



**Tunnel City Plant
Monroe, Wisconsin
Reclamation Plan**

November 9, 2011

Monroe County
 Land Conservation Department
 820 Industrial Drive, Suite 3
 Sparta WI 54656
 (608) 269-8976



APPLICATION FOR
 RECLAMATION PERMIT FOR NEW OR
 REOPENED NONMETALLIC MINING
 SITES
 Form NM-02 Date - 1/11

PLEASE COMPLETE ALL INFORMATION ON THIS APPLICATION. PRINT OR TYPE. Use of this form is required for any nonmetallic mining reclamation permit application filed pursuant to Chapter NR 135, Wis. Adm. Code. Monroe County will not consider your application unless you complete and submit all information required by this application form.

<p>1. Applicant/Operator Unimin Corporation Tunnel City Plant Address PO Box 200 City, State, Zip Code Tunnel City, Wi , 54660 Telephone No. (Include area code) 208-861-9560</p>	<p>2. Property Owners/Lessors (if different from Applicant/Operator) Address See Attached City, State, Zip Code Telephone No. (Include area code) (Additional owner/lessor information can be submitted on separate sheet)</p>
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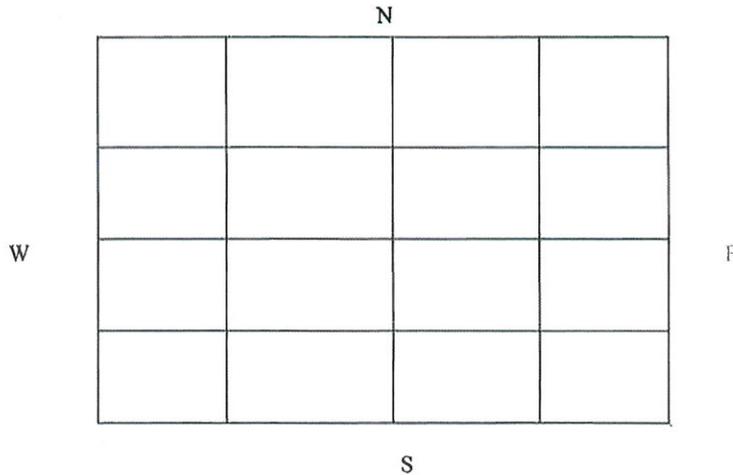
3. Property Description: Provide the complete legal description of the property on which the mine is located (example: N ½ , NE ¼, Section 3, T29N, R6E)

SEE ATTACHED

Town, City, Village of Greenfield , County of MONROE
 Tax Parcel Number _____
 Total Site Acreage _____

4. General Location Map - draw the location of the site on the section map below. Include roads and any other pertinent information and label ¼ ¼ section points. Alternatively, attach a plat map, topographic map or other map of sufficient detail to enable access to the site by public roads

SEE ATTACHED



5. Project Information: Please provide a brief description of the general location (including surrounding land use) and the nature of the nonmetallic mine (type of deposit, proposed frequency and expected duration of mining activity).

The site is located near Tunnel City south of STH-21 and to the east of Fort McCoy in Greenfield Township.
 The vast majority of the area is forested with scattered open fields, a small amount of cropland and a few homes.
 A loosely consolidated sand will be mined year-round. The duration of the mining activity is dependent upon market demand, depth mined and sand quality (as determined by customer needs), but is expected to be in excess of twenty years.

6. Reclamation Plan: A reclamation plan conforming to s. NR 135.19, Wis. Adm. Code must be submitted with this permit application, including any previous regulatory approvals so long as they meet the reclamation standards of subch. II of NR 135 as allowed under ss. NR 135.21(1)(d) and (e), Wis. Adm. Code.

I hereby certify, as a duly authorized representative or agent, that the operator, Unimin Corporation (name of operator), will provide, as a condition of the reclamation permit, financial assurance as required by s. NR 135.40, Wis. Adm. Code, upon granting of the reclamation permit and before mining begins.

I also certify that, if applicable, the land owner or lessor has been provided with a copy of the reclamation plan as required by s. NR 135.19(6)(b), Wis. Adm. Code and a signed certification from the landowner indicating their concurrence with the reclamation is attached to this application.

Signature of Applicant or Duly Authorized Agent

 Andrew G. Bradley

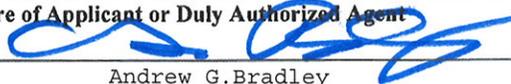
Date Signed
11/4/11

7. Fees: Fee already paid for 2011 mining year

Acres currently undisturbed that will be activated January 1, 2011 through December 31, 2011 _____ acres

Total fee for 2011 (includes DNR fee) (see table below) = \$ _____

I hereby certify that the information contained herein is true and accurate. I also certify that I am entitled to apply for a permit, or that I am the duly authorized representative or agent of an applicant who is entitled to apply for a permit.

Signature of Applicant or Duly Authorized Agent

 Andrew G. Bradley

Date Signed
11/4/11

FEE SCHEDULE

Mine Size, Unreclaimed Acres	2010 Monroe Co. Fee	Wisconsin DNR's Annual Fee	Total Annual Fee
			2011
1 to 5 acres	\$150	\$35	\$185
6 to 10 acres	\$300	\$70	\$370
11 to 15 acres	\$450	\$105	\$555
16 to 25 acres	\$600	\$140	\$740
26 to 50 acres	\$700	\$160	\$860
51 acres or larger	\$750	\$175	\$925

MAKE CHECKS PAYABLE TO: MONROE COUNTY LAND CONSERVATION DEPT.

LEAVE BLANK - FOR RECEIVING AGENCY USE ONLY

Permit No.	Date Received	Date Application Was Complete
Date Reclamation Plan Received: Received By:	Date Financial Assurance Received: Received By:	Amount

Owner Contact Information List for Reclamation Permit Application

Eagle Land Investments, LLC
Attn: Ruder Ware, LLC
402 Graham Ave.
PO Box 187
Eau Claire, WI 54702-0187
715-834-3425

Chapman Farms-Land, LLC
21509 Gladeview Ave.
Tomah, WI 54660
608-3724053

Reclamation Plan Certificates

**CERTIFICATION OF RECEIPT OF AND CONCURRENCE WITH
NON-METALLIC MINING RECLAMATION PLAN
PURSUANT TO SEC. NR 135.19(6), WIS. ADM. CODE**

The undersigned hereby certifies that:

1. The undersigned owns certain real property in Monroe County, State of Wisconsin, as more particularly described in the attached Exhibit A (the "Property"), which is incorporated herein by reference;

2. That the undersigned, as of the date set forth below, has been provided with a copy of a Reclamation Plan prepared by Unimin Corporation, as operator, in connection with a proposed non-metallic extraction and processing operation located in Monroe County, State of Wisconsin, which includes the Property (the "Unimin Reclamation Plan"), as required by Sec. NR 135.19(6), Wis. Adm. Code;

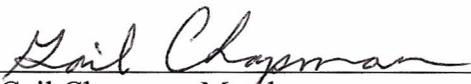
3. The undersigned hereby concurs with the Unimin Reclamation Plan and agrees to allow the implementation of the Unimin Reclamation Plan.

NOW THEREFORE, the undersigned executes this Certification as of the date set forth below.

CHAPMAN FARMS-LAND, LLC



Duane A. Chapman, Member
Date: 11-3-11



Gail Chapman, Member
Date: 11-3-11

EXHIBIT A
Parcel Number and Description of the Property

Parcel No.	Acres	Description
014-00438-0000	40.0	The Southwest ¼ of the Southeast ¼, Section 34, Township 18 North, Range 2 West, Monroe County, Wisconsin.
014-00439-0000	40.0	The Southeast ¼ of the Southeast ¼, Section 34, Township 18 North, Range 2 West, Monroe County, Wisconsin.
014-00453-0000	40.0	The Southwest ¼ of the Southwest ¼, Section 35, Township 18 North, Range 2 West, Monroe County, Wisconsin.
014-00454-0000	40.0	The Southeast ¼ of the Southwest ¼, Section 35, Township 18 North, Range 2 West, Monroe County, Wisconsin.
014-00457-0000	40.0	The Southwest ¼ of the Southeast ¼, Section 35, Township 18 North, Range 2 West, Monroe County, Wisconsin.

**CERTIFICATION OF RECEIPT OF AND CONCURRENCE WITH
NON-METALLIC MINING RECLAMATION PLAN
PURSUANT TO SEC. NR 135.19(6), WIS. ADM. CODE**

The undersigned hereby certifies that:

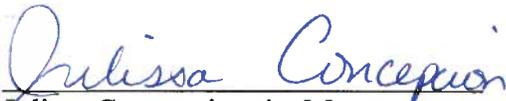
1. The undersigned owns certain real property in Monroe County, State of Wisconsin, as more particularly described in the attached Exhibit A (the "Property"), which is incorporated herein by reference;

2. That the undersigned, as of the date set forth below, has been provided with a copy of a Reclamation Plan prepared by Unimin Corporation, as operator, in connection with a proposed non-metallic extraction and processing operation located in Monroe County, State of Wisconsin, which includes the Property (the "Unimin Reclamation Plan"), as required by Sec. NR 135.19(6), Wis. Adm. Code;

3. The undersigned hereby concurs with the Unimin Reclamation Plan and agrees to allow the implementation of the Unimin Reclamation Plan.

NOW THEREFORE, the undersigned executes this Certification as of the date set forth below.

EAGLE LAND INVESTMENTS, LLC



Julissa Concepcion, its Manager

Date: 11-3-11

EXHIBIT A
Parcel Number and Description of the Property

Monroe County Parcel Nos.:

014-00375-0000	014-00367-0000
014-00451-2000	014-00447-0000
014-00456-2000	014-00379-2000
014-00445-0000	014-00360-0000
014-00442-0000	014-00473-5000
014-00449-0000	014-00370-0000
014-00443-2000	014-00370-5000
014-00443-0000	014-00361-0000
014-00362-0000	014-00363-0000
014-00364-0000	014-00363-2500
014-00373-0000	014-00451-5000
014-00381-0000	014-00363-2000
014-00377-0000	014-00363-2700
014-00379-0000	014-00346-7500
014-00471-0000	014-00359-6000
014-00324-0000	014-00380-0000
014-00321-0000	014-00366-0000
014-00382-0000	014-00561-1000
014-00468-0002	014-00376-0000
014-00471-2000	014-00561-2000
014-00372-0000	014-00450-0000
014-00447-0001	014-00368-0000
014-00374-0000	014-00378-0000
014-00369-0000	014-00359-0000
014-00401-0001	014-00349-0000
014-00405-0000	014-00346-0000
014-00371-0000	

Legal descriptions:

Former Thomas R. and Kari L. Curran Property

Parcel 1

Northwest Quarter of the Northwest Quart (NW ¼ of NW ¼) of Section Thirty-six (36) excepting the following parcels:

1. Lands described in Vol. 3 of CSM at page 84 as Document No. 327450;
2. Lot 2 of Vol. 9 of CSM at page 231 as Document No. 436493.

All that part of the Northeast Quarter of the Northwest Quarter (NE ¼ of NW ¼) of Section Thirty-six (36) lying Westerly of the centerline of C.T.H. "M" excepting those lands described in Vol. 3 of CSM at page 84 as Document No. 327450;

Southeast Quarter of the Southeast Quarter (SE ¼ of SE ¼) of Section Twenty-six (26);

All that part of the South Half of the Southwest Quarter (S ½ of SW ¼) of Section Twenty-five (25) lying Westerly of the centerline of C.T.H. "M" excepting the following parcels:

1. Those lands described in Vol. 3 of CSM at page 84 as Document No. 327450;
2. Commencing at the SW corner of said Section 25; thence N90°00'E 1582.00 feet along the South line of the SW ¼ of Section 25; thence N2°08'E 88.1 feet; thence N13°29'E 244.1 feet; thence N17°19'W 285.1 feet; thence N10°03'E 484.5 feet; thence N6°38'E 55.4 feet; thence N83°22'W 33 feet to the West right of way of C.T.H. "M" to the point of beginning; thence continuing N83°22'W 100 feet; thence N6°38'E 75 feet; thence S83°22'E 100 feet; thence S6°38'W 75 feet along said right of way line to the point of beginning.

The North 30 feet of Lot Two (2) of a Certified Survey Map recorded in Vol. 9 of CSM at page 231 as Document No. 436493 located in the NW ¼ of NW ¼ of Section 36;

All above lands located in Township Eighteen (18) North, Range Two (2) West, Township of Greenfield, Monroe County, Wisconsin.

