlord's or any Landlord's Indemnitees use of the Land or otherwise arising from any act, omission, negligence or misconduct of Landlord or any Landlord Indemnatee, except to the extent caused by the negligence or misconduct of Tenant or any Tenant Indemnatee. This indemnification obligation shall survive the termination of this Lease.

13. **Possible Release of Land.** Tenant will, at Landlord's written request, release from this Lease those portions of the Land that have been reclaimed as required by the Reclamation Plan, and will execute documents in recordable form to document each such release; provided, however, that no portions of the Land shall be so released if such portion is, or will be during the Term, necessary for uses incidental to Mining Operations, including, without limitation, storage of overburden or Sand, and access roads.

14. **Memorandum of Agreement.** Landlord and Tenant shall sign a Memorandum of Agreement in the form of Exhibit E which may be filed by Tenant in the office of the

Buffalo County Register of Deeds. This Lease shall not be recorded. Upon any termination or other expiration of this Lease, Tenant shall, upon Landlord's request, and without charge or cost to Landlord, furnish to Landlord a recordable instrument terminating or otherwise releasing any interest of Tenant in the Land in form and substance reasonably satisfactory to Landlord.

15. Hazardous Materials.

15.1 Definition. The terms "Hazardous Material" and "Hazardous Materials" shall mean and refer to asbestos, radon, urea-formaldehyde, polychlorinated biphenyls ("PCBs"), or substances containing PCBs, nuclear fuel or materials, radioactive materials, explosives, known carcinogens, petroleum products and bi-products, and any substance defined as hazardous or toxic or as a contaminant or pollutant in, or the release or disposal of which is regulated by any Environmental Law. The term "Environmental Law" shall mean and refer to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 ("CERCLA"), 42 U.S.C. §9601, et seq.; the Federal Resource Conservation and Recovery Act of 1976 ("RCRA"), 42 U.S.C. §6901, et seq.; the Federal Water Pollution Control Act, 33 U.S.C. §1251, et seq.; the Clean Air Act, 42 U.S.C. §7401, et seq.; all as the same may be from time to time amended, and any other federal, state, county, municipal, local or other statute, law, ordinance or regulation that relates to or deals with human health or the environment, including, without limitation, all regulations promulgated by a regulatory body pursuant to any such statute, law, ordinance or regulation.

15.2 Limitation. Landlord covenants and agrees that, except as otherwise stated in this Lease to the contrary, Tenant shall not be liable for any damage or liability of any kind or for any damage or injury to persons or property from any cause whatsoever arising from the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land by Tenant, its agents, contractors, invitees, guests or permittees.

15.3 By Tenant. Tenant, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save, keep harmless and make whole Landlord and Landlord's successors, assigns, agents, employees, officers, owners, members, partners, affiliates and contractors, and each of them (collectively, "**Landlord's Indemnitees**"), for, from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Landlord and/or Landlord's Indemnitees in any way relating to or arising out of the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land in violation of Law by Tenant, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land prior to the Effective Date or by Landlord, its officers, directors, members, employees, agents, contractors, invitees, guests or permittees (whether before or after the Effective Date). The obligations of Tenant under this Section 15 shall survive the expiration or earlier termination of this Lease.

15.4 By Landlord. Landlord, on behalf of itself and its successors and assigns, and each of them, hereby agrees to indemnify, defend, protect, save, keep harmless and make whole Tenant and Tenant's successors, assigns, agents, employees, officers, owners, members, partners, affiliates and contractors, and each of them (collectively, "**Tenant's Indemnitees**"), for, from and against any and all liabilities, obligations, losses, damages, penalties, fees, fines, claims, actions, suits, costs, expenses and disbursements, including reasonable attorneys' fees and expenses, of whatsoever kind and nature imposed on, incurred by or asserted against Tenant and/or Tenant's Indemnitees in any way relating to or arising out of the placement, storage, generation, release or disposal of any Hazardous Materials on, in, under or about the Land prior to the Effective Date or by Landlord or its officers, directors, members, employees, agents, contractors, invitees, guests or permittees, except for Hazardous Materials placed, stored, generated, released or disposed of on, in, under, or about the Land by Tenant, its agents, contractors, invitees, guests or permittees. The obligations of Landlord under this Section 15 shall survive the expiration or earlier termination of this Lease.

16. **Assignment.** Tenant may assign or sublet all or any portion of its interest in this Lease or in the Land without the consent of Landlord; however, no such assignment or sublease shall be effective until Landlord and the assignee or sublessee have negotiated the term, amount of rent and amount of royalty. Landlord agrees to participate in good faith in such negotiations. In the event of a sublease by Tenant, Tenant agrees to cooperate in such negotiations and to agree to necessary changes to this Lease that result from such negotiation.

17. **Notices.** All notices required under this Lease shall be sent by U.S. First Class Mail to the following address:

If to Landlord: Gerald D. Earney and Cheryl A. Earney Tenant  
W998 Schoepps Valley Road  
Cochrane, WI 54622

With a required copy to: Attorney Bruce J. Brovold  
Kostner, Koslo & Brovold LLC  
108 W. Main Street  
Arcadia, WI 54612-1326

If to Tenant: ZEER LLC  
349 West 24th Street  
Buffalo City, WI 54622

With a required copy to: Attorney Joseph R. Mirr  
Ruder Ware, L.L.S.C.  
Street Address: 402 Graham Ave, Eau Claire, WI 54701  
Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187

18. **Governing Law.** This Lease shall be governed by the laws of the State of Wisconsin. The invalidity of any term of this Lease shall in no way affect the validity or enforceability of the remaining terms.
19. **No Liens or Encumbrances.** Subject to Section 5.1, Tenant shall keep Landlord's interest in the Land free and clear of all costs, liens and encumbrances; and Landlord may place and maintain in a conspicuous place upon the Land such notice as shall be lawfully necessary to protect Landlord against all such claims, including, specifically, any and all mechanics' lien claims.
20. **No Relationship other than Landlord and Tenant.** Nothing contained in this Lease shall create between Landlord and Tenant, or be relied upon by others as creating, any relationship of partnership, association, joint venture, employer/employee or otherwise. The sole relationship of Landlord and Tenant under this Lease shall be that of a Landlord/vendor and Tenant/vendee.
21. **Amendment.** This Lease may be amended only by a writing signed by both Landlord and Tenant. If such a written amendment is entered into, such written amendment shall modify only the provisions of this Lease specifically modified and shall be deemed to incorporate by reference, unchanged, all remaining provisions of this Lease.
22. **Entire Agreement.** This Lease and the Exhibits and related agreements contemplated herein contain the entire agreement of Landlord and Tenant and supersede any prior or contemporaneous written or oral agreements among them with respect to the subject matter of this Lease. There are no representations, warranties, agreements, arrangements or understandings, oral or written, between Landlord and Tenant relating to the subject matter contained in this Lease that are not fully expressed in this Lease.
23. **Attorney's Fees.** If any party to this Lease is required to or commences any action or proceeding against the other by reason of any breach or claimed breach of any provision of this Lease, is required to or commences any action or proceeding in any way connected with this Lease or seeks a judicial declaration of rights under this Lease, the party prevailing in such action or proceeding shall be entitled to recover from the other party the prevailing party's reasonable attorneys' fees and costs, including, but not limited to, all expert witness fees, other witness fees and associated expenses, whether or not the proceeding or action proceeds to judgment.
24. **Headings and Captions.** The headings and captions at the beginnings of various Sections of this Lease shall not be construed to be substantive part of this Lease or in any way define, limit, expand or affect any provision of this Lease.
25. **Time of the Essence.** With regard to the performance by Landlord and Tenant of their obligations under this Lease, time is expressly made of the essence.
26. **Counterparts.** This Lease may be signed in two (2) or more counterparts, each of which shall constitute an original, but all of which, taken together, shall be one (1) and the same document.



27. **Nonwaiver of Rights and Breaches.** No failure or delay of Landlord or Tenant in the exercise of any right given to them under this Lease shall constitute a waiver of such right, nor shall any single or partial exercise of any such right preclude other or further exercise of such right or of any other right. The waiver by Landlord or Tenant of any breach of any term or provision of this Lease shall not be deemed to be a waiver of any subsequent breach of any term or provision of this Lease or of any breach of any other provision of this Lease. No waiver under this Lease shall be effective until set forth in writing and executed by the party making the waiver.
28. **Remedies.** In the event of breach of the provisions of this Lease, the nonbreaching party may pursue any remedy provided at law or in equity.
29. **Exculpation.** Tenant agrees to look solely to Landlord's interest in the Land, for the recovery of any judgment from Landlord, it being agreed that the persons who are part of the Landlord and the corporation which is part of Landlord and its directors, officers, or shareholders, shall never be personally liable for any such judgment.
30. **Partial Invalidity.** If any term, covenant, condition or provision of this Lease is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of the provisions hereof shall remain in full force and effect and shall in no way be affected, impaired or invalidated thereby.
31. **Force Majeure.** Tenant shall not be liable for any failure or delay in performance under this Lease (including for delay in the payment of money due and payable hereunder) to the extent such failures or delays shall relate to labor disputes (including strikes, lockouts, walkouts, slowdowns, etc.), nonavailability of materials, war or national defense, preemptions, governmental restrictions (including the denial or cancelation of any necessary governmental license or permit), changes in laws, acts of God or other causes beyond the reasonable control of Tenant; provided that Tenant shall commence such performance and continue the same with diligence and continuity immediately after the removal of any of the causes hereinabove specified; provided further that the total collective time for all occasions for which Tenant's performance is excused pursuant to this Section 31 shall be added to the end of the term of this Lease.
32. **No Merger.** The fee simple estate in the Land shall not merge with the Leasehold or any other estate or interest in the Land, and the parties hereto do hereby express their intent to avoid any merger of such interests or estates.
33. **Confidentiality.** The terms and conditions of this Lease shall be forever treated as confidential by Landlord and Tenant and shall not be disclosed to any person, other than to: the individuals who are part of Tenant and their immediate families; the members of the entity which is a part of Tenant; the officers, directors, and management employees of Tenant and its parent companies; and representatives of Landlord and Tenant with a need to know; and in addition thereto Landlord and Tenant's attorneys, accountants, tax consultants and any state and federal taxing authorities. The provisions of this section do not apply to disclosures made in a court of competent jurisdiction or to a governmental agency, when required by subpoena, court order, law or administrative

regulation. The provisions of this section do not apply to disclosures made to insurance agents or underwriters for the purpose of obtaining insurance. The provisions of this section will continue in full force and effect even after expiration or termination of this Lease.

34. **Financing.** Tenant may, at any time from time to time, without the consent, approval or input from Landlord, enter into a financing arrangement or arrangements resulting in the encumbrance of all or any portion of its interest in this Lease and Tenant's leasehold estate in the Land by deed of trust, mortgage, security instrument, collateral assignment, or otherwise for the purpose of securing money borrowed from a third party. Landlord agrees to sign any and all documentation reasonably related thereto or reasonably requested by Tenant's lender(s), including, without limitation, to title affidavits and collateral access agreements.
35. **Title Insurance.** Tenant, at any time during the Term, at Tenant's cost and expense, may purchase a leasehold title insurance policy, insuring it against any loss on account of defect, lien or encumbrance in title, guaranteeing the area and boundaries, and showing good title to the Land, including all mineral rights to be vested in Landlord, free and clear of all defects, liens and encumbrances, easements, restrictions, rights-of-way, roadways, encroachments or other matters of record or other grants which may affect the use of the Land by Tenant. Landlord shall cooperate with Tenant and assist Tenant in obtaining such leasehold title insurance policy, including, without limitation, signing such documents that may be reasonably requested by the title company to issue such leasehold title insurance policy.
36. **SNDA.** In the event all or any portion of the Land is encumbered by a deed of trust, mortgage, security instrument, collateral assignment, or otherwise for the purpose of securing money borrowed by Landlord from a third party, Landlord agrees to provide Tenant, prior to the Commencement Date (and at any time thereafter prior to any new monetary lien is granted against the Land), with a subordination, non-disturbance and attornment agreement between the holder of such encumbrance and Tenant, in form and substance reasonably acceptable to Tenant.

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IN WITNESS WHEREOF, the undersigned have executed this Lease on the date hereinabove written.

LANDLORD:

Gerald D. Earney

Gerald D. Earney

Cheryl A. Earney

Cheryl A. Earney

ACKNOWLEDGMENTS

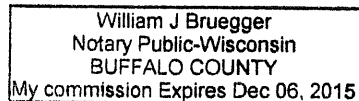
STATE OF WISCONSIN            )  
  ) ss:  
COUNTY OF BUFFALO         )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Gerald D. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec. 6, 2015

STATE OF WISCONSIN            )  
  ) ss:  
COUNTY OF BUFFALO         )

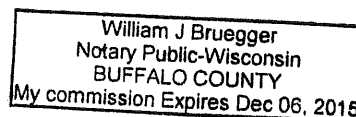


The foregoing instrument was acknowledged before me on July 21, 2013, by **Cheryl A. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name



TENANT:

ZEER LLC, a Wisconsin limited liability company

By: Kevin J. Rich  
Kevin J. Rich, its Managing Member

ACKNOWLEDGMENT

STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of ZEER LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Driver License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec 6, 2015

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015

\*Print or type name

This instrument was drafted on behalf of Tenant by:

Attorney Joseph R. Mirr, of Ruder Ware, L.L.S.C.  
Street Address: 402 Graham Ave, Eau Claire, WI 54701  
Mailing Address: P.O. Box 187, Eau Claire, WI 54702-0187  
Telephone number: 715-834-3425

**EXHIBIT A**  
**Legal Description**

Real property located in the Town of Waumandee, Buffalo County Wisconsin, described as follows:

**LEASE PARCEL 1** (mine site 1 and conveyor corridors)

Current Owner: Gerald and Cheryl Earney (Parts of Parcel ID Numbers: PID 034-00813-0000; PID 034-00814-0000; PID 034-00818-0000)

Part of the Southeast Quarter of the Southeast Quarter, part of the Northeast Quarter of the Southeast Quarter and part of the Northwest Quarter of the Southeast Quarter of Section 32, Township 21 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the South Quarter corner of said Section 32; Thence N28°01'18"E on a survey tie line a distance of 1481.13 feet to the northerly right of way of Schoepps Valley Road; Thence N39°55'35"E a distance of 559.85 feet; Thence S75°59'02"E a distance of 275.44 feet to the POINT OF BEGINING; Thence N19°15'43"E a distance of 626.47 feet; Thence N41°55'14"W a distance of 103.64 feet; Thence N14°43'36"E a distance of 182.73 feet; Thence S89°30'45"E a distance of 872.45 feet; Thence S48°16'49"W a distance of 163.67 feet; Thence S24°48'35"E a distance of 251.98 feet; Thence S59°33'12"W a distance of 333.34 feet; Thence S05°39'30"E a distance of 525.09 feet; Thence S10°41'40"E a distance of 300.79 feet to the southerly right of way of Schoepps Valley Road; Thence S29°35'25"E a distance of 423.42 feet; Thence S71°30'26"E a distance of 260.65 feet more or less to the east line of the Southeast Quarter of said Section 32; Thence southerly on the east line of the Southeast Quarter of said Section 32 a distance of 66.39 feet; Thence N69°21'07"W a distance of 293.32 feet more or less; Thence N37°51'42"W a distance of 493.43 feet to the southerly right of way of Schoepps Valley Road; Thence N11°36'59"W a distance of 66.00 feet to the northerly right of way of Schoepps Valley Road; Thence continuing N11°36'59"W a distance of 583.31 feet; Thence S78°23'01"W a distance of 620.32 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 722,589 square feet or 16.59 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

**LEASE PARCEL 2** (conveyor corridors, conveyor creek crossing and interior access road)

Current Owners: Gerald and Cheryl Earney (Parts of Parcels ID Number: PID 034-00832-0000; PID 034-00833-0000)

Part of the Southwest Quarter of the Southwest Quarter of Section 33, Township 21 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the Southwest corner of said Section 33; Thence S89°39'04"E on the south line of said Section 33 (standard line) a distance of 554.06 feet to the POINT OF BEGINING; Thence N15°06'13"E a distance of 101.48 feet; Thence N57°33'08"W a distance of 386.00 feet; Thence N27°08'39"W a distance of 447.95 feet; Thence N69°21'07"W a distance of 46.16 feet more or less to the west line of the Southwest Quarter of said Section 33; Thence northerly on the west line of the Southwest Quarter of said Section 33 a distance of 66.39 feet; Thence S71°30'26"E a distance of 150.29 feet more or less; Thence S28°47'10"E a distance of 437.07 feet; Thence S64°47'32"E a distance of 303.97 feet; Thence S05°20'57"E a distance of 227.79 feet to the south line of the Southwest Quarter of said Section 33; Thence N89°39'04"W a distance of 103.06 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 108,593 square feet or 2.49 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

## **EXHIBIT B**

### **Reclamation Plan**

[to be attached prior to the Contingency Date]

**EXHIBIT C**  
**Insurance Requirements and Coverages**

Tenant shall procure and maintain, until all of its obligations under this Lease have been discharged, the following insurance against claims for injury to persons or damage to property which may arise from or in connection with Tenant's use of the Land.

The insurance requirements herein are minimum requirements for this Lease and in no way limit the indemnity covenants contained in this Lease.

A. Minimum Scope and Limits of Insurance — Tenant shall provide coverage with limits of liability not less than those stated below.

1. **Commercial General Liability — Occurrence Form**

The policy shall include bodily injury, property damage, broad form contractual liability and XCU coverage.

- General Aggregate  
\$2,000,000
- Products – Completed Operations Aggregate  
\$2,000,000
- Personal and Advertising Injury  
\$1,000,000
- Each Occurrence  
\$1,000,000
- Damage to Rented Premises (each occurrence)  
\$1,000,000

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including completed operations.”

2. **Excess/Umbrella Liability**

- General Aggregate \$2,000,000

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant.”

3. **Automobile Liability**

Bodily injury and property damage for any owned, hired, and non-owned vehicles used by Tenant in connection with use of the Land.



• Combined Single Limit (CSL) \$1,000,000  
•

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant.”

4. Worker’s Compensation and Employers’ Liability

• Workers’ Compensation As required by  
Wisconsin State law  
• Employers’ Liability As required by Wisconsin  
State law  
•

5. Pollution

• \$1,000,000 limit/\$25,000 deductible

The policy shall be endorsed to include the following additional insured language:  
“Landlord shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of Tenant, including automobiles owned, leased, hired or borrowed by Tenant.”

B. Additional Insurance Requirements: The policies shall include, or be endorsed to include, the following provisions:

1. Each insurance policy required by this Lease shall provide the required coverage and shall not be suspended, voided or canceled except after such insurer has endeavored to provide thirty (30) days prior written notice to Landlord.
2. Each insurance policy required by this Lease shall be endorsed to include a waiver of subrogation against Landlord, as applicable.

C. Acceptability of Insurers: Insurance is to be placed with insurers duly licensed or authorized to do business in the state of Wisconsin and with an “A.M. Best” rating of not less than A-.

Verification of Coverage: Each insurance policy required by this Lease must be in effect at or prior to the Commencement Date under this Lease and remain in effect for the duration of the Agreement. Upon request, each party shall furnish the other party with certificates of insurance (ACORD form or equivalent) as required by this Lease. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. Failure to maintain the insurance policies as required by this Lease or to provide evidence of renewal is a material breach of this Lease.

## **EXHIBIT D**

### **Title Exceptions**

**Real estate mortgage in favor of Badgerland Financial**

## EXHIBIT E

### Form of Memorandum of Agreement MEMORANDUM OF AGREEMENT

WITNESSETH: This is a Memorandum of that certain Lease Agreement, described below, wherein Landlord demised and leased and does by these presents demise and lease to Tenant those certain premises hereinafter described:

LANDLORD: Gerald D. Earney and Cheryl A. Earney

TENANT: ZEER LLC, a Wisconsin limited liability company

EFFECTIVE  
DATE OF LEASE: July 21, 2013

COMMENCEMENT DATE: The first day of the first calendar month immediately following the Contingency Date

TERM: 10 years, expiring on the 10<sup>th</sup> anniversary of the January 1 following Commencement Date, subject to extension for up to two (2) additional 5-year terms

PREMISES: All land, including, without limitation, Sand and improvements located thereon, more particularly described on **Exhibit A** attached hereto and depicted as Lease Parcel 1 and Lease Parcel 2 on Exhibit F attached hereto

The mailing addresses of  
Landlord and Tenant are as follows:

LANDLORD: Gerald D. Earney and Cheryl A. Earney  
W998 Schoepps Valley Road  
Cochrane, WI 54622

With required copies to: Attorney Bruce J. Brovold  
Kostner, Koslo & Brovold LLC  
108 W. Main Street  
Arcadia, WI 54612-1326

TENANT:

ZEER LLC

Attn: \_\_\_\_\_

With a required copy to:

Attorney Joseph R. Mirr

Ruder Ware, L.L.S.C.

Street Address:

402 Graham Ave, Eau Claire, WI 54701

Mailing Address:

P.O. Box 187, Eau Claire, WI 54702-0187

[Signature page follows]

LANDLORD:

Gerald D. Earney  
Gerald D. Earney

Cheryl A. Earney  
Cheryl A. Earney

ACKNOWLEDGMENTS

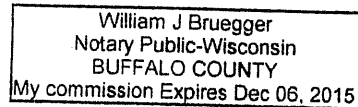
STATE OF WISCONSIN                    )  
  ) ss:  
COUNTY OF BUFFALO                 )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Gerald D. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec 6, 2015

STATE OF WISCONSIN                    )  
  ) ss:  
COUNTY OF BUFFALO                 )

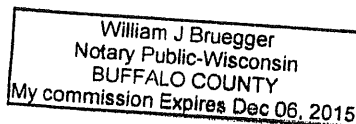


The foregoing instrument was acknowledged before me on July 21, 2013, by **Cheryl A. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name



TENANT:

ZEER LLC, a Wisconsin limited liability company

By: \_\_\_\_\_

Kevin J. Rich, its Managing Member

ACKNOWLEDGMENT

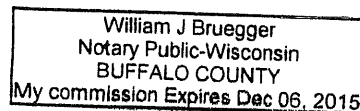
STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of ZEER LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Driver's License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec. 6, 2015

\*Print or type name



**EXHIBIT F**

**SURVEY**

**[TO BE ATTACHED]**

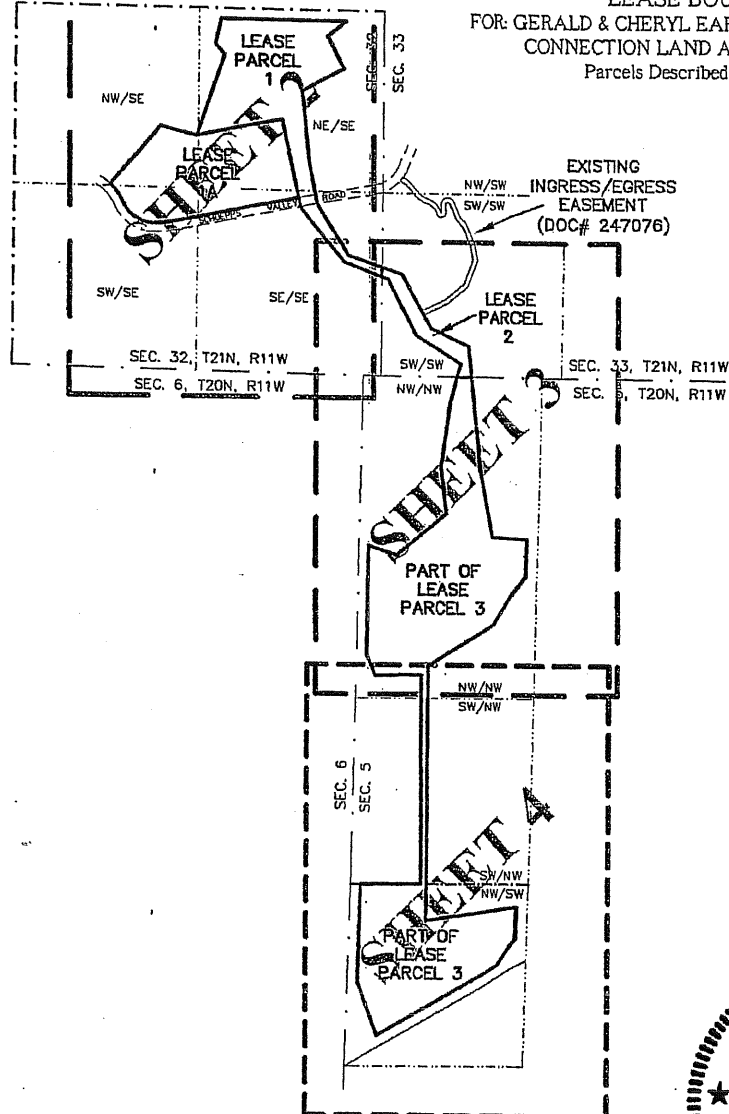


# MAP OF SURVEY

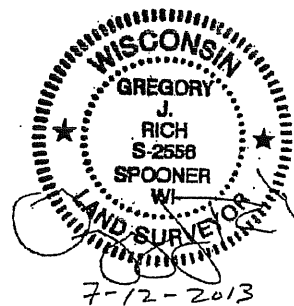
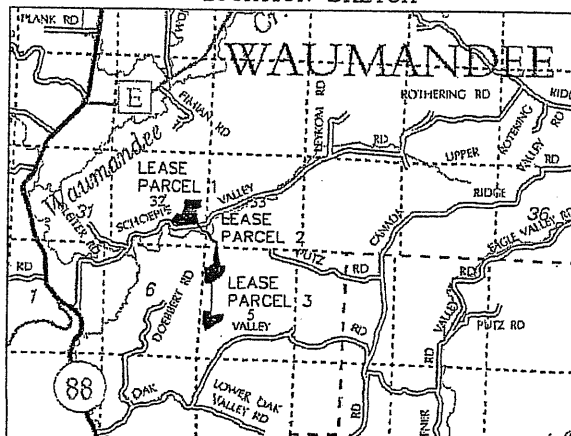
## LEASE BOUNDARIES

FOR: GERALD & CHERYL EARNEY AND THE MISSISSIPPI  
CONNECTION LAND AND TIMBER CO., LLC

Parcels Described on Sheets 5 & 6



### LOCATION SKETCH



### SURVEYOR'S CERTIFICATE:

I, Gregory J. Rich, a Wisconsin Land Surveyor, hereby certify that pursuant to a request from GERALD & CHERYL EARNEY AND THE MISSISSIPPI CONNECTION LAND AND TIMBER CO., LLC, I have surveyed and mapped the above described property and that this MAP OF SURVEY, to my best knowledge, information and belief is a correct representation of the boundary lines surveyed under my direction and supervision. THAT I have fully complied with the Wisconsin Administrative Code AE-7 in surveying and mapping said lands. This survey and the certification thereof was made for the exclusive use of GERALD & CHERYL EARNEY AND THE MISSISSIPPI CONNECTION LAND AND TIMBER CO., LLC. Said certification is not transferable to any other party without the re-certification of the same.

SHEET 1 OF 6



## SUBLEASE

THIS SUBLEASE is entered into July 21, 2013, between **ZEER LLC**, a Wisconsin limited liability company ("Landlord") and **Badger Bluff Sands, LLC**, a Wisconsin limited liability company ("Tenant").

### I. BASIC LEASE PROVISIONS AND CERTAIN DEFINITIONS.

- A. Land: As legally described on Exhibit A and depicted on Lease Parcel 3 on Exhibit F
- B. Tenant's Address: 349 West 24th Street, Buffalo City, WI 54622
- C. Landlord's Address (for notices): 349 West 24th Street, Buffalo City, WI 54622
- D. Prime Landlord: **The Mississippi Connection Land & Timber Co. LLC**
- E. Prime Landlord's Address: 349 W. 24th Street, Buffalo City, WI 54622
- F. Identification of Prime Lease: Lease dated July 21, 2013, as and if amended
- G. Sublease Term: Same as in the Prime Lease
- H. Commencement Date: Same as in the Prime Lease
- I. Rent Commencement Date: Same as in the Prime Lease
- J. Expiration Date: Same as in the Prime Lease
- L. Rent: Same as in the Prime Lease
- N. Payment Address: Same as in the Prime Lease
- O. Security Deposit: none
- P. Tenant's Use: Same as in the Prime Lease
- Q. Event of Default: Same as in the Prime Lease
- Q. Broker(s): None.

Capitalized terms used in this Sublease shall have the meanings assigned above or as otherwise defined in this Sublease.

2. PRIME LEASE. Landlord is the tenant under a Prime Lease with the Prime Landlord. Landlord warrants that (a) Landlord has delivered to Tenant a complete copy of the Prime Lease and all other agreements between Prime Landlord and Landlord relating to the leasing, use or occupancy of the Land, (b) the Prime Lease is, as of the date of this Sublease, in full force and effect, and (c) no event of default has occurred under the Prime Lease and, to Landlord's knowledge, no event has occurred and is continuing that would constitute an event of default by Landlord, but for the requirement of the giving of notice and the expiration of the period of time to cure.

3. SUBLEASE. Landlord, in consideration of the rents and the agreements to be performed by Tenant, subleases to Tenant the Land described in the Prime Lease. .

4. SUBLEASE TERM. The Sublease Term shall commence on the Commencement Date and shall expire on the Expiration Date, unless sooner terminated as provided elsewhere in this Sublease.

5. POSSESSION. Tenant shall continue possession on the Commencement Date.

6. TENANT'S USE. The Land shall be used and occupied only for the Tenant's Use.

7. RENT. Beginning on the Rent Commencement Date, Tenant agrees to pay the Rent to the Prime Landlord at the Prime Landlord's Address, or to another payee or at another address designated by notice from Prime Landlord to Tenant, without prior demand and without any deduction. Rent shall be paid as required in the Prime Lease. Tenant's covenant to pay Rent is independent of every other covenant in this Sublease. If Rent is not paid when due, Tenant shall pay, relative to the delinquent payment, an amount equal to the sum that would be payable by Landlord to Prime Landlord for late payment under the Prime Lease.

8. TENANT'S OBLIGATIONS. Tenant assumes and undertakes all obligations of Landlord as tenant under the Prime Lease, to the extent Tenant is obligated to perform them under the Prime Lease.

9. QUIET ENJOYMENT. Landlord represents that it has full power and authority to enter into this Sublease, subject to the consent of the Prime Landlord, if required under the Prime Lease. So long as no Event of Default has occurred, Tenant's quiet and peaceable enjoyment of the Land shall not be disturbed by Landlord or by anyone claiming through Landlord.

10. TENANT'S INSURANCE. Tenant shall procure and maintain at its expense all insurance that Landlord is required to carry under the Prime Lease, naming Landlord, as well as Prime Landlord, in the manner required in the Prime Lease . Tenant shall furnish to Landlord and Prime Landlord a certificate of Tenant's insurance not later than the date Tenant takes possession of the Land. Each party waives claims against the other for property damage, provided the waiver does not invalidate the waiving party's property insurance; each party shall attempt to

obtain from its insurance carrier a waiver of its right of subrogation. Tenant waives claims against Prime Landlord and Landlord for property damage to the Land or its contents if and to the extent that Landlord waives such claims against Prime Landlord under the Prime Lease. Tenant agrees to obtain for the benefit of Prime Landlord and Landlord waivers of subrogation rights from its insurer to the extent they are required of Landlord under the Prime Lease. Landlord agrees to use commercially reasonable efforts to obtain from Prime Landlord a waiver of claims for insurable property damage losses and an agreement from Prime Landlord to obtain a waiver of subrogation rights in Prime Landlord's property insurance, if and to the extent that Prime Landlord waives such claims against Landlord under the Prime Lease or is required under the Prime Lease to obtain a waiver of subrogation rights.

11. ASSIGNMENT OR SUBLETTING. Tenant shall not, without the consent of Landlord: (i) assign, convey, or mortgage this Sublease or any interest under it; (ii) allow any transfer of the Sublease or any lien upon Tenant's interest by operation of law; (iii) sub-sublet all or any part of the Land; or (iv) permit the occupancy of all or any part of the Land by anyone other than Tenant (all of the foregoing being referred to collectively as a "Transfer"). If Landlord consents to a Transfer, Landlord shall use reasonable efforts to obtain the consent of Prime Landlord if its consent is required under the Prime Lease. Any cost of obtaining Prime Landlord's consent shall be borne by Tenant. No Transfer shall be effective and no Transfer shall commence unless and until any defaults by Tenant have been cured. No Transfer shall relieve Tenant from its obligations under this Sublease, and Tenant shall continue to be liable as a principal and not as a guarantor or surety, as though no Transfer had occurred.

13. ENCUMBERING TITLE. Tenant shall not do anything that shall encumber the title of Prime Landlord in and to the Land, nor shall the interest or estate of Prime Landlord or Landlord be subject to any claim by way of lien or encumbrance caused by Tenant. Any claim to, or lien upon, the Land arising from any act or omission of Tenant shall accrue only against the subleasehold estate of Tenant and shall be subordinate to the rights of Prime Landlord in and to the Land and the interest of Landlord in the Land leased pursuant to the Prime Lease. Specifically, Tenant shall not permit the Land to become subject to any mechanic's lien on account of labor or material furnished to Tenant or claimed to have been furnished to Tenant in connection with work of any character performed or claimed to have been performed on the Land by or at the direction or sufferance of Tenant, provided, however, that if permitted under the Prime Lease, Tenant shall have the right to contest in good faith if done with reasonable diligence the validity of any lien or claimed lien if Tenant shall give to Prime Landlord and Landlord such security as may be deemed satisfactory to them to assure payment and to prevent any sale, foreclosure, or forfeiture of the Land by reason of non-payment. On final determination of the lien or claim of lien, Tenant shall immediately pay any judgment rendered, with all costs and charges, and shall have the lien released and any judgment satisfied.

14. INDEMNITY. Tenant agrees to Indemnify Landlord if Landlord is liable to Prime Landlord because of acts or omissions of Tenant that are the subject matter of any indemnity or hold harmless of Landlord to Prime Landlord under the Prime Lease.

15. LANDLORD'S RESERVED RIGHTS. Landlord reserves the right, on reasonable prior notice, to inspect the Land or to exhibit them to persons having a legitimate interest at any time during the Sublease Term.

16. PROVISIONS REGARDING SUBLEASE. This Sublease and all the rights of parties under it are subject and subordinate to the Prime Lease. Each party agrees that it will not, by its act or omission to act, cause a default under the Prime Lease. In furtherance of the foregoing, the parties confirm, each to the other, that it is not practical in this Sublease agreement to enumerate all of the rights and obligations of the various parties under the Prime Lease and to specifically allocate those rights and obligations in this Sublease agreement. Accordingly, in order to afford to Tenant the benefits of this Sublease and of those provisions of the Prime Lease that by their nature are intended to benefit the party in possession of the Land, and in order to protect Landlord against a default by Tenant that might cause a default or event of default by Landlord under the Prime Lease, the parties agree:

A. Except as otherwise expressly provided in this Sublease, Landlord shall perform its covenants and obligations under the Prime Lease that do not require possession of the Land for their performance and that are not otherwise to be performed under this sublease by Tenant on behalf of Landlord. For example, Landlord shall at all times keep in full force and effect all insurance required of Landlord as tenant under the Prime Lease unless that requirement is waived in writing by Prime Landlord.

B. Except as otherwise expressly provided in this Sublease, Tenant shall perform all affirmative covenants and shall refrain from performing any act that is prohibited by the negative covenants of the Prime Lease, where the obligation to perform or refrain from performing is by its nature imposed upon the party in possession of the Land. If practicable, Tenant shall perform affirmative covenants that are also covenants of Landlord under the Prime Lease at least 5 days prior to the date when Landlord's performance is required under the Prime Lease. Landlord shall have the right to enter the Land to cure any default by Tenant under this Section.

C. Landlord shall not agree to any amendment to the Prime Lease that might have an adverse effect on Tenant's occupancy of the Land or its use of the Land for its intended purpose, unless Landlord shall first obtain Tenant's prior approval.

17. BROKERAGE. Each party warrants to the other that it has had no dealings with any broker in connection with this Sublease other than the Broker(s), whose commission shall be paid by Landlord. Each party agrees to Indemnify the other party from and as to any liability for any compensation claimed by any broker or agent other than Broker(s) with respect to this Sublease or its negotiation on behalf of the party through whom the claim is made.

18. MEMORANDUM. Landlord and Tenant shall sign a Memorandum of Agreement in the form of Exhibit E which may be filed by Tenant in the office of the Buffalo County Register of Deeds. This Sublease shall not be recorded. Upon any termination or other

expiration of this Sublease, Tenant shall, upon Landlord's request, and without charge or cost to Landlord, furnish to Landlord a recordable instrument terminating or otherwise releasing any interest of Tenant in the Land in form and substance reasonably satisfactory to Landlord.

IN WITNESS WHEREOF, the parties have executed this Sublease on the day and year first above written.

**ZEER LLC**

a Wisconsin limited liability company, Landlord

By: Kevin J. Rich  
(Kevin J. Rich, Managing Member)

**Badger Bluff Sands LLC**

a Wisconsin limited liability company, Tenant

By: Kevin J. Rich  
Kevin J. Rich,  
Managing Member

**ACKNOWLEDGMENT**

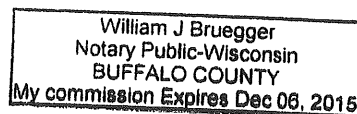
STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of ZEER LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Drivers License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec. 6, 2015

\*Print or type name



ACKNOWLEDGMENT

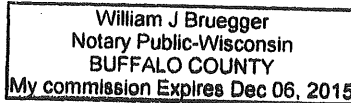
STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of Badger Bluff Sands LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Drivers License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* [Signature]  
Notary Public  
State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name



**EXHIBIT A**  
**Legal Description**  
**Page 1 of 2**

Real property located in the Town of Waumandee, Buffalo County Wisconsin, described as follows:

**LEASE PARCEL 3:**

Part of the Northwest Quarter of the Northwest Quarter, part of the Southwest Quarter of the Northwest Quarter and part of the Northwest Quarter of the Southwest Quarter of Section 5, Township 20 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the Southwest corner of Section 33; Thence SR9°39'04"E on the standard line between Section 33, T21 N, R11 W and Section 5, T20N, R 11 W; a distance of 554.06 feet to the POINT OF BEGINNING; Thence continuing S89°39'04"E on said standard line a distance of 103.06 feet; Thence S05°20'57"E a distance of 658.45 feet; Thence S11°18'32"E a distance of 500.05 feet; Thence S86°43'26"E a distance of 253.98 feet; Thence S01°18'18"W a distance of 268.06 feet; Thence S34°03'47"W a distance of 420.30 feet; Thence S58°01'36"W a distance of 570.62 feet; Thence S00°13'34"W a distance of 1842.92 feet; Thence N81°09'02"E a distance of 680.08 feet; Thence S01°27'51"W a distance of 233.02 feet; Thence S36°08'25"W a distance of 233.69 feet; Thence S59°51'49"W a distance of 1015.54 feet; Thence N20°09'33"W a distance of 411.03; Thence N01°33'26"E a distance of 704.00 feet; Thence N89°37'46"E a distance of 432.57 feet; Thence N00°00'12"E a distance of 1514.68 feet; Thence S88°50'02"W a distance of 329.49 feet; Thence N23°51'18"W a distance of 166.87 feet; Thence N01°13'53"E a distance of 781.42 feet; Thence S71°34'45"E a distance of 212.31 feet; Thence N49°47'58"E a distance of 468.03 feet; Thence N06°56'53"W a distance of 337.74 feet; Thence N08°24'20"E a distance of 457.15 feet; Thence N15°06'13"E a distance of 199.37 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 2,030,821 square feet or 46.62 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

-and-

All rights in favor of the property described above as to a 2 rod wide easement located in the Southwest Quarter of the Southwest Quarter and the Northwest Quarter of the Southwest Quarter of Section 33, Township 21 North, Range 11 West, Town of Waumandee, Buffalo County, Wisconsin as set forth in that certain Right-of-Way Easement recorded in the office of the Register of Deeds for Buffalo County, Wisconsin on November 9, 2011, in Volume 490 of Records, Page 347, as document number 247076.

**Exhibit E**  
**Form of Memorandum of Agreement**  
**MEMORANDUM OF AGREEMENT**

WITNESSETH: This is a Memorandum of that certain Sublease, described below, wherein Landlord demised and leased and does by these presents demise and lease to Tenant those certain premises hereinafter described:

A. Land: As legally described on Exhibit A and depicted on Lease Parcel 3 on Exhibit F

B. Tenant: Badger Bluff Sands, LLC, a Wisconsin limited liability company

C. Tenant's Address: 349 West 24th Street, Buffalo City, WI 54622

D. Landlord **ZEER LLC**, a Wisconsin limited liability company

E. Landlord's Address (for notices): 349 West 24th Street, Buffalo City, WI 54622

F. Prime Landlord: **The Mississippi Connection Land & Timber Co. LLC**

G. Prime Landlord's Address: 349 W. 24th Street, Buffalo City, WI 54622

H. Effective Date of Sublease: July 21, 2013

H. Identification of Prime Lease: Lease between Prime Landlord, as landlord, and Landlord, as tenant, dated July 21, 2013, as and if amended

I. Commencement Date: The first day of the first calendar month immediately following the Contingency Date

J. Term: 10 years, expiring on the 10<sup>th</sup> anniversary of the January 1 following Commencement Date, subject to extension for up to two (2) additional 5-year terms

[SIGNATURE PAGE FOLLOWS]



**ZEER LLC**

a Wisconsin limited liability company, Landlord

By: \_\_\_\_\_

Kevin J. Rich, Managing Member

**Badger Bluff Sands LLC**

a Wisconsin limited liability company, Tenant

By: \_\_\_\_\_

Kevin J. Rich,  
Managing Member

**ACKNOWLEDGMENT**

STATE OF Wisconsin )

) ss:

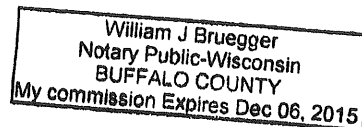
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of ZEER LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Drivers License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name



ACKNOWLEDGMENT

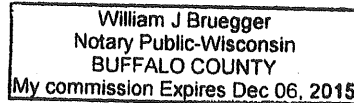
STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

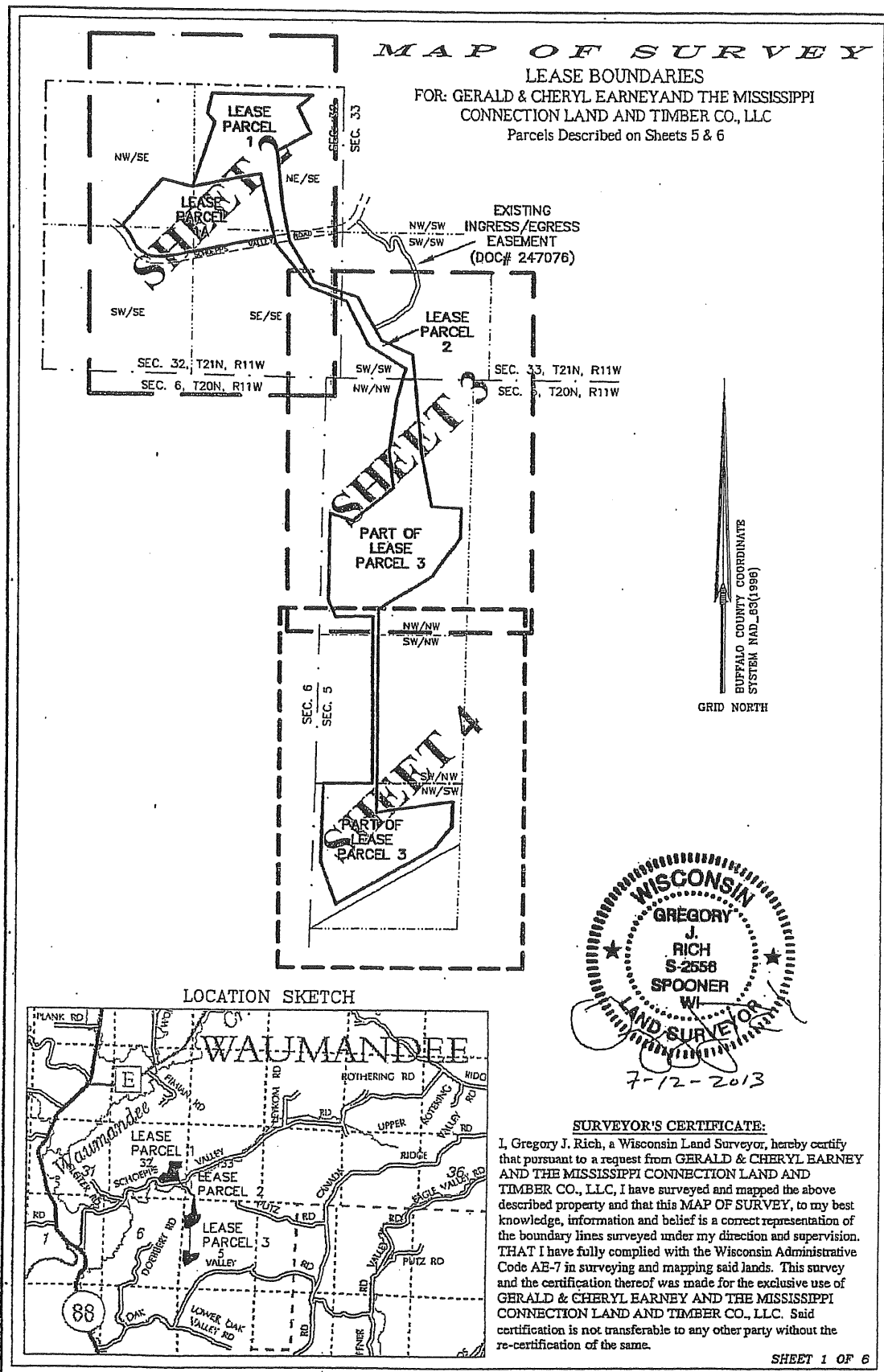
The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of Badger Bluff Sands LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Drivers License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec. 6, 2015

\*Print or type name





## SUBLEASE

THIS SUBLEASE is entered into July 21, 2013, between **ZEER LLC**, a Wisconsin limited liability company ("Landlord") and **Badger Bluff Sands, LLC**, a Wisconsin limited liability company ("Tenant").

### I. BASIC LEASE PROVISIONS AND CERTAIN DEFINITIONS.

- A. Land: As legally described on Exhibit A and depicted on Lease Parcel 1 and Lease Parcel 2 on Exhibit F
- B. Tenant's Address: 349 West 24th Street, Buffalo City, WI 54622
- C. Landlord's Address (for notices): 349 West 24th Street, Buffalo City, WI 54622
- D. Prime Landlord: **Gerald D. Earney and Cheryl A. Earney**
- E. Prime Landlord's Address: W998 Schoepps Valley Road, Cochrane, WI 54622
- F. Identification of Prime Lease: Lease dated July 21, 2013, as and if amended
- G. Sublease Term: Same as in the Prime Lease
- H. Commencement Date: Same as in the Prime Lease
- I. Rent Commencement Date: Same as in the Prime Lease
- J. Expiration Date: Same as in the Prime Lease
- L. Rent: Same as in the Prime Lease
- N. Payment Address: Same as in the Prime Lease
- O. Security Deposit: none
- P. Tenant's Use: Same as in the Prime Lease
- Q. Event of Default: Same as in the Prime Lease
- Q. Broker(s): None.

Capitalized terms used in this Sublease shall have the meanings assigned above or as otherwise defined in this Sublease.

2. PRIME LEASE. Landlord is the tenant under a Prime Lease with the Prime Landlord. Landlord warrants that (a) Landlord has delivered to Tenant a complete copy of the Prime Lease and all other agreements between Prime Landlord and Landlord relating to the leasing, use or occupancy of the Land, (b) the Prime Lease is, as of the date of this Sublease, in full force and effect, and (c) no event of default has occurred under the Prime Lease and, to Landlord's knowledge, no event has occurred and is continuing that would constitute an event of default by Landlord, but for the requirement of the giving of notice and the expiration of the period of time to cure.

3. SUBLEASE. Landlord, in consideration of the rents and the agreements to be performed by Tenant, subleases to Tenant the Land described in the Prime Lease. .

4. SUBLEASE TERM. The Sublease Term shall commence on the Commencement Date and shall expire on the Expiration Date, unless sooner terminated as provided elsewhere in this Sublease.

5. POSSESSION. Tenant shall continue possession on the Commencement Date.

6. TENANT'S USE. The Land shall be used and occupied only for the Tenant's Use.

7. RENT. Beginning on the Rent Commencement Date, Tenant agrees to pay the Rent to the Prime Landlord at the Prime Landlord's Address, or to another payee or at another address designated by notice from Prime Landlord to Tenant, without prior demand and without any deduction. Rent shall be paid as required in the Prime Lease. Tenant's covenant to pay Rent is independent of every other covenant in this Sublease. If Rent is not paid when due, Tenant shall pay, relative to the delinquent payment, an amount equal to the sum that would be payable by Landlord to Prime Landlord for late payment under the Prime Lease.

8. TENANT'S OBLIGATIONS. Tenant assumes and undertakes all obligations of Landlord as tenant under the Prime Lease, to the extent Tenant is obligated to perform them under the Prime Lease.

9. QUIET ENJOYMENT. Landlord represents that it has full power and authority to enter into this Sublease, subject to the consent of the Prime Landlord, if required under the Prime Lease. So long as no Event of Default has occurred, Tenant's quiet and peaceable enjoyment of the Land shall not be disturbed by Landlord or by anyone claiming through Landlord.

10. TENANT'S INSURANCE. Tenant shall procure and maintain at its expense all insurance that Landlord is required to carry under the Prime Lease, naming Landlord, as well as Prime Landlord, in the manner required in the Prime Lease. Tenant shall furnish to Landlord and Prime Landlord a certificate of Tenant's insurance not later than the date Tenant takes possession of the Land. Each party waives claims against the other for property damage, provided the waiver does not invalidate the waiving party's property insurance; each party shall attempt to obtain from its insurance carrier a waiver of its right of subrogation. Tenant waives claims

against Prime Landlord and Landlord for property damage to the Land or its contents if and to the extent that Landlord waives such claims against Prime Landlord under the Prime Lease. Tenant agrees to obtain for the benefit of Prime Landlord and Landlord waivers of subrogation rights from its insurer to the extent they are required of Landlord under the Prime Lease. Landlord agrees to use commercially reasonable efforts to obtain from Prime Landlord a waiver of claims for insurable property damage losses and an agreement from Prime Landlord to obtain a waiver of subrogation rights in Prime Landlord's property insurance, if and to the extent that Prime Landlord waives such claims against Landlord under the Prime Lease or is required under the Prime Lease to obtain a waiver of subrogation rights.

