

Stream & Location: Chagrin River Upstream Miles Road

RM: 29.00 Date: 7/30/21

Mark Matteson

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 15-001-000 STORET #: D01521 Lat./Long.: 41.4260 -81.3989

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

Check ONE (Or 2 & average)

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE
☐ BLDR /SLABS [10]	☒	☐ HARDPAN [4]	☒
☐ BOULDER [9]	☒	☐ DETRITUS [3]	☐
☒ COBBLE [8]	☒	☐ MUCK [2]	☐
☐ GRAVEL [7]	☒	☐ SILT [2]	☐
☐ SAND [6]	☒	☐ ARTIFICIAL [0]	☐
☐ BEDROCK [5]	☐		

ORIGIN

☐ LIMESTONE [1]

☒ TILLS [1]

☐ WETLANDS [0]

☐ HARDPAN [0]

☐ SANDSTONE [0]

☐ RIP/RAP [0]

☐ LACUSTURINE [0]

☐ SHALE [-1]

☐ COAL FINES [-2]

QUALITY

☐ HEAVY [-2]

☐ MODERATE [-1]

☒ NORMAL [0]

☐ FREE [1]

☐ EXTENSIVE [-2]

☒ MODERATE [-1]

☒ NORMAL [0]

☐ NONE [1]

Substrate
Maximum
20
16.5NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

14+2+1-0.5

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.

AMOUNT

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]

☐ OVERHANGING VEGETATION [1]

☐ SHALLOWS (IN SLOW WATER) [1]

☒ ROOTMATS [1]

☒ POOLS > 70cm [2]

☐ ROOTWADS [1]

☐ BOULDERS [1]

☐ OXBOWS, BACKWATERS [1]

☐ AQUATIC MACROPHYTES [1]

☐ LOGS OR WOODY DEBRIS [1]

☐ EXTENSIVE >75% [11]

☒ MODERATE 25-75% [7]

☐ SPARSE 5-<25% [3]

☐ NEARLY ABSENT <5% [1]

Comments

7+7

Cover
Maximum
20
14

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☒ HIGH [3]
☒ MODERATE [3]	☒ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments

3+5+6+3

Channel
Maximum
20
17

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

River right looking downstream

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

Comments

3+4+1

Indicate predominant land use(s)
past 100m riparian.
Riparian
Maximum
10
8

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

☒ > 1m [6]

☐ 0.7-<1m [4]

☐ 0.4-<0.7m [2]

☐ 0.2-<0.4m [1]

☐ < 0.2m [0]

☐ POOL WIDTH > RIFFLE WIDTH [2]

☒ POOL WIDTH = RIFFLE WIDTH [1]

☐ POOL WIDTH < RIFFLE WIDTH [0]

☐ TORRENTIAL [-1]

☒ VERY FAST [1]

☒ FAST [1]

☒ MODERATE [1]

☐ SLOW [1]

☐ INTERSTITIAL [-1]

☐ INTERMITTENT [-2]

☐ EDDIES [1]

Indicate for reach - pools and riffles.

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

Comments

6+1+3

Pool /
Current
Maximum
12
10

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
☒ BEST AREAS > 10cm [2]	☒ MAXIMUM > 50cm [2]	☒ STABLE (e.g., Cobble, Boulder) [2]	☒ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☒ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☐ EXTENSIVE [-1]

Comments

2+2+2+1.5

Riffle /
Run
Maximum
8
7.5

6) GRADIENT (32.6 ft/mi)

DRAINAGE AREA

(58 mi²)

☐ VERY LOW - LOW [2-4]

☐ MODERATE [6-10]

☐ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

%RUN:

%RIFFLE:

Gradient
Maximum
10
4

A7 SAMPLED REACH

Check ALL that apply

METHOD

1st -sample pass- 2nd

☐	BOAT	☐	HIGH	☐
☐	WADE	☐	UP	☐
☐	L. LINE	☐	NORMAL	☐
☐	OTHER	☐	LOW	☐
	DISTANCE	☐	DRY	☐

DISTANCE

☐ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☐ OTHER

meters

CANOPY

☐ > 85%- OPEN

☐ 55%-<85%

☐ 30%-<55%

☐ 10%-<30%

☐ <10%- CLOSE

C7 RE

POOL: ☐ >100ft² ☐ >3ft

B1 AESTHETICS

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

D1 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 / SLIMPS
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

