



# SMAPVEX12 Soil Texture Map, Version 1

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## USER GUIDE

### How to Cite These Data

As a condition of using these data, you must include a citation:

McNairn, H., J. Powers, and G. Wiseman. 2014. *SMAPVEX12 Soil Texture Map, Version 1*. [Indicate subset used]. Boulder, Colorado USA. NASA National Snow and Ice Data Center Distributed Active Archive Center. <https://doi.org/10.5067/5694JSVXBA3A>. [Date Accessed].

FOR QUESTIONS ABOUT THESE DATA, CONTACT [NSIDC@NSIDC.ORG](mailto:NSIDC@NSIDC.ORG)

FOR CURRENT INFORMATION, VISIT <https://nsidc.org/data/SV12STM>



National Snow and Ice Data Center

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# 1 DATA DESCRIPTION

This data set consists of soil texture classification data derived from field surveys as part of the Soil Moisture Active Passive Validation Experiment 2012 (SMAPVEX12). The soil texture classification map provides information about vegetation present in the study area.

## 1.1 Parameters

The measured parameter for this data set is soil texture classification. Soil texture classification distinguishes between soil types, water, bedrock, and urban areas. Values range between 2 and 74; not all values are necessarily present. The data field C\_SOIL contains the soil texture classification data as described in Table 1.

Table 1. Soil Texture Classification Designations

<b>Class Code</b>	<b>Class Name</b>
2	Urban, modified or unclassified
6	Water
16	Salt flats
18	Sand and gravel
19	Eroded slopes
20	Sand and gravel (gleysols)
21	Sandy lacustrine
22	Variable textured alluvium (regosols)
26	Sandy eolian
27	Loamy till with water worked surfaces
28	Loamy till (black chernozems)
29	Loamy till (gleysols)
30	Sandy loam lacustrine
31	Loamy lacustrine
32	Strongly acidic clay till
33	Clayey lacustrine (black chernozems)
34	Sandy lacustrine (gleysols)
35	Shallow organic fen peat
36	Deep organic fen peat
37	Sandy loam lacustrine (gleysols)
38	Loam lacustrine (gleysols)
40	Clayey lacustrine (gleysols)

Class Code	Class Name
42	Clay over shale bedrock
48	Loamy till (dark grey chernozems)
49	Marsh
50	Highly calcareous loamy till (brunisol and dark grey chernozems)
51	Loamy till (luvisols)
52	Highly calcareous loamy till (black chernozems)
53	Acidic coarse loamy till
54	Weakly calcareous sandy loam till
55	Weakly calcareous sandy loam till (gleysols)
56	Extremely calcareous loamy till (black chernozems)
57	Extremely calcareous loamy till (black chernozems)
60	Variable textured alluvium (gleysols)
62	Highly calcareous loamy till (gleysols)
63	Clayey lacustrine (gleysols)
64	Clayey lacustrine (luvisols and dark grey chernozems)
68	Shallow organic forest peat
69	Deep organic forest or sphagnum peat
71	Precambrian bedrock
72	Sand and gravel with overlays
73	Limestone bedrock
74	Sand and gravel with overlays (gleysols)

**Note:** For information on additional parameter fields that are not provided in this document, please refer questions to [Agriculture and Agri-Food Canada](#).

## 1.2 File Information

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### 1.2.1 Format

Data are provided in ESRI shapefile format. Included are the main ESRI Shapefile (.shp), the index file (.shx), the database file (.dbf), and the projection file (.prj)

## 1.3 Spatial Information

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### 1.3.1 Coverage

Southernmost Latitude: 49.44°N

Northernmost Latitude: 49.96°N

Westernmost Longitude: 98.51°W

Easternmost Longitude: 97.85°W

### 1.3.2 Resolution

The field survey methods provided approximately 25 to 30 inspection sites per section, or one site per 10 hectares (316 m). Thus, the spatial resolution for this data set is approximately 316 meters.

### 1.3.3 Geolocation

Data are provided in Universal Transverse Mercator (UTM), Zone 14, North American Datum of 1983 (NAD 1983) coordinates.

## 1.4 Temporal Information

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### 1.4.1 Coverage and Resolution

Data were obtained at various intervals, usually once per day, from 07 June through 19 July 2012.

## 2 DATA ACQUISITION AND PROCESSING

Soil texture maps were produced by detailed soil surveys carried out by Agriculture and Agri-Food Canada at a scale of 1:50,000 for the more homogeneous clay soils and 1:20,000 for the sandy and loam soils, which were landscapes that were more complex. The soil data used for the SMAPVEX campaign was sourced from the Canada-Manitoba Soil Survey Reports that cover most of the southern portion of Manitoba. The soils data that are available for the SMAPVEX study area were sourced from Soil Survey Reports ([mbd60](#) and [mbd20](#)). Soil survey methods involved extensive field sampling, lab analysis, and air photo interpretation to map and document the soils in these areas. The field survey methods provided approximately 25 to 30 inspection sites per section, or one site per 10 hectares (316 m). Boundaries delineating map units in the survey area were compiled on an aerial photographic base at a scale of 1:20,000 (1 cm = 0.2 km).

For more information, visit the [Agriculture and Agri-Food Canada Soil Survey Reports for Manitoba](#) Web site.

## 3 SOFTWARE AND TOOLS

Various software packages can be used to read the ESRI shapefile, such as ArcGIS and MATLAB, or other similar GIS software.

## 4 CONTACTS AND ACKNOWLEDGMENTS

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### 4.1 Acknowledgments

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## 5 REFERENCES

McNairn, H., T. Jackson, G. Wiseman, S. Belair, A. Berg, P. Bullock, A. Colliander, M. Cosh, S. Kim, R. Magagi, M. Moghaddam, J. Adams, S. Homayouni, E. Ojo, T. Rowlandson, J. Shang, K. Goita, and M. Hosseini. In Press. The Soil Moisture Active Passive Validation Experiment 2012 (SMAPVEX12): Pre-Launch Calibration and Validation of the SMAP Satellite. *IEEE Trans. Geosci. Rem. Sens.*

## 6 DOCUMENT INFORMATION

### 6.1 Publication Date

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### 6.2 Date Last Updated

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