



Map of Proposed Silica Sand Mining Operations in Project Area







Minnesota Department of Natural Resources

Division of Ecological and Water Resources, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 E-mail: lisa.joyal@state.mn.us

July 16, 2012

Correspondence # ERDB 20120383

Mr. Chris Priebe G-Cubed, Inc. 14070 Hwy 52 SE Chatfield, MN 55923

RE: Natural Heritage Review of the proposed Winona County Sand Pits; T105N R10W Sections 9, 14-16, 21-23; Winona County

Dear Mr. Priebe,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, rare features have been documented within the search area (for details, see the enclosed database reports; please visit the Rare Species Guide at http://www.dnr.state.mn.us/rsg/index.html for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following rare features may be adversely affected by the proposed project:

• The loggerhead shrike (*Lanius ludovicianus*), a state-listed threatened bird, was documented in the vicinity of the proposed project in 1993. Subsequent searches in 1995 did not find any shrikes. The nearest nesting record in the NHIS is about twenty miles from the project site.

Loggerhead shrikes use grasslands that contain short grass and scattered perching sites such as hedgerows, shrubs, or small trees. They can be found in native prairie, pastures, shelterbelts, old fields or orchards, cemeteries, grassy roadsides, and farmyards. Shrikes frequently shift territories between years so it is not unusual for a particular nesting area to be vacant for several years before it is used again. If the project boundary contains suitable habitat, then it is possible that loggerhead shrikes may breed in the area. Please refer to the DNR Rare Species Guide at http://www.dnr.state.mn.us/rsg/index.html for more information on the biology, habitat use, and conservation measures of this rare species.

Please contact the DNR Regional Nongame Specialist, Jaime Edwards at 507-206-2820, to discuss any additional data or concerns she may have regarding loggerhead shrikes in this area.

• There are a few areas within the project boundary that the Minnesota County Biological Survey considered for Sites of Biodiversity Significance, but these areas were determined to be below the minimum biodiversity threshold for statewide significance. These sites, however, may have conservation value at the local level as habitat for native plants and animals, corridors for animal movements, buffers surrounding higher quality natural areas, or as areas with high potential for restoration of native habitat. A GIS shapefile of MCBS Sites of Biodiversity Significance (including Sites ranked Below) can be downloaded from the DNR Data Deli at http://deli.dnr.state.mn.us.



The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

The enclosed results include an Index Report and a Detailed Report of records in the Rare Features Database, the main database of the NHIS. To control the release of specific location information, which might result in the destruction of a rare feature, both reports are copyrighted.

The <u>Index Report</u> provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an environmental review document (e.g., EAW or EIS), municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the index report for any other purpose, please contact me to request written permission. The <u>Detailed Report</u> is for your personal use only as it may include specific location information that is considered nonpublic data under *Minnesota Statutes*, section 84.0872, subd. 2. If you wish to reprint or publish the Detailed Report for any purpose, please contact me to request written permission.

For environmental review purposes, the Natural Heritage letter and database reports are valid for one year; they are only valid for the project location (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or if an updated review is needed.

Please note that locations of the gray wolf (*Canis lupus*), state-listed as special concern, and the Canada lynx (*Lynx canadensis*), federally-listed as threatened, are not currently tracked in the NHIS. As such, the Natural Heritage Review does not address these species.

Furthermore, the Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. Additional rare features for which we have no data may be present in the project area, or there may be other natural resource concerns associated with the proposed project. For these concerns, please contact your DNR Regional Environmental Assessment Ecologist (contact information available at http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html). Please be aware that additional site assessments or review may be required.

Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources. An invoice will be mailed to you under separate cover.

Sincerely,

Risa Joyal

Lisa Joyal Endangered Species Review Coordinator

- enc. Rare Features Database: Index Report Rare Features Database: Detailed Report Rare Features Database Reports: An Explanation of Fields
- cc: Melissa Doperalski Jaime Edwards

