

## Engineering Interpretations

### **Construction Material and Excavating**

Soils are rated as sources for road fill, topsoil, sand, and gravel. Suitability ratings of good, fair, or poor are given for soils used as a source of road fill and topsoil. Ratings of probable and improbable are given for sand and gravel. A rating of probable means that on the basis of the available evidence, the source material is likely to be in or below the soil. A rating of improbable means that the source material is unlikely to be in or below the soil. The ratings for sand and gravel do not consider the quality of the source material because quality depends on how the source material is to be used.

### **Road Fill**

Road fill consists of soil material that is excavated from its original position and used in road embankments elsewhere. The evaluations for road fill are for low embankments that generally are less than 6 feet in height and are less exacting in design than high embankments such as those along superhighways. The rating is given for the whole soil, from the surface to a depth of about 5 feet, based on the assumption that soil horizons will be mixed in loading, dumping, and spreading. Soils are rated as to the amount of material available for excavation, the ease of excavation, and how well the material performs after it is in place.

### **Sand**

Sand as a construction material is usually defined as particles ranging in size from 0.074 mm (sieve #200) to 4.75 mm (sieve #4) in diameter. Sand is used in great quantities in many kinds of construction. Specifications for each purpose vary widely. The intent of this rating is to show only the probability of finding material in suitable quantity. The suitability of the sand for specific purposes is not evaluated. If the lowest layer of the soil contains sand, the soil is rated as a probable source regardless of thickness. The assumption is that the sand layer below the depth of observation exceeds the minimum thickness.

### **Gravel**

Gravel as a construction material is defined as particles ranging in size from 4.76 mm (sieve #4) to 76 mm (3 inches) in diameter.

Gravel is used in great quantities in many kinds of construction. Specifications for each purpose vary widely. The intent of this rating is to show only the probability of finding material in suitable quantity. The suitability of the gravel for specific purposes is not evaluated. If the lowest layer of the soil contains gravel, the soil is rated as a probable source regardless of thickness. The assumption is that the gravel layer below the depth of observation exceeds the minimum thickness.

### **Topsoil**

The term "topsoil" has several meanings. As used here, the term describes soil material used to cover an area so as to improve soil conditions for establishment and maintenance of adapted vegetation. Generally, the upper part of the soil, which is richest in organic matter, is most desirable; however, material excavated from deeper layers is also used. In this rating, the upper 40 inches of soil material is evaluated for use as topsoil. In the

borrow area, the material below 40 inches is evaluated for its suitability for plant growth after the upper 40 inches is removed. The soil properties that are used to rate the soil as topsoil are those that affect plant growth, the ease of excavation, loading, and spreading, and those that affect the reclamation of the borrow area.

