

ENCLOSURE 1

Question: Section 4.3 and Section 4.5, General

The U.S. Soil Conservation Service should review all areas likely to be disturbed for the presence of prime farmlands. Provide a letter from the state soil conservationist indicating if any prime farmland or additional land of statewide or local importance will be affected by the project.

Response

Attachment 2A contains soil association maps of Alternative Sites 8 and 10 and the preferred site provided by the Soil Conservatio.. Service (SCS). Also included in Attachment 2A is a table which provides SCS cropland capability units for these maps.

The SCS ranks soil units (groups of similar soil associations or series) on their suitability as cropland. The ranking is composed of three parts, limitation index, reason for limitation, and production/management index.

A Roman numeral (I-VIII) is used to denote the presence of limiting factors in regard to agricultural production. "I" indicates no limitations (prime farmland), "IV" suggests special management requirements may be necessary for farming, and "VIII" indicates the unit is unsuitable for agricultural production because of severe conditions.

A small case letter (e, w, s, c) indicates the major limiting factor.

e - wind or water erosion hazard

w - excess water

s - shallow rooting zone

c - adverse climatic conditions

The third entry, Arabic number (I2) designates potential yield and management practice necessary to achieve potential yield. One (1) represents minimal management necessary to achieve the potential crop yield. Management becomes progressively more critical from 1 to I2.

Further discussion of the suitability index can be found in Attachment 2B.

A brief description of the soil unit's suitability for pasture and hayland plantings is shown in Attachment 2C.

The combined ratings of crop and pasture/hayland suitabilities can give an overall idea of the area's worth as agricultural land. For example, the Nunn Clay Loam (18B), which occupies a portion of the preferred disposal site, is suited for climatically adapted plant species (F); but yields will be limited by water shortages, and erosion is a potential problem (IIIe1).

Although the disposal and alternative sites may include soil units with a III rating, the small size, or discontinuous nature of the units, combined with inadequate water supplies discourages cultivation.

