

**Stearns County, Minnesota - Aggregate Resources**  
**Test Hole Drilling and Sampling**  
**stea\_testholes**

---

**Metadata Summary**

<b><i>Originator</i></b>	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section
<b><i>Abstract</i></b>	This dataset includes information gathered in the field. Fieldwork was completed in the fall of 2010 and spring of 2011. It includes 78 test hole drilling sites within Stearns County, Minnesota. Samples were taken from 23 of the 78 test holes and tested by the Mn/DOT for construction aggregate gradations and quality. 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. For the 23 sampled locations there are fields related to gradations and quality.
<b><i>Browse Graphic</i></b>	none available
<b><i>Time Period of Content Date</i></b>	2011
<b><i>Currentness Reference</i></b>	Data were collected in the fall of 2010 and spring of 2011
<b><i>Access Constraints</i></b>	
<b><i>Use Constraints</i></b>	Acknowledgement of the Minnesota Department of Natural Resources is appreciated for products derived from these data.
<b><i>Distributor Organization</i></b>	Minnesota Department of Natural Resources, Division of Lands and Minerals
<b><i>Ordering Instructions</i></b>	<p>Stearns County's aggregate resource spatial datasets (shapefiles &amp; file geodatabase) are included in the file Stearnsdata.zip, accessible from the MN DNR Aggregate Mapping web page: <a href="http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html">http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html</a></p> <p>The spatial datasets include: sand and gravel resource potential, crushed stone potential, test-holes drilled, geologic field observations, aggregate pits, Minnesota Geological Survey (MGS) County Well Index (CWI) data points, Mn/DOT Aggregate Source Information System (ASIS) points, and Mn/DOT ASIS pit quality table.</p>
<b><i>Online Linkage</i></b>	<a href="#">Click here</a> 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

### Stearns County, Minnesota - Aggregate Resources: Test Hole Drilling stea\_testholes

Section 1	Identification Information		
<b>Originator</b>	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section		
<b>Title</b>	Stearns County Aggregate Resources: stea_testholes (Test Hole Drilling)		
<b>Abstract</b>	This dataset includes information gathered in the field. Fieldwork was completed in the fall of 2010 and spring of 2011. It includes 78 test hole drilling sites within Stearns County, Minnesota. Samples were taken from 23 of the 78 test holes and tested by the Mn/DOT for construction aggregate gradations and quality. 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. For the 23 sampled locations there are fields related to gradations and quality.		
<b>Purpose</b>	To summarize the test holes collected in Stearns County, Minnesota. These test holes were made to confirm air photo interpretation that identified potential aggregate bearing landforms.		
<b>Time Period of Content Date</b>	2011		
<b>Currentness Reference</b>	Data were collected in the fall of 2010 and spring of 2011		
<b>Progress</b>	Complete		
<b>Maintenance and Update Frequency</b>	None planned		
<b>Spatial Extent of Data</b>	Stearns County, Minnesota		
<b>Bounding Coordinates</b>	-95.13 -94.05 45.79 45.27		
<b>Place Keywords</b>	Stearns County, Minnesota		
<b>Theme Keywords</b>	Test hole drilling, aggregate quality, sieve, gradations, aggregate resources, surficial geology.		
<b>Theme Keyword Thesaurus</b>			
<b>Access Constraints</b>			
<b>Use Constraints</b>	Acknowledgement of the Minnesota Department of Natural Resources is appreciated for products derived from these data.		
<b>Contact Person Information</b>	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: <a href="mailto:aggregatemap@state.mn.us">aggregatemap@state.mn.us</a>		

**Browse Graphic**

none available

**Browse Graphic  
File Description****Associated Data  
Sets**

Stearns County's aggregate resource spatial datasets (shapefiles & file geodatabase) are included in the file Stearnsdata.zip, accessible from the MN DNR Aggregate Mapping web page:  
[http://www.dnr.state.mn.us/lands\\_minerals/aggregate\\_maps/completed/index.html](http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html)  
The spatial datasets include: sand and gravel resource potential, crushed stone potential, test-holes drilled, geologic field observations, aggregate pits, Minnesota Geological Survey (MGS) County Well Index (CWI) data points, Mn/DOT Aggregate Source Information System (ASIS) points, and Mn/DOT ASIS pit quality table.

**Section 2****Data Quality Information****Attribute Accuracy****Logical Consistency****Completeness**

The data points were gathered at the location where the test holes were drilled. Additional information is given in the Lineage section.

**Horizontal  
Positional Accuracy**

The differential correction of the GPS unit for GPS located sites is +/- 2 meters.

**Vertical Positional  
Accuracy**

Not applicable.

