03SF001

June 16, 2003

C-4 AMP proj. area

Plot Number 035F001	Date June 16, 2003
Recorders Farley ; Allison ; Rice	Slope less than 2-4%
Aspect Flat ridgetop	Landtype 260
Air Photo Numbers 299-56	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 0414190 UTM 5151724	Site Location Description

Notes scattered cow pies evidence livestock use, but use is estimated as light-mod because seedling aspen have not been browsed

evidence of mod-heavy dispersed rec use → camping & bonfire parties

general notes
005 ?
infiltration
013 ?

USDA - Forest Service

03-SF001

SOIL DESCRIPTION

(Reference FSH 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		6-16-03	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County
C-4 AMP	HNF		MT	

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
Granitic Residuum or Till?		~5840'	

18. Landform	19. Slope: a. % 4 b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____
Flat Ridge Top			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		50°F at 20cm	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-8	10YR 2/2	10YR 4/1	NA	SL	12%	1BFGR		VFR-LO	SO-PS	NA	GR-5% CB-15% ST-15%	3VF 3F 1M	3VF 3F 1M	NA	No observation	CW
	8-14	10YR 3/2	10YR 4/2	NA	SL	14%	1BFGR		VFR-LO	SO-PS	NA	GR-TR CB-25% ST-20%	1VF 2F 1M	2VF 2F 1M	NA		CW
	14-23	10YR 4/4	10YR 6/4	NA	SL	18%	1SFBK		FR	SS-PS	NA	GR-TR CB-10% ST-10%	1F	1VF 1F 1M	NA	↓	:
	23+											GR- CB- ST-					
												GR- CB- ST-					
												GR- CB- ST-					
												GR- CB- ST-					
												GR- CB- ST-					
												GR- CB- ST-					

26. Partical Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-6 (2/86)

INFIL_TEST: Infiltration 03SF001
Plot Name C-U AMP Date 6-16-03 Recorders Farley Allison Rice

Plot Code

Sue Test 1. Site Moisture 3 Microtopography i

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	+180 ml (2180)	1500 ml	1320 ml	1480 ml	1340 ml	1420 ml

Evette Test 2. Site Moisture 3 Microtopography i

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	1820 ml	1000 ml	1100 ml	960 ml	1040 ml	940 ml

Ron Test 3. Site Moisture 3 Microtopography i

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	+1000 ml (7000)	+1600 ml (3600)	+1700 ml (3700)	1700 ml (3700)	2000 ml (4000)	1600 ml (3600)

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

Rooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

Date: 6-16-03 | Site Name/Code: C-4 AMP 03SF001

Crew: Farley, Allison, Rice

Rooting Depth Data

		Very Fine to Fine (<1-2 mm diameter)	
		10-100 roots (common)	>100 roots (Many)
Transect 1	1 1M	5"	2"
	2 5M	4"+ (Rock)	2"
	3 10M	3"	2"
	4 15M	4"	3"
	5 20M	5"	1.5"

Notes: Plant Cover x4 5 Plants 5 Litter
#1 7 plants 3 litter
#2 4 6 litter
#3 8 2 litter

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1:
- Texture: SL
- Structure: 1 VR GR
- Hue: 10YR
- Value: 2
- Chroma: 2

Transect 2	1 1M	5"	2"
	2 5M	6"	2"
	3 10M	4"	2"
	4 15M	4.5"	2"
	5 20M	5"	2.5"

Notes:

	Litter	Plant		Litter	Plant
#1	𝍸 III	II	#4	III	𝍸 II
#2	𝍸 II	III			
#3	𝍸 I	IIII			

Transect 2:
- Texture: SL
- Structure: 2 FSBK to 2 VF GR, 8" depth to color change
- Hue: 10YR
- Value: 2
- Chroma: 2

Transect 3	1 1M	5.5"	2"
	2 5M	5"	2"
	3 10M	4"+ (Rock)	3"
	4 15M	5"	2.5"
	5 20M	4"	3"

Notes:

	Litter	Plant
#1	𝍸	𝍸
#2	IIII	𝍸 I
#3	𝍸 III	II

Transect 3:
- Texture: SL
- Structure: 2 VF GR, 10" depth to rock - no color change
- Hue: 10YR
- Value: 3
- Chroma: 2

Erosion Bridge Data

	Record distance from top of bridge to top of rod		
	Bridge 1	Bridge 2	
1			
2			
3			
4			
5			
6			
7			
8			
9			

Notes:

03SF002

06/16/2003

Plot Number 03SF002	Date 6-16-03
Recorders Farley; Allison; Rice	Slope 5-6%
Aspect South	Landtype 36
Air Photo Numbers 299-56	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 0415880 UTM 5151013 0001111223 3591458351	Site Location Description CU AMP

Notes

Site is narrow riparian stringer which borders perimeter of TS Unit marked B36 w/ orange paint on LP

Scattered aspen & lodgepole in valley bottom

area sampled appears to be an old road or skid trail

USDA - Forest Service

SOIL DESCRIPTION

(Reference FSH 2509.18)

035F002

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		6-16-03	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County
CU AMP	HNF			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
Alluvium / Till	Granitic Boulder Batholith	~5880'	

18. Landform	19. Slope: a. % 5-6 b. Shape concave c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____
Swale Valley bottom			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		47°F @ 20cm; 45°@ 50	Est. < 40"

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d) %C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-4	10YR 2/1	10YR 4/1	NA	SL 13	2vf GR		VFR	SO PS	NA	GR - T CB - 15 ST - 35	3vf 3f 2 1	3vf 3f 1M	NA	No	CS
	4-11	10YR 2/2	10YR 4/2	NA	SL 14	2F SBK		VFR	SO PS	NA	GR - T CB - 15 ST - 35	2vf 2f 1M	2vf 2f 1M	NA	No	CS
	11-21	10YR 4/3	10YR 6/3	NA	SL 14	2F SBK		FR	SS PS	NA	GR - T CB - 15 ST - 35	1f 1M	1vf 2f 1M	NA	No	CS
	21-26	10YR 4/3	10YR 6/2	5YR 4/6	SCL 31	3M SBK		SH-H	SP	NA	GR - T CB - 15 ST - 35	1M	1f 1M	NA	No	?
	26+	soil	continues but saturated				E	very	rocky		GR - CB - ST -					→
											GR - CB - ST -					
		Note	Platy layer @		5-7"		depth	→		evidence	GR - CB - of ST -	old	road			
											GR - CB - ST -					
											GR - CB - ST -					

26. Partial Sketch/Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-1 (2/86)

CUAMP

INFIL_TEST: Infiltration
Plot Name 002 Date 6/16/03 Recorders Ron Rice Evette Allison

Plot Code

Test 1. Site Moisture 2 Microtopography 1

Residual Cover 30 % Species 1 Cover spp Species 2 Ach mil

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	3700 ml	1800 ml	2100 ml	1700 ml	1300 ml	1800 ml

Test 2. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Test 3. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Site Notes:
EA:
Seasonal drainage
Wet soils
Abundant forbe cover - clover, dandel
Yarrow - Blue eyed Susan
Good grass cover
Meadow brome /brome spp
Some Aspen
Shrub cover of Vaccinium & Snowberry
Mixed lodgepole & Doug F

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

ite:
iew:

Site Name/Code: 03SF002

Rooting Depth Data

	Very Fine to Fine (<1-2 mm diameter)	
	10-100 roots	>100 roots
Transect 1		
1	3-4"	2"
2	1½-2½"	Ø
3	2½"	1½"
4	2-3½"	1½-2"
5	5½-9	2-3½

Notes:
*1 5 Plants 5 Litter
*2 10 " " 0 Litter
*3 9 " " 1 Litter
switch
*4 10 Plants 0 Litter
rock, color change?

	Very Fine to Fine (<1-2 mm diameter)	
	10-100 roots	>100 roots
Transect 2		
1	2-2½	2½-4
2	1½-3	3-4
3	1-3	3-4
4	3-4½	4½-6
5	2-3	3-3½

Notes:
Rock @ 5.5"
switch

Transect		
1 3'	1½-3	3-3½
2 16'	1½-	3½
3 32'	1-2½	2½-4
4 47'	2-4	4-6
5 66'	1½	3½

Notes:
Color change @ 34"
end "A" horizon

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1	
Texture:	SL
Structure:	2 VFGR
Hue:	10YR
Value:	2
Chroma:	1
Transect 2	
Texture:	SL
Structure:	1-2 VRGR
Hue:	10YR
Value:	2
Chroma:	1
Transect	
Texture:	SL
Structure:	2VFGR
Hue:	10yr
Value:	3
Chroma:	

Erosion Bridge Data

	Record distance from top of bridge to top of rod		
	Bridge 1	Bridge 2	
1			
2			
3			
4			
5			
6			
7			
8			
9			

Notes:

Ground Cover:

Rock	Litter	Plant	Wood	
II		||||| |||	T2-1
		||||| ||		T2-2
	II	||||| ||||		T2-3
		||||| |||||		T2-4
	I	||||| ||||		T3-1
I	II	|||||	II	T3-2
	||||	|||||		T3-3

INFIL_TEST: Infiltration
Plot Name 03SF003 Date 6/17/03 Recorders Evette Allison

Plot Code

Test 1. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	4300 ml	2860 ml	_____ml	_____ml	_____ml	_____ml

Test 2. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
2:30	10:00 8320 ml	_____ml	_____ml	_____ml	_____ml	_____ml

Test 3. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
5:00	12:30 _____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

USDA - Forest [redacted]

SOIL DES[redacted]IPTION

(Reference FSH 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. _____ T. _____ R. _____

9. Area	10. Forest	11. Ranger District	12. State	13. County

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind _____ b. Class _____

18. Landform	19. Slope: a. % _____ b. Shape _____ c. Length _____ d. Aspect NW	20. Drainage Class	21. Surface Stone and Rock a. GR _____ b. CB _____ c. ST _____ d. BY _____

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table *(Depth)*

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d) [%C]	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
A	0-59 cm	10YR 3/1	10YR 4/1	NA	SCL	2VRGR			SS-P		GR - 15% CB - 2% ST - 0	3VR 10cm		NA	Not observed	
B	59 cm ↓	10YR 3/4	10YR 5/3	NA		2VRGR					GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic H[redacted]	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-[redacted] (12/86)

03SF004 06/17/2003

(03SF003 YFMP students)

Plot Number 03SF004	Date 6/17/03
Recorders Sue Farley	Slope
Aspect SE	Landtype 260
Air Photo Numbers 299-56	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates N 5151462 E 414650	Site Location Description

Notes

narrow riparian stringer → aspen, few willow, ephemeral draw; slight rec use; light - mod livestock use

USDA - Forest Service

03SF004

SOIL DESCRIPTION
(Reference FSH 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ___ T. ___ R. ___
		6-17-03	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County
CU AMP	HNF			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ___ b. Class ___
till / alluvium	granitic Boulder Bath	~5680'	

18. Landform	19. Slope: a. % b. Shape c. Length d. Aspect	20. Drainage Class	21. Surface Stone and Rock a. GR ___ b. CB ___ c. ST ___ d. BY ___
swale / valley bottom	a. % 4-5 b. Shape concave c. Length linear d. Aspect South	WD	

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		49°F @ 20cm 45° @ 50	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR Moist (1) (c)	COLOR Dry (2)	COLOR Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE Dry (1) (f)	CONSISTENCE Moist (2)	CONSISTENCE Wet (3)	SPECIAL FEATURES Cutans (1) (g)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-3	10YR 2/1	10YR 2/1	NA	SL	12	2F GR		VFR	SO PS	NA	GR - / CB - / ST -	3 vf 3 f 1 M				C S
	3-12	10YR 3/1		NA	SL	16	2F-M SBK		FR	SS PS	NA	GR - / CB - / ST -	2 vf 2 f 2 m				C S
	12-19	10YR 3/1		NA	SL	18	2M SBK		SH	SS P	NA	GR - T CB - 30 ST -	1 f 2 m				C S
	19-26	10YR 4/3		NA	SL	13	1F SBK 10.5G		LO	LO LO	NA	GR - 15 CB - ST -	/				C S
	26+	soil transitioning to highly weathered granitic bedrock										GR - 15 CB - ST -					
												GR - CB - ST -					
		6-8 in depth platy structure										GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Partial Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic H	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