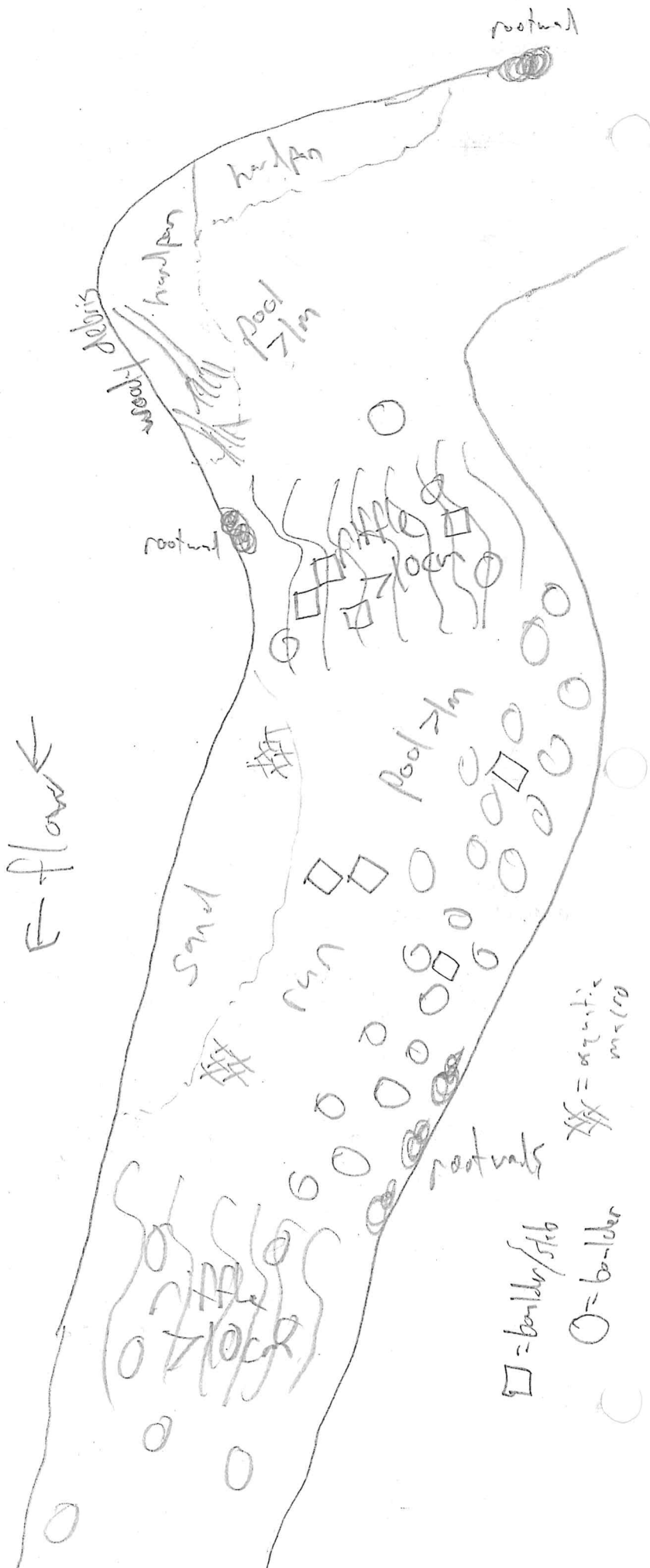
E7 ISSUES

F) MEASUREMENTS

F7 MEASUREMENTS

Legacy Tree:

Stream Drawing:



Stream & Location: Chagrin River US Willey Creek/S. Chagrin Reservoir RM: 26.70 Date: 6/30/21

JUSTIN TELEP DMILES 24 Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 15-001-000 STORET #: DP01 P03 Lat./ Long.: 41.4250 -81.4176 Office verified location ☐

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

Check ONE (Or 2 & average)