ENCLOSURE 2

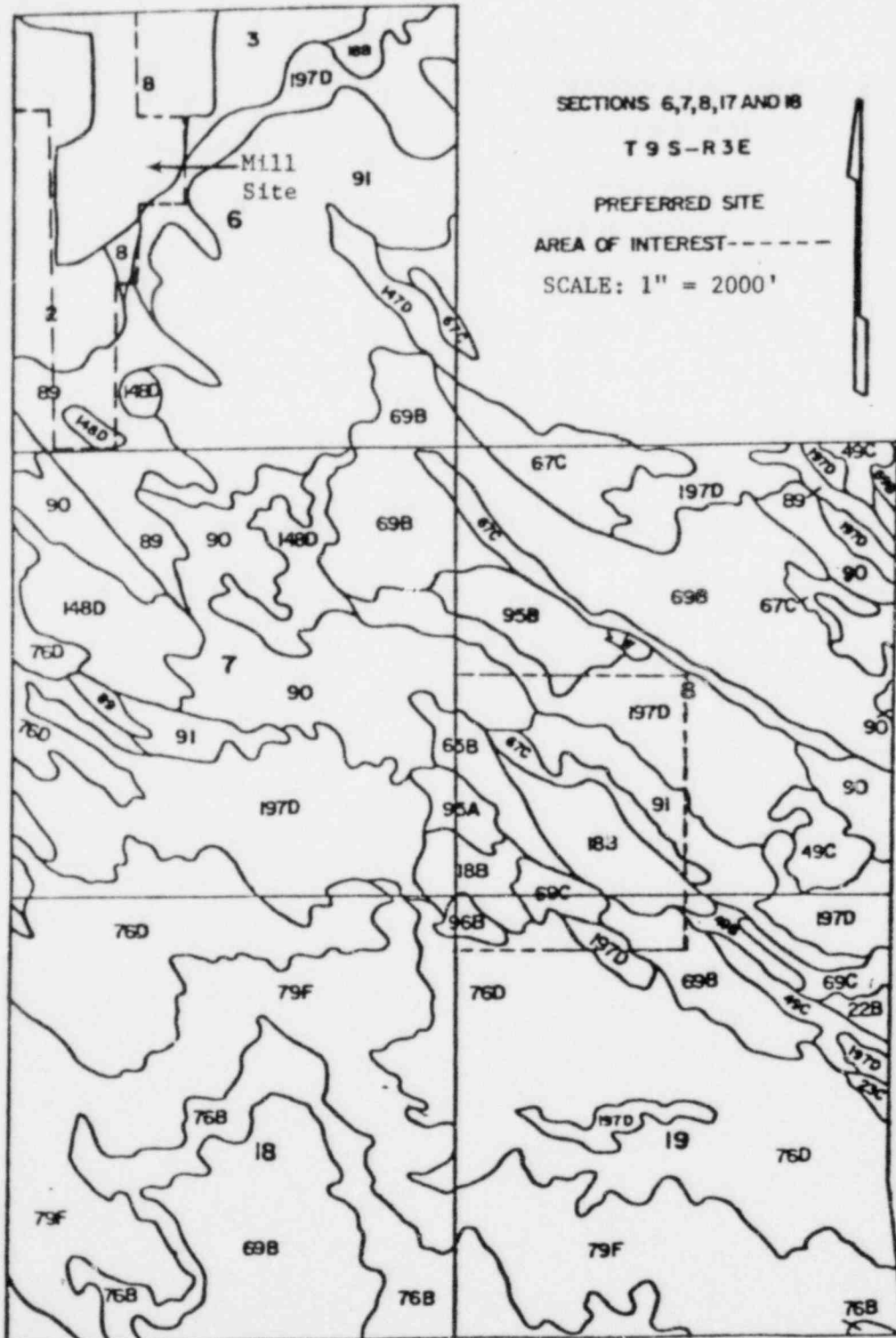
ATTACHMENT 2A

SOIL ASSOCIATION MAPS

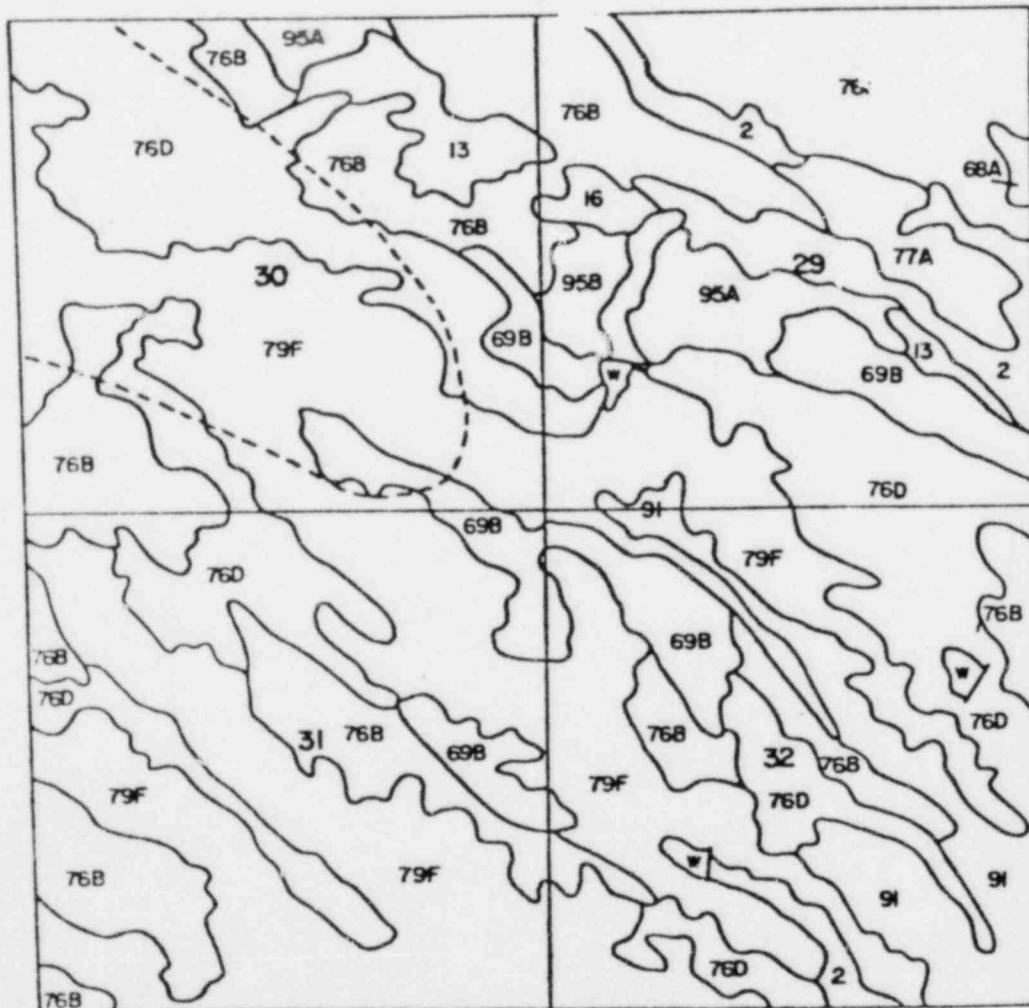
AND

CROPLAND CAPABILITY UNITS

ATTACHMENT 2A



SECTIONS 29, 30, 31 AND 32
T 9 S - R 3 E
ALTERNATIVE SITE 10
AREA OF INTEREST - - - - -
SCALE: 1" = 2000'



UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

FARM AND RANCH

TABLE OF SOIL INTERPRETIVE GROUPS

Map Symbol	Soil Mapping Unit Name	Cropland Capability Unit*	Pasture & Hayland Group
2	Lohmiller silty clay loam	IIIc2	F
3	Haverson loam	IIIc2	F
5	Stetter clay	IVs3	I
8	Glenberg fine sandy loam	IVe6	H
10	Pits, mine	VIIIIs2	-
13	Cedar Butte silt loam	IVs2	C
15	Arvada loam	VIIs3	NS
16	Hisle-Slickspots complex		
	Hisle part	VIIs ²	NS
18B	Nunn clay loam	IIIe1	F
19A	Satanta loam	IIIc1	F
19B	Satanta loam	IIIe1	F
19C	Satanta loam	IVe1	F
22B	Jayem fine sandy loam	IVe7	H
23C	Dailey fine sand	VIe10	NS
40B	Norka-Variant silt loam	IVe1	F
42B	Butche-Boneek Loams		
	Butche Part	VIIs2	NS
	Boneek Part	IVe1	F
44B	Boneek silt loam	IIe1	F
49C	Ascalon fine sandy loam	VIe7	HN
67C	Colby-Norka silt loams		
	Colby part	VIe3	GN
68A	Norka silt loam	IIIe1	F
69B	Norka silt loam	IIIe1	F
76B	Minnequa silt loam	IVe8	G
76D	Minnequa-Midway silty complex		
	Minnequa part	VIe3	GN
77A	Manvel silt clay loam	IVe10	G
79F	Shingle-Penrose- Rock outcrop compl.		
	Shingle part	VIIIe4	NS
80A	Manzanola silty clay loam	IIIIs1	I

Indicate with asterisk () if irrigated.

