

**Stream & Location:** WEST CREEK - SITE #1 **RM:** 0.2 **Date:** 06/21/07

**Downstream of:** GANNON Rd to SWAFF Rd **Scorers Full Name & Affiliation:** CITTY ZIMONASKY - NEORSD

**River Code:** - **STORET #:** - **Lat./ Long.:** 41.4145 181.6477 (NAD 83 - decimal) **Office verified location**

**1) SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

<b>BEST TYPES</b>		<b>OTHER TYPES</b>		<b>ORIGIN</b>		<b>QUALITY</b>	
<input type="checkbox"/> BLDR /SLABS [10]	<input checked="" type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	<b>Substrate</b> <span style="font-size: 24px;">14.5</span> Maximum 20
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>			<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	

**NUMBER OF BEST TYPES:**  4 or more [2]  3 or less [0]

**Comments:** \_\_\_\_\_

**2) INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]	<input type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]

**Comments:** \_\_\_\_\_

**Cover** 5  
Maximum 20

**3) CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<b>SINUOSITY</b>	<b>DEVELOPMENT</b>	<b>CHANNELIZATION</b>	<b>STABILITY</b>
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments:** Riffles - Good/Fair Pools - Fair/Poor

**Channel** 10.5  
Maximum 20

**4) BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

<b>EROSION</b>	<b>RIPIARIAN WIDTH</b>	<b>FLOOD PLAIN QUALITY</b>	<b>CONSERVATION TILLAGE</b>
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

**Comments:** \_\_\_\_\_

**Riparian** 3  
Maximum 10

**5) POOL / GLIDE AND RIFFLE / RUN QUALITY**

<b>MAXIMUM DEPTH</b>	<b>CHANNEL WIDTH</b>	<b>CURRENT VELOCITY</b>	<b>Recreation Potential</b> <b>Primary Contact</b> <b>Secondary Contact</b> <small>(circle one and comment on back)</small>
Check ONE (ONLY)	Check ONE (Or 2 & average)	Check ALL that apply	
<input type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	

**Comments:** \_\_\_\_\_

**Pool / Current** 7  
Maximum 12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

<b>RIFFLE DEPTH</b>	<b>RUN DEPTH</b>	<b>RIFFLE / RUN SUBSTRATE</b>	<b>RIFFLE / RUN EMBEDDEDNESS</b>
<input checked="" type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

**Comments:** \_\_\_\_\_

**Riffle / Run** 5.5  
Maximum 8

**6) GRADIENT** (5.4 ft/mi)  VERY LOW - LOW [2-4]  MODERATE [6-10]  HIGH - VERY HIGH [10-6]

**DRAINAGE AREA** (19.0 mi<sup>2</sup>)

**% POOL:**  **% GLIDE:**

**% RUN:**  **% RIFFLE:**

**Gradient** 6  
Maximum 10

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc.

**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

BOAT  WADE  L. LINE  OTHER

**STAGE**

1st-sample pass-- 2nd

HIGH  UP  NORMAL  LOW  DRY

**DISTANCE**

0.5 Km  0.2 Km  0.15 Km  0.12 Km  OTHER

**CLARITY**

1st --sample pass-- 2nd

< 20 cm  20-40 cm  40-70 cm  > 70 cm/ CTB

SECCHI DEPTH

1st \_\_\_\_\_ cm  
2nd \_\_\_\_\_ cm

**CANOPY**

> 85%- OPEN  55%-<85%  30%-<55%  10%-<30%  <10%- CLOSED

**CJ RECREATION**

AREA DEPTH  
POOL:  >100ft<sup>2</sup>  >3ft

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMORED / SLUMPS
- ISLANDS / SCLOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

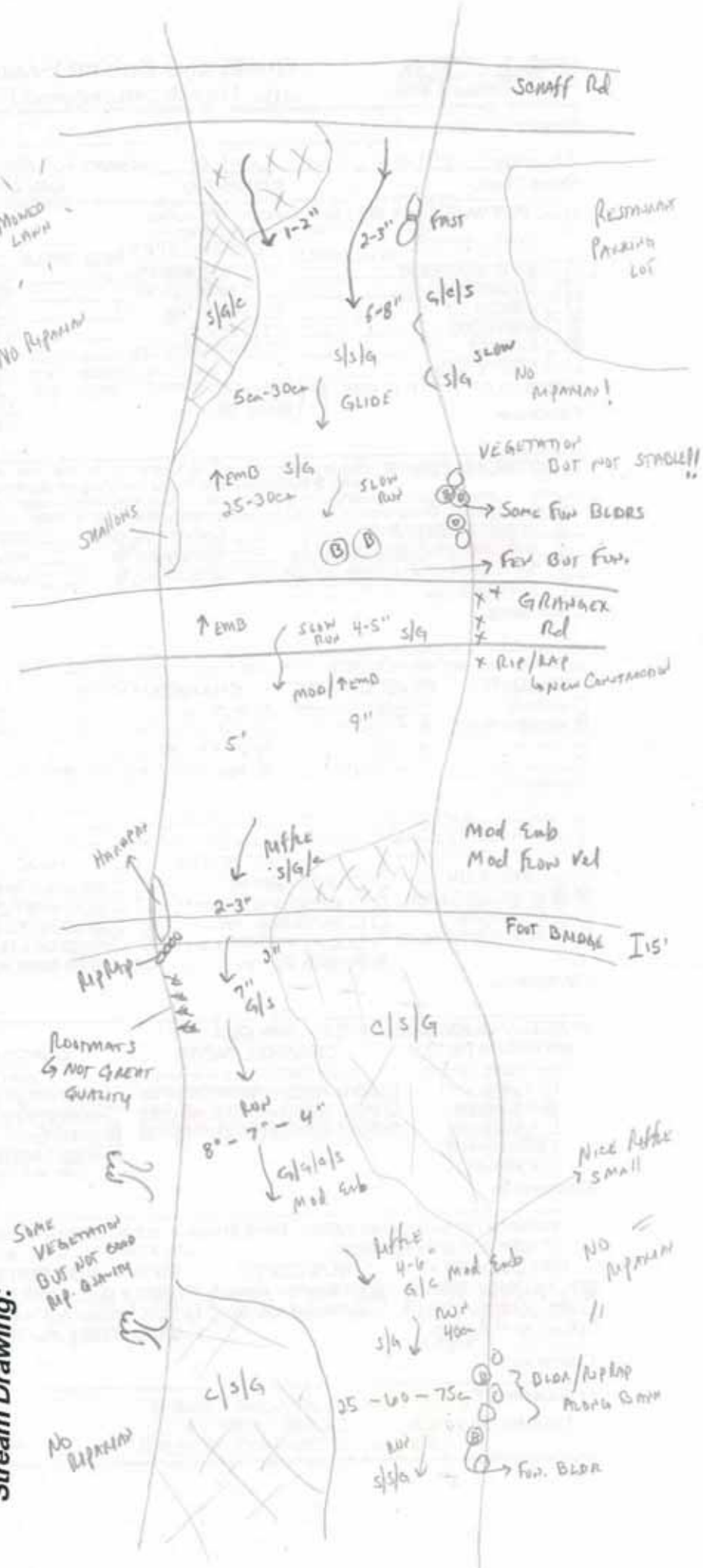
**EJ ISSUES**

- WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- width
  - depth
  - max. depth
  - bankfull width
  - bankfull x depth
  - W/D ratio
  - bankfull max. depth
  - floodprone x<sup>2</sup> width
  - entrench. ratio
- Legacy Tree:

**Stream Drawing:**



Stream & Location: West Creek #5 Along Landfill #480 (D&F Flume) RM: 1.0 Date: 06/21/02

Scorers Full Name & Affiliation: Tiffany Moore - NEOKSO

River Code: - - - STORET #: - - - Lat./ Long.: 41.4093 / 81.6556 Office verified location

### 1] SUBSTRATE

Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

<p><b>BEST TYPES</b></p> <input type="checkbox"/> BLDR /SLABS [10] <input type="checkbox"/> BOULDER [9] <input type="checkbox"/> COBBLE [8] <input type="checkbox"/> GRAVEL [7] <input type="checkbox"/> SAND [6] <input type="checkbox"/> BEDROCK [5]	<p><b>POOL RIFFLE</b></p> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p><b>OTHER TYPES</b></p> <input type="checkbox"/> HARDPAN [4] <input type="checkbox"/> DETRITUS [3] <input type="checkbox"/> MUCK [2] <input type="checkbox"/> SILT [2] <input type="checkbox"/> ARTIFICIAL [0]	<p><b>POOL RIFFLE</b></p> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]</p>		<p>Check ONE (Or 2 &amp; average)</p> <p><b>ORIGIN</b></p> <input type="checkbox"/> LIMESTONE [1] <input type="checkbox"/> TILLS [1] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> HARDPAN [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> RIP/RAP [0] <input type="checkbox"/> LACUSTURINE [0] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> COAL FINES [-2]	
<p>Comments</p>		<p><b>QUALITY</b></p> <input type="checkbox"/> HEAVY [-2] <input checked="" type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> FREE [1] <input type="checkbox"/> EXTENSIVE [-2] <input checked="" type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> NONE [1]	

