

APPENDIX C

DATA SUMMARY APPENDIX

Data Summary Appendix

Overview

This appendix consists of data summary tables not presented in any of the other appendices. Both temperature and sediment related data are contained within the tables of this appendix. For a full Microsoft Access database of data from this project contact Montana Department of Environmental Quality.

Table C-1. Percent Fines Less Than 2mm in Riffles

Stream Name	Reach Name	Reach Type	Zone	Percent < 2mm
Big Hole River	BH09	reference	Big Hole	0.0%
Big Hole River	BH18	reference	Big Hole	0.0%
Big Hole River	BH28	reference	Big Hole	7.9%
Johnson Creek	JC03	reference	Montane/high	34.0%
Schultz Creek	SH01	reference	Montane/high	13.3%
Warm Springs Creek	WS07	reference	Montane/high	2.0%
Trail Creek	TC02	reference	Montane/low	3.8%
Trail Creek	TC07	reference	Montane/low	22.5%
North Fork Big Hole River	NF02	reference	North Fork	14.1%
North Fork Big Hole River	NF06	reference	North Fork	4.8%
Fox Creek	FC03	reference	Valley	1.0%
Little Lake Creek	LL05	reference	Valley	38.2%
Mussigbrod Creek	MC05	reference	Valley	10.9%
Miner Creek	MC06	reference	Valley	20.0%
Pintlar Creek	PC04	reference	Valley	17.0%
Rock Creek	RO04	reference	Valley	19.4%
Big Hole River	BH08	Impacted	Big Hole	1.0%
Big Hole River	BH16	Impacted	Big Hole	5.0%
Big Hole River	BH19	Impacted	Big Hole	2.0%

Table C-1. Percent Fines Less Than 2mm in Riffles

Stream Name	Reach Name	Reach Type	Zone	Percent < 2mm
Big Hole River	BH22	Impacted	Big Hole	7.6%
Big Hole River	BH26	Impacted	Big Hole	0.0%
Big Hole River	BH26R	Impacted	Big Hole	3.0%
Johnson Creek	JC02	Impacted	Montane/high	13.0%
Johnson Creek	JC02R	Impacted	Montane/high	6.9%
Trail Creek	TC08	Impacted	Montane/high	19.4%
Trail Creek	TC08r	Impacted	Montane/high	22.5%
Frances Creek	FR01	Impacted	Montane/low	15.7%
Joseph Creek	JO02	Impacted	Montane/low	8.0%
Ruby Creek	RC04	Impacted	Montane/low	0.0%
Trail Creek	TC03	Impacted	Montane/low	27.5%
Tie Creek	TI02	Impacted	Montane/low	26.2%
North Fork Big Hole River	NF07	Impacted	North Fork	4.9%
North Fork Big Hole River	NF11	Impacted	North Fork	6.7%
Doolittle Creek	DC03	Impacted	Valley	23.0%
Fox Creek	FC02	Impacted	Valley	5.0%
Governor Creek	GC04	Impacted	Valley	8.2%
Governor Creek	GC06	Impacted	Valley	2.0%
Governor Creek	GC11	Impacted	Valley	0.0%
Johnson Creek	JC07	Impacted	Valley	5.0%
Mussigbrod Creek	MC07	Impacted	Valley	54.5%
McVey Creek	MV03	Impacted	Valley	60.0%
Pine Creek	PN03	Impacted	Valley	12.1%
Ruby Creek	RC07	Impacted	Valley	10.6%
Ruby Creek	RC08	Impacted	Valley	17.8%
Ruby Creek	RC08	Impacted	Valley	17.8%
Rock Creek	RO06	Impacted	Valley	13.2%
Steel Creek	SC03	Impacted	Valley	32.4%
Steel Creek	SC06	Impacted	Valley	25.5%
Swamp Creek	SW03	Impacted	Valley	20.8%

Table C-1. Percent Fines Less Than 2mm in Riffles

Stream Name	Reach Name	Reach Type	Zone	Percent < 2mm
Swamp Creek	SW10	Impacted	Valley	24.1%
Warm Springs Creek	WS10	Impacted	Valley	1.0%
Warm Springs Creek	WS11	Impacted	Valley	5.0%

Table C-2. Percent Fines Less Than 6mm in Riffles

Stream Name	Reach Name	Reach Type	Zone	Percent < 6mm
Big Hole River	BH09	reference	Big Hole	0.0%
Big Hole River	BH18	reference	Big Hole	0.0%
Big Hole River	BH28	reference	Big Hole	10.9%
Warm Springs Creek	WS07	reference	Montane/high	5.9%
Johnson Creek	JC03	reference	Montane/high	43.7%
Schultz Creek	SH01	reference	Montane/high	13.3%
Trail Creek	TC07	reference	Montane/low	34.3%
Trail Creek	TC02	reference	Montane/low	6.7%
North Fork Big Hole River	NF06	reference	North Fork	7.1%
North Fork Big Hole River	NF02	reference	North Fork	16.2%
Fox Creek	FC03	reference	Valley	1.0%
Rock Creek	RO04	reference	Valley	32.3%
Pintlar Creek	PC04	reference	Valley	18.9%
Miner Creek	MC06	reference	Valley	25.0%
Little Lake Creek	LL05	reference	Valley	41.2%
Mussigbrod Creek	MC05	reference	Valley	14.9%
Big Hole River	BH19	Impacted	Big Hole	7.0%
Big Hole River	BH22	Impacted	Big Hole	8.7%
Big Hole River	BH26	Impacted	Big Hole	2.8%
Big Hole River	BH08	Impacted	Big Hole	6.0%
Big Hole River	BH16	Impacted	Big Hole	8.0%
Big Hole River	BH26R	Impacted	Big Hole	7.9%
Johnson Creek	JC02R	Impacted	Montane/high	10.9%

Table C-2. Percent Fines Less Than 6mm in Riffles

Stream Name	Reach Name	Reach Type	Zone	Percent < 6mm
Johnson Creek	JC02	Impacted	Montane/high	21.0%
Trail Creek	TC08r	Impacted	Montane/high	28.4%
Trail Creek	TC08	Impacted	Montane/high	29.1%
Joseph Creek	JO02	Impacted	Montane/low	15.0%
Trail Creek	TC03	Impacted	Montane/low	42.2%
Tie Creek	TI02	Impacted	Montane/low	32.7%
Ruby Creek	RC04	Impacted	Montane/low	2.0%
Frances Creek	FR01	Impacted	Montane/low	17.6%
North Fork Big Hole River	NF07	Impacted	North Fork	7.8%
North Fork Big Hole River	NF11	Impacted	North Fork	8.7%
Doolittle Creek	DC03	Impacted	Valley	33.0%
Johnson Creek	JC07	Impacted	Valley	5.0%
Governor Creek	GC06	Impacted	Valley	2.0%
Governor Creek	GC11	Impacted	Valley	0.0%
Governor Creek	GC04	Impacted	Valley	9.2%
Fox Creek	FC02	Impacted	Valley	6.0%
Pine Creek	PN03	Impacted	Valley	13.1%
McVey Creek	MV03	Impacted	Valley	67.0%
Mussigbrod Creek	MC07	Impacted	Valley	71.3%
Swamp Creek	SW10	Impacted	Valley	26.9%
Swamp Creek	SW03	Impacted	Valley	24.8%
Ruby Creek	RC08	Impacted	Valley	25.7%
Ruby Creek	RC07	Impacted	Valley	15.4%
Steel Creek	SC06	Impacted	Valley	26.5%
Warm Springs Creek	WS11	Impacted	Valley	10.9%
Warm Springs Creek	WS10	Impacted	Valley	1.0%
Steel Creek	SC03	Impacted	Valley	51.9%
Rock Creek	RO06	Impacted	Valley	20.2%
Ruby Creek	RC08	Impacted	Valley	25.7%