11. ASSIGNMENT OR SUBLETTING. Tenant shall not, without the consent of Landlord: (i) assign, convey, or mortgage this Sublease or any interest under it; (ii) allow any transfer of the Sublease or any lien upon Tenant's interest by operation of law; (iii) sub-sublet all or any part of the Land; or (iv) permit the occupancy of all or any part of the Land by anyone other than Tenant (all of the foregoing being referred to collectively as a "Transfer"). If Landlord consents to a Transfer, Landlord shall use reasonable efforts to obtain the consent of Prime Landlord if its consent is required under the Prime Lease. Any cost of obtaining Prime Landlord's consent shall be borne by Tenant. No Transfer shall be effective and no Transfer shall commence unless and until any defaults by Tenant have been cured. No Transfer shall relieve Tenant from its obligations under this Sublease, and Tenant shall continue to be liable as a principal and not as a guarantor or surety, as though no Transfer had occurred.

13. ENCUMBERING TITLE. Tenant shall not do anything that shall encumber the title of Prime Landlord in and to the Land, nor shall the interest or estate of Prime Landlord or Landlord be subject to any claim by way of lien or encumbrance caused by Tenant. Any claim to, or lien upon, the Land arising from any act or omission of Tenant shall accrue only against the subleasehold estate of Tenant and shall be subordinate to the rights of Prime Landlord in and to the Land and the interest of Landlord in the Land leased pursuant to the Prime Lease. Specifically, Tenant shall not permit the Land to become subject to any mechanic's lien on account of labor or material furnished to Tenant or claimed to have been furnished to Tenant in connection with work of any character performed or claimed to have been performed on the Land by or at the direction or sufferance of Tenant, provided, however, that if permitted under the Prime Lease, Tenant shall have the right to contest in good faith if done with reasonable diligence the validity of any lien or claimed lien if Tenant shall give to Prime Landlord and Landlord such security as may be deemed satisfactory to them to assure payment and to prevent any sale, foreclosure, or forfeiture of the Land by reason of non-payment. On final determination of the lien or claim of lien, Tenant shall immediately pay any judgment rendered, with all costs and charges, and shall have the lien released and any judgment satisfied.

14. INDEMNITY. Tenant agrees to Indemnify Landlord if Landlord is liable to Prime Landlord because of acts or omissions of Tenant that are the subject matter of any indemnity or hold harmless of Landlord to Prime Landlord under the Prime Lease.

15. LANDLORD'S RESERVED RIGHTS. Landlord reserves the right, on reasonable prior notice, to inspect the Land or to exhibit them to persons having a legitimate interest at any time during the Sublease Term.

16. PROVISIONS REGARDING SUBLEASE. This Sublease and all the rights of parties under it are subject and subordinate to the Prime Lease. Each party agrees that it will not, by its act or omission to act, cause a default under the Prime Lease. In furtherance of the foregoing, the parties confirm, each to the other, that it is not practical in this Sublease agreement to enumerate all of the rights and obligations of the various parties under the Prime Lease and to specifically allocate those rights and obligations in this Sublease agreement. Accordingly, in order to afford to Tenant the benefits of this Sublease and of those provisions of the Prime Lease that by their nature are intended to benefit the party in possession of the Land, and in order to protect Landlord against a default by Tenant that might cause a default or event of default by Landlord under the Prime Lease, the parties agree:

A. Except as otherwise expressly provided in this Sublease, Landlord shall perform its covenants and obligations under the Prime Lease that do not require possession of the Land for their performance and that are not otherwise to be performed under this sublease by Tenant on behalf of Landlord. For example, Landlord shall at all times keep in full force and effect all insurance required of Landlord as tenant under the Prime Lease unless that requirement is waived in writing by Prime Landlord.

B. Except as otherwise expressly provided in this Sublease, Tenant shall perform all affirmative covenants and shall refrain from performing any act that is prohibited by the negative covenants of the Prime Lease, where the obligation to perform or refrain from performing is by its nature imposed upon the party in possession of the Land. If practicable, Tenant shall perform affirmative covenants that are also covenants of Landlord under the Prime Lease at least 5 days prior to the date when Landlord's performance is required under the Prime Lease. Landlord shall have the right to enter the Land to cure any default by Tenant under this Section.

C. Landlord shall not agree to any amendment to the Prime Lease that might have an adverse effect on Tenant's occupancy of the Land or its use of the Land for its intended purpose, unless Landlord shall first obtain Tenant's prior approval.

17. BROKERAGE. Each party warrants to the other that it has had no dealings with any broker in connection with this Sublease other than the Broker(s), whose commission shall be paid by Landlord. Each party agrees to Indemnify the other party from and as to any liability for any compensation claimed by any broker or agent other than Broker(s) with respect to this Sublease or its negotiation on behalf of the party through whom the claim is made.

18. MEMORANDUM. Landlord and Tenant shall sign a Memorandum of Agreement in the form of Exhibit E which may be filed by Tenant in the office of the Buffalo County Register of Deeds. This Sublease shall not be recorded. Upon any termination or other





ACKNOWLEDGMENT

STATE OF Wisconsin )  
 ) ss:  
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of Badger Bluff Sands LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Drivers License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name

William J Bruegger Notary Public-Wisconsin BUFFALO COUNTY My commission Expires Dec 06, 2015
---

**EXHIBIT A**  
**Legal Description**

Real property located in the Town of Waumandee, Buffalo County Wisconsin, described as follows:

**LEASE PARCEL 1 (mine site 1 and conveyor corridors)**

Current Owner: Gerald and Cheryl Earney (Parts of Parcel ID Numbers: PID 034-00813-0000; PID 034-00814-0000; PID 034-00818-0000)

Part of the Southeast Quarter of the Southeast Quarter, part of the Northeast Quarter of the Southeast Quarter and part of the Northwest Quarter of the Southeast Quarter of Section 32, Township 21 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the South Quarter corner of said Section 32; Thence N28°01'18"E on a survey tie line a distance of 1481.13 feet to the northerly right of way of Schoepps Valley Road; Thence N39°55'35"E a distance of 559.85 feet; Thence S75°59'02"E a distance of 275.44 feet to the POINT OF BEGINNING; Thence N19°15'43"E a distance of 626.47 feet; Thence N41°55'14"W a distance of 103.64 feet; Thence N14°43'36"E a distance of 182.73 feet; Thence S89°30'45"E a distance of 872.45 feet; Thence S48°16'49"W a distance of 163.67 feet; Thence S24°48'35"E a distance of 251.98 feet; Thence S59°33'12"W a distance of 333.34 feet; Thence S05°39'30"E a distance of 525.09 feet; Thence S10°41'40"E a distance of 300.79 feet to the southerly right of way of Schoepps Valley Road; Thence S29°35'25"E a distance of 423.42 feet; Thence S71°30'26"E a distance of 260.65 feet more or less to the east line of the Southeast Quarter of said Section 32; Thence southerly on the east line of the Southeast Quarter of said Section 32 a distance of 66.39 feet; Thence N69°21'07"W a distance of 293.32 feet more or less; Thence N37°51'42"W a distance of 493.43 feet to the southerly right of way of Schoepps Valley Road; Thence N11°36'59"W a distance of 66.00 feet to the northerly right of way of Schoepps Valley Road; Thence continuing N11°36'59"W a distance of 583.31 feet; Thence S78°23'01"W a distance of 620.32 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 722,589 square feet or 16.59 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

**LEASE PARCEL 2 (conveyor corridors, conveyor creek crossing and interior access road)**

Current Owners: Gerald and Cheryl Earney (Parts of Parcels ID Number: PID 034-00832-0000; PID 034-00833-0000)

Part of the Southwest Quarter of the Southwest Quarter of Section 33, Township 21 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the Southwest corner of said Section 33; Thence S89°39'04"E on the south line of said Section 33 (standard line) a distance of 554.06 feet to the POINT OF BEGINING; Thence N15°06'13"E a distance of 101.48 feet; Thence N57°33'08"W a distance of 386.00 feet; Thence N27°08'39"W a distance of 447.95 feet; Thence N69°21'07"W a distance of 46.16 feet more or less to the west line of the Southwest Quarter of said Section 33; Thence northerly on the west line of the Southwest Quarter of said Section 33 a distance of 66.39 feet; Thence S71°30'26"E a distance of 150.29 feet more or less; Thence S28°47'10"E a distance of 437.07 feet; Thence S64°47'32"E a distance of 303.97 feet; Thence S05°20'57"E a distance of 227.79 feet to the south line of the Southwest Quarter of said Section 33; Thence N89°39'04"W a distance of 103.06 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 108,593 square feet or 2.49 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

**Exhibit E**  
**Form of Memorandum of Agreement**  
**MEMORANDUM OF AGREEMENT**

WITNESSETH: This is a Memorandum of that certain Sublease, described below, wherein Landlord demised and leased and does by these presents demise and lease to Tenant those certain premises hereinafter described:

A. Land: As legally described on Exhibit A and depicted on Lease Parcel 1 and Lease Parcel 2 on Exhibit F

B. Tenant: Badger Bluff Sands, LLC, a Wisconsin limited liability company

C. Tenant's Address: 349 W. 24<sup>th</sup> Buffalo City, WI 54622

D. Landlord **ZEER LLC**, a Wisconsin limited liability company

E. Landlord's Address (for notices): 349 West 24th Street, Buffalo City, WI 54622

F. Prime Landlord: **Gerald D. Earney and Cheryl A. Earney**

G. Prime Landlord's Address: W998 Schoepps Valley Road, Cochrane, WI 54622

H. Effective Date of Sublease: July 21, 2013

H. Identification of Prime Lease: Lease between Prime Landlord, as landlord, and Landlord, as tenant, dated July 21, 2013, as and if amended

I. Commencement Date: The first day of the first calendar month immediately following the Contingency Date

J. Term: 10 years, expiring on the 10<sup>th</sup> anniversary of the January 1 following Commencement Date, subject to extension for up to two (2) additional 5-year terms

[SIGNATURE PAGE FOLLOWS]

**ZEER LLC**

a Wisconsin limited liability company, Landlord

By: \_\_\_\_\_

Kevin J. Rich  
Kevin J. Rich, Managing Member

**Badger Bluff Sands LLC**

a Wisconsin limited liability  
company, Tenant

By: \_\_\_\_\_

Kevin J. Rich  
Kevin J. Rich,  
Managing Member

**ACKNOWLEDGMENT**

STATE OF Wisconsin )

) ss:

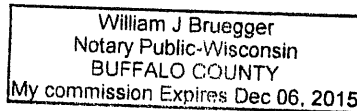
COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 26, 2013, by Kevin J. Rich the Managing Member of ZEER LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Drivers License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec 6, 2015

\*Print or type name



ACKNOWLEDGMENT

STATE OF Wisconsin )

) ss:

COUNTY OF Buffalo )

The foregoing instrument was acknowledged before me on July 21, 2013, by Kevin J. Rich the Managing Member of Badger Bluff Sands LLC, a Wisconsin limited liability company, on behalf of the company. He/She is personally known to me or has produced Drivers License as identification.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public  
State of Wisconsin  
My Commission Dec. 6, 2015

William J Bruegger  
Notary Public-Wisconsin  
BUFFALO COUNTY  
My commission Expires Dec 06, 2015

\*Print or type name

**EXHIBIT A**  
**Legal Description**

Real property located in the Town of Waumandee, Buffalo County Wisconsin, described as follows:

**LEASE PARCEL 1 (mine site 1 and conveyor corridors)**

Current Owner: Gerald and Cheryl Earney (Parts of Parcel ID Numbers: PID 034-00813-0000; PID 034-00814-0000; PID 034-00818-0000)

Part of the Southeast Quarter of the Southeast Quarter, part of the Northeast Quarter of the Southeast Quarter and part of the Northwest Quarter of the Southeast Quarter of Section 32, Township 21 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the South Quarter corner of said Section 32; Thence N28°01'18"E on a survey tie line a distance of 1481.13 feet to the northerly right of way of Schoepps Valley Road; Thence N39°55'35"E a distance of 559.85 feet; Thence S75°59'02"E a distance of 275.44 feet to the POINT OF BEGINING; Thence N19°15'43"E a distance of 626.47 feet; Thence N41°55'14"W a distance of 103.64 feet; Thence N14°43'36"E a distance of 182.73 feet; Thence S89°30'45"E a distance of 872.45 feet; Thence S48°16'49"W a distance of 163.67 feet; Thence S24°48'35"E a distance of 251.98 feet; Thence S59°33'12"W a distance of 333.34 feet; Thence S05°39'30"E a distance of 525.09 feet; Thence S10°41'40"E a distance of 300.79 feet to the southerly right of way of Schoepps Valley Road; Thence S29°35'25"E a distance of 423.42 feet; Thence S71°30'26"E a distance of 260.65 feet more or less to the east line of the Southeast Quarter of said Section 32; Thence southerly on the east line of the Southeast Quarter of said Section 32 a distance of 66.39 feet; Thence N69°21'07"W a distance of 293.32 feet more or less; Thence N37°51'42"W a distance of 493.43 feet to the southerly right of way of Schoepps Valley Road; Thence N11°36'59"W a distance of 66.00 feet to the northerly right of way of Schoepps Valley Road; Thence continuing N11°36'59"W a distance of 583.31 feet; Thence S78°23'01"W a distance of 620.32 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 722,589 square feet or 16.59 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.

**LEASE PARCEL 2 (conveyor corridors, conveyor creek crossing and interior access road)**

Current Owners: Gerald and Cheryl Earney (Parts of Parcels ID Number: PID 034-00832-0000; PID 034-00833-0000)

Part of the Southwest Quarter of the Southwest Quarter of Section 33, Township 21 North, Range 11 West of the Fourth Principal Meridian, Buffalo County, Wisconsin; Said Lease Parcel is more particularly described as follows:

Commencing at the Southwest corner of said Section 33; Thence S89°39'04"E on the south line of said Section 33 (standard line) a distance of 554.06 feet to the POINT OF BEGINNING; Thence N15°06'13"E a distance of 101.48 feet; Thence N57°33'08"W a distance of 386.00 feet; Thence N27°08'39"W a distance of 447.95 feet; Thence N69°21'07"W a distance of 46.16 feet more or less to the west line of the Southwest Quarter of said Section 33; Thence northerly on the west line of the Southwest Quarter of said Section 33 a distance of 66.39 feet; Thence S71°30'26"E a distance of 150.29 feet more or less; Thence S28°47'10"E a distance of 437.07 feet; Thence S64°47'32"E a distance of 303.97 feet; Thence S05°20'57"E a distance of 227.79 feet to the south line of the Southwest Quarter of said Section 33; Thence N89°39'04"W a distance of 103.06 feet to the POINT OF BEGINNING and the end of this description.

Said description contains 108,593 square feet or 2.49 acres more or less and is subject to all easements of a recorded and/or unrecorded nature.



**EXHIBIT F**

**Survey**

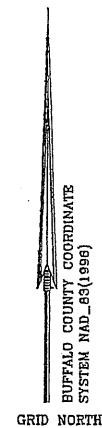
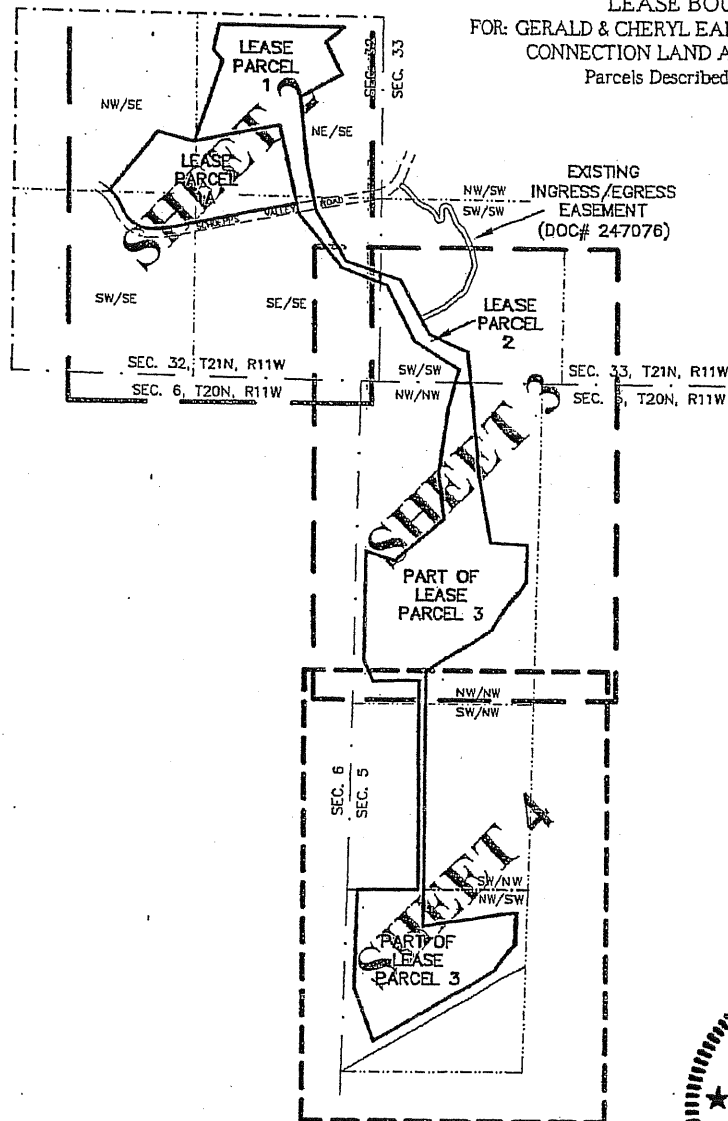
**[to be attached]**



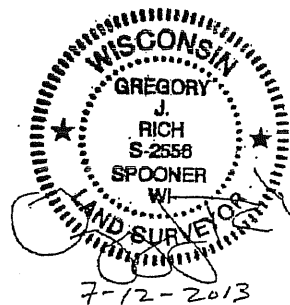
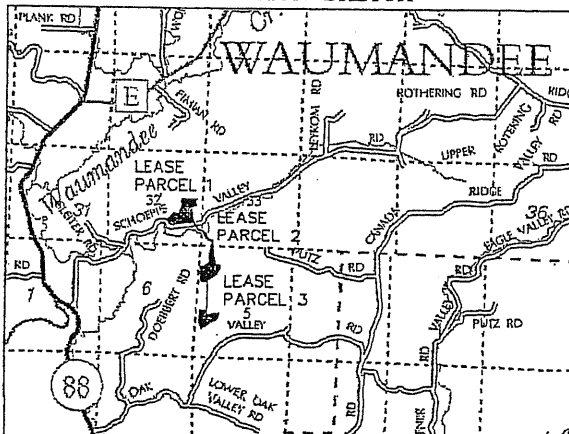
# MAP OF SURVEY

## LEASE BOUNDARIES

FOR: GERALD & CHERYL EARNEY AND THE MISSISSIPPI  
CONNECTION LAND AND TIMBER CO., LLC  
Parcels Described on Sheets 5 & 6



## LOCATION SKETCH



## SURVEYOR'S CERTIFICATE:

I, Gregory J. Rich, a Wisconsin Land Surveyor, hereby certify that pursuant to a request from GERALD & CHERYL EARNEY AND THE MISSISSIPPI CONNECTION LAND AND TIMBER CO., LLC, I have surveyed and mapped the above described property and that this MAP OF SURVEY, to my best knowledge, information and belief is a correct representation of the boundary lines surveyed under my direction and supervision. THAT I have fully complied with the Wisconsin Administrative Code AE-7 in surveying and mapping said lands. This survey and the certification thereof was made for the exclusive use of GERALD & CHERYL EARNEY AND THE MISSISSIPPI CONNECTION LAND AND TIMBER CO., LLC. Said certification is not transferable to any other party without the re-certification of the same.

SHEET 1 OF 6

**JOINDER OF AND CONSENT TO LEASE  
BY LIFE ESTATE HOLDER**

RETURN TO :  
Ruder Ware, L.L.S.C.  
Attn: Joseph R. Mirr  
P.O. Box 187  
Eau Claire, WI 54702-0187

Parcel I.D. No. \_\_\_\_\_

WHEREAS, on July \_\_, 2013, Gerald D. Earney and Cheryl A. Earney, husband and wife, as Landlord, and ZEER LLC, a Wisconsin limited liability company, as Tenant, entered into that certain lease agreement regarding certain real property and improvements located in the Town of Waumandee, Buffalo County, Wisconsin legally described on Exhibit A attached hereto and depicted as Lease Parcel 1 and Lease Parcel 2 on Exhibit F attached hereto (the "Lease"); and

WHEREAS, Marion R. Earney, a single person, is the holder of a life estate in lands in Buffalo County, Wisconsin pursuant to that certain Warranty Deed by Marion R. Earney to Gerald Earney and Cheryl Earney, husband and wife, dated March 24, 2010 and recorded in the office of the Register of Deeds for Buffalo County, Wisconsin, on March 25, 2010, in Volume 470 of Records, Page 237, as Document Number 241541(the "Life Estate"); and

WHEREAS, the lands subject to the Lease Estate are described as all lands located South of Schoepps Valley Road located in the Southeast corner quarter of Section 32, Township 21 North, Range 11 West; and

WHEREAS, a portion of Lease Parcel 1, as described in the Lease, is subject to the Life Estate; and

WHEREAS, Marion R. Earney is willing to execute this instrument.

NOW, THEREFORE, for good and valuable consideration, Marion R. Earney, as holder of the Life Estate, does hereby: (a) acknowledge receipt of a copy of the Lease; (b) join in the Lease as if she were the Landlord; and (c) consent to the execution and delivery of the Lease by Landlord.

**IN WITNESS WHEREOF**, the undersigned has executed this Joinder of and Consent to Lease by Life Estate Holder on July \_\_, 2013.

Marion R Earney  
Marion R. Earney

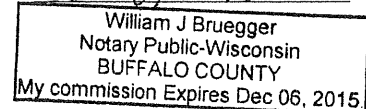
ACKNOWLEDGMENT

STATE OF WISCONSIN    )  
  ) ss:  
COUNTY OF BUFFALO    )

The foregoing instrument was acknowledged before me on July 21, 2013, by **Marion R. Earney**, to me known to be the person who executed the foregoing instrument and acknowledged the same.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

William J. Bruegger  
\* William J. Bruegger  
Notary Public, State of Wisconsin  
My Commission Dec. 6, 2015



This instrument drafted by Attorney Joseph R. Mirr on behalf of ZEER LLC



## **APPENDIX B**

### **MAPS**

- Figure 1. Existing Conditions
- Figure 2. Property Owners / Structures / Well Locations
- Figure 3. Overall Operations and Erosion Control Plan
  - Figure 3a. Phase I and Wet Plant – Operations and Erosion Control Plan
  - Figure 3b. Phase II Corridor – Operations and Erosion Control Plan
  - Figure 3c. Phase II – Operations and Erosion Control Plan
  - Figure 3d. Phase III – Operations and Erosion Control Plan
- Figure 4. Haul Routes Map
- Figure 5. WISCLAND Landcover Map
- Figure 6. NRCS Soil Survey Map
- Figure 7. Groundwater Elevation Map
- Figure 8. Wetland Delineation Map
- Figure 9. Wisconsin Wetland Inventory Map
- Figure 10. Flood Insurance Rate Map
- Figure 11. USGS Topographical Map

## MAPS REQUIRED

Completed	Map Requirement	Figure Number
X	Perimeter of mine boundary (including processing area)	1, 2, 3
X	Pre/ <del>Post</del> -mining contours (Reclamation Plan)	1
X	Residential wells within 3,960 feet	2
X	Existing structures within 2,640 feet	2
X	Existing and proposed structures within the mine site	2
X	Location of settling ponds	3a, 3c, 3d
X	Wetland boundaries	8
X	Direction of flow of storm water run-off	1
X	Adjacent property owners	2
X	Surface water within 2,640 feet	1-11
X	Excavation areas with delineated mine phases	3, 3a, 3c, 3d
X	Location of erosion control berms and topsoil	3a, 3c, 3d
X	Location of storm water ponds	3a, 3c, 3d
X	Location of material stockpiling	3a, 3c, 3d

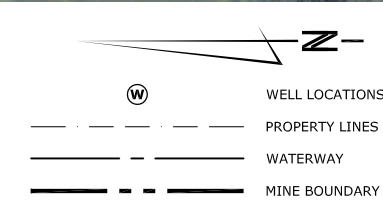






G:\2013-proj\13373041\dwg\PROPERTY OWNERS, STRUCTURES & WELL LOCATIONS.dwg

PLOT DATE: Jul 22, 2013 - 09:12am



NO.	BY	DATE	REVISIONS

PROJECT MANAGER	SHARON MASEK
CHECKED BY:	
APPROVED BY:	

**COOPER  
ENGINEERING**

2600 COLLEGE DRIVE, P.O. BOX 230  
RICE LAKE, WISCONSIN 54868-0230  
TELEPHONE (715) 234-7008  
FAX (715) 234-1025

**BADGER BLUFF SANDS LLC**  
**WAUMANDEE TOWNSHIP, BUFFALO COUNTY, WISCONSIN**

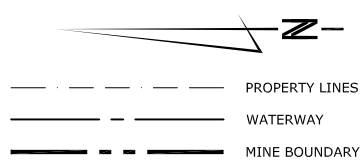
SHEET DESCRIPTION  
**ADJACENT PROPERTY OWNERS,  
STRUCTURES, & WELL LOCATIONS**

DATE 07/17/2013	DRAWN BY KB
SCALE 0 250 500	PROJECT NO. 13373041
	SHEET NO. FIGURE 2



G:\2013-proj\13373041\dwg\PHASING & OPERATIONS.dwg

PLOT DATE: Jul 22, 2013 - 09:12am



NO.	BY	DATE	REVISIONS

PROJECT MANAGER	SHARON MASEK
CHECKED BY:	
APPROVED BY:	

**COOPER  
ENGINEERING**

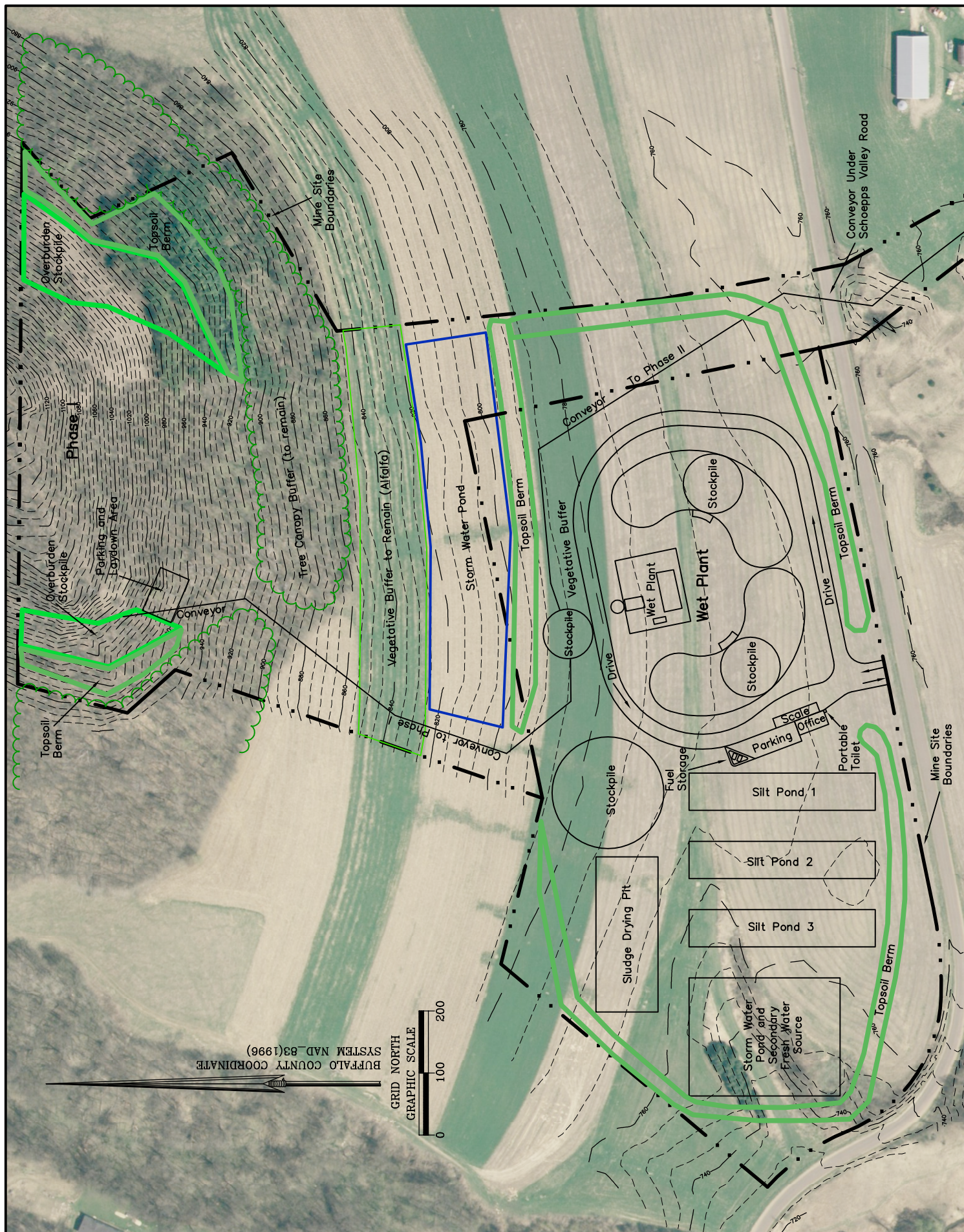
2600 COLLEGE DRIVE, P.O. BOX 230  
RICE LAKE, WISCONSIN 54868-0230  
TELEPHONE (715) 234-7008  
FAX (715) 234-1025

**BADGER BLUFF SANDS LLC**  
**WAUMANDEE TOWNSHIP, BUFFALO COUNTY, WISCONSIN**

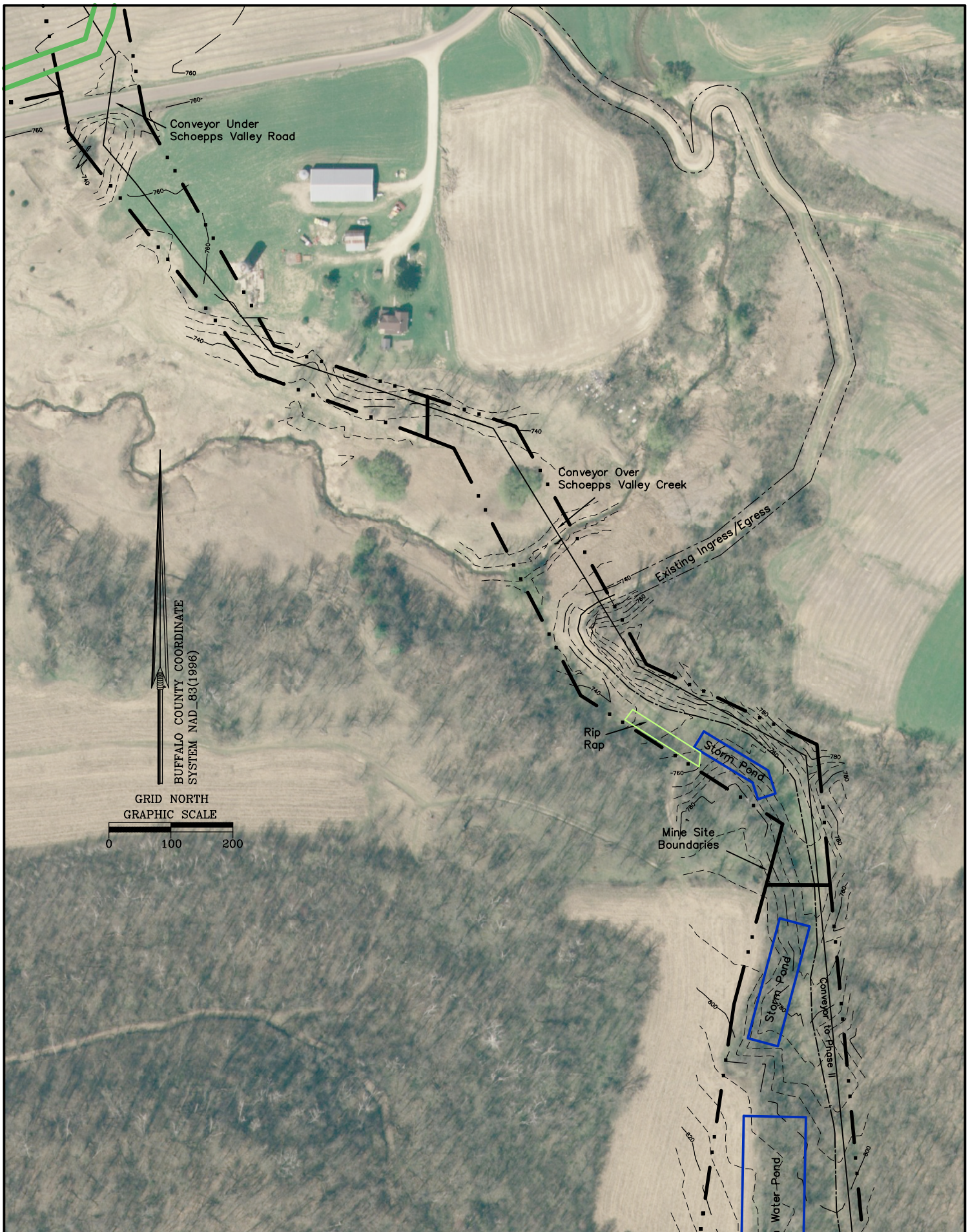
SHEET DESCRIPTION  
**OVERALL OPERATIONS AND  
EROSION CONTROL PLAN**

DATE 07/17/2013	DRAWN BY KB
SCALE 0 250	PROJECT NO. 13373041
	SHEET NO. FIGURE 3

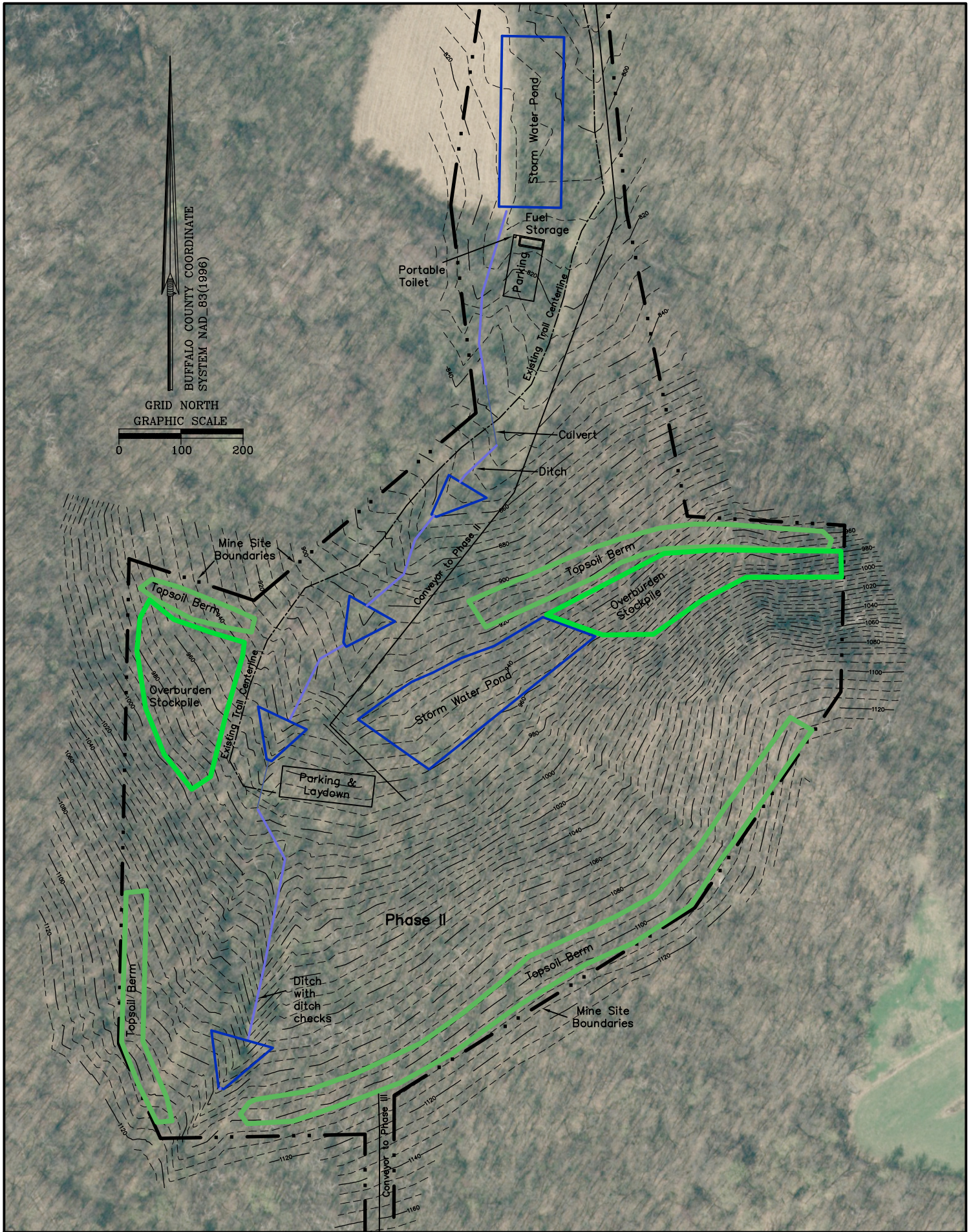




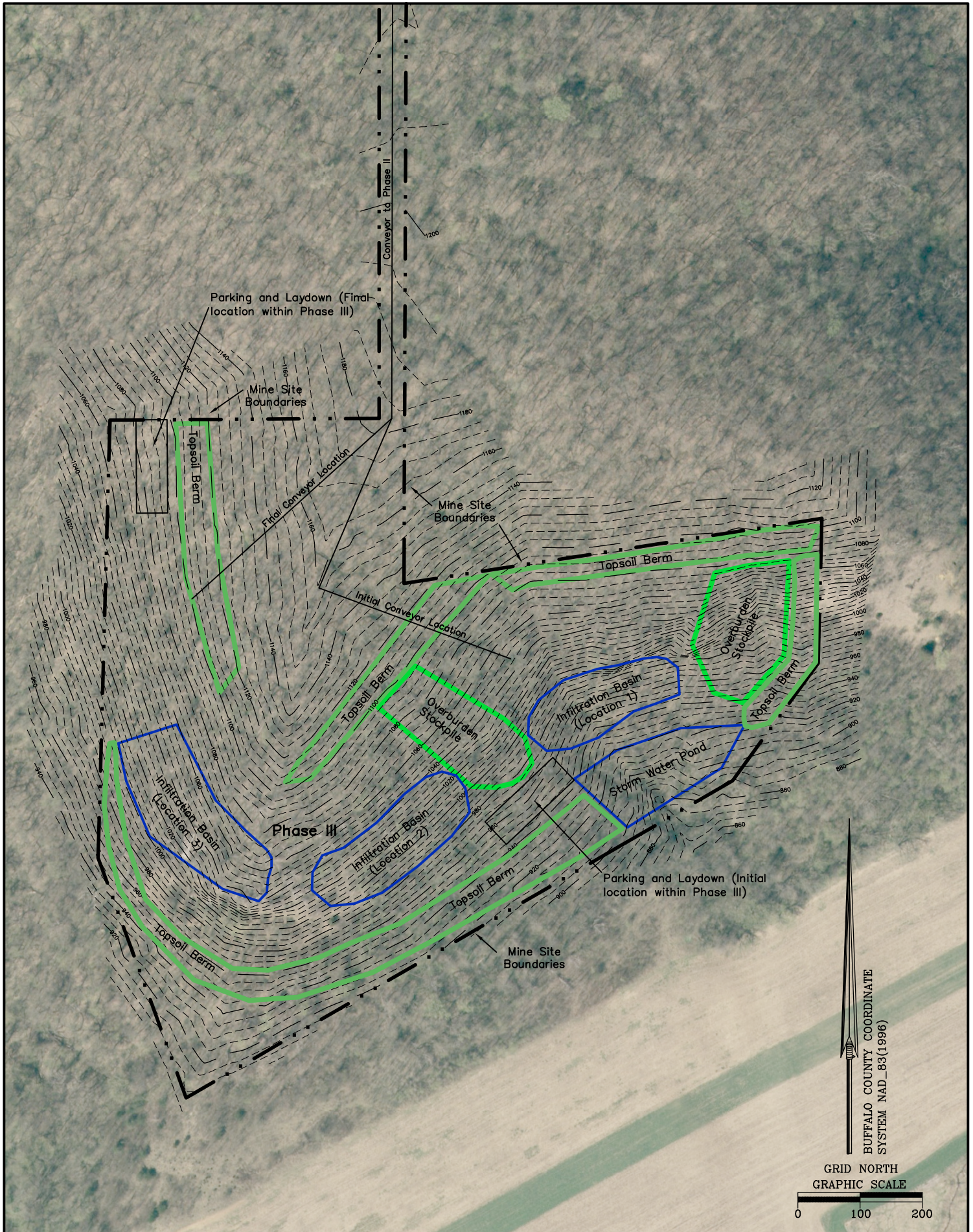






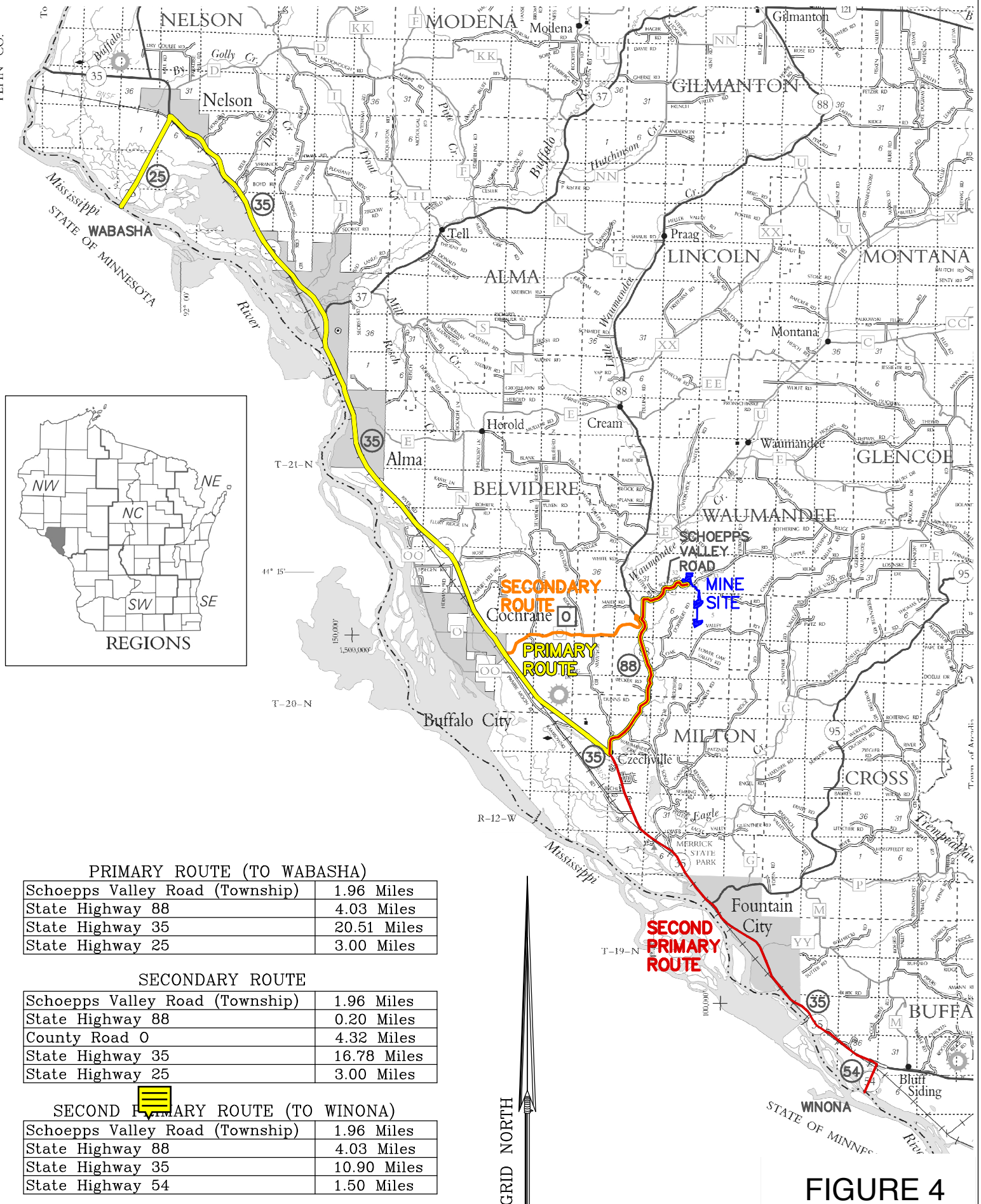




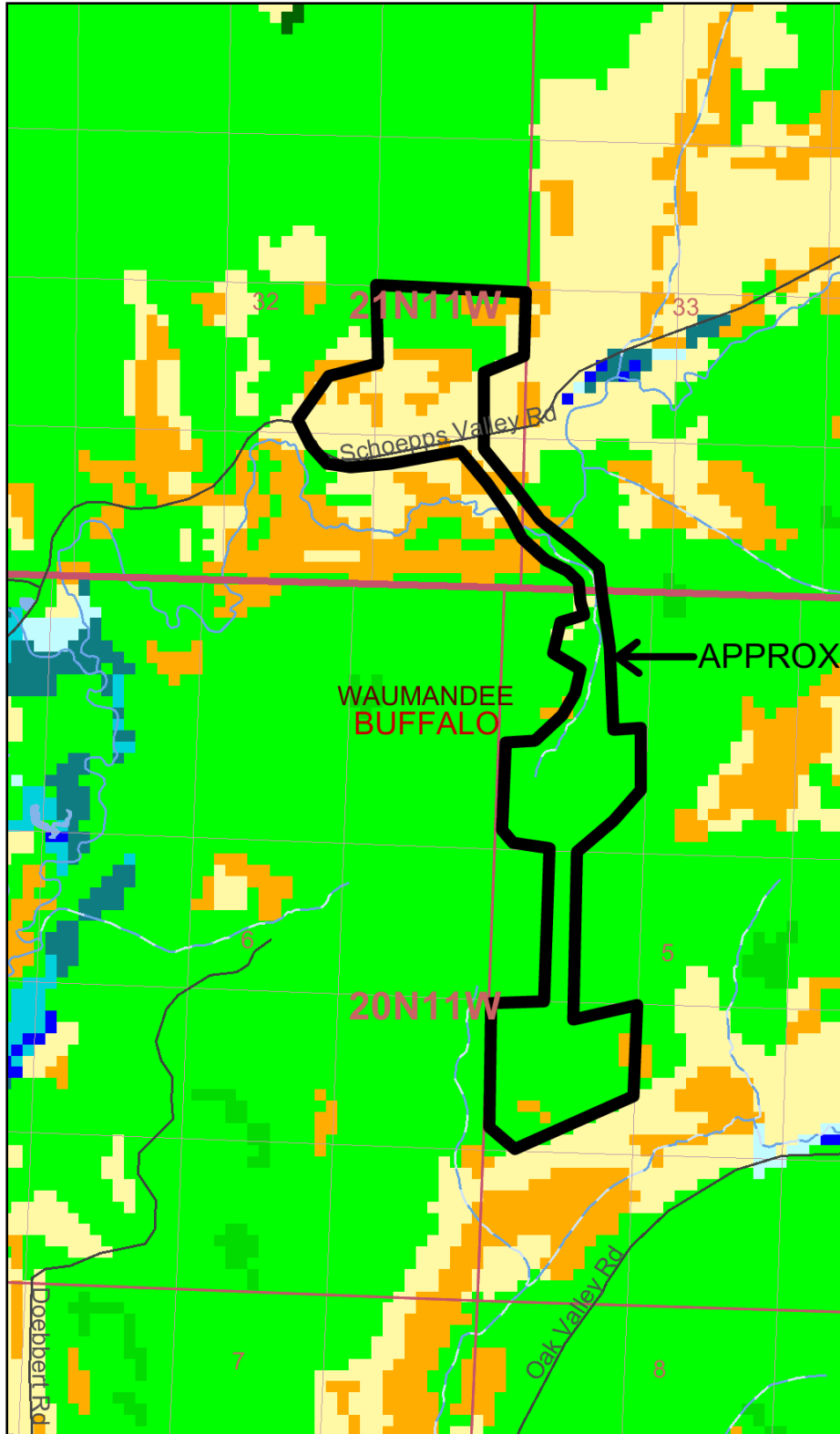




# MAP OF HAUL ROUTES BUFFALO COUNTY, WISCONSIN



# Badger Bluff Sands LLC



## Legend

### Major Highways

- Interstate
- State Highway
- U.S. Highways
- County Roads
- Local Roads
- 24K County Boundaries
- PLSS Townships
- PLSS Sections
- PLSS Q-Q Sections

### Civil Towns

- Civil Town
- 24K Open Water
- 24K Rivers and Shorelines

- Intermittent
- Fluctuating
- Perennial

### Cities and Villages

- Village
- City

### WISCLAND Landcover

- High Intensity Urban
- Low Intensity Urban
- Golf Course
- General Agriculture
- Cranberry Bog
- Grassland
- Coniferous Forest
- Broad-leaved Deciduous Forest
- Mixed Deciduous-Coniferous Forest
- Open Water
- Emergent-Wet Meadow Wetland
- Lowland Shrub Wetland
- Forested Wetland
- Barren
- Shrubland
- Cloud Cover
- Other

NAIP 2010 Color Air Photo



Scale: 1:18,400

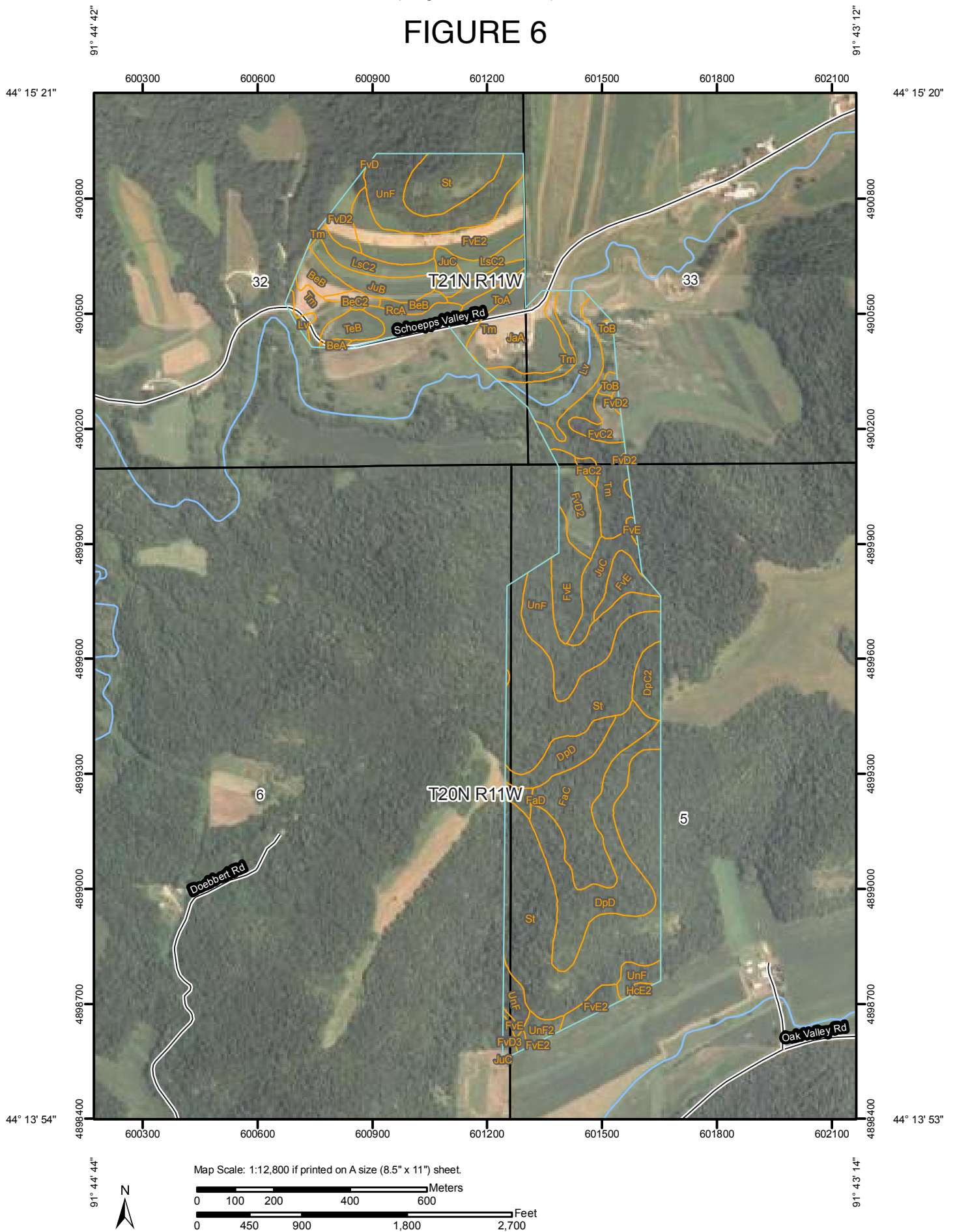
FIGURE 5

Map created on Jul 15, 2013

Wisconsin Wetland Inventory (WWI) maps show graphic representations of the type, size and location of wetlands in Wisconsin. These maps have been prepared from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work. State statutes define a wetland as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions." The principal focus of the WWI is to produce wetland maps that are graphic representations of the type, size and location of wetlands in Wisconsin. Within this context, the objective of the WWI is to produce reconnaissance level information on the location, type, size of these habitats such that they are accurate at the nominal scale of the 1:24,000 (1 inch = 2000 feet) base map. The DNR recognizes the limitations of using remotely sensed information as the primary data source. They are to be used as a guide for planning purposes. There is no attempt, in either the design or products of this inventory, to define the limits of jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning specified agency regulatory programs and jurisdictions that may affect such activities. The most accurate method of determining the legal extent of a wetland for federal or state regulations is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.



