Engineering Interpretations

Engineering Index Properties

This table gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey areas. Most soils have layers of contrasting properties within the upper 5 to 6 feet. Information in this table includes depth, USDA texture, Unified and AASHTO Classification, rock fragments larger than 3 inches, percentage passing designated sieves, liquid limit, and plasticity index.

Properties

DEPTH to the upper and lower boundaries of each layer is indicated.

TEXTURE is given in the standard terms used by the USDA. The terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. (Textural terms are defined in Chapter 4, Soil Survey Manual or in the glossary of most soil survey reports) If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

UNIFIED CLASSIFICATION SYSTEM classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content.

AASHTO CLASSIFICATION is the system adopted by the American Association of State Highway and Transportation Officials. It classifies soils according to those properties that affect roadway construction.

ROCK FRAGMENTS, 3 to 10 inches and greater than 10 inches in diameter, are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

PERCENTAGE (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven dry weight. The sieves, numbers 4, 10, 40, and 200, have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

LIQUID LIMIT AND PLASTICITY INDEX (Atterbery limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area, or from nearby areas, and on field examination.

This subsection includes:

- **(a) Engineering Index Properties**

Table 21.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated. For an explanation of the abbreviations in the USDA texture column, see "Texture, soil" in the Glossary.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
40000:												
Barden----------	0-10	SIL	CL	A-4, A-6	0	0	100	100	90-100	75-85	25-35	8-15
	10-47	SIC, SICL, CL	CL, CH	A-7	0	0	100	100	90-100	80-95	40-60	25-40
	47-80	SICL, CL, SCL	CL	A-6, A-7	0	0	100	70-100	45-100	40-90	30-45	15-25
40011:												
Barco----------	0-11	L	CL, SC	A-4, A-6	0	0	100	100	85-95	45-75	22-35	8-14
	11-17	L	CL, SC	A-4, A-6	0	0	100	100	85-95	45-75	22-35	8-14
	17-22	L, SCL, CL	CL, SC	A-6	0	0-5	85-100	85-100	75-100	45-80	25-40	11-22
	22-30	FSL	GW-GC	A-2-4	0	0	15-30	10-25	10-20	5-15	17-30	NP-11
	30-60	WB	---	---	---	---	---	---	---	---	---	---
40015:												
Eldorado--------	0-7	SIL	CL, ML	A-4	0-7	0-8	80-100	75-100	70-95	68-90	16-30	3-11
	7-20	CBV-SIL, STV-SIL, ST-SIL	GC	A-4	5-30	5-40	51-95	45-90	40-85	40-80	21-30	6-11
	20-33	CBX-SIL, CBV-SIL, CBX-SICL, CBV-SICL	GC	A-2, A-6	10-40	30-45	20-75	15-70	15-65	15-60	21-43	6-18
	33-80	CBV-C, CB-C, GRV-C, GR-C	GC	A-7	0-30	15-55	51-100	45-100	40-95	40-95	45-86	18-42
40016:												
Eldorado--------	0-6	GRV-SIL	GC	A-6, A-4	0	10-40	55-75	45-65	45-65	40-60	15-30	3-11
	6-15	CBX-SIL, CBV-SIL	GC	A-2-6, A-2-4	0-1	55-65	35-55	30-50	30-50	30-45	20-30	6-11
	15-34	CBX-SIL, CBV-SIL, CBX-SICL, CBV-SICL	GC	A-2-6, A-2-7	0-25	55-65	10-50	5-45	5-45	5-40	20-45	6-18
	34-64	CBV-C, CB-C, GR-C, GRV-C	GC, CH	A-7	0-30	15-55	51-100	45-100	40-95	40-95	43-86	18-42
	64	UWB	---	---	---	---	---	---	---	---	---	---
40017:												
Maplegrove------	0-11	SIL	CL-ML	A-4	0	0	100	95-100	90-95	85-90	18-23	4-7
	11-27	SICL, SIC	CH	A-7	0	0-2	80-100	70-100	70-100	65-95	40-67	20-41
	27-46	GR-SICL, SICL	CL	A-6, A-7	0	0-25	70-100	65-100	60-95	60-90	32-48	12-25
	46-80	GRV-C, GRX-C	GC	A-7, A-2-7	0-23	0-25	20-70	10-65	10-60	10-60	55-88	31-56