Table C-3. Area of Eroding Banks Along Each Monitoring Reach (sq. ft)

Reach Name	Reach Type	Zone	Eroding Bank #							
			1	2	3	4	5	6	7	8
BH09	reference	Big Hole	92	185	80	136				
BH28	reference	Big Hole	148							
JC03	reference	Montane/high	70							
WS07	reference	Montane/high	37	35	15	14	42	100		
TC02	reference	Montane/low	36							
TC07	reference	Montane/low	36							
NF02	reference	North Fork	176							
NF06	reference	North Fork	70	50	38	67				
FC03	reference	Valley	35							
MC05	reference	Valley	60							
PC04R	reference	Valley	24	125	122	26				
RO04	reference	Valley	31							
BH08	Impacted	Big Hole	56	86	210	76	258	294	276	
BH16	Impacted	Big Hole	130	51	68					
BH19	Impacted	Big Hole	392	473	443	360	233	231		
BH26	Impacted	Big Hole	281							
BH26R	Impacted	Big Hole	512	108						
TC08	Impacted	Montane/high	175	152						
RC04	Impacted	Montane/low	38	18	39					
TC03	Impacted	Montane/low	112	71						
TI02	Impacted	Montane/low	33	128						
NF07	Impacted	North Fork	51	260	113	83	990			
NF11	Impacted	North Fork	69	950	630	178				
DC03	Impacted	Valley	225	495	374					
GC04	Impacted	Valley	12	32	36	54	14			
GC06	Impacted	Valley	94	32	57	22	146			
GC11	Impacted	Valley	156	272	87	105	148	71		
JC07	Impacted	Valley	35	86						

Table C-3. Area of Eroding Banks Along Each Monitoring Reach (sq. ft)

Reach Name	Reach Type	Zone	Eroding Bank #							
			1	2	3	4	5	6	7	8
MC07	Impacted	Valley	60	34	32					
MV03	Impacted	Valley	34	179	24	40	27	36	18	42
PN03	Impacted	Valley	26	32						
RC07	Impacted	Valley	228	42	50	141	32	166	210	
RC08	Impacted	Valley	13	29	43	110				
RO06	Impacted	Valley	44	60	20	26				
SC03	Impacted	Valley	95	20	60	36	48			
SC06	Impacted	Valley	87	385	122	224				
SW10	Impacted	Valley	70	52	113	215	97	98	50	630
WS10	Impacted	Valley	29	344	100	136				
WS11	Impacted	Valley	48	554	53	156	710	92	220	

Table C-4. Area of Eroding Banks Along Each Monitoring Reach (sq. ft)

Reach_Name	Reach_Type	Zone	Eroding Bank #								total
			9	10	11	12	13	14	15	16	
BH09	reference	Big Hole									493
BH28	reference	Big Hole									148
JC03	reference	Montane/high									70
WS07	reference	Montane/high									243
TC02	reference	Montane/low									36
TC07	reference	Montane/low									36
NF02	reference	North Fork									176
NF06	reference	North Fork									224
FC03	reference	Valley									35
MC05	reference	Valley									60
PC04R	reference	Valley									297
RO04	reference	Valley									31
BH08	Impacted	Big Hole									1256
BH16	Impacted	Big Hole									249
BH19	Impacted	Big Hole									2132
BH26	Impacted	Big Hole									281
BH26R	Impacted	Big Hole									620
TC08	Impacted	Montane/high									327
RC04	Impacted	Montane/low									95
TC03	Impacted	Montane/low									183
TI02	Impacted	Montane/low									161
NF07	Impacted	North Fork									1497
NF11	Impacted	North Fork									1827
DC03	Impacted	Valley									1094
GC04	Impacted	Valley									149
GC06	Impacted	Valley									350
GC11	Impacted	Valley									840

Table C-4. Area of Eroding Banks Along Each Monitoring Reach (sq. ft)

Reach_Name	Reach_Type	Zone	Eroding Bank #								
			9	10	11	12	13	14	15	16	total
JC07	Impacted	Valley									122
MC07	Impacted	Valley									126
MV03	Impacted	Valley	77	96	96	42	20	66	66	40	902
PN03	Impacted	Valley									59
RC07	Impacted	Valley									869
RC08	Impacted	Valley									196
RO06	Impacted	Valley									150
SC03	Impacted	Valley									259
SC06	Impacted	Valley									818
SW10	Impacted	Valley	60	240							1624
WS10	Impacted	Valley									608
WS11	Impacted	Valley									1834

Table C-5. Percent fines less than 6 mm in pool tails

Reach Name	Reach Type	Zone	Fines Score	Pool#
BH08	Impacted	Big Hole	1.53	1
BH08	Impacted	Big Hole	9.69	2
BH08	Impacted	Big Hole	6.12	3
BH16	Impacted	Big Hole	9.69	1
BH16	Impacted	Big Hole	19.39	2
BH19	Impacted	Big Hole	15.82	1
BH22	Impacted	Big Hole	37.76	1
BH22	Impacted	Big Hole	57.65	2
BH22	Impacted	Big Hole	62.24	3
BH22	Impacted	Big Hole	56.63	4
BH26	Impacted	Big Hole	12.24	1
BH26R	Impacted	Big Hole	100.00	1

Table C-5. Percent fines less than 6 mm in pool tails

Reach Name	Reach Type	Zone	Fines Score	Pool#
DC03	Impacted	Valley	97.96	1
DC03	Impacted	Valley	54.59	2
DC03	Impacted	Valley	94.39	3
DC03	Impacted	Valley	46.94	4
DC03	Impacted	Valley	4.08	5
DC03	Impacted	Valley	34.69	6
DC03	Impacted	Valley	39.29	7
DC03	Impacted	Valley	96.43	8
DC03	Impacted	Valley	89.80	9
DC03	Impacted	Valley	9.69	10
DC03	Impacted	Valley	55.61	11
DC03	Impacted	Valley	71.43	12
FC02	Impacted	Valley	61.73	1
FC02	Impacted	Valley	59.18	2
FC02	Impacted	Valley	75.00	3
FC02	Impacted	Valley	93.88	4
FC02	Impacted	Valley	46.94	5
FR01	Impacted	Montane/low	67.86	1
FR01	Impacted	Montane/low	84.18	2
FR01	Impacted	Montane/low	94.39	3
GC04	Impacted	Valley	100.00	1
GC04	Impacted	Valley	96.43	2
GC04	Impacted	Valley	89.29	3
GC04	Impacted	Valley	94.39	4
GC04	Impacted	Valley	99.49	5
GC04	Impacted	Valley	93.37	6
GC04	Impacted	Valley	95.41	7
GC04	Impacted	Valley	88.78	8
GC06	Impacted	Valley	98.47	1
GC06	Impacted	Valley	86.73	2

