Aitkin County, Minnesota - Aggregate Resources
Geologic Field Observations
aitk_fobs

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 by two geologists who worked on this project at separate times and did not overlap. Steve Kostka did field work in the fall of 2008, 2009, and 2010. Carrie Jennings did field work from May through October of 2013. It includes 699 field observation sites within Aitkin County, Minnesota. Observations include, but are not limited to: natural exposures of surficial geologic sediment, artificial and temporary exposures in gravel, borrow or sand pits, along road cuts or in excavations and observations of the surface. This spatial dataset contains a field description of each site, the dominant type of material encountered, the source of information, geologic unit thickness (if non-aggregate-bearing; aggregate unit thickness and geologic overburden thickness if aggregate is not present at surface).

Browse Graphic

none available

Time Period of Content Date

October 2013

Currentness Reference

Data were collected between 2008 and 2013.

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

Aitkin County's aggregate resource spatial datasets (shapefiles & file geodatabase) are included in the file Aitkindata.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, 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" in Section 6 of this metadata.

Full Metadata

Aitkin County Aggregate Resources: aitk_fobs (Geologic Field Observations)

Section 1	Identification Information		
Originator	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section		
Title	Aitkin County Aggregate Resources: aitk_fobs (Geologic Field Observations)		
Abstract	This dataset includes information gathered in the field by two geologists who worked on this project at separate times and did not overlap. Steve Kostka did field work in the fall of 2008, 2009, and 2010. Carrie Jennings did field work from May through October of 2013. It includes 699 field observation sites within Aitkin County, Minnesota. Observations include, but are not limited to: natural exposures of surficial geologic sediment, artificial and temporary exposures in gravel, borrow or sand pits, along road cuts or in excavations and observations of the surface. This spatial dataset contains a field description of each site, the dominant type of material encountered, the source of information, geologic unit thickness (if non-aggregate-bearing; aggregate unit thickness and geologic overburden thickness if aggregate is not present at surface).		
Purpose	To summarize the field observations collected in Aitkin County, Minnesota. These field observations were made to confirm air photo, topographic map, DEM and soil map interpretations that identified potential aggregate-bearing landforms.		
Time Period of Content Date	October 2013		
Currentness Reference	Data were collected between 2008 and 2013.		
Progress	Complete		
Maintenance and Update Frequency	None planned		
Spatial Extent of Data	Aitkin County, Minnesota		
Bounding Coordinates	-93.81 -93.05 47.16 46.15		
Place Keywords	Aitkin County, Minnesota		
Theme Keywords	Field observations, aggregate resources, surficial geology.		
Theme Keyword Thesaurus			
Access Constraints			
Use Constraints	Acknowledgement of the Minnesota Department of Natural Resources is appreciated for products derived from these data.		
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: kevin.hanson@state.mn.us

Browse Graphic none available

Browse Graphic File Description

Associated Data Sets Aitkin County's aggregate resource spatial datasets (shapefiles & file geodatabase) are included in the file Aitkindata.zip, accessible from the MN DNR Aggregate Mapping web page: http://www.dnr.state.mn.us/lands_minerals/aggregate_maps/completed/index.html
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Section 2 Data Quality Information

Attribute Accuracy

Logical Consistency

Completeness The data points were gathered at the location where field observations took place. Additional information is given in the Lineage section.

Horizontal Positional Accuracy The differential correction of the GPS unit for GPS located sites is +/- 3 meters.

Vertical Positional Accuracy Not applicable.

Lineage A tablet PC, a Garmin GPS Bluetooth unit, 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 and associated tabular attribute were updated in real time as much as possible. 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. At other times a portable Garmin Etrex or a GPS equipped iPhone were used instead of the above mentioned hardware and software. 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 Desktop versions: 9.3, 10.0, 10.1

Geographic Reference for Tabular Data

Spatial Object Type Point

Vendor Specific Point

Object Types	
Tiling Scheme	None

Section 4 Spatial Reference Information

Horizontal Coordinate Scheme	UTM
Ellipsoid	GRS80
Horizontal Datum	NAD83
Horizontal Units	Meters
Distance Resolution	
Altitude Datum	Not applicable
Depth Datum	Not applicable
UTM Zone Number	15E north

Section 5 Entity and Attribute Information

Entity and Attribute Overview	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.
Entity and Attribute Detailed Citation	See beyond Section 7 for detailed field and attribute information

Section 6 Distribution Information

Publisher	Minnesota Department of Natural Resources, Division of Lands and Minerals, Mineral Potential Evaluation Section
Publication Date	2014
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: kevin.hanson@state.mn.us
Distributor's Data Set Identifier	Aitkin County Aggregate Resources, Sand and Gravel Potential
Distribution Liability	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,

