

Stream & Location: West Creek Broadview Rd. RM: 3.65 Date: 7/23/14

Zabotny Soehalen Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: - - - STORET #: Lat./Long.: 41.4103 181.6943 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, POOL RIFFLE, OTHER TYPES, POOL RIFFLE, ORIGIN, SILT, QUALITY, and NUMBER OF BEST TYPES.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS, and AMOUNT.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY, and Channel Maximum.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, and Riparian Maximum.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY Includes categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, and Recreation Potential.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species. Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS, and Riffle / Run Maximum.

6] GRADIENT (48.4 ft/ml) DRAINAGE AREA (623 m^2) Includes categories: GRADIENT, DRAINAGE AREA, %POOL, %GLIDE, %RUN, %RIFFLE, and Gradient Maximum.

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

meters

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

CJ RECREATION

- AREA DEPTH
POOL: >100ft >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 / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

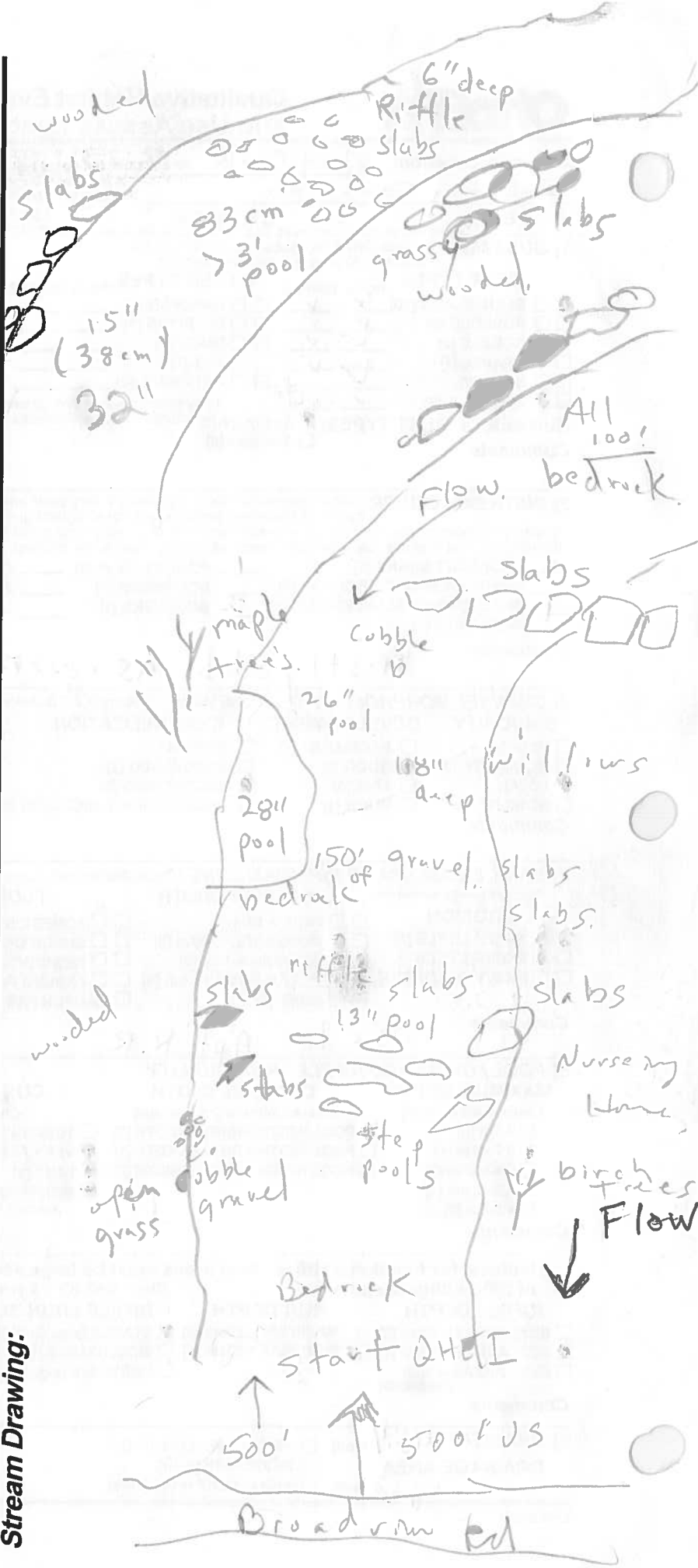
- WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / 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:





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 46.75

Stream & Location: West Creek Broadview Rd **RM:** 3.65 **Date:** 7/2/14

Zablotny, Soehnen **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District

River Code: - - **STORET #:** - - **Lat./Long.:** 41.4103 181.6943 (NAD 83 - decimal °) **Office verified location**

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

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE	ORIGIN	QUALITY
<input type="checkbox"/> BLDR /SLABS [10]	<input checked="" type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/>	<input type="checkbox"/> LIMESTONE [1]	<input checked="" type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> SILT	<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 checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [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"/> RIP/RAP [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input checked="" type="checkbox"/> BEDROCK [5]	<input checked="" type="checkbox"/>	<small>(Score natural substrates; ignore sludge from point-sources)</small>		<input type="checkbox"/> LAGUSTURINE [0]	<input checked="" type="checkbox"/> MODERATE [-1]
NUMBER OF BEST TYPES: <input checked="" type="checkbox"/> 4 or more [2] <input type="checkbox"/> 3 or less [0]				<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]
Comments				<input type="checkbox"/> COAL FINES [-2]	Substrate 11.5 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.

<input checked="" type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> AMOUNT
<input checked="" type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input 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 type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> MODERATE 25-75% [7]
Comments			<input checked="" type="checkbox"/> SPARSE 5-<25% [3]
			<input type="checkbox"/> NEARLY ABSENT <5% [1]
			Cover Maximum 20 6

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<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 checked="" type="checkbox"/> MODERATE [2]
<input checked="" type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input checked="" 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			Channel Maximum 20 10

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

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input checked="" 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		Indicate predominant land use(s) past 100m riparian.
		<input type="checkbox"/> CONSERVATION TILLAGE [1]
		<input checked="" type="checkbox"/> URBAN OR INDUSTRIAL [0]
		<input type="checkbox"/> MINING / CONSTRUCTION [0]
		Riparian Maximum 10 3.75

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	Primary Contact
<input type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Secondary Contact
<input checked="" type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input checked="" type="checkbox"/> VERY FAST [1]	<small>(circle one and comment on back)</small>
<input checked="" type="checkbox"/> 0.4-<0.7m [2]	<input checked="" type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> 0.2-<0.4m [1]		<input type="checkbox"/> INTERSTITIAL [-1]	
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> INTERMITTENT [-2]	
Comments		<input checked="" type="checkbox"/> MODERATE [1]	Pool / Current Maximum 12 6
		<input type="checkbox"/> EDDIES [1]	
		<small>Indicate for reach - pools and riffles.</small>	

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

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input checked="" type="checkbox"/> NONE [2]
<input checked="" 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 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 Maximum 8 5.5

6] GRADIENT (48.4 ft/ml) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-8]

DRAINAGE AREA (6.3 mi²)

%POOL: **%GLIDE:**

%RUN: **%RIFFLE:**

Gradient
Maximum 10 4

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: <100ft² >3ft

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 / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