Printed June 2012 Data valid for one year Mi In Printed June 2012 Data valid for one year In In In Rare Features Database: In Element Name and Occurrence Number In Element Name and Occurrence Number In In In Element Name and Occurrence Number In Lanius ludovicianus (Loggerhead Shrike) #110 In T105N R10W S16, T105N R10W S15; Winona County Lithobates palustris (Pickerel Frog) #68 T105N R10W S3, T105N R10W S10; Winona County Yascular Plant	innesota Natural Heritage Information ; idex Report of records within 1 mile rad ERBD# 20120383 - Winona County Sand T105N R10W Sections 9, 14-16, 21-2 Winona County Federal Status No Status	System lius of: 3 MN Status THR THR	State Rank S2B	Global Rank G4	P Last Observed Date 1993-07-07 2000-07-27	EO ID # 17854 28135
Vertebrate Animal	No Status	THR	S3B	G4	1993-07-07	17854
<u>Lanius ludovicianus</u> (Loggerhead Shrike) #110 T105N R10W S16, T105N R10W S15; Winona County	No Status	THR	S2B	G4	1993-07-07	17854
<u>Lithobates palustris</u> (Pickerel Frog) #68 T105N R10W S3, T105N R10W S10; Winona County		NON	S4	G5	2000-07-27	28135
Vascular Plant <u>Hieracium longipilum</u> (Long-bearded Hawkweed) #59 T105N R10W S13, T105N R10W S12; Winona County		NON	SNR	G4G5	1992-09-30	15157
Records Printed = 3	Minnesota's endangered species law (<i>Minneso</i> 6212.1800 to 6212.2300 and 6134) prohibit th taking includes digging or destroying. For an	<i>ta Statutes</i> , secti le taking of threa imals, taking incl	on 84.0895) and tened or endang ludes pursuing, i	l associated r ered species · capturing, or	ules (<i>Minnesota R</i> without a permit. killing.	<i>ules</i> , part For plants,
An Explanation of Fields:						
Element Name and Occurrence Number: The Element is the name of the raparentheses; for all other elements it is solely the element name. Native plant Number, in combination with the Element Name, uniquely identifies each rec	are feature. For plant and animal species recort community names correspond to Minnesota's cord.	ds, this field hold Native Plant Cor	ls the scientific : nmunity Classif	name followe ication (Versi	ed by the common ion 2.0). The Occı	name in urrence
Federal Status: The status of the species under the U.S. Endangered Species of its range; LT,PDL = listed threatened, proposed for delisting; C = candidat	Act: LE = endangered; LT = threatened; LE,L te for listing. If null or 'No Status,' the species h	T = listed endang as no federal stat	gered in part of i .us.	ts range, liste	ed threatened in an	other part
MN Status: Legal status of plant and animal species under the Minnesota Enstatus. Native plant communities, geological features, and colonial waterbird.	idangered Species Law: END = endangered; TI nesting sites do not have any legal status under	IR = threatened; the Endangered	SPC = special c Species Law an	oncern; NON d are represei	V = tracked, but no nted by a N/A.	legal
State Rank: Rank that best characterizes the relative rarity or endangerment of Minnesota Department of Natural Resources to set priorities for research, invo Critically imperiled in Minnesota because of extreme rarity or because of some factor(s) making it very vulnerable to extirpation from the stactors making it vulnerable to extirpation. S4 = Apparently secure in Minneso Df historical occurrence in the state, perhaps having not been verified in the poccurrences in the state were destroyed or if it had been extensively and unsus Cank not applicable. S#S# = Range Rank: a numeric range rank (e.g., S2S3) numerals, whereby B refers to the breeding population of the element in Minneson secure in the state were destroyed or if the state of the secure in the state.	of the taxon or plant community in Minnesota. entory and conservation planning. The state ra ne factor(s) making it especially vulnerable to e tate. S3 = Vulnerable in Minnesota either becausta, usually widespread. S5 = Demonstrably superstated to be still extant. A past 20 years, but suspected to be still extant. A cocessfully looked for. SNR = Rank not yet asso is used to indicate the range of uncertainty abc esota and N refers to the non-breeding populati	The ranks do nc nks are updated a extirpation from t se rare or uncorr ceure in Minneso n element would essed. SU = Unab ssed. SU = Unab on of the element	trepresent a leg as inventory infa he state. S2 = Ir umon, or found i ta, essentially in become SH wit ble to rank. SX i ble to rank. SX i in Minnesota.	yal status. Th primation beco niperiled in M n a restricted eradicable ur hout the 20-y hout the 20-y = Presumed e S#B, S#N =	ey are used by the ormes available. S1 finnesota because range, or because nder present condit 'ear delay if the on extinct in Minneso = Used only for mi	= of rarity or of other i.ons. SH = ly known ta. SNA = gratory

Global Rank: The global (i.e., range-wide) assessment of the relative rarity or imperilment of the species or community. Ranges from G1 (critically imperiled due to extreme rarity on a world-wide Copyright 2012, Division of Ecological and Water Resources, State of Minnesota DNR

centers. basis) to G5 (demonstrably secure, though perhaps rare in parts of its range). Global ranks are determined by NatureServe, an international network of natural heritage programs and conservation data

Last Observed Date: Date that the Element Occurrence was last observed to be extant at the site in format YYY-MM-DD

EO ID #: Unique identifier for each Element Occurrence record.

1 Element Occurrence or 2, based on minimum separation distance and barriers to movement. evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. Specifications for each species determine whether multiple observations should be considered Element Occurrence: An area of land and/or water in which an Element (i.e., a rare species or community) is, or was, present, and which has practical conservation value for the Element as



ENVIRONMENTAL BENEFITS INDEX

The Environmental Benefits Index (EBI) is a composite score of multiple ecological benefits. The score is based on a 0-300 scale, where a score of 300 is most initiable from a conservation perspective. The EBI is the sum of the three independent layers described elsewhere on this site: sail ension risk, water quality risk , and a wildlife habitat quality layers. Each of those component layers contributes 0-500 points to the EBI. This layer was created with the intention to rank CBP and other critical lands on multiple ecological benefits simultaneously. This approach is similar to the EBI used by the farm Service Agency to rank farmers migueds to ensult and in the Conservation Reserve Program. Our approach affers in that it offers festibility in the weighting scheme, and allows users to endore both the spatial distribution of the data and the consequences of using alternative weighting systems. For example 1, identifying lands of high soil encoder its is important, the habitat quality and water quality risk maps can be downweighted (e.g. scaled from 0-50). This would produce a different map than when all attributes are weighted equals

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Environmental	Benefits
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Map-	Scale: 1	**1.0	69.1

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http://mdh-agua.health.state.mn.us/cwi/MapFrame.htm

11/14/2012



Last Date when data was updated: 10/29/2012

Print Version

ID Number:	1850011	
Facility Contact:	Wayne Getz (507) 932-4227 Utica Utica Water Superintendent c/o Mr. Wayne Getz 633 East Fourth Street St. Charles, MN 559721371	
MDH Contact:	Pat Bailey (507) 206-2741 18 Woodlake Drive Southeast Rochester, MN 55904 <u>pat.bailey@state.mn.us</u>	

Status of the Source Water Protection Plan:

The water supply system is implementing the wellhead protection plan that has been approved by the Minnesota Department of Health under Minnesota Rules 4720.