*This subsection includes:*

- **(a) Construction Materials and Excavating**

Table 14.--Construction Materials and Excavating

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 1.00. The larger the value, the greater the potential limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
15003:										
Basehor-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~depth to bedrock	1.00	~hard bedrock <40"	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
			~excess fines	1.00	~excess fines	1.00	~too sandy	0.54	~cutbanks cave	0.29
			(bottom layer)		(thickest layer)		(moderately limited)		(slightly limited)	
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
15004:										
Basehor-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~depth to bedrock	1.00	~hard bedrock <40"	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~slope	0.67	~excess fines	1.00	~excess fines	1.00	~slope	1.00	~slope	1.00
	(limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
							~too acid	0.54	~cutbanks cave	0.29
							(moderately limited)		(slightly limited)	
40000:										
Barden-----	Very limited		Very limited		Very limited		Limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	0.79	~wetness	1.00
	(very limited)		(thickest layer)		(bottom layer)		(limited)		(very limited)	
	~shrink-swell	0.71	~excess fines	1.00	~excess fines	1.00	~wetness	0.12	~too clayey	0.30
	(limited)		(bottom layer)		(thickest layer)		(slightly limited)		(moderately limited)	
	~wetness	0.12							~cutbanks cave	0.29
	(slightly limited)								(slightly limited)	
40003:										
Woodson-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~wetness	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	1.00	~excess fines	1.00	~excess fines	1.00	~wetness	0.96	~too clayey	0.74
	(very limited)		(bottom layer)		(thickest layer)		(limited)		(limited)	
	~wetness	0.96							~cutbanks cave	0.29
	(limited)								(slightly limited)	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
40004:										
Barden-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~wetness	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	1.00	~excess fines	1.00	~excess fines	1.00	~wetness	0.12	~too clayey	0.34
	(very limited)		(bottom layer)		(thickest layer)		(slightly limited)		(moderately limited)	
	~wetness	0.12							~cutbanks cave	0.29
	(slightly limited)								(slightly limited)	
40005:										
Sylvania-----	Very limited		Very limited		Very limited		Very limited		Limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~too clayey	0.90
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(limited)	
	~shrink-swell	1.00	~excess fines	1.00	~excess fines	1.00	~large surface stones	0.70	~wetness	0.90
	(very limited)		(bottom layer)		(thickest layer)		(limited)		(limited)	
	~depth to bedrock	0.60					~too acid	0.36	~cutbanks cave	0.29
	(limited)						(moderately limited)		(slightly limited)	
40006:										
Barco-----	Very limited		Very limited		Very limited		Limited		Moderately limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~depth to bedrock	0.93	~soft bedrock	0.35
	(very limited)		(thickest layer)		(bottom layer)		(limited)		(moderately limited)	
	~low strength	0.78	~excess fines	1.00	~excess fines	1.00	~too acid	0.48	~cutbanks cave	0.29
	(limited)		(bottom layer)		(thickest layer)		(moderately limited)		(slightly limited)	
	~shrink-swell	0.27							~too clayey	0.02
	(slightly limited)								(slightly limited)	
Sylvania-----	Limited		Very limited		Very limited		Limited		Very limited	
	~low strength	0.78	~excess fines	1.00	~excess fines	1.00	~too clayey	0.99	~cutbanks cave	1.00
	(limited)		(thickest layer)		(bottom layer)		(limited)		(very limited)	
	~shrink-swell	0.69	~excess fines	1.00	~excess fines	1.00	~area reclaim	0.92	~wetness	0.64
	(limited)		(bottom layer)		(thickest layer)		(limited)		(limited)	
	~depth to bedrock	0.48					~too acid	0.42	~too clayey	0.28
	(moderately limited)						(moderately limited)		(slightly limited)	
40007:										
Eldorado-----	Moderately limited		Very limited		Limited		Very limited		Very limited	
	~shrink-swell	0.39	~excess fines	1.00	~excess fines	0.99	~small stones	1.00	~too clayey	1.00