FIGURE 6



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Units

### Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot



Very Stony Spot



Wet Spot



Other

### Special Line Features



Gully



Short Steep Slope



Other

### Political Features



Cities



PLSS Township and Range



PLSS Section

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

## MAP INFORMATION

Map Scale: 1:12,800 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Buffalo County, Wisconsin

Survey Area Data: Version 6, Sep 21, 2011

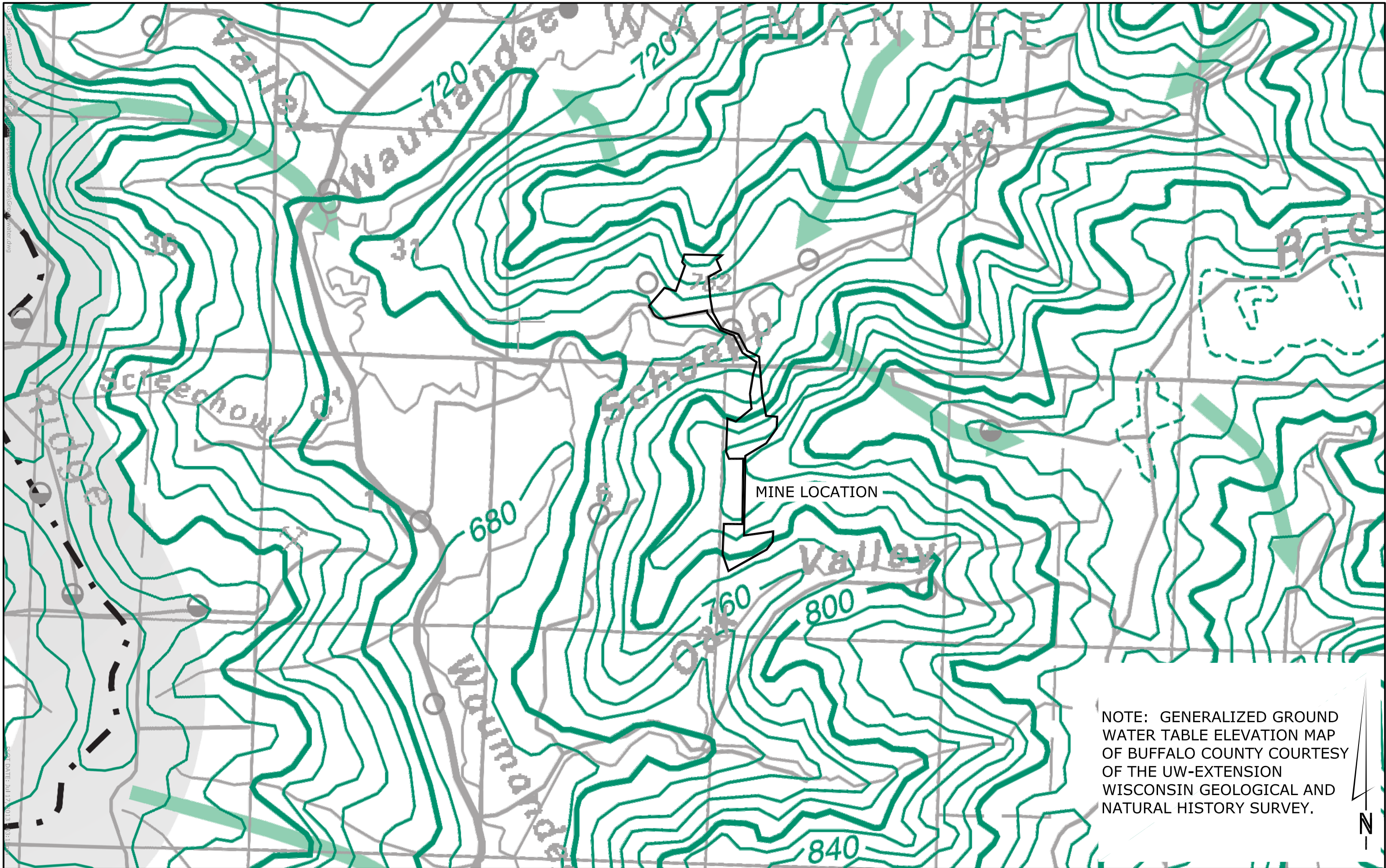
Date(s) aerial images were photographed: 7/19/2005; 7/14/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Buffalo County, Wisconsin (WI011)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeA	Bertrand silt loam, 0 to 2 percent slopes	0.4	0.2%
BeB	Bertrand silt loam, 2 to 6 percent slopes	3.6	1.6%
BeC2	Bertrand silt loam, 6 to 12 percent slopes, moderately eroded	1.0	0.5%
DpC2	Dubuque silt loam, deep, 6 to 12 percent slopes, moderately eroded	2.9	1.3%
DpD	Dubuque silt loam, deep, 12 to 20 percent slopes	20.7	9.3%
FaC	Fayette silt loam, uplands, 6 to 12 percent slopes	12.7	5.7%
FaC2	Fayette silt loam, uplands, 6 to 12 percent slopes, moderately eroded	0.6	0.3%
FaD	Fayette silt loam, uplands, 12 to 20 percent slopes	1.0	0.4%
FvC2	Fayette silt loam, valleys, 6 to 12 percent slopes, moderately eroded	2.5	1.1%
FvD	Fayette silt loam, valleys, 12 to 20 percent slopes	0.0	0.0%
FvD2	Fayette silt loam, valleys, 12 to 20 percent slopes, moderately	7.9	3.5%
FvD3	Fayette silt loam, valleys, 12 to 20 percent slopes, severely eroded	0.7	0.3%
FvE	Fayette silt loam, valleys, 20 to 30 percent slopes	8.2	3.7%
FvE2	Fayette silt loam, valleys, 20 to 30 percent slopes, moderately	12.4	5.5%
HcE2	Hesch fine sandy loam, 20 to 30 percent slopes, moderately eroded	0.2	0.1%
JaA	Jackson silt loam, 0 to 2 percent slopes	9.7	4.3%
JuB	Judson silt loam, 2 to 6 percent slopes	4.2	1.9%
JuC	Judson silt loam, 6 to 12 percent slopes	6.3	2.8%
LsC2	Lindstrom silt loam, 6 to 12 percent slopes, moderately eroded	5.2	2.3%
Lv	Loamy alluvial land, poorly drained	9.6	4.3%
RcA	Richwood silt loam, 0 to 2 percent slopes	3.2	1.4%
St	Steep stony and rocky land	61.2	27.4%
TeB	Tell silt loam, 2 to 6 percent slopes	2.4	1.1%
Tm	Terrace escarpments, loamy	18.3	8.2%
ToA	Toddville silt loam, 0 to 2 percent slopes	2.1	0.9%
ToB	Toddville silt loam, 2 to 6 percent slopes	0.7	0.3%
UnF	Urne-Norden loams, 30 to 40 percent slopes	24.6	11.0%
UnF2	Urne-Norden loams, 30 to 40 percent slopes, moderately eroded	1.3	0.6%
<b>Totals for Area of Interest</b>		<b>223.8</b>	<b>100.0%</b>

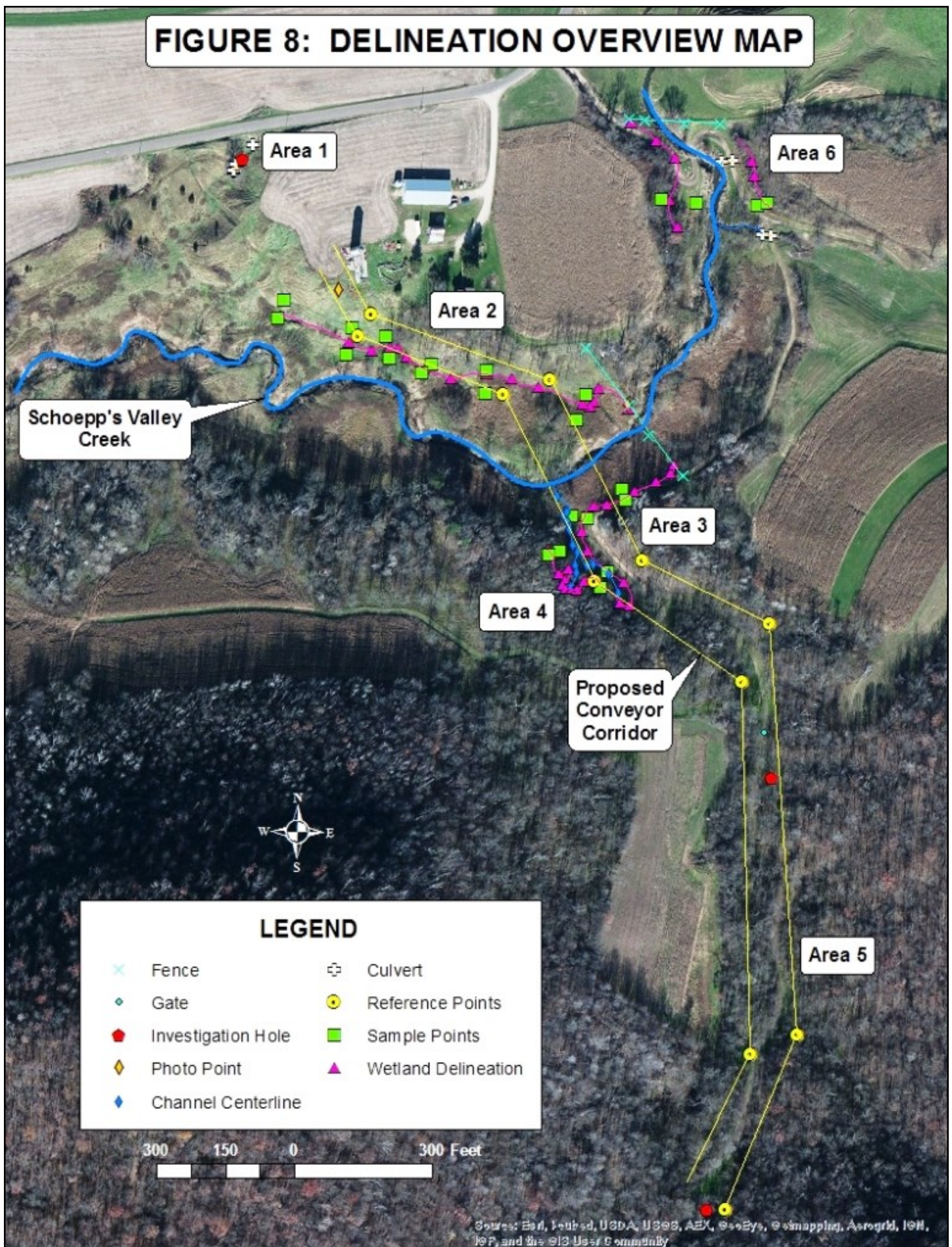




NOTE: GENERALIZED GROUND  
WATER TABLE ELEVATION MAP  
OF BUFFALO COUNTY COURTESY  
OF THE UW-EXTENSION  
WISCONSIN GEOLOGICAL AND  
NATURAL HISTORY SURVEY.



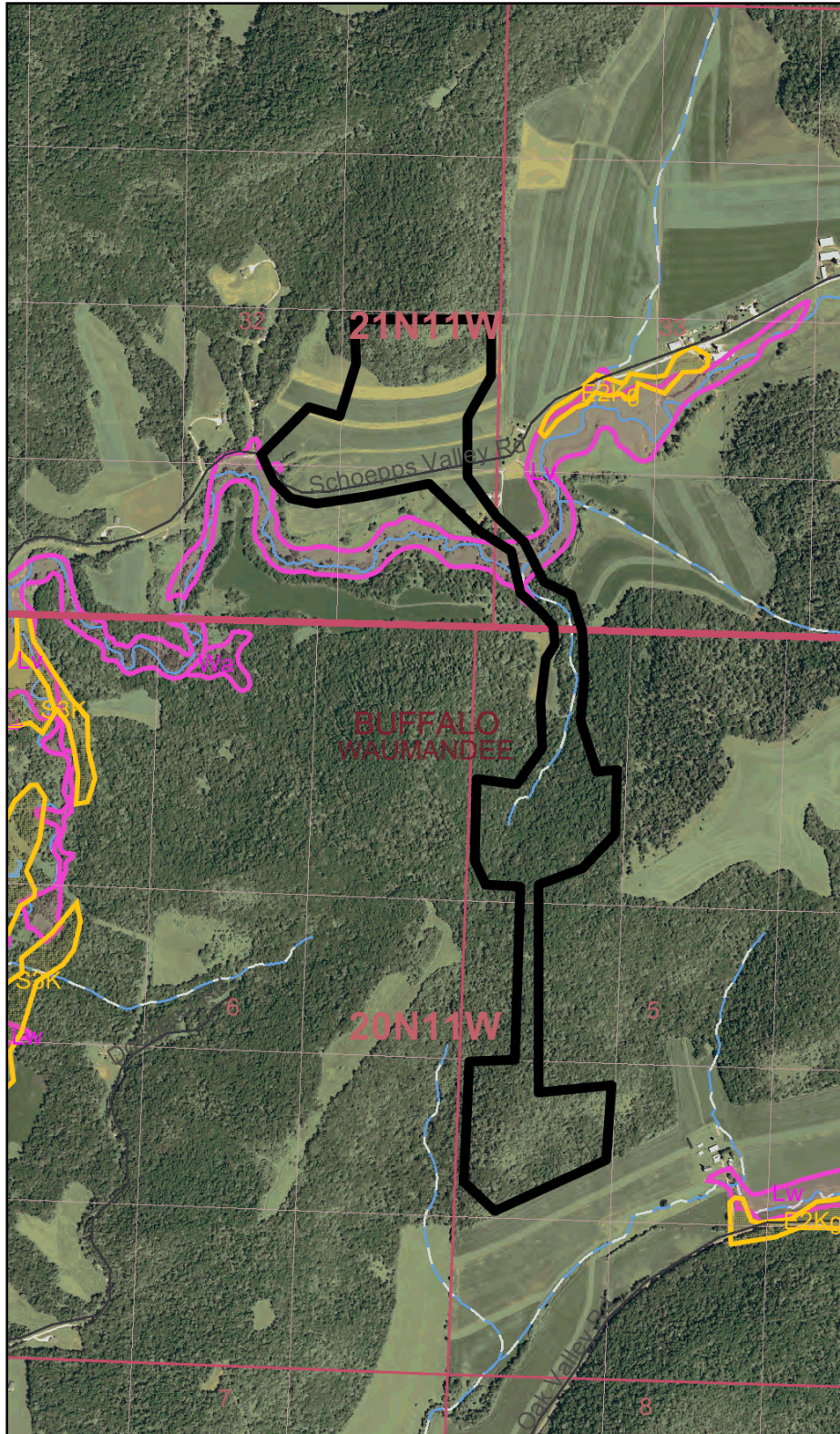
**FIGURE 8: DELINEATION OVERVIEW MAP**



Wetland Delineation performed by Wisconsin Wetland Specialists.



# WWI Map



## Legend

- Railroads
- Major Highways
  - Interstate
  - State Highway
  - U.S. Highway
  - County Road
  - Local Road
- 24K County Boundaries
- PLSS Townships
- PLSS Sections
- PLSS Q-Q Sections
- Civil Towns
  - Civil Town
- USDA Wetspots
- DNR Wetland Points
  - Excavated Pond
  - Dammed Pond
  - Wetland Too Small to Delineate
  - Filled Excavated Pond
  - Filled Dammed Pond
  - Filled Wetland Too Small to Delineate
  - Filled or Drained Wetland
- DNR Wetland Areas
  - Upland
  - Wetland
  - Filled or Drained Wetland
  - Wetland Indicator Soils
  - 24K Open Water
  - 24K Rivers and Shorelines
- Intermittent
- Fluctuating
- Perennial
- Cities and Villages
  - Village
  - City
- NAIP 2010 Color Air Photo



Scale: 1:17,544

FIGURE 9

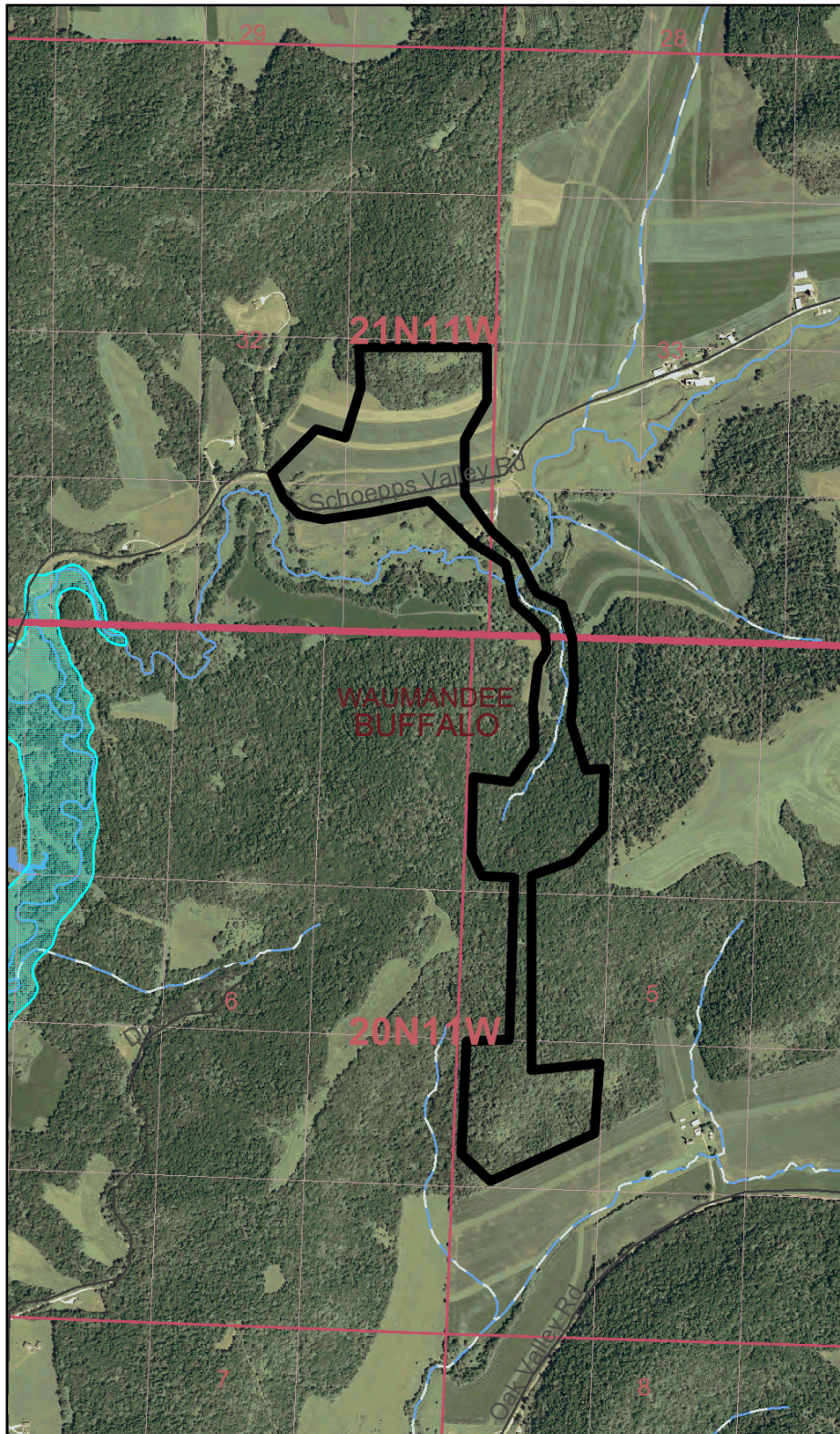
0 1000 2000 ft.

Map created on Jul 16, 2013

Wisconsin Wetland Inventory (WWI) maps show graphic representations of the type, size and location of wetlands in Wisconsin. These maps have been prepared from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work. State statutes define a wetland as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions." The principal focus of the WWI is to produce wetland maps that are graphic representations of the type, size and location of wetlands in Wisconsin. Within this context, the objective of the WWI is to produce reconnaissance level information on the location, type, size of these habitats such that they are accurate at the nominal scale of the 1:24,000 (1 inch = 2000 feet) base map. The DNR recognizes the limitations of using remotely sensed information as the primary data source. They are to be used as a guide for planning purposes. There is no attempt, in either the design or products of this inventory, to define the limits of jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning specified agency regulatory programs and jurisdictions that may affect such activities. The most accurate method of determining the legal extent of a wetland for federal or state regulations is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.



# FIRM



## Legend

- Railroads
- Major Highways
  - Interstate
  - State Highway
  - U.S. Highway
  - County Roads
  - Local Roads
- 24K County Boundaries
- PLSS Townships
- PLSS Sections
- PLSS Q-Q Sections
- Civil Towns
  - Civil Town
- Digital Flood Boundaries
  - 100 Year Floodplain
  - 500 Year Floodplain
  - Floodway
  - 24K Open Water
  - 24K Rivers and Shorelines
- Intermittent Fluctuating
- Perennial
- Cities and Villages
  - Village
  - City
- NAIP 2010 Color Air Photo



Scale: 1:18,757

0 1100 2200 ft.

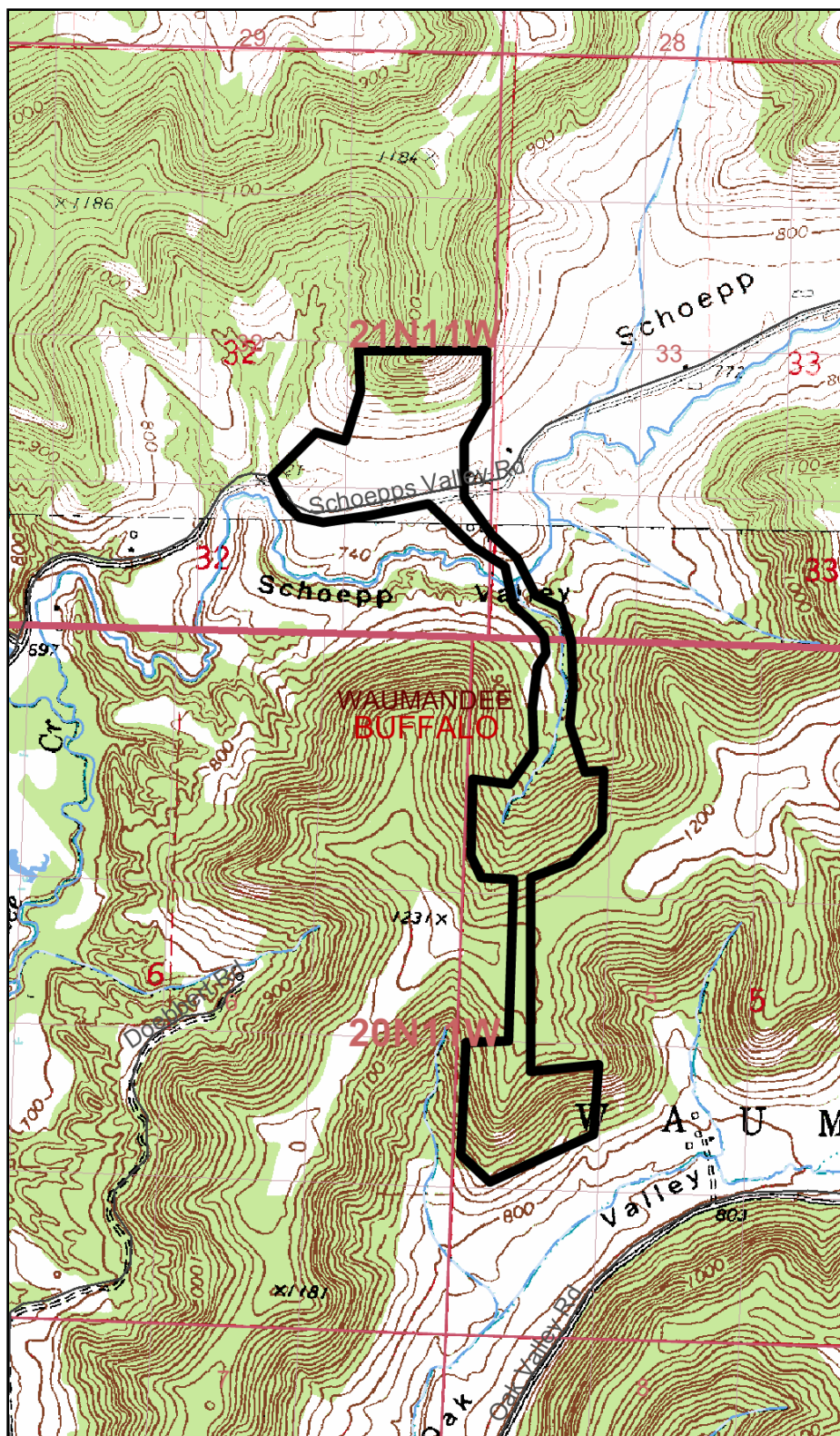
Map created on Jul 16, 2013

FIGURE 10

Wisconsin Wetland Inventory (WWI) maps show graphic representations of the type, size and location of wetlands in Wisconsin. These maps have been prepared from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work. State statutes define a wetland as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions." The principal focus of the WWI is to produce wetland maps that are graphic representations of the type, size and location of wetlands in Wisconsin. Within this context, the objective of the WWI is to produce reconnaissance level information on the location, type, size of these habitats such that they are accurate at the nominal scale of the 1:24,000 (1 inch = 2000 feet) base map. The DNR recognizes the limitations of using remotely sensed information as the primary data source. They are to be used as a guide for planning purposes. There is no attempt, in either the design or products of this inventory, to define the limits of jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning specified agency regulatory programs and jurisdictions that may affect such activities. The most accurate method of determining the legal extent of a wetland for federal or state regulations is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.



# USGS Topo Map



## Legend

- Railroads
- Major Highways
  - Interstate
  - State Highway
  - U.S. Highway
  - County Roads
  - Local Roads
- 24K County Boundaries
- PLSS Townships
- PLSS Sections
- PLSS Q-Q Sections
- Civil Towns
  - Civil Town
  - 24K Open Water
  - 24K Rivers and Shorelines
- Intermittent
- Fluctuating
- Perennial
- Cities and Villages
  - Village
  - City
- NAIP 2010 Color Air Photo



Scale: 1:18,757

0 1100 2200 ft.

Map created on Jul 16, 2013

FIGURE 11

Wisconsin Wetland Inventory (WWI) maps show graphic representations of the type, size and location of wetlands in Wisconsin. These maps have been prepared from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work. State statutes define a wetland as "an area where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrophytic vegetation and which has soils indicative of wet conditions." The principal focus of the WWI is to produce wetland maps that are graphic representations of the type, size and location of wetlands in Wisconsin. Within this context, the objective of the WWI is to produce reconnaissance level information on the location, type, size of these habitats such that they are accurate at the nominal scale of the 1:24,000 (1 inch = 2000 feet) base map. The DNR recognizes the limitations of using remotely sensed information as the primary data source. They are to be used as a guide for planning purposes. There is no attempt, in either the design or products of this inventory, to define the limits of jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning specified agency regulatory programs and jurisdictions that may affect such activities. The most accurate method of determining the legal extent of a wetland for federal or state regulations is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.



## **APPENDIX C**

### **TOWN MEETING MINUTES**

## **Waumandee Town Board Meeting Minutes – April 9, 2013**

The monthly Town of Waumandee board meeting was called to order by Chairman Rick Reuter at 8:00 p.m., at the Waumandee-Montana-Lincoln Fire Station.

Board members present: Rick Reuter, John Sendelbach, Mike Schmidtknecht, clerk – Kim Pronschinske, treasurer – Todd Pronschinske. Others in attendance: Les Brommer, Steve Speltz, Dan Schmidtknecht, Reggie Franz, Jeanne Franz, Glenette Rosenow, Gerald Earney, Dennis Earney, Kevin Rich, Tom George, Tom Bagniewski, Gary LeMasters, & Clyde Abts.

Current Bank Balances: General Checking 100-079 . . . . \$8,359.86  
Money Market 2020-021 . . . . . \$2,604.32

Motion by Mike Schmidtknecht to approve the March minutes. Second by John Sendelbach. Motion carried 3-0.

Motion by Mike Schmidtknecht to approve the March treasurer's report. Second by John Sendelbach. Motion carried 3-0.

### **Public Comment:**

- 1) Glenette Rosenow asked if there could be copies of the minutes and treasurer's report available for those in attendance at each meeting.
- 2) Dan Schmidtknecht questioned how many liquor licenses were available in the township. Kim Pronschinske explained that there is one "Class B" license still available at a minimum cost of \$10,000. Other liquor licenses are unlimited as long as the applicant meets all legal requirements set forth by the state.
- 3) Jeanne Franz questioned the road use agreement on the agenda, referring to Mississippi Connection Land & Timber Co. She suggested the board contact other townships to research the agreements they have in place and contact people living on the roads in question to get their input.
- 4) Reggie Franz questioned if there was a fee set for a road use agreement. He thought he recalled a \$50,000 amount at a previous meeting. He also asked if there was any written contract from Mississippi Connection Land & Timber Co. to date, the size and weight of the trucks they would use to haul, and if changes in the road (corners, etc.) would need to be addressed before they could haul sand. He said that in Chippewa County, \$1,000,000 per mile was agreed upon. The board stated that the amount they had discussed regarding Schoepp's Valley Rd. was \$500,000 and that there was nothing on paper at this point except the road and bridge reports done by the engineers.
- 5) Kevin Rich reinforced that the engineers who did the assessments came up with estimates of \$500,000 which included a 30% overage.
- 6) Gary LeMasters commented on Kevin's time frame for the application process, permit fees for mining, and the road agreement in question, as the county still has decisions to make regarding sand mines.

The board discussed whether or not a road agreement with Mississippi Connection Land & Timber Co. is beneficial at this time. Because Peter Stoltman (Buffalo County Zoning) had spoken with Rick Reuter stating it was a good idea, and Kevin Rich has had extensive research done on Schoepp's Valley Rd., Rick felt that the following proposal should be put in the form of a motion. Rick Reuter moved "The Town of Waumandee may negotiate the terms of a road use agreement for a portion of Schoepp's Valley Rd. with the Mississippi Connection Land & Timber Co., Gerald & Cheryl Earney, and all agents that may represent them. This negotiation may occur following the Buffalo County Board of Adjustment's approval of their industrial sand mine in Schoepp's Valley. The operator shall obtain an agreement with the applicable Township before the mined product can be hauled on any town road." Second by John Sendelbach. Motion carried 3-0.

Rick Reuter moved to accept the mowing contract of \$3,300 from Scenic Landscape Services for 2013. Second by Mike Schmidtknecht. Motion carried 3-0.

Motion by John Sendelbach to approve a Class "B" & "Class C" liquor license from May 1, 2013 – October 31, 2013 for Heather Secrist, d/b/a Suncrest Gardens LLC, at a cost of \$50 each. Second by Rick Reuter. Motion carried 3-0.

The Oshkosh plow truck is here. Rick Reuter & Clyde Abts looked at various boxes. A 12 ft. V-box is available for \$1,000 and a spinner (for sand application) would still need to be purchased. The cost of a new box and spinner from Universal Truck Equipment is \$7,200. Clyde estimated \$500 to build just the spinner. Mike Schmidtknecht moved to purchase the 12 ft. V-box for \$1000 from Borkowski Towing and Salvage. Second by John Sendelbach. Motion carried 3-0.

The board discussed items that should be addressed regarding the 3 yr. road plan at the annual meeting.

Rick Reuter questioned where the town board stands if confronted about the accident involving the plow truck and Gordon Hohmann's car in January. Mike Schmidtknecht advised at this point it's completely an insurance issue.

Mike Schmidtknecht moved to adjourn, second by John Sendelbach. Motion carried 3-0. Meeting adjourned.

Kim Pronschinske, clerk

## **APPENDIX D**

### **TRAFFIC/ROAD STUDIES BRIDGE INFORMATION**

1. Traffic Impact Study
2. Driveway Location Analysis
3. Road Evaluation Report
4. Bridge Inspection Report
5. Bridge Information

TRAFFIC IMPACT STUDY FOR:

**Schoepps Valley Road Sand Mine**  
Buffalo County, Wisconsin

November 18, 2012



**PREPARED FOR:**

Cooper Engineering  
2600 College Drive  
Rice Lake, WI 54868  
Contact Person: Scot Balsavich, VP

**PREPARED BY:**

Traffic Analysis & Design, Inc.  
N36 W7505 Buchanan Ct.  
Cedarburg, WI 53012  
Phone: (262)-377-1845  
Fax: (262)-377-4381  
Contact Persons: Tammi Czewski, P.E., PTOE  
John A. Bieberitz, P.E., PTOE

TRAFFIC  
ANALYSIS &  
DESIGN, INC.  




## **SCHOEPPS VALLEY ROAD SAND MINE TIA**

### **INTRODUCTION**

A sand mine is being proposed along Schoepps Valley Road in Buffalo County, Wisconsin. As shown on Exhibit 1, the sand mine site is located on the south side of Schoepps Valley Road, just over two miles northeast of State Trunk Highway (STH) 88.

The proposed Schoepps Valley Road sand mine is in the preliminary planning stages for operations, but is anticipated to have five employees working at the mine (7:00 a.m. to 6:30 or 7:00 p.m. shifts) plus 8-10 trucks hauling up to 80 loads per day. Hauling hours will be from 7:00 a.m. until 6:00 p.m. Monday through Friday (and Saturdays at times). During hauling hours, it is expected that all 8-10 trucks will arrive and leave within the same hour.

This report documents the procedures, findings and conclusions of the traffic impact analysis. The traffic impact analysis includes evaluation of traffic volumes and intersection geometrics with the buildout of the sand mine sites.

### **STUDY AREA**

The intersections evaluated in this study include the following:

- Schoepps Valley Road & STH 88
- Schoepps Valley Road & Proposed Mine Driveway

The study area roadways are discussed below:

**Schoepps Valley Road** is a two-lane rural roadway that predominantly runs east/west from STH 88 to Rotering Ridge Drive in Buffalo County. According to 24-hour volume counts collected by TADI in October 2012, Schoepps Valley Road has an average traffic volume of about 160 vehicles per day (vpd) west of Gleiter Road and about 150 vpd east of Gleiter Road.

**STH 88** is a two-lane north/south undivided rural highway that runs from STH 35 south of Cochrane, Wisconsin to Gilmanton, Wisconsin. According to the Wisconsin Department of Transportation (WisDOT), STH 88 had a 2009 annual average daily traffic (AADT) volume of about 720 vpd north of Schoepps Valley Road and about 730 vpd south of Schoepps Valley Road.

### **DATA COLLECTION**

TADI conducted a field review of the study area including a photo log of Schoepps Valley Road at the intersection with STH 88 and at the driveway location for the proposed sand mine. The field review included determination of speed limits, traffic control, turn lane geometrics, intersection spacing, etc. These features were compiled and illustrated on Exhibit 2.

In October 2012, TADI placed road tubes on Schoepps Valley Road, both east and west of Gleiter Road to obtain weekday 24-hour volume counts. Based on the data, nearly 97 percent of all vehicles on this section of Schoepps Valley are automobiles, bikes, buses, or small trucks. The remaining three percent are either three-axle single-unit trucks (about one percent), or double-bottom trucks (about two percent).

Weekday turning movement counts were also collected at the Schoepps Valley Road intersection with STH 88 from 6:00-9:00 a.m. and from 3:00-6:00 p.m. All traffic count data collected for this study is located in Appendix A. Based on the turning movement counts, the highest-volume hour during the weekday morning time period occurs from 7:15-8:15 a.m. and the highest-volume hour

during the weekday evening time period occurs from 5:00-6:00 p.m. The weekday morning and weekday evening peak hour traffic volumes are shown on Exhibit 3.

## **SITE DEVELOPMENT**

The new trips expected from the proposed sand mine were determined from the number of employees, shift patterns, and trucking operations to and from the sand mine on Schoepps Valley Road. Based on sand mine operations, truck hauling and employee trips to/from the development sites are expected to generate a total of 90 new trips during a typical weekday, 25 new trips during the weekday morning peak hour (15 entering and 10 exiting), and 25 trips during the weekday evening peak hour (10 entering and 15 exiting).

The distribution of the new truck hauling and employee trips to and from the proposed sand mine driveways were determined based on STH 88 access to surrounding cities and other populated areas. Based on these geographic factors, the distribution of trucks and employees to/from the proposed mine site was evaluated as follows:

- 50% to and from the north on STH 88
- 50% to and from the south on STH 88

New trips to and from the proposed sand mine site were assigned to the study intersections along Schoepps Valley Road based on the above trip distribution. The employee trip generation, trip distribution, and traffic assignment is shown on Exhibit 4.

The year 2012 build traffic turning movement volumes at the study intersections were determined by adding the expected site new trips (Exhibit 4) to the year 2012 background traffic volumes (Exhibit 3). The year 2012 build traffic volumes are shown on Exhibit 5.

## **PEAK HOUR CAPACITY ANALYSIS**

### **Description of Level of Service**

The study area intersections were analyzed based on the procedures set forth in the *2000 Highway Capacity Manual* (HCM) using the Synchro 7.0 software. Intersection operation is defined by “level of service”. Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purpose of this traffic study, LOS C was used to define acceptable peak hour operating conditions. Descriptions of the various levels of service are as follows:

**LOS A** is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized intersections, average delays are less than 10 seconds. At unsignalized intersections, average delays are less than 10 seconds.

**LOS B** represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

**LOS C** still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

**LOS D** represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized

intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

**LOS E** represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

**LOS F** represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

### **Year 2012 Background Traffic Analysis**

The peak hour capacity/LOS table for the year 2012 background traffic condition is shown on Exhibit 6. The year 2012 background traffic (no development site traffic) was evaluated with the existing geometrics and traffic control at the Schoepps Valley Road intersection with STH 88. As shown, all turning movements at the study intersection operate at LOS A during the weekday morning and evening peak hours. The traffic analysis worksheet for the year 2012 background traffic condition is located in Appendix B of this report.

### **Year 2012 Build Traffic Analysis**

The peak hour capacity/LOS table for the year 2012 build traffic condition is also shown on Exhibit 6. The year 2012 build traffic (year 2012 background traffic plus additional traffic from the proposed sand mine) was evaluated with the existing geometrics and traffic control at the study intersections.

As shown, the additional traffic from the proposed sand mine is expected to result in LOS A for all traffic movements at the Schoepps Valley Road intersections with STH 88 and the proposed sand mine driveway. The traffic analysis worksheets for the year 2012 build traffic conditions are located in Appendix C of this report.

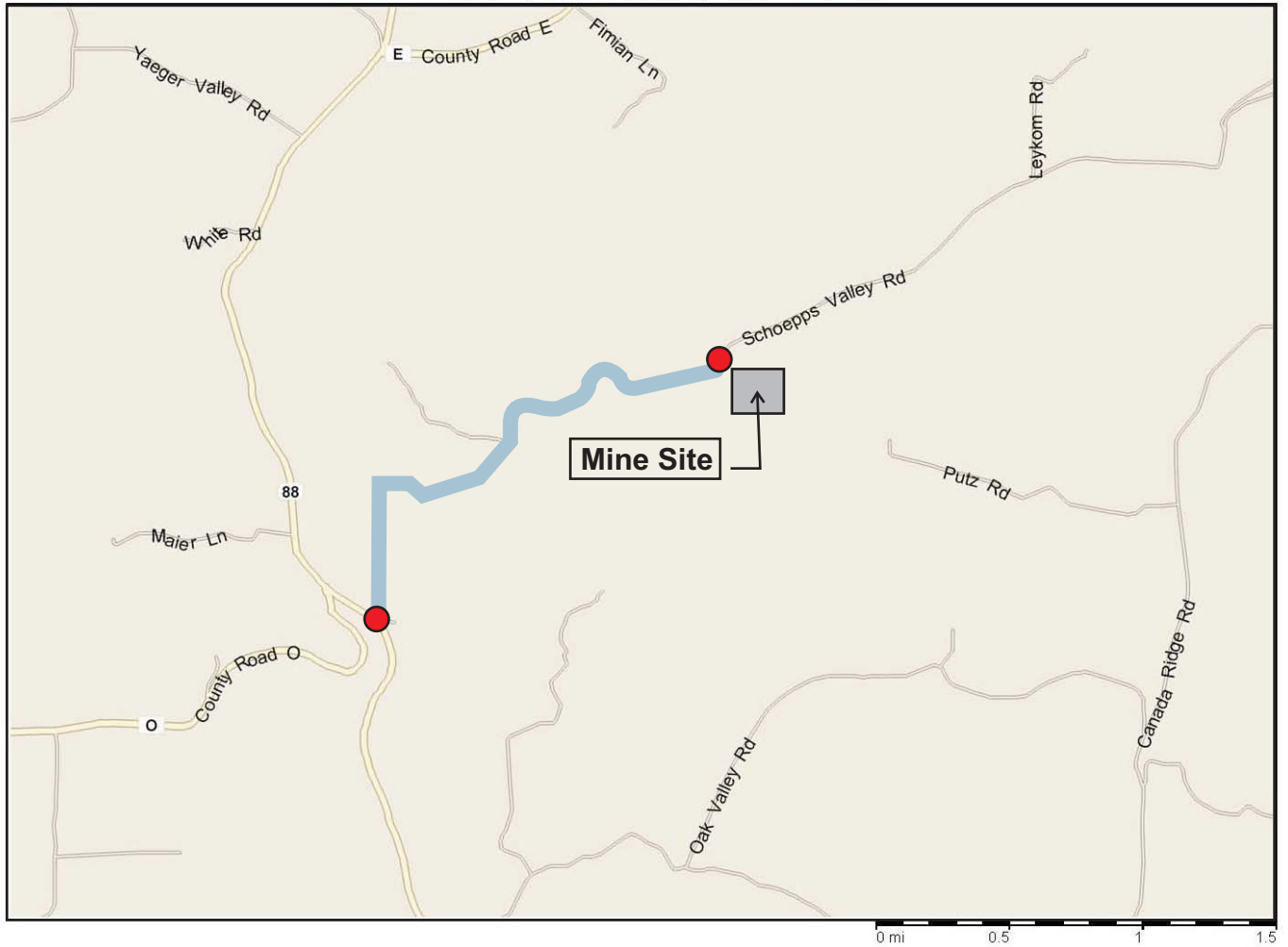
With full buildout of the sand mine, the expected daily traffic on Schoepps Valley Road is expected to increase to about 240 vpd. The expected daily traffic on STH 88 is expected to increase to about 765 and 775 vpd north and south of Schoepps Valley Road, respectively. Typically, two-lane rural roadways are considered to operate at LOS B or better with 4,400 vpd. Therefore, there is expected to be acceptable traffic operations at LOS B or better and excess capacity on both STH 88 and Schoepps Valley Road with buildout of the proposed sand mine.

### **SUMMARY/ CONCLUSIONS**

The Schoepps Valley Road intersections with STH 88 and the sand mine driveway are expected to operate acceptably at LOS A during the weekday morning and evening peak hours with full buildout of the sand mine along Schoepps Valley Road. The additional traffic expected from the proposed sand mine is not expected to require additional turn lanes or other roadway improvements for operational efficiency during the peak hours or typical weekdays with the year 2012 build traffic volumes.