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

FARM AND RANCH
TABLE OF SOIL INTERPRETIVE GROUPS
(Continued)

<u>Map Symbol</u>	<u>Soil Mapping Unit Name</u>	<u>Cropland Capability Unit*</u>	<u>Pasture & Hayland Group</u>
80B	Manzanola silty clay loam	IVe3	I
89	Bradhurst clay	VIa6	NS
90	Grummit-Snomo clays Grummit part	VIe12	NS
91	Grummit-Rock out- crop complex Grummit part	VIIe5	NS
95A	Kyle clay	IVs3	I
97D	Pierre-Samsil clays Pierre part	VIe4	IN
98F	Samsil clay	VIIe5	NS
148D	Dwyer loamy fine sand	VIIe3	NS
1. 5	Nathias-Midway-Rock outcrop complex Nathias part	VIe12	NS
197D	Pierre-Grummit clay Pierre part	VIe4	IN
49B	Tuthill fine sandy loam	Ne7	H
69C	Norka silt loam	Ne1	F
95B	Kyle clay	Ne3	I

Indicate with asterisk () if irrigated.

ATTACHMENT 2B

CAPABILITY CLASSIFICATION

ATTACHMENT 2B

CAPABILITY CLASSIFICATION

Capability units are given in Table 1 and show the capability unit or units for each mapping unit symbol that appears in the area. The capability unit descriptions are as brief as possible and give the user an idea of the capability of each mapping unit for agricultural uses. In the capability classification system soils are grouped according to their limitations and hazards when used for agricultural purposes. The capability classification has three major levels of soils groupings: (1) capability class, (2) capability subclass, and (3) capability unit. Capability class is the broadest level with eight groups, Class I through Class VIII. Soils grouped in Class I have few or no limitations for crop production while soils in Class VIII have little or no value for agricultural purposes. Limitations for agricultural use are progressively more severe from Class I to Class VIII.

All classes except Class I and V are divided into two to four subclasses. Class I soils have no limitations. The four subclasses are (a) erosion, (w) wetness, (s) soil limitation, and (c) climatic limitation. Subclass class (a) includes soils where erosion is a hazard or past erosion is the major limiting factor. Subclass (w) includes soils where excess water is the main hazard. All Class V land is in subclass (w). Subclass (s) includes soils where a shallow rooting zone is the major hazard. An example of a capability subclass is IIa.

Capability subclasses are further separated into capability units. A capability unit is set apart from the capability class with an arabic numeral at the end of the subclass, such as IIe1. Soils grouped into a capability unit respond alike and require similar management practices, although they may group two or more soil series together. Soils in a capability unit have about the same potentials for yields and the same kinds and degrees of limitations. Thus soils in a capability unit are uniform enough to produce similar kinds of crops, require similar conservation treatment and management with a specific use, and have comparable productive potentials. A complete description of the capability classification is given in Agricultural Handbook 210, Land Capability Classification. Following are capability unit descriptions for the area in Fall River and Custer Counties:

- IIIc1 Deep and moderately deep, loamy soils on nearly level (0 to 2%) uplands. The main limitation is inadequate moisture and the main hazard is wind erosion.
- IIIc2 Deep, loamy soils on nearly level (0 to 2%) bottom lands and footslopes that sometimes receive beneficial overflow. The main limitation is inadequate moisture and the main hazard is wind erosion.
- IIIc3 Deep, loamy, well to moderately well drained soils in nearly level (0 to 2%) upland swales and small draws that receive beneficial run-in. However, the main limitation is still inadequate moisture.
- IIIe1 Deep and moderately deep, loamy soils on gently sloping (2 to 6%) uplands. The main limitation is moisture shortage and the main hazards are wind and water erosion.
- IIIe1 Deep and moderately deep, clayey soils on nearly level (0 to 2%) uplands. The main limitations are lack of moisture and an unfavorable rooting zone. The main hazard is wind erosion.
- IVe1 Moderately deep and deep, loamy soils on undulating and sloping (6 to 9%) uplands. They have severe water and moderate wind erosion hazards. The main limitation is inadequate moisture.
- IVe2 Soils with 20 to 40 inches of loamy material over sand and gravel on gently sloping (2 to 6%) uplands. The main limitations are the low water holding capacity and inadequate moisture. The main hazards are wind and water erosion.
- IVe3 Deep and moderately deep, clayey soils on gently sloping (2 to 6%) uplands. The main limitations are inadequate moisture and an unfavorable rooting zone. The main hazards are water and wind erosion.
- IVe4 Deep, moderately sandy soils on nearly level (0 to 2%) uplands. They have severe wind erosion hazards. The main limitations are low water holding capacity and inadequate moisture.
- IVe6 Deep and moderately deep, moderately sandy soils on nearly level (0 to 2%) bottom lands, terraces, and uplands. They have severe wind erosion hazards. The main limitations are inadequate moisture and low water holding capacity.
- IVe7 Deep and moderately deep, moderately sandy soils on gently undulating and gently sloping (2 to 6%) uplands and terraces. They have severe wind erosion hazards. The main limitations are inadequate moisture and low water holding capacity.
- IVe8 Moderately deep, loamy, calcareous soils on gently undulating and gently sloping (2 to 6%) uplands. They have severe wind erosion hazards. The main limitation is inadequate moisture.
- IVe10 Deep, loamy, calcareous soils on nearly level (0 to 2%) uplands. They have severe wind erosion hazards. The main limitation is inadequate moisture.
- IVe1 Soils with loamy surfaces 20 to 40 inches thick over sand and gravel on nearly level (0 to 2%) terraces. The main limitations are inadequate moisture and low water holding capacity. The main hazard is wind erosion.
- IVe2 Soils with 4 to 10 inches of loamy surfaces over dense, claypan subsoils that contain salts. These soils occur in nearly level (0 to 2%) upland swales and on uplands. The main limitations are an unfavorable rooting zone and inadequate moisture. The main hazard is wind erosion.
- IVe3 Moderately deep, clayey soils on nearly level (0 to 2%) uplands. The main limitations are inadequate moisture and unfavorable rooting zone. The main hazard is wind erosion.
- Vw1 These are low, very poorly drained soils that are suitable for grazing. The main limitations are poor drainage and ponding.
- Vie1 Moderately deep and deep, loamy soils on rolling to hilly (9 to 25%) uplands. These soils have severe water and moderate wind erosion hazards. The main limitations are inadequate rainfall and steep slopes.