BJ AESTHETICS

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

Circle some & COMMENT

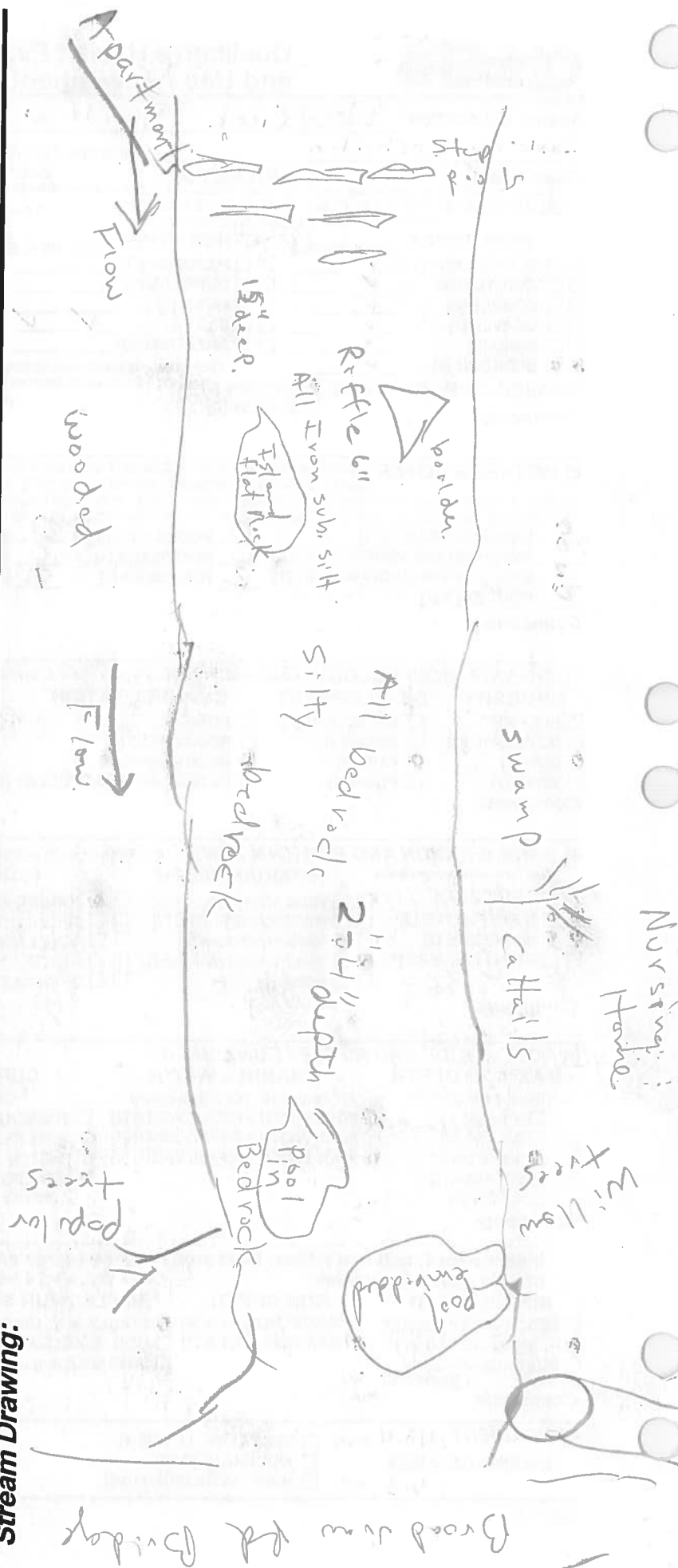
EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O 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:





Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 66.0

Stream & Location: West Creek D.S I480 off Lancaster **RM:** 2.10 **Date:** 7/2/14
Zablotny Soehalen **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District

River Code: - **STORET #:** - **Lat./ Long.:** 41.4103 181.6943 **Office verified location**

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

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE	ORIGIN	QUALITY
<input checked="" type="checkbox"/> BLDR /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 type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input checked="" type="checkbox"/> SILTS [1]	<input type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input type="checkbox"/> GRAVEL [7]	<input 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 type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input checked="" type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	(Score natural substrates; ignore)		<input type="checkbox"/> RIP/RAP [0]	<input checked="" type="checkbox"/> MODERATE [-1]

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0] **sludge from point-sources**

Comments

Substrate
17.5
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.

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

Comments

Cover
Maximum 20
10

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<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 type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input checked="" type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel
Maximum 20
9.5

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

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY
<input type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<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 checked="" type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Comments

Riparian
Maximum 10
5.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY	Recreation Potential
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply	Primary Contact
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	Secondary Contact
<input type="checkbox"/> 0.7-<1m [4]	<input checked="" 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 type="checkbox"/> FAST [1]	
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> MODERATE [1]	

Comments

Pool / Current
Maximum 12
11

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average).