INFIL_TEST: Infiltration
Plot Name 03SF004 Date 6-17-03 Recorders Farley

Plot Code

Test 1. Site Moisture 2 Microtopography 1

Tyler → Residual Cover 100 % Species 1 _____ Species 2 _____

	Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
Time →	0:00	7:30	12:30	17:30	22:30	27:30	32:30
		2000 ml	860 ml	660 ml	610 ml	720 ml	620 ml

Test 2. Site Moisture 2 Microtopography 1

Roy → Residual Cover 100 % Species 1 _____ Species 2 _____

	Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
	~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
2:30		10:00 2800 ml	1340 ml	840 ml	1060 ml	980 ml	1000 ml

Test 3. Site Moisture 2 Microtopography 1

Tim → Residual Cover 100 % Species 1 _____ Species 2 _____

	Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
	~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
5:00		12:30 2340 ml	820 ml	1700 ml	980 ml	1040 ml	1000 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

Rooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

Date: 6-17-09 | Site Name/Code: 035F004

Crew: Farley

Rooting Depth Data

		Very Fine to Fine (<1-2 mm diameter)	
		10-100 roots	>100 roots
Transect 1	1 16'	5"	3"
	2 33'	6.5"	3"
	3 49'	9"	Ø
	4 66'	8"	2"
	5 3'	6.5"	2"
	Notes:		
Transect 2	1 1M	5"	2.5"
	2 5M	4"	2.5"
	3 10M	Ø	2.5"
	4 15M	6"	3"
	5 20M	7"	2.5"
	Notes: hit rock @ 18" but no color change yet		
Transect 3	1 3'	7.5"	3"
	2 16'	7"	3"
	3 33'	6	3"
	4 49'	7"	3"
	5 66'	7.5"	Ø
	Notes: hit rock @ 18" but no color change		

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

	Texture:	Structure:	Hue:	Value:	Chroma:
Transect 1	SL	2 VF-F GR	10YR	2	1
Transect 2			10YR	2	1
Transect 3	SL	2 VF-F GR	10YR	2	1

Erosion Bridge Data

	Record distance from top of bridge to top of rod		
	Bridge 1	Bridge 2	

Notes:

Project Area	CU AMP										
Sample Site Number	035F004										
Date	6-17-03										
Recorders	Farley										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	IIII	III		I	IIII	IIII	IIII	IIII	II		
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"										IIII	IIIII
Live Plant	IIII	IIII	IIII	IIIII	IIII	IIII	III	IIII	IIIII	IIIII	
Moss/Lichen											
Bare Soil			III							V	I

03SF005

06/17/2003

USDA - Forest

CU AMP 03SF005

SOIL DESCRIPTION
(Reference FSH 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		6-17-03	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
Residuum	Granitic	~5740	

18. Landform	19. Slope: a. % 20-25 b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____
Linear - Convex Hillslope			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table *(Depth)*
		50° F @ 20cm 55° @ 50	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0 - 7	7.5YR 3/1	7.5YR 4/2	/	SL	11	2 F GR		FR	SO PO	/	GR - 10 CB - 5 ST -	2vf 3F	2vf 2f	NA		C W
	7 - 14	7.5YR 3/1	7.5YR 4/2	/	SL	10	2 M SBK		FR	SO PO	/	GR - 10 CB - 5 ST -	2vf 2f	1vf 2f	NA		C W
	14 - 20	7.5YR 3/1	7.5 YR 4/2	/	SL	10	2 M SBK		FR	SO PO	/	GR - 10 CB - 20 ST - 5	1f	1f	NA		C W
	20+	Rocky	but	soil appears	to continue							GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Partial Sect. Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

INFIL_TEST: Infiltration
Plot Name 035F005 Date 6/17/03 Recorders Evette Allison

Plot Code 035F005

Ron Test 1. Site Moisture Dry 1 Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	740 ml	700 ml	520 ml	480 ml	420 ml	580 ml

Tylex Test 2. Site Moisture Dry 1 Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value /	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	~~2340~~ 1000 ml	1000 ml	900 ml	940 ml	840 ml	100 ml

Tim Test 3. Site Moisture Dry 1 Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start / Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	3280 ml	1060 ml	1800 ml	940 ml	1600 ml	1200 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

ite: 6/18/03 | Site Name/Code: 035F005

ew: Ron Rice, Eve He Allison, Tim Carroll

		Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter)		Soil Structure, Color, Texture Data (Texture = sandy, loamy, clayey; Structure = blocky, platy, columnar, granular; Color = hue, value, chroma (Munsell color charts))
		10-100 roots	>100 roots	
Transect 1	1 3'	3 – 5"	2½"	Texture: SL 0-9% clay
	2 16'	2½"	1½"	
	3 32'	5"	3"	Structure: 1-2 VF GR
	4 47	4"	2½"	
	5 66	5"	2"	Hue: 10 YR
	Notes: depth to ~~color change~~ no color change / hit rock @ 9"			Value: 3 dry
				Chroma: 3
Transect 2	1 3'	4.5"	3"	Texture: SL
	2 16'	4.5"	3.5"	
	3 33'	7"	5"	Structure: 1-2 VF GR
	4 49'	6"	2"	
	5 66'	5"	1.5"	Hue: 10 YR
	Notes: hit rock @ 5.5" = no color change			Value: 4 dry
				Chroma: 3
Transect 3	1 3'	rock @ 4"	4"	Texture: SL
	2 16'	5"	2.5"	
	3 33'	3.5"	2.5"	Structure: 1-2 VF GR
	4 49'	6"	Ø	
	5 66"	4"	3"	Hue: 10YR
	Notes: hit rock @ 4" → no color change			Value: 4 dry
				Chroma: 3

Erosion Bridge Data

	Record distance from top of bridge to top of rod			Notes:
	Bridge 1	Bridge 2		
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

UTM N 5151277
E 414288

UTM N 5151277 E 414288

Project Area	CUAMP										
Sample Site Number	035F005										
Date	6/18/03										
Recorders											
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover											
Duff/Plant Litter	3	4		IIII	NI	II	NK	IIII	I	II	III
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	7	6	9	NK I	II	III	NK	NK II	III	III	II
Moss/Lichen					I	III					
Bare Soil			I		II	II			NI	NI	NI

03SF006 06/18/2003

Plot Number 03SF006	Date 6-18-03
Recorders Farley ; Allison; Rice	Slope 2-4 %
Aspect Flat	Landtype 136
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates	Site Location Description south of trail through Blackhall Meadows

Notes

Blackhall Meadows site →
canvas just beginning to bloom
slight flow in stream but will be dry in a couple more weeks
no livestock yet
meadow is moist but not saturated as before
ground water now @ 31" depth

USDA - Forest [redacted] 035F006 **SOIL DES[redacted]PTION** (Referen[redacted] 2509.18) UTM N5149486 E 408311

1. Map Unit Sy[redacted]	2. Family or Series	3. Date 6/18/03	4. [redacted]y	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____

9. Area	10. Forest	11. Ranger District	12. State MT	13. County

14. Parent Material Residum / Till ?	15. Bedrock Name Granitic	16. Elevation 6365	17. Erosion: a. Kind ____ b. Class ____

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature 30cm 45 F 60cm 41 F	25. Water Table (Depth) 31"

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
												GR -					
												CB -					
												ST -					
												GR -					
												CB -					
												ST -					
												GR -					
												CB -					
												ST -					
	0-5"	10YR 2/1		None	L	27%	2MGR		60	SOPO		GR - Trace	3BF 3F 1M	3VF 3F 1M	NA	Not observed	AW
												CB -					
												ST -					
	5-13"	7.5YR 4/2		7.5YR 4/6	SL	14%	2MSBK		SH	SSP		GR - 12%	2VF 3F 1M	2VF 2F 1M	↓	↓	GS
												CB - Ø					
												ST - Ø					
B	15-29"	No Matrix Color all Gleyed or Mottled		Gley 2.5/1 Mottled 7.5YR 5/6	SC	36%	2COSBK		H	SPV		GR - 15%	1VF 1F	1VF 2F 1M	↓	↓	CS
												CB - Ø					
												ST - Ø					
C_r	29"+											GR -					
												CB -					
												ST -					
Hit @ 29"	Highly Weathered Granitic BR- C_r											GR -					
												CB -					
												ST -					
31" GW												GR -					
												CB -					
												ST -					

26. Partical Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:
28. Diagnostic Horizons	a. Surface:	b. Subsurface:		29. Moist Control Section Depth:

FS-2500-1 (2/86)

EXISTING VEGETATION

(Species) TREES	(% Crown Cover)	31. (Species) SHRUBS	(% Crown Cover)	32. (Species) FORBS	(% Crown Cover)	33. (Species) GRASSES	(% Crown Cover)

. Additional Notes (Use and Management): 7/27/90

INFIL_TEST: Infiltration
Plot Name 035F006 Date 6-18-03 Recorders Farley
Plot Code CU AMP

Evette → Test 1. Site Moisture 3 Microtopography I

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	1660 ml	580 ml	640 ml	660 ml	580 ml	700 ml

Ron → Test 2. Site Moisture 3 Microtopography I

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ +10:00	12:30	17:30	22:30	27:30	32:30
	1700 ml	+200 ml	+1600 ml	+1500 ml	1500 ml	1680 ml

Jim → Test 3. Site Moisture 3 Microtopography I

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	10,000 ml	+1000 ml	+1600 ml	+300 ml	+700 ml	2000 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

INFIL_TEST: Infiltration

Plot Name Date Recorders

Plot Code

Test 1. Site Moisture_____ Microtopography____

Residual Cover_____% Species 1 _____ Species 2_____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Test 2. Site Moisture_____ Microtopography____

Residual Cover_____% Species 1 _____ Species 2_____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Test 3. Site Moisture_____ Microtopography____

Residual Cover_____% Species 1 _____ Species 2_____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

ate: 6-18-03 | Site Name/Code: 035F006

ew: Farley, Allison, Rice, Carroll

Transect 1

Rooting Depth Data — Very Fine to Fine (<1-2 mm diameter)

	10-100 roots	>100 roots
1	4½-6½	4½"
2	4"-5"	4"
3	4-6"	4"
4	3½-5"	3½"
5	4½-5½"	4½"

Notes: #1 9 Plants 1 Litter
#2 8 " " 2 " "
#3 10 Plants
#4 8 Plants 2 Litter
A horizon 7½ = color change

Soil Structure, Color, Texture Data
Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Texture: L
Structure: 2 VF GR
Hue: 10 YR
Value: 2
Chroma: 1

Transect 2

1	4½-6½"	4½"
2	6"	4.5"
3	5"	4"
4	5.5"	4"
5	5"	4"

Notes: #1 10 Plants Litter
A horizon 6" = color change

Texture: L
Structure: 2 F-M GR
Hue: 10 YR
Value: 2
Chroma: 1

Transect 3

1	8"	6"
2	9"	7"
3	6"	5"
4	9"	4
5	Ø	3.5"

Notes:
A horizon 3.5"

Texture: L
Structure: 2 F GR
Hue: 10 YR
Value: 2
Chroma: 1

Erosion Bridge Data

	Record distance from top of bridge to top of rod			Notes:
	Bridge 1	Bridge 2		
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Project Area	C-U AMP										
Sample Site Number	035F006										
Date	6-18-03										
Recorders	Rice · Allison										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter					I	HH	II		HH		
Rock>2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant					HH III	HH II	HH III	HH HH	HH II	HH HH	HH III
Moss/Lichen											
Bare Soil											

03SF007 06/19/2003

Plot Number 03SF007	Date 6-19-03
Recorders Farley ; Allison ; Rice A. Johnson & M. Johnson	Slope N 2-4 %.
Aspect Flat	Landtype 260
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates	Site Location Description

Notes

site is located on a stream terrace / footslope adjacent to Travis Crk about 1/4 mi above confluence w/ Buffalo Crk.

evidence of livestock grazing = bare soil & weed patches under shade trees; scattered cowpies → no evidence of grazing yet this year

orchard grass or blue grass dominates site on the stream terrace

SOIL DESCRIPTION

(R... FSH 2509.18)

12T 0414400 UTM 514[redacted]

035F007

Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ___ T. ___ R. ___
		6/19/03	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County
CU AMA	HNF	Helena RD	MT	

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind	b. Class
Alluvium	Granitic - Boulder Bath.	N5420'		

18. Landform	19. Slopes: a. % 2-4 b. Shape ___ c. Length ___ d. Aspect ___	20. Drainage Class	21. Surface Stone and Rock a. GR ___ b. CB ___ c. ST ___ d. BY ___
Stream Terrace		WD	

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		50°F @ 20cm 45°F @ 50cm	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
		charcoal lenses in subsoil									GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					
	0-10cm	10YR 3/2		NA	SL 10%	2FGR		FR	SO PO	—	GR - T CB - ST -	3vf 3f	3vf 3f			C W
	10-30 cm	10YR 3/2		NA	SL 15%	2+MSBK ↓ 2MGR		FR	SS PO	—	GR - T CB - ST -	2vf 2f 1m	2vf 2f			C I
	30-42 cm	10YR 4/2		NA	LCOS 5%	SGR		LO	SO PO	—	GR - 45% CB - ST -	1vf 1f	2vf 2f			C I
Ab	42-68 cm	10YR 3/1		5YR 4/6	SL 18%	2CO-MSBK		FR	SS PS	CPDP	GR - T CB - ST -	1vf 1vf	2vf 2f			C I
	68-76 cm	10YR 4/3		NA	LFS 6%	SGR		LO	SO PO	—	GR - T CB - ST -	—	2vf 2f			
	76 100	10YR 3/2		5YR FOM 4/6	LCOS 7%	SGR		LO	SO PO	—	GR - 55% CB - ST -	—	2vf 2f			

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:
				29. Moist Control Section Depth:

28. Diagnostic Hz	a. Surface:	b. Subsurface:

EXISTING VEGETATION

(Species) TREES (% Crown Cover)	31. (Species) SHRUBS (% Crown Cover)	32. (Species) FORBS (% Crown Cover)	33. (Species) GRASSES (% Crown Cover)

Additional Notes (Use and Management): 7/27/90

NOTE: 2nd time interval was 10 min
∴ test was 5 min too long

INFIL_TEST: Infiltration
Plot Name CU AMP Date 6/19/03 Recorders Evette Allison Matt

Plot Code 035F007

Sue

Test 1. Site Moisture 2 Microtopography 1

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	~~12:30~~ 1340	17:30 160	22:30 300	27:30 100	32:30 1320
	12000 ml	21,340 ml (10,700)	10,160 ml	10,300 ml	10,100 ml	9320 ml

Test 2. Site Moisture 2 Microtopography 1

Adrian

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	~~12:30~~ 1	17:30 1480	22:30	27:30 1440	32:30 1800
	14,000 ml	22,000 ml (11,001)	11,480 ml	10,000 ml	11,440 ml	9800 ml

Test 3. Site Moisture 2 Microtopography 1

Ron

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30 1150	~~12:30~~ 10 min	17:30 1360	22:30 1700	27:30 1400	32:30 1100
	11,050 ml	18,000 ml (9,000)	11,360 ml	9,700 ml	7,400 ml	9100 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

INFIL_TEST: Infiltration
Plot Name Date Recorders

Plot Code

Test 1. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Test 2. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Test 3. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

ate: 6/19/03 | Site Name/Code: 035F007

rew: RonRSoeF Adrian H Matt Evette A

Rooting Depth Data

Very Fine to Fine (<1-2 mm diameter)

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1

	10-100 roots	>100 roots
1 1M	6"	Ø
2 5M	6"	1"
3 10M	6.5"	2"
4 15M	6"	3"
5 20M	6"	3"

Notes: A horizon → color change @ 7"

Texture: SL 11% C

Structure: 2 F GR

Hue: 10 YR

Value: 3

Chroma: 2 dry

Transect 2

Evette A #1

1	3-5"	0-3"
2	1-2"	0-1"
3	2-4"	0-2"
4	1-2½"	0-1"
5	2-4"	0-2"

Notes: Depth to color change 5"

Texture: Sandy loam 10% clay

Structure: 1-2 F GR

Hue: 10 YR

Value: 3

Chroma: 1

Transect

1	2-5"	0-2"
2	3-6"	0-3"
3	3-4"	0-3"
4	2-3"	0-2"
5	3-5"	0-3"

Notes: Transect up the slope Shallow soil

Texture: LS 9% Clay

Structure: 1-2 VF GR

Hue: 10 YR

Value: 3

Chroma: 1

Erosion Bridge Data

	Record distance from top of bridge to top of rod		
	Bridge 1	Bridge 2	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Notes:

Project Area	CU AMP										
Sample Site Number	035F007										
Date	6-19-03										
Recorders	Farley; A. Johnson										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover											
Duff/Plant Litter	𝍸 𝍸	𝍸 𝍸	𝍸	𝍸							
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant											
Moss/Lichen											
Bare Soil											

Gophers

03SF008 06/30/2003

Plot Number 03SF008	Date 6-30-03
Recorders Farley	Slope 10,10°
Aspect ~~[illegible]~~ 315° ~~[illegible]~~ South - South east	Landtype
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 0415378 UTM 5449933	Site Location Description

Notes

The miserably hot, afternoon heat exhaustion, day ...

site has much evidence of past human use:
historic placer mining along creek plus historic
cabin site near plot
more recent timber harvest in adjacent areas
plus evidence of livestock and wildlife grazing

platy layer indicates past compaction at about 5-8 inch
depth likely due to historic mining & occupancy

INFIL_TEST: Infiltration
Plot Name OC-4 AMP Date 6-30-03 Recorders Farley, M. Johnson, Rice

Plot Code 035F008

Sue Test 1. Site Moisture 1 Microtopography c

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	1000 ml	300 ml	400 ml	320 ml	200 ml	320 ml

Matt Test 2. Site Moisture 1 Microtopography c

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
2:30	10:00 1600 ml	400 ml	600 ml	400 ml	400 ml	300 ml

Ron Test 3. Site Moisture 1 Microtopography c

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
5:00	12:30 1600 ml	700 ml	400 ml	320 ml	220 ml	400 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

USDA - Forest S

SOIL DESCRIPTION

03SF008

(Reference FSH 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		6-30-03	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County
C-U-AMP	Helena			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
residuum	granitic		

18. Landform	19. Slope: a. % 2-4 b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____
footslope			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table *(Depth)*
		20cm (55°F) 50 (53°)	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	at 11" highly weathered charcoal										GR - CB - ST -					
											GR - CB - ST -					
											GR - CB - ST -					
	0-2½in	10yr 2/1	10yr 3/2	NA	L 14%	2MSBK	S	FR	SO/PO	NA	GR - 12% CB - ST -	3F/3VF	2F/2VF	NA		Clear Smooth
	2½-9in	~~10yr 5/2~~ 10yr 3/2	10yr 5/2	NA	L 23%	2MPL	MH	FI	SS/SP	NA	GR - 2% CB - ST -	2F/2VF	~~2F~~ 2VF	NA		Gradual (Clear Smooth)
	9-14in	10yr 2/2	10yr 5/2	NA	CL 23%	2MSBK	HA	FI	MS MP	NA	GR - 5% CB - 0 ST - 0	1F/1VF	2F	NA		Gradual wavy
	14-24in	10yr 3/2	10yr 5/2	NA	CL 38%	2MSBK	HA	FI	MS MP	eCD PSP	GR - 15% CB - ST -	1F	1F	NA		clear smooth
	24-35in	10yr 3/2 ~~2.5yr 4/6~~	10yr 5/2	7.5yr 4/6 cP 1	SC 31%	2MSBK	~~HA~~	~~FI~~ VFI	MS MP	eCD PSP	GR - 20% CB - 0 ST - 0	1F	1F	NA		Clear Smooth
	Bottom Layer 35-45in	~~Bottom 7.5yr 4/6~~	10yr 6/2	7½yr 4/4 mP 2-3	SCL 31%	Massive		FI	SS SP	NA	GR - 20% CB - 0 ST - 0	NA	1F	NA		NA

26. Particl Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

ate: 6-30-03 | Site Name/Code: 035FM8

rew: Rice, T. Johnson

Rooting Depth Data

Very Fine to Fine (<1-2 mm diameter)

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1

	Distance	10-100 roots	>100 roots
1		~~0-3cm~~ 3-~~5~~	~~3-5~~ 0-~~3~~
2	5	3.5-5	0-3.5
3	10	4-7	0-4
4	15	2½-5	0-2½
5	20	3½-5½	0-3½

Notes: Color change 5in

Texture: 12% clay, loamy
Structure: 1F GR
Hue: 10yr
Value: 2
Chroma: 2

Transect 2

1		3-5	~~3-7~~ 0-7
2		4-7	0-4
3		3-3½	0-3
4		4-5	0-4
5		3-5	0-3

Notes: Color change 6½

Texture: 15% clay, loamy
Structure: 2MSBK
Hue: 10yr
Value: 2
Chroma: 1

Transect 3

1		2½-5	0-2½
2		2-5	0-2
3		2-5	0-2
4		2-3	0-2
5		3-5	0-3

Notes: Color @ 10"

Texture: 12% loamy
Structure: 2MSBK
Hue: 10yr
Value: 2
Chroma: 1

Erosion Bridge Data

	Record distance from top of bridge to top of rod		
	Bridge 1	Bridge 2	
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Notes:

Project Area	C-U AMP										
Sample Site Number	035F008										
Date	6-30-03										
Recorders	Rice, M. Johson										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	5	9	6	01	4		6	5	7	7	1
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	5	1	4	10	6	10	2	4	3	3	9
Moss/Lichen/Fungi								1			
Bare Soil											

03SF009 07/01/2003

Plot Number 03SF009	Date July 1, 2003
Recorders Farley ; Rice ; M. Johson	Slope 12 %
Aspect WSW 76°	Landtype 360
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 0408720 UTM 5147355	Site Location Description approx. 1/4 mi. North of Park Lake

Notes

Elev. 6420 ft. (1926 m.)

ample evidence of gopher activity

small grassy park is fringed by aspen / doug fir & lodgepole in the draw

No evidence of recent grazing

dry site in upland landscape position ; rolling terrain

rounded topography appears due to old glacial activity

USDA - Forest [redacted] 035F009 CU AMP **SOIL DE[redacted]IPTION** (Reference: [redacted] 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		7-1-03	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County
Chessman Res.	Helena N.F.			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
Residual m/till	Granite		

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock: a. GR ____ b. CB ____ c. ST ____ d. BY ____
Upland, rolling terrain, linear hillslope			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		10cm: 56°F 50cm: 49°F	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
	6-0cm	10yr 3/2	10yr 3/2	NA	SL	9%	1FGR	S	VFR	SOPO	NA	GR - 5 CB - 0 ST - 0	3F/3VF	2VFIG	NA	NA	Clear Smooth
	23-6cm	10yr 3/2	10yr 4/2	NA	SL	12%	2COSBK	S	FR	SOPO	NA	GR - 10 CB - 0 ST -	2F	2FIG	NA	NA	Gradual Smooth
	45-23cm	10yr 3/4	10yr 4/3	NA	SL	7%	1MSBK	S	VFR	SOPO	NA	GR - 20% CB - 15% ST -	2F	3MIR	NA	NA	wavy, abrupt
	58-45cm	G	R U	S	S		NA	NA	NA	NA	NA	GR - 0 CB - 0 ST - 0	NA	NA	NA	NA	NA