Table C-5. Percent fines less than 6 mm in pool tails

Reach Name	Reach Type	Zone	Fines Score	Pool#
GC06	Impacted	Valley	79.59	3
GC06	Impacted	Valley	77.04	4
GC06	Impacted	Valley	34.18	5
GC06	Impacted	Valley	75.51	6
GC06	Impacted	Valley	93.37	7
GC11	Impacted	Valley	8.16	1
GC11	Impacted	Valley	2.55	2
JC02	Impacted	Montane/high	85.71	1
JC02	Impacted	Montane/high	76.53	2
JC02	Impacted	Montane/high	51.02	3
JC02	Impacted	Montane/high	5.61	4
JC02R	Impacted	Montane/high	3.06	1
JC02R	Impacted	Montane/high	0.00	2
JC02R	Impacted	Montane/high	15.31	3
JC07	Impacted	Valley	64.80	1
JC07	Impacted	Valley	40.82	2
JC07	Impacted	Valley	50.51	3
JO02	Impacted	Montane/low	51.02	1
JO02	Impacted	Montane/low	63.78	2
JO02	Impacted	Montane/low	48.47	3
JO02	Impacted	Montane/low	10.20	4
JO02	Impacted	Montane/low	30.61	5
MC07	Impacted	Valley	67.35	1
MC07	Impacted	Valley	100.00	2
MV03	Impacted	Valley	100.00	1
MV03	Impacted	Valley	100.00	2
NF07	Impacted	North Fork	38.78	1
NF11	Impacted	North Fork	100.00	1
PN03	Impacted	Valley	28.57	1
PN03	Impacted	Valley	89.29	2

Table C-5. Percent fines less than 6 mm in pool tails

Reach Name	Reach Type	Zone	Fines Score	Pool#
PN03	Impacted	Valley	100.00	3
PN03	Impacted	Valley	85.20	4
PN03	Impacted	Valley	91.84	5
RC04	Impacted	Montane/low	6.12	1
RC04	Impacted	Montane/low	1.02	2
RC04	Impacted	Montane/low	6.12	3
RC04	Impacted	Montane/low	1.02	4
RC07	Impacted	Valley	34.69	1
RC07	Impacted	Valley	64.80	2
RC08	Impacted	Valley	55.61	1
RC08	Impacted	Valley	35.71	2
RC08	Impacted	Valley	52.04	3
RC08	Impacted	Valley	59.18	4
RO06	Impacted	Valley	95.92	1
RO06	Impacted	Valley	100.00	2
SC03	Impacted	Valley	60.71	1
SC03	Impacted	Valley	93.88	2
SC06	Impacted	Valley	38.27	1
SC06	Impacted	Valley	54.08	2
SW03	Impacted	Valley	97.96	1
SW03	Impacted	Valley	50.00	2
SW03	Impacted	Valley	91.33	3
SW10	Impacted	Valley	28.06	1
SW10	Impacted	Valley	4.08	2
TC03	Impacted	Montane/low	50.51	1
TC03	Impacted	Montane/low	5.10	2
TC03	Impacted	Montane/low	23.47	3
TC08	Impacted	Montane/high	17.35	1
TC08	Impacted	Montane/high	56.12	2
TI02	Impacted	Montane/low	2.55	1

Table C-5. Percent fines less than 6 mm in pool tails

Reach Name	Reach Type	Zone	Fines Score	Pool#
TI02	Impacted	Montane/low	9.18	2
TI02	Impacted	Montane/low	62.76	3
WS10	Impacted	Valley	8.16	1
WS10	Impacted	Valley	4.08	2
WS11	Impacted	Valley	2.04	1
WS11	Impacted	Valley	14.80	2
BH09	reference	Big Hole	4.59	1
BH09	reference	Big Hole	2.55	2
BH18	reference	Big Hole	98.47	1
BH18	reference	Big Hole	12.76	2
BH18	reference	Big Hole	9.69	3
BH18	reference	Big Hole	10.71	4
BH18	reference	Big Hole	5.10	5
BH28	reference	Big Hole	25.00	1
BH28	reference	Big Hole	59.18	2
BH28	reference	Big Hole	46.43	3
BH28	reference	Big Hole	100.00	4
BH28	reference	Big Hole	50.00	5
BH28	reference	Big Hole	19.90	6
BH28	reference	Big Hole	100.00	7
FC03	reference	Valley	18.37	1
FC03	reference	Valley	12.24	2
FC03	reference	Valley	25.00	3
FC03	reference	Valley	55.61	4
FC03	reference	Valley	16.33	5
FC03	reference	Valley	81.63	6
FC03	reference	Valley	66.33	7
FC03	reference	Valley	89.80	8
FC03	reference	Valley	16.33	9
FC03	reference	Valley	56.12	10

Table C-5. Percent fines less than 6 mm in pool tails

Reach Name	Reach Type	Zone	Fines Score	Pool#
FC03	reference	Valley	46.94	11
FC03	reference	Valley	13.27	12
JC03	reference	Montane/high	92.35	1
JC03	reference	Montane/high	99.49	2
JC03	reference	Montane/high	98.98	3
LL05	reference	Valley	88.78	1
LL05	reference	Valley	88.27	2
LL05	reference	Valley	91.84	3
LL05	reference	Valley	97.96	4
LL05	reference	Valley	92.35	5
LL05	reference	Valley	72.45	6
LL05	reference	Valley	95.41	7
LL05	reference	Valley	100.00	8
MC05	reference	Valley	79.59	1
MC05	reference	Valley	12.24	2
MC06	reference	Valley	91.33	1
MC06	reference	Valley	94.90	2
MC06	reference	Valley	100.00	3
MC06	reference	Valley	100.00	4
MC06	reference	Valley	99.49	5
MC06	reference	Valley	100.00	6
MC06	reference	Valley	100.00	7
MC06	reference	Valley	100.00	8
MC06	reference	Valley	81.63	9
NF02	reference	North Fork	10.71	1
NF02	reference	North Fork	11.22	2
NF06	reference	North Fork	38.27	1
PC04	reference	Valley	99.49	1
PC04	reference	Valley	11.22	2
PC04	reference	Valley	80.61	3

Table C-5. Percent fines less than 6 mm in pool tails

Reach Name	Reach Type	Zone	Fines Score	Pool#
PC04	reference	Valley	100.00	4
PC04	reference	Valley	73.47	5
PC04R	reference	Valley	64.29	1
RO04	reference	Valley	62.24	1
RO04	reference	Valley	20.41	2
RO04	reference	Valley	9.69	3
RO04	reference	Valley	24.49	4
RO04	reference	Valley	32.65	5
SC02	reference	Montane/low	100.00	1
SH01	reference	Montane/high	14.29	1
SH01	reference	Montane/high	6.12	2
SH01	reference	Montane/high	7.14	3
SH01	reference	Montane/high	2.04	4
SH01	reference	Montane/high	3.57	5
SH01	reference	Montane/high	10.20	6
SH01	reference	Montane/high	43.88	7
SH01	reference	Montane/high	8.16	8
TC02	reference	Montane/low	79.59	1
TC02	reference	Montane/low	50.51	2
TC02	reference	Montane/low	12.76	3
TC02	reference	Montane/low	42.35	4
TC07	reference	Montane/low	100.00	1
TC07	reference	Montane/low	92.35	2
TC07	reference	Montane/low	50.51	3
TC07	reference	Montane/low	18.88	4
WS07	reference	Montane/high	39.29	1
WS07	reference	Montane/high	12.76	2
WS07	reference	Montane/high	2.55	3
WS07	reference	Montane/high	0.00	4