	(moderately limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~large stones	0.30	~excess fines	1.00	~excess fines	0.99	~area reclaim	1.00	~large stones	0.30
	(slightly limited)		(bottom layer)		(thickest layer)		(very limited)		(slightly limited)	
	~low strength	0.22	~small stones	0.38	~small stones	0.38	~large surface stones	0.70	~cutbanks cave	0.29
	(slightly limited)		(thickest layer)		(thickest layer)		(limited)		(slightly limited)	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
40008:										
Parsons-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~wetness	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	1.00	~excess fines	1.00	~excess fines	1.00	~wetness	1.00	~too clayey	1.00
	(very limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
	~wetness	1.00					~too acid	0.24	~cutbanks cave	0.29
	(very limited)						(slightly limited)		(slightly limited)	
44000:										
Cherokee-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~wetness	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	1.00	~excess fines	1.00	~excess fines	1.00	~wetness	1.00	~too clayey	0.95
	(very limited)		(bottom layer)		(thickest layer)		(very limited)		(limited)	
	~wetness	1.00					~too acid	0.36	~cutbanks cave	0.29
	(very limited)						(moderately limited)		(slightly limited)	
46001:										
Verdigris-----	Very limited		Very limited		Very limited		Not limited		Moderately limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00			~flooding	0.60
	(very limited)		(thickest layer)		(bottom layer)				(moderately limited)	
	~shrink-swell	0.27	~excess fines	1.00	~excess fines	1.00			~cutbanks cave	0.29
	(slightly limited)		(bottom layer)		(thickest layer)				(slightly limited)	
46002:										
Hepler-----	Very limited		Very limited		Very limited		Limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~wetness	0.86	~wetness	1.00
	(very limited)		(thickest layer)		(bottom layer)		(limited)		(very limited)	
	~wetness	0.86	~excess fines	1.00	~excess fines	1.00			~flooding	0.60
	(limited)		(bottom layer)		(thickest layer)				(moderately limited)	
	~shrink-swell	0.33							~cutbanks cave	0.29
	(moderately limited)								(slightly limited)	
66001:										
Dameron-----	Very limited		Very limited		Possible source		Limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	0.69	~cutbanks cave	1.00
	(very limited)		(thickest layer)		(thickest layer)		(limited)		(very limited)	
	~shrink-swell	0.29	~excess fines	1.00	~possible source	0.33	~small stones	0.50	~flooding	0.60
	(slightly limited)		(bottom layer)		(bottom layer)		(moderately limited)		(moderately limited)	
									~too clayey	0.10
									(slightly limited)	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
70000:										
Bona-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~cutbanks cave	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	0.30	~excess fines	1.00	~excess fines	1.00			~too clayey	1.00
	(slightly limited)		(bottom layer)		(thickest layer)				(very limited)	
70006:										
Credon-----	Very limited		Very limited		Limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~cutbanks cave	1.00
	(very limited)		(thickest layer)		(thickest layer)		(very limited)		(very limited)	
	~shrink-swell	0.45	~excess fines	1.00	~excess fines	1.00	~dense layer	0.99	~wetness	1.00
	(moderately limited)		(bottom layer)		(bottom layer)		(limited)		(very limited)	
	~wetness	0.26					~wetness	0.26	~too clayey	1.00
	(slightly limited)						(slightly limited)		(very limited)	
70007:										
Cliquot-----	Limited		Very limited		Very limited		Very limited		Very limited	
	~shrink-swell	0.74	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~cutbanks cave	1.00
	(limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~depth to bedrock	0.30	~excess fines	1.00	~excess fines	1.00	~slope	1.00	~slope	1.00
	(slightly limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
	~slope	0.08					~too acid	0.24	~wetness	0.78
	(slightly limited)						(slightly limited)		(limited)	
70008:										
Goss-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~cutbanks cave	1.00
	(very limited)		(thickest layer)		(thickest layer)		(very limited)		(very limited)	