Source Water Protection Area: - Click Map1 to view SWPA map(s).

Yes - A Source Water Protection Area has been designated for this well.

Description of the source water - The water supply for Utica is obtained from 1 primary well. Well depth (in feet), well status, aquifer (s) used, and sensitivity of the source(s) of drinking water are listed in the following table.

Unique Well No	Well ID	Depth	Well Use	Aquifer	Aquifer Sensitivity	*Well Sensitivity	SWPA
00150344	New Well #3	420	Primary	Bedrock	High	See (2)	Yes

Well construction assessment - The water well used by the Utica meets current standards for construction and maintenance. These factors do not contribute to the susceptibility of the source water to contamination.

Well Sensitivity - Well sensitivity refers to the integrity of the well due to its construction and maintenance. It is based on the results of the well construction assessment. It can be one of the following:

(1) The well is susceptible to contamination because it does not meet current construction standards or no information about well construction is available, regardless of aquifer sensitivity.

(2) The well is not susceptible because it meets well construction standards and does not present a pathway for contamination to readily enter the water supply.

Aquifer Sensitivity - Aquifer sensitivity refers to the degree of geological protection afforded the aquifer(s) used by the public water supply.

High - The aquifer is considered to exhibit a high sensitivity to contamination because of the local geological setting.

Source Water Susceptibility - Source water susceptibility refers to the likelihood that a contaminant will reach the source of drinking water. It reflects the results of assessing well sensitivity, aquifer sensitivity, and water quality data.

High - The source of drinking water is considered to exhibit a high susceptibility to contamination because of the local geological setting.

Contaminants of concern - The following statement summarizes the potential contaminants for which a source of drinking water may be at risk:

One or more contaminants regulated under the federal Safe Drinking Water Act for this public water supply system have been detected

in the source water. However, the water supplied to users meets state and federal drinking water standards for potability. For further information, please contact the MDH representative listed at the beginning of this assessment.

651-201-5000 Phone 888-345-0823 Toll-free 651-201-5797 TTY

Information on this website is available in alternative formats to individuals with disabilities upon request.

Updated



Last Date when data was updated: 10/29/2012

Print Version

ID Number:	1850009
Facility Contact:	Kyle Karger (507) 932-3020 Saint Charles St. Charles Water Superintendent c/o Mr. Kyle A. Karger 830 Whitewater Avenue St. Charles, MN 55972
MDH Contact:	Pat Bailey (507) 206-2741 18 Woodlake Drive Southeast Rochester, MN 55904 <u>pat.bailey@state.mn.us</u>

Status of the Source Water Protection Plan:

The water supply system is designating its wellhead protection area(s) and preparing assessments of well and aquifer vulnerability as specified under Minnesota Rules Chapter 4720.

Source Water Assessment Area: -

No - A Source Water Assessment Area has yet to be designated for this well.

Description of the source water - The water supply for Saint Charles is obtained from 3 primary wells. Well depth (in feet), well status, aquifer(s) used, and sensitivity of the source(s) of drinking water are listed in the following table.

Unique Well No	Well ID	Depth	Well Use	Aquifer	Aquifer Sensitivity	*Well Sensitivity	SWPA
00161426	Well #4	736	Primary	Bedrock	High	See (2)	No
00161430	Well #5	702	Primary	Bedrock	High	See (2)	No
00219162	Well #3	667	Primary	Bedrock	High	See (2)	No

Well construction assessment - The water wells used by the Saint Charles meet current standards for construction and maintenance. These factors do not contribute to the susceptibility of the source water to contamination.

Well Sensitivity - Well sensitivity refers to the integrity of the well due to its construction and maintenance. It is based on the results of the well construction assessment. It can be one of the following:

(1) The well is susceptible to contamination because it does not meet current construction standards or no information about well construction is available, regardless of aquifer sensitivity.

(2) The well is not susceptible because it meets well construction standards and does not present a pathway for contamination to readily enter the water supply.

Aquifer Sensitivity - Aquifer sensitivity refers to the degree of geological protection afforded the aquifer(s) used by the public water supply.

High - The aquifer is considered to exhibit a high sensitivity to contamination because of the local geological setting.

Source Water Susceptibility - Source water susceptibility refers to the likelihood that a contaminant will reach the source of drinking water. It reflects the results of assessing well sensitivity, aquifer sensitivity, and water quality data.

High - The source of drinking water is considered to exhibit a high susceptibility to contamination because of the local geological setting.

High - The source water is considered to be susceptible because of the tritium content of the well water in bedrock.

Contaminants of concern - The following statement summarizes the potential contaminants for which a source of drinking water may be at risk:

One or more contaminants regulated under the federal Safe Drinking Water Act for this public water supply system have been detected in the source water. However, the water supplied to users meets state and federal drinking water standards for potability. For further information, please contact the MDH representative listed at the beginning of this assessment.