Substrate  
17  
Maximum 20

### 2] INSTREAM COVER

Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<p><u>2</u> UNDERCUT BANKS [1] <u>0</u> OVERHANGING VEGETATION [1] <u>1</u> SHALLOWS (IN SLOW WATER) [1] <u>2</u> ROOTMATS [1]</p>	<p><u>1</u> POOLS &gt; 70cm [2] <u>0</u> ROOTWADS [1] <u>1</u> BOULDERS [1]</p>	<p><u>0</u> OXBOWS, BACKWATERS [1] <u>0</u> AQUATIC MACROPHYTES [1] <u>1</u> LOGS OR WOODY DEBRIS [1]</p>	<p><b>AMOUNT</b></p> <p>Check ONE (Or 2 &amp; average)</p> <input type="checkbox"/> EXTENSIVE >75% [11] <input checked="" type="checkbox"/> MODERATE 25-75% [7] <input checked="" type="checkbox"/> SPARSE 5-<25% [3] <input type="checkbox"/> NEARLY ABSENT <5% [1]
<p>Comments</p>			<p>Cover Maximum <span style="border: 1px solid black; border-radius: 10px; padding: 5px;">12</span> 20</p>

### 3] CHANNEL MORPHOLOGY

Check ONE in each category (Or 2 & average)

<p><b>SINUOSITY</b></p> <input type="checkbox"/> HIGH [4] <input checked="" type="checkbox"/> MODERATE [3] <input type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1]	<p><b>DEVELOPMENT</b></p> <input type="checkbox"/> EXCELLENT [7] <input checked="" type="checkbox"/> GOOD [5] <input type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1]	<p><b>CHANNELIZATION</b></p> <input type="checkbox"/> NONE [6] <input type="checkbox"/> RECOVERED [4] <input checked="" type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	<p><b>STABILITY</b></p> <input checked="" type="checkbox"/> HIGH [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> LOW [1]
<p>Comments</p>			
			<p>Channel Maximum <span style="border: 1px solid black; border-radius: 10px; padding: 5px;">12</span> 20</p>

### 4] BANK EROSION AND RIPARIAN ZONE

Check ONE in each category for EACH BANK (Or 2 per bank & average)

<p><b>EROSION</b></p> <input checked="" type="checkbox"/> NONE / LITTLE [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> HEAVY / SEVERE [1]	<p><b>RIPARIAN WIDTH</b></p> <input type="checkbox"/> WIDE > 50m [4] <input type="checkbox"/> MODERATE 10-50m [3] <input type="checkbox"/> NARROW 5-10m [2] <input checked="" type="checkbox"/> VERY NARROW < 5m [1] <input checked="" type="checkbox"/> NONE [0]	<p><b>FLOOD PLAIN QUALITY</b></p> <input type="checkbox"/> FOREST, SWAMP [3] <input type="checkbox"/> SHRUB OR OLD FIELD [2] <input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input type="checkbox"/> FENCED PASTURE [1] <input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	<p><b>CONSERVATION TILLAGE</b></p> <input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0] <input type="checkbox"/> MINING / CONSTRUCTION [0]
<p>Comments</p>			
			<p>Riparian Maximum <span style="border: 1px solid black; border-radius: 10px; padding: 5px;">3.25</span> 10</p>

### 5] POOL / GLIDE AND RIFFLE / RUN QUALITY

<p><b>MAXIMUM DEPTH</b></p> <p>Check ONE (ONLY)</p> <input type="checkbox"/> > 1m [6] <input checked="" type="checkbox"/> 0.7-<1m [4] <input type="checkbox"/> 0.4-<0.7m [2] <input type="checkbox"/> 0.2-<0.4m [1] <input type="checkbox"/> < 0.2m [0]	<p><b>CHANNEL WIDTH</b></p> <p>Check ONE (Or 2 &amp; average)</p> <input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<p><b>CURRENT VELOCITY</b></p> <p>Check ALL that apply</p> <input type="checkbox"/> TORRENTIAL [-1] <input checked="" type="checkbox"/> SLOW [1] <input type="checkbox"/> VERY FAST [1] <input type="checkbox"/> INTERSTITIAL [-1] <input checked="" type="checkbox"/> FAST [1] <input type="checkbox"/> INTERMITTENT [-2] <input checked="" type="checkbox"/> MODERATE [1] <input type="checkbox"/> EDDIES [1]	<p><b>Recreation Potential</b></p> <p>Primary Contact Secondary Contact (circle one and comment on back)</p>
<p>Comments</p>			<p>Pool / Current Maximum <span style="border: 1px solid black; border-radius: 10px; padding: 5px;">7</span> 12</p>

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:  NO RIFFLE [metric=0]

<p><b>RIFFLE DEPTH</b></p> <input checked="" type="checkbox"/> BEST AREAS > 10cm [2] <input type="checkbox"/> BEST AREAS 5-10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric=0]	<p><b>RUN DEPTH</b></p> <input checked="" type="checkbox"/> MAXIMUM > 50cm [2] <input type="checkbox"/> MAXIMUM < 50cm [1]	<p><b>RIFFLE / RUN SUBSTRATE</b></p> <input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<p><b>RIFFLE / RUN EMBEDDEDNESS</b></p> <input type="checkbox"/> NONE [2] <input checked="" type="checkbox"/> LOW [1] <input checked="" type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1]
<p>Comments</p>			<p>Riffle / Run Maximum <span style="border: 1px solid black; border-radius: 10px; padding: 5px;">6</span> 8</p>

<p>6] GRADIENT ( <u>5.4</u> ft/mi )</p>	<p><input type="checkbox"/> VERY LOW - LOW [2-4] <input checked="" type="checkbox"/> MODERATE [6-10] <input type="checkbox"/> HIGH - VERY HIGH [10-6]</p>	<p>% POOL: <input type="text"/> % GLIDE: <input type="text"/></p> <p>% RUN: <input type="text"/> % RIFFLE: <input type="text"/></p>	<p>Gradient Maximum <span style="border: 1px solid black; border-radius: 10px; padding: 5px;">6</span> 10</p>
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**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
  - WADE
  - L. LINE
  - OTHER
- STAGE**
- 1st - sample pass - 2nd
  - HIGH
  - UP
  - NORMAL
  - LOW
  - DRY

**DISTANCE**

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

**CLARITY**

- 1st - sample pass - 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm / CTB
- SECCHI DEPTH

meters

**CANOPY**

- > 85% - OPEN
- 55% - 85%
- 30% - 55%
- 10% - 30%
- < 10% - CLOSED

**CJ RECREATION**

AREA DEPTH POOL:  > 100r²  > 3ft

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURED / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

**EJ ISSUES**

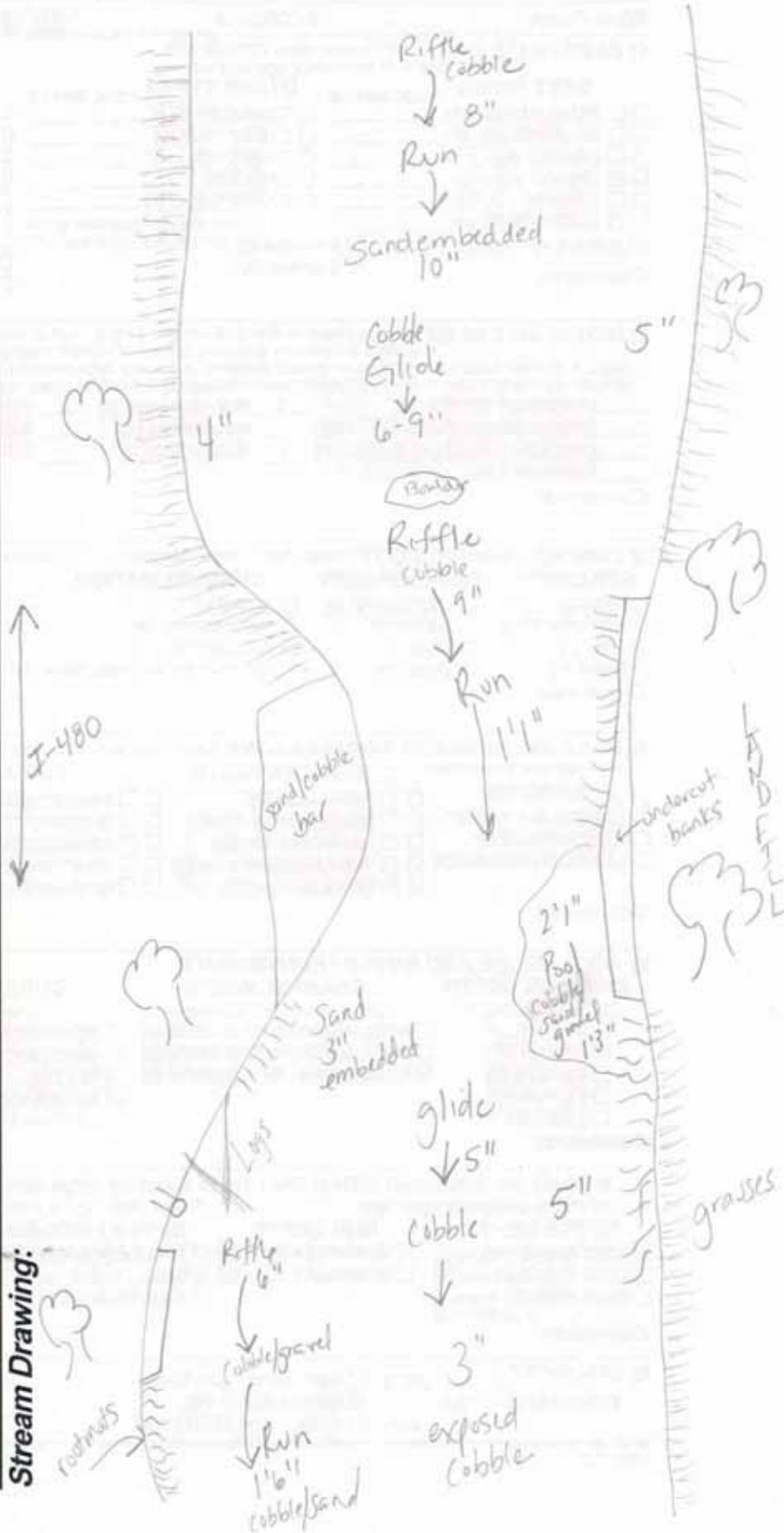
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- $\bar{x}$  width
- $\bar{x}$  depth
- max. depth
- $\bar{x}$  bankfull width
- bankfull  $\bar{x}$  depth
- W/D ratio
- bankfull max. depth
- floodprone  $\bar{x}^2$  width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**