	~shrink-swell	0.45	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~too clayey	1.00
	(moderately limited)		(bottom layer)		(bottom layer)		(very limited)		(very limited)	
							~area reclaim	1.00		
							(very limited)			
70009:										
Goss-----	Very limited		Very limited		Limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	0.99	~too clayey	1.00	~too clayey	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~large stones	0.41	~excess fines	1.00	~small stones	0.66	~small stones	1.00	~large stones	0.41
	(moderately limited)		(bottom layer)		(thickest layer)		(very limited)		(moderately limited)	
	~shrink-swell	0.33	~small stones	0.66	~small stones	0.66	~area reclaim	1.00	~cutbanks cave	0.29
	(moderately limited)		(thickest layer)		(bottom layer)		(very limited)		(slightly limited)	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
70010:										
Goss-----	Moderately limited		Very limited		Limited		Very limited		Very limited	
	~large stones	0.38	~excess fines	1.00	~excess fines	0.99	~slope	1.00	~slope	1.00
	(moderately limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~slope	0.33	~excess fines	1.00	~excess fines	0.99	~too clayey	1.00	~cutbanks cave	1.00
	(moderately limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
	~shrink-swell	0.25	~small stones	0.10	~small stones	0.10	~small stones	1.00	~too clayey	0.93
	(slightly limited)		(thickest layer)		(thickest layer)		(very limited)		(limited)	
70012:										
Hoberg-----	Very limited		Very limited		Limited		Limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~dense layer	0.95	~wetness	1.00
	(very limited)		(thickest layer)		(thickest layer)		(limited)		(very limited)	
	~wetness	0.48	~excess fines	1.00	~small stones	0.66	~wetness	0.48	~dense layer	0.95
	(moderately limited)		(bottom layer)		(bottom layer)		(moderately limited)		(limited)	
			~small stones	0.66	~possible source	0.42	~small stones	0.12	~too clayey	0.57
			(bottom layer)		(bottom layer)		(slightly limited)		(moderately limited)	
70014:										
Moko-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~depth to bedrock	1.00	~hard bedrock <40"	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~large stones	0.99	~excess fines	1.00	~excess fines	1.00	~slope	1.00	~slope	1.00
	(very limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
	~slope	0.92	~small stones	1.00	~small stones	1.00	~small stones	0.97	~large stones	0.99
	(limited)		(thickest layer)		(thickest layer)		(limited)		(very limited)	
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
70040:										
Cliquot-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~too clayey	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	0.97	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~wetness	0.61
	(limited)		(bottom layer)		(thickest layer)		(very limited)		(limited)	
	~depth to bedrock	0.90					~too acid	0.54	~cutbanks cave	0.29
	(limited)						(moderately limited)		(slightly limited)	
Bolivar-----	Very limited		Very limited		Very limited		Very limited		Limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~depth to bedrock	1.00	~soft bedrock	0.79
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(limited)	
	~low strength	0.22	~excess fines	1.00	~small stones	1.00	~too clayey	0.58	~cutbanks cave	0.29
	(slightly limited)		(bottom layer)		(thickest layer)		(moderately limited)		(slightly limited)	
	~large stones	0.02	~small stones	1.00	~excess fines	1.00	~too sandy	0.40	~too clayey	0.05
	(slightly limited)		(thickest layer)		(thickest layer)		(moderately limited)		(slightly limited)	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
70041:										
Goss-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~too clayey	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	0.23	~excess fines	1.00	~excess fines	1.00	~slope	0.96	~slope	0.96
	(slightly limited)		(bottom layer)		(thickest layer)		(limited)		(limited)	
	~large stones	0.19	~small stones	0.66	~small stones	0.66	~large stones	0.30	~cutbanks cave	0.29
	(slightly limited)		(thickest layer)		(thickest layer)		(slightly limited)		(slightly limited)	
70042:										
Goss-----	Moderately limited		Very limited		Possible source		Very limited		Very limited	