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input checked="" 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]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

Riffle / Run
Maximum 8
4.5

6] GRADIENT (36.4 ft/mi) VERY LOW - LOW [2-4] **% POOL:** **% GLIDE:**
DRAINAGE AREA (8.7 mi²) MODERATE [6-10] **% RUN:** **% RIFFLE:**
 HIGH - VERY HIGH [10-6] **Gradient** Maximum 10

Gradient
Maximum 10
8

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
- SECHI DEPTH

CANOPY

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

CJ RECREATION

AREA DEPTH
POOL: >100ft >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

EJ ISSUES

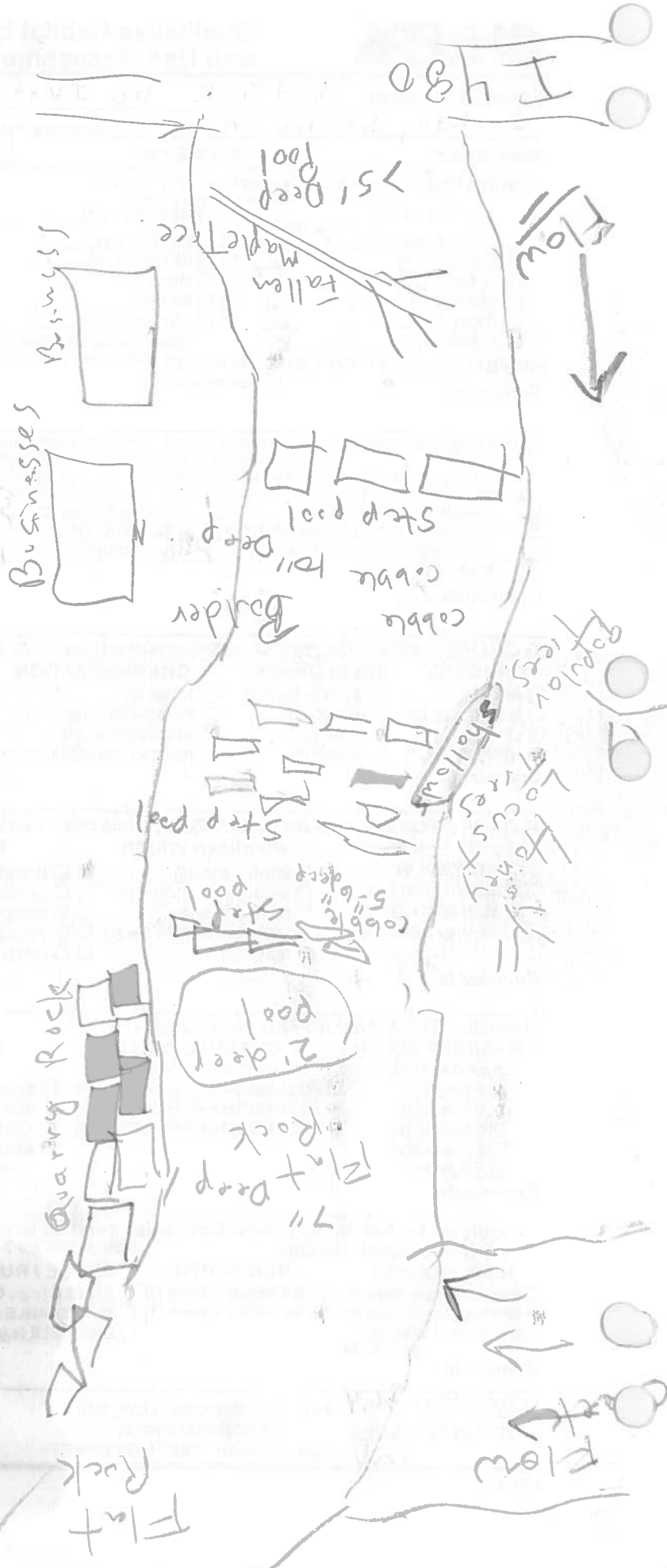
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- 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:



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

Stream & Location: West Creek P.S. Lancaster RM: 1.60 Date: 7/12/14

Zablotny Soehnlen Scores Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: STORET #: Lat./ Long.: 18 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Includes categories: BEST TYPES, OTHER TYPES, ORIGIN, and QUALITY. Includes a 'Substrate' box with value 19.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts... Includes categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes a 'Cover' box with value 6.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). Includes categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes a 'Channel' box with value 10.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). Includes categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Includes a 'Riparian' box with value 3.5.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes a 'Recreation Potential' box with Primary Contact and Secondary Contact. Includes a 'Pool / Current' box with value 8.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). Includes categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes a 'Riffle / Run' box with value 4.

6] GRADIENT (33.3 ft/mi) DRAINAGE AREA (18.9 mi^2). Includes categories: VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. Includes a 'Gradient' box with value 8.

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

CLARITY

- 1st --sample pass-- 2nd
- < 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: < 100ft² > 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 / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

EJ ISSUES

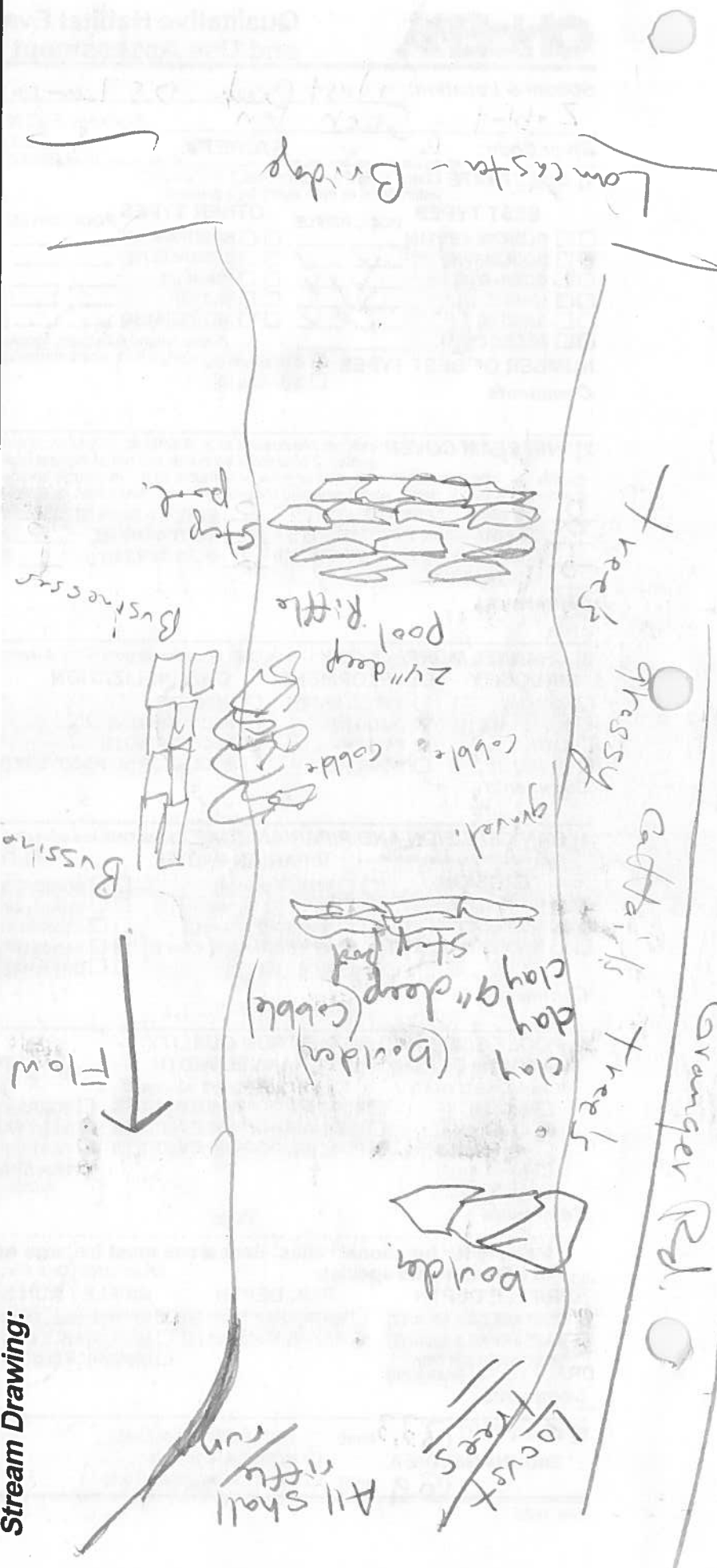
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- 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:



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

Stream & Location: West Creek, Graner + Schaaf Rd. RM: 0.20 Date: 12/8/14

Zablotny T.

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: STORET #: Lat./ Long.: 41.4145 781.6477 Office verified location

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

Substrate assessment grid with categories: BEST TYPES, POOL RIFFLE, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY, and EMBEDDEDNESS. Includes checkboxes for various substrate types and a score box for 18.

Comments: post habitat renovation.

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

Instream Cover assessment grid with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS. Includes checkboxes and a score box for 9.

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

Channel Morphology assessment grid with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes and a score box for 11.

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. Includes checkboxes and a score box for 5.

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

Pool / Glide and Riffle / Run Quality assessment grid with categories: MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY, Recreation Potential. Includes checkboxes and a score box for 8.

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 / Run Substrate assessment grid with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes and a score box for 4.5.

6) GRADIENT (5.4 ft/ml) DRAINAGE AREA (13.2 ml²) VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. Includes % POOL, % GLIDE, % RUN, % RIFFLE and a score box for 6.

AJ SAMPLED REACH

Check ALL that apply

- | METHOD | STAGE |
|----------------------------------|--|
| <input type="checkbox"/> BOAT | 1st -sample pass- 2nd |
| <input type="checkbox"/> WADE | <input type="checkbox"/> HIGH <input type="checkbox"/> |
| <input type="checkbox"/> L. LINE | <input type="checkbox"/> UP <input type="checkbox"/> |
| <input type="checkbox"/> OTHER | <input type="checkbox"/> NORMAL <input type="checkbox"/> |
| | <input type="checkbox"/> LOW <input type="checkbox"/> |
| | <input type="checkbox"/> DRY <input type="checkbox"/> |

DISTANCE

- | | |
|----------------------------------|--|
| <input type="checkbox"/> 0.5 Km | CLARITY |
| <input type="checkbox"/> 0.2 Km | 1st -sample pass- 2nd |
| <input type="checkbox"/> 0.15 Km | <input type="checkbox"/> < 20 cm <input type="checkbox"/> |
| <input type="checkbox"/> 0.12 Km | <input type="checkbox"/> 20-40 cm <input type="checkbox"/> |
| <input type="checkbox"/> OTHER | <input type="checkbox"/> 40-70 cm <input type="checkbox"/> |
| | <input type="checkbox"/> > 70 cm/ CTB <input type="checkbox"/> |
| | <input type="checkbox"/> SECCHI DEPTH <input type="checkbox"/> |

- meters
- CANOPY**
- | | |
|---|--------------|
| <input type="checkbox"/> > 85% - OPEN | 1st _____ cm |
| <input type="checkbox"/> 55% - < 85% | 2nd _____ cm |
| <input type="checkbox"/> 30% - < 55% | |
| <input type="checkbox"/> 10% - < 30% | |
| <input type="checkbox"/> < 10% - CLOSED | |

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

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

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

- DJ MAINTENANCE**
- Circle some & COMMENT
- 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 H₂O / TILE / H₂O 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 x^2 width
 - entrench. ratio
- Legacy Tree:

Stream Drawing:

