

Mineral Potential Evaluation Section (MPES) Report 380: Aggregate Resource Potential in Parts of Northern St. Louis and Lake Counties, MN

- Field Observations - report380_fobs

This page last updated: 2011

Metadata created using [Minnesota Geographic Metadata Guidelines](#)

Metadata Summary

Originator	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section
Abstract	This dataset includes information gathered in the field. Fieldwork was completed in the fall of 2009 and spring of 2010. It includes 841 field observation sites within the project boundary in parts of northern St. Louis County and Lake County, Minnesota. Observations include, but are not limited to: aggregate pits (gravel pits, sand pits), sand pits, and borrow pits; test holes; exposures of surficial geologic sediment, glacial stratigraphy, and bedrock formations in road cuts or along stream banks; excavations for basements, judicial ditches, construction projects, and trenches (cable, pipe, tiling). This spatial dataset contains a field description of each site, the dominant type of material encountered, the source of information, geologic unit thickness, and geologic overburden thickness.
Browse Graphic	none available
Time Period of Content Date	2010
Currentness Reference	Data were collected in the fall of 2009 and spring of 2010
Access Constraints	
Use Constraints	Acknowledgement of the Minnesota Department of Natural Resources is appreciated for products derived from these data.
Distributor Organization	Minnesota Department of Natural Resources, Division of Lands and Minerals
Ordering Instructions	<p>The MPES Report 380's spatial datasets (shapefiles & file geodatabase) are included in the file report380data.zip, accessible from the MN DNR Aggregate Mapping web page: http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html</p> <p>The spatial datasets include: sand and gravel resource potential, clay and silt resource potential, field observations, aggregate pits, Minnesota Geological Survey (MGS) County Well Index (CWI) data points, MGS CWI stratigraphy table, sieve analysis database, Mn/DOT Aggregate Source Information System (ASIS) points, and Mn/DOT ASIS pit quality table.</p>
Online Linkage	Click here to download data. (See Ordering Instructions above for details.) By clicking here, you agree to the notice in "Distribution Liability" in Section 6 of this metadata.

Full Metadata

Mineral Potential Evaluation Section (MPES) Report 380: Aggregate

Resource Potential in Parts of Northern St. Louis and Lake Counties, MN

- Field Observations - report380_fobs

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Section 1	Identification Information	Top of page
Originator	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section	
Title	Mineral Potential Evaluation Section (MPES) Report 380: Aggregate Resource Potential in Parts of Northern St. Louis and Lake Counties, MN - Field Observations - report380_fobs	
Abstract	This dataset includes information gathered in the field. Fieldwork was completed in the fall of 2009 and spring of 2010. It includes 841 field observation sites within the project boundary in parts of northern St. Louis County and Lake County, Minnesota. Observations include, but are not limited to: aggregate pits (gravel pits, sand pits), sand pits, and borrow pits; test holes; exposures of surficial geologic sediment, glacial stratigraphy, and bedrock formations in road cuts or along stream banks; excavations for basements, judicial ditches, construction projects, and trenches (cable, pipe, tiling). This spatial dataset contains a field description of each site, the dominant type of material encountered, the source of information, geologic unit thickness, and geologic overburden thickness.	
Purpose	To summarize the field observations collected in the MPES Report 380's project boundary. These field observations were made to confirm air photo interpretation that identified potential aggregate bearing landforms.	
Time Period of Content Date	2010	
Currentness Reference	Data were collected in the fall of 2009 and spring of 2010	
Progress	Complete	
Maintenance and Update Frequency	None planned	
Spatial Extent of Data	Northern St. Louis County and Lake County, Minnesota	
Bounding Coordinates	-92.30 -91.65 47.92 47.45	
Place Keywords	St. Louis County, Lake County, Minnesota	
Theme Keywords	Field observations, aggregate resources, surficial geology.	
Theme Keyword Thesaurus		
Access Constraints		