	~slope	0.58	~excess fines	1.00	~possible source	0.50	~slope	1.00	~slope	1.00
	(moderately limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	0.33	~excess fines	1.00	~possible source	0.42	~small stones	1.00	~cutbanks cave	1.00
	(moderately limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
							~area reclaim	1.00	~too clayey	1.00
							(very limited)		(very limited)	
70043:										
Sonsac-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~hard bedrock <40"	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~too clayey	0.99
	(very limited)		(bottom layer)		(thickest layer)		(very limited)		(limited)	
	~large stones	0.96	~small stones	0.66	~small stones	0.66	~large stones >25%	1.00	~large stones	0.96
	(limited)		(thickest layer)		(thickest layer)		(very limited)		(limited)	
Moko-----	Very limited		Very limited		Limited		Very limited		Very limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~depth to bedrock	1.00	~hard bedrock <40"	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
			~excess fines	1.00	~excess fines	0.75	~small stones	1.00	~slope	0.37
			(bottom layer)		(thickest layer)		(very limited)		(moderately limited)	
							~too clayey	0.59	~cutbanks cave	0.29
							(moderately limited)		(slightly limited)	
Rock outcrop---	Not rated		Not rated		Not rated		Not rated		Not rated	
70044:										
Sonsac-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~depth to bedrock	1.00	~excess fines	1.00	~excess fines	1.00	~slope	1.00	~slope	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~hard bedrock <40"	1.00
	(very limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
	~shrink-swell	0.35					~small stones	1.00	~too clayey	1.00
	(moderately limited)						(very limited)		(very limited)	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
70044:										
Moko-----	Very limited		Very limited		Limited		Very limited		Very limited	
	~depth to bedrock (very limited)	1.00	~excess fines (thickest layer)	1.00	~excess fines (bottom layer)	1.00	~depth to bedrock (very limited)	1.00	~hard bedrock <40" (very limited)	1.00
	~slope (slightly limited)	0.25	~excess fines (bottom layer)	1.00	~excess fines (thickest layer)	0.99	~slope (very limited)	1.00	~slope (very limited)	1.00
							~small stones (very limited)	1.00	~cutbanks cave (slightly limited)	0.29
70045:										
Keeno-----	Moderately limited		Very limited		Possible source		Very limited		Very limited	
	~wetness (moderately limited)	0.48	~excess fines (thickest layer)	1.00	~possible source (bottom layer)	0.42	~small stones (very limited)	1.00	~cutbanks cave (very limited)	1.00
	~large stones (slightly limited)	0.00	~excess fines (bottom layer)	1.00	~possible source (thickest layer)	0.42	~dense layer <20" (very limited)	1.00	~wetness (very limited)	1.00
							~too clayey (limited)	0.67	~dense layer <20" (very limited)	1.00
70047:										
Wanda-----	Moderately limited		Very limited		Very limited		Not limited		Very limited	
	~shrink-swell (moderately limited)	0.36	~excess fines (thickest layer)	1.00	~excess fines (thickest layer)	1.00			~cutbanks cave (very limited)	1.00
	~low strength (slightly limited)	0.22	~excess fines (bottom layer)	1.00	~excess fines (bottom layer)	1.00			~too clayey (slightly limited)	0.10
70048:										
Alsup-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength (very limited)	1.00	~excess fines (thickest layer)	1.00	~excess fines (bottom layer)	1.00	~too clayey (very limited)	1.00	~cutbanks cave (very limited)	1.00
	~shrink-swell (very limited)	1.00	~excess fines (bottom layer)	1.00	~excess fines (thickest layer)	1.00	~large surface stones (limited)	0.70	~wetness (limited)	0.90
	~depth to bedrock (moderately limited)	0.45					~slope (slightly limited)	0.16	~too clayey (limited)	0.70
73000:										
Pomme-----	Not limited		Very limited		Possible source		Very limited		Very limited	
			~excess fines (thickest layer)	1.00	~possible source (thickest layer)	0.46	~small stones (very limited)	1.00	~cutbanks cave (very limited)	1.00
			~excess fines (bottom layer)	1.00	~possible source (bottom layer)	0.15	~area reclaim (very limited)	1.00	~too clayey (very limited)	1.00
							~too clayey (limited)	0.77		