26. Particl[redacted] Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

INFIL_TEST: Infiltration
Plot Name CU AMP Date 7-1-03 Recorders Farley

Plot Code 035F009 N. of Chessman Reservoir Rice M. Johnson

Test 1. Site Moisture 2 Microtopography i

Sue

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	1620 ml	640 ml	860 ml	560 ml	620 ml	720 ml

Matt Test 2. Site Moisture 2 Microtopography i

Residual Cover 101 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	1000 ml	700 ml	540 ml	700 ml	550 ml	600 ml

Ron Test 3. Site Moisture 2 Microtopography i

Residual Cover 100 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	2600 ml	1200 ml	1500 ml	700 ml	1000 ml	1180 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

te: 7-1-03 | Site Name/Code: 035F009

ew: Rice, M Johnson

Rooting Depth Data

		Very Fine to Fine (<1-2 mm diameter)	
		10-100 roots	>100 roots
Transect 1	1	2-5 1/2 in	0-2 in
	2	1-3 in	0-1 in
	3	1.5-4 in	0-1.5 in
	4	2-4 in	0-2 in
	5	3 1/2-5 1/2	0-3 1/2 in
	Notes:	Depth of A horizon 3 1/2 in Color change 3 1/2 in	
Transect 2	1	3-5 in	0-3 in
	2	2 1/2-4 in	0-2 1/2 in
	3	3-5 in	0-3 in
	4	2 1/2-4 1/2	0-2 1/2
	5	3 1/2-6	0-3 1/2
	Notes:	Color change at 7 1/2	
Transect 3	1	2 1/2-5 in	0-2 1/2 in
	2	1-3 in	0-1 in
	3	4-6 in	0-4 in
	4	3-7	0-3 in
	5	3 1/2-6 in	0-3 1/2 in
	Notes:	Color Change 7 in	

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1	Texture:	99% clay	Sandy Loam
	Structure:	2F SBK	
	Hue:	10yr	
	Value:	3	
	Chroma:	2	
Transect 2	Texture:	9.10	S.L
	Structure:	2MSBK	
	Hue:	10yr	
	Value:	3	
	Chroma:	2	
Transect 3	Texture:	19 1/2	SL
	Structure:	2 MSBK	
	Hue:	10yr	
	Value:	3	
	Chroma:	2	

Erosion Bridge Data

	Record distance from top of bridge to top of rod			Notes:
	Bridge 1	Bridge 2		

Project Area	C-4 AMD										
Sample Site Number	035F009										
Date	7-1-03										
Recorders	Rice M. Johnson										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	5	5	6	4	6	2	5	1	6	4	2
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	5	4	4	6	4	6	4	6	4	6	7
Moss/Lichen											
Bare Soil		1				2	1	3			1

03SF010 07/01/2003

Plot Number 03SF010	Date 7-1-03
Recorders Farley Rice M. Johnson	Slope ~4%
Aspect	Landtype
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 0408495 UTM 5147202	Site Location Description North of Chessman Res.

Notes

Aspen glade w/ grass/fork understory

Just ~100' off Forest Rd. north of Chessman Res

tree roots are restricted to topsoil because of fluctuating seasonal water table to within 8 inches of surface

USDA - Forest [redacted]

SOIL DES[redacted]IPTION

(Reference [redacted] 2509.18)

CU AMP 035F010

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		7-1-03	S Farley				

9. Area	10. Forest	11. Ranger District	12. State	13. County

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
residuum/till	granitic	6440'	

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect: ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____
gentle swale			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
aspen glade - grass/forb understory		50°F @ 20cm; 43°F @ 50cm	40 in.

HORIZON DESIGNATION (a)	DEPTH in. (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
		1/4 inch of grass litter @ surface										GR - CB - ST -					
	0-8	10YR 2/1		NA	CL	38	3f-m ABK	VH	VFi	VS VP	contin. ped faces thick promin.	GR - CB - ST -	3vf 3f 2M	3vf 2f	NA		C W
	8-21	10YR 4/2		7.5YR 4/6 c	SL	8	1M SBK	SH	So	So Po	NA	GR - CB - ST -	2vf 2f	2vf 1f	NA		G S
	21-32	10YR 5/2		7.5YR 5/8 M	SL	8	1M SBK	SH	So	So Po	NA	GR - CB - ST -	1f	2vf 1f	NA		G S
	32-40	10YR 6/1		7.5YR 5/6 M	LS	5	loose	Lo	So	So Po	NA	GR - CB - ST -	none	2vf	NA		G S
	40+	= ground water seeps into pit										GR - CB - ST -					I

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

INFIL_TEST: Infiltration
Plot Name C-4 AMP Date 7-7-03 Recorders

Plot Code 035F010

Adrian

Test 1. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Ran out of water before test finished

Matt

Test 2. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Test 3. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	_____ml	_____ml	_____ml	_____ml	_____ml	_____ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

INFIL_TEST: Infiltration
Plot Name Date 7-1-03 Recorders Fanley

Plot Code 035F010 Rice M. Johnson

Test 1. Site Moisture 3 Microtopography 4

Residual Cover 100 % Species 1 _____ Species 2 _____

Infiltration rate too fast to run 3 tests simultaneously

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	20,000 ml	8,600 ml	10,000 ml	9,600 ml	9,200 ml / 1200	8,800 ml

Test 2. Site Moisture _____ Microtopography _____

Residual Cover _____ % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	_____ ml	_____ ml	_____ ml	_____ ml	_____ ml	_____ ml

Test 3. Site Moisture _____ Microtopography _____

Residual Cover _____ % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	_____ ml	_____ ml	_____ ml	_____ ml	_____ ml	_____ ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ing Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

7-1-03 | Site Name/Code: 035F010

Farley Rice M. Johnson

Rooting Depth Data

	Very Fine to Fine (<1-2 mm diameter)	
	10-100 roots	>100 roots
1	2-5	0-2
2	2-5	0-2 in.
3	4-7 in	0-4 in
4	2½-4½ in	0-3½ in
5	3-5 in	0-3 in

Notes: Color change @ 5 in

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Texture: 40% clay Clay Loam
Structure: 3MABK
Hue: 10yr
Value: 2
Chroma:

1	4-7in	0-4 in
2	3½-6 in	0-3½ in
3	2-4½ in	0-2 in
4	3-7 in	0-3 in
5	3-6 in	0-3 in

Notes: Color change at 6 in

Texture: 40% clay Clay Loam
Structure: 3MABK
Hue: 10y
Value: 2
Chroma:

1	2-4½ in	0-2 in
2	2-5 in	0-2 in
3	2½-5½	0-2½
4	3-7 in	0-3 in
5	2-6 in	0-2

Notes: Color change at 7 in
* edge of lodgepole/aspen stands

Texture: 9% SL
Structure: 2FGr
Hue: 10yr
Value: 3
Chroma: 2

Erosion Bridge Data

Record distance from top of bridge to top of rod		
Bridge 1	Bridge 2	

Notes:

035F010

Project Area	E-4 AMP										
Sample Site Number	035F010										
Date	7-1-03										
Recorders	Farley Rice M. Johnson										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	8	5	1	4	7	5	2	2	1	5	2
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	1	5	9	6	3	5	9	8	9	5	8
Moss/Lichen											
Bare Soil											

03SF011 07/02/2003

Plot Number 03SF011	Date 7-2-03
Recorders Farley	Slope N 20-25
Aspect E	Landtype 36
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 0410681 UTM 5145450	Site Location Description

Notes

evidence of grazing = "weedy" site w/ ample cow pies some bare ground & plant pedestalling

recreation impacts evident = vehicle tracks visible in broken vegetation off-road plus heavy-use dispersed rec site in flat area on ridgetop

gopher activity prevalent on site

USDA - Forest Service — C-U AMP 035F011

SOIL DESCRIPTION

(Reference FSH 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
LT 34		7-2-09	SF				

9. Area	10. Forest	11. Ranger District	12. State	13. County
	HNF	Helena R.D.	MT	

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
residuum	Granitic	~6660'	

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock: a. GR ____ b. CB ____ c. ST ____ d. BY ____
upper 1/3 hillslope		Excess - WD	

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
grassland site		55°F @ 20cm. 52°F @ 50cm	~ None

HORIZON DESIGNATION (a)	DEPTH cm (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)*	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-6	10YR 2/1	10YR 3/2	NA	LS	6	1 vf GR	SO	VFR	SO PO	NA	GR - 15 CB - ST -	3 vf 2 f	3 vf-f	NE		G W
	6-20	10YR 2/2	10YR 4/4	NA	LS	5	1 f SBK	SO	VFR	SO PO	NA	GR - 30 CB - ST -	2 vf 2 f	2 vf-f	NA		G W
	20-36	10YR 3/4	10YR 6/4	NA	LS	7	1 f SBK 10%	SO	VFR	SO PO	NA	GR - 20 CB - ST -	1 f 1 M	2 vf-f	NA		G W
	36-54	10YR 4/5	10YR 6/4	NA	LS	7	1 f 10% SBK	SO	VFR	SO PO	NA	GR - 25 CB - ST -	1 f	2 vf-f	NA		G W
	54-110	10YR 4/4	10YR 6/6	NA	LS	5	SG	10	10	SO PO	NA	GR - 30 CB - ST -	1 f	2 vf-f	NA		G W
	~~110+~~											GR - CB - ST -					
	110+	highly weathered granitic bedrock										GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Partical Stat Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic zons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

INFIL_TEST: Infiltration
Plot Name CU AMP Date 7-2-03 Recorders Farley Archer DeHart Allison Rice A. Johnson

Plot Code 035F01

Test 1. Site Moisture 1 Microtopography c

Adrian Residual Cover 85 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	2020 ml	1660 ml	1840 ml	1800 ml	1800 ml	1800 ml

Since Test 2. Site Moisture 1 Microtopography c

Residual Cover 85 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
2:30	10:00					
	2,760 ml	2000 ml	2540 ml	2460 ml	2460 ml	2460 ml

Gotte Test 3. Site Moisture 1 Microtopography c

Residual Cover 85 % Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
5:00	12:30					
	2,500 ml	1950 ml	2000 ml	2000 ml	2500 ml	2420 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

Rooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

Date: 7/2/01 | Site Name/Code: C-U AMP 035E011

Crew: Rica, A. Johnson, Archer, DeHart

Rooting Depth Data

		Very Fine to Fine (<1-2 mm diameter)	
		10-100 roots	>100 roots
Transect 1 1m	1	3-7 in	0-3 in
5m	2	1-2 in	0-1 in
10m	3	2-7.5 in	0-2 in
15m	4	0-1.5 in	
20m	5	4-7 in	0-4 in
	Notes: Color change at 12 in		
Transect 2 1m	1	2-5 in	0-2 in
5m	2	1-7 in	0-1 in
10m	3	3-7 in	0-3 in
15m	4	1-5 in	0-1 in
20m	5	1-4 in	0-1 in
	Notes: Color change at 3 in		
Transect 3	1	2-5"	0-2"
	2	0-6"	
	3	3-8"	0-3"
	4	0-2.5"	
	5	1.5-4"	0-1.5"
	Notes: Color change at 8"		

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1:
- Texture: 6% clay sandy loam
- Structure: 1VFSPK
- Hue: 10yr
- Value: 3
- Chroma: 2

Transect 2:
- Texture: 6% clay sandy loam
- Structure: 1VFSPK
- Hue: 10yr
- Value: 3
- Chroma: 2

Transect 3:
- Texture: SL 7% clay
- Structure: 1FSBK
- Hue: 10YR
- Value: 3
- Chroma: 2

Erosion Bridge Data

	Record distance from top of bridge to top of rod		
	Bridge 1	Bridge 2	
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			

Notes:

Project Area	C-U AMP										
Sample Site Number	03 SF Cil										
Date	7-2-03										
Recorders	Rice A. Johnson Archer DeHart										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter		////	////	//	////	//	//	///	///	////	///
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	//// //// //	////	////	////	/	//// ///	//// //	//	////	///	////
Moss/Lichen											
Bare Soil	/	/	/	/	////	/	/	////	//	//	//

03SF012 07/07/2003

Plot Number 03SF012	Date 7-7-03
Recorders Farley	Slope 2-4 % 5.7
Aspect 126°	Landtype 36A
Air Photo Numbers FL 41 499-148	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 041052 UTM 5146495	Site Location Description just east of road intersection to Park Lake on Chessman Reservoir

Notes cows have recently grazed this season → ample cow pies & moderate utilization levels

also evidence of frequent dispersed rec use → trash, pallets for fires, etc.

sample site is just west of dilapidated barb wire fence & harvest unit w/ small lodgepole regen.