Table C-6. Pool Frequency

Bankfull Widths/Pool				
Stream Name	Reach Name	Reach Type	Zone	Bankfull Width/Pool
Big Hole River	BH18	reference	Big Hole	5.55
Big Hole River	BH28	reference	Big Hole	2.97
Big Hole River	BH09	reference	Big Hole	4.74
Johnson Creek	JC03	reference	Montane/high	4.61
Warm Springs Creek	WS07	reference	Montane/high	2.83
Schultz Creek	SH01	reference	Montane/high	5.02
Trail Creek	TC02	reference	Montane/low	4.75
Trail Creek	TC07	reference	Montane/low	6.03
North Fork Big Hole River	NF02	reference	North Fork	5.43
North Fork Big Hole River	NF06	reference	North Fork	7.51
Fox Creek	FC03	reference	Valley	8.35
Miner Creek	MC06	reference	Valley	4.92
Pintlar Creek	PC04	reference	Valley	7.26
Pintlar Creek	PC04R	reference	Valley	15.21
Mussigbrod Creek	MC05	reference	Valley	21.80
Rock Creek	RO04	reference	Valley	5.43
Little Lake Creek	LL05	reference	Valley	4.69
Big Hole River	BH22	Impacted	Big Hole	4.80
Big Hole River	BH26	Impacted	Big Hole	16.45
Big Hole River	BH16	Impacted	Big Hole	7.39
Big Hole River	BH19	Impacted	Big Hole	13.20
Big Hole River	BH26R	Impacted	Big Hole	12.17
Big Hole River	BH08	Impacted	Big Hole	3.66
Johnson Creek	JC02	Impacted	Montane/high	4.73
Trail Creek	TC08	Impacted	Montane/high	8.77
Johnson Creek	JC02R	Impacted	Montane/high	6.39
Joseph Creek	JO02	Impacted	Montane/low	3.89
Ruby Creek	RC04	Impacted	Montane/low	4.95

Table C-6. Pool Frequency

Bankfull Widths/Pool				
Stream Name	Reach Name	Reach Type	Zone	Bankfull Width/Pool
Tie Creek	TI02	Impacted	Montane/low	5.30
Trail Creek	TC03	Impacted	Montane/low	8.33
Frances Creek	FR01	Impacted	Montane/low	11.84
North Fork Big Hole River	NF11	Impacted	North Fork	16.98
North Fork Big Hole River	NF07	Impacted	North Fork	7.51
Doolittle Creek	DC03	Impacted	Valley	6.03
Fox Creek	FC02	Impacted	Valley	23.54
Governor Creek	GC04	Impacted	Valley	9.98
Governor Creek	GC06	Impacted	Valley	10.12
McVey Creek	MV03	Impacted	Valley	71.18
Pine Creek	PN03	Impacted	Valley	17.18
Warm Springs Creek	WS11	Impacted	Valley	5.87
Steel Creek	SC06	Impacted	Valley	9.79
Steel Creek	SC03	Impacted	Valley	20.86
Johnson Creek	JC07	Impacted	Valley	8.60
Warm Springs Creek	WS10	Impacted	Valley	6.87
Ruby Creek	RC07	Impacted	Valley	6.14
Ruby Creek	RC08	Impacted	Valley	4.46
Governor Creek	GC11	Impacted	Valley	7.32
Swamp Creek	SW03	Impacted	Valley	13.47
Swamp Creek	SW10	Impacted	Valley	6.48
Mussigbrod Creek	MC07	Impacted	Valley	25.25
Rock Creek	RO06	Impacted	Valley	13.34

Table C-7. Percent Shrub Cover Along Stream Banks

Reach Name	Reach Type	Zone	Percent Shrub Cover Along Bankfull			
			Score 1	Score 2	Score 3	Score 4
WS11	Impacted	Valley	58	60	32	38
WS10	Impacted	Valley	62	38	54	68
WS07	reference	Montane/high	76	68	82	82
TI02	Impacted	Montane/low	46	50	52	68
TC08r	Impacted	Montane/high	12	36	2	0
TC08	Impacted	Montane/high	32	68	56	56
TC07	reference	Montane/low	42	50	38	26
TC03	Impacted	Montane/low	46	34	44	54
TC02	reference	Montane/low	40	36	32	36
SW10	Impacted	Valley	2	6	2	0
SW03	Impacted	Valley	36	38	48	48
SH01	reference	Montane/high	2	0	0	0
SC06	Impacted	Valley	0	0	2	0
SC03	Impacted	Valley	60	46	50	64
SC02	reference	Montane/low	80	76	72	76
RO06	Impacted	Valley	24	30	14	8
RO04	reference	Valley	10	26	24	20
RC08	Impacted	Valley	30	38	56	60
RC07	Impacted	Valley	72	58	56	40
RC04	Impacted	Montane/low	34	60	56	32
PN03	Impacted	Valley	28	50	26	44
PC04R	reference	Valley	78	58	72	84
PC04	reference	Valley	84	78	48	38
NF11	Impacted	North Fork	14	0	0	2
NF07	Impacted	North Fork	2	8	26	16
NF06	reference	North Fork	48	34	24	38
NF02	reference	North Fork	54	62	36	48
MV03	Impacted	Valley	0	0	0	0

Table C-7. Percent Shrub Cover Along Stream Banks

Reach Name	Reach Type	Zone	Percent Shrub Cover Along Bankfull			
			Score 1	Score 2	Score 3	Score 4
MC07	Impacted	Valley	52	38	48	38
MC06	reference	Valley	48	44	54	68
MC05	reference	Valley	22	26	66	78
LL05	reference	Valley	34	18	64	58
JO02	Impacted	Montane/low	58	60	70	58
JC07	Impacted	Valley	68	46	52	66
JC03	reference	Montane/high	0	0	0	0
JC02R	Impacted	Montane/high	6	4	2	10
JC02	Impacted	Montane/high	0	0	0	0
GC11	Impacted	Valley	24	40	20	28
GC06	Impacted	Valley	36	30	40	28
GC04	Impacted	Valley	0	0	0	0
FR01	Impacted	Montane/low	0	0	0	0
FC03	reference	Valley	66	72	62	82
FC02	Impacted	Valley	18	36	54	68
DC03	Impacted	Valley	6	6	14	12
BH28	reference	Big Hole	26	40	22	10
BH26R	Impacted	Big Hole	0	4	10	0
BH26	Impacted	Big Hole	0	0	6	0
BH22	Impacted	Big Hole	6	18	10	8
BH19	Impacted	Big Hole	18	26	18	2
BH18	reference	Big Hole	72	60	32	38
BH16	Impacted	Big Hole	30	6	40	42
BH09	reference	Big Hole	74	60	76	86
BH08	Impacted	Big Hole	32	22	20	40