Parcel 2

Lot Two (2) of a Certified Survey Map recorded in Vol. 9 of CSM at page 231 as Document No. 436493 located in the Northwest Quarter of the Northwest Quarter (NW ¼ of NW ¼) of Section Thirty-six (36), Township Eighteen (18) North, Range Two (2) West, Township of Greenfield, Monroe County, Wisconsin EXCEPT the North 30 feet thereof.

Parcel 3

Easement for the benefit of Parcel 2 created by a Warranty Deed recorded at the Office of the Register of Deeds for Monroe County, Wisconsin in Vol. 188 of Records at page 648 as Document No. 436564.

Former Timothy S. Frederick Property

East 4/5ths of the Northeast Quarter of the Southeast Quarter (NE ¼ of SE ¼), Section Twenty-Six (26), Township Eighteen (18) North, Range Two (2), West lying South of the highway, EXCEPTING two acres and 138 rods in the Southeast corner, formerly deeded to John Simpson, ALSO EXCEPTING one acre in the Northwest corner thereof, formerly deeded to Monroe County for road purposes only.

Former Peter J. and Kristin Hilliker Hartung Property

Those lands described in Certified Survey Map recorded in Vol. 10 of CSM at page 40 as Document No. 440337 located in part of the Northwest Quarter of the Southeast Quarter (NW ¼

of SE ¼) and the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼) of Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Southwest Quarter of the Northeast Quarter (SW ¼ of NE ¼)

Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼) except the following parcel: A parcel of land being 20 rods wide North and South and 40 rods in length East and West in the SW corner of said forty;

All that part of the Northwest Quarter of the Northeast Quarter (NW ¼ of NE ¼) which lies Southwesterly of the Town Road;

Northeast Quarter of the Northwest Quarter (NE ¼ of NW ¼) except that part lying Northeasterly of the Town Road;

All above lands in Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Ronald L. and Kathleen E. Nicks Property

That part of the East half of the Southwest Quarter (E ½ of SW ¼) lying East of Highway;

That part of the Northwest Quarter of the Southeast Quarter (NW ¼ of SE ¼) lying South of the highway;

Southwest Quarter of the Southeast Quarter (SW ¼ of SE ¼);

West 16 rods of Northeast Quarter of the Southeast Quarter (NE ¼ of SE ¼) lying South of Highway;

All in Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, excepting from the above parcels of land:

1. Lands described in Vol. 232 of Deeds at page 316;
2. Lands described in Vol. 248 of Deeds at page 668 and re-recorded in Vol. 251 of Deeds at page 27;
3. Lands in Vol. 247 of Deeds page 267;
4. Lands described in Vol. 8 of CSM at page 248 as Document No. 419437.

Former Gregory A. Anderson Property

All that portion of the Southeast Quarter of the Southwest Quarter (SE ¼ -SW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, lying West of the centerline of the North-South town road.

Former David and Laura Witt Property

Parcel 1

South One-half of the Northwest Quarter of the Northwest Quarter (S ½ of NW ¼ of NW ¼) of Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Parcel 2

Access easement 66 feet in width for the benefit of Parcel 1 over, through and across a parcel of land, the centerline of which is described as follows: Commencing at the W ¼ corner of Section 26, Township 18 North, Range 2 West; thence South along the West Section line of Section 26 a distance of 994.37 feet; thence S88°51'14"E 149.39 feet to the point of beginning to the centerline; thence continuing N2°11'10"E a distance of 408.79 feet to the centerline of Buckley Drive and the point of terminus. Said easement to extend to grantees, heirs, successors and/or assigns.

Access easement 66 feet in width for the benefit of Parcel 1 over, through and across a parcel of land, the centerline of which is described as follows: Commencing at the W ¼ corner of Section 26, Township 18 North, Range 2 West; thence South along the West Section line of Section 26 a distance of 994.37 feet; thence S88°51'14"E 149.39 feet to the point of beginning of the centerline; thence continuing S2°11'10"W a distance of 33 feet; thence West parallel with the E-W ¼ line to a point 33 feet East of the Section line of Section 26; thence South parallel with and 33 feet East of the West section of line of Section 26 and the West Section line of Section 35 to the North line of the South ½ of the NW ¼ of NW ¼ of Section 35, Township 18 North, Range 2 West and the point of terminus of said easement. Said easement to extend to grantees, heirs, successors and/or assigns.

Former Fred G. J. Farris Revocable Trust Dated July 20, 2005 Property

Those lands described in the Certified Survey Map recorded in Volume 8 of Surveys, Page 205 as Document No. 417082; located in the Southeast Quarter of the Southwest Quarter (SE¼ of SW ¼), Section Twenty-six (26) Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Donald and Joyce Witt Property

Parcel 1

Lot 1 of a Certified Survey Map recorded in Vol. 6 CSM on page 186 as Document No. 385378 located in the Northwest Quarter of Southwest Quarter (NW ¼ of SW ¼), Section Twenty-six (26) Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Parcel 2

An easement for the benefit of Parcel 1 over and across a 66 foot wide parcel of land, the centerline of which is described as follows: Commencing at the Southwest corner of the above-described parcel; thence North 88°51'14" W a distance of 33.01 feet to the beginning of said

centerline; thence N2°11'01" E a distance of 408.79 feet to the centerline of the Town Road formerly known as Buckley Drive and the end of said centerline.

Parcel 3

Lot 1 and Outlot 2 of a certified Survey Map recorded in Vol. 21 CSM on page 130 as Document No. 577110 located in part of the Southwest Quarter of the Southeast Quarter (SW ¼ of SE ¼), part of the Northeast Quarter of Southeast Quarter (NE ¼ of SE ¼), and part of the Southeast Quarter of Southeast Quarter (SE ¼ of SE ¼), Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Margaret M. Johnson Property

The North one-half of the Northwest Quarter of the Northwest Quarter (N ½ of NW ¼ of NW ¼), Section Thirty-five (35);

The Southwest Quarter of the Southwest Quarter (SW ¼ of SW ¼), Section Twenty-six (26);

The Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼), Section Twenty-six (26)

EXCEPT:

1. Those lands created in Vol. 104 of Deeds on page 125 as Document No. 121668 and Vol. 106 of deeds on page 424 as Document No. 125904;
2. Those lands as described in Vol. 232 of Deeds on page 28 as Document No. 301075
3. Those lands as described in Vol. 247 of Deeds on page 58 as Document No. 328000;
4. Those lands as described in Vol. 81 of Records on page 629 as Document No. 387083;
5. Those lands as described in Vol. 121 of Records on page 757 as Document No. 407011.

All in Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Ronny and Carol Duncan Property

Lot 1 of a certified Survey Map recorded in Vol. 8 CSM on page 248 as Document No. 419437 located in the Northwest Quarter of Southeast Quarter (NW ¼ of SE ¼) and the Northeast Quarter of Southeast Quarter (NE ¼ of SE ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Wayne T. Broecker Property

A parcel of land in the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, described as follows: Commencing at the Southwest corner of said forty; thence Northerly along said forty line, 1028.10 feet to the South line of lands described in Vol. 1 CSM on page 253 as Document No. 293698; thence N73°21'E along the South line of said CSM a distance of 218 feet to the centerline of the Town Road, thence Southerly along center line of the Town Road S20°24'E, a distance of 1182.97 feet; thence Westerly along the South line of said forty to the point of beginning.

Former Robert J. and Theresa A. Betthausen Property

Those lands as described in Certified Survey Map recorded in Vol.8 of CSM on page 123, as Document No. 411816, located in the Southwest Quarter of the Northwest Quarter (SW $\frac{1}{4}$ of NW $\frac{1}{4}$), Section Thirty-six (36), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin.

Former Matthew Witt Property

A parcel of land located in the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, described as follows: Commencing at the West Quarter corner of said Section 26; thence South, along the West line of the Southwest Quarter of said Section 26, a distance of 994.37 feet; thence S88°51'14"E a distance of 723.70 feet, to the point of beginning; thence continuing S88°51'14"E to the East line of the said Northwest Quarter of the Southwest Quarter; thence Northerly, along the East line of the said Northwest Quarter of the Southwest Quarter, to the centerline of a Town Road f/k/a Buckley Drive; thence along said centerline, to a point which is N0°12'50"E, 682.81 feet from the point of beginning; thence S0°12'50"W, a distance of 682.81 feet, to the point of beginning, EXCEPT the following described parcel of land:

Commencing at the intersection of the South line of the Town Road with the East line of the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$); thence Southwesterly along the South line of the Town Road 400 feet; thence Southeasterly 700 feet to the East Section line of said forty; thence North to the point of beginning.

Former Martin P. Murphy and Joanne Murphy Property

A parcel of land located in the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$), Section Twenty-six (26), Township eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, described as follows: Commencing at the intersection of the South line of the Town Road with the East line of the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$); thence Southwesterly along the South line of the Town Road 400 feet; thence Southeasterly 700 feet to the East Section line of said forty; thence North to the point of beginning.

Former Naomie M. Ugo Property

Those lands described in a Certified Survey Map recorded in Vol. 1 CSM on page 253, as Document No. 293698 located in part of the Southwest Quarter (SW $\frac{1}{4}$), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Karolene J. Roberts, Earl E. Roberts, and Barbara J. Roberts Property

Lot One (1) of a Certified Survey Map recorded in Vol. 12 of CSM on page 192 as Document No. 478449, located in the Southeast Quarter of the Northwest Quarter (SE $\frac{1}{4}$ of NW $\frac{1}{4}$) and the Northeast Quarter of the Southwest Quarter (NE $\frac{1}{4}$ of SW $\frac{1}{4}$), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Donald O. Erdman Property

Lot Three (3) of a Certified Survey Map recorded in Vol. 12 of CSM at page 192 as Document No. 478449 located in the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Scott W. Knutson Property

The Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼), Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, lying and being West of the Highway as the same now crosses said forty.

Former Janice M. Clark a/k/a Janice L. Clark Property

A parcel of land located in the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼) and the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, described as follows: Commencing at a point where the road that runs North and South in said Section intersects with the road that runs East and West in said Section, thence South along said North and South road 314 feet, thence East 590 feet, thence North 424 feet more or less to the center of the East and West road, thence West along said centerline to the place of beginning, EXCEPT Lots 1 and 3 of Vol. 12 CSM, page 192, as Document No. 478449. (This description includes Lots 2 and 4 of Vol. 12 CSM, page 192, as Document No. 478449.)

Former Letha J. Webster, Trustee of the Eugene F. Webster and Letha J. Webster Revocable Trust dated March 29, 2010

A parcel of land located in the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼), the Southwest Quarter of the Northeast Quarter (SW ¼ of NE ¼), the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼) and the Northwest Quarter of the Southeast Quarter (NW ¼ of SE ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, described as follows: Commencing at the Northeast corner of the lands described in Vol. 232 of Deeds, on page 298, as Document No. 301828, thence South 424 feet; thence East 970 feet; thence North to the center of the town road f/k/a Buckley Drive, thence Westerly along the center of the town road to a point directly North of the place of beginning, thence South to the point of beginning.

Former Howard J. Webster Property

Parcel 1

A parcel of land located in the West Half of the Northwest Quarter of the Southwest Quarter (W ½ of NW ¼ of SW ¼) of Section Twenty-five (25), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin more particularly described as follows: Commencing at the intersection of the former pipe line of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company and the South line of the Tunnel City highway; thence North 73°30' West along the South line of said highway 89 feet; thence North 63°48' West 32 feet; thence North 63°45' West 144.3 feet to the point of beginning; thence North 55°45' West 260

feet; thence South 0°30' West 301 feet; thence South 55°45' East 98.2 feet; thence North 21°45' East 243.2 feet to the point of beginning.

Parcel 2

Easement for benefit of parcel 1 created by an instrument recorded in Vol. 177 of Deeds at page 228 as Document No. 228733

Parcel 3

A parcel of land located in the Northeast Quarter of the Southeast Quarter (NE ¼ of SE ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin more particularly described as follows: Commencing at a point 9 rods West of the SE corner of said forty; thence West along the South line thereof a distance of 14 rods; thence North 19 ½ rods; thence East 27 rods more or less to the Section line; thence South on the Section line 10 ½ rods to the Railroad Water Pipes; thence Southwesterly following the Railroad Water Pipes a distance of 16 rods to the place of beginning.