BEST TYPES		POOL RIFFLE	OTHER TYPES		POOL RIFFLE	ORIGIN		QUALITY		Substrate Maximum 20
☒ BLDR /SLABS [10]	☒	☒	☐ HARDPAN [4]	☐	☐	☐ LIMESTONE [1]	☐ HEAVY [-2]	☐	16.5	
☐ BOULDER [9]	☐	☐	☐ DETRITUS [3]	☐	☐	☐ TILLS [1]	☐ MODERATE [-1]	☐		
☐ COBBLE [8]	☐	☐	☐ MUCK [2]	☐	☐	☐ WETLANDS [0]	☒ NORMAL [0]	☐		
☐ GRAVEL [7]	☐	☐	☐ SILT [2]	☐	☐	☐ HARDPAN [0]	☐ FREE [1]	☐		
☐ SAND [6]	☐	☐	☐ ARTIFICIAL [0]	☐	☐	☐ SANDSTONE [0]	☐ EXTENSIVE [-2]	☐		
☐ BEDROCK [5]	☐	☐	(Score natural substrates; ignore sludge from point-sources)		☐	☐ RIP/RAP [0]	☐ MODERATE [-1]	☐		
NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0]						SILT		EMBEDDEDNESS		
Comments 15+2+0.5+0						☒ LACUSTURINE [0]		☐ NORMAL [0]		
						☒ SHALE [-1]		☐ NONE [1]		
						☐ COAL FINES [-2]				

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.

AMOUNT

Check ONE (Or 2 & average)

UNDERCUT BANKS [1]		POOLS > 70cm [2]		OXBOWS, BACKWATERS [1]		AMOUNT		
☐ OVERHANGING VEGETATION [1]	☐	☐ ROOTWADS [1]	☐	☐ AQUATIC MACROPHYTES [1]	☐	☐ EXTENSIVE >75% [11]	8	
☐ SHALLOWS (IN SLOW WATER) [1]	☐	☐ BOULDERS [1]	☐	☐ LOGS OR WOODY DEBRIS [1]	☐	☐ MODERATE 25-75% [7]		
☐ ROOTMATS [1]	☐					☒ SPARSE 5-<25% [3]		
						☐ NEARLY ABSENT <5% [1]		

Comments

Cover
Maximum
20

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☒ HIGH [3]
☒ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]
☒ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments 2.5+5+6+3

Channel
Maximum
20

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

* River right looking downstream

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		CONSERVATION TILLAGE [1]	
☒ NONE / LITTLE [3]	☒	☒ WIDE > 50m [4]	☒	☒ FOREST, SWAMP [3]	☒	☐ URBAN OR INDUSTRIAL [0]	8.75
☐ MODERATE [2]	☐	☐ MODERATE 10-50m [3]	☐	☐ SHRUB OR OLD FIELD [2]	☐	☐ MINING / CONSTRUCTION [0]	
☐ HEAVY / SEVERE [1]	☐	☐ NARROW 5-10m [2]	☐	☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐		
		☐ VERY NARROW < 5m [1]	☐	☐ FENCED PASTURE [1]	☐	Indicate predominant land use(s) past 100m riparian.	
		☐ NONE [0]	☐	☐ OPEN PASTURE, ROWCROP [0]	☐		

Comments 2.75+4+2

Riparian
Maximum
10

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

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

☒ > 1m [6]	☒ POOL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1]	☒ SLOW [1]
☐ 0.7-<1m [4]	☐ POOL WIDTH = RIFFLE WIDTH [1]	☐ VERY FAST [1]	☐ INTERSTITIAL [-1]
☐ 0.4-<0.7m [2]	☐ POOL WIDTH < RIFFLE WIDTH [0]	☒ FAST [1]	☐ INTERMITTENT [-2]
☐ 0.2-<0.4m [1]		☒ MODERATE [1]	☒ EDDIES [1]
☐ < 0.2m [0]		Indicate for reach - pools and riffles.	

Comments 6+2+4

Pool /
Current
Maximum
12

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

☐ NO RIFFLE [metric=0]

Check ONE (Or 2 & average).