<i>Use Constraints</i>	Acknowledgement of the Minnesota Department of Natural Resources is appreciated for products derived from these data.
<i>Contact Person Information</i>	Aggregate Resource Mapping Program, Industrial Minerals Geologist or GIS Specialist Minnesota Department of Natural Resources, Division of Lands and Minerals 500 Lafayette Road St. Paul, MN 55155-4045 Phone: 651-259-5959 FAX: 651-296-5939 E-mail: aggregatemap@state.mn.us
<i>Browse Graphic</i>	none available
<i>Browse Graphic File Description</i>	
<i>Associated Data Sets</i>	<p>The MPES Report 380's spatial datasets (shapefiles & file geodatabase) are included in the file report380data.zip, accessible from the MN DNR Aggregate Mapping web page: http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html</p> <p>The spatial datasets include: sand and gravel resource potential, clay and silt resource potential, field observations, aggregate pits, Minnesota Geological Survey (MGS) County Well Index (CWI) data points, MGS CWI stratigraphy table, sieve analysis database, Mn/DOT Aggregate Source Information System (ASIS) points, and Mn/DOT ASIS pit quality table.</p> <p>The field observations dataset (report380_fobs.shp) can be joined to the sieve analysis datatable (report380_sieve.dbf) through the primary key 'FIELD_ID'. The sieve analysis datatable displays the sieve results of 74 samples that were taken in the field.</p>

Section 2	Data Quality Information	Top of full metadata	Top of page
<i>Attribute Accuracy</i>			
<i>Logical Consistency</i>			
<i>Completeness</i>	The data points were gathered at the location where field observations took place. Additional information is given in the Lineage section.		
<i>Horizontal Positional Accuracy</i>	The differential correction of the GPS unit for GPS located sites is +/- 2 meters.		
<i>Vertical Positional Accuracy</i>	Not applicable.		
<i>Lineage</i>	A tablet PC, a GPS unit (Garmin Etrex), ArcGIS 9.3 software, and the GPS toolbar in ArcGIS 9.3 were used in the field to determine the track and location of the observer collecting the points. Field observation points were digitized in real time, as well as, the entered tabular attribute information. The combination of the GPS unit's location, USGS topographic maps (1:24,000), and aerial photographs (1:3,000 - 1:12,000) were used to assist in determining the observation's site location on screen. The GPS unit (with differential correction) is accurate to approximately a few meters.		
<i>Source Scale Denominator</i>	3000		

Section 3	Spatial Data Organization Information	Top of full metadata	Top of page
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<i>Native Data Set Environment</i>	ArcGIS 9.3
<i>Geographic Reference for Tabular Data</i>	
<i>Spatial Object Type</i>	Point
<i>Vendor Specific Object Types</i>	Point
<i>Tiling Scheme</i>	MPES Report 380 Project Boundary

Section 4	Spatial Reference Information	Top of full metadata	Top of page
<i>Horizontal Coordinate Scheme</i>	UTM		
<i>Ellipsoid</i>	GRS80		
<i>Horizontal Datum</i>	NAD83		
<i>Horizontal Units</i>	Meters		
<i>Distance Resolution</i>			
<i>Altitude Datum</i>	Not applicable		
<i>Depth Datum</i>	Not applicable		
<i>UTM Zone Number</i>	15E		

Section 5	Entity and Attribute Information	Top of full metadata	Top of page
<i>Entity and Attribute Overview</i>	This dataset consists of field observation unique id, type of site, type of geologic material, description of the observation, unit thickness, overburden thickness, sampled (Y/N), and gravel percentage of material if sampled.		
<i>Entity and Attribute Detailed Citation</i>	Attribute values can be found in a table at the bottom of this document (report380_fobs.pdf). If you are viewing this metadata in ArcCatalog, from the .xml file, the attribute table is not displayed. You will have to refer to the 'report380_fobs.pdf' document included in the project zip file report380data.zip, which can be found at the following folder directory: report380data\resource\shapefiles\mn_dnr\metadata		

Section 6	Distribution Information	Top of full metadata	Top of page
<i>Publisher</i>	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section		
<i>Publication Date</i>	2011		
<i>Contact Person Information</i>	Aggregate Resource Mapping Program Industrial Minerals Geologist or GIS Specialist Minnesota Department of Natural Resources, Division of Lands and Minerals 500 Lafayette Road St. Paul, MN 55155-4045 Phone: 651-259-5959		

FAX: 651-296-5939
E-mail: aggregatemap@state.mn.us

Distributor's Data Set Identifier

MPES Report 380: Aggregate Resource Potential in Parts of Northern St. Louis and Lake Counties, MN

Distribution Liability

The Minnesota Department of Natural Resources makes no representation or warranties, express or implied, with respect to the reuse of data provided herewith, regardless of its format or the means of its transmission. There is no guarantee or representation to the user as to the accuracy, currency, suitability, or reliability of this data for any purpose. The user accepts the data 'as is', and assumes all risks associated with its use. By accepting this data, the user agrees not to transmit this data or provide access to it or any part of it to another party unless the user shall include with the data a copy of this disclaimer. The Minnesota Department of Natural Resources assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data.