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
40018:												
Medoc----------	0-9	SIL	CL-ML, ML	A-4	0	0	100	100	95-100	83-95	14-21	2-6
	9-13	SIL	CL-ML, ML	A-4	0	0	100	100	90-100	80-95	16-25	3-8
	13-32	C, SIC	CH	A-7-6	0	0	100	100	95-100	90-100	52-73	29-46
	32-75	SICL	CL	A-6, A-7-6	0	0	100	100	85-100	80-100	37-48	17-25
	75-80	SICL	CL	A-7-6	0	0	100	100	100	95-100	43-48	21-25
40019:												
Newtonia--------	0-15	SIL	CL	A-4, A-6	0	0	100	100	95-100	65-100	20-30	5-14
	15-29	SIL, SICL	CL	A-4, A-6	0	0	100	90-100	85-100	80-100	30-44	9-22
	29-80	SICL, SIC, C	CH, CL	A-6, A-7	0	0	90-100	85-100	80-100	70-100	39-60	15-34
Eldorado--------	0-7	SIL	CL, ML	A-4	0-7	0-8	80-100	75-100	70-100	70-90	16-30	3-11
	7-20	CBV-SIL, STV-SIL, ST-SIL	GC	A-4	5-30	5-40	51-95	45-90	40-85	40-80	21-30	6-11
	20-33	CBX-SIL, CBV-SIL, CBX-SICL, CBV-SICL	GC	A-2, A-6	10-40	30-45	20-75	15-70	15-65	15-60	21-43	6-18
	33-80	CBV-C, CB-C, GRV-C, GR-C	GC	A-7	0-30	15-55	51-100	45-100	40-95	40-95	43-85	18-42
40020:												
Newtonia--------	0-8	SIL	CL	A-4, A-6	0	0	100	100	95-100	65-100	20-30	5-15
	8-24	SIL, SICL	CL	A-4, A-6	0	0	100	90-100	85-100	80-100	30-44	9-22
	24-80	SICL, SIC, C	CH, CL	A-6, A-7	0	0	90-100	85-100	80-100	70-100	39-60	15-34
Eldorado--------	0-7	SIL	CL, ML	A-4	0-7	0-8	80-100	75-100	70-100	70-90	16-30	3-11
	7-20	CBV-SIL, STV-SIL, ST-SIL	GC	A-4	5-30	5-40	51-95	45-90	40-85	40-80	21-30	6-11
	20-33	CBX-SIL, CBV-SIL, CBX-SICL, CBV-SICL	GC	A-2, A-6	10-40	30-45	20-75	15-70	15-65	15-60	21-43	6-18
	33-80	CBV-C, CB-C, GRV-C, GR-C	GC	A-7	0-30	15-55	51-100	45-100	40-95	40-95	43-85	18-42
40021:												
Opolis----------	0-8	SIL	CL-ML	A-4	0	0	100	97-100	90-100	80-95	15-21	2-6
	8-15	SIL	CL-ML	A-4	0	0	100	90-100	90-100	80-90	15-29	2-10
	15-30	SIC, C	CH, CL	A-7-6	0	0	100	90-100	85-100	85-100	45-73	23-46
	30-70	SICL	CL	A-6	0	0	100	90-100	85-100	80-90	34-48	15-25
	70-80	SIC	CL, CH	A-7-6, A-6	0	0	100	100	90-100	85-100	39-57	18-30
Hepler----------	0-8	SIL	CL-ML	A-4	0	0	100	100	90-100	85-100	20-23	5-7
	8-18	SIL	CL-ML	A-4	0	0	100	100	90-100	85-100	18-21	4-6
	18-48	SICL, SIL	CL	A-6, A-4	0	0	100	100	90-100	85-100	20-38	5-15
	48-80	SICL, SIC	CL	A-7-6, A-6	0	0	100	100	95-100	85-100	34-47	15-20