CAPABILITY CLASSIFICATION - Continued

- VIe3 Moderately deep and deep, calcareous, loamy soils on undulating to hilly (6 to 25%) uplands. These soils have severe water and moderate wind erosion hazards. The main limitations are inadequate moisture and steep slopes.
- VIe4 Moderately deep and deep clayey soils on sloping to steep (6 to 25%) uplands. These soils have severe water and wind erosion hazards. The main limitations are inadequate rainfall and unfavorable rooting zones.
- VIe7 Moderately deep and deep, sandy soils on gently undulating to rolling (2 to 15%) uplands. They have severe wind and moderate water erosion hazards. The main limitations are inadequate moisture and low water holding capacity.
- VIe8 Deep, sandy soils on bottomlands. They have severe wind erosion hazards. The main limitations are low water holding capacity and inadequate moisture.
- VIe9 Shallow, sandy soils on gently undulating to moderately steep (2 to 25%) uplands. They have severe wind and moderate water erosion hazards. These soils are not suited for cultivation.
- VIe10 Deep, sandy and very sandy soils on nearly level to rolling (0 to 15%) uplands. These soils have very severe wind erosion hazards. They are not suited for cultivation.
- VIe11 Shallow, loamy and silty soils over soft bedrock on nearly level to moderately steep (0 to 25%) uplands. These soils have severe wind and water erosion hazards. They are not suited for cultivation.
- VIe12 Shallow, clayey soils on nearly level to moderately steep (0 to 25%) uplands. These soils have a severe water erosion hazard and limited rooting depth. These soils are not suited for cultivation.
- VIe1 Shallow, loamy soils over hard bedrock on nearly level to moderately steep (0 to 25%) uplands. These soils have limited rooting depth and low or very low available water capacity. These soils are not suited for cultivation.
- VIa3 Soils on nearly level to sloping (0 to 9%) uplands with thin, sandy to clayey surfaces and dense, clayey or claypan subsoils. The main limitation is the unfavorable rooting zone. The main hazards are wind and water erosion on most soils, but flooding is a hazard on some.
- VIa4 Very shallow, gravelly soils on nearly level to moderately steep (0 to 25%) uplands. The main limitation is low water holding capacity. The main hazards are water and wind erosion.
- VIa6 Dense clay soils on nearly level to sloping (0 to 9%) uplands and toe slopes. The main limitations are unfavorable rooting zone and salts. The main hazard is water erosion.
- VIIe1 Shallow to deep, loamy soils on very steep (25 to 50%) uplands. They have severe water erosion hazards. The main limitation is steep slopes.
- VIIe3 Shallow to deep, sandy soils on steep (25 to 40%) uplands. They have severe wind and water erosion hazards. The main limitations are low or very low available water capacity and steep slopes.
- VIIe4 Shallow, loamy soils over soft bedrock on steep and very steep (25 to 50%) uplands. They have a severe water erosion hazard.
- VIIe5 Shallow, clayey soils on steep and very steep (25 to 50%) uplands. They have a severe water erosion hazard.
- VIIa1 Shallow, loamy soils over hard bedrock on steep and very steep (25 to 50%) uplands. They have limited rooting depth and low or very low available water capacity.
- VIIa7 Very shallow, gravelly soils and terrace breaks on steep to very steep (25 to 50%) uplands. The main limitations are low water holding capacity and unfavorable rooting zone. The main hazard is water erosion.
- VIIIa1 Rock outcrops and rock land. Best suited to wildlife and recreation.
- VIIIa7 Nearly barren shale land, gravel pits, badlands, and pits and dumps. Best suited to wildlife and recreation.
- VIIIa3 Nearly barren areas of slickspots, that have little or no grazing value.

ATTACHMENT 2C

PASTURE AND HAYLAND
SUITABILITY GROUPS

BRIEF DESCRIPTIONS OF PASTURE AND HAYLAND SUITABILITY GROUPS

- GROUP H1 - WETLAND SOILS suited for pasture but where excess moisture limits choice of plants to water tolerant species.
- GROUP B2 - DEPRESSIONAL SOILS suited for pasture that are too wet for all but water tolerant grass species.
- GROUP C - CLAYPAN SOILS where choice of species and yields are limited by slow or very slow permeability and a rooting zone high in soluble salts.
- GROUP CN - Steeper slope phases (2-9%) of CLAYPAN SOILS that are not recommended for pasture plantings because of erosion hazard.
- GROUP DL - LOAMY OVER GRAVEL SOILS where choice of species and yields are limited by moderate rooting depth and limited available water capacity associated with sand and/or gravel 20 to 40 inches below the surface.
- GROUP DN - Steeper slope phases (6-40%) of LOAMY OVER GRAVEL SOILS that are not recommended for pasture plantings because of erosion hazard.
- GROUP E - CLAYEY SUBSOILS where choice of species and yields are slightly limited by compact subsoils with slow permeability.
- GROUP EN - Steeper slope phases (6-9%) of CLAYEY SUBSOILS that are not recommended for pasture plantings because of erosion hazard.
- GROUP F - LOAMY OR SILTY SOILS well suited for all climatically adapted plants.
- GROUP FN - Steeper slope phases (9-40%) of LOAMY OR SILTY SOILS that are not recommended for pasture plantings because of erosion hazard.
- GROUP G - LIMY SOILS with thin surface layers, where yields and choice of species are limited by a rooting zone high in lime content, generally low fertility, and severe erosion hazard.
- GROUP GN - Steeper slope phases (9-40%) of LIMY SOILS with thin surface layers are not recommended for pasture plantings because of erosion hazard.