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

Comments 2+1+2+1.5

Riffle /
Run
Maximum
86) GRADIENT (37.04 ft/mi) ☐ VERY LOW - LOW [2-4] ☐ MODERATE [6-10] ☐ HIGH - VERY HIGH [10-6]

DRAINAGE AREA

(122 mi²)

%POOL: 30

%GLIDE: 5

%RUN: 35

%RIFFLE: 30

Gradient
Maximum
10

AJ SAMPLED REACH

Check ALL that apply

METHOD

STAGE
1st sample pass-- 2nd

☐ 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

1st pass _____ cm
2nd pass _____ cm

CANOPY

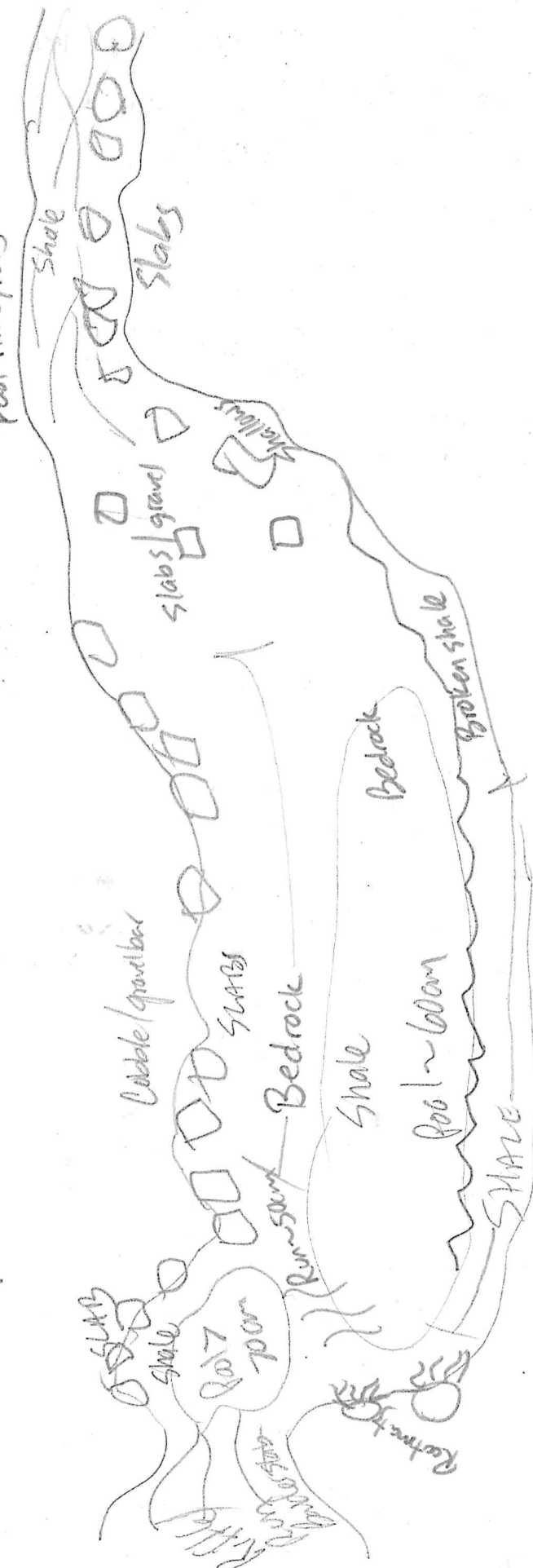
☒ > 85%- OPEN
☐ 55%-<85%
☐ 30%-<55%
☐ 10%-<30%
☐ <10%- CLOSED

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

Shale slabs broken off from the majority of best substrate types. Pool predominantly shale bedrock in deeper parts, with mostly sand, boulder slabs, and fine gravel along the banks. An exposed bedrock cliff on river right shows layers of shale siltstone and sandstone mixed throughout.

