

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-14-0003 **USGS Hydrologic Unit:** 051202081407
Stream Name: East Fork White River **County:** Martin
Description: CR 3 (Abel Hill Rd) **Latitude:** 38 32 28.27577 **Longitude:** -86 49 3.69373
Drainage: **Site Number:** 18T-001

SiteID: WEL-14-0003 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB33973
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	93.3 %		ASTM D888-09(C)
DO	7.37 mg/L		ASTM D888-09(C)
pH (Field)	8.12 SU		EPA 150.2
Specific Conductance (Field)	459 umho/cm		SM2510B
Temperature	27.35 °C		SM2550B(2)
Turbidity (Hach)	44 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-1	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	26 mg/L	2	EPA 300.0
Hardness (as CaCO3)	210 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	58 mg/L	5.6	SM2540D
Solids, Total (TS)	320 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	310 mg/L	10	SM2540C
Sulfate	21 mg/L	1	EPA 300.0
Calcium (Total)	54 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	20 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.45 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.14 mg/L	0.05	SM4500P-E
TKN	0.47 mg/L	0.4	SM4500N(Org)-D
TOC	3.2 mg/L	1	SM5310C

<u>Lab ID #</u> AB33973	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	8.6 MPN/100mL	1	SM9223B

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SiteID: WEL-14-0003 Sample Date: 8/14/2018 IDEM Sample #: AB31592
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	86.9 %		ASTM D888-09(C)
DO	6.92 mg/L		ASTM D888-09(C)
pH (Field)	8.12 SU		EPA 150.2
Specific Conductance (Field)	448.8 umho/cm		SM2510B
Temperature	27 °C		SM2550B(2)
Turbidity (Hach)	30.2 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: WEL-14-0003 Sample Date: 9/17/2018 IDEM Sample #: AB34639
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	63 %		ASTM D888-09(C)
DO	5.37 mg/L		ASTM D888-09(C)
pH (Field)	7.62 SU		EPA 150.2
Specific Conductance (Field)	322 umho/cm		SM2510B
Temperature	23.02 °C		SM2550B(2)
Turbidity (Hach)	66.2 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

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Lab ID # 500-151705-1	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	160 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	99 mg/L	5	SM2540D
Solids, Total (TS)	310 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	220 mg/L	10	SM2540C
Sulfate	11 mg/L	0.4	EPA 300.0
Calcium (Total)	44 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	28 mg/L	10	SM5220C
Nitrogen, Ammonia	0.15 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.8 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.21 mg/L	0.05	SM4500P-E
TKN	0.78 mg/L	0.4	SM4500N(Org)-D
TOC	6.3 mg/L	1	SM5310C

Lab ID # AB34639	Result	Reporting Limit	Method
E. coli	98.8 MPN/100mL	1	SM9223B

Lab ID # AB34639a	Result	Reporting Limit	Method
Coliforms (Total)	20140 MPN/100mL	100	SM9223B

SiteID: WEL-14-0003 **Sample Date:** 9/24/2018 **IDEM Sample #:** AB34942
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	86.7 %		ASTM D888-09(C)
DO	7.41 mg/L		ASTM D888-09(C)
pH (Field)	8.12 SU		EPA 150.2
Specific Conductance (Field)	427 umho/cm		SM2510B
Temperature	23.16 °C		SM2550B(2)
Turbidity (Hach)	34.1 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34942	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	80.9 MPN/100mL	1	SM9223B

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SiteID: WEL-14-0003 Sample Date: 10/1/2018 IDEM Sample #: AB34982
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	88.2 %		ASTM D888-09(C)
DO	8.08 mg/L		ASTM D888-09(C)
pH (Field)	7.92 SU		EPA 150.2
Specific Conductance (Field)	459 umho/cm		SM2510B
Temperature	19.56 °C		SM2550B(2)
Turbidity (Hach)	32.3 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34982	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	30.1 MPN/100mL	1	SM9223B