Parcel 4

All that part of the Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼) of Section Twenty-five (25), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin bounded on the North by Town Road f/k/a Tunnel City Road, on the South and East by what is known as Railroad Water Pipes, on the West by the West Section line excepting the following parcels:

1. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73 ½° West along the South line of said highway 4.50 chains; thence South 27 ½° West 2.20 chains; thence South 62° East 2.50 chains; thence North 57° East 3.60 chains to the place of beginning;
2. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73 ½° West along the South line of said highway 89 feet; thence South 90 feet to said Railroad water pipe; thence along said Railroad water pipe in a Southwesterly direction 80 feet; thence West 63 feet; thence North 120 feet to the South line of the Sparta and Tunnel City Highway; thence along the South line of said highway to the place of beginning about 74 feet more or less;
3. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence Northwesterly along the said highway 32 feet; thence South 23 rods to the Railroad water pipe; thence Northeasterly along said Railroad water pipe 16 rods; thence Westerly 63 feet; thence Northerly 125 feet to iron stake on the highway to the point of beginning;
4. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73°-30' West along the South line of said highway 89.0 feet; thence North 63°45' West 32 feet to the point of beginning; thence continuing North 63° 45' West 100.3 feet;

thence South 21° 45' West 326.7 feet; thence South 63° 45' East 100.3 feet; thence North 21°45' East 326.7 feet to the point of beginning;

5. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73° 30' West along the South line of said highway 89 feet; thence North 63° 48' West 32 feet; thence North 63° 45' West 144.3 feet to the point of beginning; thence North 55° 45' West 260 feet; thence South 0° 30' West 301 feet; thence South 55° 45' East 98.2 feet; thence North 21° 45' East 243.2 feet to the point of beginning.

Former Karen Hilliker Property

The Southwest One-eighth (SW 1/8) of the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼), Section Thirty-Five (35), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, being 20 rods wide North and South and 40 rods in length East and West.

Former Railroad Properties Property

Parcel 5:

A strip, belt or piece of land one Hundred and Six (106) feet in width across the Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼) of Section No. Twenty-six (26) in Township Eighteen (18) North, Range Two (2) West, lying between two parallel lines one of which is fifty (50) feet distant southerly from the present centerline of Main line of said grantees railway and the other said line is one hundred and six (106) feet Southerly from the present right of way line of said Company Railway. The North 40 feet of the land hereby conveyed is for additional right of way for said grantees railway and the south 66 feet is for public highway.

Parcel 6:

A strip of land 125 feet in width being 85 feet of such width upon the Southerly side and 40 feet of such width upon the Northerly side of the centerline of said Railway as now located over and across the Northeast Quarter of Southeast Quarter (NE ¼ of SE ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West.

Also a certain piece of land North of 70 feet wide parallel to and adjoining the above described strip of land and extending Westerly 120 feet from the land purchased by Chicago, Milwaukee and St. Paul Railway Company of Willard Brown Jan. 25, 1877.

Parcel 9:

All that part of the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West which lies South of the Southerly of the right of way line of the Grantee's Railway.

Parcel 10:

All that part of the Southeast Quarter of the Northeast Quarter (SE ¼ of NE ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, lying south of a line drawn parallel to and 40 feet distant Northerly measured at right angle from the centerline of said railway as it now runs, located and operated.

Parcel 16:

All that part of the SW ¼ of NE ¼ of Section 26, Township 18 North, Range 2 West which lies South of the Southerly right of way line of the C. M. & St. Paul Railway Co.

EXHIBIT A
Parcel Number and Description of the Property

Monroe County Parcel Nos.:
014-00407-0000
014-00401-0000

Legal descriptions:
EXISTING AREA 3, 4, 5 & 6 LEGAL DESCRIPTION:

Area 3 (Parcel 4 of commitment):
All that part of the Northeast Quarter of Southeast Quarter (NE 1/4 of SE 1/4) of Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, lying South of the Chicago, Milwaukee and St. Paul Railroad Company Right of way, EXCEPT Outlot 2 of Vol. 21 CSM on page 130 as Doc. No. 577110. Shown For Information: Parcel No. 014-00401-0000

Area 4 (Parcel 3 of commitment):
Outlot 3 of a Certified Survey Map recorded in Vol. 21 CSM on page 130 as Doc. No. 577110 located in part of the Southeast Quarter of Southeast Quarter (SE 1/4 of SE 1/4), Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin. Shown For Information: Parcel No. 014-00407-0000

Area 5 (Parcel 2 of commitment):
All that part of the Northwest Quarter of the Southeast Quarter (NW 1/4 of SE 1/4) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West lying North of the highway, except that part heretofore conveyed to Chicago, Milwaukee & St. Paul Railway.

Area 6 (Parcel 1 of commitment):
All that part of the Northeast Quarter of Southeast Quarter (NE 1/4 of SE 1/4) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West lying North of the highway n/k/a Flag Ave excepting the following parcels:
1. Lands described in Vol. 74 of Deeds at page 341
2. Lands described in Vol. 29 of Deeds at page 172.

PROPOSED AREA 3-LEGAL DESCRIPTION:

AREA 3A:
All that part of the Northeast Quarter of Southeast Quarter of Section 27, Township 18 North, Range 2 West, Town of Greenfield, Monroe County, Wisconsin, lying South of the Canadian Pacific Railway (formerly Chicago, Milwaukee and St. Paul Railroad Company) Right of Way

and lying North of a line 150 feet south of and parallel to said Right of Way, EXCEPT Outlot 2 of Vol. 21 CSM on page 130 as Doc. No. 577110.

AREA 3B:

All that part of the Northeast Quarter of Southeast Quarter of Section 27, Township 18 North, Range 2 West, Town of Greenfield, Monroe County, Wisconsin, lying South of a line 150 feet south of and parallel to the south line of the Canadian Pacific Railway (formerly Chicago, Milwaukee and St. Paul Railroad Company) Right of Way, EXCEPT Outlot 2 of Vol. 21 CSM on page 130 as Doc. No. 577110.

AREA 3C:

All that part of the Northeast Quarter of Southeast Quarter of Section 27, Township 18 North, Range 2 West, Town of Greenfield, Monroe County, Wisconsin, described as follows:
Commencing at the Southeast corner of said Northeast Quarter of the Southeast Quarter; thence North 0 degrees 02 minutes 56 seconds West on an assumed bearing along the east line of said Northeast Quarter of the Southeast Quarter 78.61 feet; thence S 84 degrees 41 minutes 07 seconds West 58.59 feet to the point of beginning; thence continuing on said bearing of South 84 degrees 41 minutes 07 seconds West 432.61 feet; thence North 10 degrees 32 minutes 17 seconds West 142.14 feet; thence North 83 degrees 05 minutes 53 seconds East 443.02 feet; thence South 6 degrees 19 minutes 04 seconds East 153.84 feet to the point of beginning.

Property Descriptions

LISTING OF PARCEL NUMBERS FOR RECLAMATION PERMIT

014-00375-0000
014-00451-2000
014-00456-2000
014-00445-0000
014-00442-0000
014-00449-0000
014-00443-2000
014-00443-0000
014-00362-0000
014-00364-0000
014-00373-0000
014-00381-0000
014-00377-0000
014-00379-0000
014-00471-0000
014-00324-0000
014-00321-0000
014-00382-0000
014-00468-0002
014-00471-2000
014-00372-0000
014-00447-0001
014-00374-0000
014-00369-0000
014-00401-0001
014-00405-0000
014-00371-0000
014-00367-0000
014-00447-0000
014-00379-2000
014-00360-0000
014-00473-5000
014-00370-0000
014-00370-5000
014-00361-0000
014-00363-0000
014-00363-2500
014-00451-5000
014-00363-2000
014-00363-2700
014-00346-7500
014-00359-6000
014-00380-0000
014-00366-0000

014-00561-1000
014-00376-0000
014-00561-2000
014-00450-0000
014-00368-0000
014-00378-0000
014-00359-0000
014-00349-0000
014-00346-0000
014-00400-0000
014-00406-0000
014-00404-0000
014-00401-8000
014-00389-5000
014-00356-2000
014-00346-0000
014-00349-0000
014-00378-0000
014-00304-5000
014-00555-0000
014-00363-0000
014-00363-2000
014-00363-2700

Town Lands (Purchased 11/09/11)

014-00407-0000
014-00401-0000

(plus two parcels with no current Parcel No.)

Chapman Farms- Land, LLC Lands (to be transferred)

014-00438-0000
014-00439-0000
014-00453-0000
014-00454-0000
014-00457-0000

LISTING OF LEGAL DESCRIPTIONS FOR RECLAMATION PERMIT

Former Thomas R. and Kari L. Curran Property

Parcel 1

Northwest Quarter of the Northwest Quart (NW ¼ of NW ¼) of Section Thirty-six (36) excepting the following parcels:

1. Lands described in Vol. 3 of CSM at page 84 as Document No. 327450;
2. Lot 2 of Vol. 9 of CSM at page 231 as Document No. 436493.

All that part of the Northeast Quarter of the Northwest Quarter (NE ¼ of NW ¼) of Section Thirty-six (36) lying Westerly of the centerline of C.T.H. "M" excepting those lands described in Vol. 3 of CSM at page 84 as Document No. 327450;

Southeast Quarter of the Southeast Quarter (SE ¼ of SE ¼) of Section Twenty-six (26);

All that part of the South Half of the Southwest Quarter (S ½ of SW ¼) of Section Twenty-five (25) lying Westerly of the centerline of C.T.H. "M" excepting the following parcels:

1. Those lands described in Vol. 3 of CSM at page 84 as Document No. 327450;
2. Commencing at the SW corner of said Section 25; thence N90°00'E 1582.00 feet along the South line of the SW ¼ of Section 25; thence N2°08'E 88.1feet; thence N13°29'E 244.1 feet; thence N17°19'W 285.1 feet; thence N10°03'E 484.5 feet; thence N6°38'E 55.4 feet; thence N83°22'W 33 feet to the West right of way of C.T.H. "M" to the point of beginning; thence continuing N83°22'W 100 feet; thence N6°38'E 75 feet; thence S83°22'E 100 feet; thence S6°38'W 75 feet along said right of way line to the point of beginning.

The North 30 feet of Lot Two (2) of a Certified Survey Map recorded in Vol. 9 of CSM at page 231 as Document No. 436493 located in the NW ¼ of NW ¼ of Section 36;

All above lands located in Township Eighteen (18) North, Range Two (2) West, Township of Greenfield, Monroe County, Wisconsin.

Parcel 2

Lot Two (2) of a Certified Survey Map recorded in Vol. 9 of CSM at page 231 as Document No. 436493 located in the Northwest Quarter of the Northwest Quarter (NW ¼ of NW ¼) of Section Thirty-six (36), Township Eighteen (18) North, Range Two (2) West, Township of Greenfield, Monroe County, Wisconsin EXCEPT the North 30 feet thereof.

Parcel 3

Easement for the benefit of Parcel 2 created by a Warranty Deed recorded at the Office of the Register of Deeds for Monroe County, Wisconsin in Vol. 188 of Records at page 648 as Document No. 436564.

Former Timothy S. Frederick Property

East 4/5ths of the Northeast Quarter of the Southeast Quarter (NE ¼ of SE ¼), Section Twenty-Six (26), Township Eighteen (18) North, Range Two (2), West lying South of the highway, EXCEPTING two acres and 138 rods in the Southeast corner, formerly deeded to John Simpson, ALSO EXCEPTING one acre in the Northwest corner thereof, formerly deeded to Monroe County for road purposes only.

Former Peter J. and Kristin Hilliker Hartung Property

Those lands described in Certified Survey Map recorded in Vol. 10 of CSM at page 40 as Document No. 440337 located in part of the Northwest Quarter of the Southeast Quarter (NW ¼ of SE ¼) and the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼) of Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Southwest Quarter of the Northeast Quarter (SW ¼ of NE ¼)

Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼) except the following parcel: A parcel of land being 20 rods wide North and South and 40 rods in length East and West in the SW corner of said forty;

All that part of the Northwest Quarter of the Northeast Quarter (NW ¼ of NE ¼) which lies Southwesterly of the Town Road;

Northeast Quarter of the Northwest Quarter (NE ¼ of NW ¼) except that part lying Northeasterly of the Town Road;

All above lands in Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Ronald L. and Kathleen E. Nicks Property

That part of the East half of the Southwest Quarter (E ½ of SW ¼) lying East of Highway;

That part of the Northwest Quarter of the Southeast Quarter (NW ¼ of SE ¼) lying South of the highway;

Southwest Quarter of the Southeast Quarter (SW ¼ of SE ¼);

West 16 rods of Northeast Quarter of the Southeast Quarter (NE ¼ of SE ¼) lying South of Highway;

All in Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, excepting from the above parcels of land:

1. Lands described in Vol. 232 of Deeds at page 316;
2. Lands described in Vol. 248 of Deeds at page 668 and re-recorded in Vol. 251 of Deeds at page 27;
3. Lands in Vol. 247 of Deeds page 267;
4. Lands described in Vol. 8 of CSM at page 248 as Document No. 419437.