FJ MEASUREMENTS		EJ ISSUES		DJ MAINTENANCE		BJ AESTHETICS		CJ RECREATION	
☐ width	☐ depth	WWTP / CSO / NPDES / INDUSTRY	Circle some & COMMENT	PUBLIC / PRIVATE / BOTH / NA	NUISANCE ALGAE	NUISANCE ALGAE	AREA DEPTH	POOL: ☒ >100R2 ☐ >3ft	
☐ max. depth	☐ bankfull width	HARDENED / URBAN / DIRT&GRIME		ACTIVE / HISTORIC / BOTH / NA	INVASIVE MACROPHYTES	INVASIVE MACROPHYTES			
☐ bankfull width	☐ bankfull x depth	CONTAMINATED / LANDFILL		YOUNG-SUCCESSION-OLD	EXCESS TURBIDITY	EXCESS TURBIDITY			
☐ W/D ratio	☐ bankfull max. depth	BMPs-CONSTRUCTION-SEDIMENT		SPRAY / SNAG / REMOVED	DISCOLORATION	DISCOLORATION			
☐ floodprone x ² width	☐ entrench. ratio	LOGGING / IRRIGATION / COOLING		MODIFIED / DIPPED OUT / NA	FOAM / SCUM	FOAM / SCUM			
☐ Legacy Tree:		BANK / EROSION / SURFACE		LEVEED / ONE SIDED	OIL SHEEN	OIL SHEEN			
		FALSE BANK / MANURE / LAGOON		RELOCATED / CUTOFFS	TRASH / LITTER	TRASH / LITTER			
		WASH H ₂ O / TILE / H ₂ O TABLE		MOVING-BEDLOAD-STABLE	NUISANCE ODOR	NUISANCE ODOR			
		ACID / MINE / QUARRY / FLOW		ARMOURED / SLUMPS	SLUDGE DEPOSITS	SLUDGE DEPOSITS			
		NATURAL / WETLAND / STAGNANT		ISLANDS / SCOURED	CSOs/SSOs/OUTFALLS	CSOs/SSOs/OUTFALLS			
		PARK / GOLF / LAWN / HOME		IMPOUNDED / DESICCATED					
		ATMOSPHERE / DATA PAUCITY		FLOOD CONTROL / DRAINAGE					

Stream Drawing: Flow →



Stream & Location: Chagrin River DST Pepper Luce CreekRM: 22.60 Date: 08/05/21

JUSTIN TELEP

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer DistrictRiver Code: 15-001-000 STORET #: 301454 Lat./Long.: 41.4707 -81.4053Office verified location ☐1) **SUBSTRATE** Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

- | BEST TYPES | POOL RIFFLE | OTHER TYPES | POOL RIFFLE |
|--|-------------------------------------|---|--------------------------|
| ☐ BLDR /SLABS [10] | ☒ | ☐ HARDPAN [4] | ☐ |
| ☐ BOULDER [9] | ☒ | ☐ DETRITUS [3] | ☐ |
| ☒ COBBLE [8] | ☒ | ☐ MUCK [2] | ☐ |
| ☐ GRAVEL [7] | ☒ | ☐ SILT [2] | ☐ |
| ☒ SAND [6] | ☒ | ☐ ARTIFICIAL [0] | ☐ |
| ☐ BEDROCK [5] | ☐ | | |

- | ORIGIN |
|---|
| ☐ LIMESTONE [1] |
| ☐ TILLS [1] |
| ☐ WETLANDS [0] |
| ☐ HARDPAN [0] |
| ☒ SANDSTONE [0] |
| ☐ RIP/RAP [0] |
| ☐ LACUSTURINE [0] |
| ☐ SHALE [-1] |
| ☐ COAL FINES [-2] |

- | QUALITY |
|--|
| ☐ HEAVY [-2] |
| ☐ MODERATE [-1] |
| ☒ NORMAL [0] |
| ☐ FREE [1] |
| ☐ EXTENSIVE [-2] |
| ☐ MODERATE [-1] |
| ☒ NORMAL [0] |
| ☐ NONE [1] |

Substrate
16
Maximum
20NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

14 + 2 + 0 + 0 + 0

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.

AMOUNT

Check ONE (Or 2 & average)

- | | | |
|---|--|---|
| ☐ UNDERCUT BANKS [1] | ☒ POOLS > 70cm [2] | ☐ OXBOWS, BACKWATERS [1] |
| ☐ OVERHANGING VEGETATION [1] | ☐ ROOTWADS [1] | ☐ AQUATIC MACROPHYTES [1] |
| ☐ SHALLOWS (IN SLOW WATER) [1] | ☐ BOULDERS [1] | ☐ LOGS OR WOODY DEBRIS [1] |
| ☐ ROOTMATS [1] | | |

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

Comments

5 + 3

Cover
Maximum
20
83) **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

- | SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY |
|--|---|--|--|
| ☒ HIGH [4] | ☒ EXCELLENT [7] | ☒ NONE [6] | ☐ HIGH [3] |
| ☒ MODERATE [3] | ☒ GOOD [5] | ☐ RECOVERED [4] | ☒ MODERATE [2] |
| ☐ LOW [2] | ☐ FAIR [3] | ☐ RECOVERING [3] | ☐ LOW [1] |
| ☐ NONE [1] | ☐ POOR [1] | ☐ RECENT OR NO RECOVERY [1] | |

Comments

3.5 + 6 + 6 + 2

Channel
Maximum
20
17.54) **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

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

Indicate predominant land use(s) past 100m riparian.