**Lineage**

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. Test hole points were digitized in real time, as well as, much of the 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.

**Source Scale  
Denominator**

3000

**Section 3****Spatial Data Organization  
Information****Native Data Set  
Environment**

ArcGIS 9.3

**Geographic  
Reference for  
Tabular Data****Spatial Object Type**

Point

**Vendor Specific  
Object Types**

Point

**Tiling Scheme**

None

Section 4	Spatial Reference Information		
<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		
<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>	See beyond Section 7 for detailed field and attribute information		

Section 6	Distribution Information		
<i>Publisher</i>	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section		
<i>Publication Date</i>	2012		
<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: <a href="mailto:aggregatemap@state.mn.us">aggregatemap@state.mn.us</a>		
<i>Distributor's Data Set Identifier</i>	Stearns County Aggregate Resources, Sand and Gravel Potential		
<i>Distribution Liability</i>	The State of Minnesota makes no representations or warranties express or implied, with respect to the use of the information contained herein 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, completeness, usefulness, or reliability of this information for any purpose. The user accepts the information "as is." The State of Minnesota assumes no responsibility for loss or damage incurred as a result of any user's reliance on this information. All maps, reports, data, and other information contained herein are protected by copyright. Permission is granted to copy and use the materials herein for any lawful noncommercial purpose. Any user of this information agrees not to transmit or provide access to all or any part of this information to another party unless the user shall include with the information a copy of this disclaimer.		
<i>Transfer Format</i>			

**Name**

**Transfer Format**

**Version Number**

**Transfer Size**

mb for data, mb for associated maps

**Ordering  
Instructions**

Stearns County's aggregate resource spatial datasets (shapefiles & file geodatabase) are included in the file Stearnsdata.zip, accessible from the MN DNR Aggregate Mapping web page:

[http://www.dnr.state.mn.us/lands\\_minerals/aggregate\\_maps/completed/index.html](http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html)

The spatial datasets include: sand and gravel resource potential, crushed stone potential, test-holes drilled, geologic field observations, aggregate pits, Minnesota Geological Survey (MGS) County Well Index (CWI) data points, Mn/DOT Aggregate Source Information System (ASIS) points, and Mn/DOT ASIS pit quality table.

**Online Linkage**

[Click here](#) to download data. (See Ordering Instructions above for details.) By clicking here, you agree to the notice in "Distribution Liability" above.

## Section 7

## Metadata Reference Information

**Metadata Date**

2012

**Contact Person  
Information**

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](mailto: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>

---

Table Name	Field Name	Definition	Valid Values	Descriptions
stea_testholes.dbf	FIELD_ID	Text, 8	Ex: stea_293, stea_343	Unique identifiers used in the field.
	SITETYPE_1	Text, 50	See Below	
			Test Hole	Test hole drilled with a Giddings Soil probe.
	SITETYPE_2	Text, 50	See Below	Further description of the observation site specified in SITE_TYPE1.
			Test Hole	Test hole drilled with a Giddings Soil probe or Geoprobe.
	MATERIAL_1	Text, 25	See Below	Describes the primary type of material encountered at each observation site and does not necessarily reflect stratigraphic order.
			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.
			Sandy Till	A term used to described unsorted sediment deposited by glaciers that have a predominantly sandy texture.
			Silt	A fine grained sediment that has a diameter between 0.004 to 0.0625 mm.
			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.
			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.
			Sandy Loam	A mixture of silt, sand and clay that has higher amounts of sand.
			Silt	A fine grained sediment that has a diameter between 0.004 to 0.0625 mm.
			Till	A term used to describe the unsorted sediment deposited by glaciers- contains a mixture of clay, silt, sand, gravel and boulders
	FIELDDESC	Text, 200	Ex: Drill Hole (0-9 ft) 0-6 Till, 6-9 Gravel.	A short field description of the observation site.
	Thickness	Text, 15	Ex: >10, ~20	The thickness of the deposit expressed in combination with a modifier.
	Thick_mod	Text, 1	Ex: >,~	Modifiers to express numeric approximations observed for deposit thickness: > greater than ~ approximate
	Thick_val	Short Integer, 4	Ex: 5, 10, 15...	Gives the value for thickness.
	Overburden	Text, 15	Ex: <10, ~20, >25,	Expresses overburden thickness by possibly using one or both the modifier and value.
	Ob_mod	Text, 1	Ex: >,<,~	Modifiers to express numeric approximations observed for deposit thickness: > greater than < less than ~ approximate
	Ob_val	Short Integer, 4	Ex: 5, 10, 15	Gives the value for overburden
	SAMPLED	Text, 3	Yes or No	Was this test hole sampled?
	DRILLED_BY	Text, 50	Ex: Giddings, Geoprobe	What type of drill took the sample?
	SAMPLE_ID	Text, 15	Ex: CO-PS11-0037	Unique sample ID given by Mn/DOT laboratory.

