

Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1010 North Fork Grindstone Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

Date Received: June 3, 2007

Field Data Sheets for Recreation Use Stream Surveys
Data Sheet A - Water Body Identification
(For water body being surveyed)

Water Body Information

Water Body Name:	North Fork Grindstone Creek	WBID:	1010
8 digit HUC code:	10300102	County:	Boone
Upstream Legal Description	48N 12W 16		
Downstream Legal Description	48N 12W 20		
Number of Sites Evaluated	3		
List all site numbers, listed upstream to downstream	1,2,3		

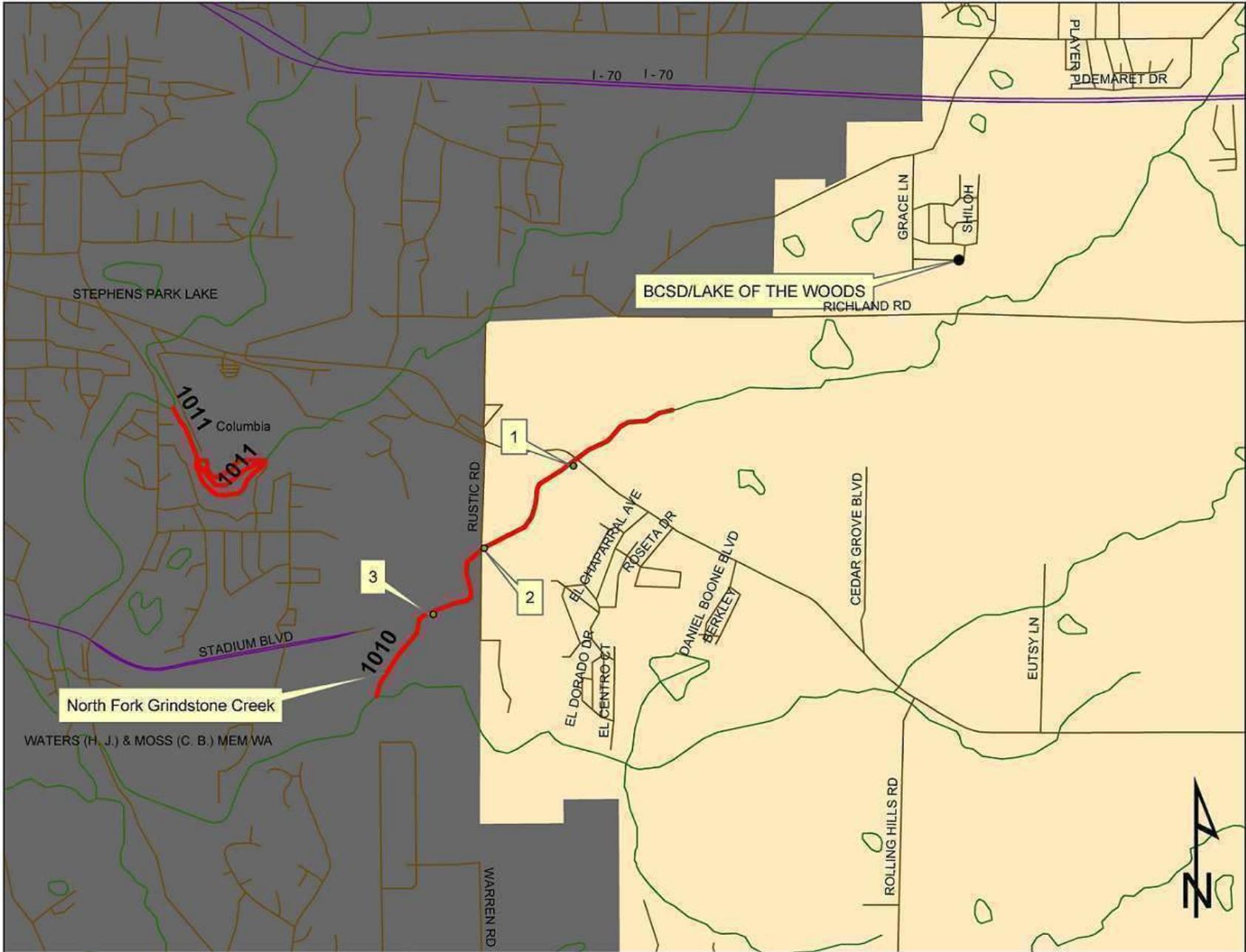
Discharger Facility Information

Discharger Facility Name(s):	BCRSD, Lake of the Woods
Discharger Permit Number(s):	MO 0034444