Comments

2.5 + 4 + 2.5

Riparian
Maximum
10
95) **POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

- | |
|--|
| ☒ > 1m [6] |
| ☐ 0.7-<1m [4] |
| ☐ 0.4-<0.7m [2] |
| ☐ 0.2-<0.4m [1] |
| ☐ < 0.2m [0] |

- | |
|---|
| ☒ POOL WIDTH > RIFFLE WIDTH [2] |
| ☐ POOL WIDTH = RIFFLE WIDTH [1] |
| ☐ POOL WIDTH < RIFFLE WIDTH [0] |

- | | |
|--|--|
| ☐ TORRENTIAL [-1] | ☐ SLOW [1] |
| ☐ VERY FAST [1] | ☐ INTERSTITIAL [-1] |
| ☒ FAST [1] | ☐ INTERMITTENT [-2] |
| ☒ MODERATE [1] | ☒ EDDIES [1] |

Indicate for reach - pools and riffles.

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

Comments

6 + 2 + 4

Pool /
Current
Maximum
12
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]

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

Comments

2 + 2 + 1.5 + 1

Riffle /
Run
Maximum
8
6.56) **GRADIENT** (12.66 ft/mi)
DRAINAGE AREA (153 mi²)
☐ VERY LOW - LOW [2-4]
☐ MODERATE [6-10]
☒ HIGH - VERY HIGH [10-6]%POOL: **25** %GLIDE: **5**
%RUN: **30** %RIFFLE: **40**Gradient
Maximum
10
8

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

POOL: ☐ > 100ft² ☐ > 3ft

BJAESTHETICS

- 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 ☐ ARMOURD / SLUMPS ☐ ISLANDS / SCOURED ☐ IMPOUNDED / DESICCATED ☐ FLOOD CONTROL / DRAINAGE ☐