Stream & Location: WEST CREEK - SIDE #6 RM: 1.1 Date: 06/21/02

At Concrete Frame W/ I-480 & Landfill (Reserve) Scorers Full Name & Affiliation: CATHY ZAMBORSKY - NEARSD

River Code: STORET #: Lat./ Long.: 41.4097 181.6590 Office verified location

1) SUBSTRATE Check ONLY Two substrate TYPE BOXES, estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment grid with categories: BEST TYPES, OTHER TYPES, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

Comments

Mini-Made Structure - ~75% of Zone Concrete Frame

2) INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

Comments

3) CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY.

Comments

4) BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

Bank Erosion and Riparian Zone assessment grid with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

Comments

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Check ONE (ONLY)

Check ONE (Or 2 & average)

Check ALL that apply

Maximum Depth checkboxes: > 1m, 0.7-1m, 0.4-0.7m, 0.2-0.4m, < 0.2m

Channel Width checkboxes: POOL WIDTH > RIFFLE WIDTH, POOL WIDTH = RIFFLE WIDTH, POOL WIDTH < RIFFLE WIDTH

Current Velocity checkboxes: TORRENTIAL, VERY FAST, FAST, MODERATE, SLOW, INTERSTITIAL, INTERMITTENT, EDDIES

Indicate for reach - pools and riffles.

Pool / Current Maximum 12

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average)

NO RIFFLE [metric=0]

RIFFLE DEPTH

RUN DEPTH

RIFFLE / RUN SUBSTRATE

RIFFLE / RUN EMBEDDEDNESS

Riffle Depth checkboxes: BEST AREAS > 10cm, BEST AREAS 5-10cm, BEST AREAS < 5cm

Run Depth checkboxes: MAXIMUM > 50cm, MAXIMUM < 50cm

Riffle/Run Substrate checkboxes: STABLE, MOD. STABLE, UNSTABLE

Riffle/Run Embeddedness checkboxes: NONE, LOW, MODERATE, EXTENSIVE

Riffle / Run Maximum 8

Comments

6) GRADIENT (3.4 ft/mi) DRAINAGE AREA (10.4 mi^2)

Gradient assessment fields: %POOL, %GLIDE, %RUN, %RIFFLE

Gradient Maximum 10

### AJ SAMPLED REACH

Check ALL that apply

#### METHOD

- BOAT
  - WADE
  - L. LINE
  - OTHER
- STAGE
- 1st - sample pass - 2nd
- HIGH
  - UP
  - NORMAL
  - LOW
  - DRY

#### DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

#### CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm / CTB

#### SECCHI DEPTH

- 1st  \_\_\_\_\_ cm
- 2nd  \_\_\_\_\_ cm

#### CANOPY

- > 85% - OPEN
- 55% - 85%
- 30% - 55%
- 10% - 30%
- < 10% - CLOSED

#### CJ RECREATION

- AREA > 100ft<sup>2</sup>
- DEPTH > 3ft

#### BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSO<sub>s</sub>/SSO<sub>s</sub>/OUTFALLS

#### DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

#### EJ ISSUES

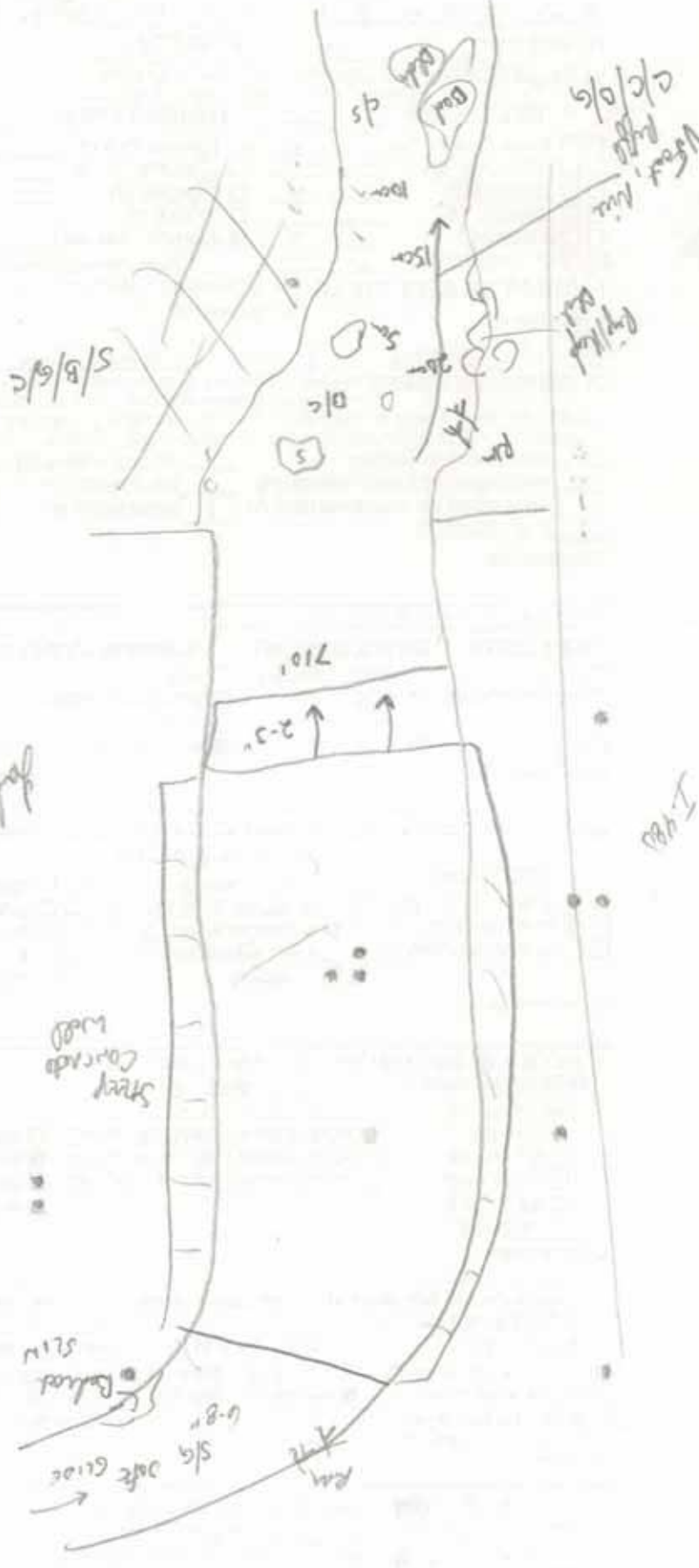
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

#### FJ MEASUREMENTS

- $\bar{x}$  width
- $\bar{x}$  depth
- max. depth
- $\bar{x}$  bankfull width
- bankfull  $\bar{x}$  depth
- W/D ratio
- bankfull max. depth
- floodprone  $\bar{x}^2$  width
- entrench. ratio

Legacy Tree:

### Stream Drawing:



**Stream & Location:** W19 Creek #9 Downstream from Lancaster Drive Bridge **RM:** 1.6 **Date:** 6/22/07

**Scorers Full Name & Affiliation:** Tiffany Moore - NEDSSD

**River Code:** - - **STORET #:** - **Lat./ Long.:** 41.4448 N 81.6619 W (NAD 83 - decimal) **Office verified location**

**1] SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

<p><b>BEST TYPES</b></p> <input type="checkbox"/> BLDR /SLABS [10] <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> POOL RIFFLE <input type="checkbox"/> BOULDER [9] <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> COBBLE [8] <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> GRAVEL [7] <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> POOL RIFFLE <input type="checkbox"/> SAND [6] <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> POOL RIFFLE <input type="checkbox"/> BEDROCK [5] <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> POOL RIFFLE	<p><b>OTHER TYPES</b></p> <input type="checkbox"/> HARDPAN [4] <input checked="" type="checkbox"/> POOL RIFFLE <input checked="" type="checkbox"/> POOL RIFFLE <input type="checkbox"/> DETRITUS [3] <input type="checkbox"/> POOL RIFFLE <input type="checkbox"/> POOL RIFFLE <input type="checkbox"/> MUCK [2] <input type="checkbox"/> POOL RIFFLE <input type="checkbox"/> POOL RIFFLE <input type="checkbox"/> SILT [2] <input type="checkbox"/> POOL RIFFLE <input type="checkbox"/> POOL RIFFLE <input type="checkbox"/> ARTIFICIAL [0] <input type="checkbox"/> POOL RIFFLE <input type="checkbox"/> POOL RIFFLE <small>(Score natural substrates; ignore sludge from point-sources)</small>	<p><b>ORIGIN</b></p> <input type="checkbox"/> LIMESTONE [1] <input checked="" type="checkbox"/> SILT <input checked="" type="checkbox"/> SILT <input type="checkbox"/> TILLS [1] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> HARDPAN [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> RIP/RAP [0] <input type="checkbox"/> LACUSTURINE [0] <input type="checkbox"/> LACUSTURINE [0] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> COAL FINES [-2] <input type="checkbox"/> COAL FINES [-2]	<p><b>QUALITY</b></p> <input type="checkbox"/> HEAVY [-2] <input checked="" type="checkbox"/> HEAVY [-2] <input type="checkbox"/> MODERATE [-1] <input checked="" type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input checked="" type="checkbox"/> NORMAL [0] <input type="checkbox"/> FREE [1] <input type="checkbox"/> FREE [1] <input type="checkbox"/> EXTENSIVE [-2] <input type="checkbox"/> EXTENSIVE [-2] <input type="checkbox"/> MODERATE [-1] <input type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> NONE [1] <input type="checkbox"/> NONE [1]
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**NUMBER OF BEST TYPES:**  4 or more [2]  3 or less [0]

**Comments:** Excessive embeddedness in substrate cover

Substrate  
16.5  
 Maximum 20

**2] INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.)

<p><input type="checkbox"/> UNDERCUT BANKS [1] <input checked="" type="checkbox"/> UNDERCUT BANKS [1]  <input type="checkbox"/> OVERHANGING VEGETATION [1] <input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]  <input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1] <input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]  <input type="checkbox"/> ROOTMATS [1] <input checked="" type="checkbox"/> ROOTMATS [1]</p>	<p><input type="checkbox"/> POOLS &gt; 70cm [2] <input checked="" type="checkbox"/> POOLS &gt; 70cm [2]  <input type="checkbox"/> ROOTWADS [1] <input checked="" type="checkbox"/> ROOTWADS [1]  <input type="checkbox"/> BOULDERS [1] <input checked="" type="checkbox"/> BOULDERS [1]</p>	<p><input type="checkbox"/> OXBOWS, BACKWATERS [1] <input checked="" type="checkbox"/> OXBOWS, BACKWATERS [1]  <input type="checkbox"/> AQUATIC MACROPHYTES [1] <input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]  <input type="checkbox"/> LOGS OR WOODY DEBRIS [1] <input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]</p>	<p><b>AMOUNT</b></p> <input type="checkbox"/> EXTENSIVE >75% [11] <input type="checkbox"/> EXTENSIVE >75% [11] <input type="checkbox"/> MODERATE 25-75% [7] <input type="checkbox"/> MODERATE 25-75% [7] <input checked="" type="checkbox"/> SPARSE 5-<25% [3] <input checked="" type="checkbox"/> SPARSE 5-<25% [3] <input type="checkbox"/> NEARLY ABSENT <5% [1] <input type="checkbox"/> NEARLY ABSENT <5% [1]
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**Comments:**

Cover  
8  
 Maximum 20

**3] CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<p><b>SINUOSITY</b></p> <input type="checkbox"/> HIGH [4] <input checked="" type="checkbox"/> HIGH [4] <input type="checkbox"/> MODERATE [3] <input checked="" type="checkbox"/> MODERATE [3] <input type="checkbox"/> LOW [2] <input checked="" type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1] <input type="checkbox"/> NONE [1]	<p><b>DEVELOPMENT</b></p> <input type="checkbox"/> EXCELLENT [7] <input checked="" type="checkbox"/> EXCELLENT [7] <input type="checkbox"/> GOOD [5] <input checked="" type="checkbox"/> GOOD [5] <input type="checkbox"/> FAIR [3] <input checked="" type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1] <input type="checkbox"/> POOR [1]	<p><b>CHANNELIZATION</b></p> <input type="checkbox"/> NONE [6] <input checked="" type="checkbox"/> NONE [6] <input type="checkbox"/> RECOVERED [4] <input checked="" type="checkbox"/> RECOVERED [4] <input type="checkbox"/> RECOVERING [3] <input checked="" type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	<p><b>STABILITY</b></p> <input checked="" type="checkbox"/> HIGH [3] <input checked="" type="checkbox"/> HIGH [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> LOW [1] <input type="checkbox"/> LOW [1]
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**Comments:**

Channel  
12  
 Maximum 20

**4] BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

<p><b>EROSION</b></p> <input type="checkbox"/> NONE / LITTLE [3] <input checked="" type="checkbox"/> NONE / LITTLE [3] <input type="checkbox"/> MODERATE [2] <input checked="" type="checkbox"/> MODERATE [2] <input type="checkbox"/> HEAVY / SEVERE [1] <input checked="" type="checkbox"/> HEAVY / SEVERE [1]	<p><b>RIPARIAN WIDTH</b></p> <input type="checkbox"/> WIDE > 50m [4] <input checked="" type="checkbox"/> WIDE > 50m [4] <input type="checkbox"/> MODERATE 10-50m [3] <input checked="" type="checkbox"/> MODERATE 10-50m [3] <input type="checkbox"/> NARROW 5-10m [2] <input checked="" type="checkbox"/> NARROW 5-10m [2] <input type="checkbox"/> VERY NARROW < 5m [1] <input checked="" type="checkbox"/> VERY NARROW < 5m [1] <input type="checkbox"/> NONE [0] <input checked="" type="checkbox"/> NONE [0]	<p><b>FLOOD PLAIN QUALITY</b></p> <input type="checkbox"/> FOREST, SWAMP [3] <input checked="" type="checkbox"/> FOREST, SWAMP [3] <input type="checkbox"/> SHRUB OR OLD FIELD [2] <input checked="" type="checkbox"/> SHRUB OR OLD FIELD [2] <input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input type="checkbox"/> FENCED PASTURE [1] <input checked="" type="checkbox"/> FENCED PASTURE [1] <input type="checkbox"/> OPEN PASTURE, ROWCROP [0] <input checked="" type="checkbox"/> OPEN PASTURE, ROWCROP [0]	<p><b>CONSERVATION TILLAGE [1]</b> <input type="checkbox"/> CONSERVATION TILLAGE [1]  <b>URBAN OR INDUSTRIAL [0]</b> <input type="checkbox"/> URBAN OR INDUSTRIAL [0]  <b>MINING / CONSTRUCTION [0]</b> <input type="checkbox"/> MINING / CONSTRUCTION [0]</p> <p><small>Indicate predominant land use(s) past 100m riparian.</small></p>
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**Comments:**

Riparian  
3  
 Maximum 10

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

<p><b>MAXIMUM DEPTH</b> Check ONE (ONLY!)</p> <input type="checkbox"/> > 1m [6] <input checked="" type="checkbox"/> > 1m [6] <input type="checkbox"/> 0.7-<1m [4] <input checked="" type="checkbox"/> 0.7-<1m [4] <input type="checkbox"/> 0.4-<0.7m [2] <input checked="" type="checkbox"/> 0.4-<0.7m [2] <input type="checkbox"/> 0.2-<0.4m [1] <input checked="" type="checkbox"/> 0.2-<0.4m [1] <input type="checkbox"/> < 0.2m [0] <input checked="" type="checkbox"/> < 0.2m [0]	<p><b>CHANNEL WIDTH</b> Check ONE (Or 2 &amp; average)</p> <input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0] <input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<p><b>CURRENT VELOCITY</b> Check ALL that apply</p> <input type="checkbox"/> TORRENTIAL [-1] <input checked="" type="checkbox"/> TORRENTIAL [-1] <input type="checkbox"/> VERY FAST [1] <input checked="" type="checkbox"/> VERY FAST [1] <input type="checkbox"/> FAST [1] <input checked="" type="checkbox"/> FAST [1] <input type="checkbox"/> MODERATE [1] <input checked="" type="checkbox"/> MODERATE [1] <input type="checkbox"/> SLOW [1] <input checked="" type="checkbox"/> SLOW [1] <input type="checkbox"/> INTERSTITIAL [-1] <input checked="" type="checkbox"/> INTERSTITIAL [-1] <input type="checkbox"/> INTERMITTENT [-2] <input checked="" type="checkbox"/> INTERMITTENT [-2] <input type="checkbox"/> EDDIES [1] <input checked="" type="checkbox"/> EDDIES [1]	<p><b>Recreation Potential</b></p> <p><b>Primary Contact</b></p> <p><b>Secondary Contact</b> (circle one and comment on back)</p>
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**Comments:**