UAA Surveyor

Name of Surveyor:	Gilisa Gould	Telephone Number:	(913)307-0054 Ext. 19
Organization/Employer:	SES, Inc.		
Position:	Field Team Leader		

Signed: _____ Date: _____



**Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
(must be completed for each site)**

WBID 1010
Site # 1

Date and Time: 5/18/2007 9:52

Current Weather Conditions clear

Weather Conditions for Past 10 days: Rained about 1 inch total in the area

Drought Conditions? No

Site Location (e.g. road crossing) crossing with ww

GPS Mark: 45

Upstream Photo 99 Downstream Photo 98

Uses Observed (Uses actually observed at time of survey) Circle

Swimming	Skin Diving	SCUBA diving	Tubing
Water Skiing	Wind Surfing	Kayaking	Boating
Wading	Rafting	Hunting	Trapping
Fishing	None of the Above	Other	

Surrounding Conditions

City/county parks	Playgrounds	MDC conservation lands	Urban areas
Campgrounds	Boating accesses	State parks	National Forests
Nature trails	Stairs/walkway	No trespass sign	Fence
Steep slopes	None of the Above	Other	

Indications of Human Use

Roads	Rope swings	Foot paths/prints	Dock/platform
Livestock Watering	RV/ATV Tracks	Camping Sites	Fire pit/ring
NPDES Discharge	Fishing Tackle	Other:	None of the Above

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)
(Median Depth Shown in Bold)

Site # 1

Mark # 45

1010_Creek_Boone

	Depth
Transect 1	0.00
Substrate:	0.00
cobble	0.00
Water Clarity:	0.05
clear	0.05
Channel Feature:	0.10
riffle	0.10
Channel Width:	0.10
2 yards	0.05
0.05	0.05
Transect 2	0.10
Substrate:	0.00
cobble	0.05
Water Clarity:	0.10
clear	0.10
Channel Feature:	0.10
riffle	0.05
Channel Width:	0.05
4 yards	0.00
0.05	0.00
Transect 3	0.15
Substrate:	0.40
cobble/bedrock	0.40
Water Clarity:	0.40
clear	0.35
Channel Feature:	0.20
pool	0.15
Channel Width:	0.20
6 yards	0.50
0.38	0.45
Transect 4	0.00
Substrate:	0.10
cobble/bedrock	0.25
Water Clarity:	0.30
cloudy	0.35
Channel Feature:	0.35
pool	0.30
Channel Width:	0.20
6 yards	0.10
0.23	0.15

Transect 5	0.00
Substrate:	0.10
bedrock/cobble	0.15
Water Clarity:	0.30
cloudy	0.30
Channel Feature:	0.35
pool	0.25
Channel Width:	0.20
7 yards	0.15
0.18	0.05
Transect 6	0.05
Substrate:	0.15
silt/bedrock/cobble	0.30
Water Clarity:	0.40
cloudy	0.30
Channel Feature:	0.45
pool	0.35
Channel Width:	0.35
8 yards	0.30
0.30	0.25
Transect 7	0.10
Substrate:	0.30
silt/cobble	0.25
Water Clarity:	0.30
clear	0.30
Channel Feature:	0.30
pool	0.10
Channel Width:	0.20
8 yards	0.25
0.25	0.15
Transect 8	0.00
Substrate:	0.10
cobble/silt	0.20
Water Clarity:	0.15
cloudy	0.10
Channel Feature:	0.00
pool	0.00
Channel Width:	0.00
9 yards	0.10
0.10	0.15