Table C-8. Percent Shrub Cover along Perpendicular Transects to Stream

Reach Name	Reach Type	Zone	% Cover Along Transects				
			Score A	Score B	Score C	Score D	Score E
BH18	reference	Big Hole	65.5	98.0	74.7	57.0	21.5
BH28	reference	Big Hole	27.0	30.7	33.1	55.4	3.0
BH09	reference	Big Hole	93.1	62.4	91.6	67.7	54.1
JC03	reference	Montane/high	0.0	0.0	0.0	0.0	0.0
WS07	reference	Montane/high	79.9	60.9	77.6	81.3	66.9
SH01	reference	Montane/high	0.0	0.0	0.0	0.0	0.0
SC02	reference	Montane/low	25.6	78.3	84.3	76.3	95.0
TC02	reference	Montane/low	64.1	45.5	48.8	25.0	28.4
TC07	reference	Montane/low	86.6	68.1	61.9	67.8	50.0
NF02	reference	North Fork	35.7	50.2	45.6	20.0	85.0
NF06	reference	North Fork	69.5	54.0	84.6	62.0	35.5
FC03	reference	Valley	21.6	54.5	62.5	48.6	51.5
MC06	reference	Valley	45.0	75.5	89.0	58.0	85.5
PC04	reference	Valley	86.4	78.6	84.3	58.2	89.7
PC04R	reference	Valley	76.6	82.5	90.1	40.8	48.9
MC05	reference	Valley	17.8	10.4	11.7	9.0	15.7
RO04	reference	Valley	44.4	50.7	32.4	74.0	37.4
LL05	reference	Valley	10.0	4.0	36.0	14.5	17.0
BH22	Impacted	Big Hole	21.9	25.8	30.8	25.9	0.0
BH26	Impacted	Big Hole	0.0	0.0	16.0	0.0	0.0
BH16	Impacted	Big Hole	1.5	16.0	0.0	11.0	46.1
BH19	Impacted	Big Hole	12.7	10.5	0.0	10.3	0.0
BH26R	Impacted	Big Hole	20.0	0.0	86.5	50.0	0.0
BH08	Impacted	Big Hole	40.1	34.7	27.5	0.0	34.5
JC02	Impacted	Montane/high	0.0	0.0	0.0	0.0	0.0
TC08	Impacted	Montane/high	44.2	54.4	0.0	27.3	73.7
TC08r	Impacted	Montane/high	0.0	56.3	58.0		
JC02R	Impacted	Montane/high	0.0	0.0	0.0	0.0	0.0

Table C-8. Percent Shrub Cover along Perpendicular Transects to Stream

Reach Name	Reach Type	Zone	% Cover Along Transects				
			Score A	Score B	Score C	Score D	Score E
JO02	Impacted	Montane/low	87.9	36.0	91.5	68.1	68.3
RC04	Impacted	Montane/low	58.2	53.2	54.0	80.3	54.6
TI02	Impacted	Montane/low	39.8	44.6	35.3	62.9	72.9
TC03	Impacted	Montane/low	69.5	57.9	30.8	48.0	85.0
FR01	Impacted	Montane/low	0.0	44.6	0.0	0.0	0.0
NF11	Impacted	North Fork	29.2	0.0	32.5	0.0	18.0
NF07	Impacted	North Fork	36.5	7.7	64.7	24.6	32.7
DC03	Impacted	Valley	1.0	0.0	1.0	4.8	0.0
FC02	Impacted	Valley	5.4	9.4	44.6	11.3	0.0
GC04	Impacted	Valley	0.0	0.0	0.0	0.0	0.0
GC06	Impacted	Valley	40.1	0.0	41.5	7.0	37.2
MV03	Impacted	Valley	0.0	0.0	0.0	0.0	0.0
PN03	Impacted	Valley	16.9	36.7	16.7	71.1	10.8
WS11	Impacted	Valley	90.8	88.2	6.1	82.9	69.6
SC06	Impacted	Valley	0.8	0.0	0.0	0.0	0.0
SC03	Impacted	Valley			0.0	30.4	100.0
JC07	Impacted	Valley	16.0	70.5	40.3	35.5	23.8
WS10	Impacted	Valley	86.3	41.0	81.0	0.0	54.0
RC07	Impacted	Valley	75.4	52.9	73.3	67.2	45.3
RC08	Impacted	Valley	46.2	65.6	56.7	72.7	95.9
GC11	Impacted	Valley	43.5	72.6	38.5	25.9	33.6
SW03	Impacted	Valley	45.0	33.5	13.8	36.6	54.9
SW10	Impacted	Valley	0.0	0.0	11.3	0.0	0.8
MC07	Impacted	Valley	27.6	0.0	0.0	0.0	0.0
RO06	Impacted	Valley	12.2	8.3	6.1	46.9	0.0

Table C-9. Width to Depth Ratios

Reach	Transect	Channel Characteristics at Cross	Width/Depth
BH18	A	LS	22
BH18	B	LS	33
BH18	C	LS/R	27
BH18	D	LS	43
BH18	E	RI	22
BH28	A	GL	20
BH28	B	RI	22
BH28	C	MCP	22
BH28	D	PL	12
BH28	E	PL	8
BH09	A	RUN	11
BH09	B	RUN	21
BH09	C	GL	22
BH09	D	RUN	25
BH09	E	RUN	31
BH22	A	RI	34
BH22	B	GL	31
BH22	C	RI	35
BH22	D	PL	10
BH22	E	PL	59
BH26	A	RI	46
BH26	B	GL	58
BH26	C	RI	59
BH26	D	RI	82
BH26	E	GL	68
BH16	A	GL	39
BH16	B	RUN	18
BH16	C	GL	25
BH16	D	MCP	4

Table C-9. Width to Depth Ratios

Reach	Transect	Channel Characteristics at Cross	Width/Depth
BH16	E	RUN	34
BH19	A	RI	68
BH19	B	MCP	55
BH19	C	MCP	44
BH19	D	GL	32
BH19	E	RUN	44
BH26R	A	GL	71
BH26R	B	GL	58
BH26R	C	PL	56
BH26R	D	GL	42
BH26R	E	RUN	48
BH08	A	PL	22
BH08	B	PL	34
BH08	C	RI	55
BH08	D	RUN	51
BH08	E	RUN	70
NF02	A	RI	22
NF02	B	PB	10
NF02	C	RI	25
NF02	D	GL	28
NF02	E	PB	16
NF06	A	RUN	26
NF06	B	RUN	16
NF06	C	RI	29
NF06	D	RUN	30
NF06	E	PL	20
JC03	A	PD	12
JC03	B	PD	8
JC03	C	RUN	42
JC03	D	PD	9

Table C-9. Width to Depth Ratios

Reach	Transect	Channel Characteristics at Cross	Width/Depth
JC03	E	RUN	23
SH01	A	GL	13
SH01	B	GL	15
SH01	C	PP	6
SH01	D	PP	6
SH01	E	PP	13
TC02	A	PL	4
TC02	B	PL	13
TC02	C	RI	13
TC02	D	MP	10
TC02	E	PD	5
TC07	A	CCP	10
TC07	B	MCP	8
TC07	C	RI	11
TC07	D	PD	16
TC07	E	PD	9
FC03	A	RUN	5
FC03	B	GL	14
FC03	C	RI	13
FC03	D	RUN	16
FC03	E	RI	19
LL05	A	RI	30
LL05	B	PL	8
LL05	C	GL	10
LL05	D	PL	20
LL05	E	GL	19
MC05	A	RI	22
MC05	B	PB	10
MC05	C	RI	25
MC05	D	GL	28