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
40022:												
Opolis----------	0-8	SIL	CL-ML	A-4	0	0	100	97-100	90-100	80-95	15-21	2-6
	8-15	SIL	CL-ML	A-4	0	0	100	90-100	90-100	80-90	15-29	2-10
	15-30	SIC, C	CH, CL	A-7-6	0	0	100	90-100	85-100	85-100	45-73	23-46
	30-70	SICL	CL	A-6	0	0	100	90-100	85-100	80-90	34-48	15-25
	70-80	SIC	CL, CH	A-7-6, A-6	0	0	100	100	90-100	85-100	39-57	18-30
40023:												
Opolis----------	0-8	SIL	CL-ML	A-4	0	0	100	97-100	90-100	80-95	15-21	2-6
	8-15	SIL	CL-ML	A-4	0	0	100	90-100	90-100	80-90	15-29	2-10
	15-30	SIC, C	CH, CL	A-7-6	0	0	100	90-100	85-100	85-100	45-73	23-46
	30-70	SICL	CL	A-6	0	0	100	90-100	85-100	80-90	34-48	15-25
	70-80	SIC	CL, CH	A-7-6, A-6	0	0	100	100	90-100	85-100	39-57	18-30
40024:												
Opolis----------	0-6	L	ML, CL-ML, CL	A-4	0	0	100	97-100	85-100	60-75	16-25	3-8
	6-14	SIC, C	CH, CL	A-7-6	0	0	100	85-100	85-100	75-95	47-60	25-35
	14-35	SICL, CL	CL	A-6	0	0	100	90-100	85-100	60-90	37-40	17-19
	35-72	CL	CL	A-7-6, A-6	0	0	100	100	90-100	70-80	37-43	17-21
40026:												
Sylvania--------	0-6	GR-SIL	CL-ML, CL	A-4	0	0-2	65-95	60-90	55-85	50-75	20-30	5-12
	6-20	GR-SIL, GRV-SIL	GC	A-2-6, A-4, A-2-4	0	0-2	30-65	25-60	25-60	20-50	20-30	5-12
	20-23	GRV-SIC, GRX-SIC	GC	A-2-7	0	0-2	10-55	5-50	5-45	5-45	47-50	20-23
	23-52	C, SIC	CL, CH	A-7	0	0-2	90-100	85-100	85-100	80-95	43-74	18-35
	52-80	WB			---	---	---	---	---	---	---	---
40027:												
Sylvania--------	0-5	GRV-SIL	GC	A-4, A-2-4	0	0-2	35-60	30-50	28-45	25-40	20-30	5-12
	5-12	GR-SIL, GRX-SIL, GRV-SIL	GC	A-2-6, A-2-4	0	0-2	15-65	10-60	10-55	10-50	20-30	5-12
	12-19	GRV-SIC, GRX-SIC	GC	A-7-6, A-2-7	0	0-2	10-55	10-50	10-45	10-45	47-50	20-23
	19-57	C, SIC	CL, CH	A-7	0	0-2	90-100	85-100	80-100	80-95	43-74	18-35
	57-80	WB			---	---	---	---	---	---	---	---
40028:												
Sylvania--------	0-7	L	CL, CL-ML	A-4	0	0-8	75-100	75-100	70-90	50-65	20-35	2-15
	7-12	CL	CL, CL-ML	A-4	0	0-10	75-100	75-100	70-95	55-75	20-35	2-15
	12-44	C, SIC	CL, CH	A-7	0	0-2	90-100	85-100	85-100	80-95	43-74	18-35
	44-60	WB			---	---	---	---	---	---	---	---