651-201-5000 Phone 888-345-0823 Toll-free 651-201-5797 TTY

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Updated







Web Soil Survey National Cooperative Soil Survey







Natural Resources Conservation Service

USDA

Web Soil Survey National Cooperative Soil Survey

Depth to Any Soil Restrictive Layer

Dept	Depth to Any Soil Restrictive Layer— Summary by Map Unit — Winona County, Minnesota (MN169)						
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI			
11B	Sogn silt loam, 1 to 6 percent slopes	30	2.4	0.6%			
11D	Sogn silt loam, rocky, 6 to 30 percent slopes	30	12.2	3.0%			
285A	Port Byron silt loam, 1 to 3 percent slopes	>200	19.7	4.9%			
285B	Port Byron silt loam, 3 to 6 percent slopes	>200	70.6	17.5%			
285C	Port Byron silt loam, 6 to 12 percent slopes	>200	8.3	2.1%			
301A	Lindstrom silt loam, 1 to 3 percent slopes	>200	129.0	31.9%			
301C	Lindstrom silt loam, 6 to 12 percent slopes	>200	21.2	5.2%			
301D	Lindstrom silt loam, 12 to 20 percent slopes	>200	18.7	4.6%			
322C2	Timula silt loam, 6 to 12 percent slopes, eroded	>200	0.1	0.0%			
401C	Mt. Carroll silt loam, 6 to 12 percent slopes	>200	2.4	0.6%			
401D	Mt. Carroll silt loam, 12 to 20 percent slopes	>200	8.6	2.1%			
457E	Lacrescent channery silt loam, 20 to 45 percent slopes	>200	3.1	0.8%			
476B	Frankville silt loam, 2 to 6 percent slopes	76	8.7	2.2%			
476C	Frankville silt loam, 6 to 12 percent slopes	76	25.3	6.3%			
476D	Frankville silt loam, 12 to 18 percent slopes	76	1.2	0.3%			
484D	Eyota fine sandy loam, 12 to 20 percent slopes	>200	13.4	3.3%			
826B	Gale-Blackhammer silt loams, 2 to 6 percent slopes	76	2.2	0.6%			
898F	Bellechester-Brodale complex, rocky, 15 to 60 percent slopes	140	42.1	10.4%			
1830	Eitzen silt loam	>200	2.6	0.6%			
1952B	Keltner silt loam, 3 to 6 percent slopes	127	6.6	1.6%			
1954B	Spinks loamy fine sand, bedrock substratum, 1 to 6 percent slopes	127	0.0	0.0%			

Dep	th to Any Soil Restrictive Layer— S	Summary by Map Unit — Winona Cour	nty, Minnesota	(MN169)
Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
1954C	Spinks loamy fine sand, bedrock substratum, 6 to 15 percent slopes	127	2.3	0.6%
1960B	Haverhill variant, clay loam, 1 to 8 percent slopes	>200	2.8	0.7%
w	Water	>200	0.5	0.1%
Totals for Area	of Interest		404.0	100.0%

Description

A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters Aggregation Method: Dominant Component Component Percent Cutoff: None Specified Tie-break Rule: Lower Interpret Nulls as Zero: No





Web Soil Survey National Cooperative Soil Survey





Soil Map—Winona County, Minnesota (WEST DABELSTEIN QUARRY)

Soil Map–Winona County, Minnesota (WEST DABELSTEIN QUARRY)



Natural Resources Conservation Service

USDA

Web Soil Survey National Cooperative Soil Survey

Map Unit Legend

	Winona County, Minnesota (MI	N169)	
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
11B	Sogn silt loam, 1 to 6 percent slopes	2.4	0.6%
11D	Sogn silt loam, rocky, 6 to 30 percent slopes	12.2	3.0%
285A	Port Byron silt loam, 1 to 3 percent slopes	19.7	4.9%
285B	Port Byron silt loam, 3 to 6 percent slopes	70.6	17.5%
285C	Port Byron silt loam, 6 to 12 percent slopes	8.3	2.1%
301A	Lindstrom silt loam, 1 to 3 percent slopes	129.0	31.9%
301C	Lindstrom silt loam, 6 to 12 percent slopes	21.2	5.2%
301D	Lindstrom silt loam, 12 to 20 percent slopes	18.7	4.6%
322C2	Timula silt loam, 6 to 12 percent slopes, eroded	0.1	0.0%
401C	Mt. Carroll silt loam, 6 to 12 percent slopes	2.4	0.6%
401D	Mt. Carroll silt loam, 12 to 20 percent slopes	8.6	2.1%
457E	Lacrescent channery silt loam, 20 to 45 percent slopes	3.1	0.8%
476B	Frankville silt loam, 2 to 6 percent slopes	8.7	2.2%
476C	Frankville silt loam, 6 to 12 percent slopes	25.3	6.3%
476D	Frankville silt loam, 12 to 18 percent slopes	1.2	0.3%
484D	Eyota fine sandy loam, 12 to 20 percent slopes	13.4	3.3%
826B	Gale-Blackhammer silt loams, 2 to 6 percent slopes	2.2	0.6%
898F	Bellechester-Brodale complex, rocky, 15 to 60 percent slopes	42.1	10.4%
1830	Eitzen silt loam	2.6	0.6%
1952B	Keltner silt loam, 3 to 6 percent slopes	6.6	1.6%
1954B	Spinks loamy fine sand, bedrock substratum, 1 to 6 percent slopes	0.0	0.0%
1954C	Spinks loamy fine sand, bedrock substratum, 6 to 15 percent slopes	2.3	0.6%
1960B	Haverhill variant, clay loam, 1 to 8 percent slopes	2.8	0.7%
W	Water	0.5	0.1%
Totals for Area of Inter	est	404.0	100.0%

SEPA Head States National Clean Diesel Campaign (NCDC) Quantifier Use The Quantifier

Not logged in | login

Working Together for Cleaner Air

DEQ FAQs

1) Fleet Entry >> 2) Vehicle Group Entry >> 3) Technology Entry >> 4) Quantify Results >> 5) Health Benefits

Note: Your session will time out after 30 minutes of inactivity.