Table C-9. Width to Depth Ratios

Reach	Transect	Channel Characteristics at Cross	Width/Depth
MC05	E	PB	16
MC06	A	RI	14
MC06	B	LS	6
MC06	C	RI	15
MC06	D	RI	14
MC06	A	PI	4
NF02	B	RUN	9
NF02	C	RUN	8
NF02	D	RI	11
NF02	E	RI	11
NF02	A	RUN	26
NF06	B	RUN	16
NF06	C	RI	29
NF06	D	RUN	30
NF06	E	PL	20
NF06	A	MCP	11
PC04	B	RI	21
PC04	C	GL	10
PC04	D	RUN	5
PC04	E	RI	12
PC04R	A	RI	13
PC04R	B	RI	8
PC04R	C	RI	8
PC04R	D	GL	16
PC04R	E	PL	5
PC04	A	RI	14
PC04	B	LS	6
PC04	C	RI	15
PC04	D	RI	14
PC04R	A	PI	4

Table C-9. Width to Depth Ratios

Reach	Transect	Channel Characteristics at Cross	Width/Depth
PC04R	B	RUN	9
PC04R	C	RUN	8
PC04R	D	RI	11
PC04R	E	RI	11

Table C-10. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Geometry						
Model Reach	Model Description	Month/day	Latitude	Segment Length	Upstream Elevation	Downstream Elevation	Width's A Term	Width's B Term	Manning's n
(--)	(--)		(degrees)	(mi)	(ft)	(ft)	(s/ft ²)	(--)	(--)
BH18	existing conditions modeled	15-Jul	45.399	1.305	6400.89	6361.52	17.603	0.2	0.045
BH22	existing conditions modeled	15-Jul	45.502	6.089	6259.82	6171.24	26.561	0.2	0.041
BH22	vegetation changed to reference conditions	15-Jul	45.502	6.089	6259.82	6171.24	26.561	0.2	0.041
BH22	channel geometry changed to reference conditions	15-Jul	45.502	6.089	6259.82	6171.24	17.45	0.2	0.041
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	45.502	6.089	6259.82	6171.24	17.45	0.2	0.041
BH26	existing conditions modeled	15-Jul	45.639	2.61	6040	6003.91	27.049	0.2	0.042
BH26	vegetation changed to reference conditions	15-Jul	45.639	2.61	6040	6003.91	27.049	0.2	0.042
BH26	channel geometry changed to reference conditions	15-Jul	45.639	2.61	6040	6003.91	16.56	0.2	0.042
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	45.639	2.61	6040	6003.91	16.56	0.2	0.042
BH28	existing conditions modeled	15-Jul	45.662	0.534	5974.39	5961.26	17.625	0.2	0.039
BH28	vegetation changed to reference conditions	15-Jul	45.662	0.534	5974.39	5961.26	17.625	0.2	0.039

Table C-11. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Hydrology			
Model Reach	Model Description	month / day	Segment Inflow	Inflow Temp.	Segment Outflow	Accretion Temp.
(--)	(--)	(--)	(cfs)	(*F)	(cfs)	(*F)
BH18	existing conditions modeled	15-Jul	20	66.2	20	42.4
BH22	existing conditions modeled	15-Jul	20	66.2	20	42.4
BH22	vegetation changed to reference conditions	15-Jul	20	66.2	20	42.4
BH22	channel geometry changed to reference conditions	15-Jul	20	66.2	20	42.4
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	20	66.2	20	42.4
BH26	existing conditions modeled	15-Jul	20	66.2	20	42.4
BH26	vegetation changed to reference conditions	15-Jul	20	66.2	20	42.4
BH26	channel geometry changed to reference conditions	15-Jul	20	66.2	20	42.4
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	20	66.2	20	42.4
BH28	existing conditions modeled	15-Jul	20	66.2	20	42.4
BH28	vegetation changed to reference conditions	15-Jul	20	66.2	20	42.4

Table C-12. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Meteorology								
Model Reach	Model Description	Month / Day	Air Tem p.	Max. Air Temp	Relative Humidity	Wind Speed	Ground Temp	Thermal Gradient	Possible Sun	Dust Coeff .	Ground Reflectivity
(--)	(--)	(...)	(*F)	(*F)	(%)	(mph)	(*F)	(j/m2/s/C)	(%)	(--)	(%)
BH18	existing conditions modeled	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH22	existing conditions modeled	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH22	vegetation changed to reference conditions	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH22	channel geometry changed to reference conditions	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH26	existing conditions modeled	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH26	vegetation changed to reference	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14

Table C-12. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Meteorology								
Model Reach	Model Description	Month / Day	Air Tem p.	Max. Air Temp	Relative Humidity	Wind Speed	Ground Temp	Thermal Gradient	Possible Sun	Dust Coeff .	Ground Reflectivity
(--)	(--)	(...)	(*F)	(*F)	(%)	(mph)	(*F)	(j/m2/s/C)	(%)	(--)	(%)
	conditions										
BH26	channel geometry changed to reference conditions	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH28	existing conditions modeled	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14
BH28	vegetation changed to reference conditions	15-Jul	67	85	15	5	42.4	1.65	100	3.5	14

Table C-13. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Optional Shading Variables										
Model Reach	Model Description	Month/ Day	Segment Azimuth	Topo. Altitude (E)	Vegetation Height (E)	Vegetation Crown (E)	Vegetation Offset (E)	Vegetation Density (E)	Topo. Altitude (W)	Vegetation Height (W)	Vegetation Crown (W)	Vegetation Offset (W)	Vegetation Density (W)
(--)	(--)	(--)	(degrees)	(degrees)	(ft)	(ft)	(ft)	(%)	(degrees)	(ft)	(ft)	(ft)	(%)
BH18	existing conditions modeled	15-Jul	-6.6	3	12	6	8	46.22%	3	13	6	12	73.12%
BH22	existing conditions modeled	15-Jul	-0.8	3	9	4	10	26.99%	3	4	2	1	4.39%
BH22	vegetation changed to reference conditions	15-Jul	-0.8	3	12	6	8	46.22%	3	13	6	12	73.12%
BH22	channel geometry changed to reference conditions	15-Jul	-0.8	3	9	4	10	26.99%	3	4	2	1	4.39%
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	-0.8	3	12	6	8	46.22%	3	13	6	12	73.12%
BH26	existing conditions modeled	15-Jul	5.2	1.5	6	2	20	7.80%	4	3	2	1	6.33%
BH26	vegetation changed to reference conditions	15-Jul	5.2	1.5	12	6	8	46.22%	4	13	6	12	73.12%

Table C-13. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Optional Shading Variables										
Model Reach	Model Description	Month/ Day	Segment Azimuth	Topo. Altitude (E)	Vegetation Height (E)	Vegetation Crown (E)	Vegetation Offset (E)	Vegetation Density (E)	Topo. Altitude (W)	Vegetation Height (W)	Vegetation Crown (W)	Vegetation Offset (W)	Vegetation Density (W)
(-)	(-)	(-)	(degrees)	(degrees)	(ft)	(ft)	(ft)	(%)	(degrees)	(ft)	(ft)	(ft)	(%)
BH26	channel geometry changed to reference conditions	15-Jul	5.2	1.5	6	2	20	7.80%	4	3	2	1	6.33%
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	5.2	1.5	12	6	8	46.22%	4	13	6	12	73.12%
BH28	existing conditions modeled	15-Jul	11.6	2	2.5	1	0	45.10%	5	8	2	2	60.85%
BH28	vegetation changed to reference conditions	15-Jul	11.6	2	12	6	8	46.22%	5	13	6	12	73.12%

