Gills Creek Monitoring Sites Monitoring Data Summary for January 17th, 2020 – February 19th, 2020

Data Gaps

- The GILA station sonde was buried in sediment for a brief period beginning on January 31st. The turbidity, DO, and pH sensors were buried, so the data for those parameters were removed from January 31st until February 5th after a field visit to clear the sonde of sediment.
- The GILB and GILC stations did not have any interruptions in the data during this monitoring period.
- The website experienced reporting issues with the pressure transducers at GILA from January 18th to January 22nd, therefore no CS451 data was recorded during that brief period.

SCDHEC Standards

- None of the Gills Creek monitoring stations recorded any pH readings outside of the acceptable SCDHEC range of 6 to 8.5
- The GILA station recorded an average DO value of 10.2 mg/L, the GILB station recorded an average DO value of 10.3 mg/L, and the GILC station recorded an average DO value of 9.4 mg/L, all of which are above the SCDHEC daily average DO standard of 5 mg/L.
- During this deployment period, the GILA, GILB, and GILC stations recorded minimum DO levels of 8.9 mg/L, 8 mg/L, and 7.3 mg/L, respectively. All the stations in the Gills Creek watershed recorded DO values above the SCDHEC instantaneous minimum standard of 4 mg/L.

Storm Events

- The GILA station recorded 7 storm events resulting in approximately 6.1 inches of rainfall. The GILB station recorded 7 storms that resulted in approximately 6.4 inches of rainfall. The GILC station recorded 7 storms that resulted in approximately 6.7 inches of rainfall.
- The monitored water quality parameters all displayed typical storm event response patterns during the recorded storm events in the Gills Creek watershed.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 6.5 days at each of the Gills Creek stations, occurring prior to the February 13th storm event.

Potential Illicit Discharges and Abnormal Events

At the GILB and GILC station, a decrease in stage was observed on January 29th, likely caused by activity occurring in Lake Katherine, upstream of GILB. The stage increased to normal baseflow conditions on January 30th. During this brief period of low stage, some water quality parameters were impacted as follows: specific conductivity increased, DO decreased, and pH increased.

Flow Measurements

No flow measurements were taken in Gills Creek during this monitoring period.





Gills Creek A (Jan 17, 2020 - Feb 19, 2020)

	CONTINUOUS SUMMARY STATISTICS														
PARAMETER	DESC	CRIPTION			ER QUA AMETER		MINIM OBSER		MAXIMU OBSERV		MEDIAN OBSERVED	ME OBSE		STAND/ DEVIAT	
STREAM NAME:	Gill	ls Creek		STA	GE (FT):		2.3	3	5.9		2.9	3.	.0	0.6	
LOCATION:		Drive Bridge		TEM	PERATU	RE					F0				
ADDRESS:		orest Drive, ia, SC 2920		(°F):		48		61		53	5	3	3		
COORDINATES:	34.01982	6, -80.9635	66	TURBIDITY (NTU):		9		243		21	2	3	13		
TMDL/IMPAIRMENT:	Fecal & Dis	ssolved Oxy	gen	, ,											
NEIGHBORING LANDUSE:	Residential	and comme	ercial	pH:		6.3		7.2		6.5	6.	.5	0.1		
APPROX. DRAINAGE AREA:	48 sq	uare miles		,											
SPATIAL LOCATION:	Most up	pstream site)		CIFIC	_,									_
TOTAL NO. STORMS OVER 0.1 INCH:		7		(mS/	DUCTIVI cm):	TY	0.03	3	0.060		0.043	0.0)42	0.003	
MAX. DAILY RAINFALL:	2.6	inches			OLVED		8.9		11.4		10.0	10	12	0.8	
TOTAL RAINFALL (FOR PERIOD):	6.1	inches		OXY	GEN (mg	ı/L):	0.0				10.0	10	,. <u>_</u>	0.0	
11 -					St	age & Rair	ıfall							- 0	
# 9 11 at 7														0 1	0.0 0.5 1.0 1.5 2.0 2.5
7, 28, 28, 27, 27, 28, 28, 28, 28, 28, 28, 28, 28, 28, 28								N	<u> </u>	—				1 2	1.5 2.0
1 1/17 1/19 1/21	1/23	1/25 1/	/27	1/29	1/31	2/2	2/4	2/6	2/8	2/10	2/12	2/14 2		2/18	1.5
70						Water Ter	np								
_{г.} 60			_										\downarrow		
50				^	_	_									
40 +	1/23	1/25 1	1/27	1/29	1/31	2/2	2/4	2/6	2/8	2/10	2/12	2/14	2/16	2/18	
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								48	4						
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0.07					S	pecific Cor	ductivity								
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85 0.06 0.05 0.04		_	+	-		+	+	-	~-						
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1/1/ 1/15 1//	1/23	1/23	1/4/	1/ 27	1/31	4/4	2/4	2/0	2/0	2/10	2/12	2/14	2/10	۷/ 10	
SCDHEC in-stream stan	dard: Daily averag	ge not less than	ı 5 mg/L wi	th a low of	4 mg/L	Dissolve	d Oxygen					4 mg/L (SCDHEC L	ow Standard)	
13 T															
11 19 9 E 7 5															

1/25

1/27

1/29

1/31

1/17

1/19

1/21

1/23

2/2

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2/6

2/8

2/10

2/12

2/14

2/16

Gills Creek A (Jan 17, 2020 - Feb 19, 2020)

Explanation of Statistics:

MINIMUM OBSERVED	The minimum of the values recorded by the datasonde in 15 minute intervals.
MAXIMUM OBSERVED	The maximum of the values recorded by the datasonde in 15 minute intervals.
MEDIAN OBSERVED	The median of all the values recorded by the datasonde in 15 minute intervals.
MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Sampled Data:

	Sample 1		Sample 2		Sample 3		Sample 4	
Analyte (units)	2/6/	2020	2/6/	2020	2/6/	2020		
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	12:04	196	13:17	40	15:20	148		
Total Suspended Solids (mg/L)	12:04	7.3	13:17	7.2	15:20	7.1		
Total Phosphorus (mg/L)	12:04	0.022						
Total Nitrogen (mg/L)	12:04	0.76						

Notes:

Samples 1, 2, and 3 were taken during wet weather conditions.





Gills Creek B (Jan 17, 2020 - Feb 19, 2020)

DADAMETER				CONTINUOUS			SUMMARY STATISTICS						
PARAMETER	DESCI	RIPTION			R QUALIT METERS:		MINIMUM OBSERVE		MAXIMUM DBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARI DEVIATION	
STREAM NAME:	Gills	Creek		DISCH	ARGE (CF	·S):	9.6		870.0	128.0	164.1	112.3	
LOCATION:		treet bridge		TEMPE	RATURE		47		62	53	E4	4	
ADDRESS:		vine Street . SC 29209		(°F):			47		63	53	54	4	
COORDINATES:	33.989656			TURBIDITY (NTU):			44 700	07 05	35	33			
TMDL/IMPAIRMENT:	Fecal & Diss	olved Oxy	gen				14		766	27	33	33	
NEIGHBORING LANDUSE:	Residential a	nd comme	rcial	pH:			6.3		6.8	6.5	6.5	0.1	
APPROX. DRAINAGE AREA:	59 squ	are miles		pri.			0.3		0.0	0.5	0.5	0.1	
SPATIAL LOCATION:	Mido	lle site		SPECI	FIC								
TOTAL NO. STORMS OVER 0.1 INCH:		7		CONDI (mS/cr	UCTIVITY n):		0.029		0.081	0.050	0.049	0.005	
MAX. DAILY RAINFALL:	2.9 ii	nches		DISSO	LVED		8.0		44.4	40.4	40.2	0.5	
TOTAL RAINFALL (FOR PERIOD):	6.4	nches		OXYGI	EN (mg/L):	:	8.0		11.4	10.4	10.3	0.5	
This discharge data is fro	om the USGS 02169	570 Gills Cree	ek station.		Discha	rge & Rair	nfall			-	-	-	
1200 £ 900						- · · · · · · · · · · · · · · · · · · ·						0.0	
90,600 1/17 1/10 1/21								_/				0.0 0.5 1.0 1.5 2.0	
0				+	9			— —	1			2.0	
70 60 50	~~~	^	~	~~	Wat	ter Temp	_^_^	^	~~^		~~	^	
1/17 1/19 1/21	1/23	1/25 1,	/27 1	1/29 1,	/31 2/3	2 2	2/4 2	2/6	2/8 2/1	0 2/12 2	2/14 2/16	2/18	
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7.0						рН							
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0.1	1/23	1/25 1	/27	1/29 1				2/6	2/8 2/1	2/12	2/14 2/16	2/18	
0.1	1/23	1/25 1	/27	1/29 1				2/6	2/8 2/1	2/12	2/14 2/16	2/18	
0.1				<u></u>	Specif	fic Conduc	tivity	2/6	2/8 2/1		2/14 2/16	2/18	
6.4 6.2 1/17 1/19 1/21 0.1 0.08 0.08 0.04 0.04 0.02 1/17 1/19 1/2	1 1/23	1/25	1/27	1/29	Special 1/31 2.	fic Conduc	tivity				2/14 2/16	2/18	
0.1 0.08 0.08 0.00 0.00 0.00 0.01 0.01 0.02 0.04 0.02 1/17 1/19 1/21	1 1/23	1/25	1/27	1/29	Special	fic Conduc	tivity				2/14 2/16		
6.4 6.2 1/17 1/19 1/21 0.08 0.08 0.00 0.04 0.02 1/17 1/19 1/2	1 1/23	1/25	1/27	1/29	Special	fic Conduc	tivity				2/14 2/16	2/18	

Gills Creek B (Jan 17, 2020 - Feb 19, 2020)

Explanation of Statistics:

MINIMUM OBSERVED	The minimum of the values recorded by the datasonde in 15 minute intervals.
MAXIMUM OBSERVED	The maximum of the values recorded by the datasonde in 15 minute intervals.
MEDIAN OBSERVED	The median of all the values recorded by the datasonde in 15 minute intervals.
MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Sampled Data:

	Sample 1		Sam	ple 2	Sam	ple 3	Sample 4	
Analyte (units)	1/20,	/2020	2/6/	2020	2/6/	2020	2/6/	2020
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	11:53	524	11:47	754	14:12	538	15:43	728
Total Suspended Solids (mg/L)	11:53	35	11:47	38	14:12	32.6	15:43	46.8
Total Phosphorus (mg/L)			11:47	0.037				
Total Nitrogen (mg/L)			11:47	1.12				

Notes:

Sample 1 was taken during dry conditions. Samples 2, 3, and 4 were taken during wet weather conditions.





Gills Creek C (Jan 17, 2020 - Feb 19, 2020)

		CONTINUOUS	SUMMARY STATISTICS						
PARAMETER	DESCRIPTION	WATER QUALITY PARAMETERS:	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION		
STREAM NAME:	Gills Creek	STAGE (FT):	3.0	11.8	5.1	6.1	2.1		
LOCATION:	Bluff Road bridge	TEMPERATURE	43	62	52	52	4		
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	(°F):	43	62	52	52	4		
COORDINATES:	33.948043, -80.9889	TURBIDITY (NTU):		05	4.4	47	11		
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	TORBIDITY (NTO):	8	95	14	17	11		
NEIGHBORING LANDUSE:	Residential and commercial	pH:	6.2	6.6	6.4	6.4	0.1		
APPROX. DRAINAGE AREA:	64 square miles	pri.	0.2	0.0	0.4	0.4	0.1		
SPATIAL LOCATION:	Most downstream site	SPECIFIC							
TOTAL NO. STORMS OVER 0.1 INCH:	7	CONDUCTIVITY (mS/cm):	0.041	0.080	0.063	0.061	0.005		
MAX. DAILY RAINFALL: TOTAL RAINFALL (FOR	2.9 inches 6.7 inches	DISSOLVED OXYGEN (mg/L):	7.3	11.4	9.5	9.4	0.9		
PERIOD):			<u> </u>				<u> </u>		
20		Stage & Ra	infall				0.0		
# 16 12 12 18 18 18 18 18 18 18 18 18 18 18 18 18							0.0 0.5 1.0 1.5 2.0 2.5		
\$ 4							2.0		
1/17 1/19 1/21	1/23 1/25 1/27	1/29 1/31 2/2	2/4 2/6	2/8 2/10	2/12 2	2/14 2/16	2/18		
1/17 1/19 1/21	1/23 1/25 1/27			2/8 2/10	2/12 2	2/14 2/16	2/18		
70	. 1/23 1/25 1/27	1/29 1/31 2/2 Water Te		2/8 2/10	2/12 2	//14 2/16	2/18		
70	1/23 1/25 1/27			2/8 2/10	0 2/12 2	/14 2/16	2/18		
70 60				2/8 2/10		2/16	2/18		
70 60 50 40 1/17 1/19 1/21		Water Te	2/4 2/6						
70 60 50 40 1/17 1/19 1/21		1/29 1/31 2/2	2/4 2/6						
70 60 50 40 1/17 1/19 1/21		1/29 1/31 2/2	2/4 2/6						
P = 120 90 1/17 1/19 1/21		1/29 1/31 2/2	2/4 2/6	2/8 2/1					
P = 120	1/23 1/25 1/27	Water Te 1/29 1/31 2/2 Turbidi 1/29 1/31 2/2	2/4 2/6 ty 2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
70 60 50 40 1/17 1/19 1/21 1/21 1/21 6.8	1/23 1/25 1/27	1/29 1/31 2/2 Turbidi	2/4 2/6 ty 2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