Former Gregory A. Anderson Property

All that portion of the Southeast Quarter of the Southwest Quarter (SE ¼ -SW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, lying West of the centerline of the North-South town road.

Former David and Laura Witt Property

Parcel 1

South One-half of the Northwest Quarter of the Northwest Quarter (S ½ of NW ¼ of NW ¼) of Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Parcel 2

Access easement 66 feet in width for the benefit of Parcel 1 over, through and across a parcel of land, the centerline of which is described as follows: Commencing at the W ¼ corner of Section 26, Township 18 North, Range 2 West; thence South along the West Section line of Section 26 a distance of 994.37 feet; thence S88°51'14"E 149.39 feet to the point of beginning to the centerline; thence continuing N2°11'10"E a distance of 408.79 feet to the centerline of Buckley Drive and the point of terminus. Said easement to extend to grantees, heirs, successors and/or assigns.

Access easement 66 feet in width for the benefit of Parcel 1 over, through and across a parcel of land, the centerline of which is described as follows: Commencing at the W ¼ corner of Section 26, Township 18 North, Range 2 West; thence South along the West Section line of Section 26 a distance of 994.37 feet; thence S88°51'14"E 149.39 feet to the point of beginning of the centerline; thence continuing S2°11'10"W a distance of 33 feet; thence West parallel with the E-W ¼ line to a point 33 feet East of the Section line of Section 26; thence South parallel with and 33 feet East of the West section of line of Section 26 and the West Section line of Section 35 to the North line of the South ½ of the NW ¼ of NW ¼ of Section 35, Township 18 North, Range 2 West and the point of terminus of said easement. Said easement to extend to grantees, heirs, successors and/or assigns.

Former Fred G. J. Farris Revocable Trust Dated July 20, 2005 Property

Those lands described in the Certified Survey Map recorded in Volume 8 of Surveys, Page 205 as Document No. 417082; located in the Southeast Quarter of the Southwest Quarter (SE¼ of SW ¼), Section Twenty-six (26) Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Donald and Joyce Witt Property

Parcel 1

Lot 1 of a Certified Survey Map recorded in Vol. 6 CSM on page 186 as Document No. 385378 located in the Northwest Quarter of Southwest Quarter (NW ¼ of SW ¼), Section Twenty-six (26) Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Parcel 2

An easement for the benefit of Parcel 1 over and across a 66 foot wide parcel of land, the centerline of which is described as follows: Commencing at the Southwest corner of the above-described parcel; thence North 88°51'14" W a distance of 33.01 feet to the beginning of said centerline; thence N2°11'01" E a distance of 408.79 feet to the centerline of the Town Road formerly known as Buckley Drive and the end of said centerline.

Parcel 3

Lot 1 and Outlot 2 of a certified Survey Map recorded in Vol. 21 CSM on page 130 as Document No. 577110 located in part of the Southwest Quarter of the Southeast Quarter (SW ¼ of SE ¼), part of the Northeast Quarter of Southeast Quarter (NE ¼ of SE ¼), and part of the Southeast Quarter of Southeast Quarter (SE ¼ of SE ¼), Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Margaret M. Johnson Property

The North one-half of the Northwest Quarter of the Northwest Quarter (N ½ of NW ¼ of NW ¼), Section Thirty-five (35);

The Southwest Quarter of the Southwest Quarter (SW ¼ of SW ¼), Section Twenty-six (26);
The Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼), Section Twenty-six (26)
EXCEPT:

1. Those lands created in Vol. 104 of Deeds on page 125 as Document No. 121668 and Vol. 106 of deeds on page 424 as Document No. 125904;
2. Those lands as described in Vol. 232 of Deeds on page 28 as Document No. 301075
3. Those lands as described in Vol. 247 of Deeds on page 58 as Document No. 328000;
4. Those lands as described in Vol. 81 of Records on page 629 as Document No. 387083;
5. Those lands as described in Vol. 121 of Records on page 757 as Document No. 407011.

All in Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Ronny and Carol Duncan Property

Lot 1 of a certified Survey Map recorded in Vol. 8 CSM on page 248 as Document No. 419437 located in the Northwest Quarter of Southeast Quarter (NW ¼ of SE ¼) and the Northeast Quarter of Southeast Quarter (NE ¼ of SE ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Wayne T. Broecker Property

A parcel of land in the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, described as follows: Commencing at the Southwest corner of said forty; thence Northerly along said forty line, 1028.10 feet to the South line of lands described in Vol. 1 CSM on page 253 as Document No. 293698; thence N73°21'E along the South line of said CSM a distance of 218 feet to the centerline of the Town Road, thence Southerly along center line of the Town Road S20°24'E, a distance of 1182.97 feet; thence Westerly along the South line of said forty to the point of beginning.

Former Robert J. and Theresa A. Betthausen Property

Those lands as described in Certified Survey Map recorded in Vol.8 of CSM on page 123, as Document No. 411816, located in the Southwest Quarter of the Northwest Quarter (SW $\frac{1}{4}$ of NW $\frac{1}{4}$), Section Thirty-six (36), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin.

Former Matthew Witt Property

A parcel of land located in the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, described as follows: Commencing at the West Quarter corner of said Section 26; thence South, along the West line of the Southwest Quarter of said Section 26, a distance of 994.37 feet; thence S88°51'14"E a distance of 723.70 feet, to the point of beginning; thence continuing S88°51'14"E to the East line of the said Northwest Quarter of the Southwest Quarter; thence Northerly, along the East line of the said Northwest Quarter of the Southwest Quarter, to the centerline of a Town Road f/k/a Buckley Drive; thence along said centerline, to a point which is N0°12'50"E, 682.81 feet from the point of beginning; thence S0°12'50"W, a distance of 682.81 feet, to the point of beginning, EXCEPT the following described parcel of land:

Commencing at the intersection of the South line of the Town Road with the East line of the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$); thence Southwesterly along the South line of the Town Road 400 feet; thence Southeasterly 700 feet to the East Section line of said forty; thence North to the point of beginning.

Former Martin P. Murphy and Joanne Murphy Property

A parcel of land located in the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$), Section Twenty-six (26), Township eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, described as follows: Commencing at the intersection of the South line of the Town Road with the East line of the Northwest Quarter of the Southwest Quarter (NW $\frac{1}{4}$ of SW $\frac{1}{4}$); thence Southwesterly along the South line of the Town Road 400 feet; thence Southeasterly 700 feet to the East Section line of said forty; thence North to the point of beginning.

Former Naomie M. Ugo Property

Those lands described in a Certified Survey Map recorded in Vol. 1 CSM on page 253, as Document No. 293698 located in part of the Southwest Quarter (SW $\frac{1}{4}$), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Karolene J. Roberts, Earl E. Roberts, and Barbara J. Roberts Property

Lot One (1) of a Certified Survey Map recorded in Vol. 12 of CSM on page 192 as Document No. 478449, located in the Southeast Quarter of the Northwest Quarter (SE $\frac{1}{4}$ of NW $\frac{1}{4}$) and the Northeast Quarter of the Southwest Quarter (NE $\frac{1}{4}$ of SW $\frac{1}{4}$), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Donald O. Erdman Property

Lot Three (3) of a Certified Survey Map recorded in Vol. 12 of CSM at page 192 as Document No. 478449 located in the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Former Scott W. Knutson Property

The Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼), Section Thirty-five (35), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, lying and being West of the Highway as the same now crosses said forty.

Former Janice M. Clark a/k/a Janice L. Clark Property

A parcel of land located in the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼) and the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, described as follows: Commencing at a point where the road that runs North and South in said Section intersects with the road that runs East and West in said Section, thence South along said North and South road 314 feet, thence East 590 feet, thence North 424 feet more or less to the center of the East and West road, thence West along said centerline to the place of beginning, EXCEPT Lots 1 and 3 of Vol. 12 CSM, page 192, as Document No. 478449. (This description includes Lots 2 and 4 of Vol. 12 CSM, page 192, as Document No. 478449.)

Former Letha J. Webster, Trustee of the Eugene F. Webster and Letha J. Webster Revocable Trust dated March 29, 2010

A parcel of land located in the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼), the Southwest Quarter of the Northeast Quarter (SW ¼ of NE ¼), the Northeast Quarter of the Southwest Quarter (NE ¼ of SW ¼) and the Northwest Quarter of the Southeast Quarter (NW ¼ of SE ¼), Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, described as follows: Commencing at the Northeast corner of the lands described in Vol. 232 of Deeds, on page 298, as Document No. 301828, thence South 424 feet; thence East 970 feet; thence North to the center of the town road f/k/a Buckley Drive, thence Westerly along the center of the town road to a point directly North of the place of beginning, thence South to the point of beginning.

Former Howard J. Webster Property

Parcel 1

A parcel of land located in the West Half of the Northwest Quarter of the Southwest Quarter (W ½ of NW ¼ of SW ¼) of Section Twenty-five (25), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin more particularly described as follows: Commencing at the intersection of the former pipe line of the Chicago, Milwaukee, St. Paul and Pacific Railroad Company and the South line of the Tunnel City highway; thence North 73°30' West along the South line of said highway 89 feet; thence North 63°48' West 32 feet; thence North 63°45' West 144.3 feet to the point of beginning; thence North 55°45' West 260 feet; thence South 0°30' West 301 feet; thence South 55°45' East 98.2 feet; thence North 21°45' East 243.2 feet to the point of beginning.

Parcel 2

Easement for benefit of parcel 1 created by an instrument recorded in Vol. 177 of Deeds at page 228 as Document No. 228733

Parcel 3

A parcel of land located in the Northeast Quarter of the Southeast Quarter (NE ¼ of SE ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin more particularly described as follows: Commencing at a point 9 rods West of the SE corner of said forty; thence West along the South line thereof a distance of 14 rods; thence North 19 ½ rods; thence East 27 rods more or less to the Section line; thence South on the Section line 10 ½ rods to the Railroad Water Pipes; thence Southwesterly following the Railroad Water Pipes a distance of 16 rods to the place of beginning.

Parcel 4

All that part of the Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼) of Section Twenty-five (25), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin bounded on the North by Town Road f/k/a Tunnel City Road, on the South and East by what is known as Railroad Water Pipes, on the West by the West Section line excepting the following parcels:

1. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73 ½° West along the South line of said highway 4.50 chains; thence South 27 ½° West 2.20 chains; thence South 62° East 2.50 chains; thence North 57° East 3.60 chains to the place of beginning;
2. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73 ½° West along the South line of said highway 89 feet; thence South 90 feet to said Railroad water pipe; thence along said Railroad water pipe in a Southwesterly direction 80 feet; thence West 63 feet; thence North 120 feet to the South line of the Sparta and Tunnel City Highway; thence along the South line of said highway to the place of beginning about 74 feet more or less;
3. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence Northwesterly along the said highway 32 feet; thence South 23 rods to the Railroad water pipe; thence Northeasterly along said Railroad water pipe 16 rods; thence Westerly 63 feet; thence Northerly 125 feet to iron stake on the highway to the point of beginning;
4. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73°-30' West along the South line of said highway 89.0 feet; thence North 63°45' West 32 feet to the point of beginning; thence continuing North 63° 45' West 100.3 feet; thence South 21° 45' West 326.7 feet; thence South 63° 45' East 100.3 feet; thence North 21°45' East 326.7 feet to the point of beginning;
5. Commencing at a point on the West line of the Railroad water pipe of the C.M. & St. P. Railway intersects the South line of the Sparta & Tunnel City Road; thence North 73° 30' West along the South line of said highway 89 feet; thence North 63° 48' West 32 feet; thence North 63° 45' West 144.3 feet to the point of beginning; thence North 55° 45'

West 260 feet; thence South 0° 30' West 301feet; thence South 55° 45' East 98.2 feet; thence North 21° 45' East 243.2 feet to the point of beginning.

Former Karen Hilliker Property

The Southwest One-eighth (SW 1/8) of the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼), Section Thirty-Five (35), Township Eighteen (18) North, Range Two (2) West, Monroe County, Wisconsin, being 20 rods wide North and South and 40 rods in length East and West.

Former Railroad Properties Property

Parcel 5:

A strip, belt or piece of land one Hundred and Six (106) feet in width across the Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼) of Section No. Twenty-six (26) in Township Eighteen (18) North, Range Two (2) West, lying between two parallel lines one of which is fifty (50) feet distant southerly from the present centerline of Main line of said grantees railway and the other said line is one hundred and six (106) feet Southerly from the present right of way line of said Company Railway. The North 40 feet of the land hereby conveyed is for additional right of way for said grantees railway and the south 66 feet is for public highway.