Wisconsin, United States, North America





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EXHIBIT DATE: 11-18-12

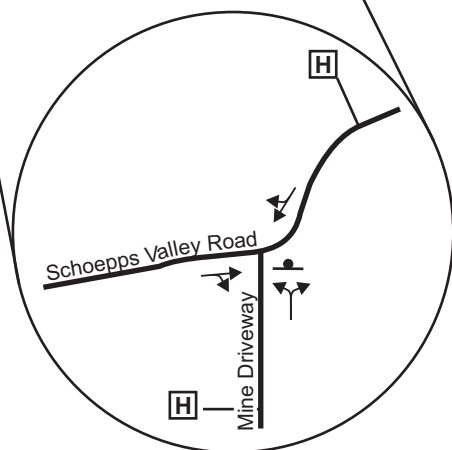
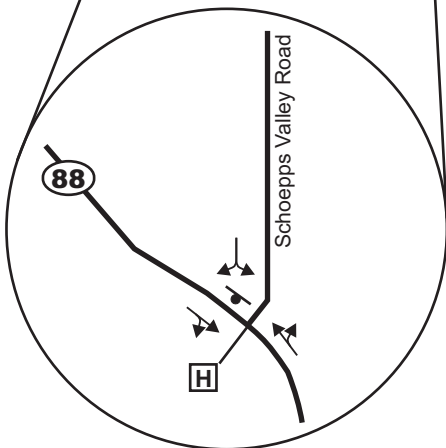
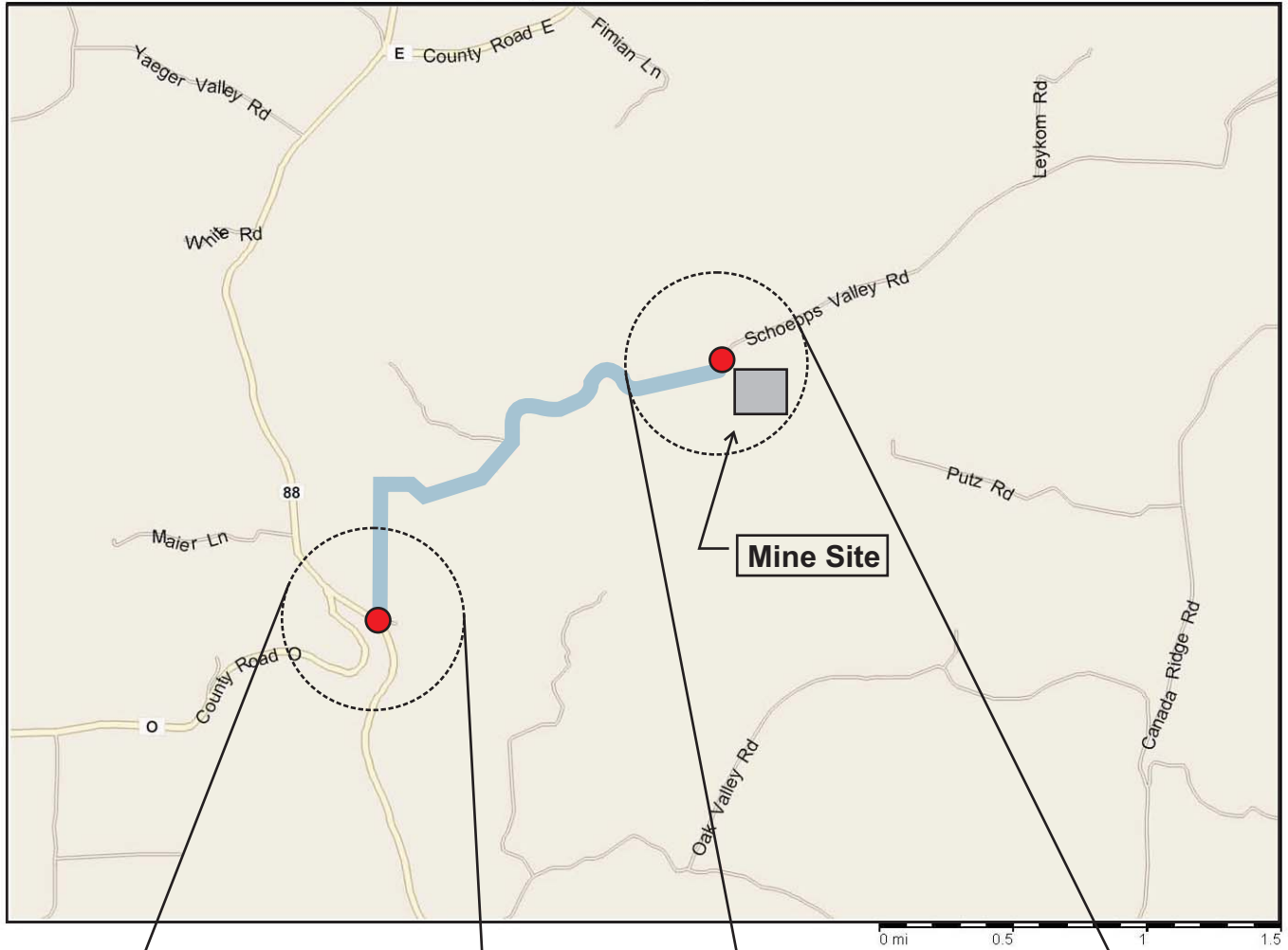
**LEGEND**

-  STUDY AREA
-  STUDY INTERSECTIONS

**EXHIBIT 1  
STUDY AREA MAP**



Wisconsin, United States, North America



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EXHIBIT DATE: 11-18-12

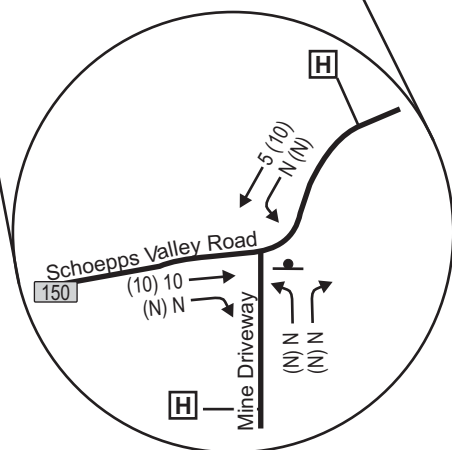
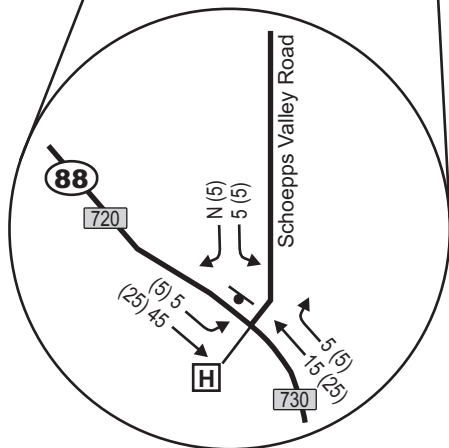
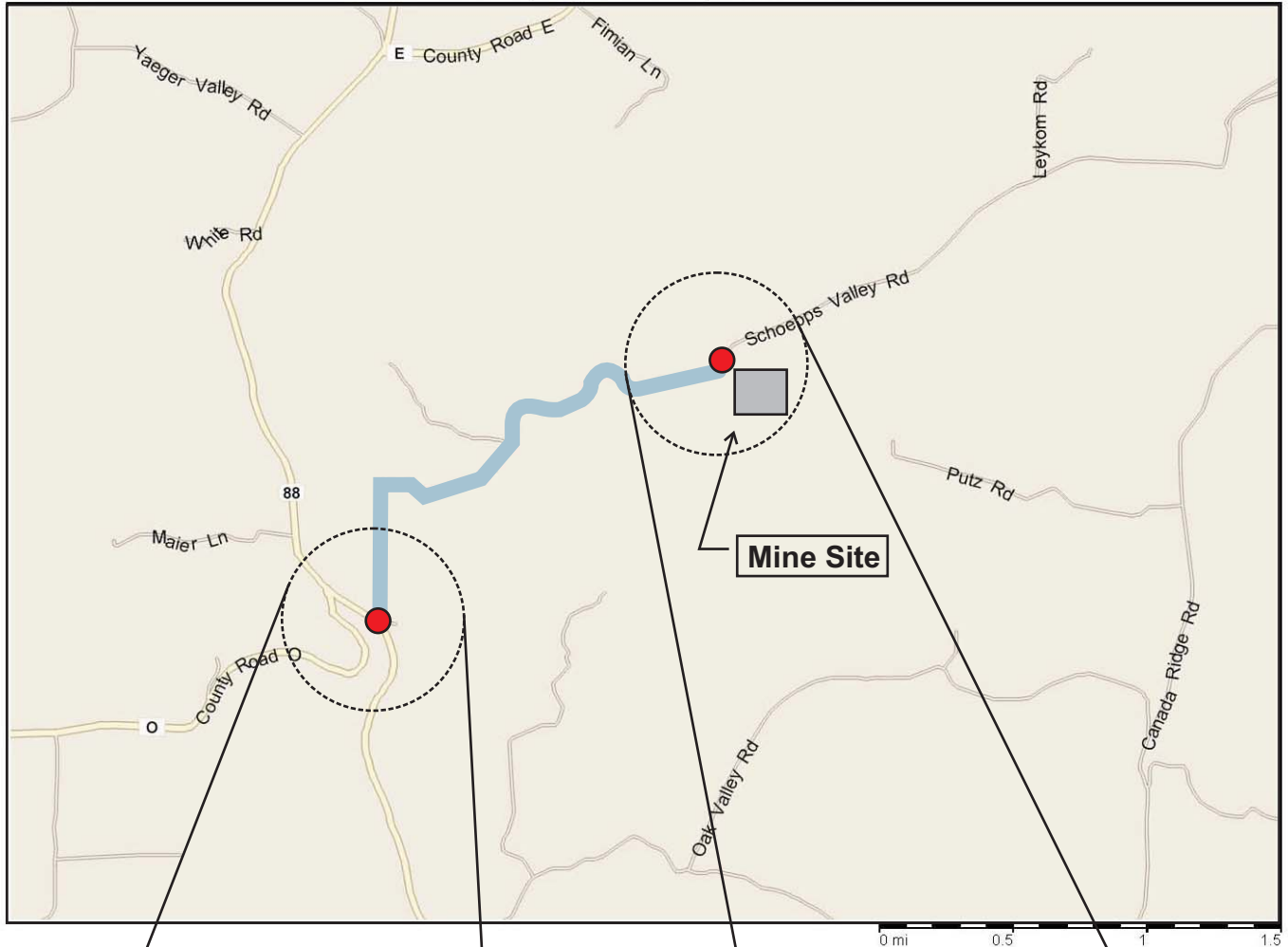
**LEGEND**

- STOP SIGN
- EXISTING LANE CONFIGURATION
- HOUSE/FARM

**EXHIBIT 2  
EXISTING GEOMETRICS**



# Wisconsin, United States, North America



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EXHIBIT DATE: 11-18-12

## LEGEND

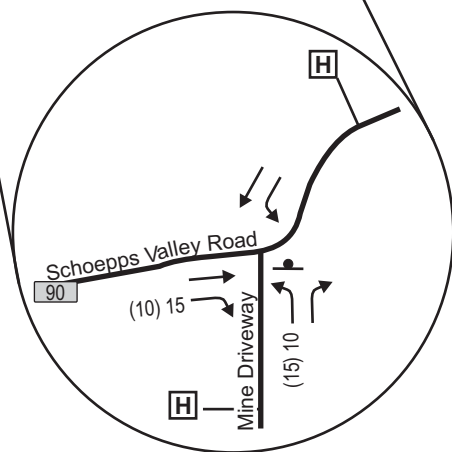
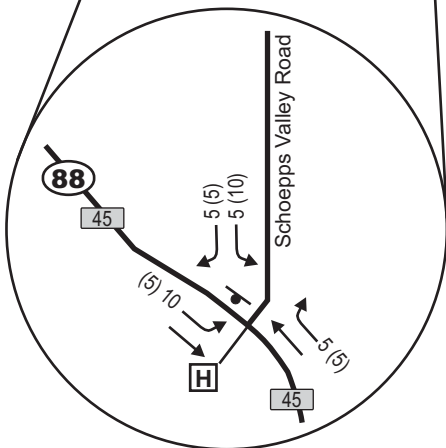
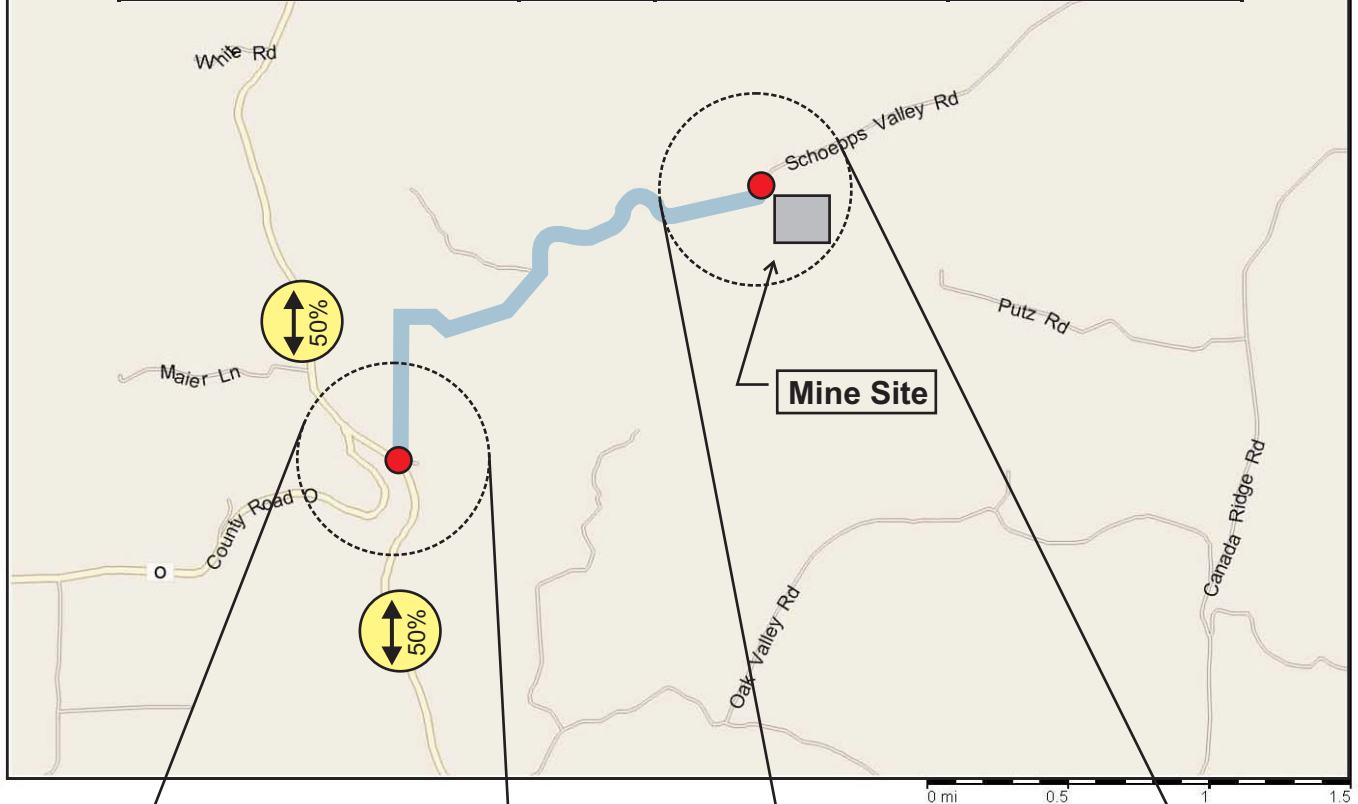
- STOP SIGN
- XX MIDWEEK AM PEAK HOUR (7:15-8:15 AM) TRAFFIC VOLUMES
- (XX) MIDWEEK PM PEAK HOUR (5:00-6:00 PM) TRAFFIC VOLUMES
- N (N) NEGLIGIBLE TRAFFIC VOLUMES (LESS THAN 3 VPH)
- XXX 2012 WEEKDAY DAILY TRAFFIC

## EXHIBIT 3 YEAR 2012 BACKGROUND TRAFFIC VOLUMES



**Trip Generation Table - Proposed Sand Mine**

Land Use	Weekday Daily	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Truck Hauling Trips	80	10	10	20	10	10	20
Employee Trips	10	5	0	5	0	5	5
<b>Total New Trips</b>	<b>90</b>	<b>15</b>	<b>10</b>	<b>25</b>	<b>10</b>	<b>15</b>	<b>25</b>



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EXHIBIT DATE: 11-18-12

**LEGEND**

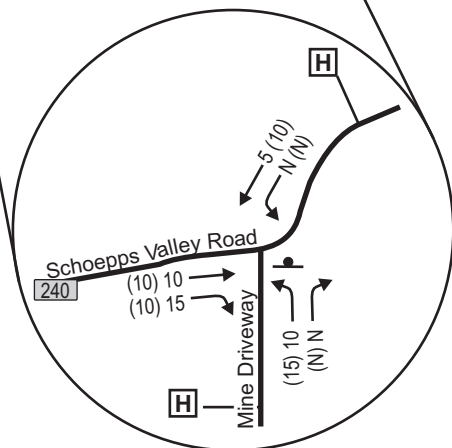
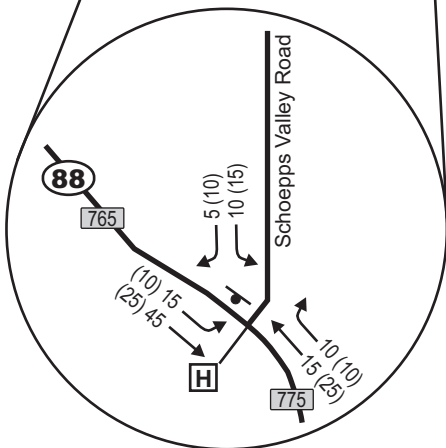
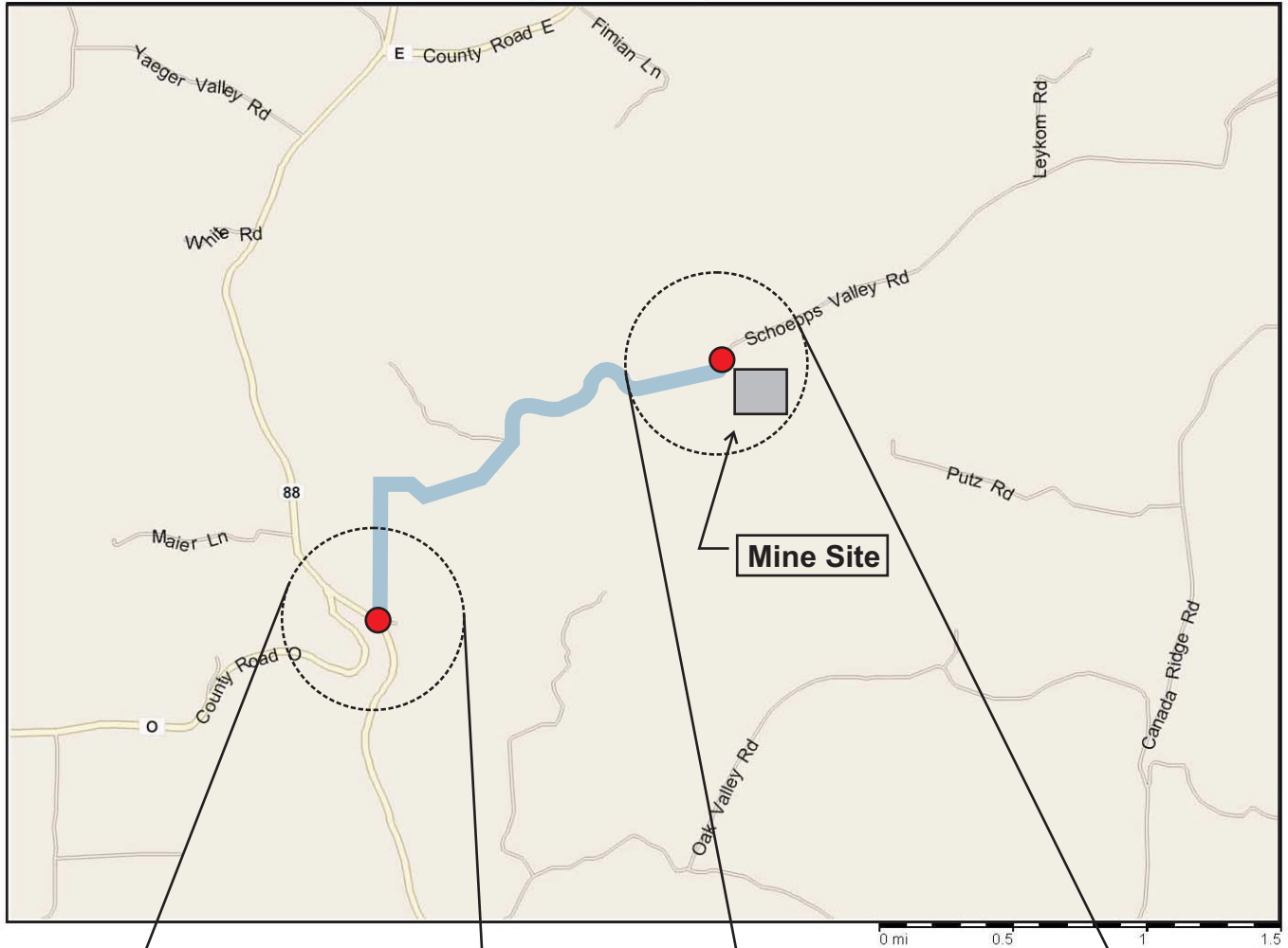
- STOP SIGN
- XX MIDWEEK AM PEAK HOUR (7:15-8:15 AM) EMPLOYEE TRIPS
- (XX) MIDWEEK PM PEAK HOUR (5:00-6:00 PM) EMPLOYEE TRIPS
- XXX DAILY EMPLOYEE TRIPS
- XX% TRIP DISTRIBUTION FOR NEW TRIPS

**EXHIBIT 4  
SAND MINE NEW TRIPS**



NOT TO SCALE

# Wisconsin, United States, North America



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EXHIBIT DATE: 11-18-12

## LEGEND

- STOP SIGN
- XX MIDWEEK AM PEAK HOUR (7:15-8:15 AM) TRAFFIC VOLUMES
- (XX) MIDWEEK PM PEAK HOUR (5:00-6:00 PM) TRAFFIC VOLUMES
- N (N) NEGLIGIBLE TRAFFIC VOLUMES (LESS THAN 3 VPH)
- XXX 2012 WEEKDAY DAILY TRAFFIC

## EXHIBIT 5 YEAR 2012 BUILD TRAFFIC VOLUMES



NOT TO SCALE

**Year 2012 Background Traffic  
Peak Hour Operating Conditions**

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Schoepps Valley Road & STH 88	Stop Sign	AM	-	-	-	A	-	A	-	A	A	A	A	-
		PM	-	-	-	A	-	A	-	A	A	A	A	-

**Year 2012 Build Traffic  
Peak Hour Operating Conditions**

Intersection	Traffic Control	Peak Hour	Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Schoepps Valley Road & STH 88	Stop Sign	AM	-	-	-	A	-	A	-	A	A	A	A	-
		PM	-	-	-	A	-	A	-	A	A	A	A	-
Schoepps Valley Road & Sand Mine Driveway	Stop Sign	AM	-	-	-	A	-	A	-	A	A	A	A	-
		PM	-	-	-	A	-	A	-	A	A	A	A	-



# **APPENDIX A**

## **TRAFFIC COUNTS**





## Turn Count Summary

**Location:** hwy 88 at schoepps valley rd , cochrane Wi

**GPS Coordinates:**

Date: 102312

Day of week: tues.

**Weather:** showers

**Analyst:** Paul

## Total vehicle traffic

[illegible]

## Car traffic

[illegible]

## Truck traffic

[illegible]

## Bicycle traffic

[illegible]

## Pedestrian volumes

[illegible]

## Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	4	44	0	7	0	0	0	14	3	0	0	0	72
Factor	0.50	0.79	0.00	0.88	0.00	0.00	0.00	0.70	0.38	0.00	0.00	0.00	0.82
Approach factor	0.75			0.88			0.71			0.00			

## Peak Hour Vehicle Summary

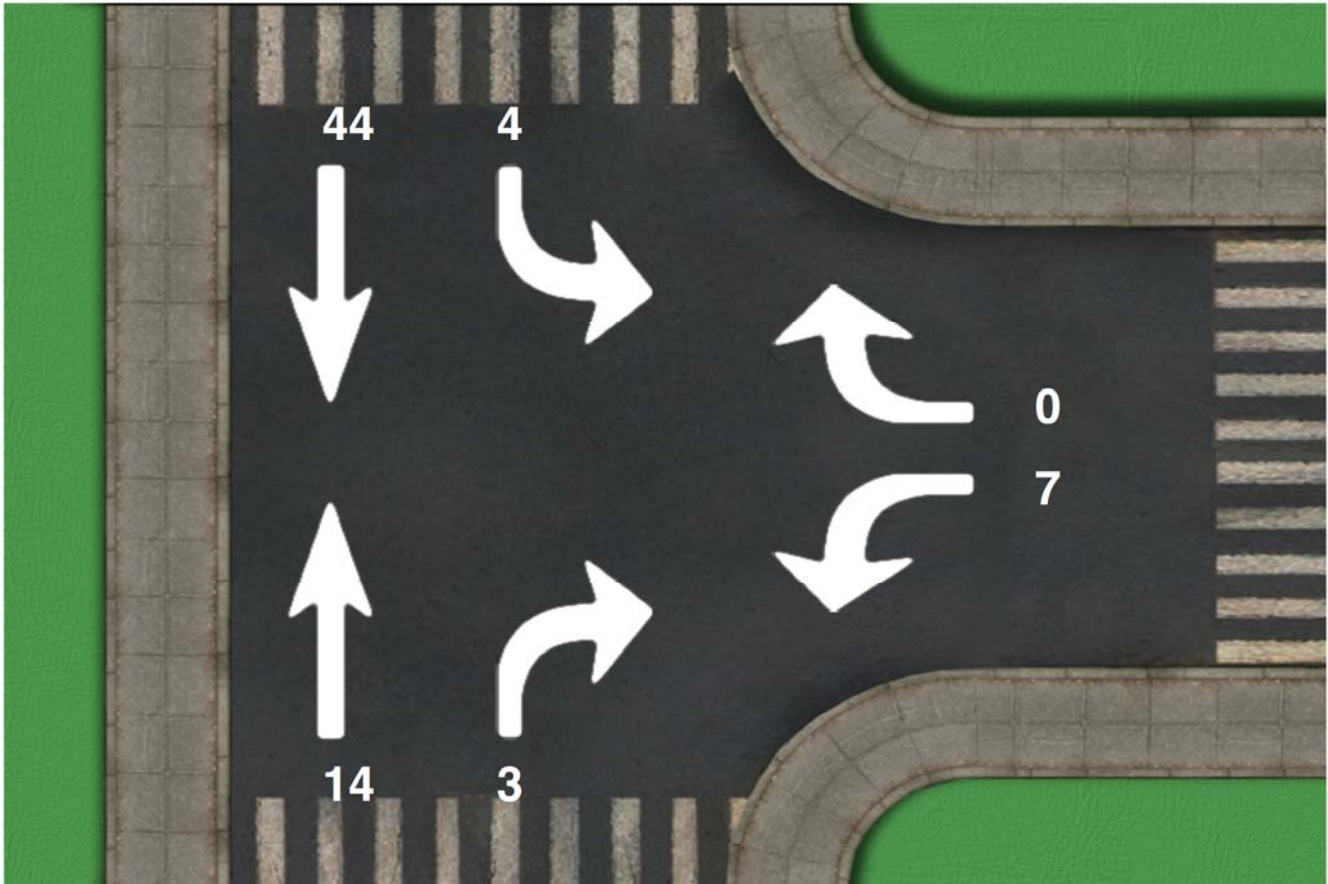
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	4	39	0	7	0	0	0	11	3	0	0	0	64
Truck	0	1	0	0	0	0	0	2	0	0	0	0	3
Bicycle	0	4	0	0	0	0	0	1	0	0	0	0	5

## Peak Hour Pedestrians

[illegible]

## Intersection Peak Hour

**Location:** hwy 88 at schoepps valley rd , cochrane Wi  
**GPS Coordinates:**  
**Date:** 102312  
**Day of week:** tues.  
**Weather:** showers  
**Analyst:** Paul



## Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	4	44	0	7	0	0	0	14	3	0	0	0	72
Factor	0.50	0.79	0.00	0.88	0.00	0.00	0.00	0.70	0.38	0.00	0.00	0.00	0.82
Approach factor	0.75			0.88			0.71			0.00			

## Turn Count Summary

**Location:** hwy 88 at s valley, wi.

**GPS Coordinates:**

**Date:** 101612

Day of week: thurs

**Weather:****Analyst:**

## Total vehicle traffic

[illegible]

## Car traffic

[illegible]



## Truck traffic

[illegible]

## Bicycle traffic

[illegible]

## Pedestrian volumes

[illegible]

## Intersection Peak Hour

17:00 - 18:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	3	26	0	3	0	3	0	26	6	0	0	0	67
Factor	0.38	0.65	0.00	0.75	0.00	0.75	0.00	0.59	0.50	0.00	0.00	0.00	0.88
Approach factor	0.66			0.75			0.62			0.00			

## Peak Hour Vehicle Summary

Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	3	23	0	3	0	3	0	21	6	0	0	0	59
Truck	0	2	0	0	0	0	0	3	0	0	0	0	5
Bicycle	0	1	0	0	0	0	0	2	0	0	0	0	3

## Peak Hour Pedestrians

[illegible]



## Intersection Peak Hour

Location: hwy 88 at s valley, wi.

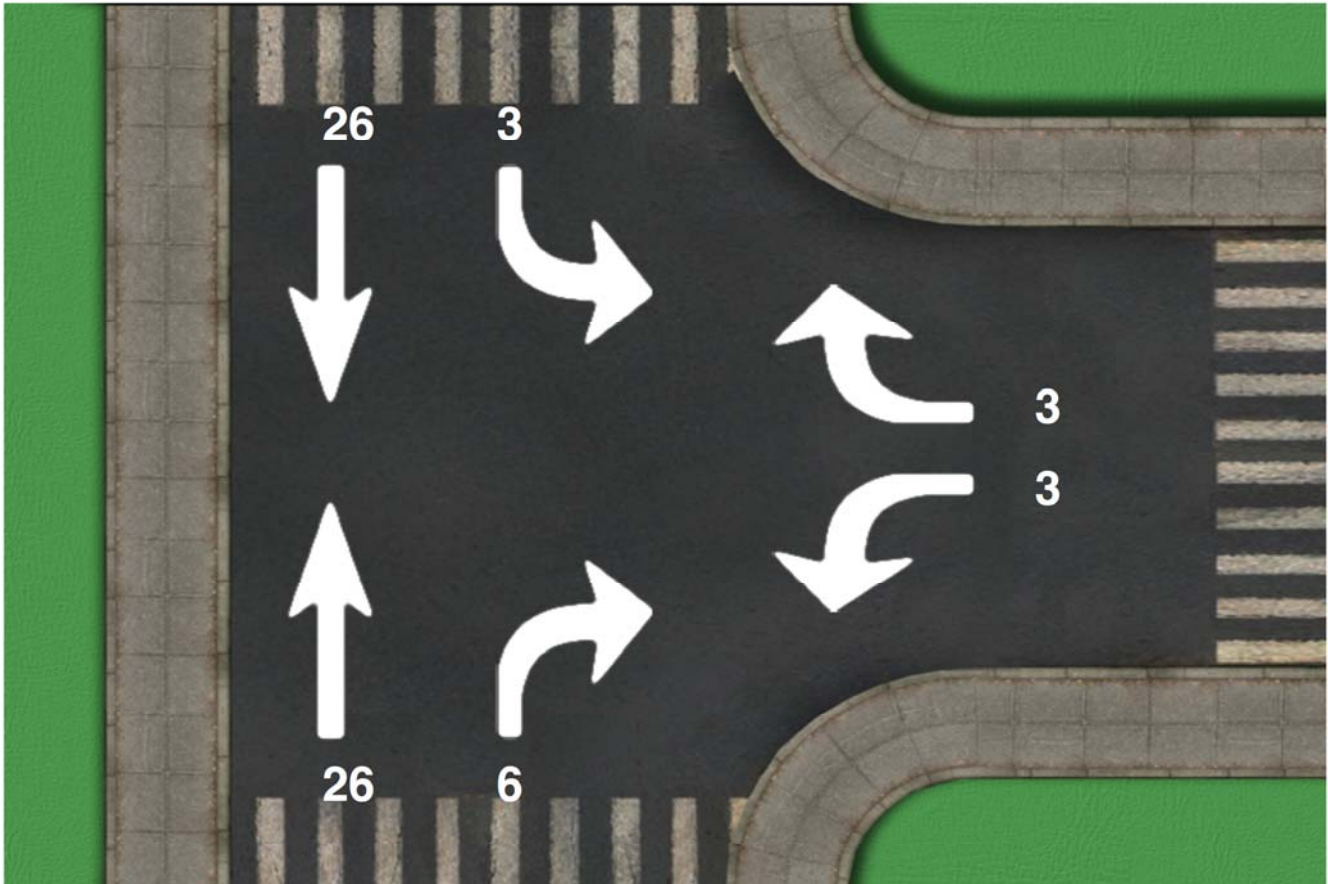
GPS Coordinates:

Date: 101612

Day of week: thurs

Weather:

Analyst:



## Intersection Peak Hour

17:00 - 18:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	3	26	0	3	0	3	0	26	6	0	0	0	67
Factor	0.38	0.65	0.00	0.75	0.00	0.75	0.00	0.59	0.50	0.00	0.00	0.00	0.88
Approach factor	0.66			0.75			0.62			0.00			

**2012 Daily Traffic Volume Counts**  
**Schoepps Valley Road, West of Gleiter Road**

	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	Average
00:00		2	2	2	2	2	2
01:00		0	0	1	0	0	0
02:00		0	0	0	0	1	0
03:00		2	2	0	0	0	1
04:00		2	1	2	1	2	2
05:00		6	4	7	3	1	4
06:00		9	9	8	8	2	7
07:00		10	9	7	1	0	5
08:00		9	13	12	5	2	8
09:00		5	7	8	12	5	7
10:00		11	9	4	11	10	9
11:00		10	8	7	9	9	9
12:00		8	8	7	16	5	9
13:00		7	11	8	11	7	9
14:00		9	10	13	13	7	10
15:00	10	9	12	15	12		12
16:00	12	11	11	15	6		11
17:00	14	15	11	9	7		11
18:00	21	14	7	10	13		13
19:00	7	5	7	11	15		9
20:00	4	5	6	9	3		5
21:00	5	11	6	10	5		7
22:00	4	3	3	7	3		4
23:00	3	2	0	1	3		2
	80	165	156	173	159	53	157

**2012 Daily Traffic Volume Counts**  
**Schoepps Valley Road, East of Gleiter Road**

	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	Average
00:00		2	2	2	2	2	2
01:00		0	0	1	0	0	0
02:00		0	0	0	0	0	0
03:00		2	2	0	0	1	1
04:00		2	1	2	1	2	2
05:00		5	4	7	2	0	4
06:00		7	7	7	9	3	7
07:00		10	9	7	1	0	5
08:00		9	13	11	5	2	8
09:00		5	5	5	11	5	6
10:00		10	7	4	10	9	8
11:00		10	8	7	10	7	8
12:00		7	11	7	16	5	9
13:00		6	12	7	11	4	8
14:00	13	8	10	9	11	11	10
15:00	8	8	12	14	11		11
16:00	8	12	8	10	7		9
17:00	14	15	10	9	6		11
18:00	18	14	8	9	14		13
19:00	6	6	6	9	15		8
20:00	4	5	6	7	3		5
21:00	5	11	6	10	5		7
22:00	4	3	3	7	3		4
23:00	3	2	0	1	3		2
	70	159	150	152	156	51	148

### Shoepps Valley Road - East of Gleiter Road

Start Time	Bikes	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
					2D	3SU		2S-1, 2S-2	3S-2		Double-Bottom				
00:00 Lane 1 (West)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
01:00 Lane 1 (West)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 Lane 1 (West)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 Lane 1 (West)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 Lane 1 (West)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 Lane 1 (West)	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
06:00 Lane 1 (West)	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0
07:00 Lane 1 (West)	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0
08:00 Lane 1 (West)	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	4	2	0	1	0	0	0	0	0	0	0	0	0	0
09:00 Lane 1 (West)	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0
All Lanes	0	3	1	0	1	0	0	0	0	0	0	0	0	0	0
10:00 Lane 1 (West)	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0
All Lanes	0	3	3	0	1	0	0	0	0	0	0	0	0	0	0
11:00 Lane 1 (West)	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
Lane 2 (East)	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0
All Lanes	0	3	3	0	1	0	0	1	0	0	0	0	0	0	0



## **APPENDIX B**










### **YEAR 2012 BACKGROUND TRAFFIC PEAK HOUR CAPACITY ANALYSIS WORKSHEETS**



# HCM Unsignalized Intersection Capacity Analysis

## 3: Schoepps Valley Road & STH 88

2012 Background  
PM Peak Hour










						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	5	25	5	5	25
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	6	28	6	6	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	71	31			34	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71	31			34	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	99			100	
cM capacity (veh/h)	932	1046			1546	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	11	34	34			
Volume Left	6	0	6			
Volume Right	6	6	0			
cSH	986	1700	1546			
Volume to Capacity	0.01	0.02	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	8.7	0.0	1.2			
Lane LOS	A		A			
Approach Delay (s)	8.7	0.0	1.2			
Approach LOS	A					
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			15.6%	ICU Level of Service		A
Analysis Period (min)			15			



# HCM Unsignalized Intersection Capacity Analysis

## 5: Schoepps Valley Road & Sand Mine Dwy










2012 Background  
PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	1	1	10	1	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	1	1	11	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			12		26	12
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			12		26	12
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1613		992	1072
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	12	12	2			
Volume Left	0	1	1			
Volume Right	1	0	1			
cSH	1700	1613	1030			
Volume to Capacity	0.01	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	0.7	8.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.7	8.5			
Approach LOS			A			
Intersection Summary						
Average Delay		1.0				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

# HCM Unsignalized Intersection Capacity Analysis

## 3: Schoepps Valley Road & STH 88










2012 Background  
AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	1	15	5	5	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	6	1	18	6	6	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	88	21			24	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	88	21			24	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	911	1059			1590	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	7	24	61			
Volume Left	6	0	6			
Volume Right	1	6	0			
cSH	933	1700	1590			
Volume to Capacity	0.01	0.01	0.00			
Queue Length 95th (ft)	1	0	0			
Control Delay (s)	8.9	0.0	0.8			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	0.8			
Approach LOS	A					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			16.5%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 5: Schoepps Valley Road & Sand Mine Dwy

2012 Background  
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	1	1	5	1	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	12	1	1	6	1	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			13		21	13
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			13		21	13
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1612		997	1070
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	13	7	2			
Volume Left	0	1	1			
Volume Right	1	0	1			
cSH	1700	1612	1033			
Volume to Capacity	0.01	0.00	0.00			
Queue Length 95th (ft)	0	0	0			
Control Delay (s)	0.0	1.2	8.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	1.2	8.5			
Approach LOS			A			
Intersection Summary						
Average Delay		1.3				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

## **APPENDIX C**










### **YEAR 2012 BUILD TRAFFIC PEAK HOUR CAPACITY ANALYSIS WORKSHEETS**



# HCM Unsignalized Intersection Capacity Analysis

## 3: Schoepps Valley Road & STH 88










2012 Background  
PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	10	25	10	10	25
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	17	11	28	11	11	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	85	34			40	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	85	34			40	
tC, single (s)	6.9	6.7			4.7	
tC, 2 stage (s)						
tF (s)	3.9	3.7			2.8	
p0 queue free %	98	99			99	
cM capacity (veh/h)	807	922			1254	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	28	40	40			
Volume Left	17	0	11			
Volume Right	11	11	0			
cSH	849	1700	1254			
Volume to Capacity	0.03	0.02	0.01			
Queue Length 95th (ft)	3	0	1			
Control Delay (s)	9.4	0.0	2.3			
Lane LOS	A		A			
Approach Delay (s)	9.4	0.0	2.3			
Approach LOS	A					
Intersection Summary						
Average Delay		3.3				
Intersection Capacity Utilization		18.5%		ICU Level of Service		A
Analysis Period (min)		15				

# HCM Unsignalized Intersection Capacity Analysis

## 5: Schoepps Valley Road & Sand Mine Dwy










2012 Background  
PM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	10	1	10	15	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	11	11	1	11	17	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			23		31	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			23		31	17
tC, single (s)			4.1		7.1	6.2
tC, 2 stage (s)						
tF (s)			2.2		4.1	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1599		840	1065
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	23	12	18			
Volume Left	0	1	17			
Volume Right	11	0	1			
cSH	1700	1599	851			
Volume to Capacity	0.01	0.00	0.02			
Queue Length 95th (ft)	0	0	2			
Control Delay (s)	0.0	0.7	9.3			
Lane LOS		A	A			
Approach Delay (s)	0.0	0.7	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			

# HCM Unsignalized Intersection Capacity Analysis

## 3: Schoepps Valley Road & STH 88

2012 Background  
AM Peak Hour










						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	10	5	15	10	15	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	12	6	18	12	18	55
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116	24			30	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116	24			30	
tC, single (s)	7.1	6.9			4.4	
tC, 2 stage (s)						
tF (s)	4.1	3.9			2.5	
p0 queue free %	98	99			99	
cM capacity (veh/h)	736	892			1403	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	18	30	73			
Volume Left	12	0	18			
Volume Right	6	12	0			
cSH	782	1700	1403			
Volume to Capacity	0.02	0.02	0.01			
Queue Length 95th (ft)	2	0	1			
Control Delay (s)	9.7	0.0	2.0			
Lane LOS	A		A			
Approach Delay (s)	9.7	0.0	2.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization			19.9%	ICU Level of Service		A
Analysis Period (min)			15			



# HCM Unsignalized Intersection Capacity Analysis

## 5: Schoepps Valley Road & Sand Mine Dwy

2012 Background  
AM Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	10	15	1	5	10	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	12	18	1	6	12	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			30	30		21
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			30	30		21
tC, single (s)			4.1	7.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	4.4		3.3
p0 queue free %			100	98		100
cM capacity (veh/h)			1589	783		1059
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	30	7	13			
Volume Left	0	1	12			
Volume Right	18	0	1			
cSH	1700	1589	802			
Volume to Capacity	0.02	0.00	0.02			
Queue Length 95th (ft)	0	0	1			
Control Delay (s)	0.0	1.2	9.6			
Lane LOS			A			
Approach Delay (s)	0.0	1.2	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			13.3%	ICU Level of Service		A
Analysis Period (min)			15			

## MEMORANDUM

**To:** Mr. Kevin Rich  
Mississippi Land and Timber Connection, LLC

**From:** Scot J. Balsavich, P.E.

**Date:** June 11, 2013

**Subject:** Schoepps Valley Road Mine Site Driveway  
SE ¼, Section 32, T21N, R11W  
Buffalo County, Wisconsin

**Project No.:** 12115088

**Copy to:**

---

We have reviewed the proposed driveway connection locations for the proposed processing facility (wet plant) for the non-metallic mine in the township of Waumandee along Schoepps Valley Road. The general location for the wet plant is in the NW ¼ of the SE ¼ of Section 32, T21N, R11W, on the north side of Schoepps Valley Road.

Three options were reviewed. The first, Option A, is to have the wet plant traffic exit and enter onto Schoepps Valley Road approximately 1.718 miles east of Highway 88 along a reverse horizontal curve in the road. A second option, Option B, is located approximately 500 feet east of Option A on Schoepps Valley Road. A third option, Option C, is also located on Schoepps Valley Road approximately 170 feet east of Option B. All three options are illustrated on the Proposed Mine Entrance Locations map, which is attached.

One of the first issues is to establish a design speed for the project site. There is no posted speed limit in the vicinity of the driveway; therefore, the speed limit is 55 mph for a rural town road. 35 mph, 45 mph, and 55 mph design speed criteria will be evaluated due to there being two curves in Schoepps Valley Road that will influence the drivers to travel at a lower average speed. If warranted, a speed study could be conducted to gather more information on the average speed vehicles travel in the vicinity of the wet plant site.

### General Criteria Reviewed

Items evaluated include sight distance at the intersection. The following will provide more detail on the various sight distance items evaluated:

**Stopping Sight Distance (SSD):** This is the distance that it takes a driver to see an item in their path, decide to stop, physically apply the brakes, and have the vehicle decelerate to a full stop.

**Decision Sight Distance (DSD):** This is the distance for a driver to perceive driver action is warranted, determine what action to take (e.g., stop, lane change, pass on the right, pass on the left, etc.). The DSD is greater than the SSD because of the other variables for the driver to consider other than stopping. There are also other factors that influence DSD such as the overall traffic volume on the road, number of lanes, merging traffic, bike lanes, etc.

**Intersection Sight Distance (ISD):** This is the distance that a driver can see in either direction when passing through an intersection. There are variable requirements for drivers in passenger cars, single unit trucks, or larger semi-trailer trucks. Other factors influencing ISD include how many lanes a vehicle entering a road must cross, if the vehicle is turning right, left, or passing straight through, and if there are steep grades on the road that will influence acceleration rates. The ISD takes into account the distance a vehicle will travel on the main road while a driver makes the decision to pull out onto the road, how long the vehicle pulling out will take to accelerate up to the rolling speed of the main road, the distance traveled by oncoming traffic in that time, and a cushion distance so the drivers on the main road will not be required to significantly slow down to allow for the entering vehicle to accelerate to speed.

**Sight Distance Category:** Sight distance categories range from a Category 1 for rural two lane low volume roads, to a Category 2 for rural highways with multiple turn lanes, to a Category 3 for interchange exit ramps. Schoepps Valley Road is a Category 1.

The criteria and guidance regarding the various factors in sight distance issues with intersections is primarily derived from the American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets (AASHTO, GDHS). In Wisconsin, the standard practice is to use the Wisconsin Department of Transportation Facilities Development Manual (WisDOT FDM) that uses the GDHS material to establish a defined methodology to evaluating intersection issues.

### **Schoepps Valley Road Conditions**

The following is an evaluation with comments on the proposed driveways for the Schoepps Valley Road wet plant site:

#### **Stopping Sight Distance:**

Due to the rural setting and two lane configuration of Schoepps Valley Road, a Category 1 condition exists for the determination of the required sight distance requirement at the intersection. A Category 1 condition requires that main line traffic be provided a desirable SSD for the vehicle to observe a 6-inch object in the road and come to a full stop. At the 55 mph design speed this required distance is 495 feet, at 45 mph the distance is 360 feet, and at 35 mph the distance is 250 feet.

Option A: The SSD at Option A is estimated to exceed the required criteria for Schoepps Valley Road eastbound traffic at 35 mph and 45 mph. The roadside vegetation will need to be kept clear along the inside of the horizontal curve to maintain the sufficient SSD at 35 and 45 mph. Westbound traffic, however, travels along a steep vertical and horizontal curve and does not meet the criteria at even the lower speed of 35 mph.

Option B: The SSD at Option B does not appear to meet the criteria for Schoepps Valley Road eastbound traffic at 35 mph but exceeds the criteria for westbound traffic at 35 mph, 45 mph, and 55 mph.

Option C: The SSD at Option C exceeds the criteria for Schoepps Valley Road eastbound traffic at 35 mph (speed expected as vehicles exit the curve) and exceeds the criteria for westbound traffic at

35 mph, 45 mph, and 55 mph. Option C is the preferred option with respect to Stopping Sight Distance.

**Decision Sight Distance:**

The decision sight distance is slightly greater because there is the opportunity for a driver to consider alternative maneuvers such as passing an obstacle in the road or to stop. The required DSD for a vehicle to stop is 275 feet at 35 mph, 395 feet at 45 mph, and 535 feet at 55 mph.

The larger value for DSD is for the Avoidance Maneuver C (change in speed/path/direction, such as lane change to pass) with values of 525 feet at 35 mph, 675 feet at 45 mph, and 865 feet at 55 mph. This DSD is applicable if the driver takes additional time to decide to pass rather than simply stop for an obstruction in the road.

Option A: The available DSD is not applicable at Option A since an avoidance maneuver would require passing on the left in a no passing zone for eastbound vehicles.

Option B: The available DSD is not applicable at Option B since an avoidance maneuver would require passing on the left in a no passing zone for eastbound vehicles.

Option C: The available DSD does not appear to meet the required DSD criteria for Schoepps Valley Road eastbound traffic at 35 mph. Because of this, it is recommended to not place a bypass lane at the driveway location eliminating the option to make a lane change and requiring the stop only decision option.

**Intersection Sight Distances:**

**Condition B1 – Left turn from side road onto main road (looking right):**

Vehicle	Sight Distance Desirable/Minimum (ft)			Estimated per Preliminary Review Option A	Estimated per Preliminary Review Option B	Estimated per Preliminary Review Option C
	35 mph	45 mph	55 mph	(ft)	(ft)	(ft)
Passenger Car	515/390	665/500	810/610	360	150	320
Single Unit Truck	620/490	795/630	975/770	360	150	320
Semi-Trailer Truck	670/595	860/765	1055/930	360	150	320

The B1 condition for the ISD for passenger cars, single unit trucks, and semi-trailer trucks as estimated at 360 feet is less than the desired and minimum conditions at 35 mph, 45 mph, and 55 mph for Option A.

The B1 condition for the ISD for passenger cars, single unit trucks, and semi-trailer trucks as estimated at 150 feet is less than the desirable and minimum conditions at 35 mph, 45 mph, and 55 mph for Option B. This condition could potentially be improved by excavating the bank adjacent to the road (north and east). Even with the earthwork effort, Location B will not be a desired recommended location since the driver will need to try to look back and to the right out of a far side window to see if any vehicles are driving around the corner.

The B1 condition for the ISD for passenger cars, single unit trucks, and semi-trailer trucks as estimated at 320 feet is less than the desired and minimum conditions at 35 mph, 45 mph, and 55 mph for Option C. To achieve the minimum sight distance the proposed driveway at Option C should be moved east an additional 200 feet and that location should be investigated further in the field to verify acceptable sight distance for the left turning vehicles.

Condition B1 Summary: It is currently anticipated that the hauling of sand via trucking will not occur between the sand mines sites and the wet plant location. There will be plant and mining staff that will travel between the various operations, and those traffic movements will generate B1 (left turns) from the wet plant. Option C is the preferred option with respect to B1 movement with field verification to ensure the minimum sight distance is achieved for the Single Unit Truck vehicle (490 feet).

**Condition B2 – Right turn from side road onto main road (looking left):**

Vehicle	Sight Distance Desirable/Minimum (ft)			Estimated per Preliminary Review Option A	Estimated per Preliminary Review Option B	Estimated per Preliminary Review Option C
	35 mph	45 mph	55 mph	(ft)	(ft)	(ft)
Passenger Car	415/335	530/430	650/530	140	1540	1360
Single Unit Truck	515/440	665/565	810/690	140	1540	1360
Semi-Trailer Truck	620/545	795/695	975/850	140	1540	1360

The B2 condition for the ISD for passenger cars, single unit trucks, and semi-trailer trucks as estimated at 140 feet is less than the desired and minimum conditions at 35 mph, 45 mph, and 55 mph for Option A.

The B2 condition for the ISD for passenger cars, single unit trucks, and semi-trailer trucks as estimated at 1540 feet exceeds the desired and minimum conditions at 35 mph, 45 mph, and 55 mph for Option B.

The B2 condition for the ISD for passenger cars, single unit trucks, and semi-trailer trucks as estimated at 1360 feet exceeds the desired and minimum conditions at 35 mph, 45 mph, and 55 mph for Option C.

Condition B2 Summary: It is currently anticipated that the hauling of sand via trucking will occur from the wet plant to the west along Schoepps Valley Road. This will require trucking to make a B2 movement taking a right turn onto Schoepps Valley Road. Option A does not meet the standards, while Options B and C both meet the standards for the B2 right turn movement.

**Condition F – Vehicle turning left from main road onto side road (looking ahead on main road):**

The required sight distance for an eastbound driver to determine if it is safe to turn left into the driveway is 408 feet at 35 mph, 528 feet at 45 mph, and 648 feet at 55 mph.

The estimated sight distance of 210 feet for Option A is less than the required distance for all speeds reviewed. The observed sight distance of 1,570 feet for Option B and 1,370 feet for Option C exceeds the required distances.