USDA - Forest Se[illegible]

03SF012

SOIL DESCRIPTION
(Reference FSH 2509.18)

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location:
	12T 0410522	7-7-03	Farley				Sec. ____ T. ____ R. ____

9. Area	10. Forest	11. Ranger District	12. State	13. County
C-U AMP	Helena UTM 5146495			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion:
Residuum / Till	Granitic	~6180	a. Kind ____ b. Class ____

18. Landform	19. Slope:	20. Drainage Class	21. Surface Stone and Rock
Valley Bottom Swale	a. % 2-4 b. Shape Convex c. Length ____ d. Aspect ____	WD	a. GR ____ b. CB ____ c. ST ____ d. BY ____

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
Aspen w/grass/Forb/shrub		50°F 20cm, 46°F @ 50cm	42 inches

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
	0-8	10YR 2/1	10YR 2/1	NA	SL	7	1 VF GR	VSo	VFR	SO PO	None	GR - Ø CB - Ø ST - Ø	3 vf 3 f	3 vf 1 f	NA		C W
	8-17	10YR 4/3	10YR 6/3	NA	SL	9	1 f SBK	So	FR	SS PS	None	GR - 10% CB - 5% ST - Ø	1 vf 2 f	2 vf 1 f	NA		G S
	17-23	10YR 5/2	10YR 7/2	few distinct 10YR 4/6	SL	8	1 f SBK	So	FR	SS PS	None	GR - 10% CB - T ST - Ø	1 f	2 vf 1 f	NA		C S
	23-33	10YR 5/3	10YR 7/2	common prominent 10YR 4/6	SL	11	1 f SBK	So	FR	SS PS	None	GR - 10% CB - T ST - Ø	1 f	2 vf 1 f	NA		C S
	33-42+	No Matrix		Mottle 5YR 3/4 Gley 2 5/5BG	SCL	31	2 M SBK	H	Fi	S VP	None	GR - CB - ST -	1 f	2 vf 1 f	NA		

26. Partical Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic H[illegible]	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

INFIL_TEST: Infiltration — Management Area — Evanson

Plot Name Clancy/Union ville Date 7-7-03 Recorders Martini, A. Johnson

Plot Code 035F012 labeled on GPS as Clancy

Charlie

Test 1. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	2300 ml	2320 ml	2380 ml	2600 ml	3240 ml	1960 ml

Total=

Test 2. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
2:30	7:30	12:30	17:30	22:30	27:30	32:30
	[redacted] ml	1440 ml	1260 ml	1240 ml	1260 ml	1260 ml

3540

total=

Adrian

Test 3. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
5:00	7:30	12:30	17:30	22:30	27:30	32:30
	5500 ml	5200 ml	4440 ml	3740 ml	3,000 ml	3,000 ml

total=

Adrian

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Aspect: 126°

Slope: 5%

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

T8N, R5W, Sec. 1 Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

Tally Charlie cont.

1

1760

Rooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

Date: 7/07/03 | Site Name/Code: 035F012

Crew: Kendrick, M. Johnson

Transect 1

	M	Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter) 10-100 roots	>100 roots
1	1	2.5 - 6 in.	0-2.5 in.
2	5	2.5 - 6 in.	0-2.5 in.
3	10	2 - 4 in.	0-2 in.
4	15	2 - 6 in.	0-2 in.
5	20	2 - 4 in.	0-2 in.

Notes: color change at 4 in.

Soil Structure, Color, Texture Data (Texture = sandy, loamy, clayey; Structure = blocky, platy, columnar, granular; Color = hue, value, chroma (Munsell color charts))

Texture: clay 40% clay

Structure: 2 COSBK

Hue: 10YR

Value: 2

Chroma: 1

Transect 2

	M	Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter) 10-100 roots	>100 roots
1	1	1-2.5 in.	0-1 in.
2	5	2-4 in.	0-2 in.
3	10	3-6 in.	0-3 in.
4	15	3-6 in.	0-3 in.
5	20	3-5 in.	0-3 in.

Notes: color change at 6 in.

Soil Structure, Color, Texture Data

Texture: cl 40% clay

Structure: 2 COSBK

Hue: 10YR

Value: 2

Chroma: 1

Transect 3

	M	Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter) 10-100 roots	>100 roots
1	1	2-4 in.	0-2 in.
2	5	1-3 in.	0-1 in.
3	10	2-3 in.	0-2 in.
4	15	2-3 in.	0-2 in.
5	20	2-2.5 in.	0-2 in.

Notes: *high traffic area
color change at 2 in.

Soil Structure, Color, Texture Data

Texture: loam 14% clay

Structure: 1 FGR

Hue: 10YR

Value: 2

Chroma: 1

Erosion Bridge Data

	Record distance from top of bridge to top of rod		
	Bridge 1	Bridge 2	

Notes:

Project Area											
Sample Site Number	035F012										
Date	7/07/03										
Recorders											
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	7	7	7	5		7	4	3	9	6	7
Rock >2"											
Woody <1"											
Woody 1-3"										1	
Woody 3-6"											
Woody 6-12"					1						
Woody 12-24"											
Live Plant	3	3	3	5		3	3	5	1	3	3
Moss/Lichen							3	2			
Bare Soil											

035F012

03SF013 07/07/2003

Plot Number 03SF013	Date 7-7-03
Recorders Farley	Slope 8.0°
Aspect 130°	Landtype 36
Air Photo Numbers FL41 499-149	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 12T 0409499 UTM 5145014	Site Location Description ridgetop between Park Lake & Cheesman Reservoir

Notes Fescue grassland site → dry ridgetop

much gopher activity

no recent sign of grazing activity

USDA - Forest Se

SOIL DESCRIPTION
(Reference FSH 2509.18)

093SF013

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ___ T. ___ R. ___
	12T 0409494	7-7-03	Farley				

9. Area	10. Forest	11. Ranger District	12. State	13. County
C-U AMP	Helena UTM 5145014			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ___ b. Class ___
Residuum	Granitic	6925'	

18. Landform	19. Slope: a. % ___ b. Shape ___ c. Length ___ d. Aspect ___	20. Drainage Class	21. Surface Stone and Rock a. GR ___ b. CB ___ c. ST ___ d. BY ___
broad rolling uplands ridgetops			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
Grassland – Fescue		55° F @ 20 cm & 53° 50 cm	None

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	Dry (2)	Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	Moist (2)	Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-6	10YR 2/2 ←→	10YR 2/1	None	SL	6	1 vf GR	So	FR	SO PO	None	GR - 5 CB - 5 ST - 0	3vf 1f	3vf 2f	None		G W
	6-14	10YR 6/4 ←→	10YR 3/4	None	SL	7	1 f SBK	SO	FR	SO PO	None	GR - 20 CB - 60 ST - 0	2vf 2f	2vf 1f	None		G W
	14-35	10YR 3/4	10YR 5/4	None	LS	4	Loose SG	So	FR	SO PO	None	GR - 10 CB - 5 ST - 0	1f	1vf 1f	None		G S
	35-37	10YR 5/4	10YR 7/4	None	SL	10	Loose SG	SO	FR	SO PO	None	GR - 10 CB - 5 ST - 0	1f	1vf 1f	None		/
	37+	rock ? or bedrock → likely bedrock due to clay pocket accumulations just above this depth										GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

e: 7/07/03 | Site Name/Code: 035F013

w: Kindrick, Dawson

Rooting Depth Data

Very Fine to Fine (<1-2 mm diameter)

		10-100 roots	>100 roots
Transect 1			
1	1	1-2 in.	0-1 in.
2	5	1-4 in.	0-1 in.
3	10	1.5-5 in.	0-1.5 in.
4	15	2-4 in.	0-2 in.
5	20	3.5-6 in.	0-3.5 in.
Notes: Color change at 3 in. M			
Transect 2			
1	1	3-6 in.	0-3 in.
2	5	2-5 in.	0-2 in.
3	10	2-5 in.	0-2 in.
4	15	1-3 in.	0-1 in.
5	20	2.5-6 in.	0-2.5 in.
Notes: Color change at 3 in. M			
Transect 3			
1	1	1.5-5.5 in.	0-1.5 in.
2	5	1-4 in.	0-1 in.
3	10	2-4 in.	0-2 in.
4	15	1.5-5.5 in.	0-1.5 in.
5	20	1.5-3 in.	0-1.5 in.
Notes: Color change at 3 in.			

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1
- Texture: 8% clay; SL
- Structure: 1 FGR
- Hue: 10YR
- Value: 2
- Chroma: 2

Transect 2
- Texture: 8% clay; SL
- Structure: 0 SG
- Hue: 10YR
- Value: 3
- Chroma: 3

Transect 3
- Texture: 8% clay; SL
- Structure: 2 MSBK
- Hue: 10YR
- Value: 3
- Chroma: 4

Erosion Bridge Data

Record distance from top of bridge to top of rod		
Bridge 1	Bridge 2	

Notes:

INFIL_TEST: Infiltration (Management area #2)
Plot Name Clancy/Unionville Date 7-7-03 Recorders Dillon, Martin, Brian

Plot Code 035F013

Test 1. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	2,060 ml	1440 ml	1160 ml	1800 ml	1200 ml	1440 ml

Test 2. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
2:30	1430 ml	1020 ml	820 ml	900 ml	1020 ml	1000 ml

Test 3. Site Moisture _____ Microtopography ____

Residual Cover _____% Species 1 _____ Species 2 _____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
5:00	12:30 1300 ml	580 ml	760 ml	400 ml	800 ml	860 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

Project Area	GU AMA										
Sample Site Number	03SF013										
Date 7/07/03											
Recorders Kimbrick, McDonald											
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**~~T2-4~~**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	~~66~~	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	~~20~~	10	15	20
Ground Cover:											
Duff/Plant Litter	9	9	9	6	6	5	5		7	4	6
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	1	1	1	3	2	3	2		3	2	3
Moss/Lichen											
Bare Soil				1	1	2	3		1	4	1

03SF013

Crew: Marian Jeff Matt

USDA - Forest Service — 03SF014 — SOIL DESCRIPTION (Reference FSH 2509.18) — 03SF014

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____

9. Area	10. Forest	11. Ranger District	12. State	13. County

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock: a. GR ____ b. CB ____ c. ST ____ d. BY ____
Colluvium			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
Conifers			

HORIZON DESIGNATION (a)	DEPTH inches (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-20"	10yr 3/3	10yr 5/2	NONE	SL	15	2MSBK	SH	FI	SO PO	NONE	GR - 30 CB - 0 ST -	2F 3VF IM	2F IVF	many roots for 2.5 inches none	none	Smooth Gradual
	20-36"	10yr 3/2	10yr 5/2	NONE	SL	17	2MSBK	SH	SS PO	SO PO	NONE	GR - 35 CB - 30 ST -	IM 2F IVF	2F 2VF	NONE	NONE	Clear wavy
	36-50"	10yr 5/4		NONE	SCL	22	2MSBK	SH	FI	SS PO	NONE	GR - 20 CB - 10 ST -	2F	2F	NONE	NONE	
	50+	Soil rock	continued to	a deeper depth	and	would	probably	mix	in	with	the	weathered					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