Enter Fleet Information Start Over Dabelstein Fleet Type On Highway / Non-road State Minnesota Edit Fleet | <u>Start Over</u> Mining

No retrofit technologies currently applied. To apply a retrofit technology, click on the link below. Add a new technology



Add your first retrofit technology

Quantity 30 Type On Highway Target Fleet Short Haul Class/Equipment Class 8a (33,001-60,000) Model Year 2009 Retrofit Year of Action 2013

Fuel Type Regular Diesel (ULSD), 15 ppm Fuel Volume 526000 Veh. Miles Traveled 105200 Idling Hours 400 Edit Group | Delete Add a New Vehicle Group Quantify Emissions

SEPA United States Environmental Protection National Clean Diesel Campaign (NCDC) Quantifier **Use The Quantifier**

Not logged in | login

Working Together for Cleaner Air

DEQ FAQs

1) Fleet Entry >> 2) Vehicle Group Entry >> 3) Technology Entry >> 4) Quantify Results >> 5) Health Benefits

Note: Your session will time out after 30 minutes of inactivity.

Emissions Results:

The results are broken into four sections: Emissions Results: Annual, Daily; Emissions Results: Lifetime; Funding Sources; and Detailed Results. The data that appear in the Results tables are an aggregation of the emissions from all vehicle groups and technologies that you entered. For information on the results, refer to the User's Guide, 3. Emission Results Screen.

Start Over

Dabelstein

Fleet Type On Highway / Non-road State Minnesota

Edit Fleet

Summary Emissions Results **Detailed Results** Download Results Health Benefits

Summary Emissions Results

Annual	NOx	PM2.5	нс	со	CO2	Diesel-
	(short tons/yea	ar)(short tons/ye	ar)(short tons/ye	ear)(short tons/ye	ear)(short tons/yea	ar) Equivalent
						(gallons/year)
Baseline of Entire Fleet	16.8240	0.1624	0.4222	2.2262	5,838.6000	526,000.0000
Baseline of Vehicles Retrofitted	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Percent Reduced (%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Amount Reduced Per Year	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Daily	NOx	PM2.5	нс	со	CO2	Diesel-
	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	Equivalent (gal/day)
Kilograms Reduced Per Day (kg/day)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Lifetime	NOx	PM2.5	НС	со	CO2	Diesel-
	(short tons)	(short tons)	(short tons)	(short tons)	(short tons)	Equivalent (gallons)
Baseline of Entire Fleet	420.6007	4.0591	10.5545	55.6540	145,965.0000	13,150,000.0000
Baseline of Vehicles Retrofitted	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Percent Reduced(%)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Amount Reduced	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Amount Emitted After Retrofit, Retrofitted Vehicles	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Amount Emitted After Retrofit, Entire Fleet	420.6007	4.0591	10.5545	55.6540	145,965.0000	13,150,000.0000
Fleet Capital Cost Effectiveness (\$/ton),	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Retrofitted Vehicles						
Total Cost Effectiveness (\$/ton), Retrofitted	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Vehicles						
Remaining Lifetime	Short Haul Cl	ass 8a (33,001-	60,000)25.0 yea	rs		

Detailed Results

Detailed Annual Results

Vehicle	Target	Class/Equipment	Model	Retrofit	Number	Usage	Horsepower	Fuel	Fuel	Vehicle Miles	Technology	Number of	Installation	Unit	Тс
Class	Fleet		Year	Year	of	Rate/Year		Туре	Usage	Traveled/Year		Vehicles	Cost	Cost	Pr

Number			Vehicles		(gal)	(VMT)	Retrofitted		Сс

Detailed Lifetime Results

Vehicle	Target	Class/Equipment	Mode	Retrofit	Number	Usage	Horsepower	Fuel	Fuel	Vehicle Miles	Technology	Number of	Installation	Unit	То
Class	Fleet		Year	Year	of	Rate/Year		Туре	Usage	Traveled/Year		Vehicles	Cost	Cost	Pr
Number					Vehicles				(gal)	(VMT)		Retrofitted			Сс

Download Results

You have the option to download the results and inputted data in a Comma Separated Value (CSV) format which can be opened by most spreadsheet software. The downloaded information will appear as it does in the Detailed Results and will include any funding and contact information inputted. For more information on downloading data, refer to the User's Guide <u>3.3 Preview/Download Data</u>.

Detailed Report

View/Download detailed report as

Microsoft Excel file CSV (comma separated values) file

Summary Report

View/Download summary report as

Microsoft Excel file CSV (comma separated values) file

Health Benefits

The Health Benefits Module allows you to estimate the health benefits associated with the scenarios you have developed through the Quantifier, as a result of reductions in fine particulate matter. For more information about what the Health Benefits results do and do not include, please refer to the Health Benefits Methodology document.

Please choose up to five counties where the emission reductions will take place. The percentage of reductions in all the counties chosen must add up to 100 percent.

State	
Minne	sota
Select	State
County	/
Select	County
Total	
Percer	nt

Calculate Benefits

Chris Priebe

From:	Thomas Cinadr [thomas.cinadr@mnhs.org]
Sent:	Wednesday, May 16, 2012 2:30 PM
То:	Chris Priebe
Subject:	Re: SHPO Inquiry - Winona County Sand Pits
Follow Up Flag:	Follow up
Flag Status:	Red
Attachments:	Historic.rtf

THIS EMAIL IS NOT A PROJECT CLEARANCE.

This message simply reports the results of the cultural resources database search you requested. The database search produced results for only previously known archaeological sites and historic properties. Please read the note below carefully.

No archaeological sites were identified in a search of the Minnesota Archaeological Inventory and Historic Structures Inventory for the search area requested. A report containing the historic properties identified is attached.