**Summary:**

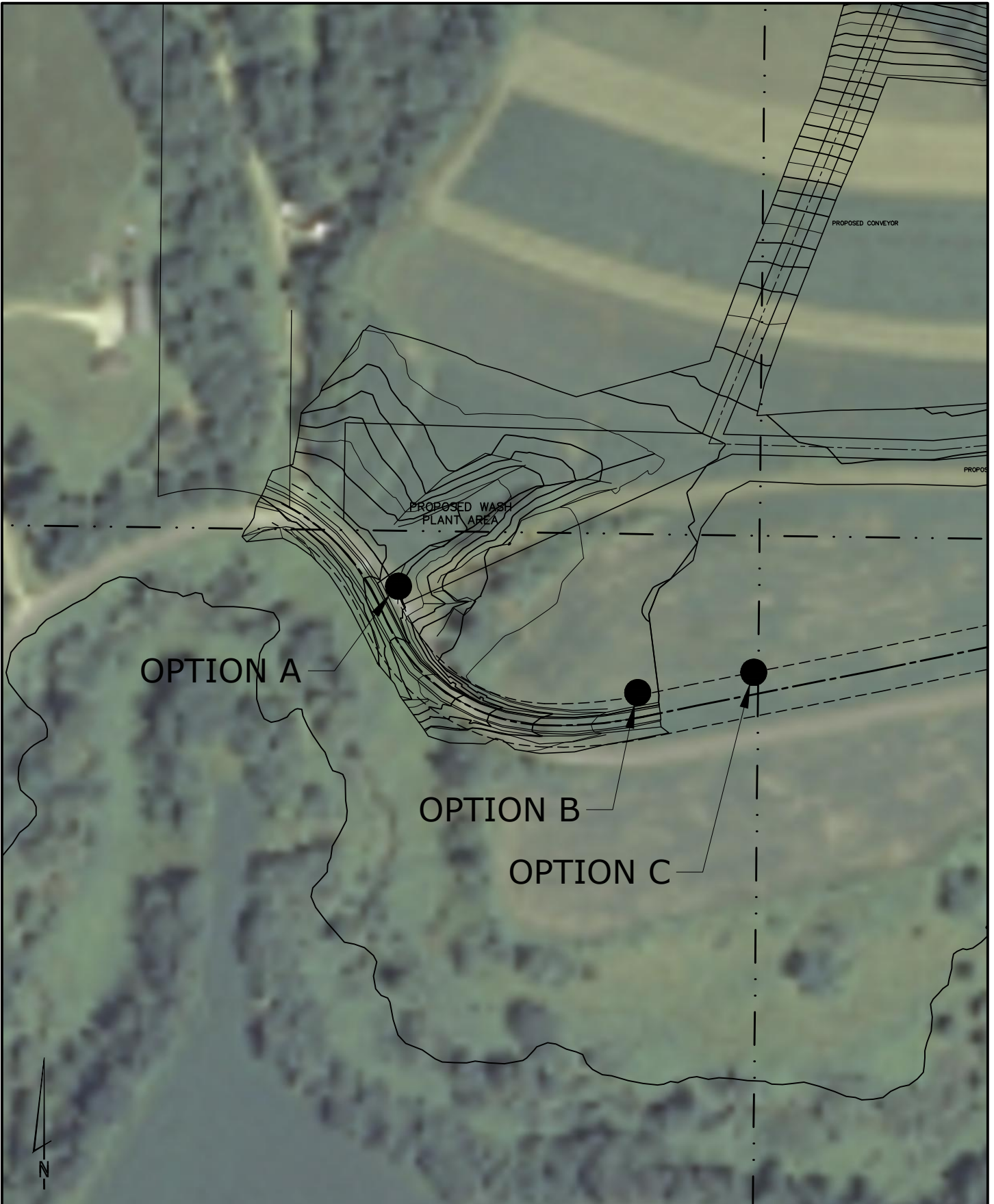
Based on a preliminary review of the three options for access to Schoepps Valley Road from the wet plant site, it appears the sight distance conditions related to vehicle operations are met for all conditions at a location approximately 200 feet east of Option C. It may be possible that this location could be moved westerly with the actual location field verified for sight distance to ensure the minimum standards are met.

Option A was also considered with the potential to remove the steep earth bank alongside the road to improve the sight distance around the corner. Even with the earthwork to remove the bank, this location is not the preferred site since there is both a horizontal and vertical curve in Schoepps Valley Road that will limit sight distance and complicate traffic flow at the potential driveway locations.

Following your review, we propose to complete a field verification to spot the precise location of the driveway and mark it with lath so the township can see the location in the field during their review.

Attached is an illustration of the driveway option locations and photographs from each location along with a tabular summary of the driveway options.





SCALE:  0'      100'      200'		MISS. CONNECTION LAND & TIMBER CO., LLC WAUMANDEE TOWNSHIP, BUFFALO COUNTY, WI		SHEET DESCRIPTION PROPOSED MINE ENTRANCE LOCATIONS			
PROJECT MANAGER		 <b>COOPER ENGINEERING</b> 2600 COLLEGE DRIVE, P.O. BOX 230 RICE LAKE, WISCONSIN 54868-0230 TELEPHONE (715) 234-7008 FAX (715) 234-1025		DATE 6/6/2013		DRAWN BY A. WEISS	
CHECKED BY:				SCALE		PROJECT NO.	
APPROVED BY:				AS SHOWN		12115088	
						SHEET NO. 1	



## Preliminary - Option A

Project: **The Mississippi Connection Land & Timber Co., LLC - Schoepps Valley Rd Sand Mine**

Date: **June 10, 2013**

Prepared/Calculated by: **Cooper Engineering Company, Inc.**

RIGHT TURN (Looking left or easterly on Schoepps Valley Road)		Intersection of Schoepps Valley Rd & Mine Ent.	LEFT TURN (Looking right or westerly on Schoepps Valley Road)	
Intersection Sight Distances (ISDs) to RIGHT		35 MPH = 51 ft/sec	Intersection Sight Distances (ISDs) to LEFT	
Case B2	Case B3	PASSENGER CAR	Case B1	Case B3
8.0	NA	DESIRABLE time gap (sec) <sup>A</sup>	10.0	NA
415	NA	DESIRABLE ISD (feet) <sup>A</sup>	515	NA
19	NA	Vehicle length (feet) <sup>B</sup>	19	19
NA	NA	Vehicle length+ 6' < Median width?	NA	NA
NA	NA	ADJUSTMENT description	NA	NA
0.0	NA	Additional time (sec) <sup>C</sup>	0.0	NA
0	NA	Additional ISD (feet)	0	NA
415	NA	Total ISD (feet)	515	NA
<b>415</b>		Desirable Controlling ISD (feet)	<b>515</b>	
<b>140</b>		<b>FIELD MEASURED DISTANCE (feet)</b>	<b>360</b>	
		Side Road Decision Point Location		
Case B2	Case B3	WB TRUCK (DESIGN VEHICLE)	Case B1	Case B3
12.0	NA	DESIRABLE time gap (sec) <sup>A</sup>	13.0	NA
620	NA	DESIRABLE ISD (feet) <sup>A</sup>	670	NA
Greater than 55 ft	Greater than 55 ft	Vehicle length (feet) <sup>B</sup>	Greater than 55 ft	Greater than 55 ft
NA	NA	Vehicle length+ 6' < Median width?	NA	NA
NA	NA	ADJUSTMENT description	NA	NA
0.0	NA	Additional time (sec) <sup>C</sup>	0.0	NA
0	NA	Additional ISD (feet)	0	NA
620	NA	Total ISD (feet)	670	NA
<b>620</b>	NA	Desirable Controlling ISD (feet)	<b>670</b>	NA
<b>140</b>		<b>FIELD MEASURED DISTANCE (feet)</b>	<b>360</b>	
		Side Road Decision Point Location		

MPH Design Speed	35	FPS Speed	51.33	
<b>Case F - Left turn Lane from Major Road</b>				
Car and Truck = Desirable at 35 mph				
Desirable Time, Car & Truck (sec)	8			
8.0 s x speed=	<b>415</b>			
	<b>210</b>	<b>FIELD MEASURED DISTANCE (feet)</b>		

## Preliminary - Option B

Project: **The Mississippi Connection Land & Timber Co., LLC - Schoepps Valley Rd Sand Mine**

Date: **June 10, 2013**

Prepared/Calculated by: **Cooper Engineering Company, Inc.**

RIGHT TURN (Looking left or easterly on Schoepps Valley Road)		Intersection of Schoepps Valley Rd & Mine Ent.	LEFT TURN (Looking right or westerly on Schoepps Valley Road)	
Intersection Sight Distances (ISDs) to RIGHT		45 MPH = 66 ft/sec	Intersection Sight Distances (ISDs) to LEFT	
Case B2	Case B3	PASSENGER CAR	Case B1	Case B3
8.0	NA	DESIRABLE time gap (sec) <sup>A</sup>	10.0	NA
530	NA	DESIRABLE ISD (feet) <sup>A</sup>	665	NA
19	NA	Vehicle length (feet) <sup>B</sup>	19	19
NA	NA	Vehicle length+ 6' < Median width?	NA	NA
NA	NA	ADJUSTMENT description	NA	NA
0.0	NA	Additional time (sec) <sup>C</sup>	0.0	NA
0	NA	Additional ISD (feet)	0	NA
530	NA	Total ISD (feet)	665	NA
<b>530</b>		Desirable Controlling ISD (feet)	<b>665</b>	
<b>1540</b>		<b>FIELD MEASURED DISTANCE (feet)</b>	<b>290</b>	
		Side Road Decision Point Location		
Case B2	Case B3	WB TRUCK (DESIGN VEHICLE)	Case B1	Case B3
12.0	NA	DESIRABLE time gap (sec) <sup>A</sup>	13.0	NA
795	NA	DESIRABLE ISD (feet) <sup>A</sup>	860	NA
Greater than 55 ft	Greater than 55 ft	Vehicle length (feet) <sup>B</sup>	Greater than 55 ft	Greater than 55 ft
NA	NA	Vehicle length+ 6' < Median width?	NA	NA
NA	NA	ADJUSTMENT description	NA	NA
0.0	NA	Additional time (sec) <sup>C</sup>	0.0	NA
0	NA	Additional ISD (feet)	0	NA
795	NA	Total ISD (feet)	860	NA
<b>795</b>	NA	Desirable Controlling ISD (feet)	<b>860</b>	NA
<b>1540</b>		<b>FIELD MEASURED DISTANCE (feet)</b>	<b>290</b>	
		Side Road Decision Point Location		

MPH Design Speed	45	FPS Speed	66.00	
<b>Case F - Left turn Lane from Major Road</b>				
Car and Truck = Desirable at 45 mph				
Desirable Time, Car & Truck (sec)	8			
8.0 s x speed=	<b>530</b>			
	<b>1570</b>	<b>FIELD MEASURED DISTANCE (feet)</b>		

## Preliminary - Option C

Project: **The Mississippi Connection Land & Timber Co., LLC - Schoepps Valley Rd Sand Mine**

Date: **June 10, 2013**

Prepared/Calculated by: **Cooper Engineering Company, Inc.**

RIGHT TURN (Looking left or easterly on Schoepps Valley Road)		Intersection of Schoepps Valley Rd & Mine Ent.	LEFT TURN (Looking right or westerly on Schoepps Valley Road)	
Intersection Sight Distances (ISDs) to RIGHT		55 MPH = 81 ft/sec	Intersection Sight Distances (ISDs) to LEFT	
Case B2	Case B3	PASSENGER CAR	Case B1	Case B3
8.0	NA	DESIRABLE time gap (sec) <sup>A</sup>	10.0	NA
810	NA	DESIRABLE ISD (feet) <sup>A</sup>	650	NA
19	NA	Vehicle length (feet) <sup>B</sup>	19	19
NA	NA	Vehicle length+ 6' < Median width?	NA	NA
NA	NA	ADJUSTMENT description	NA	NA
0.0	NA	Additional time (sec) <sup>C</sup>	0.0	NA
0	NA	Additional ISD (feet)	0	NA
810	NA	Total ISD (feet)	650	NA
<b>650</b>		Desirable Controlling ISD (feet)	<b>810</b>	
<b>1360</b>		<b>FIELD MEASURED DISTANCE (feet)</b>	<b>445</b>	
		Side Road Decision Point Location		
Case B2	Case B3	WB TRUCK (DESIGN VEHICLE)	Case B1	Case B3
12.0	NA	DESIRABLE time gap (sec) <sup>A</sup>	13.0	NA
1055	NA	DESIRABLE ISD (feet) <sup>A</sup>	975	NA
Greater than 55 ft	Greater than 55 ft	Vehicle length (feet) <sup>B</sup>	Greater than 55 ft	Greater than 55 ft
NA	NA	Vehicle length+ 6' < Median width?	NA	NA
NA	NA	ADJUSTMENT description	NA	NA
0.0	NA	Additional time (sec) <sup>C</sup>	0.0	NA
0	NA	Additional ISD (feet)	0	NA
1055	NA	Total ISD (feet)	975	NA
<b>975</b>	NA	Desirable Controlling ISD (feet)	<b>1055</b>	NA
<b>1360</b>		<b>FIELD MEASURED DISTANCE (feet)</b>	<b>445</b>	
		Side Road Decision Point Location		

MPH Design Speed	55	FPS Speed	80.67	
<b>Case F - Left turn Lane from Major Road</b>				
Car and Truck = Desirable at 55 mph				
Desirable Time, Car & Truck (sec)	8			
8.0 s x speed=	<b>650</b>			
	<b>1370</b>	<b>FIELD MEASURED DISTANCE (feet)</b>		

# **ROAD EVALUATION REPORT**

## **SCHOEPPS VALLEY ROAD BUFFALO COUNTY**

NOVEMBER 15, 2012

PREPARED FOR

**MISSISSIPPI CONNECTION LAND AND TIMBER COMPANY, LLC**

PREPARED BY



2600 COLLEGE DRIVE  
P.O. BOX 230  
RICE LAKE, WI 54868  
715-234-7008



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## **ROAD EVALUATION SCHOEPPS VALLEY ROAD**

### **INTRODUCTION**

This report summarizes an evaluation of Schoepps Valley Road in Buffalo County and issues related to the proposed sand hauling from a proposed mine to be located in the vicinity of W1001 Schoepps Valley Road. Included in the evaluation is information on:

- Intersections
- General horizontal and vertical alignment conditions for Town Road
- Road cross section
- Traffic loading
- Structure (bridge) and other key features along the route

The evaluation effort is preliminary and does not replace the actual engineering required for formal road design. The recommendations provided are meant to serve as a basis for cost estimates for potential improvements, and to quantify the impact the hauling will have on the town road.

### **INTERSECTIONS**

There are several conditions evaluated with intersection design or high volume driveways. The driveway for the mine site along Schoepps Valley Road will be considered a commercial driveway. It will be evaluated using intersection criteria due to the volume of traffic on the driveway relative to Schoepps Valley Road.

One of the first issues is to establish a design speed for the town road at the proposed driveway location. There is no posted speed limit in the vicinity of the driveway; therefore, the speed limit is 55 mph for a rural highway two lane highway in Wisconsin. This design speed will be used for our evaluation. It was noticed during a site visit that the rolling speed of vehicles on the route appeared to be lower than 55 mph, but no speed study was conducted. Values for speeds of 45 mph and 55 mph will be provided for consideration.

The location of the proposed driveway is at the existing farmstead entrance located at W1001 Schoepps Valley Road. Approximately 1,500 feet west of the proposed driveway is an existing horizontal curve limiting vision beyond that distance. Approximately 770 feet to the northeast along Schoepps Valley Road, there is a combination of a dip in the road and a horizontal curve that limits sight distance beyond that location.

The speed that vehicles are expected to travel at has a direct impact on the distance it takes for vehicles to adjust the travel pattern. For example, a driver traveling at 25 mph is expected to be able to detect an object in the road and stop the vehicle in 155 feet; whereas if they are traveling at 50 mph, the stopping distance is increased to 425 feet.

Another consideration is the sight distance at the intersection. The following will provide more detail on the various sight distance concerns:



Stopping Sight Distance (SSD): This is the distance that it takes a driver to see an item in their path, decide to stop, physically apply the brakes, and have the vehicle decelerate to a full stop.

Decision Sight Distance (DSD): This is the distance for a driver to perceive driver action is warranted, determine what action to take (e.g., stop, lane change, pass on right, pass on left, etc.). The DSD is greater than the SSD because of the other variables for the driver to consider other than stopping. There are also other factors that influence DSD such as the overall traffic volume on the road, number of lanes, merging traffic, bike lanes, etc.

Intersection Sight Distance (ISD): This is the distance that a driver can see in either direction when passing through an intersection. There are variable requirements for drivers in passenger cars, single unit trucks, or larger semi-trailer trucks. Other factors influencing ISD include how many lanes a vehicle entering a road must cross, if the vehicle is turning right, left, or passing straight through and also if there are steep grades on the road that will influence acceleration rates. The ISD takes into account the distance a vehicle will travel on the main road while a driver makes the decision to pull out onto the road, how long the vehicle pulling out will take to accelerate up to the rolling speed of the main road, the distance traveled by oncoming traffic in that time, and a cushion distance so the drivers on the main road will not be required to significantly slow down to allow for the entering vehicle to accelerate to speed.

Sight Distance Category: Sight distance category range from a Category 1 for rural two lane low volume roads, to a Category 2 for rural highways with multiple turn lanes, to a Category 3 for interchange exit ramps. Schoepps Valley Road is a Category 1.

The criteria and guidance regarding the various factors in sight distance issues with intersections is primarily derived from the American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets (AASHTO, GDHS). In Wisconsin, the standard practice is to use the Wisconsin Department of Transportation, Facilities Development Manual (WisDOT, FDM) that uses the GDHS material to establish a defined methodology to evaluating intersection issues.

### **Proposed Mine Driveway**

The proposed hauling will involve trucks driving from the mine site located at W1001 Schoepps Valley Road, turning left onto Schoepps Valley Road and hauling westerly along Schoepps Valley Road to STH 88. At STH 88, the trucks will turn left and proceed south along STH 88.

The following is an evaluation with comments on the proposed driveway for the mine site:

#### Stopping Sight Distance:

Due to the rural setting and two lane configuration of Schoepps Valley Road, a Category 1 condition exists for the determination of the required sight distance requirement at the intersection. A Category 1 condition requires that main line traffic be provided a desirable SSD for the vehicle to observe a 6-inch object in the road and come to a full stop. At the 55 mph design speed this required distance is 495 feet and at 45 mph the distance is 360 feet.

For traffic on Schoepps Valley Road the stopping sight distance exceeds 1,500 feet for eastbound traffic and 770 feet for westbound traffic. Both exceed the design criteria for stopping sight distance. The proposed driveway meets criteria for stopping sight distance.

#### Decision Sight Distance:

The decision sight distance is slightly greater because there is the opportunity for a driver to consider alternative maneuvers such as passing an obstacle in the road, or to stop. The required DSD for a vehicle to stop is 535 feet at 55 mph and 395 feet at 45 mph. The proposed driveway location meets the criteria for the DSD stop condition.

The larger value for DSD is for the Condition C avoidance maneuver (change speed/path/direction such as lane change to pass) with a value of 865 feet at 55 mph and 675 feet at 45 mph. The location of the proposed driveway is along the outside of a horizontal curve, resulting in the driveway being located in a "no passing zone". Because of this, Condition C for avoidance (e.g., lane change) is not applicable although the location meets the 45 mph design criteria.

Intersection Sight Distances – desirable values:

Condition B1 – Left turn from side road onto main road (looking right)

Vehicle	Required Distance (Desirable/Minimum) Feet		Existing
	55 mph	45 mph	
Passenger Car	810/610	665/500	770+ Feet
Single Unit Truck	975/770	795/630	770+ Feet
Semi-Trailer Truck	1,055/930	860/765	770+ Feet

The B1 condition for the ISD for passenger car is met for the 45 mph design speed and the minimum standards for the 55 mph design speed.

For The Single Unit Truck and the Semi-Trailer Truck, the minimum standards are met for the 45 mph design speed and the minimum for a Single Unit Truck (e.g., dump truck) for the 55 mph design speed.



At Driveway, Looking Northeast

Condition B2 – Right turn from side road onto main road (looking left)

Vehicle	Required Distance (Desirable/Minimum) Feet		Existing
	55 mph	45 mph	
Passenger Car	650/530	530/430	1,500+ Feet
Single Unit Truck	810/690	665/565	1,500+ Feet
Semi-Trailer Truck	975/850	795/695	1,500+ Feet

The B2 condition for the ISD for passenger car, single unit truck, and semi-truck as measured exceed all required values for 45 mph to 55 mph.



At Driveway, Looking West

Condition F – Vehicle turning left from main road onto side road (looking ahead on main road)

The required sight distance for a westbound driver to determine if it is safe to turn left into the driveway is 650 feet at 55 mph and 530 feet at 45 mph.

The observed sight distance of over 1,500 feet exceeds the required distances.

## **Schoepps Valley Road and STH 88 Intersection**

STH 88 has a posted speed limit of 55 mph and that speed will be used for the intersection sight distance evaluation.

The following is an evaluation with comments on the intersection of Schoepps Valley Road and STH 88:

### Stopping Sight Distance:

Due to the rural setting and two lane configuration of STH 88, a Category 1 condition exists for determining the required sight distance requirement at the intersection. A Category 1 condition requires that main line traffic be provided a desirable SSD for the vehicle to observe a 6-inch object in the road and come to a full stop. At the 55 mph design speed this required distance is 495 feet.

For traffic on STH 88 the stopping sight distance is exceeds 680 feet for northbound traffic and 1175 feet for southbound traffic. Both exceed the design criteria for stopping sight distance. The intersection meets criteria for stopping sight distance.

### Decision Sight Distance:

The decision sight distance is slightly greater because there is the opportunity for a driver to consider alternative maneuvers such as passing an obstacle in the road, or to stop. The required DSD for a vehicle to stop is 535 feet at 55 mph. The proposed driveway location meets the criteria for the DSD stop condition.

The larger value for DSD is for the Condition C avoidance maneuver (change speed/path/direction such as lane change to pass) with a value of 865 feet at 55 mph. The intersection is located along the outside of a horizontal curve, resulting in the intersection being located in a “no passing zone”. Because of this, Condition C for avoidance (e.g., lane change) is not applicable at this location.



Intersection Sight Distances:

Condition B1 – Left turn from side road onto main road (looking right):

Vehicle	Required Distance (Desirable/Minimum) Feet	Existing
	55 mph	
Passenger Car	810/610	1175+ Feet
Single Unit Truck	975/770	1175+ Feet
Semi-Trailer Truck	1055/930	1175+ Feet

The B1 condition for the ISD for all vehicles is met for minimum and desirable standard for the 55 mph design speed.



Schoeppe Valley Road and STH 88, looking right (northwest)

Condition B2 – Right turn from side road onto main road (looking left):

Vehicle	Required Distance (Desirable/Minimum) Feet	Existing
	55 mph	
Passenger Car	650/530	680+ Feet
Single Unit Truck	810/690	680+ Feet
Semi-Trailer Truck	975/850	680+ Feet

The B2 condition for the ISD for passenger car is met for the 55 mph design speed.

The required sight distance for the Single Unit Truck or Semi-Truck is not achieved at the current location for trucks turning right onto STH 88. It may be possible to achieve the sight distance by clearing away some of the vegetation along STH 88 on the southwest side to open up a longer sight distance (possibly out to 850 feet).



Schoepps Valley Road and STH 88, looking left (south east)

Condition F – Vehicle turning left from main road onto side road (looking ahead on main road):

The required sight distance for a southbound driver on STH 88 to determine if it is safe to turn left onto Schoepps Valley Road is 650 feet at 55 mph design speed (oncoming traffic traveling at 55 mph).

The observed sight distance exceeds the 650 feet required.



Schoepps Valley Road and STH 88, looking southeast

**GENERAL HORIZONTAL AND VERTICAL ALIGNMENT**

The proposed hauling activity generated from the mine operation would involve up to 80 loaded trucks leaving the mine site at W1001 Schoepps Valley Road, proceeding westerly to STH 88, turning left onto STH 88, and proceeding to the processing facility on state or federal highways.

The length of haul along Schoepps Valley Road is 2.11 miles. The route is rolling with over 12 horizontal curves along the route. The radii estimated from available aerial mapping range from 140 feet to over 340 feet. The anticipated traveling speed around the corners is expected to range from 10 mph to 35 mph depending on the degree (sharpness) of the curve.

In addition to the horizontal curves, the route has a rolling vertical alignment. Based on field observations, the vertical conditions are no more restrictive to drivers than the horizontal curves resulting in a low speed, low volume rural route.



## ROAD CROSS SECTION

Schoepps Valley Road has:

- 20 foot wide asphalt surface (several inches wider at some locations)
- 1 to 2 foot wide grass shoulders
- 3:1 to 4:1 inslopes to the ditch bottom
- Shallow ditching along crop land
- Rutting on the outside tire lane where drainage is poor.
- Many areas where grass shoulder is slightly higher than pavement (trapping water at the road edge)
- Alligator cracking is significant at some locations.
- Some areas of full pavement failure
- Overall Paser Rating of 3.

## TRAFFIC LOADING

The following table summarizes the information used in evaluating a pavement structure required to carry the proposed hauling activity:

<b>The Mississippi Connection Land and Timber Co., LLC.</b>			
November 15, 2012			
Schoepps Valley Road, Buffalo County Wisconsin			
<b>Haul Road Truck Usage</b>			
Type of dump trucks	Quad axles	Semi-Dump Trucks	
Max. Payload per load	22.5 tons	25 tons	
ESAL per Loaded Quad Axle Truck	4.05	4	
ESAL per Empty Quad Axle (Triaxle)	0.5	0.5	
Trucks per day (max)	80	80	
Days per Week (max)	6	6	
Weeks per Year (max)	50	50	
ESALs per Year	109,200	108,000	
Total ESALs (5 Year Conservative Time assuming additional sand found on location)	546,000	540,000	Owner indicated possibly complete in 3 years
Subgrade Soil = Sand with silt	4.0 Soil Support Value, 125 Resid. Mod, F-3 Frost Index, 15 DGI		

The existing pavement structure along Schoepps Valley Road consist of 4 inches of asphalt pavement on approximately 4 inches of base course, on approximately 6 inches of granular subgrade. The existing pavement structure if constructed new would have a pavement Structural Number of 2.68. The Structural Number is used to set a structural strength value that is used to compare with various pavement design options. The WisDOT has used this AASHTO method for pavement design for over 25 years.

For the forecasted traffic including the hauling, the required Structural Number is 3.74 for a hauling period of five years. The mine owner indicated they expect the mine to be operational three years, but to remain conservative with the pavement design the forecast is to have the hauling occur for five years.

Four alternatives were evaluated to strengthen the road to handle the hauling activity. The following is a summary of each option, and some reasons why the option may be chosen:

Option 1, HMA Alternative #1:

This option involves placing additional 4.25-inches of hot mix asphalt on the existing road to strengthen the route. The Structural Number calculated for this effort is 3.75. Prior to an overlay of asphalt, failed areas will need to be repaired to be able to support the new asphalt pavement. Although this option meets the structural requirements it is likely that the existing weakened pavement being overlaid will reflect the cracks present into the new pavement reducing the overall life of the new overlay. The overlay would work to meet the short term (5 years) hauling goals, but it is not certain if a full 20-year pavement life will be obtained due to the relatively poor condition of the existing road.

Option #2, HMA Alternate #2:

This option involves the pulverizing (crushing in place) of the existing asphalt surface to create a new aggregate base course layer. On top of the pulverized asphaltic base material, place 4.5 inches of new asphalt pavement. The Structural Number for this effort is 3.78. This is a common method used on rural roads because the existing asphalt surface that is alligator cracked and broken up is pulverized to 1 inch or smaller sized and left in place to serve as additional base for a new asphalt surface. This effort recycles existing material, can be constructed while traffic uses the road, and creates a better foundation to reduce the occurrence of the types of failure presently along the route.

Option #3, HMA Alternative #3:

This option involves the pulverizing (crushing in place) of the existing asphalt surface to create a new aggregate base course layer similar to option #2, but prior to pulverizing, add approximately 1 inch of additional base on the surface prior to pulverizing. On top of the pulverized asphaltic base material, place 4 inches of new asphalt pavement. The Structural Number for this effort is 3.74. This effort is similar to Option 2 except more base is added and that reduces the amount of asphalt pavement required to meet the structural goals.

#### Option #4, HMA Alternative #4:

This option involves the pulverizing (crushing in place) of the existing asphalt surface to create a new aggregate base course layer similar to option #2, but prior to pulverizing, add approximately 4 inches of additional base on the surface prior to pulverizing. On top of the pulverized asphaltic base material, place 3 inches of new asphalt pavement. The Structural Number for this effort is 3.84. This option is similar to option #3, except even more base is added further reducing the amount of asphalt needed.

Option #4 is geared toward a future where additional mining or other hauling will occur on the route and to further strengthen the road, additional layers of asphalt pavement may be added.

The four options listed all involve the placement of additional shoulder material. All shoulders along the route should be widened to a minimum of 2 feet wide. All inslopes extending down from the shoulder shall be constructed to a maximum 4:1 slope.

#### Repair Option:

As an interim measure there is the option to repair the existing road with full depth patching at failed locations. The patching would involve excavating out up to 24 inches of the existing pavement and base materials, and replacing with 18 inches of base and 6 inches of asphalt pavement. Based on a field review, it is estimated there is approximately 30,000 square feet of failed pavement that would need repair prior to hauling on Schoepps Valley Road. Without the repair, the existing failed areas will deteriorate further with potholes and rutting occurring at the failed locations. This option is listed as interim because the remaining portion of the route does not calculate to have sufficient strength to sustain repeated hauling for an extended duration (i.e., 5 years). It is possible that with the repair work, the remaining portion of the route will support the hauling with little overall deterioration. If this option is selected, then the route shall be monitored during the hauling and repairs made as necessary to keep the surface acceptable for all users.

### STRUCTURES AND OTHER KEY FEATURES

There is a wooden bridge (P-06-174) built in 1960 over the Waumandee Creek. It is a five-span structure with wooden piles and wooden abutments. The inventory rating listed on the 2011 bridge inspection is HS16, and the operational rating is HS22. The inventory rating on the National Bridge Inventory and in the Sufficiency Rating Calculation page is 25.9.

Using a 3.6 conversion factor applied to the inventory rating indicates that the bridge has a capacity to carry  $16 \times 3.6 = 57.6$  thousand pound design truck. Further calculations will need to be completed to determine the inventory capacity for particular types of loaded trucks such as a quad axle and semi-trailer hauling trucks.



Existing Wood Bridge, P-06-0174, built 1960



There is a location along the northern edge of Schoepps Valley Road where there is an older remnant of a cable guard system. This location is 3,050 feet (0.58 miles) north of STH 88 along Schoepps Valley Road. Within 10 feet of the pavement edge, the grade slopes down at a very steep rate that appears to exceed a 1:1 rate. This existing remnant of a cable guard system serves little functional purpose to control errant vehicles from travelling off the road and down the steep slope. There is also some asphalt patching in the outside (north edge) tire lane that indicates the north edge of the pavement may not be well supported. This area should be evaluated further with a soil boring prior to significant hauling activity and the existing hazardous substandard cable guard system shall be replaced with a WisDOT approved barrier system such as beam guard (guard rail).



Existing Cable Guard System

## SUMMARY

The proposed driveway location for the mine meets the minimum sight distance standards for a 55 mph design speed for cars leaving the driveway, and the minimum standards for trucks leaving if vehicles on Schoepps Valley Road are traveling at 45 mph. The desirable standards are not met, but that is due to a “dip” in Schoepps Valley Road to the east of the driveway where a vehicle will drop out of sight for 4 to 6 seconds as observed from the vantage point of the driveway. This driveway location is an existing farm driveway that has operated successfully for many years at this location.

The intersection at STH 88 and Schoepps Valley Road meets the desirable sight distance criteria for trucks turning left onto STH 88 and proceeding southerly. This is the route currently planned by the mine operator. If trucks need to turn right, then the minimum standards are not met and some additional vegetation clearing at the intersection is recommended.

The horizontal and vertical alignment along the route is considered winding, and rolling with a few longer straight sections. With any paving effort along the route, serious consideration should be given to paving the shoulders on the corners to reduce future maintenance, and to create a more comfortable width for drivers meeting trucks on the corners.

The existing cross section of the road has a 20-foot asphalt width and 2-foot wide grass shoulders. The existing shoulders in many locations have built up over time and actually appear to trap some water at the edge of the pavement. This has led to an increase in the pavement failure (alligator cracking) along the outside edge of the pavement. Future improvement should involve placement of a gravel shoulder, and periodic shoulder maintenance to reduce the elevation of the shoulder and allow for free drainage from the edge of the pavement. The 20-foot width and 2-foot shoulder meet the town road standards for the existing estimated 50 to 60 cars per day and will still meet standards with the increase in traffic of the 80 trucks per day.

The pavement surface is aged and has many locations where the pavement is past its useful structural life. There is alligator cracking and rutting along much of the route. An asphalt overlay would provide a short term remedy and could be completed to allow for the proposed hauling. This option is not recommended because the overall life of the pavement will be shortened significantly due to the weak condition of the existing pavement. The recommended long term solution is to pulverize the existing asphalt surface and reuse it as a base for a new asphalt surface. The thickness of the top layer of the asphalt will vary depending on the actual pavement design for the route, but it is estimated that the thickness of the pavement will need to be 3 inches if 4 inches of additional base is placed on the route, otherwise the thickness will be in the 4 to 4.5 inch range. Prior to the long term solution being completed, repair could be performed on the route and maintenance during the hauling period to keep the pavement surface acceptable for travelers.

The existing bridge will handle truck traffic and a separate evaluation is being completed on the loading capacity for various truck types (e.g., quad axle, tri-axle, semi type). This report will identify any limits recommended for the various types of trucks.

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Phone: 715.234.7008

Fax: 715.234.1025

e-mail: [info@cooperengineering.net](mailto:info@cooperengineering.net)

*An Employee Owned Company*

2600 College Drive, P.O. Box 230  
Rice Lake, WI 54868-0230

December 12, 2012

Mr. Kevin Rich  
The Mississippi Connection Land & Timber Co., LLC  
349 W. 24<sup>th</sup> Street  
Buffalo City, WI 54622

Re: Schoepps Valley Road Evaluation  
Bridge P-6-174 over Waumandee Creek Load Rating

Dear Mr. Rich:

At your request, we have inspected the bridge noted above and calculated load ratings for various trucks with different loads and axle configurations. The trucks and their corresponding loads, along with the calculations, are included in the appendix for your reference. Also included in the appendix are recent photographs and the latest WisDOT routine inspection report.

### **Bridge Location**

The bridge is located on Schoepps Valley Road over Waumandee Creek, approximately 1.2 mile northeast of the intersection with State Highway 88, in the Town of Waumandee, Buffalo County, Wisconsin.

### **Structure Data**

- Original Construction: 1960
- Five-Span Timber Structure
  - Five individual spans at 24 feet each for a total bridge length = 120 feet
  - Deck width = 21.7 feet
  - Clear roadway width = 20.4 feet
  - Deck thickness = 12-inch timber deck with 2-inch asphalt overlay
  - Abutments are timber retaining with five timber piles per abutment
  - Piers are timber pile bents with five piles per pier

### **Structure Condition**

From the Wisconsin Department of Transportation (WisDOT) Highway Structure Information (HIS) system, the following current information was obtained:

- Inventory Rating – HS16
- Operating Rating – HS22
- Sufficiency Rating – 61.5



The most recent routine bridge inspection report, performed October 6, 2010, along with our own observations provide the following information regarding the structure condition:

- The timber deck is in fair to good condition.
- There is some transverse cracking of the asphalt overlay over the piers.
- On the timber piling for the piers, there is between 1 and 2 inches of deterioration at the water line. There are missing nuts at the east abutment and the middle pile on this abutment is split.
- There is some settlement of the pavement with associated cracking at each approach to the structure.
- There is no rip rap in front of the abutments.
- Debris is causing some scouring of piling on the upstream side of the piers.
- There is minor tipping of the northeast wing and the southwest wing is completely buried.
- Other comments from the October 6, 2010, inspection are minor. See report in the appendix.

### **Suggested Repairs**

The notes from the latest routine inspection include the following:

- Seal deck cracks (in asphalt overlay)
- Place rip rap at abutments to protect against scour
- Remove debris from the edges of the deck. The curb is constructed so that run-off from the road can pass beneath and this is currently plugged.
- Other minor notes that may have been addressed. See report in the appendix.

### **Superstructure Ratings**

Rating calculations were performed for this structure and are included in the appendix of this report. Multiple trucks were analyzed and the ratings are as follows:

	HS20	SU4	SU5	SU6	PUP	SEMI
Inventory:	HS15	20 T	22 T	23 T	34 T	31 T
Operating:	HS22	29 T	31 T	32 T	48 T	45 T

The tonnage (T) figures noted above represent the total truck load, including truck weight. The Inventory Rating is the load level that a structure can safely sustain for an indefinite period. The Operating Rating is the absolute maximum permissible load to which a structure may be subjected.

The Inventory Ratings are the most appropriate to consider for the amount of truck traffic expected over the structure. The superstructure will be able to safely support the inventory loadings based upon the truck configurations given in the appendix. The inventory rating will also consider performance of the structure over an extended period by assigning a higher load factor to the truck weight.

We based the structure capacity on the capacity of the superstructure as been done previously by the WisDOT. We do not have as-constructed pile capacities for the structure. However, the

relatively good condition of the substructure units suggests that the pile capacity will not govern the total structure capacity. Since loading will not be heavier than it has historically but possibly more frequent, we suggest monitoring the condition of the abutments and piers on a regular basis to assess the condition.

### **Conclusions**

The structure is in relatively good condition with the exception of those limited suggested repair items listed in the report. Repair to the asphalt overlay may be the most pressing since migration of water can have an adverse effect on the rest of the structure.

This structure will be able to support the loading for the different truck configurations safely and will perform adequately without a concern for increased damage to the structure at the loading limits indicated in the table considering the Inventory Ratings. Limited trips over the structure at the Operating Rating will be safely supported but the load factors used to represent the truck loadings are not as conservative and repetitive loading will begin to have an effect on the condition over time at this increased load level.

Please contact us regarding any questions you may have about these recommended ratings and for discussion on possible limitations to the loads carried over the structure. If you have additional trucks with known axle spacing and loading, we can readily plug those into the formulas developed and provide you with the ratings.

Sincerely,

Steve Poethke, P.E.  
Structural Engineer

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Attachment



P-6-174 looking north



Looking south – Note debris alongside of roadway and transverse cracking.





Required cleaning along edge of roadway



No riprap protection in front of abutments





Missing hardware



Underside of timber deck at spreader beam

**Wisconsin Dept. of Transportation  
Structure Inventory Data**

**Bridge P060174**

<b>Structure No.:</b> P060174	<b>Municipality:</b> TOWN- WAUMANDEE (06034)	<b>Section:</b> 06	<b>Town:</b> 20N	<b>Range:</b> 11W	<b>Maintenance Agency:</b> TOWN	<b>Owner:</b> TOWN
<b>Replaced Structure No.:</b>	<b>Historical Sig.:</b> 5	<b>Latitude:</b> 0.0	<b>Longitude:</b> 0.0		<b>County:</b> BUFFALO(06)	<b>District:</b> 5

**ABUTMENT DATA (CARDINAL)**

<b>1. Abutment Type:</b> PILES/TMBR BKG
<b>2. Pile Type:</b> TR TIMBER
<b>3. Pile Size:</b> 305 MM (12")
<b>4. Slope Protection Type:</b>
<b>5. Rdwy. Width:</b> 20.4 ft
<b>6. Deck Width:</b> 21.7 ft
<b>7. Wing Type:</b>

**ABUTMENT DATA (NON-CARDINAL)**

<b>1. Abutment Type:</b> PILES/TMBR BKG
<b>2. Pile Type:</b> TR TIMBER
<b>3. Pile Size:</b> 305 MM (12")
<b>4. Slope Protection Type:</b>
<b>5. Rdwy. Width:</b> 20.4 ft
<b>6. Deck Width:</b> 21.7 ft
<b>7. Wing Type:</b>

**GEOMETRIC DATA**

<b>1. Structure Length:</b> 121.0 ft (Back to Back Abuts. Along Rrdwy. Centerline)
<b>2. No. Lanes On:</b> 2
<b>3. L. Sdk. Width On:</b> 0.0 ft
<b>4. R. Sdk. Width On:</b> 0.0 ft
<b>5. Median Type:</b>
<b>6. Median Width:</b> 0.0 ft
<b>7. Skew Angle:</b> 0 Deg.
<b>8. Direction Skew Angle:</b>
<b>9. Horizontal Curve:</b> 0.0 Radius, ft
<b>10. Dir.-Hor. Curve:</b>
<b>11. Girder Spacing:</b> 0.0 ft
<b>12. Height:</b> ft (Top Pier Footing to Top Deck or Streambed Elev. to Top Deck)
<b>13. NBI Bridge Length Met:</b> true

**APPROACH DATA**

<b>1. Appr. Pavement Width:</b> 20 ft
<b>2. Rt. Shoulder Width:</b> 1 ft
<b>3. Lt. Shoulder Width:</b> 1 ft
<b>4. Total Width (Sum Above):</b> 22 ft
<b>5. Guardrail Termination:</b> 0
<b>6. Guardrail Adequacy:</b> 0
<b>7. Railing Attachment Type:</b> NO APP GRDRL
<b>8. Railing Design Year:</b> NO SPECS
<b>9. Left Outer Railing Type:</b> FLEXIBLE BEAM - STEEL(14)
<b>10. Right Outer Railing Type:</b> FLEXIBLE BEAM - STEEL(14)
<b>11. Left Inner Railing Type:</b>
<b>12. Right Inner Railing Type:</b>

**CAPACITY DATA**

<b>1. Design MS:</b> H15
<b>2. Inventory MS:</b> HS16
<b>3. Operating MS:</b> HS22
<b>4. Max. Veh. Wt.:</b> 0 kips
<b>5. Load Rating Basis:</b> ASD
<b>6. Load Governing Member:</b> SLAB
<b>7. Deck Composition:</b> NONE
<b>8a. Deck Membrane:</b>
<b>8b. Deck Surface:</b> BITUMINOUS

**HYDRAULIC DATA**

<b>1. Design Flood Frequency:</b> 0 yrs
<b>2. Design Discharge:</b> 0 cu-ft/s
<b>3. Max. Velocity:</b> 0.0 ft/s
<b>4. Drainage Area:</b> 0.0 sq. ft
<b>5. High Water Elev.:</b> 0.0 ft
<b>6. Scour Critical Code:</b> 8
<b>7. Scour Calculated?:</b> Y

**STRUCTURE SERVICE DATA**

<b>1. Hwy. On Detour Length:</b> 17 ft
<b>2. Type Service On:</b> HIGHWAY
<b>3. Type Service Under:</b> WATERWAY

**APPRAISAL UPDATE**

<b>1. Load Capacity:</b> 5-LEGAL LOAD STRESS NOT EXCEEDED
<b>2. Geom. On:</b> 5-COND ADEQUATE-NO REPAIRS
<b>3. Geom. Under:</b> N-NO UNDERCLEARANCE RECORD EXISTS
<b>4. Appr. Align:</b> 4-COND AT TOL LIMIT-NO REPAIRS
<b>5. Horiz. Align:</b>
<b>6. Vert. Align:</b>

**PLANNING DATA**

<b>1. Functional Classification:</b> LOCAL-RURAL(09)
<b>2. ADT:</b> 60
<b>3. ADT-Year:</b> 1980
<b>4. Truck ADT %:</b> 0
<b>5. Future ADT:</b> 66
<b>6. Future ADT-Year:</b> 2000

**CONDITION DATA**

<b>Deck:</b> 6	<b>SuperStructure:</b> 6	<b>SubStructure:</b> 4	<b>Channel:</b> N
<b>Culvert:</b> N	<b>Waterway:</b> 8		

## Bridge P060174

### CONSTRUCTION DATE

Project ID	Construction Contractor	Construction Designer	Construction Year	Plans Reel Number	Letting Date	Survey Received	Work Performed
	UNKNOWN	UNKNOWN	1960				NEW STRUCTURE

### CLEARANCE DATE

Clearance Lane Number	Minimum Vertical	Minimum Vertical Date	Minimum Horizontal Distance	Right Minimum Lateral

Left Minimum Lateral	Railroad Right Minimum Lateral	Railroad Left Minimum Lateral	Railroad Vertical Distance	Railroad Horizontal Distance

### ROUTE DATE

Number	Direction	Type	Structure Route On / Under	Structure Route Cardinal / NonCardinal
	E		O	C
			U	

Number	Structure Route Location	Highway Feature Name	Structure Route Local System	Highway Feature Designation
	1.2M E JCT STH 88	SCHOEPP VALLEY RD	LRD	MAINLINE
		WAUMANDEE CREEK		WATER / LAND / OTHER

Number	Structure Route Primary Flag	Designed National Network Flag	Structure Defense Highway Designation	Highway On Inventory Route
	Y	N	0	NON
	Y	N	0	

### PIER DATE

Number	Pier Type	Piling Type	Piling Size	Pier Skew Angle	Direction of Skew
1	PILE BENT	TR TIMBER	305 MM (12" )		
2	PILE BENT	TR TIMBER	305 MM (12" )		
3	PILE BENT	TR TIMBER	305 MM (12" )		
4	PILE BENT	TR TIMBER	305 MM (12" )		

### SPAN DATE

Number	Type	Length	Configuration	Material	Girder or Truss Height	Girder or Truss Spacing
1		23.5	FLAT SLAB	TIMBER		0.0
2		24.0	FLAT SLAB	TIMBER		0.0
3		24.0	FLAT SLAB	TIMBER		0.0
4		24.0	FLAT SLAB	TIMBER		0.0
5		23.5	FLAT SLAB	TIMBER		0.0

### EXPANSIONJOINT DATE

Number	Location	Type	Inactive Date

**SUFFICIENCY RATING CALCULATION****Structure = P060174 Date is 2012-10-24****BUILDING S1**

\*\*\*\*\*

Inventory Rating = [25.92] SuperStructure Rating is = [6]  
 SubStructure Rating is = [4] Culvert Rating is = [N]

\*\*\*\*\*

$S1 = 55.0 - (A + B)$   
 $24.63 = 55.0 - (25.0 + 5.37)$   
 -----> **S1 = 24.63**

**BUILDING S2**

\*\*\*\*\*

Calculated Values ---&gt; X = 30.00 ---&gt; Y = 3.10 ---&gt; G = 0.0 ---&gt; H = 0.0

Deck (58) Rating is =	[6]	Structural Eval.(67) Rating is =	[4]
Deck Geometry (68) Rating is =	[5]	UnderClearance (69) Rating is =	[N]
Water Adequacy (71) Rating is =	[8]	Approach Align. (72) Rating is =	[4]
ADT (29) =	[60]	Road Way Width (51) m =	[6.22]
Approach Width (32) m =	[6.71]	Number of Lanes (28) =	[02]
Structure Type (43) =	[01]	Vertical Clearance (53) m =	[99.99]
STRAHNET (100) =	[0]	Traffic Pattern (102) =	[2]

\*\*\*\*\*

$S2 = 30 - [J + (G + H) + I]$   
 $25.00 = 30 - [5 + 0.00 + 0]$   
 -----> **S2 = 25.00**

**BUILDING S3**

\*\*\*\*\*

ADT (29) = [60.0] Detour Length (19) km = [27]

\*\*\*\*\*

A = 0.13  
 K = 0.58

\*\*\*\*\*

STRAHNET (100) = [0]

\*\*\*\*\*

$S3 = 15.0 - (A + B)$   
 $14.87 = 15.0 - 0.13 + 0.0$   
 -----> **S3 = 14.87**

**BUILDING S4**

\*\*\*\*\*

Detour Length (19) km is = [27] Structure Type (43) is = [01]  
 Traffic Safety number digits(36) is = [4]

\*\*\*\*\*

$S4 = A + B + C$   
 $3.00 = 0.00 + 0 + 3$   
 -----> **S4 = 3.00**

**theRating is = S1 [24.63] + S2 [25.00] + S3 [14.87] - S4 [3.00]**

**FINAL RATING IS 61.5**



Selection List Report for Wisconsin																								
Date: 5/26/2010																								
		I-008	I-006a	I-007	I-009	I-003		I-002	I-022	I-026	I-027	I-029	I-041	I-049	I-052		I-064	I-066	I-070	I-100	I-104			
State Name	Fed Agency	Structure Number	Features Desc	Facility Carried	Location	County Code	County Name	Highway District	Owner	Functional Class	Year Built	ADT	Open Closed Posted	Structure Len Mt	Deck Width Mt	Area of Bridge	Operating Rating	Inventory Rating	Posting Eval	Strahnet Highway	Highway System	Status	Sufficiency Asterisk	Sufficiency Rating
WISCONSIN	N	P06017400000000	WAUMANDEE CREEK	LRD SCHOEPP VALLEY	1.2M E JCT STH 88	011	BUFFALO	05	03	09	1960	60	A	36.9	6.6	243.54	35.6	25.9	0	0	0	SD		61.5

**BRIDGE INSPECTION REPORT**  
**Wisconsin Dept. of Transportation**  
**DT2007 2003 s.84.17 Wis. Stats. Type = UNDERWATER V. PROBE INSPECTION**

page 1

**Inventory Data**

<b>Feature On:</b> SCHOEPP VALLEY RD		<b>Maintainer:</b> TOWN		<b>Structure No:</b> P-06-0174	
<b>Feature Under:</b> WAUMANDEE CREEK		<b>Sect/Twn/Rng:</b> S06 T20N R11W			
<b>Location:</b> 1.2M E JCT STH 88		<b>County:</b> BUFFALO (		<b>Municipality:</b> TOWN-WAUMANDEE (06034)	
<b>Inv Rating:</b> HS16	<b>Rdwy Width (ft):</b> 20.4	<b>Deck Width (ft):</b> 21.7		<b>Existing Posting:</b>	
<b>Oper Rating:</b> HS22	<b>Total Length (ft):</b> 121.0	<b>Deck Area(ft2):</b> 2625		<b>ADT On:</b> 60 Yr: 1980	<b>ADT Under:</b> Yr:

**Inspection Type** (\* = Supplemental Form Required)

	<b>Routine Visual</b>	<b>Fracture Critical*</b>	<b>In-Depth*</b>	<b>UW-Dive*</b>	<b>UW-Surv*</b>	<b>UW-Probe/Visual*</b>	<b>Movable*</b>
<b>Last Insp.</b>	2008-11-03					2008-11-03	
<b>Frequency</b>	24					24	
<b>Recom. Freq.</b>							
	<b>Initial*</b>	<b>Damage</b>	<b>Interim</b>	<b>Load Posted</b>	<b>SI &amp; A Field Review*</b>		
<b>Last Insp.</b>							
<b>Frequency</b>	N/A						
<b>Recom. Freq.</b>	N/A				<b>Item No. Needing Change</b>		

**Load Rating Information**

<b>Overburden</b>	<b>Measurement (in):</b> 6.0	<b>Date:</b> 2006-11-22	<b>Deck Surface Type:</b> BITUMINOUS		
<b>Section Loss</b>	<b>File Meas. (%):</b>	<b>File Insp. Date:</b>	<b>Insp. Measurement (%):</b>	<b>Describe:</b>	
<b>Re-rate for load capacity?</b>		<b>Reason:</b>		<b>Date Last Rated:</b>	

**Expansion Joints**

		<b>Temp:</b>			<b>Signing Condition</b>			
<b>Location</b>	<b>Type</b>	<b>File Insp. Date</b>	<b>File Insp. (in)</b>	<b>New Insp. (in)</b>	<b>Type of Marker</b>	<b>File</b>	<b>Y/N</b>	<b>Comments</b>
					<b>Bridge Markers</b>	Y	Y	Straighten
					<b>Narrow Bridge</b>	N	N	
					<b>One Lane Road</b>			
					<b>Vertical Clearance</b>			
					<b>Weight Limit Post</b>			
					<b>Other(Addl. Sign)</b>			

**Clearances**(Cardinal = N or E)

	<b>File Meas. (ft.)</b>	<b>File Date</b>	<b>New Meas. (ft.)</b>
<b>Min. Vertical Clearance Under (Cardinal)</b>			
<b>Min. Vertical Clearance Under (non-Cardinal)</b>			
<b>Min. Vertical Clearance On</b>			

**Structure Type**

				<b>Construction/Rehabilitation History</b>			
<b>Material</b>	<b>Configuration</b>	<b># of Spans</b>	<b>Overall Length (ft)</b>	<b>Year</b>	<b>Work Performed</b>	<b>Plan</b>	<b>Shop</b>
TIMBER	FLAT SLAB	1	23.5	1960	NEW STRUCTURE		
TIMBER	FLAT SLAB	1	24.0				
TIMBER	FLAT SLAB	1	24.0				
TIMBER	FLAT SLAB	1	24.0				
TIMBER	FLAT SLAB	1	23.5				

**Inspection Information**

<b>Special Requirements</b>	<b>Y/N</b>	<b>Comments</b>			
<b>Traffic Control</b>					
<b>Access Equipment</b>					
<b>Other</b>	Y	Reports & Misc.			