Parcel 6:

A strip of land 125 feet in width being 85 feet of such width upon the Southerly side and 40 feet of such width upon the Northerly side of the centerline of said Railway as now located over and across the Northeast Quarter of Southeast Quarter (NE ¼ of SE ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West.

Also a certain piece of land North of 70 feet wide parallel to and adjoining the above described strip of land and extending Westerly 120 feet from the land purchased by Chicago, Milwaukee and St. Paul Railway Company of Willard Brown Jan. 25, 1877.

Parcel 9:

All that part of the Southeast Quarter of the Northwest Quarter (SE ¼ of NW ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West which lies South of the Southerly of the right of way line of the Grantee's Railway.

Parcel 10:

All that part of the Southeast Quarter of the Northeast Quarter (SE ¼ of NE ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, lying south of a line drawn parallel to and 40 feet distant Northerly measured at right angle from the centerline of said railway as it now runs, located and operated.

Parcel 16:

All that part of the SW ¼ of NE ¼ of Section 26, Township 18 North, Range 2 West which lies South of the Southerly right of way line of the C. M. & St. Paul Railway Co.

Former Union Pacific Property

Parcel 1

A strip of land one Hundred and Fifty (150) feet in width, seventy-five (75) feet in width on each side of the center line of said Milwaukee, Sparta & North Western Railway Company as surveyed and located over and across the Southwest Quarter of the Southeast quarter of said Section Twenty-seven (27);

A strip of land one hundred feet in width being 50 feet in width on each side of said center line over and across the Southeast Quarter of the Southwest Quarter of said Section twenty-seven (27).

Also all that portion of said Southwest Quarter of the Southeast Quarter and Southeast Quarter of the Southwest Quarter lying south of said strips of land and north of the right of way of said Chicago, Milwaukee & St. Paul Railway Company in Section Twenty-seven (27);

All above lands in Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Parcel 2

A strip of land one Hundred and Fifty (150) feet in width being seventy-five (75) feet in width on each side of the centerline of said Milwaukee, Sparta & Northwestern Railway Company as surveyed and located over and across the Northwest Quarter of the Southeast Quarter (NW $\frac{1}{4}$ of SE $\frac{1}{4}$), Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

A strip of land Six (6) rods north of the centerline of the Milwaukee, Sparta & Northwestern Railway Company as surveyed and located over the Northwest Quarter of the Southeast Quarter (NW $\frac{1}{4}$ of SE $\frac{1}{4}$) of Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin..

Also that portion of said Northwest Quarter of the Southeast Quarter (NW $\frac{1}{4}$ of SE $\frac{1}{4}$) lying South of said strip of land and north of the right of way of said Chicago, Milwaukee & St. Paul Railway Company, Section 27, Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Parcel 3

A strip or parcel of land 400 feet in width being 200 feet in width each side of the centerline of said Milwaukee, Sparta & Northwestern Railway Company as surveyed and located through and across the Northeast Quarter of Southeast Quarter (NE $\frac{1}{4}$ of SE $\frac{1}{4}$) of Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Also all that part of NE $\frac{1}{4}$ of SE $\frac{1}{4}$ of Section Twenty-seven (27), Township Eighteen 918) North, range Two (2) West, Town of Greenfield, Monroe County, Wisconsin lying South of said 400 foot strip of land and North of the right of way of the C. M. & St. P. Railway Company.

Parcel 4

A strip, belt or parcel of land four hundred (400) feet in width being two hundred (200) feet in width each side of the centerline of said railway as surveyed and located through and across the Southeast Quarter of the Northeast Quarter (SE $\frac{1}{4}$ of NE $\frac{1}{4}$) of Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West Town of Greenfield, Monroe County, Wisconsin.

Also all that part of said Southeast Quarter of the Northeast Quarter (SE $\frac{1}{4}$ of NE $\frac{1}{4}$) of Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin lying South of said 400 foot strip of land and North of the right of way of the Chicago, Milwaukee and St. Paul Railroad Company.

Parcel 5

A strip or parcel of land four Hundred (400) feet in width being 200 feet in width on each side of the centerline of said Railway as located across and through the South One half of the Northwest Quarter (S $\frac{1}{2}$ of NW $\frac{1}{4}$) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin excepting lands to State of Wisconsin Department of Transportation described in Vol. 253 of Deeds at page 458 as Document Number 343370.

All that part of the South One Half of the Northwest Quarter (S $\frac{1}{2}$ of NW $\frac{1}{4}$) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin lying North of the right of way of Chicago, Milwaukee & St. Paul Railroad and South of the 400 foot strip described in Vol. 29 of Deeds at page 142 deeded to Milwaukee, Sparta & Northwestern Railway.

Parcel 6

A strip of land two hundred (200) feet in width on North side of and adjacent to the centerline of said Railway as now located on and across the Southwest Quarter of the Northeast Quarter (SW $\frac{1}{4}$ of NE $\frac{1}{4}$) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West.

Also all that part of said Southwest Quarter of Northeast Quarter (SW $\frac{1}{4}$ of NE $\frac{1}{4}$) of Section 26 lying North of the North line of the right of way of the Chicago, Milwaukee and St. Paul Railway Company and South of the center line of Milwaukee, Sparta and Northwestern Railway as now laid out and located.

Parcel 7

A strip, belt or parcel of land four hundred (400) feet in width being two hundred (200) feet in width each side of the centerline of said railway as surveyed and located through and across the Southeast Quarter of the Northeast Quarter (NE $\frac{1}{4}$ of SE $\frac{1}{4}$) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Also all that portion of said Northeast Quarter of the Southeast Quarter (NE $\frac{1}{4}$ of SE $\frac{1}{4}$) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of

Greenfield, Monroe County, Wisconsin lying North of the right of way of Chicago, Milwaukee and St. Paul Railway Company and South of said 400 foot strip of land.

Parcel 8

A strip, belt or parcel of land four hundred (400) feet in width being two hundred (200) feet in width each side of the centerline of said railway as surveyed and located through and across the Southeast Quarter of the Northeast Quarter (SE $\frac{1}{4}$ of NE $\frac{1}{4}$) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West.

Also all that portion of said Southeast Quarter of the Northeast Quarter (SE $\frac{1}{4}$ of NE $\frac{1}{4}$) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin lying North of the right of way of Chicago, Milwaukee and St. Paul Railway Company and South of said 400 foot strip of land.

Parcel 9

All of the Southwest Quarter of the Northwest Quarter (SW $\frac{1}{4}$ of NW $\frac{1}{4}$), Section Twenty-five (25), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, Southwest of a line drawn parallel with and 200 feet Northeast of the centerline of Milwaukee, Sparta & Northwestern Railway as now located.

Parcel 10

All of the following described lot piece or parcel of land situate in the County of Monroe and State of Wisconsin and known and described as follows to wit: Beginning at the Northwest corner of Lot 3 in Block 3 original plat of Tunnel City in Town of Greenfield, thence South on the West line of said Lot 3 and the same as extended to the South line of Beacon street, thence East on the south line of Beacon street to a point 50 feet southwesterly from measured at right angles to the centerline of the railroad of the party of the second part as the same is surveyed and located, thence southeasterly parallel with and 50 feet distinct from said center line to the east line of Lot 1, Block 9, Original Plat of Tunnel City, thence North on the east line of said Lot 1 in Block 9 extended to the Southeast corner of Lot 1, Block 4 of said original plat, thence north on the east line of said Lot 1 to the north line of said Block 4, thence West on the North line of said Block 4 and the North line of said Block 3 to the place of beginning. (Vol. 29 Deeds page 202).

All of the following described lot piece or parcel of land situate in the County of Monroe and State of Wisconsin and known and described as follows to wit: On the West by the West line of Block 1 of said Original Plat of Tunnel City continued south to a point 200 feet distant from measured at right angle to the centerline of the Milwaukee, Sparta and Northwestern Railway Company as now located, on the north by the north line of Block 1, 2 and 3 of said original plat on the east by the east line of Lot 4, Block 3 of said original plat continued to the north line of Block 10 of said original plat, on the North by the North line of Lots 3, 2 and 1 of Block 10 aforesaid, on the east by the east line of said Block 10 and on the south by a line drawn parallel with and 200 feet distant south from measured at right angles to the center line of said aforesaid railway as now located and extending from the east line of said Block 10 to the West line of the said Original Plat of Tunnel City. (Vol. 29 of Deeds page 209).

The area of the entire above-described property (Parcels 1-10) is 4,641,086 square feet or 106.545 acres.

Former Canadian Pacific Property

Parcel 1:

All that part of the Southeast Quarter of the Northwest Quarter and Southwest Quarter of the Northeast Quarter lying southerly of the North right of way line of the Town Road (Flag Avenue), Section 26, Township 18 North, Range 2 West, Town of Greenfield, Monroe County, Wisconsin, more particularly described as follows:

Beginning at the southeast corner of the Southeast Quarter of the Northwest Quarter of said Section 26; thence South 89 degrees 39 minutes 44 seconds West on an assumed bearing along the south line of said Southeast Quarter of the Northwest Quarter 1,226.72 feet to the northerly right of way line of Flag Avenue; thence North 73 degrees 33 minutes 01 seconds East along said northerly right of way line 363.63 feet; thence continuing easterly along said right of way line 216.89 feet on a tangential curve concave to the south having a radius of 1,439.71 feet and a central angle of 8 degrees 37 minutes 54 seconds; thence continuing on said right of way line North 82 degrees 10 minutes 54 seconds East 127.77 feet; thence continuing easterly on said right of way line 330.65 feet on a non-tangential curve concave to the south having a radius of 1,464.38 feet, a central angle of 12 degrees 56 minutes 13 seconds, a chord of 329.95 feet and a chord bearing of North 89 degrees 18 minutes 37 seconds East; thence continuing on said right of way line South 84 degrees 01 minutes 43 seconds East 223.41 feet; thence continuing on said right of way line South 82 degrees 49 minutes 48 seconds East 311.35 feet; thence continuing easterly along said right of way line 383.98 feet on a tangential curve concave to the south having a radius of 1,482.44 feet and a central angle of 14 degrees 50 minutes 27 seconds to its intersection with the south line of the Southwest Quarter of the Northeast Quarter of said Section 26; thence South 89 degrees 39 minutes 44 seconds West on said south line of the Southwest Quarter of the Northeast Quarter 692.08 feet to the point of beginning. (The area of the above described property is 211,364 square feet or 4.852 acres.)

Parcel 2:

All that part of the Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West lying north and west of the right of way of the Canadian Pacific Railway formerly C.M. & St. P. Ry. Co. as now located, said right of way being distant 50 ft. from the centerline of the adjacent track. (Monroe County, Wisconsin) (The area of the above described property is 262,040 square feet or 6.016 acres.)

Former Town of Greenfield Property (purchased 11/09/2011)

Area 3 (Parcel 4 of commitment):

All that part of the Northeast Quarter of Southeast Quarter (NE 1/4 of SE 1/4) of Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin, lying South of the Chicago, Milwaukee and St. Paul Railroad Company Right of way, EXCEPT Outlot 2 of Vol. 21 CSM on page 130 as Doc. No. 577110. Shown For Information: Parcel No. 014-00401-0000

Area 4 (Parcel 3 of commitment):

Outlot 3 of a Certified Survey Map recorded in Vol. 21 CSM on page 130 as Doc. No. 577110 located in part of the Southeast Quarter of Southeast Quarter (SE 1/4 of SE 1/4), Section Twenty-seven (27), Township Eighteen (18) North, Range Two (2) West, Town of Greenfield, Monroe County, Wisconsin.

Shown For Information: Parcel No. 014-00407-0000

Area 5 (Parcel 2 of commitment):

All that part of the Northwest Quarter of the Southeast Quarter (NW 1/4 of SE 1/4) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West lying North of the highway, except that part heretofore conveyed to Chicago, Milwaukee & St. Paul Railway.

Area 6 (Parcel 1 of commitment):

All that part of the Northeast Quarter of Southeast Quarter (NE 1/4 of SE 1/4) of Section Twenty-six (26), Township Eighteen (18) North, Range Two (2) West lying North of the highway n/k/a Flag Ave excepting the following parcels:

1. Lands described in Vol. 74 of Deeds at page 341
2. Lands described in Vol. 29 of Deeds at page 172.

Chapman Farms-Land, LLC Property (to be transferred)

The Southwest 1/4 of the Southeast 1/4, Section 34, Township 18 North, Range 2 West, Monroe County, Wisconsin.

The Southeast 1/4 of the Southeast 1/4, Section 34, Township 18 North, Range 2 West, Monroe County, Wisconsin.

The Southwest 1/4 of the Southwest 1/4, Section 35, Township 18 North, Range 2 West, Monroe County, Wisconsin.