The result of this database search provides a listing of recorded archaeological sites and historic architectural properties that are included in the current SHPO databases. Because the majority of archaeological sites in the state and many historic architectural properties have not been recorded, important sites or structures may exist within the search area and may be affected by development projects within that area. Additional research, including field survey, may be necessary to adequately assess the area's potential to contain historic properties.

If you require a comprehensive assessment of a project's potential to impact archaeological sites or historic architectural properties, you may need to hire a qualified archaeologist and/or historian. If you need assistance with a project review, please contact Kelly Gragg-Johnson in Review and Compliance @ 651-259-3455 or by email at kelly.graggjohnson@mnhs.org.

The Minnesota SHPO Survey Manuals and Database Metadata and Contractor Lists can be found at http://www.mnhs.org/shpo/survey/inventories.htm

SHPO research hours are 8:00 AM – 4:00 PM Tuesday-Friday. The Office is closed on Mondays.

STATE HISTORICAL PRESERVATION OFFICE REPORT

Tom Cinadr

Survey and Information Management Coordinator 651-259-3453

On Mon, May 14, 2012 at 11:27 AM, Chris Priebe <<u>chrisp@ggg.to</u>> wrote:

May 14, 2012

Tom Cinadr

Survey and Information Management Coordinator

Minnesota State Historic Preservation Office

thomas.cinadr@mnhs.org

651-259-3453

RE: Winona County Sand Pits Database Search, Saratoga Township, Winona County, MN

Tom Cinadr,

G-Cubed Engineering is requesting a database search for historical architecture and archaeological sites located in the given area.

The SE $\frac{1}{4}$ of Section 9, the E $\frac{1}{2}$ of Section 16, the W $\frac{1}{2}$ of Section 15, The NE $\frac{1}{4}$ of Section 21, the NW $\frac{1}{4}$ of Section 22, the W $\frac{1}{2}$ of Section 14, the SE $\frac{1}{4}$ of Section 14, and the N $\frac{1}{2}$ of Section 23 all in Township 105 N, Range 10 W, in Winona County, MN.

An EAW is being prepared for a surface excavation and mining operation in Saratoga Township, Winona

County, Minnesota. Please call me with any questions.

Please respond to my email at <u>chrisp@ggg.to</u>

Thank you,

Chris Priebe

Christopher Priebe

Engineering Specialist

G-Cubed

14070 Hwy. 52 SE

Chatfield, MN 55923

Phone: (507)-867-1666 ext. 104

Cell: (507)-259-5266

Fax: (507)-867-1665

This E-mail and any files transmitted with it are confidential and are intended solely for the use of the individual or entity to which they are addressed. If you are not the intended recipient or the person responsible for delivering the E-mail to the intended recipient be advised that you have received this E-mail in error and that any use, dissemination, forwarding, printing, copying of this E-mail is strictly prohibited. If you have received this E-mail in error, please notify G-Cubed. by telephone at 507-867-1666

History/Architecture Inventory

PROPERTY NAME	ADDRESS	Twp	Range	Sec Quarters	USGS	Report	NRHP	CEF	DOE	Inventory Number
COUNTY: Winona										
CITY/TOWNSHIP: Saratoga Twp.										
school	off Co. Hwy. 35	105	10	15 NW-NE-NW	St. Charles					WN-SAR-008
Evergreen Lodge No. 46	SW corner Co. Hwy. 6 & Co. Hwy. 35	105	10	14 SE-NE-SE	Utica					WN-SAR-009
District School No. 63 (moved)	off Co. Hwy. 6	105	10	21 NE-NW-SE	St. Charles					WN-SAR-011
Saratoga Township Hall		105	10	21 SW-SE-NE	St. Charles					WN-SAR-012

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Custom Soil Resource Report Map—Farmland Classification





Table—Farmland Classification

	Farmland Classification— Summary I	oy Map Unit — Winona County,	Minnesota (MN16	9)
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
11D	Sogn silt loam, rocky, 6 to 30 percent slopes	Not prime farmland	8.2	3.7%
285A	Port Byron silt loam, 1 to 3 percent slopes	All areas are prime farmland	3.7	1.7%
285B	Port Byron silt loam, 3 to 6 percent slopes	All areas are prime farmland	60.7	27.5%
285C	Port Byron silt loam, 6 to 12 percent slopes	Farmland of statewide importance	7.3	3.3%
301A	Lindstrom silt loam, 1 to 3 percent slopes	All areas are prime farmland	74.9	34.0%
301C	Lindstrom silt loam, 6 to 12 percent slopes	Farmland of statewide importance	11.8	5.4%
301D	Lindstrom silt loam, 12 to 20 percent slopes	Not prime farmland	9.2	4.2%
322C2	Timula silt loam, 6 to 12 percent slopes, eroded	Farmland of statewide importance	1.9	0.9%
401C	Mt. Carroll silt loam, 6 to 12 percent slopes	Farmland of statewide importance	1.8	0.8%
401D	Mt. Carroll silt loam, 12 to 20 percent slopes	Not prime farmland	2.8	1.3%
476B	Frankville silt loam, 2 to 6 percent slopes	All areas are prime farmland	2.3	1.0%
476C	Frankville silt loam, 6 to 12 percent slopes	Farmland of statewide importance	7.9	3.6%
476D	Frankville silt loam, 12 to 18 percent slopes	Not prime farmland	1.2	0.6%
484D	Eyota fine sandy loam, 12 to 20 percent slopes	Not prime farmland	5.0	2.3%
826B	Gale-Blackhammer silt loams, 2 to 6 percent slopes	All areas are prime farmland	2.2	1.0%
898F	Bellechester-Brodale complex, rocky, 15 to 60 percent slopes	Not prime farmland	17.0	7.7%
1830	Eitzen silt loam	All areas are prime farmland	0.2	0.1%
1954C	Spinks loamy fine sand, bedrock substratum, 6 to 15 percent slopes	Not prime farmland	2.3	1.0%
Totals for Area of	Interest		220.4	100.0%

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Vegetative Productivity

Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

Crop Productivity Index

Crop productivity index ratings provide a relative ranking of soils based on their potential for intensive crop production. An index can be used to rate the potential yield of one soil against that of another over a period of time. Ratings range from 0 to 100. The higher numbers indicate higher production potential. The rating is not crop specific.