**Inspector Information**

<b>Team Leader Name and No. Printed:</b> Wilkinson, Ben C (9547)		<b>Team Member(s) Name(s) Printed:</b>	
<b>Team Leader Signature:</b>		<b>Inspection Date:</b> 2008-11-03	<b>Inspection Agency:</b> CONSULTANT (10)
<b>District/Local Manager and No. Printed:</b>		<b>District/Local Manager Signature:</b>	<b>Review Date:</b>

## Element Inspection (X) Check Elements Inspected

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
X	55 / 2	Timber Slab/AC Ovly	SF	2625		2625			
	trans cracks over piers.								
X	156 / 2	Timber Floor Beam	LF	100	60	40			
X	206 / 3	Timber Column	EA	30	8	20	2		
	pier piling 1-2" shell rot rotting & swelled @ water line. Nuts missing at E abut. Middle pile on east abutment is split.								
X	216 / 2	Timber Abutment	LF	49	44	5			
	Some rot at end of planks, minor seperation of planks.								
X	235 / 2	Timber Cap	LF	144	144				
	no rot. cracked								
X	236 / 2	Tiber Cross-Bracing	EA	14		4	5	5	
	2 at western most pier are completely detached, also middle pier.								
X	322 / 2	Bituminous Approach	EA	2	1	1			
	Settlement at north end								
X	333 / 2	Combin Bridge Railing	LF	239	230	9			
	Some posts have big cracks.								
X	342 / 2	RipRap Slope Protect	EA	2			2		
	No riprap in front of abutments								
X	401 / 2	Timber wingwall	EA	4	4				
	Minor tipping at NE. SW wing is completely buried								
X	405 / 2	Drainage	EA	40			40		
	Plugged								
X	410 / 2	Curb	LF	239	209	30			
	Some minor splitting and cracking								

General Inspection/Maintenance Notes

1. Replace S.W. bridge marker 2. Seal deck cracks. 3. Replace timber bracing. 4. Riprap abutments. 5. Install narrow bridge signs. 6. Remove debris from edges of deck. 7. Strengthen pier piling. 8. Unplug drains. 9. Remove debris against piers. The debris pushing up against the bracing is causing their failure. Debris needs to be removed.

NBI Ratings

NBI	File	New	NBI	File	New
Deck	6	6	Culvert	N	N
Superstructure	6	6	Channel	8	8
Substructure	4	4	Waterway	8	8

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item:
Amount:      Date(YYYY-MM-DD):
Maintenance item comment:

Maintenance Item:
Amount:      Date(YYYY-MM-DD):
Maintenance item comment:

Maintenance Item:
Amount:      Date(YYYY-MM-DD):
Maintenance item comment:

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**BRIDGE INSPECTION REPORT**  
**Wisconsin Dept. of Transportation**  
**DT2007 2003 s.84.17 Wis. Stats. Type = INTERIM INSPECTION**

page 1

**Inventory Data**

<b>Feature On:</b> SCHOEPP VALLEY RD		<b>Maintainer:</b> TOWN		<b>Structure No:</b> P-06-0174
<b>Feature Under:</b> WAUMANDEE CREEK		<b>Sect/Twn/Rng:</b> S06 T20N R11W		
<b>Location:</b> 1.2M E JCT STH 88		<b>County:</b> BUFFALO (	<b>Municipality:</b>	
<b>Inv Rating:</b> HS16	<b>Rdwy Width (ft):</b> 20.4	<b>Deck Width (ft):</b> 21.7	<b>Existing Posting:</b>	
<b>Oper Rating:</b> HS22	<b>Total Length (ft):</b> 121.0	<b>Deck Area(ft2):</b> 2625	<b>ADT On:</b> 60 <b>Yr:</b> 1980	<b>ADT Under:</b> <b>Yr:</b>

**Inspection Type** (\* = Supplemental Form Required)

	<b>Routine Visual</b>	<b>Fracture Critical*</b>	<b>In-Depth*</b>	<b>UW-Dive*</b>	<b>UW-Surv*</b>	<b>UW-Probe/Visual*</b>	<b>Movable*</b>
<b>Last Insp.</b>	2008-11-03					2008-11-03	
<b>Frequency</b>	24					24	
<b>Recom. Freq.</b>							
	<b>Initial*</b>	<b>Damage</b>	<b>Interim</b>	<b>Load Posted</b>	<b>SI &amp; A Field Review*</b>		
<b>Last Insp.</b>			2009-10-12				
<b>Frequency</b>	N/A		00				
<b>Recom. Freq.</b>	N/A				<b>Item No. Needing Change</b>		

**Load Rating Information**

<b>Overburden</b>	<b>Measurement (in):</b> 6.0	<b>Date:</b> 2006-11-22	<b>Deck Surface Type:</b> BITUMINOUS		
<b>Section Loss</b>	<b>File Meas. (%):</b>	<b>File Insp. Date:</b>	<b>Insp. Measurement (%):</b>	<b>Describe:</b>	
<b>Re-rate for load capacity?</b>		<b>Reason:</b>		<b>Date Last Rated:</b>	

**Expansion Joints**

		<b>Temp:</b>			<b>Signing Condition</b>			
<b>Location</b>	<b>Type</b>	<b>File Insp. Date</b>	<b>File Insp. (in)</b>	<b>New Insp. (in)</b>	<b>Type of Marker</b>	<b>File</b>	<b>Y/N</b>	<b>Comments</b>
					<b>Bridge Markers</b>	Y	Y	Straighten
					<b>Narrow Bridge</b>	N	N	
					<b>One Lane Road</b>			
					<b>Vertical Clearance</b>			
					<b>Weight Limit Post</b>			
					<b>Other(Addl. Sign)</b>			

**Clearances**(Cardinal = N or E)

	<b>File Meas. (ft.)</b>	<b>File Date</b>	<b>New Meas. (ft.)</b>
<b>Min. Vertical Clearance Under (Cardinal)</b>			
<b>Min. Vertical Clearance Under (non-Cardinal)</b>			
<b>Min. Vertical Clearance On</b>			

**Structure Type**

				<b>Construction/Rehabilitation History</b>			
<b>Material</b>	<b>Configuration</b>	<b># of Spans</b>	<b>Overall Length (ft)</b>	<b>Year</b>	<b>Work Performed</b>	<b>Plan</b>	<b>Shop</b>
TIMBER	FLAT SLAB	1	23.5	1960	NEW STRUCTURE		
TIMBER	FLAT SLAB	1	24.0				
TIMBER	FLAT SLAB	1	24.0				
TIMBER	FLAT SLAB	1	24.0				
TIMBER	FLAT SLAB	1	23.5				

**Inspection Information**

<b>Special Requirements</b>	<b>Y/N</b>	<b>Comments</b>				
<b>Traffic Control</b>						
<b>Access Equipment</b>						
<b>Other</b>	Y	Reports & Misc.				

**Inspector Information**

<b>Team Leader Name and No. Printed:</b> Simons, David (9584)		<b>Team Member(s) Name(s) Printed:</b>			
<b>Team Leader Signature:</b>		<b>Inspection Date:</b> 2009-10-12		<b>Inspection Agency:</b> CONSULTANT (10)	
<b>District/Local Manager and No. Printed:</b>		<b>District/Local Manager Signature:</b>		<b>Review Date:</b>	

## Element Inspection (X) Check Elements Inspected

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
X	55 / 2	Timber Slab/AC Ovly	SF	2625		2625			
		trans cracks over piers. Asphalt patches.							
X	156 / 2	Timber Floor Beam	LF	100	60	40			
X	206 / 3	Timber Column	EA	30	8	20	2		
		pier piling 1-2" shell rot rotting & swelled @ water line. Nuts missing at E abut. Middle pile on east abutment is split.							
X	216 / 2	Timber Abutment	LF	49	44	5			
		Some rot at end of planks, minor separation of planks.							
X	235 / 2	Timber Cap	LF	144	144				
		no rot. cracked							
X	236 / 2	Tiber Cross-Bracing	EA	14		4	5	5	
		2 at western most pier are completely detached, also middle pier.							
X	322 / 2	Bituminous Approach	EA	2		2			
		Settlement at north end. Cracks at each approach.							
X	333 / 2	Combin Bridge Railing	LF	239	230	9			
		Some posts have big cracks.							
X	342 / 2	RipRap Slope Protect	EA	2			2		
		No riprap in front of abutments							
X	401 / 2	Timber wingwall	EA	4	4				
		Minor tipping at NE. SW wing is completely buried							
X	405 / 2	Drainage	EA	40			40		
		Plugged							
X	410 / 2	Curb	LF	239	209	30			
		Some minor splitting and cracking							

General Inspection/Maintenance Notes

1. Replace SE bridge marker 2. Seal deck cracks. 3. Replace timber bracing. 4. Riprap abutments. 5. Install narrow bridge signs. 6. Remove debris from edges of deck. 7. Unplug drains. 8. Remove debris against piers.

NBI Ratings

NBI	File	New	NBI	File	New
Deck	6	6	Culvert	N	N
Superstructure	6	6	Channel	8	8
Substructure	4	4	Waterway	8	8

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item:	
Amount:	Date(YYYY-MM-DD):
Maintenance item comment:	

Maintenance Item:	
Amount:	Date(YYYY-MM-DD):
Maintenance item comment:	

Maintenance Item:	
Amount:	Date(YYYY-MM-DD):
Maintenance item comment:	



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**BRIDGE INSPECTION REPORT**  
**Wisconsin Dept. of Transportation**  
**DT2007 2003 s.84.17 Wis. Stats. Type = UNDERWATER V PROBE INSPECTION**

page 1

**Inventory Data**

<b>Feature On:</b> SCHOEPP VALLEY RD		<b>Maintainer:</b> TOWN		<b>Structure No:</b> P-06-0174	
<b>Feature Under:</b> WAUMANDEE CREEK		<b>Sect/Twn/Rng:</b> S06 T20N R11W			
<b>Location:</b> 1.2M E JCT STH 88		<b>County:</b> BUFFALO (		<b>Municipality:</b> TOWN-WAUMANDEE (06034)	
<b>Inv Rating:</b> HS16	<b>Rdwy Width (ft):</b> 20.4	<b>Deck Width (ft):</b> 21.7		<b>Existing Posting:</b>	
<b>Oper Rating:</b> HS22	<b>Total Length (ft):</b> 121.0	<b>Deck Area(ft2):</b> 2625		<b>ADT On:</b> 60 Yr: 1980	<b>ADT Under:</b> Yr:

**Inspection Type** (\* = Supplemental Form Required)

	<b>Routine Visual</b>	<b>Fracture Critical*</b>	<b>In-Depth*</b>	<b>UW-Dive*</b>	<b>UW-Surv*</b>	<b>UW-Probe/Visual*</b>	<b>Movable*</b>
<b>Last Insp.</b>	10-06-10					10-06-10	
<b>Frequency</b>	24					24	
<b>Recom. Freq.</b>							
	<b>Initial*</b>	<b>Damage</b>	<b>Interim</b>	<b>Load Posted</b>	<b>SI &amp; A Field Review*</b>		
<b>Last Insp.</b>			10-12-09				
<b>Frequency</b>	N/A		00				
<b>Recom. Freq.</b>	N/A				<b>Item No. Needing Change</b>		

**Load Rating Information**

Overburden	Measurement (in): 6.0	Date: 11-22-06	Deck Surface Type: BITUMINOUS		
Section Loss	File Meas. (%):	File Insp. Date: 10-06-10	Insp. Measurement (%):	Describe:	
Re-rate for load capacity?		Reason:		Date Last Rated:	

**Expansion Joints**

		<b>Temp:</b>			<b>Signing Condition</b>			
<b>Location</b>	<b>Type</b>	<b>File Insp. Date</b>	<b>File Insp. (in)</b>	<b>New Insp. (in)</b>	<b>Type of Marker</b>	<b>File</b>	<b>Y/N</b>	<b>Comments</b>
					<b>Bridge Markers</b>	Y	Y	Straighten
					<b>Narrow Bridge</b>	N	N	
					<b>One Lane Road</b>			
					<b>Vertical Clearance</b>			
					<b>Weight Limit Post</b>			
					<b>Other(Addl. Sign)</b>			

**Clearances**(Cardinal = N or E)

	<b>File Meas. (ft.)</b>	<b>File Date</b>	<b>New Meas. (ft.)</b>
<b>Min. Vertical Clearance Under (Cardinal)</b>			
<b>Min. Vertical Clearance Under (non-Cardinal)</b>			
<b>Min. Vertical Clearance On</b>			

**Structure Type**

				<b>Construction/Rehabilitation History</b>			
<b>Material</b>	<b>Configuration</b>	<b># of Spans</b>	<b>Overall Length (ft)</b>	<b>Year</b>	<b>Work Performed</b>	<b>Plan</b>	<b>Shop</b>
TIMBER	FLAT SLAB		23.5	1960	NEW STRUCTURE		
TIMBER	FLAT SLAB		24.0				
TIMBER	FLAT SLAB		24.0				
TIMBER	FLAT SLAB		24.0				
TIMBER	FLAT SLAB		23.5				

**Inspection Information**

<b>Special Requirements</b>	<b>Y/N</b>	<b>Comments</b>			
<b>Traffic Control</b>					
<b>Access Equipment</b>					
<b>Other</b>	Y	Reports & Misc.			

**Inspector Information**

<b>Team Leader Name and No. Printed:</b> Bollmann, James W (9551)		<b>Team Member(s) Name(s) Printed:</b>			
<b>Team Leader Signature:</b>		<b>Inspection Date:</b> 10-06-10		<b>Inspection Agency:</b> CONSULTANT (10)	
<b>District/Local Manager and No. Printed:</b>		<b>District/Local Manager Signature:</b>		<b>Review Date:</b>	

## Element Inspection (X) Check Elements Inspected

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
X	55 / 2	Timber Slab/AC Ovly	SF	2625		2625			
		trans cracks over piers. Asphalt patches.							
X	156 / 2	Timber Floor Beam	LF	100	60	40			
X	206 / 3	Timber Column	EA	30	8	20	2		
		pier piling 1-2" shell rot rotting & swelled @ water line. Nuts missing at E abut. Middle pile on east abutment is split.							
X	216 / 2	Timber Abutment	LF	49	44	5			
		Some rot at end of planks, minor separation of planks.							
X	235 / 2	Timber Cap	LF	144	144				
		no rot. cracked							
X	236 / 2	Timber Cross-Bracing	EA	14		14			
		Repaired							
X	322 / 2	Bituminous Approach	EA	2		2			
		Settlement at north end. Cracks at each approach.							
X	333 / 2	Combin Bridge Railing	LF	239	230	9			
		Some posts have big cracks.							
X	342 / 2	RipRap Slope Protect	EA	2			2		
		No riprap in front of abutments							
X	401 / 2	Timber wingwall	EA	4	4				
		Minor tipping at NE. SW wing is completely buried							
X	405 / 2	Drainage	EA	40			40		
		Plugged							
X	410 / 2	Curb	LF	239	209	30			
		Some minor splitting and cracking							

General Inspection/Maintenance Notes

1. Replace SE bridge marker 2. Seal deck cracks. 3. Replace timber bracing. 4. Riprap abutments. 5. Install narrow bridge signs. 6. Remove debris from edges of deck. 7. Unplug drains. 8. Remove debris against piers.

Unable to inspect center piers due to high water from recent heavy rain event. Would need a boat. Erosion present upstream and downstream.

NBI Ratings

NBI	File	New	NBI	File	New
Deck	6	6	Culvert	N	N
Superstructure	6	6	Channel	8	8
Substructure	4	4	Waterway	8	8

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item:	
Amount:	Date(YYYY-MM-DD):
Maintenance item comment:	

Maintenance Item:	
Amount:	Date(MM-DD-YY):
Maintenance item comment:	

Maintenance Item:	
Amount:	Date(MM-DD-YY):
Maintenance item comment:	

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**BRIDGE INSPECTION REPORT**  
**Wisconsin Dept. of Transportation**  
**DT2007 2003 s.84.17 Wis. Stats. Type = INTERIM INSPECTION**

page 1

**Inventory Data**

<b>Feature On:</b> SCHOEPP VALLEY RD		<b>Maintainer:</b> TOWN		<b>Structure No:</b> P-06-174	
<b>Feature Under:</b> WAUMANDEE CREEK		<b>Sect/Twn/Rng:</b> S06 T20N R11W			
<b>Location:</b> 1.2M E JCT STH 88		<b>County:</b> BUFFALO (		<b>Municipality:</b> TOWN-WAUMANDEE ( 06034 )	
<b>Inv Rating:</b> HS16	<b>Rdwy Width (ft):</b> 20.4	<b>Deck Width (ft):</b> 21.7			
<b>Oper Rating:</b> HS22	<b>Total Length (ft):</b> 121.0	<b>Deck Area(ft2):</b> 2625		<b>ADT On:</b> 60 Yr: 1980	<b>ADT Under:</b> Yr:

**Inspection Type** (\* = Supplemental Form Required)

	<b>Routine Visual</b>	<b>Fracture Critical*</b>	<b>In-Depth*</b>	<b>UW-Dive*</b>	<b>UW-Surv*</b>	<b>UW-Probe/Visual*</b>	<b>Movable*</b>
<b>Last Insp.</b>	10-06-10					10-06-10	
<b>Frequency</b>	24					24	
<b>Recom. Freq.</b>							
	<b>Initial*</b>	<b>Damage</b>	<b>Interim</b>	<b>Load Posted</b>	<b>SI &amp; A Field Review*</b>		
<b>Last Insp.</b>			10-12-11				
<b>Frequency</b>	N/A		00				
<b>Recom. Freq.</b>	N/A				<b>Item No. Needing Change</b>		

**Load Rating Information**

Overburden	Measurement (in): 6.0	Date: 11-22-06	Deck Surface Type: BITUMINOUS		
Section Loss	File Meas. (%):	File Insp. Date: 10-06-10	Insp. Measurement (%):	Describe:	
Re-rate for load capacity?		Reason:	Date Last Rated:		

**Expansion Joints**

		<b>Temp:</b>			<b>Signing Condition</b>			
<b>Location</b>	<b>Type</b>	<b>File Insp. Date</b>	<b>File Insp. (in)</b>	<b>New Insp. (in)</b>	<b>Type of Marker</b>	<b>File</b>	<b>Y/N</b>	<b>Comments</b>
					<b>Bridge Markers</b>	Y	Y	Straighten
					<b>Narrow Bridge</b>	N	N	
					<b>One Lane Road</b>			
					<b>Vertical Clearance</b>			
					<b>Weight Limit Post</b>			
					<b>Other(Addl. Sign)</b>			

**Clearances**(Cardinal = N or E)

	<b>File Meas. (ft.)</b>	<b>File Date</b>	<b>New Meas. (ft.)</b>
<b>Min. Vertical Clearance Under (Cardinal)</b>			
<b>Min. Vertical Clearance Under (non-Cardinal)</b>			
<b>Min. Vertical Clearance On</b>			

**Structure Type**

				<b>Construction/Rehabilitation History</b>			
<b>Material</b>	<b>Configuration</b>	<b># of Spans</b>	<b>Overall Length (ft)</b>	<b>Year</b>	<b>Work Performed</b>	<b>Plan</b>	<b>Shop</b>
TIMBER	FLAT SLAB		23.5	1960	NEW STRUCTURE		
TIMBER	FLAT SLAB		24.0				
TIMBER	FLAT SLAB		24.0				
TIMBER	FLAT SLAB		24.0				
TIMBER	FLAT SLAB		23.5				

**Inspection Information**

<b>Special Requirements</b>	<b>Y/N</b>	<b>Comments</b>			
<b>Traffic Control</b>					
<b>Access Equipment</b>					
<b>Other</b>	Y	Reports & Misc.			

**Inspector Information**

<b>Team Leader Name and No. Printed:</b> Bollmann, James W (9551)		<b>Team Member(s) Name(s) Printed:</b>	
<b>Team Leader Signature:</b>		<b>Inspection Date:</b> 10-12-11	<b>Inspection Agency:</b> CONSULTANT (10)
<b>District/Local Manager and No. Printed:</b>		<b>District/Local Manager Signature:</b>	<b>Review Date:</b>

## Element Inspection (X) Check Elements Inspected

Element Inspection (X) Check Elements Inspected					Quantity in Condition States				
Ck	Elem./Env.	Description	Unit	Total QTY.	1	2	3	4	5
	55 / 2	Timber Slab/AC Ovly	SF	2625		2625			
		trans cracks over piers. Asphalt patches.							
	156 / 2	Timber Floor Beam	LF	100	60	40			
X	206 / 3	Timber Column	EA	30	8	20	2		
		pier piling 1-2" shell rot rotting & swelled @ water line. Nuts missing at E abut. Middle pile on east abutment is split. The center (10) columns have rot at the waterline with minor scour present.							
X	216 / 2	Timber Abutment	LF	49	44	5			
		Some rot at end of planks, minor seperation of planks.							
X	235 / 2	Timber Cap	LF	144	144				
		no rot. cracked							
X	236 / 2	Timber Cross-Bracing	EA	14		14			
		Repaired							
	322 / 2	Bituminous Approach	EA	2		2			
		Settlement at north end. Cracks at each approach.							
	333 / 2	Combin Bridge Railing	LF	239	230	9			
		Some posts have big cracks.							
	342 / 2	RipRap Slope Protect	EA	2			2		
		No riprap in front of abutments							
X	361 / 2	Scour Smart Flag	EA	1	1				
		Monitor center piers - Debris is causing 1-2" of scour @ North Pier							
	401 / 2	Timber wingwall	EA	4	4				
		Minor tipping at NE. SW wing is completely buried							
	405 / 2	Drainage	EA	40			40		
		Plugged							
	410 / 2	Curb	LF	239	209	30			
		Some minor splitting and cracking							

General Inspection/Maintenance Notes

1. Replace SE bridge marker 2. Seal deck cracks. 3. Riprap abutments. 4. Install narrow bridge signs. 5. Remove debris from edges of deck. 6. Unplug drains. 7. Remove debris against piers.

NBI Ratings

NBI	File	New	NBI	File	New
Deck	6	6	Culvert	N	N
Superstructure	6	6	Channel	8	8
Substructure	4	4	Waterway	8	8

Maintenance Recommendations (See standard code items & numbers)

Maintenance Item:	
Amount:	Date(YYYY-MM-DD):
Maintenance item comment:	

Maintenance Item:	
Amount:	Date(MM-DD-YY):
Maintenance item comment:	

Maintenance Item:	
Amount:	Date(MM-DD-YY):
Maintenance item comment:	



































































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## **APPENDIX E**

### **SOIL BORING RESULTS SIEVE DATA**









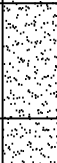





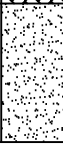




**Soil Boring Results** for Badger Bluff Sands LLC. Located in 32-21-11 & 5-20-11.  
 Compiled from Field Notes obtained from Summit Envirosolutions Drilling Log, August 10, 2012.

ELEVATION	DEPTH IN FEET	SOIL/ROCK DESCRIPTION	GRAPHIC	ELEVATION	DEPTH IN FEET	SOIL/ROCK DESCRIPTION	GRAPHIC
		<b>Bore: R-TB02</b>				<b>Bore: R-TB02</b>	
1154	0			1090	64	Continued from lower left	
	2	Clayey Silt, Dk Brn-Blk, w organics dolo grvl			66		
1150	4				68	Dolo A/A but buff-white w/ layers of light tan	
	6			1085	70		
	8				72		
1145	10	Dolomite, Buff-white, F-grnd, Hard		1080	74		
	12				76		
1140	14				78		
	16			1075	80	Dolo A/A mdtly light tan, some Buff	
	18				82		
1135	20			1070	84		
	22				86		
1130	24			1065	88		
	26				90	ST/Dolo, olv grvl & buff	
	28				92		
1125	30			1060	94		
	32				96		
1120	34				98		
	36			1055	100	Dolo, A/A Buff	
	38				102		
1115	40			1050	104		
	42	Dolo A/A but buff-white w/ layers of light tan			106		
1110	44				108		
	46			1045	110		
	48				112		
1105	50			1040	114		
	52				116		
1100	54			1035	118	Dolo, A/A, Buff grading into tan	
	56				120		
	58			1030	122		
1095	60				124		
	62				126	SS, tan, FI-CL, sub w/rnd, mod set, no Accs	
1090	64			1025	128		
		Bore R-TB02 continued at top right					



**Soil Boring Results** for Badger Bluff Sands LLC. Located in 32-21-11 & 5-20-11.  
 Compiled from Field Notes obtained from Summit Envirosolutions Drilling Log, August 10, 2012.

ELEVATION	DEPTH IN FEET	SOIL/ROCK DESCRIPTION	GRAPHIC	ELEVATION	DEPTH IN FEET	SOIL/ROCK DESCRIPTION	GRAPHIC		
Bore: R-TB04				Bore: R-TB05					
1064	0			999	18	Continued from lower left			
	2	Disturbed soil & regrowth			20	SS, Tan, FU-CL Sub rnd - well rnd, no Accs			
1060	4	Dolo, tan w/t shale HCl (esp powdered)		995	22	SS, Tan, FI-MU, A/A			
	6				24				
	8				26				
1055	10				28				
	12	SS, tan w/t Buff layers, FU-CL, sub well rnd, mod set, no Accs			30	SS, A/A, FI-ML			
1050	14			985	32				
	16				34				
	18	SS, tan, FU-CU, rnd w/rnd, well set, no Accs			36	SS, A/A, VFU-ML			
1045	20			980	38				
	22				40	SS, A/A, VFL-ML			
1040	24			975	42				
	26	End of Bore			44	SS, A/A, VFI-FI			
	28				46				
1035	30			970	48	SS, A/A, VFL-ML			
					50				
1030		Bore: R-TB05		965	52	SS, A/A, VFI-FI			
					54				
1025					56				
				960	58				
		SS/ST/SH/Dolo Lt brn - Buff			60	SS/ST, A/A, VFL-VFU			
1020				955	62				
	0	Bore R-TB05 continued at top right							
1015	2	SS, Tan, FU-CL Sub rnd - well rnd, no Accs							
	4								
1010	6								
	8								
	10								
1005	12								
	14								
1000	16								
	18								

Sheet 2 of 2





---

**Sample Name:** 1485-Kevin Reich

FracTAL Sample ID: 1485

Client Name: Tim Barth

---

**Sieve Analysis**

Method Used: Ro-Tap  
Sieve Set Used: 2  
Date Analysis Performed: 7/5/2012  
Analyst: RLA  
Starting Sample Weight (g): 100  
Sample Retained (g): 100

Sieve Size	Sample Retained		Cumulative	
(US Standard)	(g)	(%)	(%)	
16	0.6	0.6	0.6	
18	1.2	1.2	1.8	
20	3.0	3.0	4.8	
25	6.6	6.6	11.4	
30	11.3	11.3	22.7	In-Size as 20/40 = 55.1%
35	16.7	16.7	39.4	
40	20.5	20.5	59.9	
45	20.5	20.5	80.4	In-Size as 40/70 = 39.4%
50	13.4	13.4	93.8	
60	4.8	4.8	98.6	
70	0.7	0.7	99.3	
100	0.3	0.3	99.6	
200	0.1	0.1	99.7	
Pan	0.3	0.3	100.0	

Mean Diameter (mm): 0.500

Median Diameter (mm): 0.461





**Sample Name:** R-TB-04 13-30

FracTAL Sample ID: 1710

Client Name: Tim Barth, Kevin Rich

### Sieve Analysis

Method Used: Ro-Tap  
 Sieve Set Used: 1  
 Date Analysis Performed: 8/23/2012  
 Analyst: RRE  
 Starting Sample Weight (g): 100  
 Sample Retained (g): 100

Sieve Size	Sample Retained		Cumulative	
(US Standard)	(g)	(%)	(%)	
16	0.7	0.7	0.7	
18	1.0	1.0	1.7	
20	2.6	2.6	4.3	
25	6.2	6.2	10.5	In-Size as 20/40 = 50.2%
30	11.3	11.3	21.8	
35	16.5	16.5	38.3	
40	16.2	16.2	54.5	
45	15.1	15.1	69.6	In-Size as 40/70 = 40.2%
50	12.1	12.1	81.7	
60	9.0	9.0	90.7	
70	4.0	4.0	94.7	
100	3.9	3.9	98.6	
200	0.9	0.9	99.5	
Pan	0.5	0.5	100.0	

Mean Diameter (mm): 0.473

Median Diameter (mm): 0.446

1217 Bandana Blvd N.  
 St. Paul, MN 55108  
 651-842-4214  
 www.fraclab.com

8/23/2012



**Sample Name:** R-TB05 12-30  
**FracTAL Sample ID:** 1711  
**Client Name:** Tim Barth, Kevin Rich

### Sieve Analysis

**Method Used:** Ro-Tap  
**Sieve Set Used:** 1  
**Date Analysis Performed:** 8/23/2012  
**Analyst:** RRE  
**Starting Sample Weight (g):** 100  
**Sample Retained (g):** 100

Sieve Size	Sample Retained		Cumulative	
(US Standard)	(g)	(%)	(%)	
16	1.5	1.5	1.5	
18	1.2	1.2	2.7	
20	2.7	2.7	5.4	
25	5.3	5.3	10.7	In-Size as 20/40 = 38.2%
30	8.8	8.8	19.5	
35	11.5	11.5	31.0	
40	12.6	12.6	43.6	
45	16.2	16.2	59.8	In-Size as 40/70 = 50.4%
50	17.1	17.1	76.9	
60	12.6	12.6	89.5	
70	4.5	4.5	94.0	
100	3.4	3.4	97.4	
200	1.6	1.6	99.0	
Pan	1.0	1.0	100.0	

**Mean Diameter (mm):** 0.450  
**Median Diameter (mm):** 0.397

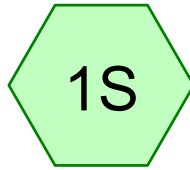
1217 Bandana Blvd N.  
 St. Paul, MN 55108  
 651-842-4214  
 www.fraclab.com



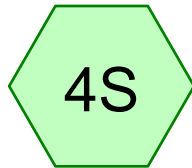
## **APPENDIX F**

### **PRELIMINARY STORM WATER DATA**

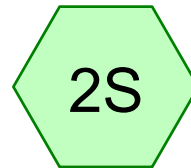




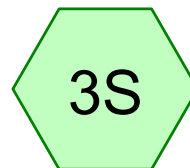
Mine A



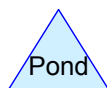
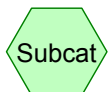
Wet Plant



Mine B



Mine C



**Routing Diagram for HydroCAD Model - Exist**

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---

**Area Listing (all nodes)**

Area (acres)	CN	Description (subcatchment-numbers)
5.785	61	>75% Grass cover, Good, HSG B (2S)
28.028	69	Small grain, C&T + CR, Good, HSG B (1S, 4S)
153.498	60	Woods, Fair, HSG B (1S, 2S, 3S, 4S)
<b>187.311</b>	<b>61</b>	<b>TOTAL AREA</b>

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---

**Soil Listing (all nodes)**

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
187.311	HSG B	1S, 2S, 3S, 4S
0.000	HSG C	
0.000	HSG D	
0.000	Other	
<b>187.311</b>		<b>TOTAL AREA</b>



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---

**Ground Covers (all nodes)**

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	5.785	0.000	0.000	0.000	5.785	>75% Grass cover, Good	2S
0.000	28.028	0.000	0.000	0.000	28.028	Small grain, C&T + CR, Good	1S, 4S
0.000	153.498	0.000	0.000	0.000	153.498	Woods, Fair	1S, 2S, 3S, 4S
<b>0.000</b>	<b>187.311</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>187.311</b>	<b>TOTAL AREA</b>	

## HydroCAD Model - Exist

Badger Bluff Sands LLC Mine Site  
Type II 24-hr 1-year Rainfall=2.50"

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---

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Mine A** Runoff Area=659,466 sf 0.00% Impervious Runoff Depth=0.22"  
Flow Length=900' Slope=0.3610 '/' Tc=8.0 min CN=62 Runoff=2.76 cfs 0.277 af

**Subcatchment 2S: Mine B** Runoff Area=3,974,190 sf 0.00% Impervious Runoff Depth=0.17"  
Flow Length=2,200' Slope=0.1550 '/' Tc=26.3 min CN=60 Runoff=4.87 cfs 1.321 af

**Subcatchment 3S: Mine C** Runoff Area=2,410,943 sf 0.00% Impervious Runoff Depth=0.17"  
Flow Length=710' Slope=0.3870 '/' Tc=6.7 min CN=60 Runoff=6.18 cfs 0.801 af

**Subcatchment 4S: Wet Plant** Runoff Area=1,114,680 sf 0.00% Impervious Runoff Depth=0.42"  
Flow Length=700' Slope=0.0570 '/' Tc=13.7 min CN=69 Runoff=11.29 cfs 0.897 af

**Total Runoff Area = 187.311 ac Runoff Volume = 3.297 af Average Runoff Depth = 0.21"**  
**100.00% Pervious = 187.311 ac 0.00% Impervious = 0.000 ac**

## HydroCAD Model - Exist

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Badger Bluff Sands LLC Mine Site

Type II 24-hr 1-year Rainfall=2.50"

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### Summary for Subcatchment 1S: Mine A

Runoff = 2.76 cfs @ 12.05 hrs, Volume= 0.277 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

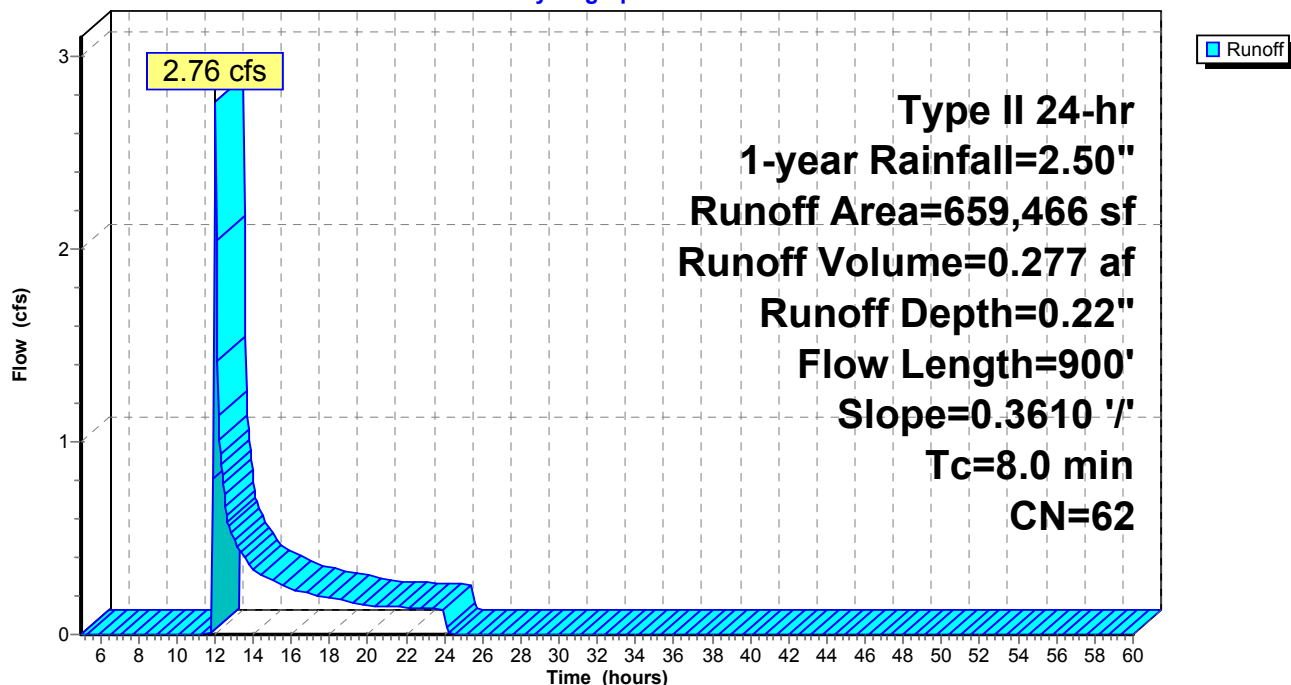
Type II 24-hr 1-year Rainfall=2.50"

Area (sf)	CN	Description
131,898	69	Small grain, C&T + CR, Good, HSG B
527,568	60	Woods, Fair, HSG B
659,466	62	Weighted Average
659,466		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	900	0.3610	1.88		Lag/CN Method,

### Subcatchment 1S: Mine A

Hydrograph



## HydroCAD Model - Exist

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Badger Bluff Sands LLC Mine Site

Type II 24-hr 1-year Rainfall=2.50"

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### Summary for Subcatchment 2S: Mine B

Runoff = 4.87 cfs @ 12.36 hrs, Volume= 1.321 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

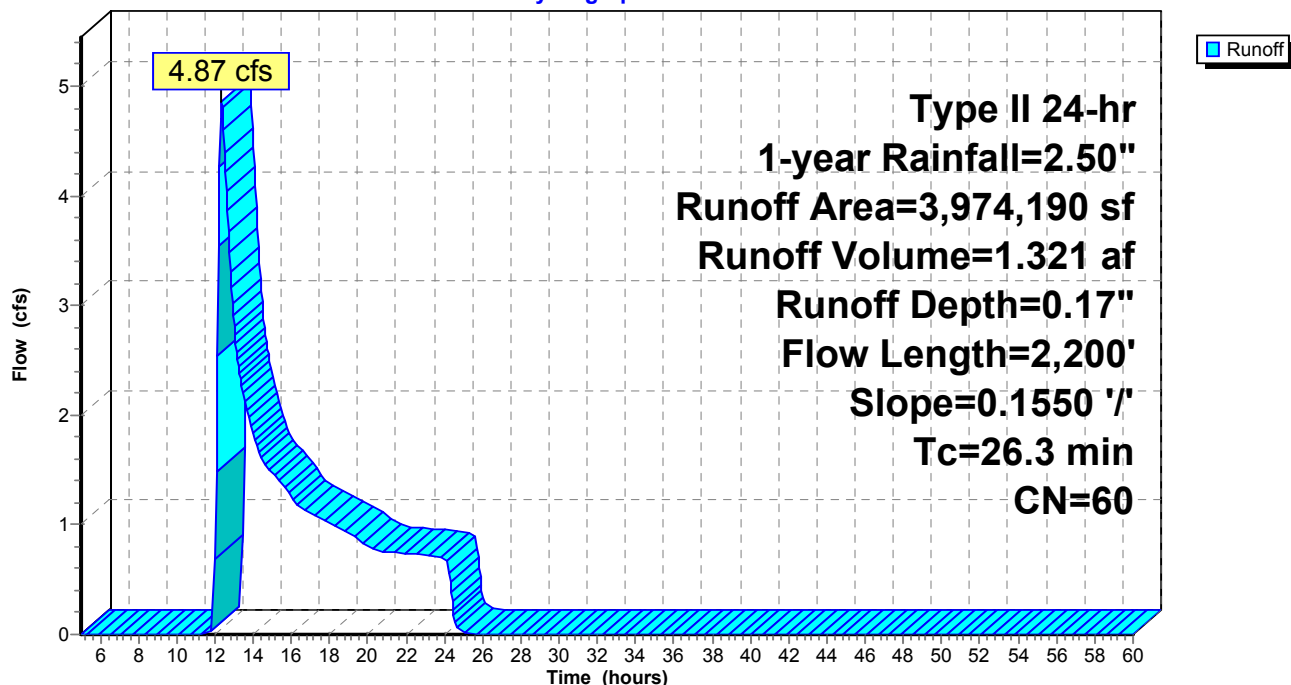
Type II 24-hr 1-year Rainfall=2.50"

Area (sf)	CN	Description
252,009	61	>75% Grass cover, Good, HSG B
3,722,181	60	Woods, Fair, HSG B
3,974,190	60	Weighted Average
3,974,190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	2,200	0.1550	1.40		Lag/CN Method,

### Subcatchment 2S: Mine B

Hydrograph



## HydroCAD Model - Exist

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Badger Bluff Sands LLC Mine Site

Type II 24-hr 1-year Rainfall=2.50"

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### Summary for Subcatchment 3S: Mine C

Runoff = 6.18 cfs @ 12.04 hrs, Volume= 0.801 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

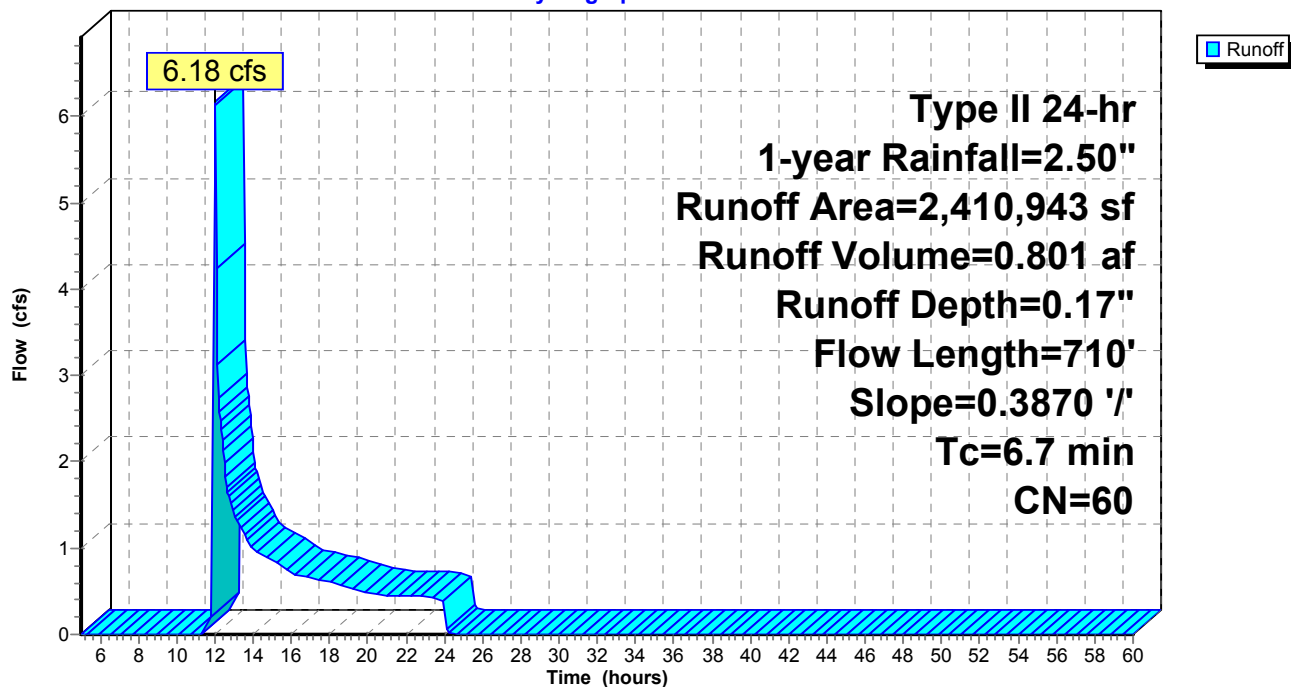
Type II 24-hr 1-year Rainfall=2.50"

Area (sf)	CN	Description
2,410,943	60	Woods, Fair, HSG B
2,410,943		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	710	0.3870	1.76		Lag/CN Method,

### Subcatchment 3S: Mine C

Hydrograph



## HydroCAD Model - Exist

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Badger Bluff Sands LLC Mine Site

Type II 24-hr 1-year Rainfall=2.50"

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### Summary for Subcatchment 4S: Wet Plant

Runoff = 11.29 cfs @ 12.09 hrs, Volume= 0.897 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

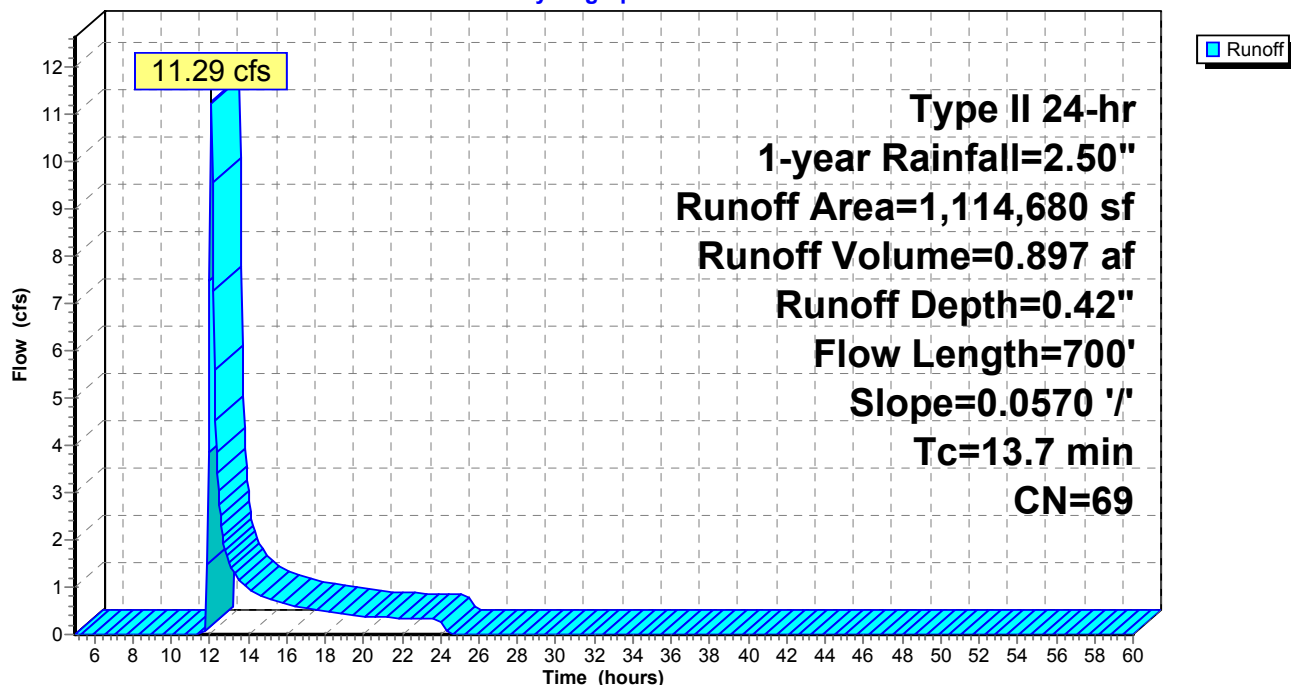
Type II 24-hr 1-year Rainfall=2.50"

Area (sf)	CN	Description
1,088,986	69	Small grain, C&T + CR, Good, HSG B
25,694	60	Woods, Fair, HSG B
1,114,680	69	Weighted Average
1,114,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	700	0.0570	0.85		Lag/CN Method,

### Subcatchment 4S: Wet Plant

Hydrograph



## HydroCAD Model - Exist

Badger Bluff Sands LLC Mine Site  
Type II 24-hr 2-year Rainfall=2.80"

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---

Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Mine A** Runoff Area=659,466 sf 0.00% Impervious Runoff Depth=0.32"  
Flow Length=900' Slope=0.3610 '/' Tc=8.0 min CN=62 Runoff=5.21 cfs 0.406 af

**Subcatchment 2S: Mine B** Runoff Area=3,974,190 sf 0.00% Impervious Runoff Depth=0.26"  
Flow Length=2,200' Slope=0.1550 '/' Tc=26.3 min CN=60 Runoff=10.53 cfs 2.011 af

**Subcatchment 3S: Mine C** Runoff Area=2,410,943 sf 0.00% Impervious Runoff Depth=0.26"  
Flow Length=710' Slope=0.3870 '/' Tc=6.7 min CN=60 Runoff=14.41 cfs 1.220 af

**Subcatchment 4S: Wet Plant** Runoff Area=1,114,680 sf 0.00% Impervious Runoff Depth=0.57"  
Flow Length=700' Slope=0.0570 '/' Tc=13.7 min CN=69 Runoff=16.44 cfs 1.206 af

**Total Runoff Area = 187.311 ac Runoff Volume = 4.842 af Average Runoff Depth = 0.31"**  
**100.00% Pervious = 187.311 ac 0.00% Impervious = 0.000 ac**

## HydroCAD Model - Exist

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Badger Bluff Sands LLC Mine Site

Type II 24-hr 2-year Rainfall=2.80"

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### Summary for Subcatchment 1S: Mine A

Runoff = 5.21 cfs @ 12.03 hrs, Volume= 0.406 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