Transfer Format Name

Transfer Format Version Number

Transfer Size

mb for data, mb for associated maps

Ordering Instructions

The MPES Report 380's spatial datasets (shapefiles & file geodatabase) are included in the file report380data.zip, accessible from the MN DNR Aggregate Mapping web page:
http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html
The spatial datasets include: sand and gravel resource potential, clay and silt resource potential, field observations, aggregate pits, Minnesota Geological Survey (MGS) County Well Index (CWI) data points, MGS CWI stratigraphy table, sieve analysis database, Mn/DOT Aggregate Source Information System (ASIS) points, and Mn/DOT ASIS pit quality table.

Online Linkage

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Section 7

Metadata Reference Information

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Metadata Date

2011

Contact Person Information

Aggregate Resource Mapping Program, Industrial Minerals Geologist or GIS Specialist
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St. Paul, MN 55155-4045
Phone: 651-259-5959
FAX: 651-296-5939
E-mail: aggregatemap@state.mn.us

Metadata Standard Name

Minnesota Geographic Metadata Guidelines

Metadata Standard Version

2.1

Metadata Standard Online Linkage

<http://www.lmic.state.mn.us/gc/stds/metadata.htm>

This page last updated: 2011

Table Name	Field Name	Begin	Definition	Valid Values	Descriptions
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		Column			
report380_fobs.dbf	FIELD_ID		Text, 8	Ex: 001, 008, 125	Unique identifiers used in the field. Can be joined to the Sieve Analysis Table for samples results where taken.
	SITETYPE_1		Text, 25	See Below	
				Borrow Pit	A pit usually dug in material that is not sand and gravel.
				Drill Hole	Test hole drilled with a Giddings Soil probe.
				Excavation	Badger holes, trenches, construction areas, or foundations.
				Exposure	Outcrop of material from erosional processes.
				Gravel Pit	Gravel pits exposing sand and gravel material.
				Other	Based on communication or observation.
				Sand Pit	Pit exposing sand with little to no gravel.
	SITETYPE_2		Text, 25	See Below	Further description of the observation site specified in SITE_TYPE1.
				Animal Hole	A hole dug by an animal which exposes sediment.
				ATV Trail	Sediment exposed within trail for ATVs.
				Borrow Pit	A mined pit for construction material.
				Communication	Contact with landowners, drillers, and experts verifying well records.
				Construction	Mining or digging due to construction.
				Ditch	Material exposed in a ditch due to a slump or landscaping that has removed vegetation.
				Drainage	Material exposed in a small water drainage feature.
				Drill Hole	Material extracted from drilling. Test hole drilled with a 6-inch auger.
				Driveway	Surficial material exposed in driveway.
				Embankment	Sediment exposed in a slope or hill where vegetation is

					patchy or lacking.
				Foundation	Sediment exposed through excavation of material for future building foundation.
				Gravel Pit	Materials exposed in gravel pit.
				Outcrop	Exposure of bedrock outcrop.
				Pond	Excavation filled in with water creating a pond.
				River Cut	Sediment exposed by river erosion.
				Road Cut	Materials exposed in a road cut.
				Sand Pit	Pit excavation revealing sand with little to no gravel.
				Shovel	Sediment revealed by excavation with a shovel.
				Surface	Exposures of bedrock/material on the ground surface.
				Telephone Pole	Sediment exposed due to drilling and installation of new telephone poles.
				Trail	Exposure of surface sediment in a hiking trail.
				Tree Tip	Exposure after a tree blows over and roots are tilted out of the ground revealing underlying sediment.
	MATERIAL_1		Text, 25	See Below	Describes the primary type of material encountered at each observation site and does not necessarily reflect stratigraphic order.
				Bedrock	Outcrop of bedrock, or presence of bedrock boulders.
				Boulders	Presence of bedrock boulders.
				Clay	Clay is a very fine-grained sediment that is less than 0.004 mm in size.
				Cobbles	Clasts that range in size from 3 inches to 10 inches.
				Gravel with Sand	Sediment that contains a mixture of rocks in varying sizes ranging from 0.0625 to 64 mm. This description is given to sediment that contains greater than 50% by