Crew: Adrian
Matt
Jeff

INFIL_TEST: Infiltration
Plot Name 035F014 Date 07/08/03 Recorders AJ

Plot Code

Test 1. Site Moisture 4 Microtopography ____

Residual Cover 80 % Species 1 _____ Species 2 _____

Adrian

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	1800 ml	1000 ml	1200 ml	1200 ml	1240 ml	1220 ml

Test 2. Site Moisture _____ Microtopography ____

Residual Cover 70 % Species 1 _____ Species 2 _____

Matt

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
2:30	700 ml	750 ml	800 ml	1000 ml	990 ml	1000 ml

Test 3. Site Moisture _____ Microtopography ____

Residual Cover 80 % Species 1 _____ Species 2 _____

Jeff

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
5:00	1600 ml	1000 ml	960 ml	1092 ml	960 ml	1100 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

035F014

Rooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

Date: 7/8/03 | Site Name/Code: 035F014 | Crew: Matt, Adrian, Jeff

		Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter)		Soil Structure, Color, Texture Data (Texture = sandy, loamy, clayey; Structure = blocky, platy, columnar, granular; Color = hue, value, chroma (Munsell color charts))
		10-100 roots	>100 roots	
Transect 1				Texture: SL 14% clay
1	1	0-1.5	1.5-5	Structure: 2MSPK
5	2	0-1	1-5	Hue: 10yr
10	3	0-2	2-4	Value: 3
15	4	0-2	2-6	Chroma: 2
20	5	0-2	2-6	
	Notes: Color change at 10 inches			
Transect 2				Texture: SL 14% clay
1	1	0-2	2-7	Structure: 2MSPK
5	2	0-1.5	1.5-5	Hue: 10yr
10	3	0-2	2-5	Value: 3
15	4	0-2	2-4	Chroma: 3
20	5	0-3.75	0-3.75	
	Notes: Color change at 3.5 inches			
Transect 3				Texture: SL 14% clay
1	1	0-3	3-5	Structure: 2MSPK
5	2	0-3	3-6	Hue: 10yr
10	3	0-3	3-6.25	Value: 3
15	4	0-2.5	2.5-6	Chroma: 3
20	5	0-4	4-7	
	Notes: Color change at 4.5 inches			

Erosion Bridge Data

	Record distance from top of bridge to top of rod			Notes:
	Bridge 1	Bridge 2		
1				
2				
3				
4				
5				
6				
7				
8				
9				
1				

Trian
Jeff

Project Area											
Sample Site Number											
Date											
Recorders											
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter											
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant											
Moss/Lichen											
Bare Soil											

USDA - Forest [redacted] 03SF015 SOIL DE[redacted]PTION (Refe[redacted] 2509.18) 03SF015

1. Map Unit Sy	2. Family or Series 07/08/2003	3. Date 7/8/03	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____

9. Area	10. Forest	11. Ranger District	12. State	13. County

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____

18. Landform Colluvium	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-12	10yr 3/1	10yr 4/2	None	SL	15	2MSPK	SH	FR	SS PO	None	GR - 15 CB - 10 ST -	2F 2VF	2VF 1F	Many roots to 2 inches		Smoothe gradual
	12-25	10yr 3/2	10yr 5/2	None	SL	16	2MSPK	SH	FR	SS PO	None	GR - 23 CB - 20 ST -	2F 2VF	3F			Clear Wavy
	25-42+	10yr 5/6	10yr 7/4	None	SL	18	2MSPK	SH	FI	SS PO	None	GR - 30 CB - 20 ST -	1F	2F			
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Partical Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

Matt
Jeff

INFIL_TEST: Infiltration
Plot Name 035F015 Date 07/08/03 Recorders AJ

Plot Code

Test 1. Site Moisture_____ Microtopography____

Residual Cover_____% Species 1_____ Species 2_____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	600 ml	440 ml	320 ml	600 ml	300 ml	400 ml

Test 2. Site Moisture_____ Microtopography____

Residual Cover_____% Species 1_____ Species 2_____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	240 ml	420 ml	600 ml	560 ml	600 ml	580 ml

Test 3. Site Moisture_____ Microtopography____

Residual Cover_____% Species 1_____ Species 2_____

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	440 ml	200 ml	380 ml	100 ml	340 ml	400 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

ate: 07/8/03 | Site Name/Code: 035F015

ew: Adrian Matt + Af

Rooting Depth Data

	Very Fine to Fine (<1-2 mm diameter)	
	10-100 roots	>100 roots
Transect 1		
1	2 - 4.5	0 - 2
2	1.5 - 4	0 - 1.5
3	2.5 - 6	0 - 2.5
4	2 - 5.5	0 - 2
5	2 - 5	0 - 2
Notes: Change in color at 8 inches ★ close to bottom of hill		
Transect 2		
1	1.5 - 4	0 - 1.5
2	2 - 4.5	0 - 2
3	1.5 - 5	0 - 1.5
4	1.5 - 4.5	0 - 1.5
5	2 - 4.5	0 - 2
Notes: Change in color at 4 inches ★ Mid Slope		
Transect 3		
1	1.5 - 3.5	0 - 1.5
2	2 - 5.5	0 - 2
3	2 - 5	0 - 2
4	1.5 - 4.5	0 - 1.5
5	2.5 - 4.5	0 - 2.5
Notes: Change in color at 5.5 inches ★ Mid Slope		

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

Transect 1
- Texture: 2 MSPK
- Structure: 15% clay Sandy
- Hue: 10 yr
- Value: 3
- Chroma: 2

Transect 2
- Texture: 2 MSPK
- Structure: 9% clay Sandy
- Hue: 10 yr
- Value: 3
- Chroma: 2

Transect 3
- Texture: 2 MSPK
- Structure: 10% Clay Sandy
- Hue: 10 yr
- Value: 3
- Chroma: 2

Erosion Bridge Data

	Record distance from top of bridge to top of rod			Notes:
	Bridge 1	Bridge 2		
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Adrian
Jeff

Project Area											
Sample Site Number											
Date											
Recorders											
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover											
Duff/Plant Litter											
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant											
Moss/Lichen											
Bare Soil											

Crew: Adrian Brenna
Charlie
Matt
Dillon
Liz

03SF016

07/09/2003

Plot Number 03SF016	Date 7-9-03
Recorders	Slope 20,10°
Aspect 186°	Landtype Colluvium
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 409655, 5141317	Site Location Description

Notes

Crew: Adrian, Matt, Kim, [illegible], Charlie, Wilson

USDA - Forest S

SOIL DESCRIPTION

(Reference 2509.18)

03SF016 03SF016

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
	07/09/2003	07/09/03	Matt				

9. Area	10. Forest	11. Ranger District	12. State	13. County

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____
Colluvium			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		50° @ 25cm 48° @ 60cm	

HORIZON DESIGNATION (a)	DEPTH (b) inches	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-9	10yr 3/2	10yr 5/2	NONE	LS	9	2MSPK	SH	FR	SO PO	None	GR - 15 CB - 5 ST -	2F 3VF 1M	2F 2VF 1M	many roots go down 2.5 inches		smooth gradual
	9-20	10yr 4/4	10yr 7/4	NONE	SL	16	2MSPK	MH	FI	SO PO	None	GR - 25 CB - 20 ST -	2F 2VF 1M	1F 1VF 1M			wavy gradual
	20-41	10yr 5/6	10yr 6/4	NONE	SL	18	2MSPK	MH	FI	SO PO	None	GR - 30 CB - 30 ST -	1F 1VF	1F 2VF			
	41+	Soil continued to a deeper depth and would probably mix in with the weathered bedrock below. note: the soil was very sandy.										GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

Crew: Adrian

INFIL_TEST: Infiltration
Plot Name 035F016 Date 07/09/03 Recorders Adrian

Plot Code

Test 1. Site Moisture 1 Microtopography ___

Residual Cover 85 % Species 1 Lit Species 2 Fescue

Adrian Johnson

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	700 ml	1620 ml	1480 ml	1620 ml	1560 ml	1560 ml

Test 2. Site Moisture 1 Microtopography ___

2 burke Residual Cover 40 % Species 1 Lit Species 2 Fescue

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
2:30	1840 ml	1400 ml	1300 ml	1180 ml	1200 ml	1560 ml

Test 3. Site Moisture 1 Microtopography ___

Residual Cover 70 % Species 1 Lit Species 2 Fescue

NNA Lindrick

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
5:00	390 ml	1660 ml	1410 ml	1460 ml	1680 ml	1600 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), *Hummocks* = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ing Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data 035F016

7-9-03 | Site Name/Code: 035F016

Crew: Adrian, Brenna, Matt, Liz, Charlie, Dillon

	Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter)		Soil Structure, Color, Texture Data (Texture = sandy, loamy, clayey; Structure = blocky, platy, columnar, granular; Color = hue, value, chroma (Munsell color charts))
	10-100 roots	>100 roots	
1	2-4 inches	0-2 inches	Texture: SL 9% clay sandy Loam
2	2-6.5 in	0-2 in	
3	1.5-6 in	0-1.5 in	Structure: 2MSBK
4	1.5-5 in	0-1.5 in	
5	2-6 in	0-2 in	Hue: 10yr
Notes: color change at 6.5 in			Value: 3
			Chroma: 3
1	2-6.5 in	0-2 in	Texture: SL 9% clay sandy Loam
2	2-6.5 in	0-2 in	
3	2.5-6 in	0-2.5 in	Structure: 2MSBK
4	2-7 in	0-2 in	
5	2-5.5 in	0-2 in	Hue: 10yr
Notes: color change at 12 in			Value: 3
			Chroma: 3
1	2-4 in	0-2 in	Texture: SL 9% Clay sandy Loam
2	1.5-4 in	0-1.5 in	
3	1.5-4 in	0-1.5 in	Structure: 2MSBK
4	2.5-6 in	0-2.5 in	
5	2-5 in	0-2 in	Hue: 10yr
Notes: colorchange at 7 in			Value: 4
			Chroma: 3

Erosion Bridge Data

Record distance from top of bridge to top of rod			Notes:
Bridge 1	Bridge 2		

Adrian L Dillon Brenna

Project Area											
Sample Site Number	035F016										
Date	07/9/03										
Recorders	Matt, Dillon, Charlie										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	6	7	4	7	4	7	4		4	5	5
Rock >2"			4		1						1
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	3	3	2	2	3	2	3		4	3	
Moss/Lichen	1										
Bare Soil				1	2	1	1		2	2	4

03SF017 07/10/2003

Plot Number 03SF017	Date 07/10/03
Recorders Adrian + Matt	Slope 20%
Aspect 170°	Landtype Colluvium
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates (409308, 5141479)	Site Location Description Hill slope above a wetland and below a Douglas fir and lodge pole stand

Notes

Moderate burrowing activity
Bunch grass is dominant vegetation species
Lupine is the second dominant vegetation species
Site is about a 3 acre meadow

(Ref: FSH 2509.18)

1. Map Unit S.	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		07/10/03	AJMS				

9. Area	10. Forest	11. Ranger District	12. State	13. County

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____
Volcanic			

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock a. GR ____ b. CB ____ c. ST ____ d. BY ____
Colluvium			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		57°@25cm, 55°@50cm	