SiteID: WEL-14-0003 Sample Date: 10/8/2018 IDEM Sample #: AB35001
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	92.5 %		ASTM D888-09(C)
DO	7.88 mg/L		ASTM D888-09(C)
pH (Field)	8.18 SU		EPA 150.2
Specific Conductance (Field)	538 umho/cm		SM2510B
Temperature	23.32 °C		SM2550B(2)
Turbidity (Hach)	30.9 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB35001	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	19.9 MPN/100mL	1	SM9223B

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SiteID: WEL-14-0003 Sample Date: 10/15/2018 IDEM Sample #: AB35020
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	91.4 %		ASTM D888-09(C)
DO	8.68 mg/L		ASTM D888-09(C)
pH (Field)	8.13 SU		EPA 150.2
Specific Conductance (Field)	557 umho/cm		SM2510B
Temperature	17.72 °C		SM2550B(2)
Turbidity (Hach)	20.1 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	2 Lookup		Observation

Lab ID # 500-153283-1	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	230 mg/L	5	SM2320B
Chloride	28 mg/L	1	EPA 300.0
Hardness (as CaCO3)	270 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	29 mg/L	5	SM2540D
Solids, Total (TS)	380 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	360 mg/L	10	SM2540C
Sulfate	23 mg/L	1	EPA 300.0
Calcium (Total)	73 mg/L	0.2	EPA 200.7
Magnesium (Total)	22 mg/L	0.1	EPA 200.7
COD	9.7 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1.4 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.12 mg/L	0.05	SM4500P-E
TKN	0.45 mg/L	0.4	SM4500N(Org)-D
TOC	2.9 mg/L	1	SM5310C

Lab ID # AB35020	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	25.6 MPN/100mL	1	SM9223B

Weather Code Definitions			
SC Sky Conditions	WD Wind Direction	WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0 - North (0 Degrees)	0 - Calm
2 - Scattered	9 - Snow	9 - East (90 Degrees)	1 - Light
3 - Partly	10 - Sleet	18 - South (180 Degrees)	2 - Mod./Light
4 - Cloudy		27 - West (270 Degrees)	3 - Moderate
5 - Mist			4 - Mod./Strong
6 - Fog			5 - Strong
7 - Shower			6 - > 86

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SiteID: WEL-15-0008 **USGS Hydrologic Unit:** 051202081503
Stream Name: Slate Creek **County:** Martin
Description: CR 22 **Latitude:** 38 32 14.20475 **Longitude:** -86 54 16.36733
Drainage: **Site Number:** 18T-002

SiteID: WEL-15-0008 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB33982
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	94.2 %		ASTM D888-09(C)
DO	7.98 mg/L		ASTM D888-09(C)
pH (Field)	7.66 SU		EPA 150.2
Specific Conductance (Field)	1060 umho/cm		SM2510B
Temperature	23.54 °C		SM2550B(2)
Turbidity (Hach)	21.8 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-10	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	220 mg/L	5	SM2320B
Chloride	10 mg/L	0.4	EPA 300.0
Hardness (as CaCO3)	570 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	18 mg/L	5	SM2540D
Solids, Total (TS)	870 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	930 mg/L	10	SM2540C
Sulfate	350 mg/L	20	EPA 300.0
Calcium (Total)	140 mg/L	0.2	EPA 200.7
Magnesium (Total)	52 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.043 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.052 mg/L	0.05	SM4500P-E
TKN	0.5 mg/L	0.4	SM4500N(Org)-D
TOC	3.3 mg/L	1	SM5310C

<u>Lab ID #</u> AB33982	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	435.2 MPN/100mL	1	SM9223B

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SiteID: WEL-15-0008 Sample Date: 9/17/2018 IDEM Sample #: AB34648
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	86.6 %		ASTM D888-09(C)
DO	7.33 mg/L		ASTM D888-09(C)
pH (Field)	7.5 SU		EPA 150.2
Specific Conductance (Field)	773 umho/cm		SM2510B
Temperature	23.54 °C		SM2550B(2)
Turbidity (Hach)	18.4 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # 500-151705-10	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	13 mg/L	1	EPA 300.0
Hardness (as CaCO3)	380 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	8.5 mg/L	5	SM2540D
Solids, Total (TS)	610 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	610 mg/L	10	SM2540C
Sulfate	310 mg/L	10	EPA 300.0
Calcium (Total)	92 mg/L	0.2	EPA 200.7
Magnesium (Total)	36 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	0.16 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.18 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.078 mg/L	0.05	SM4500P-E
TKN	0.65 mg/L	0.4	SM4500N(Org)-D
TOC	4.1 mg/L	1	SM5310C

Lab ID # AB34648	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	488.4 MPN/100mL	1	SM9223B

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SiteID: WEL-15-0008 Sample Date: 9/24/2018 IDEM Sample #: AB34951
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	72.6 %		ASTM D888-09(C)
DO	6.53 mg/L		ASTM D888-09(C)
pH (Field)	7.51 SU		EPA 150.2
Specific Conductance (Field)	723 umho/cm		SM2510B
Temperature	24.5 °C		SM2550B(2)
Turbidity (Hach)	90.6 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34951a	Result	Reporting Limit	Method
Coliforms (Total)	> 241960 MPN/100mL	241960	SM9223B
E. coli	15150 MPN/100mL	100	SM9223B

SiteID: WEL-15-0008 Sample Date: 10/1/2018 IDEM Sample #: AB34991
 Water Flow Type Pool Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	81.5 %		ASTM D888-09(C)
DO	7.59 mg/L		ASTM D888-09(C)
pH (Field)	7.51 SU		EPA 150.2
Specific Conductance (Field)	776 umho/cm		SM2510B
Temperature	18.76 °C		SM2550B(2)
Turbidity (Hach)	15.3 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34991	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	238.2 MPN/100mL	1	SM9223B

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SiteID: WEL-15-0008 Sample Date: 10/8/2018 IDEM Sample #: AB35010
 Water Flow Type Pool Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments: Red orange tint to the water

Lab ID #	Result	Reporting Limit	Method
% Sat	70.6 %		ASTM D888-09(C)
DO	6.04 mg/L		ASTM D888-09(C)
pH (Field)	7.52 SU		EPA 150.2
Specific Conductance (Field)	929 umho/cm		SM2510B
Temperature	23.04 °C		SM2550B(2)
Turbidity (Hach)	56.4 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB35010	Result	Reporting Limit	Method
E. coli	66.9 MPN/100mL	1	SM9223B

Lab ID # AB35010a	Result	Reporting Limit	Method
Coliforms (Total)	21870 MPN/100mL	100	SM9223B

SiteID: WEL-15-0008 Sample Date: 10/15/2018 IDEM Sample #: AB35029
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	93 %		ASTM D888-09(C)
DO	9.37 mg/L		ASTM D888-09(C)
pH (Field)	7.85 SU		EPA 150.2
Specific Conductance (Field)	919 umho/cm		SM2510B
Temperature	14.86 °C		SM2550B(2)
Turbidity (Hach)	13.5 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	2 Lookup		Observation

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Lab ID # 500-153283-10	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	13 mg/L	1	EPA 300.0
Hardness (as CaCO3)	480 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	8 mg/L	5	SM2540D
Solids, Total (TS)	740 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	680 mg/L	10	SM2540C
Sulfate	290 mg/L	20	EPA 300.0
Calcium (Total)	120 mg/L	0.2	EPA 200.7
Magnesium (Total)	44 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	0.16 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.67 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.045 mg/L	0.05	SM4500P-E
TKN	0.47 mg/L	0.4	SM4500N(Org)-D
TOC	3.8 mg/L	1	SM5310C

Lab ID # AB35029	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	127.4 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