Pool / Current  
7  
 Maximum 12

**Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:** Check ONE (Or 2 & average).  NO RIFFLE [metric=0]

<p><b>RIFFLE DEPTH</b></p> <input checked="" type="checkbox"/> BEST AREAS > 10cm [2] <input checked="" type="checkbox"/> BEST AREAS > 10cm [2] <input type="checkbox"/> BEST AREAS 5-10cm [1] <input type="checkbox"/> BEST AREAS 5-10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric=0] <input type="checkbox"/> BEST AREAS < 5cm [metric=0]	<p><b>RUN DEPTH</b></p> <input checked="" type="checkbox"/> MAXIMUM > 50cm [2] <input checked="" type="checkbox"/> MAXIMUM > 50cm [2] <input type="checkbox"/> MAXIMUM < 50cm [1] <input type="checkbox"/> MAXIMUM < 50cm [1]	<p><b>RIFFLE / RUN SUBSTRATE</b></p> <input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<p><b>RIFFLE / RUN EMBEDDEDNESS</b></p> <input type="checkbox"/> NONE [2] <input type="checkbox"/> NONE [2] <input checked="" type="checkbox"/> LOW [1] <input checked="" type="checkbox"/> LOW [1] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1] <input type="checkbox"/> EXTENSIVE [-1]
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**Comments:**

Riffle / Run  
6  
 Maximum 8

**6] GRADIENT** ( 33.3 ft/mi)  VERY LOW - LOW [2-4]  VERY LOW - LOW [2-4]  
**DRAINAGE AREA** ( 8.9 mi<sup>2</sup>)  MODERATE [6-10]  MODERATE [6-10]  
 HIGH - VERY HIGH [10-6]  HIGH - VERY HIGH [10-6]

**%POOL:**  **%GLIDE:**   
**%RUN:**  **%RIFFLE:**

**Comments:**

Gradient  
8  
 Maximum 10

**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
  - WADE
  - L. LINE
  - OTHER
- STAGE**
- 1st - sample pass-- 2nd
  - HIGH
  - UP
  - NORMAL
  - LOW
  - DRY
- DISTANCE**
- 0.5 Km
  - 0.2 Km
  - 0.15 Km
  - 0.12 Km
  - OTHER

**CLARITY**

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

**CANOPY**

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

**CJ RECREATION**

POOL:  >100r<sup>2</sup>  >3ft

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

**EJ ISSUES**

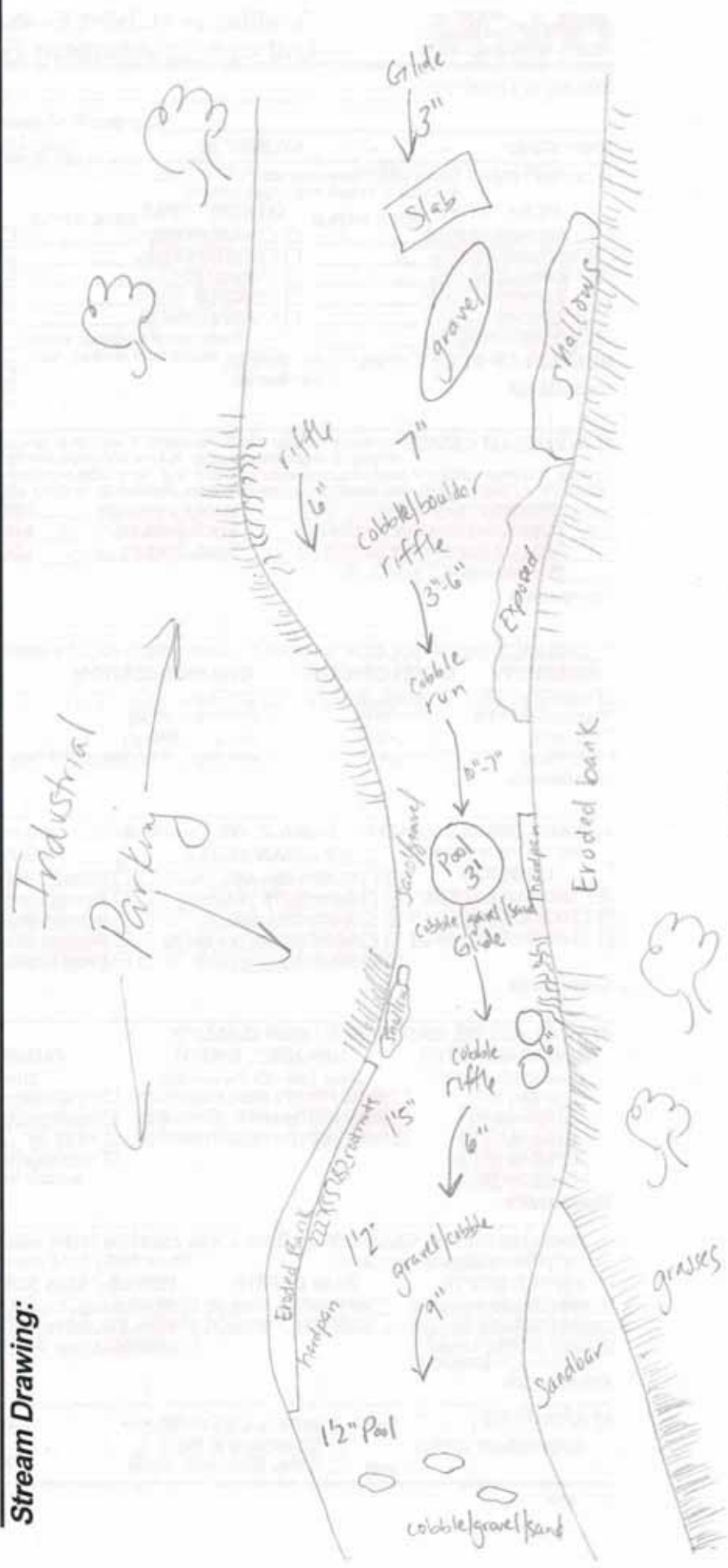
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- $\bar{x}$  width
- $\bar{x}$  depth
- max. depth
- $\bar{x}$  bankfull width
- bankfull  $\bar{x}$  depth
- W/D ratio
- bankfull max. depth
- floodprone  $\bar{x}$  width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**





**Stream & Location:** WEST CREEK - SITE # 9A **RM:** 2.1 **Date:** 06/21/07  
**UPSTREAM OF LINDSEY DR. DENVERTON OF I-480** **Scorers Full Name & Affiliation:** CATHY ZAMBORSKY - NEORS  
**River Code:** - - - **STORET #:** - - - **Lat./ Long.:** 41.4134 181.6706 (NAD 83 - decimal °) **Office verified location**

**1] SUBSTRATE** Check ONLY Two substrate TYPE BOXES. estimate % or note every type present

<b>BEST TYPES</b>	<b>POOL</b>	<b>RIFFLE</b>	<b>OTHER TYPES</b>	<b>POOL</b>	<b>RIFFLE</b>	<b>ORIGIN</b>	<b>QUALITY</b>
<input type="checkbox"/> BLDR / SLABS [10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input checked="" type="checkbox"/> EXTENSIVE [-2]
<input checked="" type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<small>(Score natural substrates; ignore sludge from point-sources)</small>			<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]

**NUMBER OF BEST TYPES:**  4 or more [2]  3 or less [0]

**Comments**

**Substrate** 9  
Maximum 20

**2] INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input checked="" type="checkbox"/> POOLS > 70cm [2]	<input checked="" type="checkbox"/> OXBOWS, BACKWATERS [1]	<b>AMOUNT</b>
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> ROOTWADS [1]	<input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	Check ONE (Or 2 & average)
<input checked="" type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> BOULDERS [1]	<input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input checked="" type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> MODERATE 25-75% [7]
			<input checked="" type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

**Comments**

**Cover** 10  
Maximum 20

**3] CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<b>SINUOSITY</b>	<b>DEVELOPMENT</b>	<b>CHANNELIZATION</b>	<b>STABILITY</b>
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input checked="" type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments**

**Channel** 8  
Maximum 20

**4] BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

<b>EROSION</b>	<b>RIPARIAN WIDTH</b>	<b>FLOOD PLAIN QUALITY</b>	<b>CONSERVATION</b>
<input type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> CONSERVATION TILLAGE [1]
<input checked="" type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input checked="" type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
	<input checked="" type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

**Comments**

**Riparian** 2.5  
Maximum 10

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

<b>MAXIMUM DEPTH</b>	<b>CHANNEL WIDTH</b>	<b>CURRENT VELOCITY</b>	<b>Recreation Potential</b>
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	<b>Primary Contact</b>
<input checked="" type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<b>Secondary Contact</b>
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> SLOW [1]	(circle one and comment on back)
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input checked="" type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input checked="" type="checkbox"/> MODERATE [1]	
		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	