BRIEF DESCRIPTIONS OF PASTURE AND HAYLAND SUITABILITY GROUPS (Cont'd)

- GROUP H - SANDY SOILS where choice of species and yields are limited by limited available water capacity and wind erosion hazard.
- GROUP HN - Steeper slope phases (6-10%) of SANDY SOILS that are not recommended for pasture plantings because of erosion hazard.
- GROUP I - CLAYEY SOILS where choice of species and yields are limited by very slow water intake rate and slow permeability.
- GROUP IN - Steeper slope phases (6-10%) of CLAYEY SOILS that are not recommended for pasture plantings because of erosion hazard.
- GROUP K - MOIST SOILS with thick surface layers, suitable for all climatically adapted plants. These soils are moderately well and well drained and receive extra moisture from runoff water which increases yields compared with adjacent upland soils.
- GROUP NS - Soils not suited for pasture plantings because of severe limitations in depth of rooting zone, water intake rate, available water capacity, or low fertility.

ATTACHMENT 2D

SOIL INTERPRETATIONS

ATTACHMENT 2D

FALL RIVER CO., AS
1/77
PRELIMINARY, SUBJECT TO CHANGE

TABLE NO. 2. SOIL INTERRELATIONS FOR USE AS TOPSOIL AND SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH

MAP SYMBOL	MAPPING UNIT NAME	SLOPE (PERCENT)	SOIL COMPOSITION (PERCENT)	THICKNESS OF "A" HORIZON IN INCHES	SUITABILITY AS TOPSOIL	REMARKS	DEPTH TO BEDROCK IN INCHES	SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH	REMARKS
1	HOVER SILT LOAM	0-2	85	2	POOR	THIN LAYER, EXCESS SODIUM DENSE COMPACT SUBSOIL	>60	POOR	EXCESS SODIUM
2	LOHMEYER SILTY CLAY LOAM	0-2	85	8	FAIR	TOO CLAYEY	>60	FAIR	TOO CLAYEY
3	HAFERSON SOILS	0-2	85	6	GOOD	---	>60	GOOD	---
4	STETTER SILTY CLAY LOAM, SALINE	0-2	85	2	POOR	TOO CLAYEY, EXCESS SALT	>60	POOR	TOO CLAYEY, EXCESS SALT
5	STETTER CLAY	0-2	85	2	POOR	TOO CLAYEY	>60	POOR	TOO CLAYEY
6	KUOLLS	0-2	85	-	UNSUITED	TOO WET	>60	POOR	TOO WET
7	BARLARD SOILS	0-2	90	5	POOR	THIN LAYER, TOO SANDY	>60	FAIR	TOO SANDY
8	GLENBERG FINE SANDY LOAM	0-2	90	6	GOOD	---	>60	GOOD	---
9	PITS, GRAVES	---	95	-	---	---	---	POOR	TOO GRAVELLY
10	PITS, MINE	---	95	-	---	---	---	POOR	TOO ROCKY
13	MOSHER SILT LOAM	0-2	85	8	POOR	EXCESS SODIUM, DENSE COMPACT SUBSOIL	>60	POOR	EXCESS SODIUM
15	ARFADA VERY FINE SANDY LOAM	0-4	85	4	POOR	THIN LAYER, EXCESS SODIUM, DENSE COMPACT SUBSOIL	>60	POOR	EXCESS SODIUM
16	HISLE-SLICKSPOTS COMPLEX HISLE PART	0-6	65	2	POOR	THIN LAYER, EXCESS SODIUM, DENSE COMPACT SUBSOIL	20-40	POOR	EXCESS SODIUM
	SLICKSPOTS PART		25	-	---	---	---	---	---
17	SHANBUT CLAY	0-3	90	2	POOR	TOO CLAYEY, EXCESS SALT	>60	POOR	TOO CLAYEY, EXCESS SALT
18A	MUNN CLAY LOAM	0-2	85	3	FAIR	TOO CLAYEY	>60	FAIR	TOO CLAYEY
18B	MUNN CLAY LOAM	2-6	90	8	FAIR	TOO CLAYEY	>60	FAIR	TOO CLAYEY
18C	MUNN CLAY LOAM	6-9	90	8	FAIR	TOO CLAYEY	>60	FAIR	TOO CLAYEY
19A	SATAMTA LOAM	0-2	85	9	GOOD	---	>60	GOOD	---
19B	SATAMTA LOAM	2-6	85	9	GOOD	---	>60	GOOD	---
19C	SATAMTA LOAM	6-9	85	9	GOOD	---	>60	GOOD	---
20A	ALTAM LOAM	0-2	95	9	FAIR	SAND AND GRAVEL AT 20-40 INCHES	>60	FAIR	THIN LAYER
20B	ALTAM LO.	2-6	90	9	FAIR	SAND AND GRAVEL AT 20-40 INCHES	>60	FAIR	THIN LAYER
21A	MITCHELL VERY FINE SANDY LOAM	0-2	95	18	GOOD	---	>60	GOOD	---
21B	MITCHELL VERY FINE SANDY LOAM	2-6	85	18	GOOD	---	>60	GOOD	---
22B	JAYEN FINE SANDY LOAM	2-9	85	13	GOOD	---	>60	GOOD	---
23B	DAILEY FINE SAND	0-6	85	14	POOR	TOO SANDY	>60	POOR	TOO SANDY
23C	DAILEY FINE SAND	6-12	85	14	POOR	TOO SANDY	>60	POOR	TOO SANDY
24B	ALICE FINE SANDY LOAM	2-9	85	10	GOOD	---	>60	GOOD	---