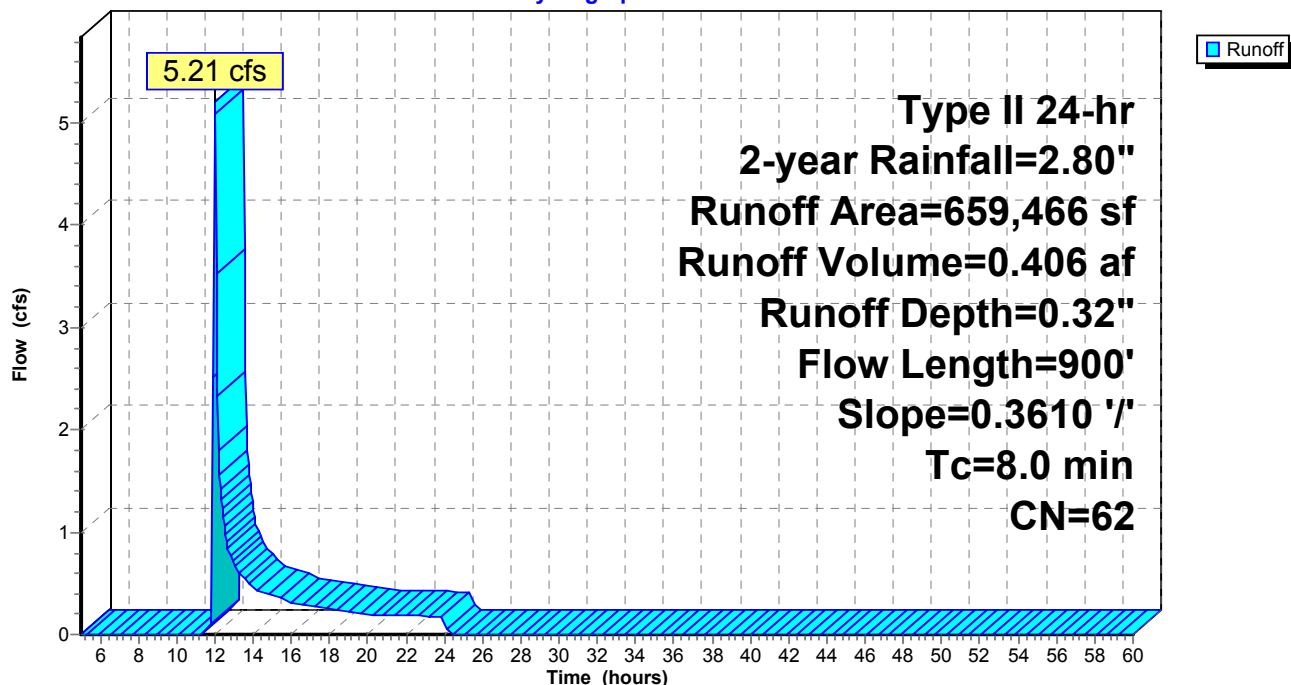
Type II 24-hr 2-year Rainfall=2.80"

Area (sf)	CN	Description
131,898	69	Small grain, C&T + CR, Good, HSG B
527,568	60	Woods, Fair, HSG B
659,466	62	Weighted Average
659,466		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	900	0.3610	1.88		Lag/CN Method,

### Subcatchment 1S: Mine A

Hydrograph





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Type II 24-hr 2-year Rainfall=2.80"

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### Summary for Subcatchment 2S: Mine B

Runoff = 10.53 cfs @ 12.31 hrs, Volume= 2.011 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

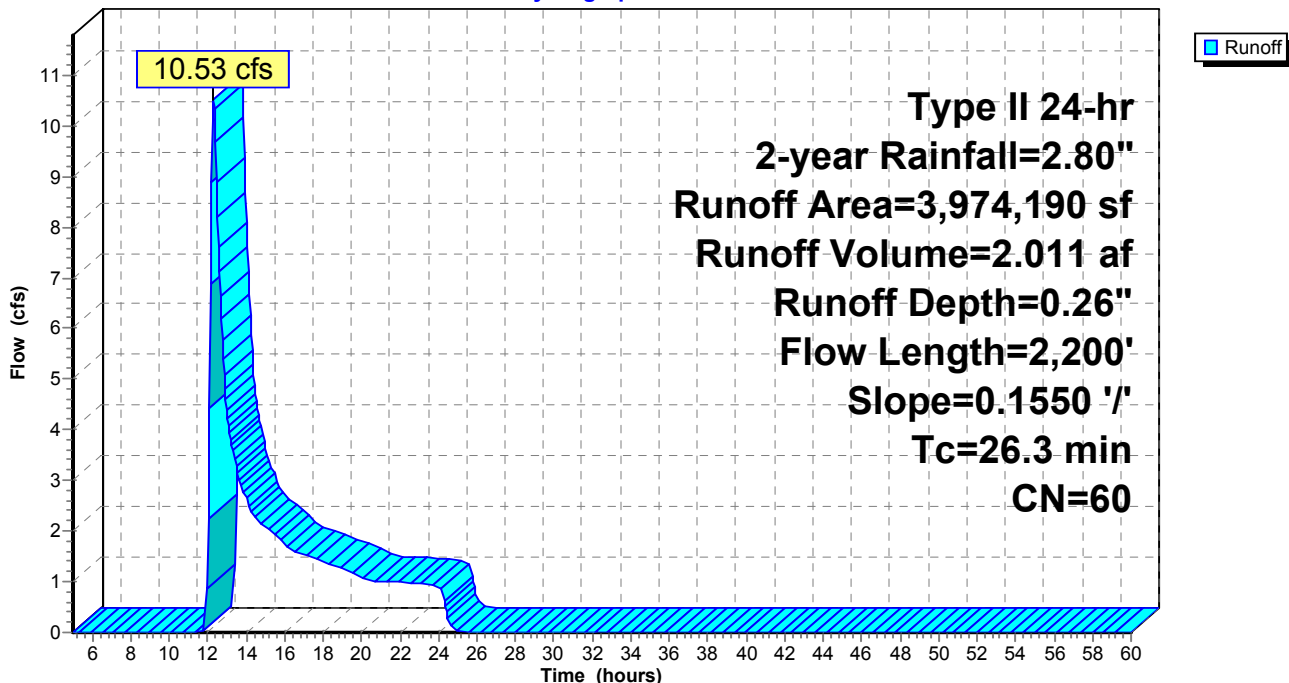
Type II 24-hr 2-year Rainfall=2.80"

Area (sf)	CN	Description
252,009	61	>75% Grass cover, Good, HSG B
3,722,181	60	Woods, Fair, HSG B
3,974,190	60	Weighted Average
3,974,190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	2,200	0.1550	1.40		Lag/CN Method,

### Subcatchment 2S: Mine B

Hydrograph



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Type II 24-hr 2-year Rainfall=2.80"

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### Summary for Subcatchment 3S: Mine C

Runoff = 14.41 cfs @ 12.02 hrs, Volume= 1.220 af, Depth= 0.26"

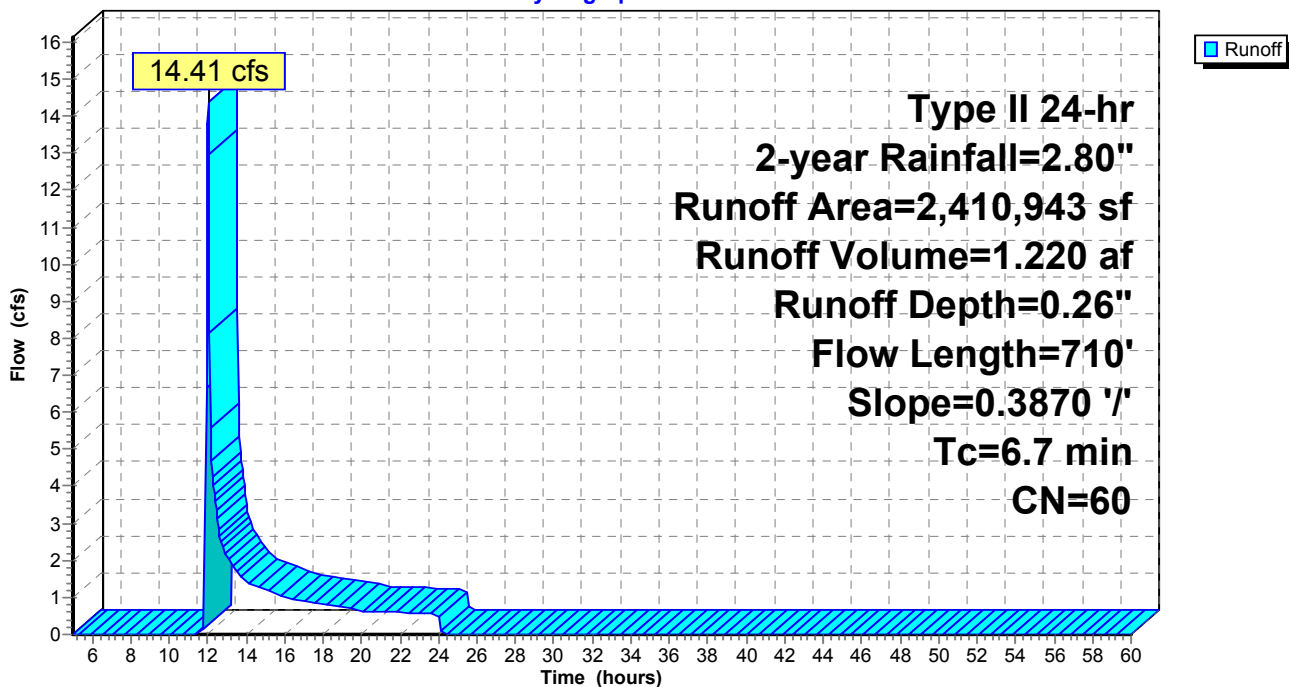
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs  
Type II 24-hr 2-year Rainfall=2.80"

Area (sf)	CN	Description
2,410,943	60	Woods, Fair, HSG B
2,410,943		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	710	0.3870	1.76		Lag/CN Method,

### Subcatchment 3S: Mine C

Hydrograph



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Type II 24-hr 2-year Rainfall=2.80"

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### Summary for Subcatchment 4S: Wet Plant

Runoff = 16.44 cfs @ 12.08 hrs, Volume= 1.206 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

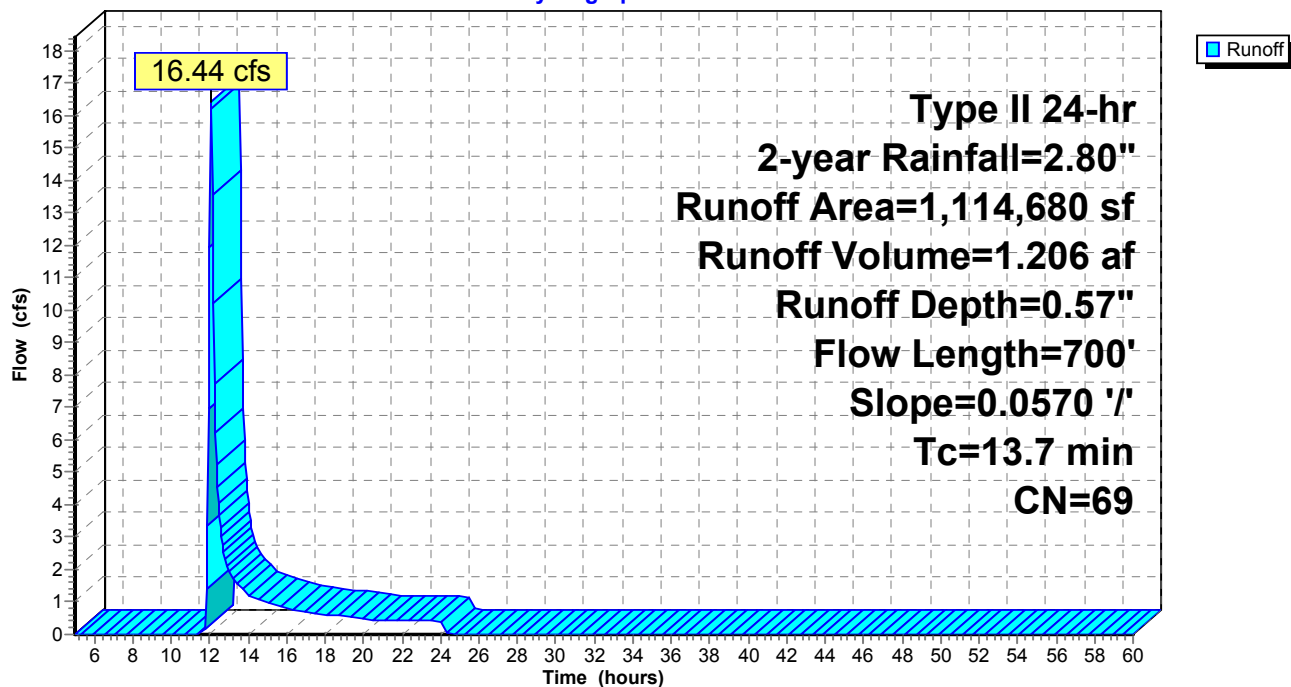
Type II 24-hr 2-year Rainfall=2.80"

Area (sf)	CN	Description
1,088,986	69	Small grain, C&T + CR, Good, HSG B
25,694	60	Woods, Fair, HSG B
1,114,680	69	Weighted Average
1,114,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	700	0.0570	0.85		Lag/CN Method,

### Subcatchment 4S: Wet Plant

Hydrograph



## HydroCAD Model - Exist

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Type II 24-hr 10-year Rainfall=4.30"  
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Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Mine A** Runoff Area=659,466 sf 0.00% Impervious Runoff Depth=1.03"  
Flow Length=900' Slope=0.3610 '/' Tc=8.0 min CN=62 Runoff=23.79 cfs 1.296 af

**Subcatchment 2S: Mine B** Runoff Area=3,974,190 sf 0.00% Impervious Runoff Depth=0.91"  
Flow Length=2,200' Slope=0.1550 '/' Tc=26.3 min CN=60 Runoff=63.93 cfs 6.946 af

**Subcatchment 3S: Mine C** Runoff Area=2,410,943 sf 0.00% Impervious Runoff Depth=0.91"  
Flow Length=710' Slope=0.3870 '/' Tc=6.7 min CN=60 Runoff=79.76 cfs 4.214 af

**Subcatchment 4S: Wet Plant** Runoff Area=1,114,680 sf 0.00% Impervious Runoff Depth=1.47"  
Flow Length=700' Slope=0.0570 '/' Tc=13.7 min CN=69 Runoff=48.88 cfs 3.125 af

**Total Runoff Area = 187.311 ac Runoff Volume = 15.581 af Average Runoff Depth = 1.00"**  
**100.00% Pervious = 187.311 ac 0.00% Impervious = 0.000 ac**

## HydroCAD Model - Exist

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Badger Bluff Sands LLC Mine Site

Type II 24-hr 10-year Rainfall=4.30"

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### Summary for Subcatchment 1S: Mine A

Runoff = 23.79 cfs @ 12.01 hrs, Volume= 1.296 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

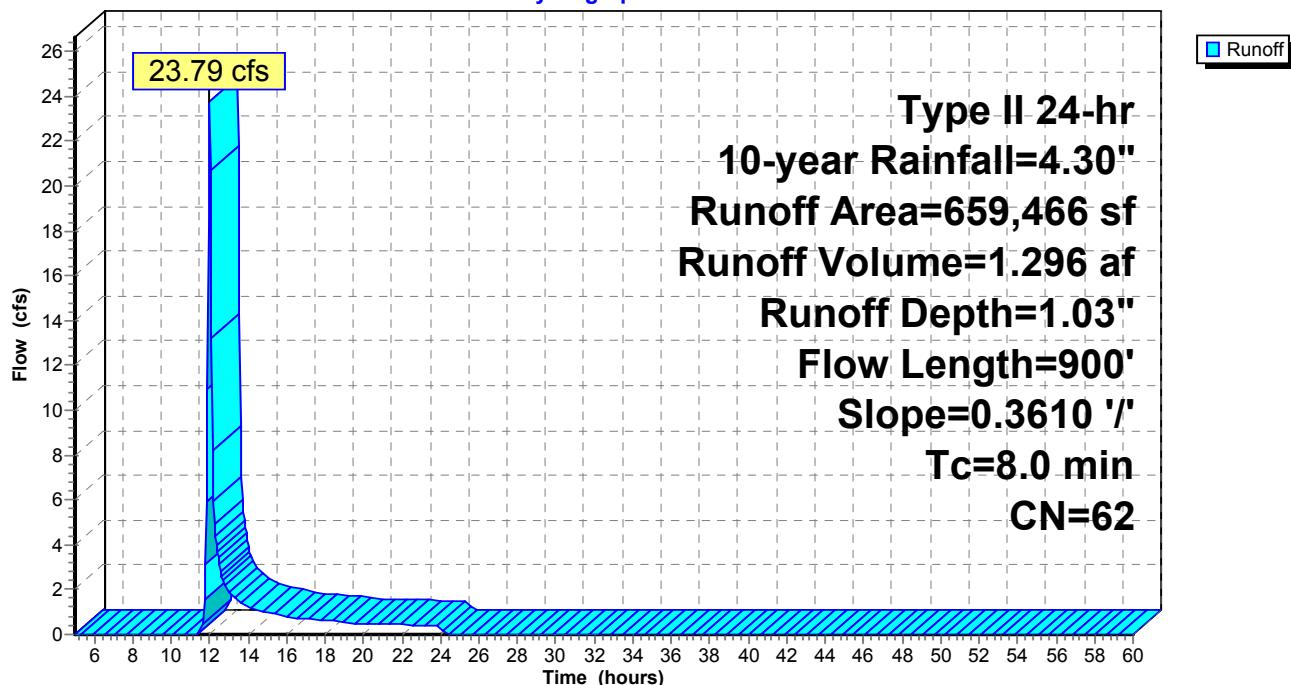
Type II 24-hr 10-year Rainfall=4.30"

Area (sf)	CN	Description
131,898	69	Small grain, C&T + CR, Good, HSG B
527,568	60	Woods, Fair, HSG B
659,466	62	Weighted Average
659,466		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	900	0.3610	1.88		Lag/CN Method,

### Subcatchment 1S: Mine A

Hydrograph



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Badger Bluff Sands LLC Mine Site

Type II 24-hr 10-year Rainfall=4.30"

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### Summary for Subcatchment 2S: Mine B

Runoff = 63.93 cfs @ 12.24 hrs, Volume= 6.946 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

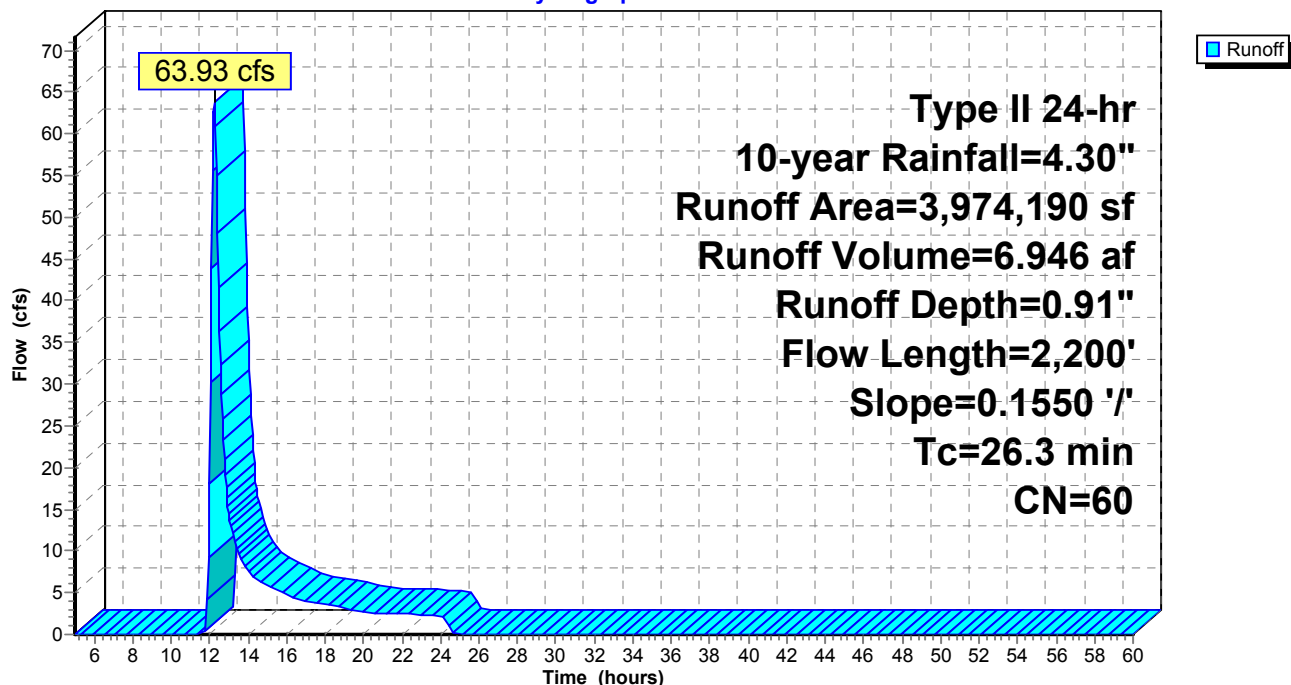
Type II 24-hr 10-year Rainfall=4.30"

Area (sf)	CN	Description
252,009	61	>75% Grass cover, Good, HSG B
3,722,181	60	Woods, Fair, HSG B
3,974,190	60	Weighted Average
3,974,190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	2,200	0.1550	1.40		Lag/CN Method,

### Subcatchment 2S: Mine B

Hydrograph



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Badger Bluff Sands LLC Mine Site

Type II 24-hr 10-year Rainfall=4.30"

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### Summary for Subcatchment 3S: Mine C

Runoff = 79.76 cfs @ 12.00 hrs, Volume= 4.214 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

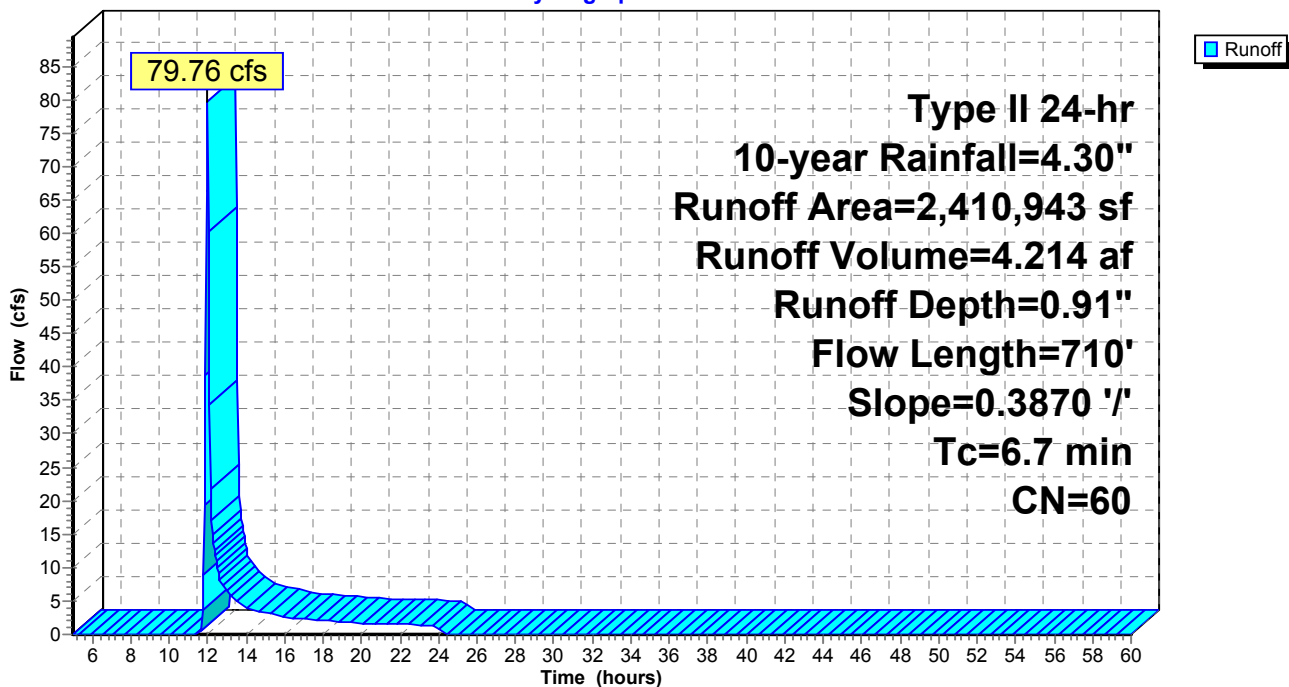
Type II 24-hr 10-year Rainfall=4.30"

Area (sf)	CN	Description
2,410,943	60	Woods, Fair, HSG B
2,410,943		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	710	0.3870	1.76		Lag/CN Method,

### Subcatchment 3S: Mine C

Hydrograph



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Type II 24-hr 10-year Rainfall=4.30"

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### Summary for Subcatchment 4S: Wet Plant

Runoff = 48.88 cfs @ 12.07 hrs, Volume= 3.125 af, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

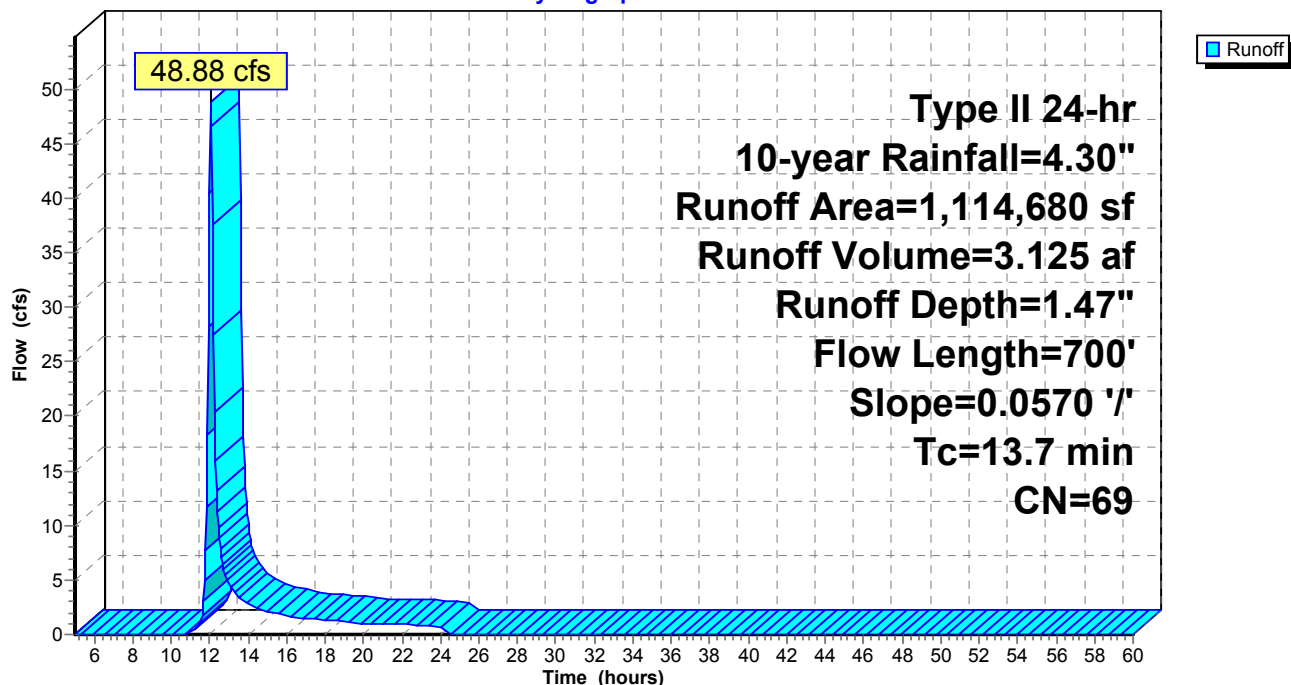
Type II 24-hr 10-year Rainfall=4.30"

Area (sf)	CN	Description
1,088,986	69	Small grain, C&T + CR, Good, HSG B
25,694	60	Woods, Fair, HSG B
1,114,680	69	Weighted Average
1,114,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	700	0.0570	0.85		Lag/CN Method,

### Subcatchment 4S: Wet Plant

Hydrograph





## HydroCAD Model - Exist

Badger Bluff Sands LLC Mine Site

Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

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Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Mine A** Runoff Area=659,466 sf 0.00% Impervious Runoff Depth=4.03"  
Flow Length=900' Slope=0.3610 '/' Tc=8.0 min CN=62 Runoff=61.71 cfs 5.081 af

**Subcatchment 2S: Mine B** Runoff Area=3,974,190 sf 0.00% Impervious Runoff Depth=3.79"  
Flow Length=2,200' Slope=0.1550 '/' Tc=26.3 min CN=60 Runoff=214.20 cfs 28.813 af

**Subcatchment 3S: Mine C** Runoff Area=2,410,943 sf 0.00% Impervious Runoff Depth=3.79"  
Flow Length=710' Slope=0.3870 '/' Tc=6.7 min CN=60 Runoff=224.33 cfs 17.480 af

**Subcatchment 4S: Wet Plant** Runoff Area=1,114,680 sf 0.00% Impervious Runoff Depth=4.86"  
Flow Length=700' Slope=0.0570 '/' Tc=13.7 min CN=69 Runoff=98.49 cfs 10.372 af

**Total Runoff Area = 187.311 ac Runoff Volume = 61.746 af Average Runoff Depth = 3.96"**  
**100.00% Pervious = 187.311 ac 0.00% Impervious = 0.000 ac**

## HydroCAD Model - Exist

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Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

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### Summary for Subcatchment 1S: Mine A

Runoff = 61.71 cfs @ 35.99 hrs, Volume= 5.081 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

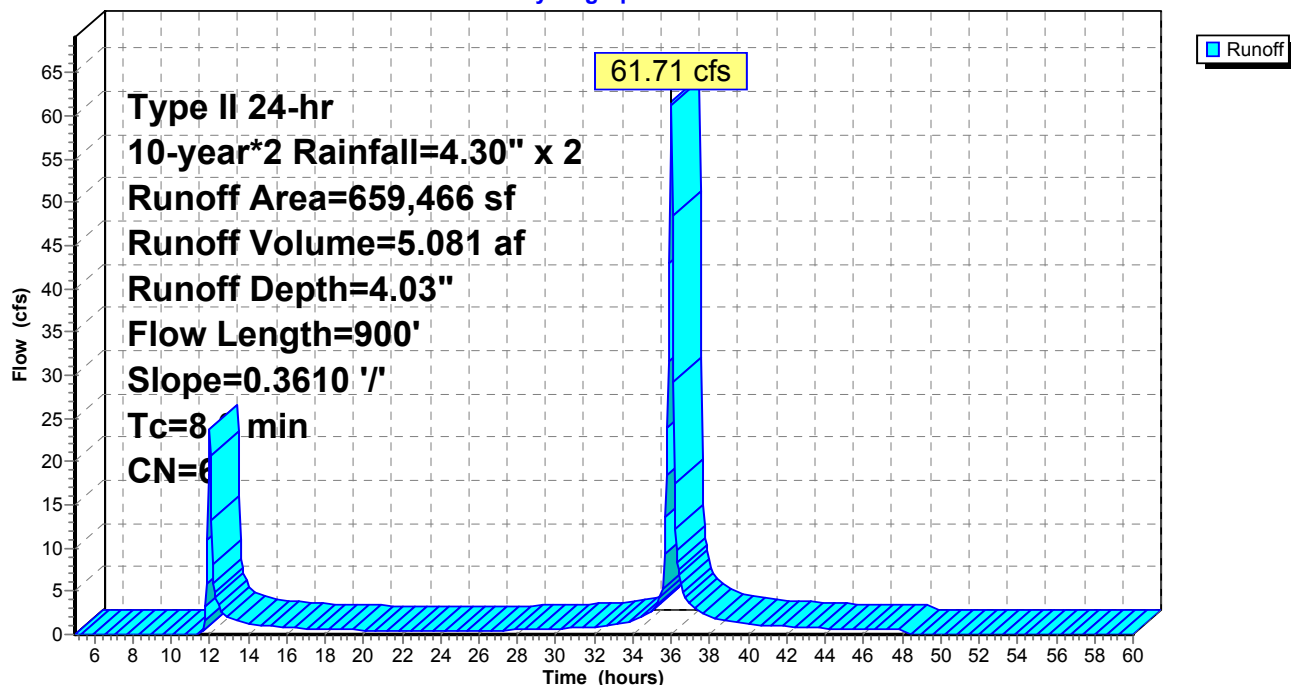
Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

Area (sf)	CN	Description
131,898	69	Small grain, C&T + CR, Good, HSG B
527,568	60	Woods, Fair, HSG B
659,466	62	Weighted Average
659,466		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	900	0.3610	1.88		Lag/CN Method,

### Subcatchment 1S: Mine A

Hydrograph



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Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

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### Summary for Subcatchment 2S: Mine B

Runoff = 214.20 cfs @ 36.19 hrs, Volume= 28.813 af, Depth= 3.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

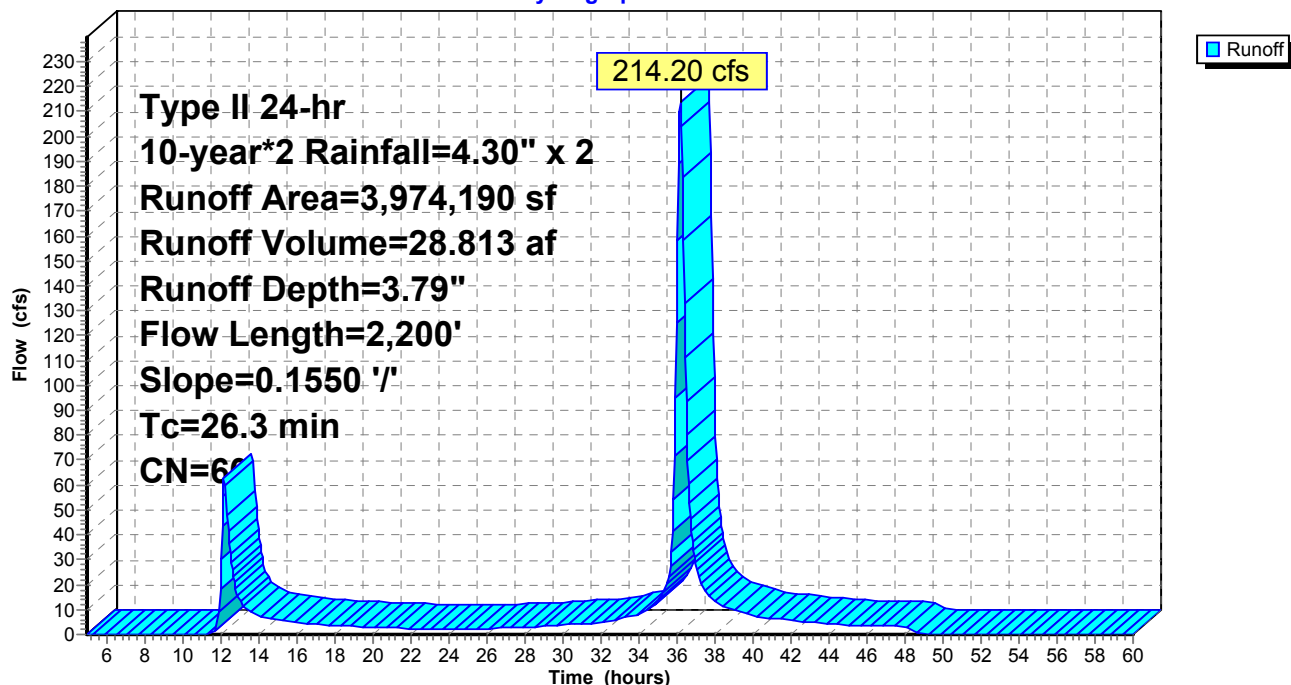
Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

Area (sf)	CN	Description
252,009	61	>75% Grass cover, Good, HSG B
3,722,181	60	Woods, Fair, HSG B
3,974,190	60	Weighted Average
3,974,190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	2,200	0.1550	1.40		Lag/CN Method,

### Subcatchment 2S: Mine B

Hydrograph



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Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

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### Summary for Subcatchment 3S: Mine C

Runoff = 224.33 cfs @ 35.98 hrs, Volume= 17.480 af, Depth= 3.79"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

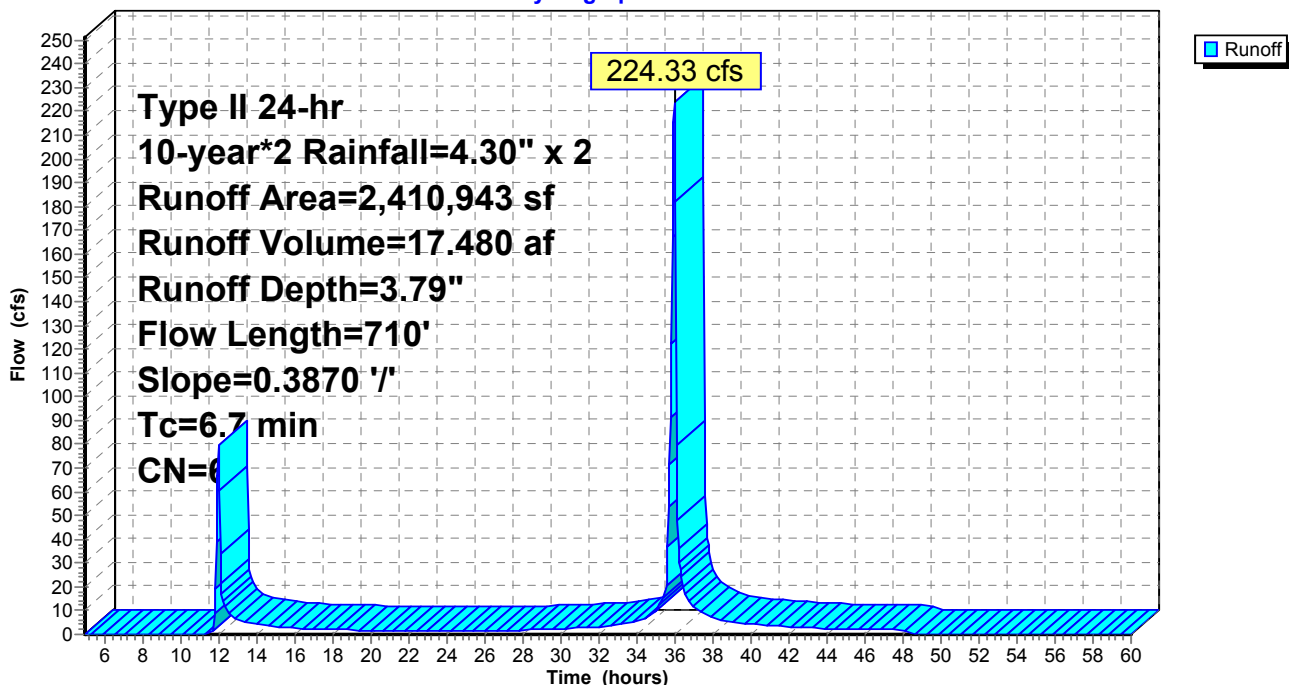
Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

Area (sf)	CN	Description
2,410,943	60	Woods, Fair, HSG B
2,410,943		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	710	0.3870	1.76		Lag/CN Method,

### Subcatchment 3S: Mine C

Hydrograph



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Type II 24-hr 10-year\*2 Rainfall=4.30" x 2  
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### Summary for Subcatchment 4S: Wet Plant

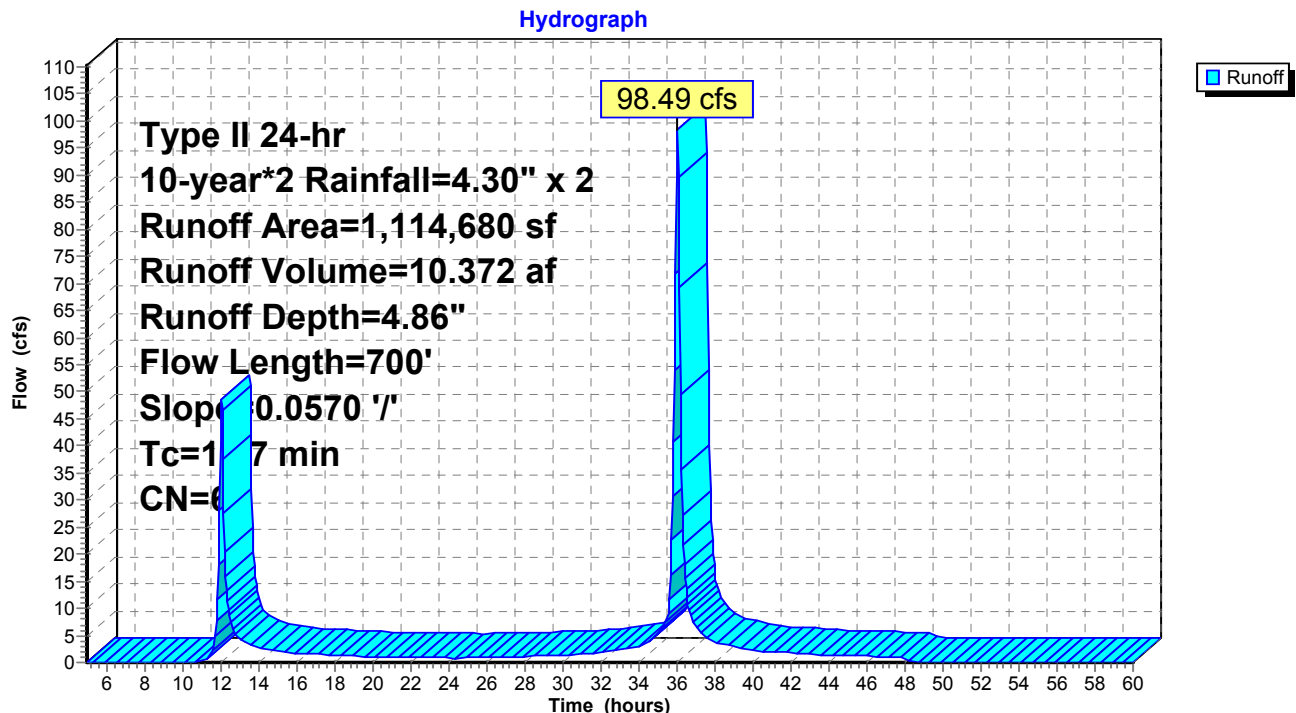
Runoff = 98.49 cfs @ 36.05 hrs, Volume= 10.372 af, Depth= 4.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs  
Type II 24-hr 10-year\*2 Rainfall=4.30" x 2

Area (sf)	CN	Description
1,088,986	69	Small grain, C&T + CR, Good, HSG B
25,694	60	Woods, Fair, HSG B
1,114,680	69	Weighted Average
1,114,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	700	0.0570	0.85		Lag/CN Method,

### Subcatchment 4S: Wet Plant



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Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Mine A** Runoff Area=659,466 sf 0.00% Impervious Runoff Depth=1.32"  
Flow Length=900' Slope=0.3610 '/' Tc=8.0 min CN=62 Runoff=31.34 cfs 1.661 af

**Subcatchment 2S: Mine B** Runoff Area=3,974,190 sf 0.00% Impervious Runoff Depth=1.19"  
Flow Length=2,200' Slope=0.1550 '/' Tc=26.3 min CN=60 Runoff=88.09 cfs 9.017 af

**Subcatchment 3S: Mine C** Runoff Area=2,410,943 sf 0.00% Impervious Runoff Depth=1.19"  
Flow Length=710' Slope=0.3870 '/' Tc=6.7 min CN=60 Runoff=106.97 cfs 5.470 af

**Subcatchment 4S: Wet Plant** Runoff Area=1,114,680 sf 0.00% Impervious Runoff Depth=1.81"  
Flow Length=700' Slope=0.0570 '/' Tc=13.7 min CN=69 Runoff=61.24 cfs 3.867 af

**Total Runoff Area = 187.311 ac Runoff Volume = 20.015 af Average Runoff Depth = 1.28"**  
**100.00% Pervious = 187.311 ac 0.00% Impervious = 0.000 ac**

## HydroCAD Model - Exist

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Badger Bluff Sands LLC Mine Site

Type II 24-hr 25-year Rainfall=4.80"

Printed 7/22/2013

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### Summary for Subcatchment 1S: Mine A

Runoff = 31.34 cfs @ 12.00 hrs, Volume= 1.661 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

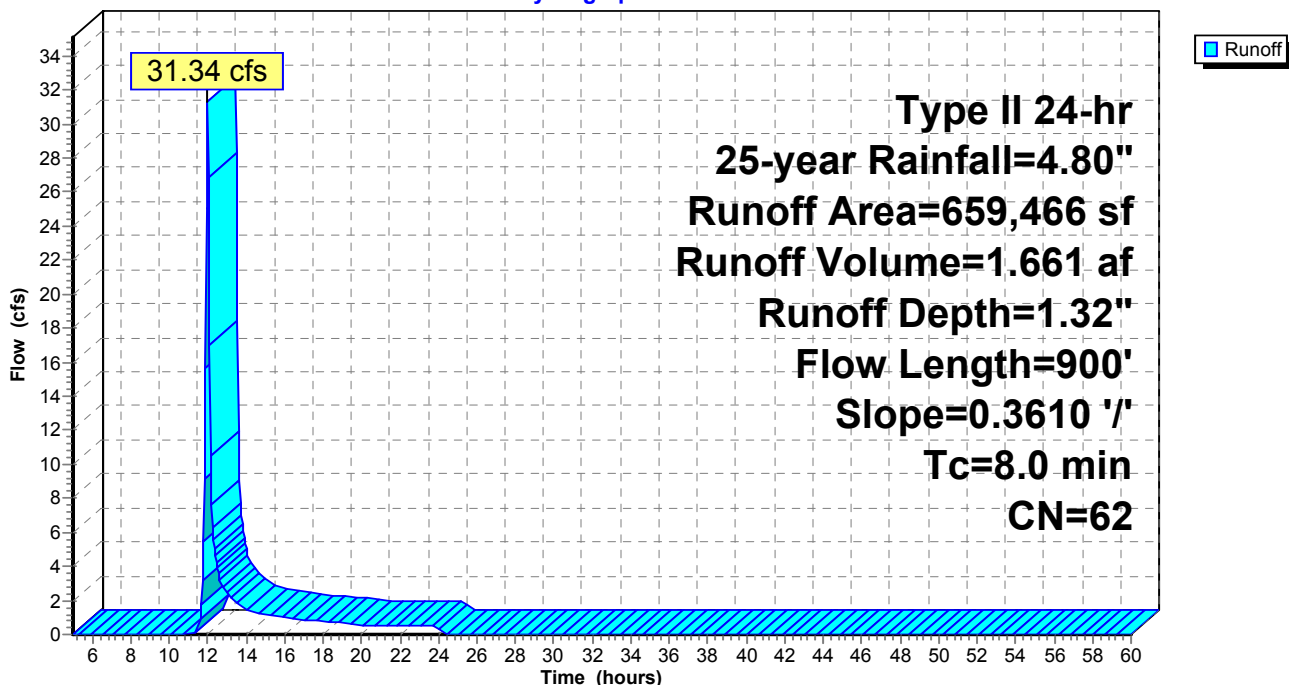
Type II 24-hr 25-year Rainfall=4.80"

Area (sf)	CN	Description
131,898	69	Small grain, C&T + CR, Good, HSG B
527,568	60	Woods, Fair, HSG B
659,466	62	Weighted Average
659,466		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	900	0.3610	1.88		Lag/CN Method,

### Subcatchment 1S: Mine A

Hydrograph



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### Summary for Subcatchment 2S: Mine B

Runoff = 88.09 cfs @ 12.23 hrs, Volume= 9.017 af, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

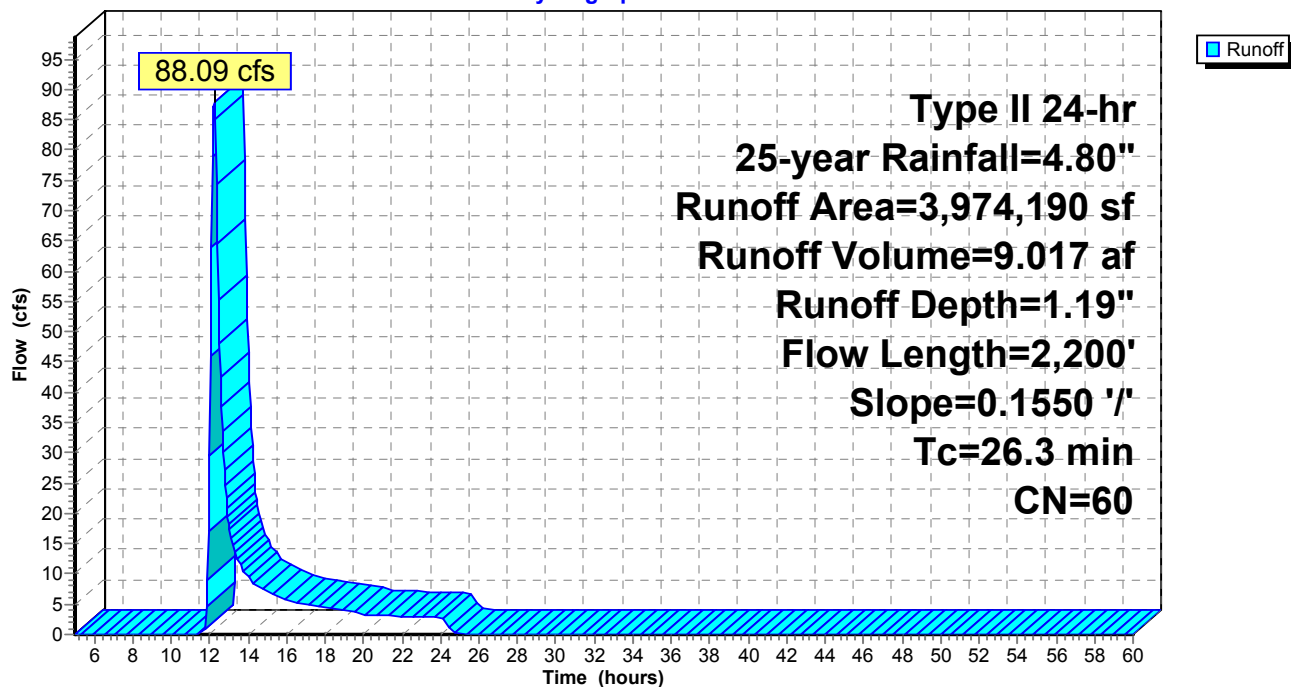
Type II 24-hr 25-year Rainfall=4.80"

Area (sf)	CN	Description
252,009	61	>75% Grass cover, Good, HSG B
3,722,181	60	Woods, Fair, HSG B
3,974,190	60	Weighted Average
3,974,190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	2,200	0.1550	1.40		Lag/CN Method,