EJ ISSUES

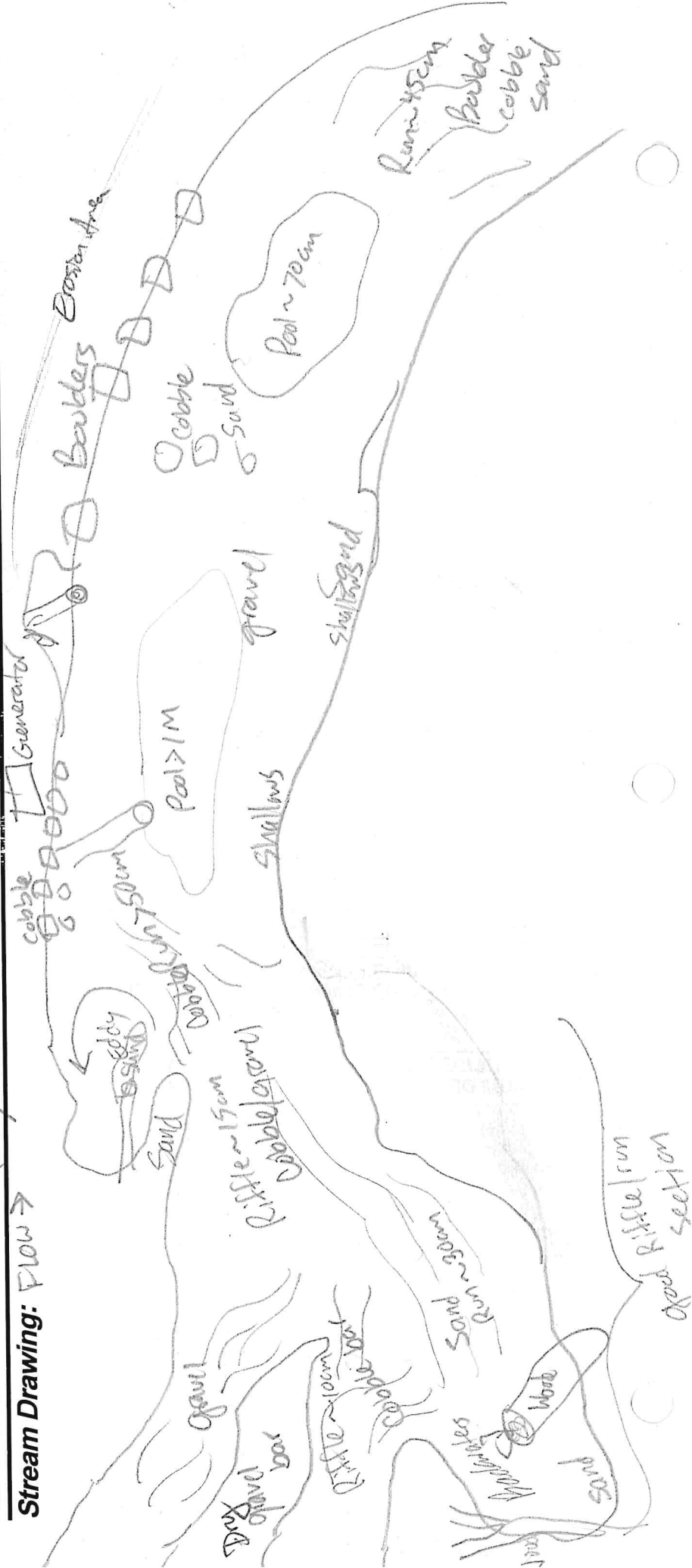
- WWTP / CSO / NPDES / INDUSTRY ☐ HARDENED / URBAN / DIRT&GRIME ☐ CONTAMINATED / LANDFILL ☐ BMPs-CONSTRUCTION-SEDIMENT ☐ LOGGING / IRRIGATION / COOLING ☐ BANK / EROSION / SURFACE ☐ FALSE BANK / MANURE / LAGOON ☐ WASH H₂O / TILE / H₂O TABLE ☐ ACID / MINE / QUARRY / FLOW ☐ NATURAL / WETLAND / STAGNANT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



Stream & Location: Willey Creek DSE Jackson Valley WWTP **RM:** 1.00 **Date:** 6/25/21

Just-in TELEP **DA:** 3.70 mi **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District
River Code: 15-004-000 **STORET #:** DP01P24 **Lat./Long.:** 41.4360 -81.4242 (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		Substrate 17 Maximum 20
☐ BLDR /SLABS [10]	☒	☒	☒	☐ HARDPAN [4]	☒	☐ LIMESTONE [1]	☒	☐ TILLS [1]	☒	☐ HEAVY [-2]	SILT EMBEDDEDNESS	
☐ BOULDER [9]	☒	☒	☒	☐ DETRITUS [3]	☒	☐ WETLANDS [0]	☒	☐ HARDPAN [0]	☒	☐ MODERATE [-1]		
☒ COBBLE [8]	☒	☒	☒	☐ MUCK [2]	☒	☐ SANDSTONE [0]	☒	☐ RIP/RAP [0]	☒	☐ NORMAL [0]		
☐ GRAVEL [7]	☒	☒	☒	☐ SILT [2]	☒	☐ LACUSTURINE [0]	☒	☐ SHALE [-1]	☒	☐ EXTENSIVE [-2]		
☐ SAND [6]	☒	☒	☒	☐ ARTIFICIAL [0]	☒	☐ COAL FINES [-2]	☒	☐ NONE [1]	☒	☐ MODERATE [-1]		
☐ BEDROCK [5]	☒	☒	☒							☐ FREE [1]		

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

Comments 15+2+0.5-0.5

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.