**Comments**

**Pool / Current** 11  
Maximum 12

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average).  NO RIFFLE [metric=0]

<b>RIFFLE DEPTH</b>	<b>RUN DEPTH</b>	<b>RIFFLE / RUN SUBSTRATE</b>	<b>RIFFLE / RUN EMBEDDEDNESS</b>
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input checked="" type="checkbox"/> EXTENSIVE [-1]

**Comments** RIFFLE-LIKE AREAS BUT NOT FUNCTIONAL.

**Riffle / Run** 0  
Maximum 8

**6] GRADIENT** ( 36.4 ft/mi)  VERY LOW - LOW [2-4]  MODERATE [6-10]  HIGH - VERY HIGH [10-6]

**DRAINAGE AREA** ( 8.3 mi<sup>2</sup>)

**%POOL:**    **%GLIDE:**   

**%RUN:**    **%RIFFLE:**   

**Comments**

**Gradient** 8  
Maximum 10

Comment RE: Reach consistency/Is reach typical of stream? - Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
  - WADE
  - L. LINE
  - OTHER
- DISTANCE**
- 0.5 Km
  - 0.2 Km
  - 0.15 Km
  - 0.12 Km
  - OTHER

**STAGE**

- 1st -sample pass-- 2nd
- HIGH
  - UP
  - NORMAL
  - LOW
  - DRY

**CLARITY**

- 1st --sample pass-- 2nd
- < 20 cm
  - 20-40 cm
  - 40-70 cm
  - > 70 cm/CTB
  - SECCHI DEPTH
- meters

**CANOPY**

- > 85% - OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10% - CLOSED

**CJ RECREATION**

AREA DEPTH POOL:  >100ft<sup>2</sup>  >3ft

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

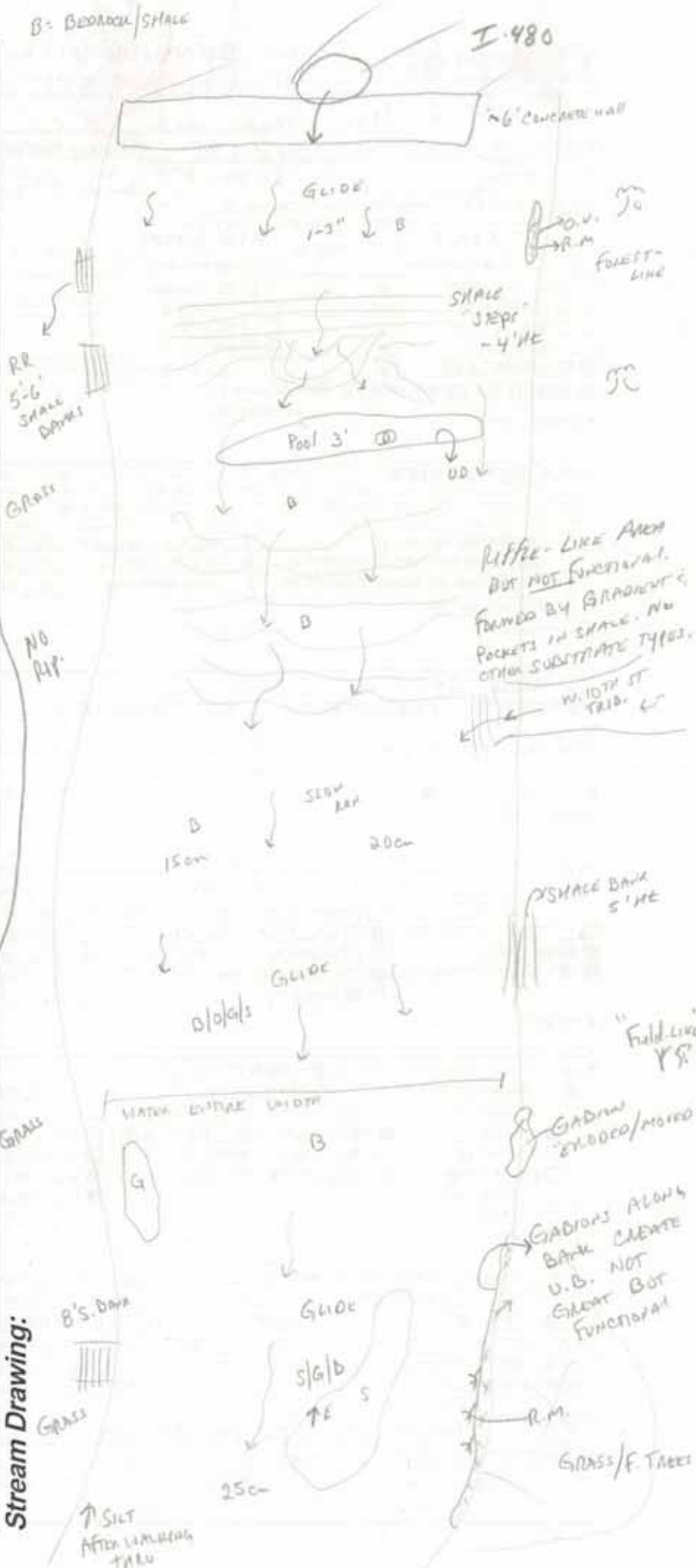
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- $\bar{x}$  width
- $\bar{x}$  depth
- max. depth
- $\bar{x}$  bankfull width
- bankfull  $\bar{x}$  depth
- W/D ratio
- bankfull max. depth
- floodprone  $\bar{x}$  width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**



Stream & Location: W49 Creek #9B @ Brookline Heights Park RM: 2.4 Date: 10/21/07

Scorers Full Name & Affiliation: Tiffany Moore - NEDESO

River Code: - STORET #: - Lat./ Long.: 41.4120 / 81.7477 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES, estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES: BDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK. OTHER TYPES: HARDPAN, DETRITUS, MUCK, SILT, ARTIFICIAL. ORIGIN: LIMESTONE, TILLS, WETLANDS, HARDPAN, SANDSTONE, RIP/RAP, LACUSTURINE, SHALE, COAL FINES. QUALITY: HEAVY, MODERATE, NORMAL, FREE, EXTENSIVE, MODERATE, NORMAL, NONE. Substrate score: 10.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT: EXTENSIVE >75%, MODERATE 25-75%, SPARSE 5-<25%, NEARLY ABSENT <5%. UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Cover score: 4.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY: HIGH, MODERATE, LOW, NONE. DEVELOPMENT: EXCELLENT, GOOD, FAIR, POOR. CHANNELIZATION: NONE, RECOVERED, RECOVERING, RECENT OR NO RECOVERY. STABILITY: HIGH, MODERATE, LOW. Channel score: 11.5.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). RIVER RIGHT LOOKING DOWNSTREAM. EROSION: NONE/LITTLE, MODERATE, HEAVY/SEVERE. RIPARIAN WIDTH: WIDE > 50m, MODERATE 10-50m, NARROW 5-10m, VERY NARROW < 5m, NONE. FLOOD PLAIN QUALITY: FOREST, SWAMP, SHRUB OR OLD FIELD, RESIDENTIAL, PARK, NEW FIELD, FENCED PASTURE, OPEN PASTURE, ROWCROP. CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION. Riparian score: 8.5.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH: > 1m, 0.7-<1m, 0.4-<0.7m, 0.2-<0.4m, < 0.2m. CHANNEL WIDTH: POOL WIDTH > RIFFLE WIDTH, POOL WIDTH = RIFFLE WIDTH, POOL WIDTH < RIFFLE WIDTH. CURRENT VELOCITY: TORRENTIAL, VERY FAST, FAST, MODERATE, SLOW, INTERSTITIAL, INTERMITTENT, EDDIES. Recreation Potential: Primary Contact, Secondary Contact. Pool / Current score: 6.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]. RIFFLE DEPTH: BEST AREAS > 10cm, BEST AREAS 5-10cm, BEST AREAS < 5cm. RUN DEPTH: MAXIMUM > 50cm, MAXIMUM < 50cm. RIFFLE / RUN SUBSTRATE: STABLE, MOD. STABLE, UNSTABLE. RIFFLE / RUN EMBEDDEDNESS: NONE, LOW, MODERATE, EXTENSIVE. Riffle / Run score: 4.

6] GRADIENT (63.4 ft/mi) DRAINAGE AREA (8.0 mi^2) VERY LOW - LOW [2-4], MODERATE [6-10], HIGH - VERY HIGH [10-6]. %POOL, %GLIDE, %RUN, %RIFFLE. Gradient score: 4.