The Southeast 1/4 of the Southwest 1/4, Section 35, Township 18 North, Range 2 West, Monroe County, Wisconsin.

The Southwest 1/4 of the Southeast 1/4, Section 35, Township 18 North, Range 2 West, Monroe County, Wisconsin.

**UNIMIN CORPORATION TUNNEL CITY PLANT
2011 RECLAMATION PLAN**

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- Geologic Cross Section
- Final Reclaimed Topography

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SITE INFORMATION

General Map

A General Site Map is attached. This map includes current topography, property boundaries and man-made features.

Geologic Composition and Depth of the Nonmetallic Mineral Deposit

A geologic cross section is attached with the depth groundwater was encountered indicated.

Existing Drainage Patterns

The northwestern portion of the property drains toward the Upper La Crosse River basin and the southeastern portion drains to the Little Lemonweir River basin. (See Biological Resources appendix for DNR Waters Data map).

Topsoil

Topsoil of the property is quite thin -- generally less than six inches in depth. The primary map units of the property are; Boone sands; Norden, Urne and Dorerton soils and Tarr sands. (See Soils appendix for Custom Soil Resource Report).

Biological Resources

There is one small wetland indicated on Wisconsin wetland inventory maps that lies within the proposed permit boundary. This wetland is apparently a manmade excavation which has developed wetland characteristics over the years. (See Biological Resources appendix for Potential Wetlands map). There is one intermittent stream segment mapped by the DNR on the property which has been included on the site map. This segment appears to be "losing" in nature as it does not connect to another stream segment. (See Biological Resources appendix for DNR Waters Data map).

The area's land cover consists of a mixture of areas dominated by conifers, such as red pine and jack pine, areas dominated by broad-leaved deciduous species such as Hill's oak, white oak, black oak, black cherry and sugar maple and areas where there is a mixture of both. A relatively small portion of the area is cropped and/or field, including a small amount of residential lawns. (See Biological Resources appendix for WISCLAND Landcover map).

Wildlife use at the area includes deer, squirrel, fox, turkey, black bear and other small mammals. The Karner blue butterfly is known to be found in the area. If surveys

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indicate the Karner blue butterfly is present, the applicant will take all measures necessary to comply with state and federal regulatory requirements.

POST-MINING LAND USE

Post-mining land use will consist of wildlife habitat which will include primarily forested areas with a mix of prairie and savannah.

RECLAMATION MEASURES

a) Earthwork etc.

The general sequence of activities are as follows: timber harvest and grubbing (as necessary), topsoil removal, topsoil stockpiling (in later stages direct re-spread is the preferred option), overburden stripping, overburden deposition (initially aboveground and eventually used for highwall reduction as mining progresses, and general contouring), deposition of tailings (mainly rejected sand that is either too coarse or too fine to be utilized in saleable products) for highwall reduction and general contouring, and upon achieving final slopes, addressing any compaction issues, respreading topsoil materials and revegetation. Reclamation will be conducted to minimize the area disturbed on an ongoing basis as mining progresses.

Unconsolidated overburden will be sloped such that it does not exceed a 3h:1v slope. Stable highwalls with catch basins may remain. Safety berms will be constructed around the perimeter of the pit as it expands.

b) Topsoil

Topsoil will be stripped and either stockpiled or directly re-spread for use in reclamation activities. Topsoil will be salvaged from building sites, impoundment excavations and from designated overburden stockpile areas along with areas to be mined. Topsoil stockpiles will be vegetated to prevent their erosion. Topsoil redistribution will not occur during or immediately after a precipitation event until the soils have sufficiently dried. Where soil (and/or subsoil) compaction is sufficient to inhibit vegetative establishment, the soil will be ripped, disked, plowed, chiseled or the like prior to the revegetation process.

c) Post mining Topography

See attached Final Reclamation Topography Map

d) Post Mining Structures

At completion of mining the plant will either be demolished, all structures removed and site reclaimed or an approved conforming alternate use will be established upon approval by the appropriate regulatory agencies.

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Revegetation Costs			
	\$/Acre	Acres	Cost
Initial revegetation	\$1,100	150	\$165,000

Miscellaneous Costs

Estimated cost of erosion and sediment control during reclamation is \$100,000.

Summary

Total Primary Reclamation Activities			\$423,600
Total of Revegetation Costs			\$165,000
Total of Miscellaneous			\$100,000
Subtotal			\$713,600
Contingencies	10%		\$71,360
Total Financial Assurance			\$759,960

f) Revegetation Plan

Where necessary, the disturbed areas will be ripped or scarified to reduce compaction. Topsoil will be direct hauled from current stripping operations or removed from stockpiles and respread.

The seeding method will be determined by the terrain for specific areas. As native species will be the focus of revegetation efforts, additional soil amendments are not necessary. Seeding and/or planting will occur in the spring or fall. Methods and rates will be dependent upon species selected and site conditions.

A diverse selection of native species will be utilized in reclamation efforts. Annual species may be used as a part of the seed mix to provide initial stabilization. Mycorrhizal inoculated seed or rootstock may be utilized to enhance growth and survival.

Mulch will be utilized on slopes exceeding five percent. Mulch rates are dependent upon type of mulch utilized. If straw mulch is used, it will be crimped or tackified.

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g) Revegetation Standards

The revegetation standard for forested areas will be a minimum of 250 live (green foliage during the growing year if deciduous species) trees and shrubs per acre three years after initial planting.

Revegetation standards for prairie/savannah will consist of a minimum of two native grasses and two native forbs per 100 sq. ft. with an overall cover of 70% after two or more growing seasons. (Cover is defined as the aerial basal portions of the vegetation along with its naturally produced litter expressed as a percentage of the total area of measurement).

h) Erosion Control

Unimin will apply for a WPDES Construction Site Storm Water General Permit, and will also apply for coverage under the Nonmetallic Mining Operations General WPDES permit which covers both stormwater and any process water discharges prior to the commencement of mining. A WPDES permit will be necessary until successful reclamation criteria have been met and signed off on by the County. As a part of the requirements for these permits, Unimin will maintain an appropriate stormwater management plan. Most stormwater runoff from the mine will be internal to the pit. Diversions will be constructed to keep stormwater from undisturbed areas from running off into the pit or coming into contact with stockpiles. Where possible, vegetative filter strips will be utilized to assist in reducing erosion and off-site sedimentation. Other sediment control structures and/or devices utilized at the site may include sediment traps, rock check dams and silt fence.

i) Interim Reclamation

If Unimin wishes to pursue a reduction in fees, it will address this via a submittal of additional information/modification of this plan.

j) Long-Term Safety Measures

For most areas it is anticipated berms and signage will be adequate. Where additional measures are warranted, catch benches and fencing may be appropriate.

k) Existing Wells

Existing wells that will no longer be used will be properly abandoned according to WI State Statutes (NR 812, Well code

A well abandonment report will be kept on file at the Main Office of the Tunnel City Plant, as well as a copy sent to the Monroe County Land Conservation Department, 820 Industrial Dr. < Suite 3, Sparta, WI 54656

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CRITERIA FOR SUCESSFUL RECLAMATION

Successful reclamation will be determined by the Regulatory Authority (RA) in this case, the Monroe County Land Conservation Department. A written reclamation approval request from the operator must be received by the RA before a determination inspection can occur. The inspection will determine if adequate vegetative cover has been established, erosion control measures have been installed if needed, and proposed safety features are in place. A written determination will be mailed to the operator. A determination will be delayed until the following growing season if the request was submitted during a time of snow cover or non-growing conditions.

See g. above.

SOILS

Custom Soil Resource Report



United States
Department of
Agriculture



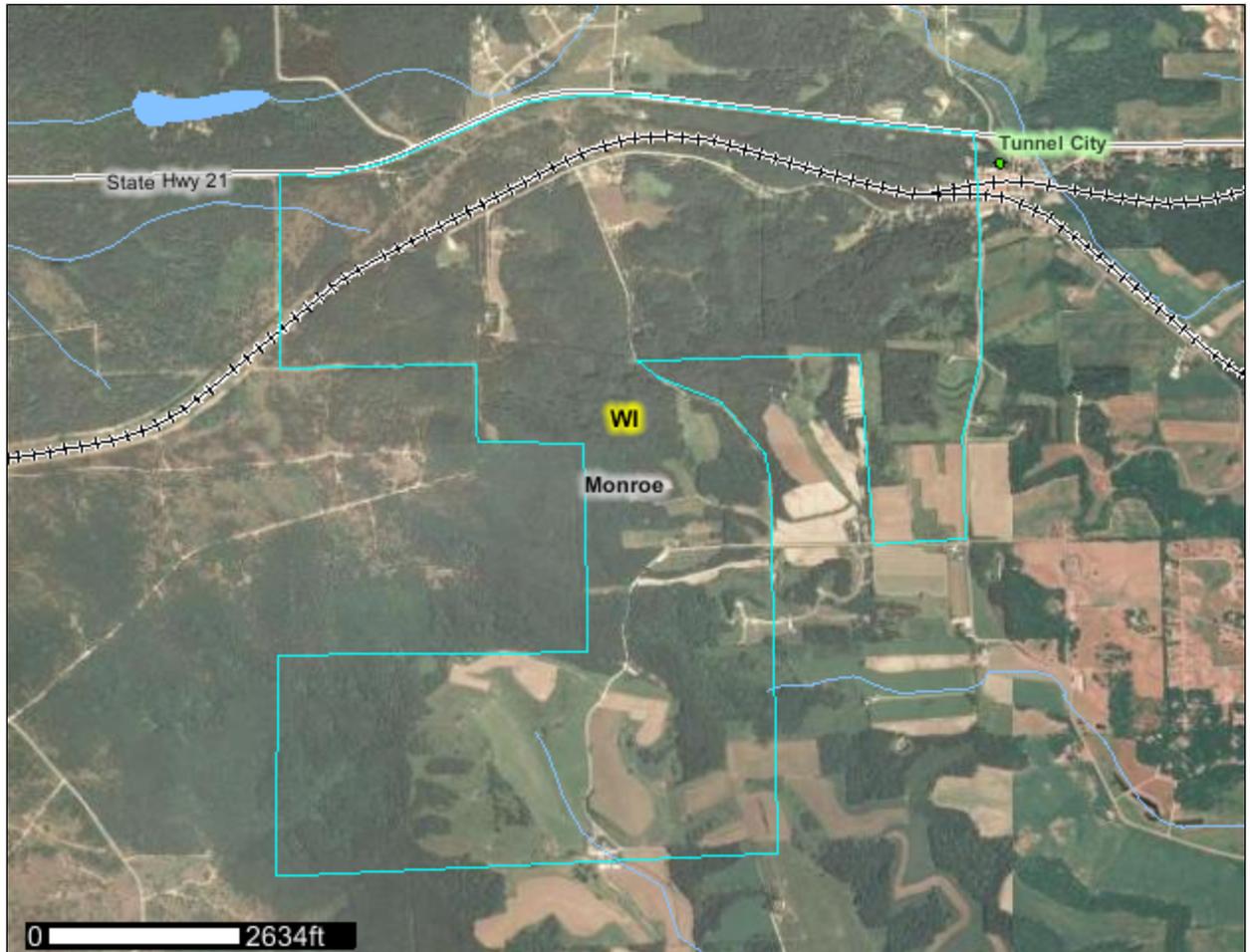
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Monroe County, Wisconsin

Tunnel City



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://soils.usda.gov/sqi/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrsc>) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

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individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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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

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:23,600 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

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: Monroe County, Wisconsin
 Survey Area Data: Version 7, May 13, 2009