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Transfer Format Name

Transfer Format Version Number

Transfer Size mb for data, mb for associated maps

Ordering Instructions Aitkin County's aggregate resource spatial datasets (shapefiles & file geodatabase) are included in the file Aitkindata.zip, accessible from the MN DNR Aggregate Mapping web page:
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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 2014

Contact Person Information

Aggregate Resource Mapping Program, Industrial Minerals Geologist or GIS Specialist
Minnesota Department of Natural Resources, Division of Lands and Minerals
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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
aitk_fobs.dbf	FIELD_ID	Text, 8	Ex: aitk_1	Unique identifiers used in the field.
	SITETYPE_1	Text, 50	See Below	
			Excavation	Trenches, construction areas, or foundations.
			Exposure	Outcrop of material from erosional processes.
			Gravel Pit	Gravel pits exposing sand and gravel material.
			Other	Based on observation, or vegetation qualities.
			Rock Pile	Conspicuous pile of rocks, generally ranging in size from cobble to boulder.
	SITETYPE_2	Text, 50	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.
			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 maintenance or a slump that exposes ditch sides.
			Drainage	Material exposed in a small water drainage feature.
			Driveway	Surficial material exposed in driveway.
			Embankment	Sediment exposed in a slope or hill where vegetation is patchy or lacking.
			Gravel Pit	Materials exposed in gravel pit.
			Observation	Sediment or vegetation observed
			River Cut	Sediment exposed by river erosion.
			Road Cut	Materials exposed in a road cut.
			Rock Pile	Conspicuous pile of rocks, generally ranging in size from cobble to boulder.
			Surface	Exposures of bedrock/material on the ground surface.

			Stream	Sediment visible in the bottom of a stream
			Telephone Pole	Sediment exposed due to drilling and installation of new telephone poles.
			Tree Tip	Exposure after a tree blows over and roots are tilted out of the ground revealing underlying sediment.
			Trench	Exposure of sediment viewed in human-made linear trench excavation
			Vegetation	Vegetation type that is indicative of a certain soil texture
	MATERIAL_1	Text, 25	See Below	Describes the primary type of material encountered at each observation site and does not necessarily reflect stratigraphic order.
			Boulders	Notable accumulation of boulders at the surface or a singular and large boulder.
			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.
			Did not Observe	Sediment texture was not observed
			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 organic horizon that contains decaying organic matter, commonly peat.
			Rocky Soil	Observation based on surficial exposure; commonly 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 directly by glaciers- contains a mixture of clay, silt, sand, gravel and boulders.
			Diamicton	A term used to describe the unsorted sediment most likely originally deposited directly by glaciers but modified after initial deposition- 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.
			Alluvium	Fine sediment ranging from fine sand to clay deposited by river or stream.
			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.
			Organics	Soil organic horizon that contains decaying organic matter, commonly peat..
			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.
			Topsoil	Presence of developed A soil horizon.
	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, +25, 10, 25, Not Available	The thickness of the deposit expressed in combination with a modifier. Not Available indicates that the measurement does not apply or was not observed.
	Thick_mod	Text, 1	Ex: +,-	Modifiers to express numeric approximations observed for deposit thickness: + greater than - to, as in 10-20
	Thick_min	Number, 4	Ex: 5, 10, 15…-999	Gives the minimum value for thickness. (-999 is a null value)
	Thick_max	Number, 4	Ex: 5, 10, 15…-999	Gives the maximum value for thickness. (-999 is a null value)
	Overburden	Text, 15	Ex: +10, ~20, +25, 10, 25, Not Available	If unit buries an aggregate deposit, this expresses overburden thickness by possibly using one or both the modifier and value. Not Available indicates that the measurement does not apply or was not observed.
	Ob_mod	Text, 1	Ex: ~, -, +	Modifiers to express numeric approximations for the overburden thickness where subsurface aggregate is present. ~ approximate - to, as in 10-20 + greater than
	Ob_min	Number, 4	Ex: 5, 10. 15…-999	Gives the minimum value for overburden thickness. (-999 is a null value).
	Ob_max	Number, 4	Ex: 5, 10. 15…-999	Gives the maximum value for overburden thickness. (-999 is a null value).
	Sampled	Text, 3	Yes or No	For Aitkin County, select test holes were sampled. See aitk_testholes for that information.

	Gravel_pct	Number, 4	Ex: -999, 50	For Aitkin County, select test holes were sampled. See aitk_testholes for that information.