HORIZON DESIGNATION (a)	DEPTH inches (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-12"	10yr 4/2	10yr 3/3	None	LS	13	2MSPK	SH	FR	SO PO	None	GR - 15 CB - 10 ST -	1M 2F 3VF	1M 2F 2VF	Many roots to 3 inches		Clear Smooth
	12"-25"	10yr 4/4	10yr 5/3	None	SL	17	2MSPK	MH	FR	SS PO	None	GR - 25 CB - 30 ST -	1M 1F 2VF	1F 2VF			Clear Smooth
	25"-43"	10yr 5/6	10yr 7/4	None	SCL	23	2MSPK	MH	FR	SS PO	None	GR - 80 CB - 40 ST -	1VF	2VF			
	43"+	Sandy bedrock.	Clay Loam layer continues					down to a			deeper	GR - depth CB - ST -	where it	intersects the			
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Partical Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

ting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data 0.3SF017

7-10-03	Site Name/Code:		
M.J.	**Rooting Depth Data**		**Soil Structure, Color, Texture Data**
(inches)	Very Fine to Fine (<1-2 mm diameter)		Texture = sandy, loamy, clayey Structure = blocky, platy, columnar, granular Color = hue, value, chroma (Munsell color charts)
	10-100 roots	>100 roots	
1	2-4.5	0-2	Texture: 14.1° clay / S.L.
2	2.5-5	0-2.5	
3	2.5-6.5	0-2.5	Structure: 2MSBK
4	2-6	0-2	
5	2-5	0-2	Hue: 10yr
Notes: color Δ @ 5.5 in.			Value: 3 Chroma: 3
1	2-7	0-2	Texture: 13.1° S-L.
2	3-6	0-3	
3	2.5-5	0-2.5	Structure: 2MSBK
4	2.5-5	0-2.5	
5	2.5-6	0-2.5	Hue: 10YR
Notes: Analysis @ flatter region on slope. color Δ @: 10 inches			Value: 3 Chroma: 3
1	2.5-6	0-2.5	Texture: 13.1° SL.
2	2-6	0-2	
3	2.5-6.5	0-2.5	Structure: 2MSBK
4	3-6	0-3	
5	3-7	0-3	Hue: 10yr
Notes: color Δ @ 3 in. * Analysis @ 10 ft. from road			Value: 3 Chroma: 3

Erosion Bridge Data

Record distance from top of bridge to top of rod			Notes:
Bridge 1	Bridge 2		

Project Area	HNF N C-V Amp										
Sample Site Number	035F017										
Date	7-10-03										
Recorders	M.J.										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	5	5	6	5	3	4	5		4	6	6
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	4	2	3	4	7	5	5		3	4	4
Moss/Lichen											
Bare Soil	1	3	1	1		1			3		

7-10-03
AJ.

035F017

INFIL_TEST: Infiltration

Plot Name | Date | Recorders

Plot Code

Test 1. Site Moisture 1 Microtopography ____

Residual Cover 65 % Species 1 bunchgrass Species 2 lupine

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	780 ml	1580 ml	1020 ml	1180 ml	1180 ml	1260 ml

Test 2. Site Moisture 1 Microtopography ____

Residual Cover 65 % Species 1 spiderwort Species 2 bunchgrass

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	60 ml	860 ml	660 ml	640 ml	740 ml	740 ml

Test 3. Site Moisture 1 Microtopography ____

Residual Cover 90 % Species 1 b.g. Species 2 lupine

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	1200 ml	880 ml	650 ml	820 ml	800 ml	830 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

03SF018

07/14/2003

Plot Number 03SF018	Date 7-14-03
Recorders M.S., -	Slope 6d°
Aspect 220°	Landtype gentle hillslope colluvium
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates (409294, 5137798)	Site Location Description

Notes * Grass vegitation, moist site, gentle sloping meadow surrounded by lodgepole pine/sub-alpine fir, past grazing activity

HNF ~ C-U-AMP (Reference FSH 2509.18) USSF010

1. Map Unit Symbol	Family or Series	3. Date	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location:
	MJ + A.J.	7-14-0_				Sec. ____ T. ____ R. ____

9. Area	10. Forest	11. Ranger District	12. State	13. County
	HNF			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind	b. Class
Granite				

18. Landform	19. Slope: a. %	b. Shape	c. Length	d. Aspect	20. Drainage Class	21. Surface Stone and Rock: a. GR	b. CB	c. ST	d. BY
Colluvium	6			220°					

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
Grasses/medow, lodgepole < sub-alpine fir forest		25 cm: 50° / 50 cm: 48°	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR Dry (2)	COLOR Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE Moist (2)	CONSISTENCE Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
-	0-4	10yr 3/3	10yr 3/3	N	SL	13	2MSBK	S	FR	SO PO	N	GR-15 CB-15 ST-	2VF 2F	2VF	*many roots until 3in		Clear smooth
-	4-12	10yr 4/3	10yr 5/3	O	SL	15	2MSBK	SH	FI	SO PO	O	GR-20 CB-15 ST-30	2VF 1F	2F	*common roots until 7in		Clear smooth
-	12-21	10yr 4/4	10yr 6/3	N	SL	17	2MSBK	SH	FI	SS PO	N	GR-40 CB-20 ST-	1VF 1F	2F			Clear smooth
-	21-40	10yr 5/6	10yr 6/4	E	SL	20	2MSBK	SH	FI	PO SS	E	GR-30 CB-30 ST-	1VF	2VF			
	40+	Sandy layer probably continues down until incorporating into bedrock.										GR- CB- ST-					
												GR- CB- ST-					
												GR- CB- ST-					
												GR- CB- ST-					
												GR- CB- ST-					

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

Crew: Matt 3-29
Evette
Adrian

INFIL_TEST: Infiltration
Plot Name 035E018 Date 7/4/08 Recorders

Plot Code

Adrian Test 1. Site Moisture 2 Microtopography ____

Residual Cover 80 % Species 1 Litter Species 2 Argl

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	540 ml	500 ml	400 ml	620 ml	400 ml	520 ml

Matt Test 2. Site Moisture 2 Microtopography ____

Residual Cover 70 % Species 1 unknown grass Species 2 Pen spp

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	800 ml	600 ml	500 ml	600 ml	550 ml	420 ml

Evette Test 3. Site Moisture 2 Microtopography ____

Residual Cover 90 % Species 1 unknown grass Species 2 Argl

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	560 ml	660 ml	460 ml	860 ml	980 ml	860 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

: 7/14/03 | Site Name/Code: CUAMP #03SF018

: EA MT

Rooting Depth Data

Very Fine to Fine (<1-2 mm diameter)

	10-100 roots	>100 roots
Transect 1		
1	5 - 13 cm	0 - 5 cm
2	7 - 12 cm	0 - 7 cm
3	3 - 10 cm	0 - 3 cm
4	5 - 7 cm	0 - 3 cm
5	5 - 12 cm	0 - 5 cm
Notes: Depth to color change 29cm		
Transect 2		
1	4 - 12 cm	0 - 4 cm
2	5 - 10 cm	0 - 5 cm
3	3 - 14 cm	0 - 3 cm
4	4 - 11 cm	0 - 4 cm
5	5 - 13 cm	0 - 5 cm
Notes: Depth to color change 22 cm		
Transect 3		
1	3 - 10 cm	0 - 3 cm
2	3 - 12 cm	0 - 3 cm
3	5 - 12 cm	0 - 5 cm
4	2 - 12 cm	0 - 2 cm
5	3 - 10 cm	0 - 3 cm
Notes: Hit rock at 18 cm, no color change from 0 - 18,		

Soil Structure, Color, Texture Data

Texture = sandy, loamy, clayey
Structure = blocky, platy, columnar, granular
Color = hue, value, chroma (Munsell color charts)

		Dry	Wet
Transect 1			
Texture:	SL		18% clay
Structure:	2 F SB K		
Hue:	10 YR		10 YR
Value:	3		2
Chroma:	3		3
Transect 2			
Texture:	L		7% clay
Structure:	2 VF/F SBK		
Hue:	10 YR		10 YR
Value:	4		3
Chroma:	2		1
Transect 3			
Texture:	SL		8% clay
Structure:	1 F SB K		
Hue:	10 YR		10 YR
Value:	4		3
Chroma:	3		2

Erosion Bridge Data

Record distance from top of bridge to top of rod

Bridge 1	Bridge 2	

Notes:

Project Area	CUAMP										
Sample Site Number	035F018										
Date	7/14/03										
Recorders	EA										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	III	III	III	III	III	II	I	III	II	III	II
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	III	III	III	III	III	III	III	III	III	III	III
Moss/Lichen											
Bare Soil											

03SF019 07/15/2003

Plot Number 03SF019	Date 7-15-03
Recorders MJ,	Slope 10d°
Aspect 148°	Landtype colluvium/residuum
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates (408203, 5139879)	Site Location Description 7000 ft.

Notes gentle slope below mixed Aspen, Doug fir, lodgepole & meadow w/ sagebrush & bunchgrass

USDA - Forest Service   MJ • John • Tom

SOIL DESCRIPTION
(Reference FSH 2509.18)

035F019

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ___ T. ___ R. ___
		7-15-07					

9. Area	10. Forest	11. Ranger District	12. State	13. County
	HNF			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ___ b. Class ___

18. Landform	19. Slope: a. % ___ b. Shape ___ c. Length ___ d. Aspect ___	20. Drainage Class	21. Surface Stone and Rock a. GR ___ b. CB ___ c. ST ___ d. BY ___
colluvium/residuum			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		55° @ 25cm 49° @ 50cm	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	Dry (2)	Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	Moist (2)	Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	Roots (3)	Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-9	10yr 3/2			SL	12	2FGr	S	VFR	SO/PO		GR - 15 CB - — ST - —	2F 2VF	2F 2VF	*many roots until 2inches		clear smooth
												GR - CB - ST -					
	9-21	10yr 3/3			SL	15	2MSBK	SH	FR	SS/PO		GR - 20 CB - 5 ST - 40	2F 2VF 1M	2F 2VF			clear smooth
	21-29	10yr 4/4 (little lighter)			SL	20	2MSBK	MH	FI	MS/PO		GR - 30 CB - 10 ST - 20	1VF 1M	1VF			clear smooth
	29-40	10yr 4/4			SL	7	1FSBK	S	FR	SO/PO		GR - 35 CB - 15 ST - 20	1VF	1VF			
	40+	Layer probably continues										GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

INFIL_TEST: Infiltration
Plot Name 035F019 Date 7-15-03 Recorders

Plot Code

GPS Cattle d 035F19

Test 1. Site Moisture ____ Microtopography ____

Dillon

Residual Cover 65 % Species 1 POA SPP Species 2 POT SPP

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	800 ml	380 ml	700 ml	420 ml	520 ml	900 ml

Test 2. Site Moisture ____ Microtopography ____

Adrian

Residual Cover 70 % Species 1 POA SPP Species 2 POT SPP

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	860 ml	640 ml	560 ml	960 ml	920 ml	1120 ml

Test 3. Site Moisture ____ Microtopography ____

Charlie

Residual Cover 60% % Species 1 Short grass Species 2 Litter — Poa spp

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	540 ml	720 ml	460 ml	700 ml	660 ml	800 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

te: 7/15/03 | Site Name/Code: Q3SF019

ew:

		Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter)		Soil Structure, Color, Texture Data (Texture = sandy, loamy, clayey; Structure = blocky, platy, columnar, granular; Color = hue, value, chroma (Munsell color charts))
		10-100 roots	>100 roots	
Transect 1	1	4-12 cm	0-4 cm	Texture: L 10%
	2	6-16 cm	0-6 cm	
	3	4-14 cm	0-4 cm	Structure: 2 FSBK
	4	4-10 cm	0-4 cm	
	5	3-12 cm	0-3 cm	Hue: 10 YR
	Notes: Depth to color change 20cm			Value: 2
				Chroma: 1 wet color
Transect 2	1	7-16 cm	0-7 cm	Texture: SL 8%
	2	7-13 cm	0-7 cm	
	3	6-16 cm	0-6 cm	Structure: 2 FSBK
	4	8-24 cm	0-8 cm	
	5	6-16 cm	0-6cm	Hue: 10 YR
	Notes: Depth to color change 2...			Value: 3
				Chroma: 2 dry
Transect :	1	5-10 cm	0-5 cm	Texture: ~~[illegible]~~ SL 8% clay
	2	6-12 cm	0-6 cm	
	3	6-13 cm	0-6 cm	Structure: 2VFSBK
	4	0-8 cm	0	
	5	5-12 cm	0-5cm	Hue: 10 YR
	Notes: Depth to color change			Value: 3
				Chroma: 2