### AJ SAMPLED REACH

Check ALL that apply

#### METHOD

- BOAT
  - WADE
  - L. LINE
  - OTHER
- 1st -sample pass-- 2nd
- HIGH
  - UP
  - NORMAL
  - LOW
  - DRY

#### DISTANCE

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

#### CLARITY

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/CTB
- SECCHI DEPTH

meters

#### CANOPY

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

#### CJ RECREATION

- POOL:  >100R2  >3R

#### BJ AESTHETICS

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

#### DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

#### EJ ISSUES

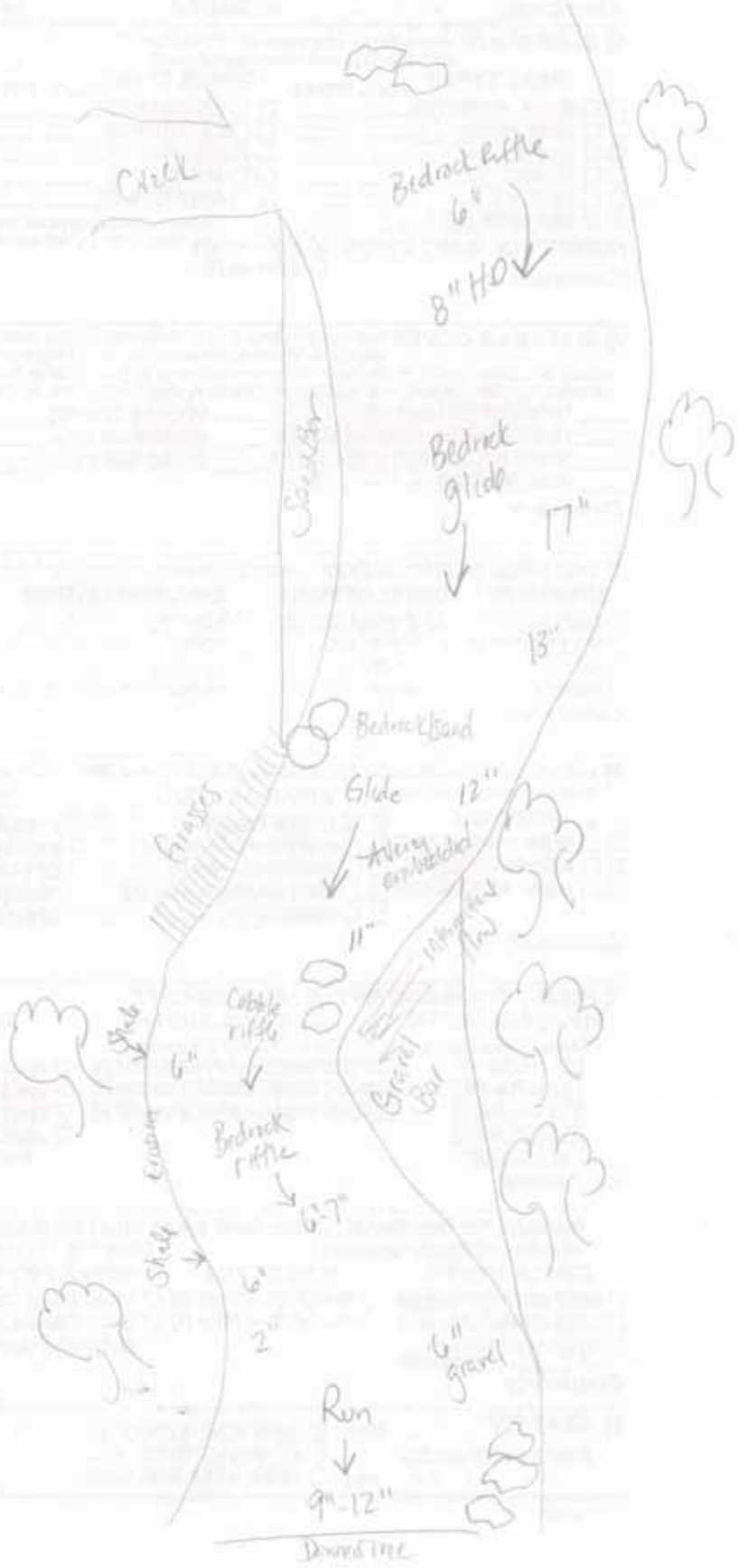
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

#### FJ MEASUREMENTS

- $\bar{x}$  width
- $\bar{x}$  depth
- max. depth
- $\bar{x}$  bankfull width
- bankfull  $\bar{x}$  depth
- W/D ratio
- bankfull max. depth
- floodprone  $\bar{x}^2$  width
- entrench. ratio

Legacy Tree:

### Stream Drawing:



**Stream & Location:** West Creek - Site #11 **RM:** 3.65 **Date:** 06/22/07

Upstream of BROADWAY ROAD **Scorers Full Name & Affiliation:** Cathy Zamiaty - NEBRSD

**River Code:** - **STORET #:** - **Lat./ Long.:** 41.4103 181.6992 (NAD 83 - decimal) **Office verified location**

**1) SUBSTRATE** Check **ONLY** Two substrate **TYPE BOXES**; estimate % or note every type present

<b>BEST TYPES</b>		<b>POOL RIFFLE</b>		<b>OTHER TYPES</b>		<b>POOL RIFFLE</b>		<b>ORIGIN</b>		<b>QUALITY</b>	
<input type="checkbox"/>	BLDR/SLABS [10]	<input type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	HARDPAN [4]	<input type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	LIMESTONE [1]	<input type="checkbox"/>	HEAVY [-2]
<input type="checkbox"/>	BOULDER [9]	<input checked="" type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	DETRITUS [3]	<input type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	TILLS [1]	<input type="checkbox"/>	MODERATE [-1]
<input type="checkbox"/>	COBBLE [8]	<input checked="" type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	MUCK [2]	<input type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	WETLANDS [0]	<input type="checkbox"/>	NORMAL [0]
<input type="checkbox"/>	GRAVEL [7]	<input checked="" type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	SILT [2]	<input type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	HARDPAN [0]	<input type="checkbox"/>	FREE [1]
<input type="checkbox"/>	SAND [6]	<input checked="" type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	ARTIFICIAL [0]	<input type="checkbox"/>	POOL RIFFLE	<input type="checkbox"/>	SANDSTONE [0]	<input type="checkbox"/>	EXTENSIVE [-2]
<input checked="" type="checkbox"/>	BEDROCK [5]	<input checked="" type="checkbox"/>	POOL RIFFLE	<small>(Score natural substrates; ignore sludge from point-sources)</small>				<input type="checkbox"/>	RIP/RAP [0]	<input type="checkbox"/>	MODERATE [-1]

**NUMBER OF BEST TYPES:**  4 or more [2]  3 or less [0]

**Comments**

**2) INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<u>0</u>	UNDERCUT BANKS [1]	<u>0</u>	POOLS > 70cm [2]	<u>0</u>	OXBOWS, BACKWATERS [1]
<u>0</u>	OVERHANGING VEGETATION [1]	<u>0</u>	ROOTWADS [1]	<u>0</u>	AQUATIC MACROPHYTES [1]
<u>2</u>	SHALLOWS (IN SLOW WATER) [1]	<u>1</u>	BOULDERS [1]	<u>0</u>	LOGS OR WOODY DEBRIS [1]
<u>1</u>	ROOTMATS [1]				

**AMOUNT** Check ONE (Or 2 & average)

EXTENSIVE >75% [11]  
 MODERATE 25-75% [7]  
 SPARSE 5-<25% [3]  
 NEARLY ABSENT <5% [1]

**Comments**

**3) CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<input type="checkbox"/> HIGH [4] <input type="checkbox"/> MODERATE [3] <input checked="" type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1]	<input type="checkbox"/> EXCELLENT [7] <input type="checkbox"/> GOOD [5] <input type="checkbox"/> FAIR [3] <input checked="" type="checkbox"/> POOR [1]	<input checked="" type="checkbox"/> NONE [6] <input type="checkbox"/> RECOVERED [4] <input type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	<input checked="" type="checkbox"/> HIGH [3] <input checked="" type="checkbox"/> MODERATE [2] <input type="checkbox"/> LOW [1]
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**Comments**

**4) BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for **EACH BANK** (Or 2 per bank & average)

River right looking downstream

<input checked="" type="checkbox"/> NONE / LITTLE [3] <input checked="" type="checkbox"/> MODERATE [2] <input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> WIDE > 50m [4] <input checked="" type="checkbox"/> MODERATE 10-50m [3] <input checked="" type="checkbox"/> NARROW 5-10m [2] <input type="checkbox"/> VERY NARROW < 5m [1] <input type="checkbox"/> NONE [0]	<input type="checkbox"/> FOREST, SWAMP [3] <input type="checkbox"/> SHRUB OR OLD FIELD [2] <input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input type="checkbox"/> FENCED PASTURE [1] <input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	<input type="checkbox"/> CONSERVATION TILLAGE [1] <input type="checkbox"/> URBAN OR INDUSTRIAL [0] <input type="checkbox"/> MINING / CONSTRUCTION [0]
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**Comments**

**5) POOL / GLIDE AND RIFFLE / RUN QUALITY**

<b>MAXIMUM DEPTH</b> Check ONE (ONLY) <input type="checkbox"/> > 1m [6] <input type="checkbox"/> 0.7-<1m [4] <input checked="" type="checkbox"/> 0.4-<0.7m [2] <input type="checkbox"/> 0.2-<0.4m [1] <input type="checkbox"/> < 0.2m [0]	<b>CHANNEL WIDTH</b> Check ONE (Or 2 & average) <input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<b>CURRENT VELOCITY</b> Check ALL that apply <input type="checkbox"/> TORRENTIAL [-1] <input checked="" type="checkbox"/> SLOW [1] <input type="checkbox"/> VERY FAST [1] <input type="checkbox"/> INTERSTITIAL [-1] <input checked="" type="checkbox"/> FAST [1] <input type="checkbox"/> INTERMITTENT [-2] <input checked="" type="checkbox"/> MODERATE [1] <input type="checkbox"/> EDDIES [1]
---	---	--