70 60 40 1/17 1/19 1/21 120 90 0 1/17 1/19 1/	1/23 1/25 1/27	Water Te 1/29 1/31 2/2 Turbidi 1/29 1/31 2/2	2/4 2/6 ty 2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
70 60 50 40 1/17 1/19 1/21 1/21 1/17 1/19 1/21 1/17 1/19 1/21 1/17 1/19 1/21	21 1/23 1/25 1/27	1/29 1/31 2/2 Turbidi	2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
2 120 90 1/17 1/19 1/21 2 6.8 6.6 6.6 6.2 6.2 6.2	21 1/23 1/25 1/27	Water Te 1/29 1/31 2/2 Turbidi 1/29 1/31 2/2	2/4 2/6 ty 2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
70 60 50 40 1/17 1/19 1/21 1/21 1/17 1/19 1/21 1/17 1/19 1/21 1/17 1/19 1/21	21 1/23 1/25 1/27	1/29 1/31 2/2 Turbidi	2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
F 6.8 6.6 6.6 6.6 6.6 6.7 6.7 6.8 6.6 6.7 6.8 6.9 6.9 6.9 6.9 6.9 6.9 6.9 6.9	21 1/23 1/25 1/27	1/29 1/31 2/2 Turbidi 1/29 1/31 2/2 pH	2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
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70 60 50 40 1/17 1/19 1/21 1/17 1/19 1/21 6.8 6.6 6.6 6.6 6.2 6.0 1/17 1/19 1/21	21 1/23 1/25 1/27 1 1/23 1/25 1/27	1/29 1/31 2/2 Turbidi 1/29 1/31 2/2 pH	2/4 2/6	2/8 2/1	0 2/12	2/14 2/16	2/18		
70 60 50 40 1/17 1/19 1/21 1/	21 1/23 1/25 1/27 1 1/23 1/25 1/27	Water Te 1/29 1/31 2/2 Turbidi 1/29 1/31 2/2 pH 1/29 1/31 2/2 Specific Co	2/4 2/6 ty 2/4 2/6 aductivity 2/4 2/6	2/8 2/1	10 2/12	2/14 2/16 2/14 2/16 2/14 2/16	2/18		
70 60 50 40 1/17 1/19 1/21 1/	21 1/23 1/25 1/27 1 1/23 1/25 1/27	Water Te 1/29 1/31 2/2 Turbidi 1/29 1/31 2/2 pH 1/29 1/31 2/2 Specific Co	2/4 2/6 ty 2/4 2/6 2/4 2/6 anductivity	2/8 2/1	10 2/12	2/14 2/16 2/14 2/16 2/14 2/16	2/18		
70 60 50 40 1/17 1/19 1/21 1/17 1/19 1/21 6.8 6.6 6.6 6.6 6.2 6.0 1/17 1/19 1/21 1/	21 1/23 1/25 1/27 1 1/23 1/25 1/27	Water Te 1/29 1/31 2/2 Turbidi 1/29 1/31 2/2 pH 1/29 1/31 2/2 Specific Co	2/4 2/6 ty 2/4 2/6 aductivity 2/4 2/6	2/8 2/1	10 2/12	2/14 2/16 2/14 2/16 2/14 2/16	2/18		
70 60 50 40 1/17 1/19 1/21 1/17 1/19 1/21 6.8 6.6 6.6 6.6 6.6 6.2 6.0 1/17 1/19 1/21 1/2	21 1/23 1/25 1/27 1 1/23 1/25 1/27	Water Te 1/29 1/31 2/2 Turbidi 1/29 1/31 2/2 pH 1/29 1/31 2/2 Specific Co	2/4 2/6 ty 2/4 2/6 aductivity 2/4 2/6	2/8 2/1	10 2/12	2/14 2/16 2/14 2/16 2/14 2/16	2/18		

Gills Creek C (Jan 17, 2020 - Feb 19, 2020)

Explanation of Statistics:

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MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Sampled Data:

	Sample 1		Sam	ple 2	Sam	ple 3	Sample 4	
Analyte (units)	1/20,	/2020	2/6/	2020	2/13,	/2020		
	Time	Results	Time	Results	Time	Results	Time	Results
Escherichia coli (MPN/100mL)	11:11	144	10:55	820	12:36	216		
Total Suspended Solids (mg/L)	11:11	6.1	10:55	9.1	12:36	6.8		
Total Phosphorus (mg/L)			10:55	0.033				
Total Nitrogen (mg/L)			10:55	1.07				

Notes:

Sample 1 was taken during dry conditions. Samples 2 and 3 were taken during wet weather conditions.