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
40029:												
Sylvania--------	0-8	L	CL, CL-ML	A-4, A-6	0	0-5	85-100	75-100	70-95	50-90	20-35	2-15
	8-30	C, SIC	CL, CH	A-7	0	0-2	90-100	85-100	85-100	80-95	43-74	18-35
	30-56	C, SIC	CL, CH	A-7-6	0	0	100	100	55-100	55-95	45-70	25-45
	56-80	WB			---	---	---	---	---	---	---	---
44000:												
Cherokee--------	0-11	SIL	CL-ML, ML	A-4	0	0	100	100	95-100	80-90	16-23	3-7
	11-16	SIL	CL, CL-ML	A-4	0	0	100	100	95-100	80-90	18-25	4-8
	16-35	SIC	CH		0	0	100	100	95-100	90-100	50-71	29-44
	35-60	SICL	CL		0	0	100	100	95-100	80-90	39-48	18-25
	60-100	SICL	CL	A-6, A-7	0	0	100	100	95-100	80-85	37-48	17-25
44002:												
Carl----------	0-15	SICL	CH, CL	A-7-6	0	0	100	100	100	95	44-55	23-33
	15-27	SIC, SICL	CH	A-7-6	0	0	95-100	85-100	85-100	80-95	50-75	28-49
	27-68	C, SIC	CH	A-7-6	0	0	95-100	85-100	85-100	80-95	55-82	33-54
	68-80	GR-C, GRV-C	GC	A-2-7, A-7-6	0-7	0-38	30-80	25-75	20-65	20-60	55-82	33-54
44004:												
McCune----------	0-11	SIL	CL-ML, CL	A-4	0	0	100	100	95-100	85-90	18-29	4-10
	11-22	SIL	ML, CL-ML	A-4	0	0	100	100	95-100	85-90	15-29	2-10
	22-80	L, SICL	CL, CL-ML	A-6, A-4, A-7-6	0	0	100	100	95-100	70-90	23-43	7-18
46001:												
Verdigris-------	0-3	SIL	CL	A-6	0	0	100	100	90-100	80-100	21-30	6-11
	3-39	SICL, SIL	CL	A-6, A-4	0	0	100	100	95-100	95-100	29-34	9-15
	39-80	SICL, SIL	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	80-95	21-34	6-15
46002:												
Hepler----------	0-8	SIL	CL-ML	A-4	0	0	100	100	90-100	85-100	20-23	5-7
	8-18	SIL	CL-ML	A-4	0	0	100	100	90-100	85-100	18-21	4-6
	18-48	SICL, SIL	CL	A-4, A-6	0	0	100	100	90-100	85-100	20-38	5-15
	48-80	SICL, SIC	CL	A-7-6, A-6	0	0	100	100	95-100	85-100	34-47	15-20
46004:												
Osage----------	0-7	SICL	CH, CL	A-7-6	0	0	100	95-100	95-100	95-100	42-54	22-31
	7-10	SIC	CH	A-7-6	0	0	100	95-100	95-100	95-100	55-64	33-39
	10-43	SIC	CH	A-7-6	0	0	100	90-100	90-100	85-100	55-75	33-49
	43-80	SICL	CH	A-7-6	0	0	100	100	100	90-95	50-55	28-33
46005:												
Verdigris-------	0-7	SIL	CL	A-6	0	0	100	100	90-100	80-100	30-36	11-15
	7-29	SICL, SIL	CL	A-6	0	0	100	100	95-100	95-100	29-34	10-15
	29-80	SICL, SIL	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	80-95	21-34	6-15