Date(s) aerial images were photographed: 6/18/2005; 7/19/2005

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

Monroe County, Wisconsin (WI081)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BIB	Billett sandy loam, 2 to 6 percent slopes	9.2	0.6%
BIC	Billett sandy loam, 6 to 12 percent slopes	10.6	0.7%
BID2	Billett sandy loam, 12 to 20 percent slopes, eroded	4.3	0.3%
BoF	Boone sand, 12 to 45 percent slopes	82.5	5.6%
CnB	Council silt loam, 2 to 6 percent slopes	3.1	0.2%
CnC	Council silt loam, 6 to 12 percent slopes	24.5	1.7%
CnD	Council silt loam, 12 to 20 percent slopes	75.5	5.2%
CnE	Council silt loam, 20 to 30 percent slopes	55.7	3.8%
DIB	Downs silt loam, 2 to 6 percent slopes	3.7	0.3%
DIC2	Downs silt loam, 6 to 12 percent slopes, eroded	30.1	2.1%
DID2	Downs silt loam, 12 to 20 percent slopes, eroded	29.9	2.0%
EID	Eleva sandy loam, 12 to 20 percent slopes	11.5	0.8%
GaD	Gale silt loam, 12 to 20 percent slopes	6.7	0.5%
ImA	Impact sand, 0 to 2 percent slopes	2.8	0.2%
ImB	Impact sand, 2 to 6 percent slopes	13.1	0.9%
IpA	Impact sand, moderately well drained, 0 to 3 percent slopes	22.3	1.5%
JaB	Jackson silt loam, 2 to 6 percent slopes	8.5	0.6%
KpA	Kickapoo fine sandy loam, 0 to 3 percent slopes	17.2	1.2%
LfD2	La Farge silt loam, 12 to 20 percent slopes, eroded	46.0	3.1%
MdB	Meridian loam, 2 to 6 percent slopes	0.2	0.0%
NIC2	Norden silt loam, 4 to 12 percent slopes, eroded	8.0	0.5%
NID2	Norden silt loam, 12 to 20 percent slopes, eroded	13.4	0.9%
NuF	Norden, Urne, and Dorerton soils, 20 to 45 percent slopes	587.2	40.1%
TrB	Tarr sand, 0 to 6 percent slopes	116.2	7.9%
TrC	Tarr sand, 6 to 12 percent slopes	217.6	14.9%
TrD	Tarr sand, 12 to 20 percent slopes	24.9	1.7%
UfC2	Urne fine sandy loam, 4 to 12 percent slopes, eroded	18.2	1.2%
UfD2	Urne fine sandy loam, 12 to 20 percent slopes, eroded	19.7	1.3%

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Monroe County, Wisconsin (WI081)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
W	Water	1.2	0.1%
Totals for Area of Interest		1,463.8	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

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Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Monroe County, Wisconsin

BIB—Billett sandy loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 680 to 1,700 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Billett and similar soils: 100 percent

Description of Billett

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy alluvium over sandy outwash

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability (nonirrigated): 3s

Typical profile

0 to 9 inches: Sandy loam

9 to 22 inches: Sandy loam

22 to 32 inches: Loamy sand

32 to 60 inches: Sand

BIC—Billett sandy loam, 6 to 12 percent slopes

Map Unit Setting

Elevation: 680 to 1,700 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Billett and similar soils: 100 percent

Description of Billett

Setting

Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over sandy outwash

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability (nonirrigated): 3e

Typical profile

0 to 9 inches: Sandy loam
9 to 22 inches: Sandy loam
22 to 32 inches: Loamy sand
32 to 60 inches: Sand

BID2—Billett sandy loam, 12 to 20 percent slopes, eroded

Map Unit Setting

Elevation: 680 to 1,700 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Billett and similar soils: 100 percent

Description of Billett

Setting

Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over sandy outwash

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 9 inches: Sandy loam
9 to 22 inches: Sandy loam
22 to 32 inches: Loamy sand
32 to 60 inches: Sand

BoF—Boone sand, 12 to 45 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Boone and similar soils: 100 percent

Description of Boone

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy residuum weathered from sandstone

Properties and qualities

Slope: 12 to 45 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.8 inches)

Interpretive groups

Land capability (nonirrigated): 7s

Typical profile

0 to 2 inches: Sand
2 to 22 inches: Fine sand
22 to 60 inches: Weathered bedrock

CnB—Council silt loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Council and similar soils: 100 percent

Description of Council

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Silty and/or loamy colluvium

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: High (about 11.0 inches)

Interpretive groups

Land capability (nonirrigated): 2e

Typical profile

0 to 8 inches: Silt loam

8 to 52 inches: Loam

52 to 60 inches: Loam

CnC—Council silt loam, 6 to 12 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Council and similar soils: 100 percent

Description of Council

Setting

Landform: Hills

Landform position (two-dimensional): Toeslope, footslope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Silty and/or loamy colluvium

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: High (about 11.0 inches)

Interpretive groups

Land capability (nonirrigated): 3e

Typical profile

0 to 8 inches: Silt loam

8 to 52 inches: Loam

52 to 60 inches: Loam

CnD—Council silt loam, 12 to 20 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Council and similar soils: 100 percent

Description of Council

Setting

Landform: Hills

Landform position (two-dimensional): Footslope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Silty and/or loamy colluvium

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.0 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 8 inches: Silt loam
8 to 52 inches: Loam
52 to 60 inches: Loam

CnE—Council silt loam, 20 to 30 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Council and similar soils: 100 percent

Description of Council

Setting

Landform: Hills
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and/or loamy colluvium

Properties and qualities

Slope: 20 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.0 inches)

Interpretive groups

Land capability (nonirrigated): 6e

Typical profile

0 to 8 inches: Silt loam
8 to 52 inches: Loam
52 to 60 inches: Loam

DIB—Downs silt loam, 2 to 6 percent slopes

Map Unit Setting

Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Downs and similar soils: 100 percent

Description of Downs

Setting

Landform: Hills, stream terraces
Landform position (two-dimensional): Summit, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Loess and/or silty alluvium

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.6 inches)

Interpretive groups

Land capability (nonirrigated): 2e

Typical profile

0 to 9 inches: Silt loam
9 to 40 inches: Silty clay loam
40 to 60 inches: Silt loam

DIC2—Downs silt loam, 6 to 12 percent slopes, eroded

Map Unit Setting

Mean annual precipitation: 28 to 33 inches

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Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Downs and similar soils: 100 percent

Description of Downs

Setting

Landform: Hills
Landform position (two-dimensional): Summit, toeslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loess and/or silty alluvium

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.6 inches)

Interpretive groups

Land capability (nonirrigated): 3e

Typical profile

0 to 9 inches: Silt loam
9 to 40 inches: Silty clay loam
40 to 60 inches: Silt loam

DID2—Downs silt loam, 12 to 20 percent slopes, eroded

Map Unit Setting

Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Downs and similar soils: 100 percent

Description of Downs

Setting

Landform: Hills
Landform position (two-dimensional): Footslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loess and/or silty alluvium

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.6 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 9 inches: Silt loam
9 to 40 inches: Silty clay loam
40 to 60 inches: Silt loam

EID—Eleva sandy loam, 12 to 20 percent slopes

Map Unit Setting

Elevation: 680 to 1,360 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Eleva and similar soils: 100 percent

Description of Eleva

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from sandstone over sandstone

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.9 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 2 inches: Sandy loam
2 to 28 inches: Sandy loam
28 to 60 inches: Weathered bedrock

GaD—Gale silt loam, 12 to 20 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Gale and similar soils: 100 percent

Description of Gale

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over sandy residuum weathered from sandstone

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 7 inches: Silt loam
7 to 29 inches: Silt loam
29 to 33 inches: Loam
33 to 39 inches: Sand
39 to 60 inches: Weathered bedrock

ImA—Impact sand, 0 to 2 percent slopes

Map Unit Setting

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Impact and similar soils: 100 percent

Description of Impact

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Residuum weathered from sandstone

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 4.7 inches)

Interpretive groups

Land capability (nonirrigated): 4s

Typical profile

0 to 15 inches: Sand

15 to 36 inches: Sand

36 to 60 inches: Sand

ImB—Impact sand, 2 to 6 percent slopes

Map Unit Setting

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Impact and similar soils: 100 percent

Description of Impact

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Residuum weathered from sandstone

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.7 inches)

Interpretive groups

Land capability (nonirrigated): 4s

Typical profile

0 to 15 inches: Sand
15 to 36 inches: Sand
36 to 60 inches: Sand

IpA—Impact sand, moderately well drained, 0 to 3 percent slopes

Map Unit Setting

Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Impact and similar soils: 100 percent

Description of Impact

Setting

Landform: Depressions, drainageways
Down-slope shape: Concave, linear
Across-slope shape: Concave
Parent material: Residuum weathered from sandstone

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Custom Soil Resource Report

Depth to water table: About 36 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.7 inches)

Interpretive groups

Land capability (nonirrigated): 4s

Typical profile

0 to 17 inches: Sand
17 to 37 inches: Sand
37 to 60 inches: Sand

JaB—Jackson silt loam, 2 to 6 percent slopes

Map Unit Setting

Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Jackson and similar soils: 100 percent

Description of Jackson

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess and/or silty alluvium over sandy alluvium

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: About 30 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.2 inches)

Interpretive groups

Land capability (nonirrigated): 2e

Typical profile

0 to 9 inches: Silt loam
9 to 23 inches: Silt loam
23 to 41 inches: Silt loam
41 to 44 inches: Stratified sand to silt loam
44 to 60 inches: Sand

KpA—Kickapoo fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Kickapoo and similar soils: 100 percent

Description of Kickapoo

Setting

Landform: Flood plains

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy alluvium

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: About 36 to 72 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Available water capacity: Moderate (about 8.5 inches)

Interpretive groups

Land capability (nonirrigated): 3w

Typical profile

0 to 5 inches: Fine sandy loam

5 to 60 inches: Stratified sand to silt

Minor Components

Ettrick

Percent of map unit:

Landform: Depressions, drainageways

Kato

Percent of map unit:

Landform: Depressions, drainageways

LfD2—La Farge silt loam, 12 to 20 percent slopes, eroded

Map Unit Setting

Elevation: 800 to 1,400 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

La farge and similar soils: 100 percent

Description of La Farge

Setting

Landform: Hills

Landform position (two-dimensional): Summit, shoulder

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loess over residuum weathered from glauconitic sandstone

Properties and qualities

Slope: 12 to 20 percent

Depth to restrictive feature: 24 to 40 inches to paralithic bedrock

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 8 inches: Silt loam

8 to 25 inches: Silt loam

25 to 31 inches: Fine sandy loam

31 to 60 inches: Unweathered bedrock

MdB—Meridian loam, 2 to 6 percent slopes

Map Unit Setting

Elevation: 680 to 1,950 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Custom Soil Resource Report

Frost-free period: 135 to 160 days

Map Unit Composition

Meridian and similar soils: 100 percent

Description of Meridian

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy alluvium over sandy alluvium

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Moderate (about 7.5 inches)

Interpretive groups

Land capability (nonirrigated): 2e

Typical profile

0 to 7 inches: Loam

7 to 22 inches: Loam

22 to 26 inches: Loam

26 to 60 inches: Sand

NIC2—Norden silt loam, 4 to 12 percent slopes, eroded

Map Unit Setting

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Norden and similar soils: 100 percent

Description of Norden

Setting

Landform: Hills

Landform position (two-dimensional): Summit, backslope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loess over loamy residuum weathered from glauconitic sandstone

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Land capability (nonirrigated): 3e

Typical profile

0 to 9 inches: Silt loam
9 to 35 inches: Loam
35 to 39 inches: Sandy loam
39 to 60 inches: Unweathered bedrock

NID2—Norden silt loam, 12 to 20 percent slopes, eroded

Map Unit Setting

Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Norden and similar soils: 100 percent

Description of Norden

Setting

Landform: Hills
Landform position (two-dimensional): Footslope, backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loess over loamy residuum weathered from glauconitic sandstone

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.8 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 9 inches: Silt loam
9 to 35 inches: Loam
35 to 39 inches: Sandy loam
39 to 60 inches: Unweathered bedrock

NuF—Norden, Urne, and Dorerton soils, 20 to 45 percent slopes

Map Unit Setting

Elevation: 800 to 1,400 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Norden and similar soils: 40 percent
Urne and similar soils: 30 percent
Dorerton and similar soils: 15 percent

Description of Norden

Setting

Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over loamy residuum weathered from glauconitic sandstone

Properties and qualities

Slope: 20 to 45 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.5 inches)

Interpretive groups

Land capability (nonirrigated): 7e

Typical profile

0 to 3 inches: Loam
3 to 10 inches: Loam
10 to 29 inches: Loam
29 to 60 inches: Unweathered bedrock

Description of Urne

Setting

Landform: Hills

Custom Soil Resource Report

Landform position (two-dimensional): Shoulder, summit, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from glauconitic sandstone

Properties and qualities

Slope: 20 to 45 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.3 inches)

Interpretive groups

Land capability (nonirrigated): 7e

Typical profile

0 to 2 inches: Fine sandy loam
2 to 32 inches: Very fine sandy loam
32 to 38 inches: Very fine sandy loam
38 to 60 inches: Weathered bedrock

Description of Dorerton

Setting

Landform: Hills
Landform position (two-dimensional): Backslope, shoulder, summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess over loamy residuum

Properties and qualities

Slope: 20 to 45 percent
Depth to restrictive feature: 45 to 70 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Land capability (nonirrigated): 7e

Typical profile

0 to 4 inches: Silt loam
4 to 21 inches: Loam
21 to 56 inches: Channery loam
56 to 60 inches: Very channery loamy sand