Transect 9	0.10
Substrate:	0.20
silt	0.10
Water Clarity:	0.20
clear	0.25
Channel Feature:	0.20
pool	0.15
Channel Width:	0.10
9 yards	0.10
0.13	0.05
Transect 10	0.05
Substrate:	0.10
silt/bedrock	0.15
Water Clarity:	0.30
cloudy	0.30
Channel Feature:	0.30
pool	0.30
Channel Width:	0.40
8 yards	0.40
0.30	0.25
Transect 11	0.00
Substrate:	0.10
silt/bedrock	0.25
Water Clarity:	0.30
clear	0.35
Channel Feature:	0.25
pool	0.30
Channel Width:	0.15
8 yards	0.05
0.20	0.05

Site Median	Site Maximum
0.15	0.50

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
(must be completed for each site)

WBID 1010
 Site # 2

Date and Time: 5/18/2007 10:40

Current Weather Conditions clear

Weather Conditions for Past 10 days: Rained about 1 inch total in the area

Drought Conditions? No

Site Location (e.g. road crossing) rustic road crossing

GPS Mark: 46

Upstream Photo 101 Downstream Photo 100

Uses Observed (Uses actually observed at time of survey) Circle

Swimming	Skin Diving	SCUBA diving	Tubing
Water Skiing	Wind Surfing	Kayaking	Boating
Wading	Rafting	Hunting	Trapping
Fishing	<i>None of the Above</i>	Other	

Surrounding Conditions

City/county parks	Playgrounds	MDC conservation lands	Urban areas
Campgrounds	Boating accesses	State parks	National Forests
Nature trails	Stairs/walkway	No trespass sign	Fence
Steep slopes	<i>None of the Above</i>	Other	

Indications of Human Use

Roads	Rope swings	Foot paths/prints	Dock/platform
Livestock Watering	RV/ATV Tracks	Camping Sites	Fire pit/ring
NPDES Discharge	Fishing Tackle	Other:	<i>None of the Above</i>

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)
(Median Depth Shown in Bold)

Site # 2

Mark # 46

1010_Creek_Boone

	Depth				
Transect 1	0.15	Transect 5	0.00	Transect 9	0.00
Substrate:	0.20	Substrate:	0.05	Substrate:	0.20
silt/cobble	0.30	bedrock/cobble	0.05	bedrock/cobble	0.20
Water Clarity:	0.35	Water Clarity:	0.05	Water Clarity:	0.20
cloudy	0.40	clear	0.10	clear	0.20
Channel Feature:	0.50	Channel Feature:	0.15	Channel Feature:	0.10
pool	0.55	riffle	0.15	riffle	0.15
Channel Width:	0.50	Channel Width:	0.15	Channel Width:	0.10
8 yards	0.30	4 yards	0.05	4 yards	0.05
0.33	0.10	0.05	0.05	0.13	0.00
Transect 2	0.05	Transect 6	0.00	Transect 10	0.00
Substrate:	0.05	Substrate:	0.00	Substrate:	0.10
silt/cobble	0.15	bedrock	0.00	cobble	0.15
Water Clarity:	0.05	Water Clarity:	0.10	Water Clarity:	0.15
cloudy	0.10	clear	0.15	clear	0.15
Channel Feature:	0.10	Channel Feature:	0.10	Channel Feature:	0.15
pool	0.05	riffle	0.00	pool	0.15
Channel Width:	0.05	Channel Width:	0.00	Channel Width:	0.10
8 yards	0.00	6 yards	0.00	5 yards	0.00
0.05	0.00	0.00	0.00	0.13	0.00
Transect 3	0.00	Transect 7	0.30	Transect 11	0.00
Substrate:	0.05	Substrate:	0.15	Substrate:	0.00
cobble	0.05	bedrock	0.15	cobble	0.00
Water Clarity:	0.10	Water Clarity:	0.00	Water Clarity:	0.00
clear	0.10	clear	0.00	clear	0.05
Channel Feature:	0.15	Channel Feature:	0.20	Channel Feature:	0.05
riffle	0.15	riffle	0.30	riffle	0.10
Channel Width:	0.20	Channel Width:	0.00	Channel Width:	0.05
3 yards	0.15	4 yards	0.05	5 yards	0.10
0.10	0.10	0.10	0.00	0.05	0.05
Transect 4	0.00	Transect 8	0.05	Site Median	Site Maximum
Substrate:	0.00	Substrate:	0.25	0.10	0.55
cobble	0.00	bedrock	0.20		
Water Clarity:	0.05	Water Clarity:	0.25		
clear	0.10	clear	0.20		
Channel Feature:	0.10	Channel Feature:	0.15		
riffle	0.05	pool	0.00		
Channel Width:	0.10	Channel Width:	0.00		
3 yards	0.10	8 yards	0.00		
0.05	0.05	0.10	0.00		

**Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
(must be completed for each site)**

WBID 1010
Site # 3

Date and Time: 5/24/2007 9:50

Current Weather Conditions cloudy

Weather Conditions for Past 10 days: Rained about 1 inch total in the area

Drought Conditions? No

Site Location (e.g. road crossing) downstream about 800 yards from Rustic Rd.

GPS Mark: 18

Upstream Photo 49 Downstream Photo 48

Uses Observed (Uses actually observed at time of survey) Circle

Swimming	Skin Diving	SCUBA diving	Tubing
Water Skiing	Wind Surfing	Kayaking	Boating
Wading	Rafting	Hunting	Trapping
Fishing	None of the Above	Other	

Surrounding Conditions

City/county parks	Playgrounds	MDC conservation lands	Urban areas
Campgrounds	Boating accesses	State parks	National Forests
Nature trails	Stairs/walkway Pic #50	No trespass sign	Fence
Steep slopes	None of the Above	Other: bench - Pic #51	

Indications of Human Use

Roads	Rope swings	Foot paths/prints	Dock/platform
Livestock Watering	RV/ATV Tracks	Camping Sites	Fire pit/ring
NPDES Discharge	Fishing Tackle	Other:	

Data Sheet C: Cross-Sectional Depth Measurements (for estimation of median depth)
(Median Depth Shown in Bold)

Site # 3

Mark # 18

1010_Creek_Boone

Depth					
Transect 1	0.00	Transect 5	0.05	Transect 9	0.00
Substrate:	0.05	Substrate:	0.00	Substrate:	0.05
cobble	0.05	cobble	0.05	gravel/silt	0.05
Water Clarity:	0.05	Water Clarity:	0.10	Water Clarity:	0.05
clear	0.05	clear	0.10	clear	0.10
Channel Feature:	0.05	Channel Feature:	0.10	Channel Feature:	0.10
riffle	0.05	pool	0.10	pool	0.15
Channel Width:	0.05	Channel Width:	0.10	Channel Width:	0.20
3 yards	0.10	5 yards	0.10	7 yards	0.20
0.05	0.05	0.10	0.00	0.10	0.15
Transect 2	0.00	Transect 6	0.00	Transect 10	0.05
Substrate:	0.05	Substrate:	0.00	Substrate:	0.05
cobble/gravel	0.10	cobble	0.00	gravel/silt	0.10
Water Clarity:	0.15	Water Clarity:	0.00	Water Clarity:	0.10
clear	0.25	clear	0.00	clear	0.10
Channel Feature:	0.20	Channel Feature:	0.05	Channel Feature:	0.10
pool	0.15	riffle	0.10	pool	0.20
Channel Width:	0.20	Channel Width:	0.05	Channel Width:	0.15
4 yards	0.15	5 yards	0.00	7 yards	0.10
0.15	0.15	0.00	0.00	0.10	0.05
Transect 3	0.00	Transect 7	0.00	Transect 11	0.00
Substrate:	0.05	Substrate:	0.00	Substrate:	0.00
gravel	0.10	cobble	0.00	cobble/sand	0.05
Water Clarity:	0.50	Water Clarity:	0.00	Water Clarity:	0.05
clear	0.20	clear	0.00	clear	0.05
Channel Feature:	0.25	Channel Feature:	0.05	Channel Feature:	0.05
pool	0.30	riffle	0.05	riffle	0.00
Channel Width:	0.30	Channel Width:	0.05	Channel Width:	0.05
4 yards	0.30	6 yards	0.05	6 yards	0.00
0.28	0.30	0.03	0.05	0.03	0.00
Transect 4	0.00	Transect 8	0.00	Site Median	Site Maximum
Substrate:	0.00	Substrate:	0.00	0.05	0.50
cobble/gravel	0.00	cobble/sand	0.00		
Water Clarity:	0.00	Water Clarity:	0.10		
clear	0.00	clear	0.05		
Channel Feature:	0.00	Channel Feature:	0.05		
riffle	0.05	pool	0.05		
Channel Width:	0.05	Channel Width:	0.05		
3 yards	0.05	7 yards	0.10		
0.00	0.05	0.05	0.05		