Table C-14. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results - Outflow Temperature					
Model Reach	Model Description	Month/Day	Predicted Mean	Mean TOut - Mean TIn	Length Normalized Mean TOut - Mean TIn	Estimated Maximum	Tmax - Mean TOut	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)	(*F)	(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 10 cfs					
BH18	existing conditions modeled	15-Jul	66.30	0.10	0.08	81.12	14.82	11.36
BH22	existing conditions modeled	15-Jul	68.34	2.14	0.35	83.95	15.61	2.56
BH22	vegetation changed to reference conditions	15-Jul	66.95	0.75	0.12	82.10	15.15	2.49
BH22	channel geometry changed to reference conditions	15-Jul	68.07	1.87	0.31	82.99	14.92	2.45
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.35	0.15	0.02	80.51	14.16	2.33
BH26	existing conditions modeled	15-Jul	67.98	1.78	0.68	83.91	15.93	6.10
BH26	vegetation changed to reference conditions	15-Jul	66.77	0.57	0.22	81.96	15.19	5.82
BH26	channel geometry changed to reference conditions	15-Jul	67.54	1.34	0.51	82.69	15.15	5.80
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.24	0.04	0.02	80.12	13.88	5.32
BH28	existing conditions modeled	15-Jul	66.33	0.13	0.24	81.53	15.20	28.46
BH28	vegetation changed to reference conditions	15-Jul	66.24	0.04	0.07	80.97	14.73	27.58

Table C-15. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month/Day	Predicted Mean	Mean TOut -Mean TIn	Length Normalized Mean TOut -Mean TIn	Estimated Maximum	Tmax - Mean Tout	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)	(*F)	(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 20 cfs					
BH18	existing conditions modeled	15-Jul	66.33	0.13	0.10	80.07	13.74	10.53
BH22	existing conditions modeled	15-Jul	68.10	1.90	0.31	82.80	14.70	2.41
BH22	vegetation changed to reference conditions	15-Jul	67.01	0.81	0.13	81.18	14.17	2.33
BH22	channel geometry changed to reference conditions	15-Jul	67.72	1.52	0.25	81.34	13.62	2.24
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.49	0.29	0.05	79.27	12.78	2.10
BH26	existing conditions modeled	15-Jul	67.50	1.30	0.50	82.54	15.04	5.76
BH26	vegetation changed to reference conditions	15-Jul	66.72	0.52	0.20	80.94	14.22	5.45
BH26	channel geometry changed to reference conditions	15-Jul	67.11	0.91	0.35	80.81	13.70	5.25
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.32	0.12	0.05	78.76	12.44	4.77
BH28	existing conditions modeled	15-Jul	66.30	0.10	0.19	80.35	14.05	26.31
BH28	vegetation changed to reference conditions	15-Jul	66.25	0.05	0.09	79.88	13.63	25.52

Table C-16. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month /Day	Predicted Mean	Mean TOut - Mean TIn	Length Normalized Mean TOut -Mean TIn	Estimated Maximum	Tmax - Mean Tout	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)	(*F)	(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 30 cfs					
BH18	existing conditions modeled	15-Jul	66.33	0.13	0.10	79.21	12.88	9.87
BH22	existing conditions modeled	15-Jul	67.87	1.67	0.27	81.81	13.94	2.29
BH22	vegetation changed to reference conditions	15-Jul	66.99	0.79	0.13	80.38	13.39	2.20
BH22	channel geometry changed to reference conditions	15-Jul	67.49	1.29	0.21	80.14	12.65	2.08
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.53	0.33	0.05	78.35	11.82	1.94
BH26	existing conditions modeled	15-Jul	67.25	1.05	0.40	81.45	14.20	5.44
BH26	vegetation changed to reference conditions	15-Jul	66.66	0.46	0.18	80.07	13.41	5.14
BH26	channel geometry changed to reference conditions	15-Jul	66.91	0.71	0.27	79.53	12.62	4.84
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.34	0.14	0.05	77.79	11.45	4.39
BH28	existing conditions modeled	15-Jul	66.29	0.09	0.17	79.43	13.14	24.61
BH28	vegetation changed to reference conditions	15-Jul	66.25	0.05	0.09	79.01	12.76	23.90

Table C-17. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description		Predicted Mean	Mean TOut - Mean TIn	Length Normalized Mean TOut - Mean TIn	Estimated Maximum	Tmax - Mean Tout	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)		(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 40 cfs					
BH18	existing conditions modeled		66.32	0.12	0.09	78.52	12.20	9.35
BH22	existing conditions modeled		67.70	1.50	0.25	80.99	13.29	2.18
BH22	vegetation changed to reference conditions		66.96	0.76	0.12	79.69	12.73	2.09
BH22	channel geometry changed to reference conditions		67.32	1.12	0.18	79.21	11.89	1.95
BH22	vegetation & channel geometry changed to reference conditions		66.54	0.34	0.06	77.62	11.08	1.82
BH26	existing conditions modeled		67.08	0.88	0.34	80.59	13.51	5.18
BH26	vegetation changed to reference conditions		66.62	0.42	0.16	79.36	12.74	4.88
BH26	channel geometry changed to reference conditions		66.79	0.59	0.23	78.59	11.80	4.52
BH26	vegetation & channel geometry changed to reference conditions		66.34	0.14	0.05	77.05	10.71	4.10
BH28	existing conditions modeled		66.28	0.08	0.15	78.70	12.42	23.26
BH28	vegetation changed to reference conditions		66.25	0.05	0.09	78.31	12.06	22.58

Table C-18. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month/Day	Predicted Mean	Mean TOut - Mean TIn	Length Normalized Mean TOut - Mean TIn	Estimated Maximum	Tmax - Mean TOut	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)		(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 50 cfs					
BH18	existing conditions modeled	15-Jul	66.32	0.12	0.09	77.95	11.63	8.91
BH22	existing conditions modeled	15-Jul	67.56	1.36	0.22	80.30	12.74	2.09
BH22	vegetation changed to reference conditions	15-Jul	66.92	0.72	0.12	79.11	12.19	2.00
BH22	channel geometry changed to reference conditions	15-Jul	67.21	1.01	0.17	78.48	11.27	1.85
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.54	0.34	0.06	77.04	10.50	1.72
BH26	existing conditions modeled	15-Jul	66.97	0.77	0.30	79.89	12.92	4.95
BH26	vegetation changed to reference conditions	15-Jul	66.58	0.38	0.15	78.77	12.19	4.67
BH26	channel geometry changed to reference conditions	15-Jul	66.71	0.51	0.20	77.85	11.14	4.27
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.34	0.14	0.05	76.46	10.12	3.88
BH28	existing conditions modeled	15-Jul	66.27	0.07	0.13	78.10	11.83	22.15
BH28	vegetation changed to reference conditions	15-Jul	66.25	0.05	0.09	77.74	11.49	21.52