When the soils are rated, the following assumptions are made: a) adequate management, b) natural weather conditions (no irrigation), c) artificial drainage where required, d) no frequent flooding on the lower lying soils, and e) no land leveling or terracing. Even though predicted average yields will change with time, the productivity indices are expected to remain relatively constant in relation to one another over time.

Custom Soil Resource Report Map—Crop Productivity Index





C	crop Productivity Index— Summary by Map	Unit — Winona Co	County, Minnesota (MN169)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI			
11D	Sogn silt loam, rocky, 6 to 30 percent slopes	6	8.2	3.7%			
285A	Port Byron silt loam, 1 to 3 percent slopes	99	3.7	1.7%			
285B	Port Byron silt loam, 3 to 6 percent slopes	98	60.7	27.5%			
285C	Port Byron silt loam, 6 to 12 percent slopes	91	7.3	3.3%			
301A	Lindstrom silt loam, 1 to 3 percent slopes	99	74.9	34.0%			
301C	Lindstrom silt loam, 6 to 12 percent slopes	92	11.8	5.4%			
301D	Lindstrom silt loam, 12 to 20 percent slopes	73	9.2	4.2%			
322C2	Timula silt loam, 6 to 12 percent slopes, eroded	78	1.9	0.9%			
401C	Mt. Carroll silt loam, 6 to 12 percent slopes	80	1.8	0.8%			
401D	Mt. Carroll silt loam, 12 to 20 percent slopes	67	2.8	1.3%			
476B	Frankville silt loam, 2 to 6 percent slopes	58	2.3	1.0%			
476C	Frankville silt loam, 6 to 12 percent slopes	55	7.9	3.6%			
476D	Frankville silt loam, 12 to 18 percent slopes	43	1.2	0.6%			
484D	Eyota fine sandy loam, 12 to 20 percent slopes	59	5.0	2.3%			
826B	Gale-Blackhammer silt loams, 2 to 6 percent slopes	68	2.2	1.0%			
898F	Bellechester-Brodale complex, rocky, 15 to 60 percent slopes	3	17.0	7.7%			
1830	Eitzen silt loam	91	0.2	0.1%			
1954C	Spinks loamy fine sand, bedrock substratum, 6 to 15 percent slopes	39	2.3	1.0%			
Totals for Area of In	terest		220.4	100.0%			

Rating Options—Crop Productivity Index

Aggregation Method: Weighted Average Component Percent Cutoff: None Specified Tie-break Rule: Higher Interpret Nulls as Zero: Yes







September 21, 2012

Mr. Stuart Hagen 301 Water Street, Suite #3 Eau Claire, WI 54703

Subject:Archaeological Assessment for the Proposed Frac Sand Processing
Operations, Roger Dabelstein Property, Winona County, Minnesota

Dear Mr. Hagen:

Summit Envirosolutions, Inc. (Summit) is pleased to submit the following letter report describing the archaeological assessment completed for the proposed Frac Sand Processing Operations on the Dabelstein property in Winona County, Minnesota.

Introduction

This letter report describes the Area of Potential Effect (APE) for archaeological resources, identifies previously recorded archaeological sites and surveys in proximity to the project area, provides results of the visual assessment of the APE, and provides recommendations for further archaeological investigations.

Area of Potential Effect (APE)

The project is located within the Southeast Riverine West Region, as defined by the State Historic Preservation Office (Anfinson 1990). The project area is located in Township 105 North, Range 10 West, Sections 15, 16, 21, and 22, in Saratoga Township, Winona County, Minnesota (Figure 1). The APE for archaeology was defined by the landowner and is depicted in Figure 1.

Background Research

Laurie Ollila, Principal Investigator at Summit, conducted literature and archival research at the State Historic Preservation Office (SHPO), the Minnesota Historical Society (MHS) and the University of Minnesota, Twin Cities Campus (U of M) in September 2012. The purpose of this research was to identify previously recorded archaeological sites and previous cultural resources surveys conducted in the vicinity of the project area. Topographic maps, soil surveys, original vegetation maps, aerial photographs, Trygg maps and historic plat maps were consulted to obtain historical information about the proposed project area and its potential to contain previously-unidentified cultural resources.

Recorded Sites within One Mile of the Project Area

Results of the literature and archival research indicate that there are no previously recorded (field-verified) or reported (not field-verified) sites in or within one mile of the project area.

Previous Surveys within the Project Area

Background research results indicate that no archaeological investigations have been previously conducted within or adjacent to the project area.