WBID# 1010



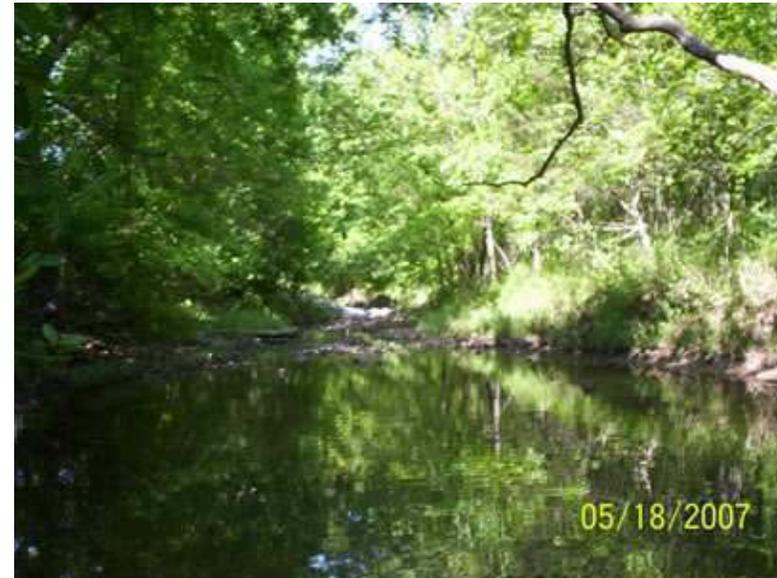
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Site# 1 Photo ID# 98, Downstream



Site# 2 Photo ID# 101, Upstream



Site# 2 Photo ID# 100, Downstream

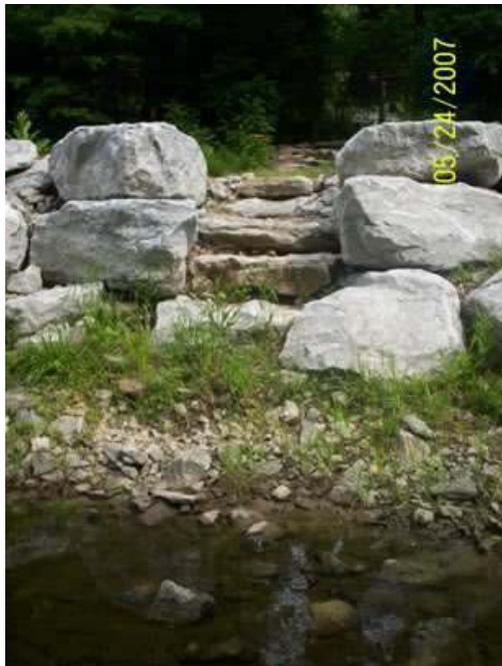
WBID# 1010



Site# 3 Photo ID# 49, Upstream



Site# 3 Photo ID# 48, Downstream



Site# 3 Photo ID# 50, Stairs/walkway



Site# 3 Photo ID# 51, Bench