TABLE NO. 2. SOIL INTERPRETATIONS FOR USE AS TOP SOIL AND SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH

MAP SYMBOL	MAFFING UNIT NAME	SLOPE (LEGEND)	SLOPE COMPOSITION (PERCENT)	THICKNESS OF "A" HORIZON IN INCHES		SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH	DEPTH TO BEDROCK IN INCHES	REMARKS	SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH	REMARKS
				AS TOPSOIL	AS SUBSOIL					
258	MURDO SOILS	0-9	85	3	POOR	FAIR	> 80	THIN LAYER	FAIR	TOO CLAYEY, THIN LAYER
258	MURDO-SCHAMBER COMPLEX MURDO PART SCHAMBER PART	9-40	45 40	3 7	POOR POOR	POOR	> 60 > 60	SLOPE, THIN LAYER THIN LAYER, SLOPE	POOR POOR	SLOPE THIN LAYER, SLOPE
308	SAFO SILTY CLAY LOAM	2-6	85	9	FAIR	FAIR	> 60	TOO CLAYEY	FAIR	TOO CLAYEY
334	TILFORD SILTY CLAY LOAM	0-2	85	10	FAIR	FAIR	> 60	TOO CLAYEY	FAIR	TOO CLAYEY
338	TILFORD SILTY CLAY LOAM	2-6	90	10	FAIR	FAIR	> 60	TOO CLAYEY	FAIR	TOO CLAYEY
344	VALLS SILT LOAM	0-2	85	9	FAIR	FAIR	> 60	TOO CLAYEY	FAIR	TOO CLAYEY
348	VALLS SILT LOAM	2-6	90	9	FAIR	FAIR	> 60	TOO CLAYEY	FAIR	TOO CLAYEY
348	VALLS SILT LOAM	6-9	85	9	FAIR	FAIR	> 60	TOO CLAYEY	FAIR	TOO CLAYEY
35	BARNUM SILT LOAM	0-2	85	5	FAIR	FAIR	> 60	THIN LAYER, LIMT	GOOD	---
408	WYCKA SILT LOAM, SANDSTONE SUBSTRATION	2-6	85	7	FAIR	FAIR	> 30	BEDROCK BELOW 30 INCHES	FAIR	THIN LAYER
420	BUTCHER-BONZEK LOAMS BUTCHER PART BONZEK PART	3-15	60 25	4 2	POOR FAIR	POOR	< 20 > 40	THIN LAYER THIN LAYER, SLOPE, TOO CLAYEY	POOR FAIR	THIN LAYER TOO CLAYEY, SLOPE
428	BUTCHER-ROCK OUTCROP/COMPLEX BUTCHER PART ROCK OUTCROP PART	15-30	60 25	4 -	POOR ---	POOR	< 20 -	THIN LAYER, SLOPE ---	POOR ---	SLOPE, THIN LAYER, ROCKS ---
437	ROCK OUTCROP-BUTCHER COMPLEX ROCK OUTCROP PART BUTCHER PART	25-50	65 20	4 4	POOR POOR	POOR	< 20	THIN LAYER, SLOPE	POOR	SLOPE, ROCKS ---
448	BONZEK SILT LOAM	2-6	85	6	FAIR	FAIR	> 40	THIN LAYER, TOO CLAYEY	FAIR	TOO CLAYEY
48	VALLS LOAMY FINE SAND	6-25	85	7	POOR	POOR	> 60	SLOPE	POOR	SLOPE, TOO SANDY
498	TUTWILL FINE SANDY LOAM	0-6	85	15	GOOD	GOOD	> 60	---	GOOD	---
490	TUTWILL FINE SANDY LOAM	6-9	85	15	GOOD	GOOD	> 60	---	GOOD	---
62	ELWOOD-WHILL LOAMS ELWOOD PART WHILL PART	6-20	45 45	15 7	FAIR POOR	FAIR	> 40 > 60	TOO CLAYEY, SLOPE SLOPE	FAIR POOR	TOO CLAYEY, SLOPE SLOPE
670	COBBY-MORSA SILT LOAMS COBBY PART MORSA PART	6-15	40-50 35	7 6	FAIR FAIR	FAIR	> 60 > 60	SLOPE SLOPE	FAIR FAIR	SLOPE SLOPE
684	MORSA SILT LOAM	0-2	90	6	GOOD	GOOD	> 60	---	GOOD	---
694	RICHFIELD SILT LOAM	0-2	90	7	FAIR	FAIR	> 60	TOO CLAYEY	FAIR	TOO CLAYEY
698	MORSA SILT LOAM	2-6	90	6	GOOD	GOOD	> 60	---	GOOD	---
690	MORSA SILT LOAM	6-9	85	6	GOOD	GOOD	> 60	---	GOOD	---