### Subcatchment 2S: Mine B

Hydrograph





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### Summary for Subcatchment 3S: Mine C

Runoff = 106.97 cfs @ 11.99 hrs, Volume= 5.470 af, Depth= 1.19"

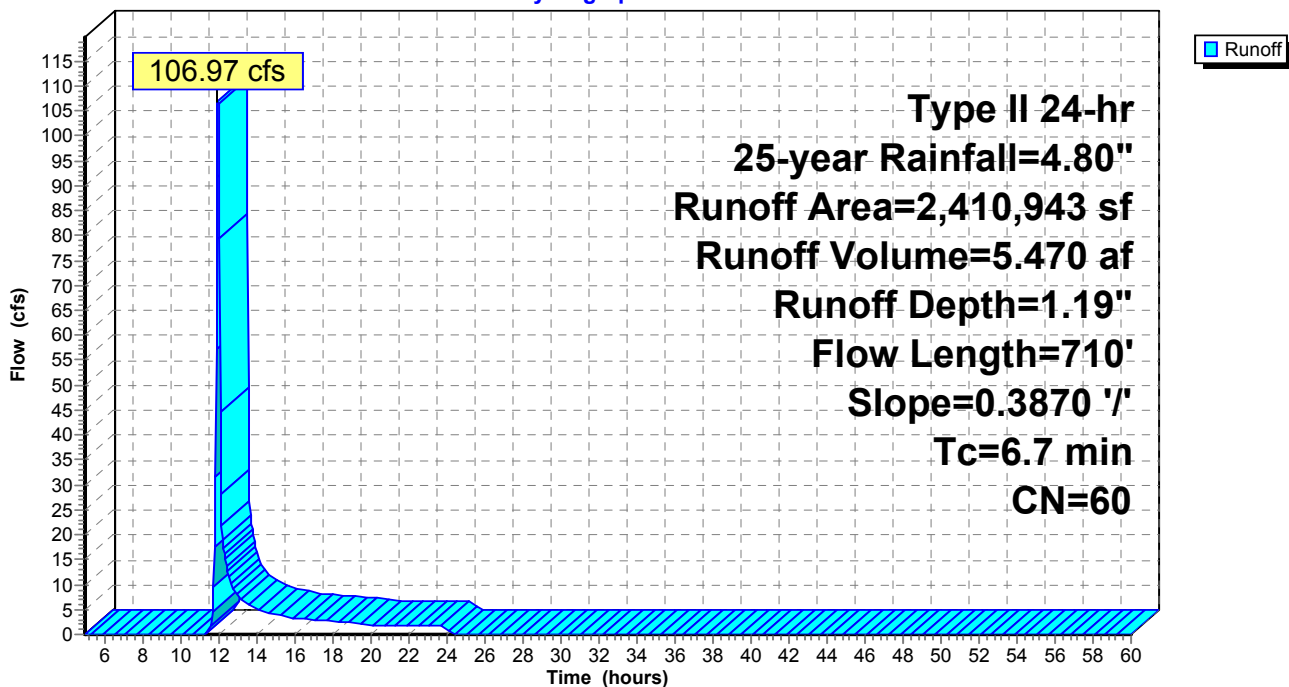
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs  
Type II 24-hr 25-year Rainfall=4.80"

Area (sf)	CN	Description
2,410,943	60	Woods, Fair, HSG B
2,410,943		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	710	0.3870	1.76		Lag/CN Method,

### Subcatchment 3S: Mine C

Hydrograph



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Type II 24-hr 25-year Rainfall=4.80"

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### Summary for Subcatchment 4S: Wet Plant

Runoff = 61.24 cfs @ 12.06 hrs, Volume= 3.867 af, Depth= 1.81"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

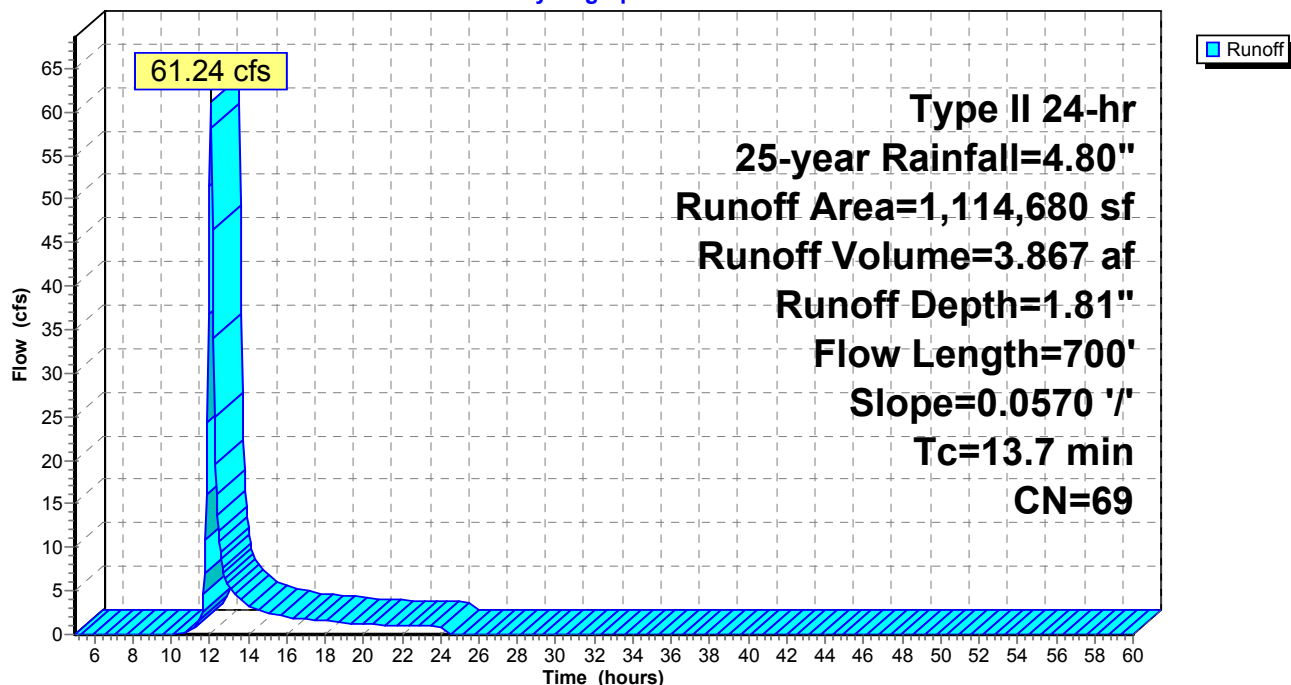
Type II 24-hr 25-year Rainfall=4.80"

Area (sf)	CN	Description
1,088,986	69	Small grain, C&T + CR, Good, HSG B
25,694	60	Woods, Fair, HSG B
1,114,680	69	Weighted Average
1,114,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	700	0.0570	0.85		Lag/CN Method,

### Subcatchment 4S: Wet Plant

Hydrograph



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Type II 24-hr 100-year Rainfall=6.00"  
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Time span=5.00-60.00 hrs, dt=0.05 hrs, 1101 points  
Runoff by SCS TR-20 method, UH=SCS  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment 1S: Mine A** Runoff Area=659,466 sf 0.00% Impervious Runoff Depth=2.09"  
Flow Length=900' Slope=0.3610 '/' Tc=8.0 min CN=62 Runoff=51.26 cfs 2.637 af

**Subcatchment 2S: Mine B** Runoff Area=3,974,190 sf 0.00% Impervious Runoff Depth=1.92"  
Flow Length=2,200' Slope=0.1550 '/' Tc=26.3 min CN=60 Runoff=154.27 cfs 14.610 af

**Subcatchment 3S: Mine C** Runoff Area=2,410,943 sf 0.00% Impervious Runoff Depth=1.92"  
Flow Length=710' Slope=0.3870 '/' Tc=6.7 min CN=60 Runoff=179.45 cfs 8.863 af

**Subcatchment 4S: Wet Plant** Runoff Area=1,114,680 sf 0.00% Impervious Runoff Depth=2.71"  
Flow Length=700' Slope=0.0570 '/' Tc=13.7 min CN=69 Runoff=92.88 cfs 5.784 af

**Total Runoff Area = 187.311 ac Runoff Volume = 31.894 af Average Runoff Depth = 2.04"**  
**100.00% Pervious = 187.311 ac 0.00% Impervious = 0.000 ac**

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### Summary for Subcatchment 1S: Mine A

Runoff = 51.26 cfs @ 12.00 hrs, Volume= 2.637 af, Depth= 2.09"

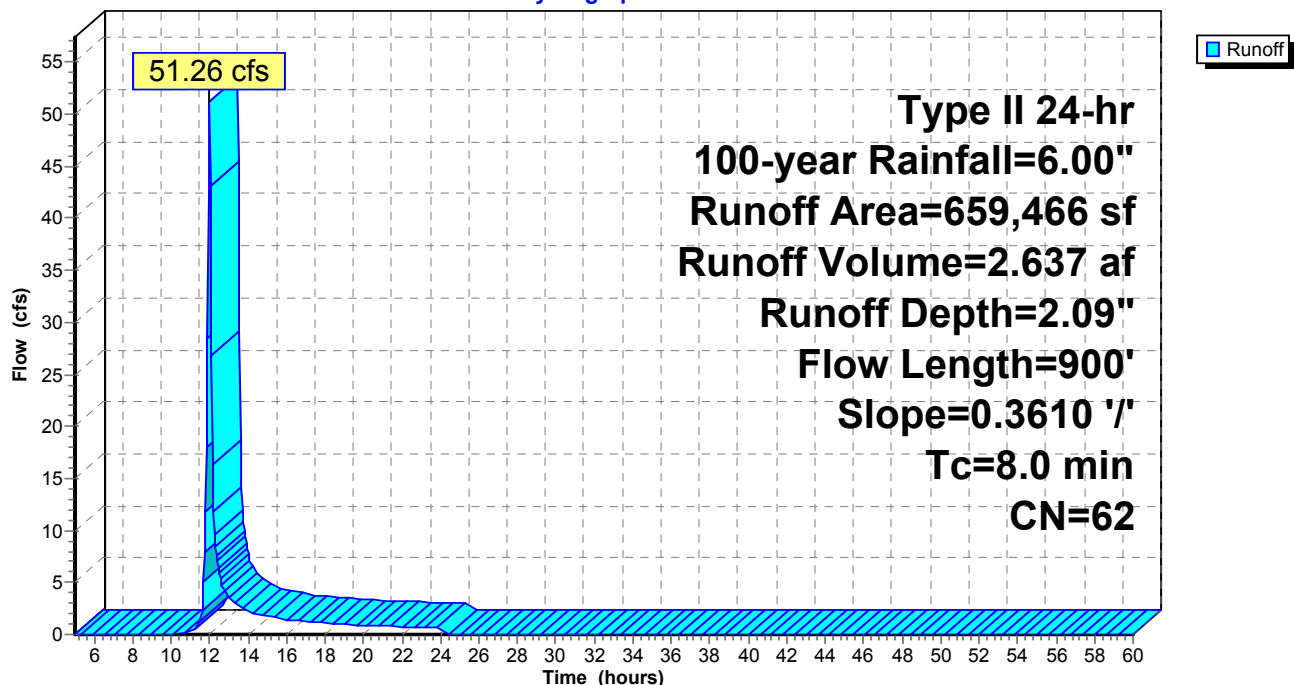
Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100-year Rainfall=6.00"

Area (sf)	CN	Description
131,898	69	Small grain, C&T + CR, Good, HSG B
527,568	60	Woods, Fair, HSG B
659,466	62	Weighted Average
659,466		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	900	0.3610	1.88		Lag/CN Method,

### Subcatchment 1S: Mine A

Hydrograph



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### Summary for Subcatchment 2S: Mine B

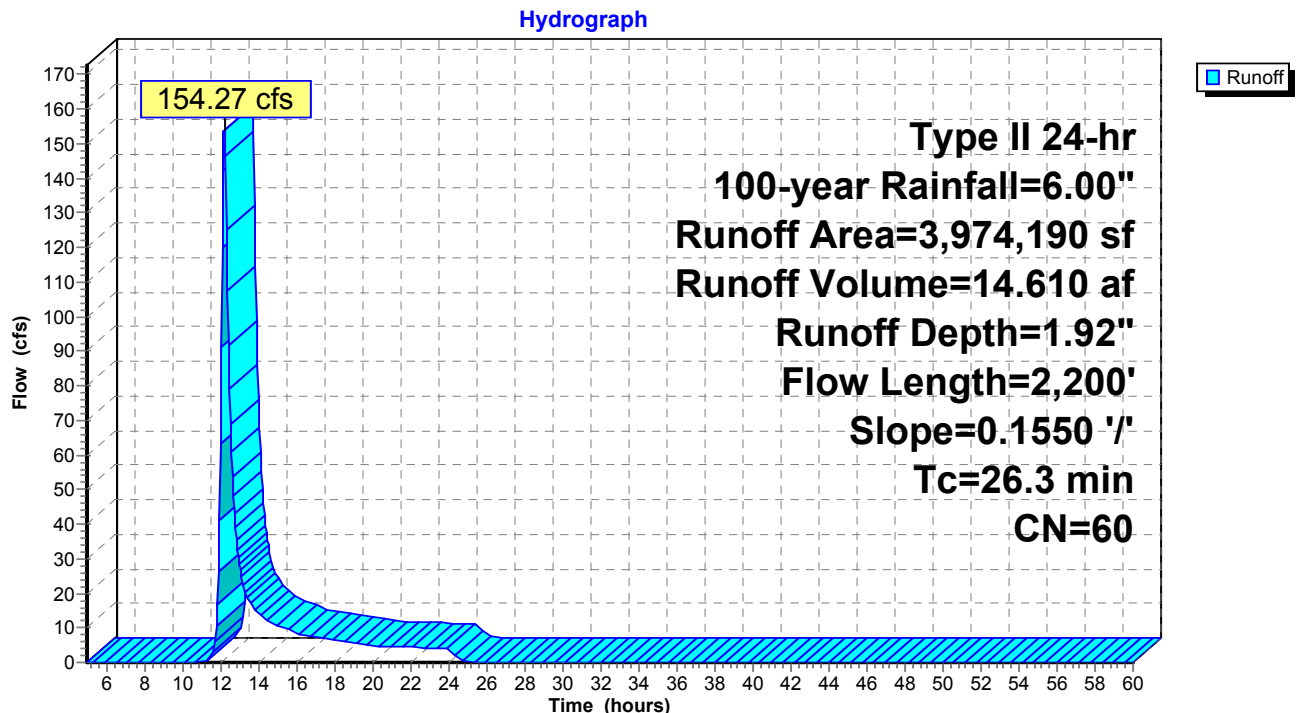
Runoff = 154.27 cfs @ 12.22 hrs, Volume= 14.610 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs  
Type II 24-hr 100-year Rainfall=6.00"

Area (sf)	CN	Description
252,009	61	>75% Grass cover, Good, HSG B
3,722,181	60	Woods, Fair, HSG B
3,974,190	60	Weighted Average
3,974,190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.3	2,200	0.1550	1.40		Lag/CN Method,

### Subcatchment 2S: Mine B



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### Summary for Subcatchment 3S: Mine C

Runoff = 179.45 cfs @ 11.99 hrs, Volume= 8.863 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

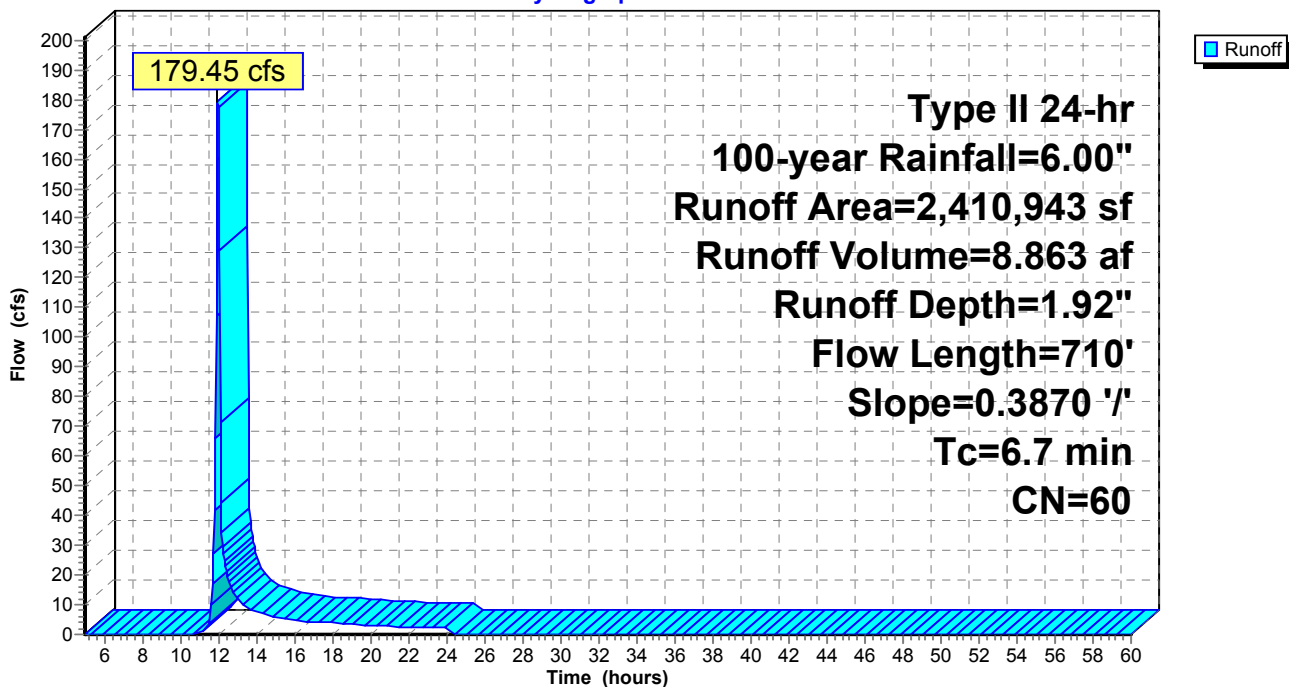
Type II 24-hr 100-year Rainfall=6.00"

Area (sf)	CN	Description
2,410,943	60	Woods, Fair, HSG B
2,410,943		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	710	0.3870	1.76		Lag/CN Method,

### Subcatchment 3S: Mine C

Hydrograph



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### Summary for Subcatchment 4S: Wet Plant

Runoff = 92.88 cfs @ 12.06 hrs, Volume= 5.784 af, Depth= 2.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-60.00 hrs, dt= 0.05 hrs

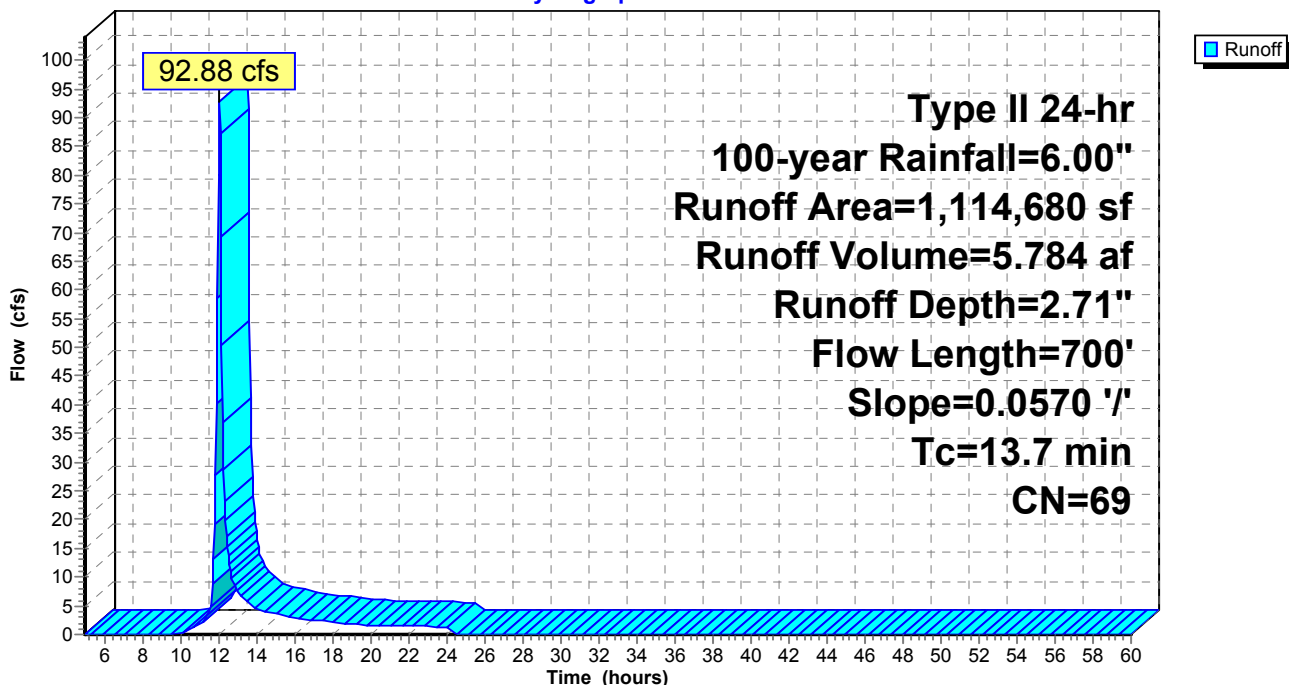
Type II 24-hr 100-year Rainfall=6.00"

Area (sf)	CN	Description
1,088,986	69	Small grain, C&T + CR, Good, HSG B
25,694	60	Woods, Fair, HSG B
1,114,680	69	Weighted Average
1,114,680		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	700	0.0570	0.85		Lag/CN Method,

### Subcatchment 4S: Wet Plant

Hydrograph



## **APPENDIX G**

**COPY OF HIGH CAPACITY  
WELL APPLICATION PERMIT**





## High Capacity, School or Wastewater Treatment Plant Well Approval Application

Form 3300-256 (R 7/05)

Page 1 of 6

**Notice:** Prior department approval is required for the construction, reconstruction or operation of a high capacity well or system of high capacity wells, a school well or a wastewater treatment plant well in accordance with Section NR 812.09(4)(a), Wisconsin Administrative Code. Personally identifiable information collected on this form, including such data as your name, address and phone number, will be used for management of department programs and is unlikely to be used for other purposes. This information will be addressable under Wisconsin's Open Records Laws, ss. 19.32 - 19.39, Wis. Stats.

Use this form to request an approval for installation of a well or wells on a high capacity property, seek approval to make other changes to a high capacity property or to modify a well on a high capacity property, as required by NR 812.09(4)(a), Wisconsin Administrative Code. Refer to definitions of high capacity well, high capacity property and high capacity well system on page 5.

This form is not intended to be used when seeking approval for construction or modification of wells serving water systems regulated under ch. NR 811, Wis. Adm. Code. Any water system serving 7 or more homes, 10 or more mobile homes, 10 or more apartments, 10 or more condominiums, or 10 or more duplexes is regulated under ch. NR 811, Wis. Adm. Code. See NR 811.01, Wis. Adm. Code for applicability requirements.

### Applicant Information

Application Prepared By (Name and Title) Gary Strand, Engineer		Company Cooper Engineering	
Street Address 2600 College Drive	City Rice Lake	State WI	ZIP Code 54868
Telephone Number 715-234-7008	Fax Number 715-234-1025	E-Mail Address gstrand@cooperengineering.net	

### Property Ownership Information

Property owner, if different than applicant (Name of Person and Title) Gerald and Cheryl Earney		Company	
Street Address W998 Schoepps Valley Road	City Cochrane	State WI	ZIP Code 54622
Telephone Number 608-248-2402	Fax Number	E-Mail Address	

### Well Operator Information

Well operator if different than owner (Name of Person and Title) Kevin Rich		Company Badger Bluff Sands, LLC	
Street Address 349 West 24th Street	City Buffalo City	State WI	ZIP Code 54622
Telephone Number 608-249-2933	Fax Number	E-Mail Address krich@chryslerwinona.com	

### Property Information

Enter the High Capacity Well File Number below if the property is already a high capacity property. If the property is not designated as a high capacity property at the time of application, enter "NONE." NOTE: Find the file number in upper right hand corner of the most recent high capacity well approval, or use the compact disk of departmental well data that is issued to drillers and pump installers. On the compact disk, see "File location" in red print in "Location" section. File number format is as follows: (1 or 2 digits for county) - (1 digit for well classification) - (1 to 4 digits for assigned property no.).

County None	Town	High Capacity Well File No.
----------------	------	-----------------------------

### Submittal Purpose

Check all that apply:

- ☒ Install one or more new wells with a capacity greater than 70 gallons per minute.
- ☐ Install one or more new wells with a capacity less than 70 gallons per minute on a high capacity property.
- ☐ Replace one or more wells with a capacity greater than 70 gallons per minute.
- ☐ Replace one or more wells with a capacity less than 70 gallons per minute on a high capacity property.
- ☐ Reconstruct one or more wells with a capacity greater than 70 gallons per minute.
- ☐ Reconstruct one or more wells with a capacity less than 70 gallons per minute on a high capacity property.
- ☐ Increase pumping rate in one or more wells to a rate greater than previously approved.
- ☐ Request continued operation of high capacity wells after a change in ownership. (No application fee required.)
- ☐ Renew a previous approval that has expired.
- ☐ Well (or wells) will serve a school or wastewater treatment plant. See definitions on page 5.
- ☐ Other, explain \_\_\_\_\_

**Site Status Information**

Determine the site status using the internet or the compact disk of departmental well data that is issued to drillers and pump installers and the information supplied by the property owner. Internet address is [dnr.wi.gov/org/water/dwg/dws.htm](http://dnr.wi.gov/org/water/dwg/dws.htm). Enter YES or NO for each of the following questions.

YES NO

- ☐ ☒ Has the property boundary changed since the most recent high capacity well approval was issued? If the property is not yet a high capacity property, check NO.
- ☐ ☒ Has there been a change in well ownership since the last approval was written?  
If YES, name of current owner: \_\_\_\_\_ Date of purchase: \_\_\_\_\_
- 
- ☐ ☒ Has there been a change in well operator since the last approval was written?  
If YES, name of current operator: \_\_\_\_\_ Date of change: \_\_\_\_\_
- 
- ☐ ☒ Will a proposed well be connected to a plumbing system that is supplied by other sources (other wells, municipal supply, etc.)? If YES, include a schematic drawing showing backflow protection.
- ☐ ☒ Is a proposed well within 1,200 feet of a landfill? Determine if there are any landfills nearby, using the well information compact disk FIND feature. Enter the township, range and section of the well location. If the well is near a section line, also check the adjacent section or sections.  
If YES, list the landfill site ID Number: \_\_\_\_\_ OR Landfill location: (Township/Range/Section) \_\_\_\_\_
- 
- ☐ ☒ Is a proposed well on a property that has a contaminated site? If YES, list the BRRTS (Bureau for Remediation and Redevelopment Tracking System) Number here and specify if the site is open or closed: \_\_\_\_\_ ☐ Open ☐ Closed
- 
- ☐ ☒ Is a proposed well on a property that has a groundwater use restriction recorded on the deed? If YES, list the BRRTS number, as assigned to the contaminated site by the DNR remediation and redevelopment program: \_\_\_\_\_
- 
- ☐ ☒ Is a proposed well on a property that is listed on the department's registry of closed remediation sites for a groundwater use restriction? See compact disk or internet at [maps.dnr.state.wi.us/imf/dnrimf.jsp?site=brts](http://maps.dnr.state.wi.us/imf/dnrimf.jsp?site=brts). If YES, list the BRRTS Number here: \_\_\_\_\_
- 
- ☐ ☒ Is a proposed well to be used for a public water supply system that serves 25 or more people? See definition of a "public water system" in the definitions section on page 5.
- ☐ ☒ Is a proposed well to be installed within a special casing area? Refer to the list of special casing areas that is published by the department and/or contact the regional DNR office.
- ☐ ☒ Has the number of wells or pumping capacity in an existing well increased since the most recent high capacity well approval was issued?
- ☐ ☒ Has the number of wells decreased since the most recent high capacity well approval? If the property is not yet a high capacity property, check NO.
- ☒ ☐ Is a non-pressurized storage vessel (i.e. reservoir) other than a pond proposed or in use?
- ☒ ☐ Will the well discharge directly to a storage pond?
- ☐ ☒ Is a pressurized tank with a capacity greater than 1,000 gallons proposed or in use?
- ☒ ☐ Is a proposed well within 1,200 feet of a quarry?
- ☐ ☒ Is a proposed well located in a floodplain or floodway?
- ☐ ☒ Are any existing well installations on the high capacity property out of compliance with Chapter NR 812, Wisconsin Administrative Code?
- ☐ ☒ Will the well be used as a source of bottled water?
- ☐ ☒ Are you seeking a variance to construct a well that has a capacity of less than 70 gallons per minute to low capacity well construction standards?
- ☐ ☒ Is the property served by a community water system?

**Existing Well Information**Enter the following information on all **existing** wells on the property, if more than four wells, submit additional sheets:

Well Name Assigned by Well Owner (North Well, etc.):	None				
Well Number Assigned by Owner (001, 002, etc.):					
WI Unique Well Number or NA if no number:					
Permanent DNR High Capacity Well Number or N/A if none:					
Public Water System ID Number, if Public (if not public, NONE):					
Potable or Non-Potable Use:					
Type of Well (Irrigation, Industrial, Residential, etc.):					
Requested Average Water Usage per Day in Gallons:					
Requested Maximum Water Usage per Day in Gallons:					
Seasonal? (April to October, Year Around, etc.):					
Approved Pumping Capacity if Previously Approved (gpm):					
Current Pump Type & Capacity (gpm):					
Proposed Pump Type & Capacity If Change Requested (gpm):					
Pump Discharge Type (Over Top of Casing Seal, Pitless, etc.):					
Discharge Location (Building Pressure Tank, Pond, etc.):					
Height of Well Casing Above Ground in Inches:					
Potential Contaminant Sources and Distance:					
Well Loc: Quarter Quarter Section	1/4 of	1/4	1/4 of	1/4	1/4 of 1/4
or Government Lot Number					
Section or French Long Lot No.					
Township:	T	N	T	N	T N
Range (Select E or W):	R	<input type="checkbox"/> E <input type="checkbox"/> W	R	<input type="checkbox"/> E <input type="checkbox"/> W	R <input type="checkbox"/> E <input type="checkbox"/> W
Latitude (Degrees and Minutes)	° ' "	° ' "	° ' "	° ' "	° ' "
Longitude (Degrees and Minutes)	° ' "	° ' "	° ' "	° ' "	° ' "
GPS Map Datum (WGS84, WTM91, etc.)					
Include as much of the following information as practical for wells that do not have well construction records attached to the application, however if the well construction record is attached, applicant may leave the following rows blank.					
Date of Construction:					
Drilled by (Name of Drilling Firm):					
Drilling Method(s) (Rotary, Percussion, Etc.)					
Well Depth in Feet:					
Upper Enlarged Drillhole Diameter in Inches and Depth in Feet:	inches, feet	inches, feet	inches, feet	inches, feet	
Lower Drillhole Diameter in Inches and Depth in Feet:	inches, feet	inches, feet	inches, feet	inches, feet	
Well Casing Diameter in Inches and Depth in Feet:	inches, feet	inches, feet	inches, feet	inches, feet	
Well Casing Material and Wall Thickness:					
Annular Space Material Between Casing and Drillhole Wall:					
Is There a Well Screen (Y or N) If so, Screen Material?:					

**Proposed Well Information**Enter the following information on all **proposed** wells on the property, if more than two wells or alternate construction, submit additional sheets:

Well Name Assigned by Well Owner (North Well, etc.):	Primary Well	Back-up Well
Well Number Assigned by Owner (001, 002, etc.):	001	002
Well Loc: Quarter Quarter Section or French Long Lot Number	SW 1/4 of SE 1/4 of Section 32	SW 1/4 of SE 1/4 of Section 32
or Government Lot Number		
Township & Range (Select E or W)	T 21 N, R 11 <input type="checkbox"/> E <input checked="" type="checkbox"/> W	T 21 N, R 11 <input type="checkbox"/> E <input checked="" type="checkbox"/> W
Latitude (Degrees and Minutes)	4 5 ° 1 5 0 2 5 '	4 5 ° 1 5 0 2 2 '
Longitude (Degrees and Minutes)	9 1 ° 4 4 2 4 2 '	9 1 ° 4 4 2 4 2 '
GPS Map Datum (WGS84, WTM91, etc.)	WTM 91	WTM 91
Type of Well (Irrigation, Industrial, Residential, etc.):	Type: Industrial <input checked="" type="checkbox"/> Potable Non-Potable	Type: Industrial <input checked="" type="checkbox"/> Potable Non-Potable
Drilling Method(s) (Rotary, Percussion, Etc.):	Mud Rotary	Mud Rotary
Anticipated Geological Materials and Depths that Are Expected During Drilling:		
Material and Depth Interval:	Unconsolidated from 0' to 20'	Unconsolidated from 0' to 20'
Material and Depth Interval:	Wonewoc SS from 20' to 100'	Wonewoc SS from 20' to 100'
Material and Depth Interval:	Eau Claire SS from 100' to 220'	Eau Claire SS from 100' to 220'
Material and Depth Interval:	Mt. Simon SS from 220' to 350'	Mt. Simon SS from 220' to 350'
Material and Depth Interval:	from ' to '	from ' to '
Drillhole Diameter and Anticipated Depth Intervals:		
Diameter and Depth Interval:	16 from 0' to 20'	16 from 0' to 20'
Diameter and Depth Interval:	15 from 20' to 220'	15 from 20' to 220'
Diameter and Depth Interval:	11-1/2 from 220' to 350'	11-1/2 from 220' to 350'
Permanent Casing or Liner Diameter and Wall Thickness at Anticipated Depth Intervals:		
Diameter and Wall Thickness at Depth Interval:	12 " diam/ 0.33 " thick 0' to 220'	12 " diam/ 0.33 " thick 0' to 220'
Diameter and Wall Thickness at Depth Interval:	" diam/ " thick ' to '	" diam/ " thick ' to '
Permanent Casing or Liner Material , If Used:		
Casing Joints (Welded, T and C, etc.)	Welded	Welded
Material and Weight at Depth Interval:	Steel / 49.56 lbs/foot 0' to 225'	Steel / 49.56 lbs/foot 0' to 225'
Material and Weight at Depth Interval:	N.A. / lbs/foot ' to '	N.A. / lbs/foot ' to '
Screen Material, Slot Size in Inches and Depth Interval or N/A if none:	N.A. / " / ' to '	N.A. / " / ' to '
Casing to Screen Joint (Welded, T and C, K Packer, etc.)	N.A.	N.A.
Annular Space Material Including Filter Pack Material, If Used:		
Material and Depth Interval:	Neat Cement Grout / 0' to 220'	Neat Cement Grout / 0' to 220'
Material and Depth Interval:	/ ' to '	/ ' to '
Proposed Average Water Usage Per Day in Gallons:	150,000	150,000
Proposed Maximum Water Usage Per Day in Gallons:	200,000	200,000
Seasonal? (April to October, Year Around, etc.):	March through November	March through November
Proposed Pump Type & Capacity (gpm):	Submersible 400 gpm	Submersible 400 gpm
Discharge Type (Over Top of Casing Seal, Pitless Adapter or Unit):	Over top of casing seal	Over top of casing seal
Discharge Location (Building Pressure Tank, Pond, etc.):	Pond	Pond
Distance and Direction to Nearest Public Utility Well & Well Name:	26,600 ft WSW Village of Cochrane Well #2	26,600 ft WSW Village of Cochrane Well #2
Distance to Other Potential Contaminant Sources:	Landfill 8,600 ft	Landfill 8,600 ft
Distance to Other Potential Contaminant Sources:	Sand mine 1,000 ft	Sand mine 1,000 ft
Leave Blank, for Department use only		

**Proposed Well Information**Enter the following information on all **proposed** wells on the property, if more than two wells or alternate construction, submit additional sheets:

Well Name Assigned by Well Owner (North Well, etc.):	Final Wash Well	
Well Number Assigned by Owner (001, 002, etc.):	003	
Well Loc: Quarter Quarter Section or French Long Lot Number	SW 1/4 of SE 1/4 of Section 32	1/4 of 1/4 of Section
or Government Lot Number		
Township & Range (Select E or W)	T 21 N, R 11 <input type="checkbox"/> E <input checked="" type="checkbox"/> W	T N, R <input type="checkbox"/> E <input type="checkbox"/> W
Latitude (Degrees and Minutes)	4 4 ° 1 5 0 1 3 '	° '
Longitude (Degrees and Minutes)	9 1 ° 4 4 1 8 2 '	° '
GPS Map Datum (WGS84, WTM91, etc.)	WTM 91	
Type of Well (Irrigation, Industrial, Residential, etc.):	Type: Industrial <input checked="" type="checkbox"/> Potable Non-Potable	Type: <input type="checkbox"/> Potable Non-Potable
Drilling Method(s) (Rotary, Percussion, Etc.):	Mud Rotary	
Anticipated Geological Materials and Depths that Are Expected During Drilling:		
Material and Depth Interval:	Unconsolidated from 0' to 20'	from 0' to '
Material and Depth Interval:	Wonewoc SS from 20' to 100'	from ' to '
Material and Depth Interval:	Eau Claire SS from 100' to 220'	from ' to '
Material and Depth Interval:	Mt. Simon SS from 220' to 35'	from ' to '
Material and Depth Interval:	from ' to '	from ' to '
Drillhole Diameter and Anticipated Depth Intervals:		
Diameter and Depth Interval:	10-5/8 from 0' to 100'	from ' to '
Diameter and Depth Interval:	5-5/8 from 100' to 200'	from ' to '
Diameter and Depth Interval:	from ' to '	from ' to '
Permanent Casing or Liner Diameter and Wall Thickness at Anticipated Depth Intervals:		
Diameter and Wall Thickness at Depth Interval:	6" diam/ 0.28 " thick 0' to 105'	" diam/ " thick 0' to '
Diameter and Wall Thickness at Depth Interval:	" diam/ " thick ' to '	" diam/ " thick ' to '
Permanent Casing or Liner Material , If Used:		
Casing Joints (Welded, T and C, etc.)	Welded	
Material and Weight at Depth Interval:	Steel / 18.97 lbs/foot 0' to 105'	/ lbs/foot 0' to '
Material and Weight at Depth Interval:	N.A. / lbs/foot ' to '	/ lbs/foot ' to '
Screen Material, Slot Size in Inches and Depth Interval or N/A if none:	N.A. / " / ' to '	/ " / ' to '
Casing to Screen Joint (Welded, T and C, K Packer, etc.)		
Annular Space Material Including Filter Pack Material, If Used:		
Material and Depth Interval:	Neat Cement Grout / 0' to 100'	/ 0' to '
Material and Depth Interval:	/ ' to '	/ ' to '
Proposed Average Water Usage Per Day in Gallons:	50,000	
Proposed Maximum Water Usage Per Day in Gallons:	100,000	
Seasonal? (April to October, Year Around, etc.):	March through November	
Proposed Pump Type & Capacity (gpm):	Submersible 60 gpm	
Discharge Type (Over Top of Casing Seal, Pitless Adapter or Unit):	Over top of casing seal	
Discharge Location (Building Pressure Tank, Pond, etc.):	Head Tank	
Distance and Direction to Nearest Public Utility Well & Well Name:	26,600 ft WSW Village of Cochrane Well #2	
Distance to Other Potential Contaminant Sources:	Landfill 8,600 ft	
Distance to Other Potential Contaminant Sources:	Sand mine 1,000 ft	
Leave Blank, for Department use only		

**Required Attachments**

1. Attach one of the maps described in A. or B., below. Plot the existing and proposed well locations on the map. For wells that have a Wisconsin Unique Well Number or a Permanent High Capacity Well Number, plot the well locations with one of those numbers.
  - A. Copy of a plat map with the property boundary clearly shown. If the property is contiguous with properties owned by the same owner in another township, include a copy of that township map too, showing the property boundaries. If the property owner listed on the plat map is different from the current owner, list the date or dates, that the current property owner purchased the property on the map.
  - B. Map of the property prepared by a licensed land surveyor and the property description as described by the surveyor.
2. Sketch map showing all of the following that are planned or exist within 300 feet of each proposed well: proposed well location; other wells; property boundary; wetlands; potential contaminant sources (septic tank and drainfield, petroleum storage tanks, sewer lines, etc.); buildings and north arrow. If no pertinent features to map within 300 feet of the proposed well, for example an irrigation well in the middle of a field, state that on the property map listed above and plot the well locations on that map.
3. Any well construction records available for existing wells on the property. Do not attach any well construction records for wells that are not on the property. If a Wisconsin Unique Well Number has not been assigned, write a well name or site well number on the record that correlates to the well name or number plotted on the maps.
4. For proposed wells with a capacity greater than 400 gallons per minute, include the performance curve or performance table that is provided by the pump manufacturer. If the pump will be a lineshaft turbine, provide a curve with the same rpm as the motor under full load and list the motor horsepower.
5. If more than one well is connected to a common plumbing system, also provide a schematic drawing of the system showing method of preventing backflow. This sketch must include the well discharge (pitless, over top of casing sanitary seal); the water line from the well; pressure tanks; sampling faucets; check valves; backflow preventers; air gaps; manually operated valves; water meters; pressure switches for pumps; and any other pertinent fittings. This schematic drawing must also identify which of these components are buried or above ground. If there is more than one check valve within the well casing, include in-well check valves on the schematic.
6. If reconstruction of an existing well is proposed, include a diagram of the current well construction and a diagram of the proposed construction.
7. If the application is for a high capacity well or wells, a \$500.00 check payable to the Department of Natural Resources, unless the application is only for continued operation after a change of ownership.

**Certification and Applicant Signatures**

If the application requests a variance for a well within 1,200 feet of a landfill, a well on a property with a groundwater use restriction, or any other variance to NR 812, Wis. Adm. Code, the property owner must sign the application. If the well operator will install a well on property that he or she does not own, the property owner must also sign the application. Otherwise, an agent of the owner may sign the application.

Unsigned and incomplete applications will not be approved.

By signing this form, the person signing this application certifies that to the best of his or her knowledge, all existing well installations on the property comply with ch. NR 812, Wis. Adm. Code. The person also certifies that to the best of his or her knowledge, all information in the application is accurate and correct.

Name - Print		Check Box	
Gerald and Cheryl Earney		<input checked="" type="checkbox"/> Owner	<input type="checkbox"/> Agent of the Owner
Signature <i>Gerald Earney</i> <i>Cheryl Earney</i>	Company <i>N/A</i>	Date <i>07/21/13</i>	

Application submittal. Mail completed application and payment with all required attachments to DNR, Private Water Systems Section - DG/2, PO Box 7921, Madison WI 53707-7921.

**Definitions from Wisconsin Administrative Codes**

"High capacity well" means a well constructed on a high capacity property. [NR 812.07(51)]

"High capacity property" means one property on which a high capacity well system exists or is to be constructed. [NR 812.07(52)]

"High capacity well system" means one or more wells, drillholes or mine shafts used or to be used to withdraw water for any purpose on one property, if the total pumping or flowing capacity of all wells, drillholes or mine shafts on one property is 70 or more gallons per minute based on the pump curve at the lowest system pressure setting, or based on the flow rate. [NR 812.07(53)]

"Public water system" means a system for the provision to the public of piped water for human consumptions if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days per year. A public water system is either a community water system or a non-community water system. Such system includes: (a) Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (b) Any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. [NR 812.07(80)]

"School" means a public or private educational facility in which a program of educational instruction is provided to children in any grade or grades from kindergarten through the 12th grade. Water systems serving athletic fields, school forests, environmental centers, home-based schools, day-care centers and Sunday schools are not school water systems. [NR 812.07(94)]

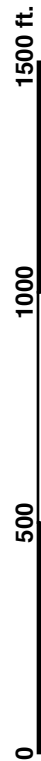
"Wastewater treatment plant" means any facility provided for the treatment of sanitary or industrial wastewater or both. The following types of facilities are excluded: (a) Facilities defined as private sewage systems in s. 145.01(12), Stats. (b) Pretreatment facilities from which effluent is directed to a public sewer system for treatment. (c) Industrial wastewater treatment facilities which consist solely of a land disposal system. [NR 114.03(14)]

Use for schematic drawings, sketch maps or other information.

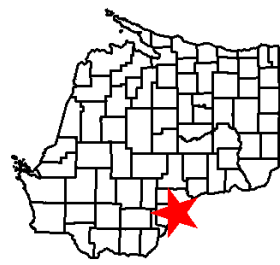
This image shows a full page of blank graph paper. The background is a very light gray, and it is covered by a precise grid of thin, medium-gray lines. The grid consists of small, equal-sized squares that extend across the entire visible area of the page, leaving no margins or other markings.







Map created on Jul 5, 2013



### Legend

**Major Highways**

- Interstate
- State Highway
- U.S. Highways
- County Roads
- Local Roads

**24K County Boundaries**

- Civil Town
- Civil Town

**USDA Wetspots**

- DNR Wetland Points
- Excavated Pond
- Dammed Pond
- Wetland Too Small to Delineate
- Filled Excavated Pond
- Filled Dammed Pond
- Filled Wetland Too Small to Delineate
- Filled or Drained Wetland

**DNR Wetland Areas**

- Upland
- Wetland
- Filled or Drained Wetland
- Wetland Indicator Soils
- 24K Open Water
- 24K Rivers and Shorelines

**Wetland Types**

- Intermittent
- Fluctuating
- Perennial

**Cities and Villages**

- Village
- City

NAIP 2010 Color Air Photo

**Scale: 1:5,000**

Wisconsin Wetland Inventory (WVI) maps show graphic representations of the type, size and location of wetlands in Wisconsin. These maps have been prepared from the analysis of high altitude imagery in conjunction with soil surveys, topographic maps, previous wetland inventories and field work. State statutes require that wetlands be inventoried and mapped. The objective of the WVI is to produce reconnaissance level information on the location, type, size of these habitats such that they are accurate at the nominal scale of the 1:24,000 (1 inch = 2000 feet) base map. The DNR recognizes the limitations of using remotely sensed information as the primary data source. There is no attempt, in either the design or products of this inventory, to define the limits of jurisdiction of any Federal, State, or local government or to establish the geographical scope of the regulatory jurisdiction of any Federal, State, or local government. Agencies concerning regulatory programs and jurisdictions that may affect such activities. The most accurate method of determining the legal extent of a wetland for federal or state regulations is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.







NORTHEAST  
PART

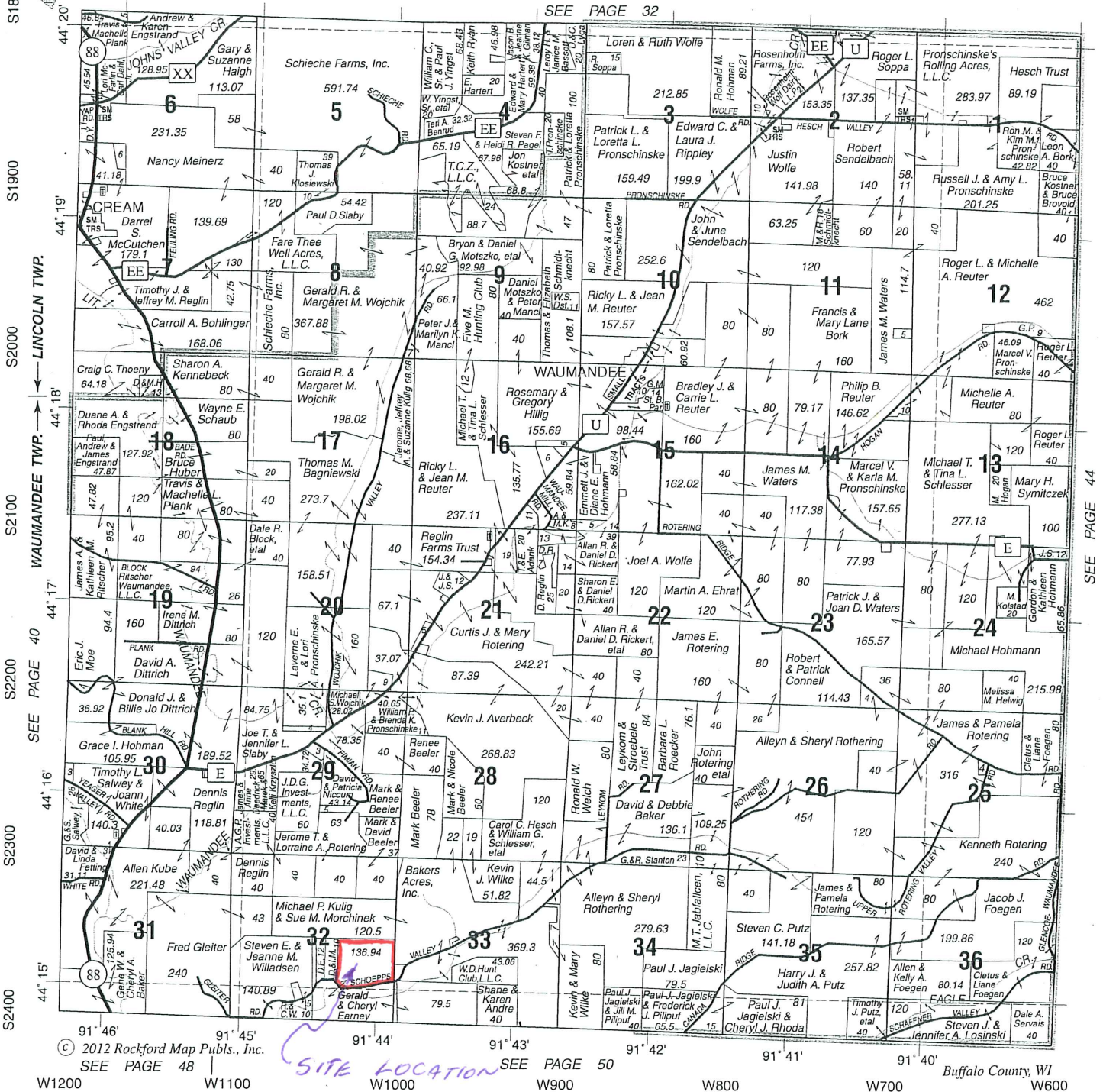
WAUMANDEE

SOUTHEAST  
PART

LINCOLN

T.21N.-R.11W.

SEE PAGE 32



SEE PAGE 44

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