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
73008:										
Viraton-----	Very limited		Very limited		Very limited		Limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~dense layer	1.00	~cutbanks cave	1.00
	(very limited)		(thickest layer)		(thickest layer)		(limited)		(very limited)	
	~wetness	0.76	~excess fines	1.00	~excess fines	1.00	~wetness	0.76	~wetness	1.00
	(limited)		(bottom layer)		(bottom layer)		(limited)		(very limited)	
									~too clayey	1.00
									(very limited)	
73010:										
Wilderness-----	Limited		Very limited		Possible source		Very limited		Very limited	
	~wetness	0.91	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~wetness	1.00
	(limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
			~excess fines	1.00	~possible source	0.33	~dense layer	0.96	~cutbanks cave	1.00
			(bottom layer)		(thickest layer)		(limited)		(very limited)	
							~wetness	0.91	~too clayey	1.00
							(limited)		(very limited)	
73031:										
Gerald-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~wetness	1.00
	(very limited)		(thickest layer)		(thickest layer)		(very limited)		(very limited)	
	~wetness	0.86	~excess fines	1.00	~excess fines	1.00	~wetness	0.86	~cutbanks cave	1.00
	(limited)		(bottom layer)		(bottom layer)		(limited)		(very limited)	
			~small stones	0.10	~small stones	0.10			~too clayey	1.00
			(bottom layer)		(bottom layer)				(very limited)	
73059:										
Pomme-----	Not limited		Very limited		Very limited		Slightly limited		Very limited	
			~excess fines	1.00	~excess fines	1.00	~area reclaim	0.08	~cutbanks cave	1.00
			(thickest layer)		(thickest layer)		(slightly limited)		(very limited)	
			~excess fines	1.00	~excess fines	1.00			~too clayey	0.99
			(bottom layer)		(bottom layer)				(very limited)	
73065:										
Wilderness-----	Moderately limited		Very limited		Very limited		Very limited		Very limited	
	~wetness	0.58	~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~wetness	1.00
	(moderately limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~large stones	0.00	~excess fines	1.00	~excess fines	1.00	~large stones >25%	1.00	~cutbanks cave	1.00
	(slightly limited)		(bottom layer)		(thickest layer)		(very limited)		(very limited)	
							~dense layer	0.99	~dense layer	0.99
							(limited)		(limited)	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
73075:										
Hobson-----	Moderately limited		Very limited		Very limited		Very limited		Very limited	
	~shrink-swell	0.45	~excess fines	1.00	~excess fines	1.00	~dense layer <20"	1.00	~wetness	1.00
	(moderately limited)		(thickest layer)		(thickest layer)		(very limited)		(very limited)	
	~wetness	0.26	~excess fines	1.00	~excess fines	1.00	~wetness	0.26	~dense layer <20"	1.00
	(slightly limited)		(bottom layer)		(bottom layer)		(slightly limited)		(very limited)	
							~too clayey	0.06	~cutbanks cave	0.29
							(slightly limited)		(slightly limited)	
74625:										
Hartville-----	Very limited		Very limited		Very limited		Very limited		Very limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	1.00	~wetness	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
	~shrink-swell	1.00	~excess fines	1.00	~excess fines	1.00	~wetness	0.76	~too clayey	0.45
	(very limited)		(bottom layer)		(thickest layer)		(limited)		(moderately limited)	
	~wetness	0.76					~too acid	0.12	~cutbanks cave	0.29
	(limited)						(slightly limited)		(slightly limited)	
74641:										
Secesh-----	Not limited		Very limited		Very limited		Very limited		Very limited	
			~excess fines	1.00	~excess fines	1.00	~small stones	1.00	~cutbanks cave	1.00
			(thickest layer)		(bottom layer)		(very limited)		(very limited)	
			~excess fines	1.00	~excess fines	1.00	~area reclaim	0.68	~flooding	0.60
			(bottom layer)		(thickest layer)		(limited)		(moderately limited)	
							~too clayey	0.25		
							(slightly limited)			
75378:										
Sturkie-----	Very limited		Very limited		Very limited		Moderately limited		Moderately limited	
	~low strength	1.00	~excess fines	1.00	~excess fines	1.00	~too clayey	0.53	~flooding	0.60
	(very limited)		(thickest layer)		(bottom layer)		(moderately limited)		(moderately limited)	
			~excess fines	1.00	~excess fines	1.00			~cutbanks cave	0.29
			(bottom layer)		(thickest layer)				(slightly limited)	
									~too clayey	0.02
									(slightly limited)	
99000:										
Pits,										
quarries-----	Not rated		Not rated		Not rated		Not rated		Not rated	
99001:										
Water-----	Not rated		Not rated		Not rated		Not rated		Not rated	

Table 14.--Construction Materials and Excavating--Continued

Map symbol and soil name	Source for roadfill		Source for sand		Source for gravel		Source for topsoil		Shallow excavations	
	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value	Limitation	Value
99004:										
Kanima-----	Very limited		Very limited		Limited		Very limited		Very limited	
	~slope	1.00	~excess fines	1.00	~excess fines	0.75	~small stones	1.00	~slope	1.00
	(very limited)		(thickest layer)		(bottom layer)		(very limited)		(very limited)	
			~excess fines	1.00	~excess fines	0.75	~area reclaim	1.00	~cutbanks cave	0.29
			(bottom layer)		(thickest layer)		(very limited)		(slightly limited)	
							~slope	1.00		
							(very limited)			