TrB—Tarr sand, 0 to 6 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Tarr and similar soils: 100 percent

Description of Tarr

Setting

Landform: Stream terraces

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy residuum weathered from sandstone

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 3.7 inches)

Interpretive groups

Land capability (nonirrigated): 4s

Typical profile

0 to 4 inches: Sand

4 to 32 inches: Sand

32 to 60 inches: Sand

TrC—Tarr sand, 6 to 12 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Custom Soil Resource Report

Frost-free period: 135 to 160 days

Map Unit Composition

Tarr and similar soils: 100 percent

Description of Tarr

Setting

Landform: Hills

Landform position (two-dimensional): Footslope, backslope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Sandy residuum weathered from sandstone

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Low (about 3.7 inches)

Interpretive groups

Land capability (nonirrigated): 6s

Typical profile

0 to 4 inches: Sand

4 to 32 inches: Sand

32 to 60 inches: Sand

TrD—Tarr sand, 12 to 20 percent slopes

Map Unit Setting

Elevation: 700 to 1,400 feet

Mean annual precipitation: 28 to 33 inches

Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 160 days

Map Unit Composition

Tarr and similar soils: 100 percent

Description of Tarr

Setting

Landform: Hills

Landform position (two-dimensional): Footslope, backslope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Sandy residuum weathered from sandstone

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.7 inches)

Interpretive groups

Land capability (nonirrigated): 7s

Typical profile

0 to 4 inches: Sand
4 to 32 inches: Sand
32 to 60 inches: Sand

UfC2—Urne fine sandy loam, 4 to 12 percent slopes, eroded

Map Unit Setting

Elevation: 800 to 1,200 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Urne and similar soils: 100 percent

Description of Urne

Setting

Landform: Hills
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from glauconitic sandstone

Properties and qualities

Slope: 4 to 12 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.3 inches)

Interpretive groups

Land capability (nonirrigated): 3e

Typical profile

0 to 2 inches: Fine sandy loam
2 to 32 inches: Very fine sandy loam
32 to 38 inches: Very fine sandy loam
38 to 60 inches: Weathered bedrock

UfD2—Urne fine sandy loam, 12 to 20 percent slopes, eroded

Map Unit Setting

Elevation: 800 to 1,200 feet
Mean annual precipitation: 28 to 33 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 135 to 160 days

Map Unit Composition

Urne and similar soils: 100 percent

Description of Urne

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy residuum weathered from glauconitic sandstone

Properties and qualities

Slope: 12 to 20 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.3 inches)

Interpretive groups

Land capability (nonirrigated): 4e

Typical profile

0 to 2 inches: Fine sandy loam
2 to 32 inches: Very fine sandy loam
32 to 38 inches: Very fine sandy loam
38 to 60 inches: Weathered bedrock

W—Water

Map Unit Setting

Elevation: 660 to 980 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 37 to 55 degrees F

Frost-free period: 145 to 165 days

Map Unit Composition

Water: 100 percent

Description of Water

Interpretive groups

Other vegetative classification: Not Assigned (water) (Nwat)

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BIOLOGICAL RESOURCES MAPS

DNR Waters Data

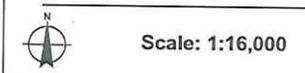
Potential Wetlands

Land Cover

DNR Waters Data

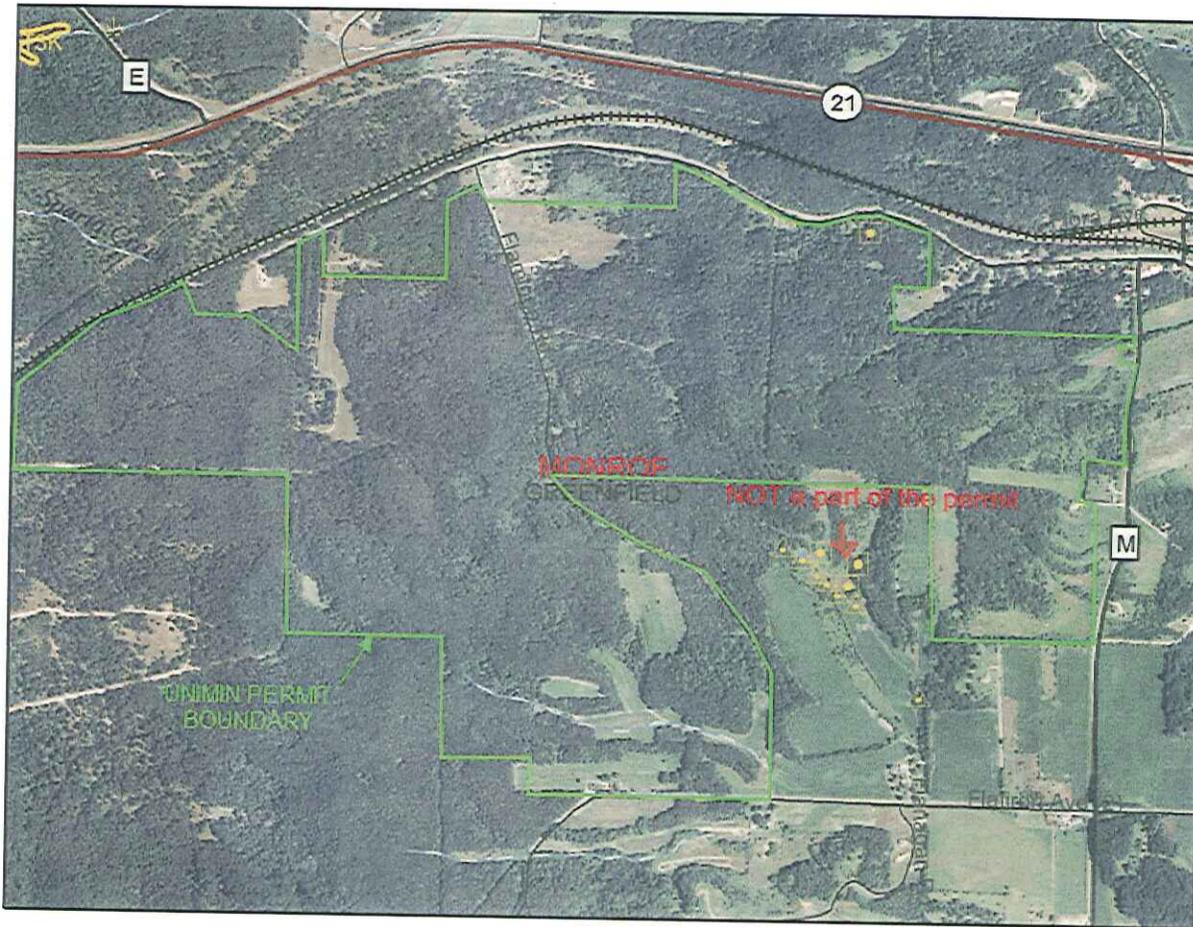


- ### Legend
- County Boundaries
 - ✕ Railroads
 - Major Highways
 - Interstate
 - US Highway
 - State Highway
 - Local Roads
 - 24K Watersheds
 - Civil Towns
 - Civil Town
 - 24K Open Water
 - 24K Rivers and Shorelines
 - Cities and Villages
 - Village
 - City
 - DNR Managed Lands
 - Fee



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Potential Wetlands



0 1500 3000 4500 ft.

Map created on Jul 2, 2011

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 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 some indicative soil conditions." The principal focus of the WVI is to produce reconnaissance level information on the location, type, size or these habitats such that they are accurate at the regional scale of the 1:24,000 (1 inch = 2000 feet) base map. The WVI recognizes the limitations of using secondary derived 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 requiring modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State, or local agencies concerning applicable 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 regulatory is a field delineation of the wetland boundary by a professional trained in wetland delineation techniques.



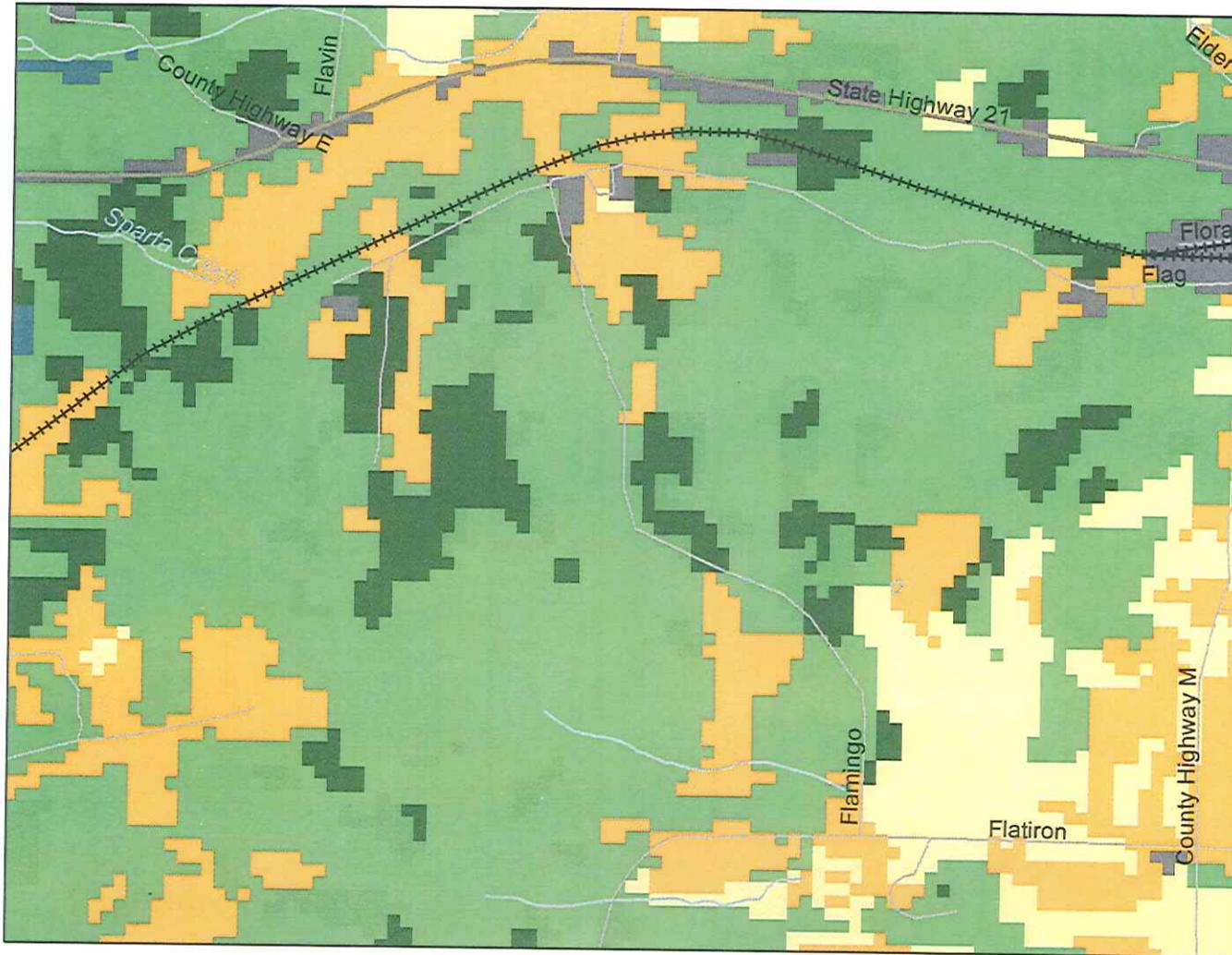
Legend

- ✂ Railroads
- Major Highways
- Interstate
- State Highway
- U.S. Highways
- County Roads
- Local Roads
- 24K County Boundaries
- Civil Towns
- Civil Town
- 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
 - 24K Open Water
- 24K Rivers and Shorelines
 - Intermittent
 - Fluctuating
 - Perennial



Scale: 1:16,000

WISCLAND Landcover



- ### Legend
- ✂ Railroads
 - Major Highways
 - Interstate
 - US Highway
 - State Highway
 - Local Roads
 - 24K Rivers and Shorelines
 - DNR Managed Lands
 - Fee
 - 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

0 1500 3000 4500 ft.

Scale: 1:16,000

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UNIMIN-CREATED MAPS

General Site Map

Geologic Cross Section

Final Reclaimed Topography



UNIMIN

UNIMIN CORPORATION
2500 MAIN STREET
NEW CASTLE, CT 06460

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REFERENCE DRAWINGS

No. BY CHD. DATE

REVISIONS

APPROVED

CHECKED BY:

DESIGNED BY:

SCALE AS SHOWN

PROJECT NO.

REV.

TUNNEL CITY PLANT
Final Reclamation
Topography Map