TABLE NO. 3. SOIL INTERPRETATIONS FOR USE AS FILL AND SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH

NAF SOURCE	MAPPING UNIT NAME	SLOPE (PERCENT)	COMPOSITION (PERCENT)	THICKNESS OF "A" HORIZON IN INCHES	SUITABILITY AS TOPSOIL	REPAIRS	DEPTH TO BEDROCK IN INCHES	SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH	REPAIRS
76B	MINNEQUA-MANTEL SILTY CLAY LOAMS MINNEQUA PART MANTEL PART	2-6	50 35	11 13	FAIR FAIR	THIN LAYER, LIMT, TOO CLAYEY THIN LAYER, LIMT, TOO CLAYEY	20-40 >60	FAIR FAIR	THIN LAYER, TOO CLAYEY TOO CLAYEY
76D	MINNEQUA-MIDWAY SILTY/CLAY LOAMS MINNEQUA PART MIDWAY PART	6-15	50 40	13 8	POOR POOR	SLOPE SLOPE, THIN LAYER	20-40 <20	POOR POOR	SLOPE SLOPE, THIN LAYER
77A	MANTEL SILTY CLAY LOAM	0-2	90	13	FAIR	THIN LAYER, LIMT, TOO CLAYEY	>60	FAIR	TOO CLAYEY
79F	SHINGLE-FENCE-ROCK OUTCROP COMPLEX SHINGLE PART FENCE PART ROCK OUTCROP PART	15-40	55 20 15	9 6 -	POOR POOR ---	THIN LAYER, SLOPE THIN LAYER ---	<20 <20 -	POOR POOR ---	THIN LAYER, SLOPE THIN LAYER ---
80A	BACA SILTY CLAY LOAM	0-2	85	3	POOR	THIN LAYER	>60	FAIR	TOO CLAYEY
80B	BACA-BAZOR SILTY CLAY LOAMS BACA PART BAZOR PART	2-6	55 35	3 4	POOR POOR	THIN LAYER THIN LAYER	>60 20-40	FAIR FAIR	TOO CLAYEY THIN LAYER, TOO CLAYEY
86	DEKAR SILTY CLAY LOAM	0-2	90	3	POOR	THIN LAYER, TOO CLAYEY	>40	POOR	TOO CLAYEY
89	BROADHURST CLAY	2-9	85	4	POOR	TOO CLAYEY	>60	POOR	TOO CLAYEY
90	GRUNNIT-SMOKO CLAYS GRUNNIT PART SMOKO PART	3-15	55 30	6 7	POOR POOR	TOO CLAYEY TOO CLAYEY	<20 >40	POOR POOR	TOO CLAYEY, THIN LAYER TOO CLAYEY
91	GRUNNIT-ROCK OUTCROP COMPLEX GRUNNIT PART ROCK OUTCROP PART	3-40	60 30	6 -	POOR ---	TOO CLAYEY, TREES ---	<20 -	POOR ---	TOO CLAYEY, THIN LAYER, TREES ---
95A	KYLE CLAY	0-2	90	4	POOR	TOO CLAYEY	>60	POOR	TOO CLAYEY
95B	KYLE CLAY	2-6	85	4	POOR	TOO CLAYEY	>60	POOR	TOO CLAYEY
96B	PIERRE CLAY	2-6	85	4	POOR	TOO CLAYEY	20-40	POOR	TOO CLAYEY
97D	PIERRE-SANSIL CLAYS PIERRE PART SANSIL PART	6-15	60 25	4 3	POOR POOR	TOO CLAYEY, SLOPE TOO CLAYEY, SLOPE	20-40 <20	POOR POOR	TOO CLAYEY, SLOPE, TOO CLAYEY, THIN LAYER, SLOPE
98D	SANSIL-PIERRE CLAYS SANSIL PART PIERRE PART	6-15	60 25	3 4	POOR POOR	TOO CLAYEY TOO CLAYEY	<20 20-40	POOR POOR	TOO CLAYEY, THIN LAYER TOO CLAYEY
98F	SANSIL CLAY	15-40	85	3	POOR	TOO CLAYEY, SLOPE	<20	POOR	THIN LAYER, TOO CLAYEY SLOPE
1A2	LAKON-WAITLAND LOAMS LAKON PART WAITLAND PART	15-40	45 40	6 12	POOR POOR	SLOPE, TREES SLOPE, TREES	30-60 >60	POOR POOR	SLOPE, TREES SLOPE, TREES
1A8A	DWYER LOAMY FINE SAND	0-2	90	6	POOR	THIN LAYER, TOO SANDY	>60	FAIR	TOO SANDY

TABLE NO. 2 SOIL INTERPRETATIONS FOR USE AS TOPSOIL AND SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH

MAP SYMBOL	MAPPING UNIT NAME	SLOPE (PERCENT)	COMPOSITION (PERCENT)	THICKNESS OF "A" HORIZON IN INCHES	SUITABILITY AS TOPSOIL ^{1/}	REMARKS	DEPTH TO BEDROCK IN INCHES	SUITABILITY OF SOIL MATERIAL FOR PLANT GROWTH ^{2/}	REMARKS
1488	DWYER LOAMY FINE SAND	2-6	90	6	POOR	THIN LAYER, TOO SANDY	>60	FAIR	TOO SANDY
1480	DWYER LOAMY FINE SAND	9-25	90	6	POOR	THIN LAYER, SLOPE	>60	POOR	SLOPE
1970	PIERRE-GRUMMIT CLAYS	5-25	55	4	POOR	TOO CLAYEY, SLOPE	20-40	POOR	TOO CLAYEY, SLOPE
	PIERRE PART GRUMMIT PART		30	6	POOR	TOO CLAYEY	<20	POOR	TOO CLAYEY, THIN LAYER

1/ SUITABILITY FOR USE AS TOPSOILS REFERS GENERALLY TO THE A HORIZON.

2/ THE COLUMN "SUITABILITY OF SOIL MATERIAL (MIXED) FOR PLANT GROWTH" REFERS TO SUITABILITY OF MATERIALS TO 60 INCHES OR TO BEDROCK THAT WILL SUPPORT VEGETATION OR IS A MEDIUM OF PLANT GROWTH, BASED UPON GENERAL TEXTURE, STRUCTURE, ERODIBILITY, AVAILABLE WATER CAPACITY, SOLUBLE SALT CONTENT, DEPTH, AND ACCESSIBILITY OR AVAILABILITY.

Question: Section 4.5, General

Provide soil maps (approximately 1" = 500') indicating the location of the mill complex, proposed disposal site and alternatives, and any borrow areas for soils required for clay liner and topsoil.

Soils maps are provided in Attachment 2A. Attachment 2D contains detailed site interpretations for these maps. Soils maps at a scale of 1"=500' were not available for three sites. Therefore, Site 8 is included at a scale of 1"=1000' and the preferred site and Site 10 are included at a scale of 1"=2000'.