Table C-19. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month/Day	Predicted Mean	Mean TOut - Mean TIn	Length Normalized Mean TOut - Mean TIn	Estimated Maximum	Tmax - Mean TOut	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)		(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 60 cfs					
BH18	existing conditions modeled	15-Jul	66.32	0.12	0.09	77.47	11.15	8.54
BH22	existing conditions modeled	15-Jul	67.45	1.25	0.21	79.71	12.26	2.01
BH22	vegetation changed to reference conditions	15-Jul	66.89	0.69	0.11	78.61	11.72	1.92
BH22	channel geometry changed to reference conditions	15-Jul	67.11	0.91	0.15	77.87	10.76	1.77
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.54	0.34	0.06	76.55	10.01	1.64
BH26	existing conditions modeled	15-Jul	66.89	0.69	0.26	79.29	12.40	4.75
BH26	vegetation changed to reference conditions	15-Jul	66.56	0.36	0.14	78.26	11.70	4.48
BH26	channel geometry changed to reference conditions	15-Jul	66.66	0.46	0.18	77.25	10.59	4.06
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.34	0.14	0.05	75.98	9.64	3.69
BH28	existing conditions modeled	15-Jul	66.26	0.06	0.11	77.60	11.34	21.24
BH28	vegetation changed to reference conditions	15-Jul	66.24	0.04	0.07	77.25	11.01	20.62

Table C-20. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month/Day	Predicted Mean	Mean TOut -Mean TIn	Length Normalized Mean TOut -Mean TIn	Estimated Maximum	Tmax - Mean TOut	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)		(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 70 cfs					
BH18	existing conditions modeled	15-Jul	66.31	0.11	0.08	77.06	10.75	8.24
BH22	existing conditions modeled	15-Jul	67.36	1.16	0.19	79.20	11.84	1.94
BH22	vegetation changed to reference conditions	15-Jul	66.85	0.65	0.11	78.17	11.32	1.86
BH22	channel geometry changed to reference conditions	15-Jul	67.04	0.84	0.14	77.36	10.32	1.69
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.53	0.33	0.05	76.13	9.60	1.58
BH26	existing conditions modeled	15-Jul	66.82	0.62	0.24	78.79	11.97	4.59
BH26	vegetation changed to reference conditions	15-Jul	66.53	0.33	0.13	77.82	11.29	4.33
BH26	channel geometry changed to reference conditions	15-Jul	66.61	0.41	0.16	76.74	10.13	3.88
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.34	0.14	0.05	75.56	9.22	3.53
BH28	existing conditions modeled	15-Jul	66.26	0.06	0.11	77.17	10.91	20.43
BH28	vegetation changed to reference conditions	15-Jul	66.24	0.04	0.07	76.84	10.60	19.85

Table C-21. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month/Day	Predicted Mean	Mean TOut - Mean TIn	Length Normalized Mean TOut - Mean TIn	Estimated Maximum	Tmax - Mean TOut	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)		(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 80 cfs					
BH18	existing conditions modeled	15-Jul	66.31	0.11	0.08	76.70	10.39	7.96
BH22	existing conditions modeled	15-Jul	67.28	1.08	0.18	78.76	11.48	1.89
BH22	vegetation changed to reference conditions	15-Jul	66.83	0.63	0.10	77.79	10.96	1.80
BH22	channel geometry changed to reference conditions	15-Jul	66.98	0.78	0.13	76.92	9.94	1.63
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.52	0.32	0.05	75.77	9.25	1.52
BH26	existing conditions modeled	15-Jul	66.77	0.57	0.22	78.34	11.57	4.43
BH26	vegetation changed to reference conditions	15-Jul	66.51	0.31	0.12	77.44	10.93	4.19
BH26	channel geometry changed to reference conditions	15-Jul	66.58	0.38	0.15	76.32	9.74	3.73
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.33	0.13	0.05	75.21	8.88	3.40
BH28	existing conditions modeled	15-Jul	66.26	0.06	0.11	76.79	10.53	19.72
BH28	vegetation changed to reference conditions	15-Jul	66.24	0.04	0.07	76.48	10.24	19.18

Table C-22. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month /Day	Predicted Mean	Mean TOut -Mean TIn	Length Normalized Mean TOut -Mean TIn	Estimated Maximum	Tmax - Mean Tout	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)		(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 90 cfs					
BH18	existing conditions modeled	15-Jul	66.31	0.11	0.08	76.38	10.07	7.72
BH22	existing conditions modeled	15-Jul	67.21	1.01	0.17	78.36	11.15	1.83
BH22	vegetation changed to reference conditions	15-Jul	66.80	0.60	0.10	77.44	10.64	1.75
BH22	channel geometry changed to reference conditions	15-Jul	66.93	0.73	0.12	76.53	9.60	1.58
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.52	0.32	0.05	75.45	8.93	1.47
BH26	existing conditions modeled	15-Jul	66.73	0.53	0.20	77.95	11.22	4.30
BH26	vegetation changed to reference conditions	15-Jul	66.50	0.30	0.11	77.09	10.59	4.06
BH26	channel geometry changed to reference conditions	15-Jul	66.55	0.35	0.13	75.94	9.39	3.60
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.33	0.13	0.05	74.90	8.57	3.28
BH28	existing conditions modeled	15-Jul	66.25	0.05	0.09	76.46	10.21	19.12
BH28	vegetation changed to reference conditions	15-Jul	66.24	0.04	0.07	76.16	9.92	18.58

Table C-23. Modeling Stream Temperatures in the Upper Big Hole River Attachment 1

Info		Date	Model Results-Outflow Temperature					
Model Reach	Model Description	Month /Day	Predicted Mean	Mean TOut - Mean TIn	Length Normalized Mean TOut - Mean TIn	Estimated Maximum	Tmax - Mean TOut	Length Normalized Tmax - Mean TIn
(--)	(--)		(*F)		(*F / mile)	(*F)	(*F)	(*F / mile)
			Q = 100 cfs					
BH18	existing conditions modeled	15-Jul	66.30	0.10	0.08	76.09	9.79	7.50
BH22	existing conditions modeled	15-Jul	67.16	0.96	0.16	78.00	10.84	1.78
BH22	vegetation changed to reference conditions	15-Jul	66.78	0.58	0.10	77.13	10.35	1.70
BH22	channel geometry changed to reference conditions	15-Jul	66.89	0.69	0.11	76.19	9.30	1.53
BH22	vegetation & channel geometry changed to reference conditions	15-Jul	66.51	0.31	0.05	75.17	8.66	1.42
BH26	existing conditions modeled	15-Jul	66.69	0.49	0.19	77.60	10.91	4.18
BH26	vegetation changed to reference conditions	15-Jul	66.48	0.28	0.11	76.79	10.31	3.95
BH26	channel geometry changed to reference conditions	15-Jul	66.53	0.33	0.13	75.61	9.08	3.48
BH26	vegetation & channel geometry changed to reference conditions	15-Jul	66.33	0.13	0.05	74.62	8.29	3.18
BH28	existing conditions modeled	15-Jul	66.25	0.05	0.09	76.16	9.91	18.56
BH28	vegetation changed to reference conditions	15-Jul	66.24	0.04	0.07	75.87	9.63	18.03