Archaeological Potential of the Project APE

The assessment of an area's potential to contain precontact archaeological resources is based on the analysis of the terrain, water sources, and other natural resources in and adjacent to that area. Permanently wet areas (e.g., wetlands and streams), poorly drained areas, and areas with slopes greater than 20 percent are generally considered inhospitable to human occupation and are unlikely to contain cultural resources. In general, areas with higher precontact archaeological potential are in proximity to a relatively substantial water source, typically within 500 feet, though the exact distance often varies according to environmental conditions such as the size of the body of water, the nature of the water source (perennial versus intermittent), and the extent of the floodplain. Topographic prominence and proximity to previously recorded precontact sites are also typically indicative of high precontact archaeological potential.

The USGS topographic map of the project area indicates that the project area is situated on the southwest end of an upland landform that overlooks intermittent streams to the west and north. Based on its topographic relationship and proximity to the water sources, this portion of the project area is considered to have moderate potential for containing precontact archaeological resources.

Areas in proximity to former or existing historic-period buildings or structures are considered to hold higher potential for containing historical-archaeological resources. These areas are not limited to the locations of buildings, as often the most important information comes from deposits within associated features, such as privies, cisterns, or middens, which were located away from primary buildings.

A review of historical maps dating to 1853, 1867, 1874, 1894, 1914, 1927, and 1939 indicate that sometime between 1853 and 1867, a farmstead was established in the SE 1/4 of the NE 1/4 of Section 21, T105N, R10W, just west of the southern end of the proposed quarry entrance road (General Land Office 1853; Bennett 1867; Andreas 1874; Foote 1894; Webb Publishing Company 1914; Farm Stock and Home 1927; Rockford Map Publishers 1939). As of 1867, the farmstead was owned by L. S. Cravath and comprised 120 acres. The 1894 plat map of the project area depicts a farmstead just east of the 1867 location in the NE 1/4 of the SE 1/4 of the NE ¹/₄ of Section 21, but no farmstead is illustrated in the location of the farmstead shown on the 1867 map (Foote 1894). It is unclear whether the map differences represent two different farmsteads or a locational discrepancy resulting from a cartographic error, though the location of the farmstead on the 1894 map corresponds with the current location of the extant farmstead. The farmstead shown on the 1894 map is listed as being owned by M. H. Phillips and labeled as "The Elms Stock Farm." At that time, the farm encompassed 79 acres (Foote 1894). By 1914, ownership of the property had been transferred to W. E. Walker, though no building is depicted on the property. Since a farmstead is depicted in that location on the 1939 plat map of the project area, the omission of the building on the 1914 map may

have been an error. The 1939 plat map indicates that by that date, the farmstead had been incorporated into a 218.83-acre parcel owned by Irene Gladys and Leland Ferden (Webb Publishing Company 1914; Rockford Map Publishers 1939).

Historical aerial photographs dating to 1936, 1940, 1947, 1951, 1954, 1962, 1968, and 1991/1992 and current aerial photographs of the project area were also reviewed. These photographs show a field access flanked by outbuildings in the vicinity of the southern end of the proposed quarry entrance road from 1936 through at least 1991/1992. This portion of the farmstead is partially cleared and overgrown on current aerial photographs of the project area. Based on the proximity of the farmstead to the proposed road, this portion of the APE is considered to have moderate potential for containing historical-archaeological resources. The remaining portions of the APE are at a significant distance from the farmstead and do not contain any structures, outbuildings or any other features associated with the farmstead on any of the reviewed aerial photographs and are therefore considered to have low potential for containing historical-archaeological resources.

Visual Assessment

Garrett Knudsen, Principal Investigator at Summit, conducted the field assessment on September 20, 2012. The field assessment consisted of a surface survey reconnaissance of the project APE, specifically to determine if there is any evidence of burial mounds or other prehistoric land use in the APE and to determine potential methods for a possible Phase I Archaeological Survey.

Visual assessment was used in conjunction with results of the literature search to ascertain which portions of the APE hold moderate to high potential for containing archaeological sites (generally, raised landforms in proximity to water with less than 20% slope), especially burial mounds. These areas were investigated through archaeological surface survey, which consisted of a systematic pedestrian transects by field personnel walking in regular intervals (15 meters/50 feet) to observe exposed surfaces for the presence of cultural materials.

The large raised terrace located in the northern portion of the project area was considered medium potential and was surveyed. This landform had exposed rock faces along its southern and western edges. The flat surface of the landform is currently under cultivation, with corn rows covering the entire area with the exception of a grove of trees extending along its western edge. Occasional fragments of weathered limestone were encountered, especially along the edges of the plowed area. Survey conditions were excellent, with over 75% surface visibility. Photos were taken of areas surveyed (see **Plate 1**).

The systematic pedestrian survey identified no evidence of cultural resources in the APE. No burial site or other evidence of prehistoric land use was identified within the project APE during this survey. No artifacts of cultural debris were identified during survey.

Recommendations

No evidence of prehistoric land use was encountered during systematic survey of portions of the APE with medium-probability for holding unrecorded precontact archaeological sites. No further survey is recommended for these areas.

Based on the moderate potential of the southern end of the proposed quarry entrance road to contain historical-archaeological resources, a Phase I survey is recommended for those portions of the APE in proximity to the farmstead.

Should the project area be expanded to include portions of the farmstead outside of the current APE, a Phase I survey of the additional areas is recommended.

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If you have any questions or require additional information, feel free to contact me at the phone number or e-mail address provided below.

Sincerely,

Summit Envirosolutions, Inc.

Laurie Allila

Laurie Ollila, M.A., RPA Staff Archaeologist (651) 842-4210 <u>lollila@summite.com</u>

Garrett Knudsen, M.A. Principal Investigator (973) 432-4897 <u>gknudsen@summite.com</u>

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Plate 1. Photos of project area APE, including elevated areas, exposed ground surface, and possible historic farmstead location.