	SAMP_TYPE	Text, 50	Ex: Test Hole	Type of sample taken.
	LAB_ID	Text, 25	Ex: Mn/DOT	What lab processed the sample?
	COMPOSITE	Text, 3	Yes or No	Was the sample a composite?
	COMP_NMBR	Short Integer	Ex: 2	Number of samples composited?
	COMP_DESC	Text, 75	Ex: 112, 113	All field IDs used in the composite sample.
	DATE_RECVD	Text, 10	Ex: 02/04/2011	Date sample was received
	SAMP_FROM	Short Integer	Ex: 1, 4, 0	Sample beginning depth (in feet) from surface.
	SAMP_TO	Short Integer	Ex: 12, 9, 18	Sample end depth (in feet) from surface.
	PCT_4IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 4 inch
	PCT_3IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 3 inch
	PCT_2_5IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 2 ½ inch
	PCT_2IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 2 inch
	PCT_1_5IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 1 ½ inch
	PCT_1_25IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 1 ¼ inch
	PCT_1IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 1 inch
	PCT_3_4_IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve ¾ inch



	PCT_5_8IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 5/8 inch
	PCT_1_2IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve ½ inch
	PCT_3_8IN	Short Integer	Ex: 100, 94, 61	Percent passing sieve 3/8 inch
	PCT_NUM4	Short Integer	Ex: 100, 94, 61	Percent passing sieve #4
	PCT_NUM8	Short Integer	Ex: 100, 94, 61	Percent passing sieve #8
	PCT_NUM10	Short Integer	Ex: 100, 94, 61	Percent passing sieve #10
	PCT_NUM16	Short Integer	Ex: 100, 94, 61	Percent passing sieve #16
	PCT_NUM30	Short Integer	Ex: 100, 94, 61	Percent passing sieve #30
	PCT_NUM40	Short Integer	Ex: 100, 94, 61	Percent passing sieve #40
	PCT_NUM50	Short Integer	Ex: 100, 94, 61	Percent passing sieve #50
	PCT_NUM100	Short Integer	Ex: 100, 94, 61	Percent passing sieve #100
	PCT_NUM200	Float	Ex: 11.5, 19.3	Percent passing sieve #200
	PCT_GRVL	Float	Ex: 30, 42	Percent gravel
	PCT_SAND	Float	Ex: 70.7, 17.9	Percent sand
	PCTSILTCLY	Float	Ex: 11.2, 5.6	Percent silt and clay
	PCTSHLSAND	Float	Ex: 0.1, 0	Percent shale in sand

	PCTTOTSHL4	Float	Ex: -999, 0.1	Percent total shale +4. -999 indicate a sample that was not tested.
	PCTSAMPShL	Float	Ex: -999, 0.1	Percent total sample shale. -999 indicate a sample that was not tested.
	PCTSNDSTN	Float	Ex: -999, 0.1, 10.7	Percent sandstone. -999 indicate a sample that was not tested.
	PCTSPL_ARG	Float	Ex: 0.9, 2.2	Percent spall argillite
	PCT_CARB	Float	Ex: 0.9, 2.2, -999	Percent carbonate. -999 indicate a sample that was not tested.
	PCT_IRONOX	Float	Ex: 0.1, 0.7	Percent iron oxide
	PCT_OCHRE	Float	Ex: -999	Percent ochre. No samples were tested for this. -999 indicate a sample that was not tested.
	PCT_UNCHRT	Float	Ex: -999, 0.31, 0.23	Percent unsound chert. -999 indicate a sample that was not tested.
	PCT_SCHIST	Float	Ex: -999, 0.3, 0.31	Percent schist. -999 indicate a sample that was not tested.
	PCTMISCSP	Float	Ex: -999, 0.04, 1.43	Percent miscellaneous spall. -999 indicate a sample that was not tested.
	PCT_TS_SPL	Float	Ex: 0.3, 1.1	Percent total sample spall
	PCTBA_SPL4	Float	Ex: 4.2, 0.8	Percent BA spall +4
	PCTNSPLARG	Float	Ex: -999, 0.5	Percent disintegrating rock. -999 indicate a sample that was not tested.
	PCTDISROCK	Float	Ex: -999, 0.2	Percent disintegrating rock -999 indicate a sample that was not tested.
	DOCLINK	Text, 250	Ex: <a href="http://files.dnr....">http://files.dnr....</a>	Link to PDF document for this sample