**Recreation Potential**  
**Primary Contact**  
**Secondary Contact**  
(circle one and comment on back)

**Comments**

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

<b>RIFFLE DEPTH</b> <input type="checkbox"/> BEST AREAS > 10cm [2] <input type="checkbox"/> BEST AREAS 5-10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric=0]	<b>RUN DEPTH</b> <input type="checkbox"/> MAXIMUM > 50cm [2] <input type="checkbox"/> MAXIMUM < 50cm [1]	<b>RIFFLE / RUN SUBSTRATE</b> <input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<b>RIFFLE / RUN EMBEDDEDNESS</b> <input type="checkbox"/> NONE [2] <input type="checkbox"/> LOW [1] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1]
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**Comments** No functional riffles; Bedrock substrate

**6) GRADIENT** (48.4 ft/mi)  VERY LOW - LOW [2-4]  MODERATE [6-10]  HIGH - VERY HIGH [10-6]

**DRAINAGE AREA** (6.6 mi<sup>2</sup>)

**% POOL:**  **% GLIDE:**   
**% RUN:**  **% RIFFLE:**

**Comments**

**AJ SAMPLED REACH**

Check ALL that apply

- METHOD**
- BOAT
  - WADE
  - L. LINE
  - OTHER
- STAGE**
- HIGH
  - UP
  - NORMAL
  - LOW
  - DRY
- DISTANCE**
- 0.5 Km
  - 0.2 Km
  - 0.15 Km
  - 0.12 Km
  - OTHER

- CLARITY**
- 1st -sample pass- 2nd
- < 20 cm
  - 20-40 cm
  - 40-70 cm
  - > 70 cm/ GTB
  - SECCHI DEPTH

- CANOPY**
- > 85% - OPEN
  - 55% - 85%
  - 30% - 55%
  - 10% - 30%
  - < 10% - CLOSED

- CJ RECREATION**
- AREA DEPTH
- POOL:  > 100R2  > 3ft

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

FJ MEASUREMENTS	EJ ISSUES	DJ MAINTENANCE	Circle some & COMMENT
<ul style="list-style-type: none"> <li><input type="checkbox"/> <math>\bar{x}</math> width</li> <li><input type="checkbox"/> <math>\bar{x}</math> depth</li> <li><input type="checkbox"/> max. depth</li> <li><input type="checkbox"/> <math>\bar{x}</math> bankfull width</li> <li><input type="checkbox"/> bankfull <math>\bar{x}</math> depth</li> <li><input type="checkbox"/> W/D ratio</li> <li><input type="checkbox"/> bankfull max. depth</li> <li><input type="checkbox"/> floodprone <math>x^2</math> width</li> <li><input type="checkbox"/> entrench. ratio</li> </ul>	<ul style="list-style-type: none"> <li>WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&amp;GRIME</li> <li>CONTAMINATED / LANDFILL</li> <li>BMPs-CONSTRUCTION-SEDIMENT</li> <li>LOGGING / IRRIGATION / COOLING</li> <li>BANK / EROSION / SURFACE</li> <li>FALSE BANK / MANURE / LAGOON</li> <li>WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE</li> <li>ACID / MINE / QUARRY / FLOW</li> <li>NATURAL / WETLAND / STAGNANT</li> <li>PARK / GOLF / LAWN / HOME</li> <li>ATMOSPHERE / DATA PAUCITY</li> </ul>	<ul style="list-style-type: none"> <li>PUBLIC / PRIVATE / BOTH / NA</li> <li>ACTIVE / HISTORIC / BOTH / NA</li> <li>YOUNG-SUCCESSION-OLD</li> <li>SPRAY / SNAG / REMOVED</li> <li>MODIFIED / DIPPED OUT / NA</li> <li>LEVEED / ONE SIDED</li> <li>RELOCATED / CUTOFFS</li> <li>MOVING-BEDLOAD-STABLE</li> <li>ARMOURED / SLUMPS</li> <li>ISLANDS / SCOURED</li> <li>IMPOUNDED / DESICCATED</li> <li>FLOOD CONTROL / DRAINAGE</li> </ul>	

- BJ AESTHETICS**
- NUISANCE ALGAE
  - INVASIVE MACROPHYTES
  - EXCESS TURBIDITY
  - DISCOLORATION
  - FOAM / SCUM
  - OIL SHEEN
  - TRASH / LITTER
  - NUISANCE ODOR
  - SLUDGE DEPOSITS
  - CSOs/SSOs/OUTFALLS

**Stream Drawing:**



**Stream & Location:** West Creek #14 @ West Pleasant Valley Rd. **RM:** 7.9 **Date:** 6/22/07

**Scorers Full Name & Affiliation:** Tiffany Moore - MEORSD

**River Code:** - - **STORET #:** - **Lat./ Long.:** 41.31630 / 81.6894 (NAD 83 - decimal) **Office verified location**

**1] SUBSTRATE** Check **ONLY** Two substrate **TYPE** BOXES; estimate % or note every type present

<b>BEST TYPES</b>	<b>POOL RIFFLE</b>	<b>OTHER TYPES</b>	<b>POOL RIFFLE</b>	<b>ORIGIN</b>	<b>QUALITY</b>
<input type="checkbox"/> BLDG / SLABS [10]	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input checked="" type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input checked="" type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> NORMAL [0]
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input checked="" type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>	<small>(Score natural substrates; ignore sludge from point-sources)</small>		<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]

**NUMBER OF BEST TYPES:**  4 or more [2]  3 or less [0]

**Comments**

**2] INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

<b>UNDERCUT BANKS [1]</b>	<b>POOLS &gt; 70cm [2]</b>	<b>OXBOWS, BACKWATERS [1]</b>	<b>AMOUNT</b>
<b>OVERHANGING VEGETATION [1]</b>	<b>ROOTWADS [1]</b>	<b>AQUATIC MACROPHYTES [1]</b>	Check ONE (Or 2 & average)
<b>SHALLOWS (IN SLOW WATER) [1]</b>	<b>BOULDERS [1]</b>	<b>LOGS OR WOODY DEBRIS [1]</b>	<input type="checkbox"/> EXTENSIVE >75% [11]
<b>ROOTMATS [1]</b>			<input checked="" type="checkbox"/> MODERATE 25-75% [7]
			<input type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]

**Comments**

**3] CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

<b>SINUOSITY</b>	<b>DEVELOPMENT</b>	<b>CHANNELIZATION</b>	<b>STABILITY</b>
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input checked="" type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments**

**4] BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

<b>EROSION</b>	<b>RIPARIAN WIDTH</b>	<b>FLOOD PLAIN QUALITY</b>	<b>CONSERVATION TILLAGE [1]</b>
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

**Comments**

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

<b>MAXIMUM DEPTH</b>	<b>CHANNEL WIDTH</b>	<b>CURRENT VELOCITY</b>	<b>Recreation Potential</b>
Check ONE (ONLY)	Check ONE (Or 2 & average)	Check ALL that apply	<b>Primary Contact</b>
<input type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	<b>Secondary Contact</b>
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	(circle one and comment on back)
<input checked="" type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input checked="" type="checkbox"/> MODERATE [1]	
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	

**Comments**

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average).  NO RIFFLE [metric=0]

<b>RIFFLE DEPTH</b>	<b>RUN DEPTH</b>	<b>RIFFLE / RUN SUBSTRATE</b>	<b>RIFFLE / RUN EMBEDDEDNESS</b>
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]

**Comments**

**6] GRADIENT** (55.0 ft/mi)  VERY LOW - LOW [2-4] **% POOL:**  **% GLIDE:**

**DRAINAGE AREA** (1.9 mi<sup>2</sup>)  MODERATE [6-10] **% RUN:**  **% RIFFLE:**

HIGH - VERY HIGH [10-6] **Gradient Maximum** 4

Comment RE: Reach consistency/ Is reach typical of stream? - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

**AJ SAMPLED REACH**

Check ALL that apply

**METHOD STAGE**

- BOAT
- WADE
- L. LINE
- OTHER
- DISTANCE
- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

1st - sample pass - 2nd

- HIGH
- UP
- NORMAL
- LOW
- DRY

**CLARITY**

- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

meters

**CANOPY**

- > 85% - OPEN
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - CLOSED

**CJ RECREATION**

POOL:  > 100r2  > 3ft

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOs/SSOs/OUTFALLS

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

**EJ ISSUES**

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- $\bar{x}$  width
- $\bar{x}$  depth
- max. depth
- $\bar{x}$  bankfull width
- bankfull  $\bar{x}$  depth
- W/D ratio
- bankfull max. depth
- floodprone  $\bar{x}^2$  width
- entrench, ratio
- Legacy Tree:

**Stream Drawing:**