ENCLOSURE 4

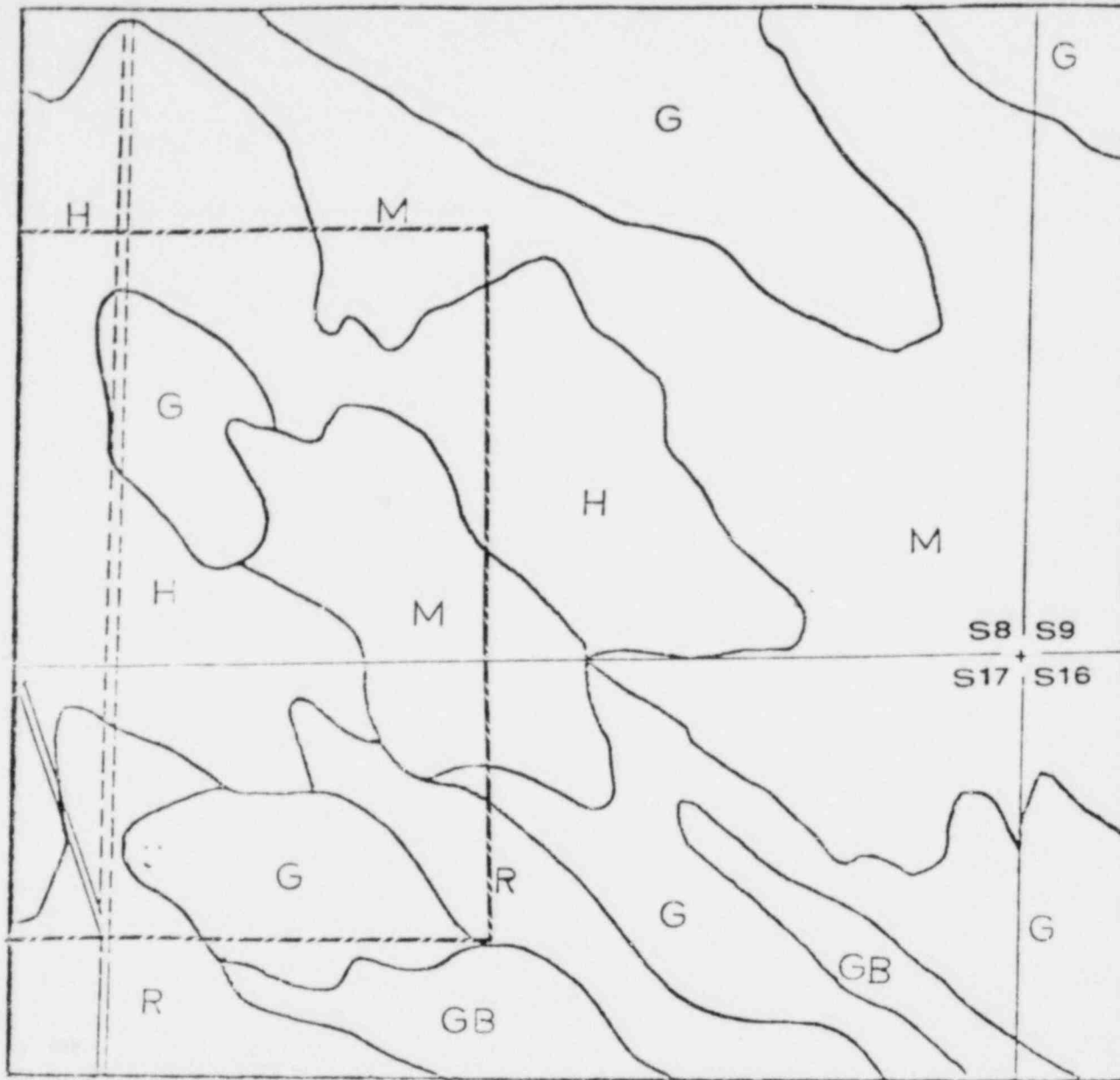
ATTACHMENT 3

VEGETATIVE ASSOCIATIONS FOR THE EDMONT, SOUTH DAKOTA AREA

Community	Total Perennial Cover (percent)	Representative Dominant Species
Abandoned-invaded A	10.5	buffalograss, blue grama, sand dropseed, needleandthread, western wheatgrass
Silver sagebrush S	26.0	silver sagebrush, buffalograss, western wheatgrass, blue grama, sandberg bluegrass
Big sagebrush, medium stand M	23.0	big sagebrush, buffalograss, blue grama, western wheatgrass, sandberg bluegrass
Silver sagebrush- big sagebrush BS	30.0	big sagebrush, silver sagebrush, buffalograss, blue grama, western wheatgrass
Big sagebrush, heavy stand H	23.0	big sagebrush, blue grama, buffalograss, sandberg bluegrass, western wheatgrass
Sand sagebrush SA	21.0	sand sagebrush, big bluestem, prairie sandreed, plains pricklypear, threadleaf sedge, blue grama
Grassland G	17.0	buffalograss, blue grama, sandberg bluegrass, threadleaf sedge
Little bluestem I	16.0	little bluestem, needleleaf sedge, wild buckwheat, prairie sandreed, Louisiana sagewort
Prairie dog town PD	17.0	buffalograss, blue grama, plains pricklypear, scarlet globemallow
Rough breaks R	14.0	big sagebrush, wild buckwheat, blue grama, buffalograss, sideoats grama

VEGETATIVE ASSOCIATIONS FOR THE EDGEMONT, SOUTH DAKOTA AREA

Community	Total Perennial Cover (percent)	Representative Dominant Species
Black greasewood- big sagebrush GB	19.0	black greasewood, big sagebrush, western wheatgrass, blue grama, alkali sacaton
Black greasewood GW	18.5	black greasewood, blue grama, sand dropseed, buffalograss, western wheatgrass
Cottonwood bottoms C	16.5	plains poplar, western wheatgrass, buffalograss, yellow sweetclover, common dandelion
Ponderosa pine P	8.1	ponderosa pine, skunkbush sumac, blue grama, buffalograss, western wheatgrass, big sagebrush, fringed and Louisiana sagewort, little bluestem



0 1000 ft

----- AREA OF INTEREST

VEGETATIVE ASSOCIATION MAP FOR THE PREFERRED DISPOSAL SITE