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
70006:												
Creldon---------	0-8	SIL	CL, CL-ML, ML	A-4, A-6	0	0	90-100	90-100	85-100	70-90	20-40	2-15
	8-27	SICL, SIC, C	CL	A-7	0	0	90-100	85-100	80-100	75-85	35-50	15-25
	27-37	GR-SICL, GRV-SIL	GC	A-2, A-6, A-7	0	0-5	35-65	30-60	30-60	20-50	30-45	10-25
	37-60	GRV-C, CBX-C, GR-C, C	CH, GC, SC	A-2, A-7	0	0-55	45-95	40-90	35-90	30-80	55-80	30-60
70012:												
Hoberg----------	0-12	SIL	CL, CL-ML	A-4, A-6	0	0-5	85-100	75-100	70-95	60-90	25-35	7-15
	12-26	SIL, SICL, GR-SICL, GR-SIL	CL, GC, SC	A-6	0	0-10	60-95	50-90	45-85	40-80	30-40	10-20
	26-42	GRV-SICL, GRV-SIL, GR-SIL, CBX-SICL, CBX-SIL	CL, GC, SC	A-2-6, A-6	0	0-45	35-85	30-75	20-70	20-65	30-40	10-20
	42-60	GRV-C, GRV-SIC, CBX-C, CBX-SIC	CH, GC, MH, SC	A-2-7, A-7	0	0-45	35-65	30-60	30-60	25-55	50-75	25-40
70045:												
Keeno----------	0-6	GR-SIL	CL, CL-ML, GC	A-2-4, A-4	0	0-15	55-90	50-85	30-80	30-65	15-30	5-10
	6-19	GRX-SICL, GRV-SICL	GC	A-2-6, A-6	0	0-35	25-55	20-50	20-45	20-45	30-40	10-20
	19-29	GRX-SICL, GRX-SIL, GR-SIL	CL, GC, SC	A-2-6, A-6	0	10-60	30-70	25-65	20-65	20-55	30-40	10-20
	29-60	GRX-SIC, GRV-SIC, GRX-C, GRV-C	CH, CL, GC, SC	A-2-7, A-7	0	0-40	30-75	25-70	25-55	20-55	40-65	20-45
70056:												
Crackerneck-----	0-9	GRX-SIL	GC-GM	A-1	0	0-45	15-30	10-25	9-22	8-20	17-23	1-5
	9-23	GRX-SIL, GRV-SIL	GC, GC-GM	A-2-4	0-20	25-40	20-35	15-30	15-25	12-25	23-28	5-10
	23-42	GRX-C, CBX-C	GC	A-2-7	0-15	0-50	10-50	5-45	5-40	4-40	50-57	22-26
	42-70	GRX-C, GRV-C, CBV-C, CBX-C	GC, GC-GM, GM, SC	A-2-7	0	0-75	15-70	10-65	9-60	8-55	47-70	20-33
70057:												
Crackerneck-----	0-9	GRX-SIL	GC-GM	A-1	0	0-45	15-30	10-25	9-20	8-20	17-23	1-5
	9-23	GRX-SIL, GRV-SIL	GC, GC-GM	A-2-4	0-20	25-40	20-35	15-30	15-25	15-25	23-28	5-10
	23-42	GRX-C, CBX-C	GC	A-2-7	0-15	0-50	10-50	5-45	5-40	4-40	50-57	22-26
	42-70	GRX-C, GRV-C, CBV-C, CBX-C	GC, GC-GM, GM, SC	A-2-7	0	0-75	15-70	10-65	9-60	8-55	47-70	20-33

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
70058:												
Crackerneck-----	0-4	GRV-SIL	GC-GM	A-4, A-2-4	0	0	30-55	25-50	22-45	20-40	17-23	1-5
	4-7	GRV-SIL	GC-GM	A-4, A-2-4	0	0	30-55	25-50	22-45	20-40	17-23	1-5
	7-29	GRX-SIL, GRV-SIL	GC, GC-GM	A-2-4	0-20	25-40	20-35	15-30	15-25	12-25	23-28	5-10
	29-42	GRX-C, CBX-C	GC	A-2-7	0-15	0-50	10-50	5-45	5-40	4-40	50-57	22-26
	42-65	GRX-C, GRV-C, CBV-C, CBX-C	GC, GC-GM, GM, SC	A-2-7	0	0-75	15-70	10-65	9-60	8-55	47-70	20-33
	65	UWB	---	---	---	---	---	---	---	---	---	---
70059:												
Goss----------	0-7	GRX-SIL	GC, GC-GM, GM	A-2	0	0-55	15-50	10-45	10-25	5-20	20-30	2-10
	7-16	GRV-SIL	GC, GC-GM, GM	A-4, A-2	0	0-45	30-50	25-50	25-50	20-40	20-30	2-10
	16-24	GRX-SIL, GRV-SIL	GC, GC-GM, GM	A-2, A-6	0-10	0-55	15-50	10-50	10-50	5-40	20-37	2-16
	24-40	GRV-C, GRX-SICL, GRX-SIC	GC, SC	A-2-7, A-7	0-15	0-40	20-70	15-65	10-50	10-45	45-51	15-40
	40-80	GRV-C, GRX-C	GC	A-2-7, A-7	0-15	0-40	20-70	15-65	10-50	10-45	50-70	25-40
70060:												
Hoberg----------	0-7	SIL	CL, CL-ML	A-4, A-6	0	0-5	85-100	75-100	70-95	65-90	25-35	7-15
	7-20	SIL, SICL, GR-SICL, CBV-SICL	CL, GC, SC	A-6	0	0-10	60-95	50-90	45-85	40-80	30-40	11-20
	20-47	GRV-SICL, GRV-SIL, GR-SIL, GRX-SICL	CL, GC, SC	A-2-6, A-6	0	0-40	40-85	30-75	20-70	20-65	30-40	11-20
	47-72	GRV-C, GRV-SIC, GRX-C	CH, GC, MH, SC	A-2-7, A-7	0	0-25	40-85	30-80	30-80	25-75	50-75	25-40
Eldorado--------	0-7	SIL	CL, ML	A-4	0-7	0-8	80-100	75-100	70-100	70-90	16-30	3-11
	7-20	CBV-SIL, STV-SIL, ST-SIL	GC	A-4	5-30	5-40	51-95	45-90	40-85	40-80	21-30	6-11
	20-33	CBX-SIL, CBV-SIL, CBX-SICL, CBV-SICL	GC	A-2, A-6	10-40	30-45	20-75	15-70	15-65	15-60	21-45	6-18
	33-80	CBV-C, CB-C, GRV-C, GR-C	GC	A-7	0-30	15-55	51-100	45-100	40-95	40-95	45-85	18-42
Pomme----------	0-7	SIL	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	80-95	75-90	23-34	7-15
	7-19	GR-SIL, GR-SICL	CL	A-4, A-6, A-7-6	0	0-10	65-100	60-100	55-90	55-90	30-45	8-21
	19-57	GRV-SIL, GRV-SICL, GRX-SICL, GRX-SIL	GC	A-2, A-6, A-7-6	0	0-25	17-55	10-50	10-45	8-45	37-48	16-25
	57-85	GRX-C, GRV-C	GC	A-2-7, A-7-6	0	0-40	17-55	10-50	10-45	8-45	48-65	28-39