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SiteID: WEL-15-0021 **USGS Hydrologic Unit:** 051202081503
Stream Name: Tributary of Slate Cr **County:** Daviess
Description: CR 800 S **Latitude:** 38 32 22.37901 **Longitude:** -86 55 57.04122
Drainage: **Site Number:** 18T-003

SiteID: WEL-15-0021 **Sample Date:** 9/17/2018 **IDEM Sample #:** AB34649
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	111.6 %		ASTM D888-09(C)
DO	9.44 mg/L		ASTM D888-09(C)
pH (Field)	8.15 SU		EPA 150.2
Specific Conductance (Field)	250 umho/cm		SM2510B
Temperature	23.66 °C		SM2550B(2)
Turbidity (Hach)	6.21 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-11	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	67 mg/L	5	SM2320B
Chloride	8.9 mg/L	1	EPA 300.0
Hardness (as CaCO3)	97 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	4.5 mg/L	5	SM2540D
Solids, Total (TS)	240 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	190 mg/L	10	SM2540C
Sulfate	45 mg/L	1	EPA 300.0
Calcium (Total)	28 mg/L	0.2	EPA 200.7
Magnesium (Total)	6.7 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	0.1 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.059 mg/L	0.05	SM4500P-E
TKN	0.57 mg/L	0.4	SM4500N(Org)-D
TOC	4.9 mg/L	1	SM5310C

Lab ID # AB34649	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	61.2 MPN/100mL	1	SM9223B

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SiteID: WEL-15-0021 Sample Date: 9/24/2018 IDEM Sample #: AB34952
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	77.3 %		ASTM D888-09(C)
DO	6.91 mg/L		ASTM D888-09(C)
pH (Field)	7.85 SU		EPA 150.2
Specific Conductance (Field)	248 umho/cm		SM2510B
Temperature	20.81 °C		SM2550B(2)
Turbidity (Hach)	4.81 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34952	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	238.2 MPN/100mL	1	SM9223B

SiteID: WEL-15-0021 Sample Date: 10/1/2018 IDEM Sample #: AB34992
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	70.8 %		ASTM D888-09(C)
DO	6.81 mg/L		ASTM D888-09(C)
pH (Field)	7.54 SU		EPA 150.2
Specific Conductance (Field)	372 umho/cm		SM2510B
Temperature	17.11 °C		SM2550B(2)
Turbidity (Hach)	5.71 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34992	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	204.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0021 **Sample Date:** 10/8/2018 **IDEM Sample #:** AB35011
Water Flow Type Riffle **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	69.1 %		ASTM D888-09(C)
DO	6.04 mg/L		ASTM D888-09(C)
pH (Field)	7.7 SU		EPA 150.2
Specific Conductance (Field)	381 umho/cm		SM2510B
Temperature	22.01 °C		SM2550B(2)
Turbidity (Hach)	4.6 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB35011	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	185 MPN/100mL	1	SM9223B

SiteID: WEL-15-0021 **Sample Date:** 10/15/2018 **IDEM Sample #:** AB35030
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	102.5 %		ASTM D888-09(C)
DO	10.61 mg/L		ASTM D888-09(C)
pH (Field)	8.11 SU		EPA 150.2
Specific Conductance (Field)	360 umho/cm		SM2510B
Temperature	13.91 °C		SM2550B(2)
Turbidity (Hach)	2.84 NTU		EPA 180.1
Air Temp	6 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	3 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-11	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	86 mg/L	5	SM2320B
Chloride	19 mg/L	2	EPA 300.0
Hardness (as CaCO3)	140 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	2 mg/L	5	SM2540D
Solids, Total (TS)	230 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	210 mg/L	10	SM2540C
Sulfate	48 mg/L	2	EPA 300.0
Calcium (Total)	38 mg/L	0.2	EPA 200.7
Magnesium (Total)	10 mg/L	0.1	EPA 200.7
COD	13 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.41 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.026 mg/L	0.05	SM4500P-E
TKN	0.47 mg/L	0.4	SM4500N(Org)-D
TOC	3.9 mg/L	1	SM5310C

Lab ID # AB35030	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1299.7 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0007 **USGS Hydrologic Unit:** 051202081503
Stream Name: Slate Creek **County:** Daviess
Description: CR 1250 E **Latitude:** 38 30 45.00625 **Longitude:** -86 56 0.06098
Drainage: **Site Number:** 18T-004

SiteID: WEL-15-0007 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB33987
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	48.7 %		ASTM D888-09(C)
DO	4.1 mg/L		ASTM D888-09(C)
pH (Field)	7.38 SU		EPA 150.2
Specific Conductance (Field)	904 umho/cm		SM2510B
Temperature	23.47 °C		SM2550B(2)
Turbidity (Hach)	8.58 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-149960-12	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	13 mg/L	0.4	EPA 300.0
Hardness (as CaCO3)	480 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	8.5 mg/L	5	SM2540D
Solids, Total (TS)	710 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	780 mg/L	10	SM2540C
Sulfate	310 mg/L	20	EPA 300.0
Calcium (Total)	110 mg/L	0.2	EPA 200.7
Magnesium (Total)	47 mg/L	0.1	EPA 200.7
COD	15 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.27 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.074 mg/L	0.05	SM4500P-E
TKN	0.57 mg/L	0.4	SM4500N(Org)-D
TOC	4.3 mg/L	1	SM5310C

Lab ID # AB33987	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	39.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0007 Sample Date: 9/17/2018 IDEM Sample #: AB34653
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	54.3 %		ASTM D888-09(C)
DO	4.65 mg/L		ASTM D888-09(C)
pH (Field)	7.46 SU		EPA 150.2
Specific Conductance (Field)	514 umho/cm		SM2510B
Temperature	22.28 °C		SM2550B(2)
Turbidity (Hach)	9.9 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # 500-151705-15	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	240 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	6.5 mg/L	5	SM2540D
Solids, Total (TS)	540 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	440 mg/L	10	SM2540C
Sulfate	150 mg/L	4	EPA 300.0
Calcium (Total)	60 mg/L	0.2	EPA 200.7
Magnesium (Total)	21 mg/L	0.1	EPA 200.7
COD	26 mg/L	10	SM5220C
Nitrogen, Ammonia	0.19 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.99 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.11 mg/L	0.05	SM4500P-E
TKN	0.82 mg/L	0.4	SM4500N(Org)-D
TOC	6.4 mg/L	1	SM5310C

Lab ID # AB34653	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	145 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0007 Sample Date: 9/24/2018 IDEM Sample #: AB34956
 Water Flow Type Pool Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	52.2 %		ASTM D888-09(C)
DO	4.74 mg/L		ASTM D888-09(C)
pH (Field)	7.58 SU		EPA 150.2
Specific Conductance (Field)	538 umho/cm		SM2510B
Temperature	20.02 °C		SM2550B(2)
Turbidity (Hach)	126 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	241960 MPN/100mL	100	SM9223B
E. coli	4550 MPN/100mL	100	SM9223B

SiteID: WEL-15-0007 Sample Date: 10/1/2018 IDEM Sample #: AB34996
 Water Flow Type Pool Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	67.8 %		ASTM D888-09(C)
DO	6.36 mg/L		ASTM D888-09(C)
pH (Field)	7.47 SU		EPA 150.2
Specific Conductance (Field)	570 umho/cm		SM2510B
Temperature	18.36 °C		SM2550B(2)
Turbidity (Hach)	8.04 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	172.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0007 Sample Date: 10/8/2018 IDEM Sample #: AB35015
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	45.9 %		ASTM D888-09(C)
DO	3.88 mg/L		ASTM D888-09(C)
pH (Field)	7.48 SU		EPA 150.2
Specific Conductance (Field)	691 umho/cm		SM2510B
Temperature	23.74 °C		SM2550B(2)
Turbidity (Hach)	5.13 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	42.2 MPN/100mL	1	SM9223B