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

Comments 6+7

Cover
Maximum 20 13

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☐ HIGH [3]
☒ MODERATE [3]	☒ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments 3+5+6+2

Channel
Maximum 20 16

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

River right looking downstream

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

Comments 2+3.5+2

Riparian
Maximum 10 7.5

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		
☐ > 1m [6]	☒ 0.7-<1m [4]	☒ POOL WIDTH > RIFFLE WIDTH [2]	☐ POOL WIDTH = RIFFLE WIDTH [1]	☐ TORRENTIAL [-1]	☒ SLOW [1]	Pool / Current Maximum 12 9
☐ 0.4-<0.7m [2]	☐ 0.2-<0.4m [1]	☐ POOL WIDTH < RIFFLE WIDTH [0]		☒ VERY FAST [1]	☐ INTERSTITIAL [-1]	
☐ < 0.2m [0]				☒ FAST [1]	☐ INTERMITTENT [-2]	
				☒ MODERATE [1]	☐ EDDIES [1]	

Comments 4+2+3

Riffle / Run
Maximum 8 5.5

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
☒ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☒ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☒ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☒ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☐ EXTENSIVE [-1]

Comments 2+1+1.5+1

6] GRADIENT (83.3 ft/mi) ☐ VERY LOW - LOW [2-4] ☐ MODERATE [6-10] ☐ HIGH - VERY HIGH [10-6] **%POOL:** **%GLIDE:** **%RUN:** **%RIFFLE:** **Gradient** Maximum 10 4

DRAINAGE AREA (3.70 mi²)

Stream & Location: Pepper-Luce CreekRM: 3.20 Date: 08/05/21

JUSTIN TELEP

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer DistrictRiver Code: 15-001-008 STORET #: 301455 Lat./Long.: 41.4721 -81.4404Office verified location ☐1) SUBSTRATE Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE
☐ BLDR /SLABS [10]	☒ ☒	☐ HARDPAN [4]	☐
☐ BOULDER [9]	☒ ☒	☐ DETRITUS [3]	☐
☒ COBBLE [8]	☒ ☒	☐ MUCK [2]	☐
☒ GRAVEL [7]	☒ ☒	☐ SILT [2]	☐
☐ SAND [6]	☒ ☐	☐ ARTIFICIAL [0]	☒
☐ BEDROCK [5]	☐		

ORIGIN

☒ LIMESTONE [1]

☒ TILLS [1]

☐ WETLANDS [0]

☐ HARDPAN [0]

☐ SANDSTONE [0]

☐ RIP/RAP [0]

☐ LACUSTURINE [0]

☐ SHALE [-1]

☐ COAL FINES [-2]

QUALITY

☐ HEAVY [-2]

☒ MODERATE [-1]

☐ NORMAL [0]

☐ FREE [1]

☐ EXTENSIVE [-2]

☒ MODERATE [-1]

☐ NORMAL [0]

☐ NONE [1]

Substrate

16

Maximum 20

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

(Score natural substrates; ignore sludge from point-sources)

Comments

15 + 2 + 1 - 2

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.

AMOUNT

Check ONE (Or 2 & average)

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

☐ EXTENSIVE >75% [11]

☒ MODERATE 25-75% [7]

☐ SPARSE 5-<25% [3]

☐ NEARLY ABSENT <5% [1]

Comments

7 + 2

Cover

14

Maximum 20

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☒ NONE [6]	☒ HIGH [3]
☒ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]
☐ LOW [2]	☒ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Comments

Pools deep; riffles w/ coarse substrate but shallow & slow

3 + 3 + 6 + 3

Channel

15

Maximum 20

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

Comments

2.5 + 4 + 2

Indicate predominant land use(s) past 100m riparian.

Riparian

8.5

Maximum 10

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

☒ > 1m [6]

☐ 0.7-<1m [4]

☐ 0.4-<0.7m [2]

☐ 0.2-<0.4m [1]

☐ < 0.2m [0]

☒ POOL WIDTH > RIFFLE WIDTH [2]

☐ POOL WIDTH = RIFFLE WIDTH [1]

☐ POOL WIDTH < RIFFLE WIDTH [0]

☐ TORRENTIAL [-1]

☒ SLOW [1]

☐ VERY FAST [1]

☐ INTERSTITIAL [-1]

☐ FAST [1]

☐ INTERMITTENT [-2]

☒ MODERATE [1]

☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments

6 + 2 + 2

Pool / Current

16

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]

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

Comments

1 + 1 + 2 + 0

Riffle / Run

4

Maximum 8

6) GRADIENT (9.62 ft/mi)

DRAINAGE AREA

(7.5 mi²)☒ VERY LOW - LOW [2-4]☒ MODERATE [6-10]☐ HIGH - VERY HIGH [10-6]

%POOL: 30

%GLIDE: 30

%RUN: 15

%RIFFLE: 25

Gradient

6

Maximum 10

[illegible]