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
70061:												
Pomme----------	0-7	SIL	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	80-95	75-90	23-34	7-15
	7-19	GR-SIL, GR-SICL	CL	A-4, A-6, A-7-6	0	0-10	65-100	60-100	55-90	55-90	30-45	8-21
	19-57	GRV-SIL, GRV-SICL, GRX-SICL, GRX-SIL	GC	A-2, A-6, A-7-6	0	0-25	15-55	10-50	10-45	8-45	37-48	16-25
	57-85	GRX-C, GRV-C	GC	A-2-7, A-7-6	0	0-40	15-55	10-50	10-45	8-45	48-65	28-39
70062:												
Pomme----------	0-7	SIL	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	80-95	75-90	23-35	7-15
	7-19	GR-SIL, GR-SICL	CL	A-4, A-6, A-7-6	0	0-10	65-100	60-100	55-90	54-90	30-45	8-21
	19-57	GRV-SIL, GRV-SICL, GRX-SICL, GRX-SIL	GC	A-2, A-6, A-7-6	0	0-25	15-55	10-50	10-45	8-45	37-48	16-25
	57-85	GRX-C, GRV-C	GC	A-2-7, A-7-6	0	0-40	15-55	10-50	10-45	8-45	48-66	28-39
Rueter----------	0-13	GRV-SIL	GC, SC, SC-SM	A-2-4, A-2-6	0	0-15	25-60	20-55	20-51	20-50	15-25	NP-15
	13-42	GRX-SIL, GRV-SIL, CBV-SIL, CBX-SIL	GC, SC	A-2-6, A-6	0-10	0-75	25-90	20-85	20-80	15-75	20-30	4-11
	42-80	GRV-C, GRX-C, CBV-C, CBX-C	GC, GP-GC, SC, SP-SC	A-2-7, A-7	0-10	10-80	10-70	5-65	5-65	4-65	55-100	35-65
70063:												
Rueter----------	0-13	GRX-SIL	GC-GM, SC-SM, GC, SC	A-1-a, A-2-4, A-2-6	0	0-45	21-91	15-85	14-79	13-76	13-25	NP-15
	13-42	GRX-SIL	GP-GC, SC, GC, SP-SC	A-2-6, A-6	0-30	0-75	18-76	10-70	10-64	5-61	18-30	4-11
	42-80	GRV-C	GP-GC, GC, SC, SP-SC	A-2-7, A-7	0-60	0-90	18-100	10-100	10-98	10-96	55-97	35-63
70064:												
Rueter----------	0-13	GRV-SIL	GP-GC, GC, SC, SC-SM	A-1-a, A-2-6, A-2-4	0-65	0-65	18-76	10-70	9-65	5-62	13-25	NP-15
	13-42	GRX-SIL	GP-GC, GC, SC, SP-SC	A-2-6, A-6	0-30	0-75	18-76	10-70	10-64	5-61	18-30	4-11
	42-80	GRV-C	GC, GP-GC, SP-SC, SC	A-2-7, A-7	0-60	0-90	18-100	10-100	10-98	10-96	55-97	35-63