SiteID: WEL-15-0007 Sample Date: 10/15/2018 IDEM Sample #: AB35034
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	60 %		ASTM D888-09(C)
DO	6.23 mg/L		ASTM D888-09(C)
pH (Field)	7.74 SU		EPA 150.2
Specific Conductance (Field)	810 umho/cm		SM2510B
Temperature	13.31 °C		SM2550B(2)
Turbidity (Hach)	4.49 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	2 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-15	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	13 mg/L	1	EPA 300.0
Hardness (as CaCO3)	410 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	2.5 mg/L	5	SM2540D
Solids, Total (TS)	620 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	590 mg/L	10	SM2540C
Sulfate	250 mg/L	20	EPA 300.0
Calcium (Total)	97 mg/L	0.2	EPA 200.7
Magnesium (Total)	41 mg/L	0.1	EPA 200.7
COD	13 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.79 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.056 mg/L	0.05	SM4500P-E
TKN	0.56 mg/L	0.4	SM4500N(Org)-D
TOC	4.7 mg/L	1	SM5310C

Lab ID # AB35034	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	261.3 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0011 **USGS Hydrologic Unit:** 051202081501
Stream Name: Mill Creek **County:** Dubois
Description: N Portersville Rd **Latitude:** 38 26 40.65871 **Longitude:** -86 57 26.15257
Drainage: **Site Number:** 18T-005

SiteID: WEL-15-0011 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB33974
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	155 %		ASTM D888-09(C)
DO	12.9 mg/L		ASTM D888-09(C)
pH (Field)	8.42 SU		EPA 150.2
Specific Conductance (Field)	430 umho/cm		SM2510B
Temperature	24.77 °C		SM2550B(2)
Turbidity (Hach)	5.81 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-2	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	160 mg/L	5	SM2320B
Chloride	23 mg/L	2	EPA 300.0
Hardness (as CaCO3)	160 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	4.5 mg/L	5	SM2540D
Solids, Total (TS)	250 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	300 mg/L	10	SM2540C
Sulfate	29 mg/L	2	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.55 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.055 mg/L	0.05	SM4500P-E
TKN	0.3 mg/L	0.4	SM4500N(Org)-D
TOC	2.2 mg/L	1	SM5310C

<u>Lab ID #</u> AB33974	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	68.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0011 Sample Date: 9/17/2018 IDEM Sample #: AB34640
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	121.5 %		ASTM D888-09(C)
DO	10.25 mg/L		ASTM D888-09(C)
pH (Field)	8.19 SU		EPA 150.2
Specific Conductance (Field)	458 umho/cm		SM2510B
Temperature	24.17 °C		SM2550B(2)
Turbidity (Hach)	3.74 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-2	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	150 mg/L	5	SM2320B
Chloride	32 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	< 5 mg/L	5	SM2540D
Solids, Total (TS)	300 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	280 mg/L	10	SM2540C
Sulfate	35 mg/L	1	EPA 300.0
Calcium (Total)	47 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	< 10 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.086 mg/L	0.05	SM4500P-E
TKN	0.41 mg/L	0.4	SM4500N(Org)-D
TOC	2.7 mg/L	1	SM5310C

Lab ID # AB34640	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	2419.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0011 Sample Date: 9/24/2018 IDEM Sample #: AB34943
 Water Flow Type Eddy Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	82.5 %		ASTM D888-09(C)
DO	7.4 mg/L		ASTM D888-09(C)
pH (Field)	7.54 SU		EPA 150.2
Specific Conductance (Field)	117 umho/cm		SM2510B
Temperature	20.65 °C		SM2550B(2)
Turbidity (Hach)	132 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	5 Lookup		Observation
Wind Direction	15 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 241960 MPN/100mL	241960	SM9223B
E. coli	51720 MPN/100mL	100	SM9223B