Erosion Bridge Data

	Record distance from top of bridge to top of rod			Notes:
	Bridge 1	Bridge 2		
1				
2				
3				
4				
5				
6				
7				
8				
9				
0				

Project Area	COAMP										
Sample Site Number	035F019										
Date	7/15/03										
Recorders	EA B										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	IIII	IIII	IIII	IIII	IIII	IIII	IIII	IIII	IIII	IIII	IIII
Rock>2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant	IIII	III	IIII	IIII	III	III	IIII	IIII	IIII	III	II
Moss/Lichen											
Bare Soil		II			II	II				II	

03SF020 07/15/2003

Plot Number 03SF020	Date 7-15-03
Recorders Matt J., John D., Tom	Slope 20%
Aspect 240°	Landtype colluvium, residium
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates 0408799 5139776	Site Location Description 6000'
Notes Very bouldery meadow above riparian area	

USDA - Forest Service

SOIL DESCRIPTION

(Reference FSH 2509.18)

MJ, JD + Tom

03SF020

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		7-15-03					

9. Area	10. Forest	11. Ranger District	12. State	13. County
	Helena			

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock: a. GR ____ b. CB ____ c. ST ____ d. BY ____
Colluvium - Residuum			

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table *(Depth)*
		25cm - 52°F / 50cm - 46°F	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	SPECIAL FEATURES (g) % of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-16"	10YR 2/2	10YR 4/2		SL	11	2msbk	s	fr	sopo		GR - 40 CB - ST -	0-3" sod 2f 2vf	2vf 2f			g. smoo
	16-29"	10YR 3/2	10YR 4/2			11	1msbk	s	fr	sopo	boulders	GR - 20 CB - ST - 40	2f 2vf	2vf 2f			cl. smo
	29-40	10YR 4/4	10YR 5/4			7	1fsbk	sh	vfr	sopo		GR - 20 CB - 20 ST - 20	1f 1vf	2vf			
	40 +	~~10YR 4/4~~			V coarse gravelly loam	7						GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Partical Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic F	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-1 (2/86)

INFIL_TEST: Infiltration
Plot Name 035F020 Date 7-15-03 Recorders

Plot Code

GPS Name 035F20

Test 1. Site Moisture ____ Microtopography ____

Residual Cover 65 % Species 1 grass Species 2 ach mil

Dillon

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	1920 ml	860 ml	1100 ml	800 ml	1340 ml	1,000 ml

Test 2. Site Moisture ____ Microtopography ____

Residual Cover 25 % Species 1 FRA VI Species 2 Grass

Brenna

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
2:30	10:00 4,000 ml	2,660 ml	2460 ml	2,300 ml	2,000 ml	2,460 ml

Test 3. Site Moisture ____ Microtopography ____

Residual Cover 70% % Species 1 grass Species 2 ant ros

Evet

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~	~~7:30~~	12:30	17:30	22:30	27:30	32:30
5:00	12:30 720 ml	680 ml	720 ml	580 ml	1,000 ml	440 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

Species 1 and 2:

Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

oting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

e: 7/15/03 | Site Name/Code: 035F020

w: Adrian, Charlie

		Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter)		Soil Structure, Color, Texture Data (Texture = sandy, loamy, clayey; Structure = blocky, platy, columnar, granular; Color = hue, value, chroma (Munsell color charts))
		10-100 roots cm	>100 roots cm	
Transect 1	1	8-13	0-8	Texture: SL 11% clay
	2	6-12	0-6	Structure: 2MSPK
	3	6-10	0-6	Hue: 10yr
	4	10-14	0-10	Value: 4
	5	6-11	0-6	Chroma: 3
	Notes: Color change @ 10 cm			
Transect 2	1	8-12	0-8	Texture: SL 12% clay
	2	7-12	0-7	Structure: 2MSPK
	3	9-13	0-9	Hue: 10yr
	4	9-13	0-9	Value: 4
	5	8-13	0-8	Chroma: 3
	Notes: Color change @ 15cm			
Transect 3	1	8-14	0-8	Texture: SL 11%
	2	8-13	0-8	Structure: 2MSPK
	3	8-14	0-8	Hue: 10yr
	4	9-16	0-9	Value: 4
	5	9-18	0-9	Chroma: 3
	Notes: Color change @ 20cm			

Erosion Bridge Data

Record distance from top of bridge to top of rod			Notes:
Bridge 1	Bridge 2		

Project Area											
Sample Site Number	035F020										
Date	7/15/03										
Recorders	Adrian & Charlie										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	𝍸	𝍸	𝍸		𝍸	𝍸	𝍸	𝍸	𝍸	𝍸	𝍸
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant											
Moss/Lichen											
Bare Soil											

03SF021 Adrian Evette John 07/15/2003

Plot Number 03SF021	Date 7-15-03
Recorders ae	Slope 28 d°
Aspect 170°	Landtype Colluvium
Air Photo Numbers	Map Names
Site Photo Numbers	Soil Sample Numbers
GPS Coordinates (414761, 5150608)	Site Location Description

Notes * Rabbitbrush, silver sage, cheatgrass, chokecherry - vegetation
bunchgrass, Douglas fir - ponderosa pine
* goat grazing activity (last year)
* sheetwash erosion visible - moderate, some pedestalling
* some emerging boulders/stone

USFS021 (Referen... FSH 2509.18) Crew: Adrian, Matt, John, Brett.

1. Map Unit Symbol	2. Family or Series	3. Date	4. By	5. Photo. No.	6. Stop No.	7. USGS Quad	8. Location: Sec. ____ T. ____ R. ____
		7/16/03					

9. Area	10. Forest	11. Ranger District	12. State	13. County
CUAMP	HNF		MT	

14. Parent Material	15. Bedrock Name	16. Elevation	17. Erosion: a. Kind ____ b. Class ____

18. Landform	19. Slope: a. % ____ b. Shape ____ c. Length ____ d. Aspect ____	20. Drainage Class	21. Surface Stone and Rock: a. GR ____ b. CB ____ c. ST ____ d. BY ____

22. Potential Natural Vegetation	23. Annual Precipitation	24. Measured Soil Temperature	25. Water Table (Depth)
		60°F @ 25cm 55°F @ 50cm	

HORIZON DESIGNATION (a)	DEPTH (b)	COLOR (c) Moist (1)	COLOR (c) Dry (2)	COLOR (c) Mottling (3)	TEXTURE (d)	%C	STRUCTURE (e)	CONSISTENCE (f) Dry (1)	CONSISTENCE (f) Moist (2)	CONSISTENCE (f) Wet (3)	SPECIAL FEATURES (g) Cutans (1)	% of Rock Fragments (2)	SPECIAL FEATURES (g) Roots (3)	SPECIAL FEATURES (g) Pores (4)	EFFER. CLASS (h)	FIELD pH (i)	BOUNDARY (j)
	0-38	10YR 3/2	10YR 4/3	None	SL	5	1FGR	S	VF	POSO	None	GR - 20 CB - ST -	2VF 1F 1M	1F		NA	CW
	38-50	10YR 3/4	10YR 4/4	None	FSL	4	2MSBK	S	VF	POSO	None	GR - 5 CB - 10 ST - 30	1F 1M	1F 1M		NA	CS
	50-84	10YR 3/4	10YR 5/6	None	LS	4	SGR	L	VFR	POSO	None	GR - 5 CB - 5 ST - 70	1F	1M		NA	
R	84+	Hit residuum with mixed loose soil & stone.										GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					
												GR - CB - ST -					

26. Particle Size Control Section	a. Depth:	b. Average Clay %:	c. Average Rock Fragment Content:	27. Depth to Lithic or Paralithic Contact:

28. Diagnostic Horizons	a. Surface:	b. Subsurface:	29. Moist Control Section Depth:

FS-2500-1 (2/86)

Crew: Matt Adrian Evette John

INFIL_TEST: Infiltration
Plot Name 035F021 Date 07/16/03 Recorders

Plot Code

Test 1. Site Moisture 1 Microtopography ____

John

Residual Cover 60 % Species 1 Buckwheat Species 2 Ant ros

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
0:00	7:30	12:30	17:30	22:30	27:30	32:30
	550 ml	1260 ml	1550 ml	1400 ml	1400 ml	1560 ml

Test 2. Site Moisture 1 Microtopography ____

Residual Cover 65 % Species 1 Ant ros Species 2 Fes ida

Evette

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 2:30	~~7:30~~ 10:00	12:30	17:30	22:30	27:30	32:30
	1600 ml	1220 ml	900 ml	1220 ml	1240 ml	950 ml

Test 3. Site Moisture 1 Microtopography ____

Residual Cover 85 % Species 1 Fes ida Species 2 Ant ros

Matt

Initial Fill	Start Value	10 min Value	15 min Value	20 min Value	25 min Value	30 min Value
~~0:00~~ 5:00	~~7:30~~ 12:30	12:30	17:30	22:30	27:30	32:30
	700 ml	600 ml	400 ml	400 ml	400 ml	400 ml

Soil Moisture Scale by Touch:

1 = Warm dry; 2 = Cool dry; 3 = Moist; 4 = Wet; 5 = Wet sponge

Microtopography Features:

Coppice Dune = c, Interspace = i (space between coppice dunes) ; Desert pavement = p (gravel up to 3"), Hummocks = h, or None = n (if no feature present)

Residue Cover:

Percent of ground covered by standing live and down organic material within small cylinder.

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Plant Species Alpha Code: Species with 1st and 2nd highest % basal cover within small cylinder or note if litter.

035F021

ooting Depth & Abundance; Soil Texture, Structure, and Color; and Erosion Bridge Data

ıte: 7/16/03 | Site Name/Code:

ew: Matt Evette Adrian John

		Rooting Depth Data: Very Fine to Fine (<1-2 mm diameter)		Soil Structure, Color, Texture Data (Texture = sandy, loamy, clayey; Structure = blocky, platy, columnar, granular; Color = hue, value, chroma (Munsell color charts))
		10-100 roots /N	>100 roots /N	
Transect 1	1	1.5-4	0-1.5	Texture: 9% clay
	2	2-4	0-2	
	3	1.5-4	0-1.5	Structure: 2MSPK
	4	1.5-5	0-1.5	Hue: 10yr
	5	1.5-4.5	0-1.5	Value: 3
	Notes: Color change @ 15 in.			Chroma: 3
Transect 2	1	2-7	0-2	Texture: 10% clay
	2	1.5-4	0-1.5	
	3	2-4.5	0-2	Structure: 2MSPK
	4	1-4	0-1	Hue: 10yr
	5	1-3.5	0-1	Value: 3
	Notes: Color change @ 3.5 in.			Chroma: 3
Transect 3	1	2-4.5	0-2	Texture: 9% clay
	2	2-6.5	0-2	
	3	1.5-7	0-1.5	Structure: 2MSPK
	4	2-5	0-2	Hue: 10yr
	5	2-7	0-2	Value: 3
	Notes: Color change @ 10 in.			Chroma: 3

Erosion Bridge Data

Record distance from top of bridge to top of rod			Notes:
Bridge 1	Bridge 2		

Crew: Adrian, Matt, John, Evette

Project Area											
Sample Site Number	035F021										
Date	7/16/03										
Recorders	Matt, Adrian										
Transect Point	**T1-1**	**T1-2**	**T1-3**	**T1-4**	**T2-1**	**T2-2**	**T2-3**	**T2-4**	**T3-1**	**T3-2**	**T3-3**
Transect Distance (ft.)	16	33	49	66	16	33	49	66	33	49	66
Transect Distance (m.)	5	10	15	20	5	10	15	20	10	15	20
Ground Cover:											
Duff/Plant Litter	𝍸	𝍸	𝍸	𝍸	𝍸	𝍸	𝍸	𝍸	𝍸	𝍸	𝍸
Rock >2"											
Woody <1"											
Woody 1-3"											
Woody 3-6"											
Woody 6-12"											
Woody 12-24"											
Live Plant			𝍸	/		/		///	///	/	/
Moss/Lichen											
Bare Soil		//			//	//				/	//