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
70065:												
Rueter----------	0-13	GRV-SIL	GC, SC, SC-SM	A-2-4, A-2-6	0	0-15	25-60	20-55	20-51	20-50	15-25	NP-15
	13-42	GRX-SIL, GRV-SIL, CBV-SIL, CBX-SIL	GC, SC	A-2-6, A-6	0-10	0-75	25-90	20-85	20-80	15-75	18-30	4-11
	42-80	GRV-C, GRX-C, CBV-C, CBX-C	GC, GP-GC, SC, SP-SC	A-2-7, A-7	0-10	10-80	10-70	5-65	5-65	5-65	55-100	35-63
70066:												
Winnipeg--------	0-9	SIL	CL	A-4	0	0	95-100	90-100	85-100	75-95	23-35	7-15
	9-45	SIL, SICL	CL	A-6	0	0	95-100	90-100	85-100	80-100	29-39	11-18
	45-64	SICL, SIC	CL	A-6, A-7-6	0	0	95-100	65-100	60-100	55-100	35-43	15-21
	64-80	GR-SICL, GRV-SICL, GRV-L, GRX-SICL, GRX-L, GR-L	GC, SC	A-6, A-2-4, A-7-6	0	0-40	20-60	15-55	15-45	10-40	29-71	9-44
71751:												
Bearthicket-----	0-11	SIL	CL, CL-ML, ML	A-4	0	0	100	95-100	90-100	75-100	18-30	3-11
	11-64	SICL, SIL	CL, CL-ML	A-4, A-6	0	0	100	90-100	90-100	88-100	21-34	5-15
	64-80	SICL, SIC, GRX-SICL, GRV-SICL, CL, GRX-L, GRX-CL	CL, GC	A-4, A-6, A-2-4, A-2-6	0	0	20-100	10-100	10-85	10-80	25-48	5-25
73031:												
Gerald----------	0-11	SIL	CL, CL-ML	A-4	0	0	95-100	85-100	80-95	75-90	20-30	6-10
	11-16	SIL	CL, CL-ML	A-4	0	0	95-100	85-100	80-95	75-90	20-30	6-10
	16-33	SIC, SICL, GR-SICL	CH, CL	A-7, A-6	0	0-5	80-100	75-100	75-90	70-85	35-55	20-30
	33-49	SICL, GR-SICL, GRV-SICL, GRX-SICL	CL, GM, ML	A-7, A-2, A-6	0	0-40	35-90	30-85	30-80	25-75	40-60	12-30
	49-80	CB-C, GRV-C, GRV-SICL, GRX-SIC, CB-SICL	GC	A-2, A-7	0	15-40	35-85	30-80	30-75	25-70	40-65	15-35
75376:												
Cedargap--------	0-11	GR-SIL	CL, GM, SM	A-1, A-2-4, A-4	0	0-15	55-90	50-85	45-85	20-75	18-30	3-11
	11-37	GRV-CL, GRV-SIL, GRV-L, GRV-SCL	GC, GM, ML, SM	A-1, A-2, A-4	0	0-15	30-90	25-85	25-85	20-65	23-44	3-22
	37-80	GRV-CL, GRX-L, GRV-L, GRV-SCL	GC, GC-GM	A-1-b, A-2-4, A-2-6	0-20	0-30	30-90	25-85	25-75	15-45	25-45	5-22

Table 21.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
99000. Pits and Quarries												
99001. Water												
99002. Borrow areas												
99003. Miscellaneous water												
99005. Landfill												
99010: Dumps.												
Pits----------	0-60	UWB	---	---	---	---	---	---	---	---	---	---
99011:												
Kanima----------	0-6	CNV-L	GC	A-2-6, A-2-4	0	0	30-55	25-50	25-45	20-35	15-30	2-11
	6-85	CNV-CL, CNV-L	GC, SM	A-4, A-2-6, A-2-7, A-6	0	0	30-55	25-50	5-50	5-49	15-43	2-18