					volume gravel.
				Organics	Soil that contains decaying organic matter.
				Rocky Soil	Observation based on surficial exposure usually within tilled field or pasture with little vegetation.
				Sand	Sand is composed of rocks and minerals that range in diameter from 0.0625 to 2 mm.
				Sand and Gravel	Sediment that contains a mixture of rocks in varying sizes ranging from 0.0625 to 64 mm. This description is given to sediment that contains greater than 15% by volume gravel.
				Sand minor Gravel	Sediment that contains a mixture of rocks in varying sizes ranging from 0.0625 to 64 mm. This description is given to sediment that contains approximately less than 7% by volume gravel.
				Sand with Gravel	Sediment that contains a mixture of rocks in varying sizes ranging from 0.0625 to 64 mm. This description is given to sediment that contains less than 15% by volume gravel.
				Silt	A fine grained sediment that has a diameter between 0.004 to 0.0625 mm.
				Silty Sand	Sand that contains some silt.
				Till	A term used to describe the unsorted sediment deposited by glaciers- contains a mixture of clay, silt, sand, gravel and boulders.
	MATERIAL_2		Text, 25	See Below	Describes the secondary (not primary) type of material at each observation site.
				Bedrock	Outcrop of bedrock or presence of bedrock within drill hole.
				Boulders	Presence of bedrock boulders.
				Clay	Clay is a very fine-grained sediment that is less than 0.004 mm in size.

				Organics	Developed P soil horizon, indicating organic material and a high water table.
				Sand	Sand is composed of rocks and minerals that range in diameter from 0.0625 to 2 mm.
				Sand and Gravel	Sediment that contains a mixture of rocks in varying sizes ranging from 0.0625 to 64 mm. This description is given to sediment that contains greater than 15% by volume gravel.
				Sand with Gravel	Sediment that contains a mixture of rocks in varying sizes ranging from 0.0625 to 64 mm. This description is given to sediment that contains less than 15% by volume gravel.
				Silt	A fine grained sediment that has a diameter between 0.004 to 0.0625 mm.
				Silty Sand	Sand that contains some silt.
				Till	A term used to describe the unsorted sediment deposited by glaciers- contains a mixture of clay, silt, sand, gravel and boulders. Within the boundaries of Project of MPES Report 380 almost all till was created by the Rainy Lobe. There is some influence of Superior Lobe sourced outwash and it is questionable if there is any Superior Lobe till within the project boundaries. Rainy Lobe till content reflects the immediate bedrock geology. Therefore it varies from granite rich till to Duluth Complex rich till. Generally the till has a sandy matrix and is gray-tan in color.
				Topsoil	Presence of developed A soil horizon.
	FIELDDESC		Text, 100	Ex: Drill Hole (0-9 ft) 0-6 Till, 6-9 Gravel.	A short field description of the observation site.
	THICKNESS		Text, 15, 0	+7, 5-15, Not Available	A description of thickness of the geological unit. Not Available indicates that the measurement does not apply

					or was not observed.
	THICK_MOD		Text, 1	See Below	Modifies the thick_min or thick_max (i.e., Thickness field).
				+	Greater Than
				-	To, as in 10-20
	THICK_MIN		Number	Ex: 2, 6, 50, -999	The minimum thickness of the observed unit (-999 value is null).
	THICK_MAX		Number	Ex: 20, 50, -999	The maximum thickness of the observed unit (-999 value is null).
	OVERBURDEN		Text, 15, 0	5-15, +5, ~10, Not Available	A description of the overburden covering an aggregate unit. Not Available indicates that the measurement does not apply or was not observed.
	OVER_MOD		Text, 1	See Below	Modifies the Ob_min or Ob_max (i.e., Thickness field).
				+	Greater Than
				-	To, as in 10-20
				~	Approximately
	OVER_MIN		Number	Ex: 2, 9, 35, -999	A description of the minimum thickness of the overburden covering the unit (-999 value is null).
	OVER_MAX		Number	Ex: 3, 5, 10, -999	A description of the maximum thickness of the overburden covering the unit (-999 value is null).
	SAMPLED		Text, 3	Yes or No	Indicates whether the material was sampled. Not all sampled material was tested.
	GRAVEL_PCT		Number	Ex. 44	Percent gravel retrieved from the sieve analysis on sampled units (-999 value is null).
	QUAL_DATA		Text, 3	Yes or No	Mn/DOT conducted the following two quality tests on 12 samples: Concrete Aggregate (CA) and Coarse and Fine Gradations