SiteID: WEL-15-0011 Sample Date: 10/1/2018 IDEM Sample #: AB34983
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	104.5 %		ASTM D888-09(C)
DO	9.67 mg/L		ASTM D888-09(C)
pH (Field)	7.8 SU		EPA 150.2
Specific Conductance (Field)	452 umho/cm		SM2510B
Temperature	19.02 °C		SM2550B(2)
Turbidity (Hach)	5.63 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	70.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0011 Sample Date: 10/8/2018 IDEM Sample #: AB35002
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	93.9 %		ASTM D888-09(C)
DO	8.08 mg/L		ASTM D888-09(C)
pH (Field)	7.77 SU		EPA 150.2
Specific Conductance (Field)	468 umho/cm		SM2510B
Temperature	22.78 °C		SM2550B(2)
Turbidity (Hach)	7.22 NTU		EPA 180.1
Air Temp	6 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB35002	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	48.4 MPN/100mL	1	SM9223B

SiteID: WEL-15-0011 Sample Date: 10/15/2018 IDEM Sample #: AB35021
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	111.7 %		ASTM D888-09(C)
DO	11.61 mg/L		ASTM D888-09(C)
pH (Field)	8.3 SU		EPA 150.2
Specific Conductance (Field)	368 umho/cm		SM2510B
Temperature	13.69 °C		SM2550B(2)
Turbidity (Hach)	3.09 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	3 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-2	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	19 mg/L	1	EPA 300.0
Hardness (as CaCO3)	150 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	< 5 mg/L	5	SM2540D
Solids, Total (TS)	260 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	240 mg/L	10	SM2540C
Sulfate	24 mg/L	1	EPA 300.0
Calcium (Total)	44 mg/L	0.2	EPA 200.7
Magnesium (Total)	10 mg/L	0.1	EPA 200.7
COD	10 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.056 mg/L	0.05	SM4500P-E
TKN	0.37 mg/L	0.4	SM4500N(Org)-D
TOC	3.1 mg/L	1	SM5310C

Lab ID # AB35021	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	461.1 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0012 **USGS Hydrologic Unit:** 051202081501
Stream Name: Mill Creek **County:** Dubois
Description: CR 700 N **Latitude:** 38 28 52.34422 **Longitude:** -86 57 11.67299
Drainage: **Site Number:** 18T-006

SiteID: WEL-15-0012 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB33989
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	136.5 %		ASTM D888-09(C)
DO	11.17 mg/L		ASTM D888-09(C)
pH (Field)	8.58 SU		EPA 150.2
Specific Conductance (Field)	309 umho/cm		SM2510B
Temperature	25.51 °C		SM2550B(2)
Turbidity (Hach)	13.3 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID # 500-149960-14</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	94 mg/L	5	SM2320B
Chloride	16 mg/L	1	EPA 300.0
Hardness (as CaCO3)	130 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	13 mg/L	5	SM2540D
Solids, Total (TS)	230 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	270 mg/L	10	SM2540C
Sulfate	13 mg/L	0.4	EPA 300.0
Calcium (Total)	34 mg/L	0.2	EPA 200.7
Magnesium (Total)	10 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	6.4 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.08 mg/L	0.05	SM4500P-E
TKN	0.58 mg/L	0.4	SM4500N(Org)-D
TOC	2.3 mg/L	1	SM5310C

<u>Lab ID # AB33989</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	435.2 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0012 Sample Date: 9/17/2018 IDEM Sample #: AB34655
 Water Flow Type Flood Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments: Water backed up from river.

Lab ID #	Result	Reporting Limit	Method
% Sat	57.1 %		ASTM D888-09(C)
DO	5 mg/L		ASTM D888-09(C)
pH (Field)	7.58 SU		EPA 150.2
Specific Conductance (Field)	297 umho/cm		SM2510B
Temperature	22.06 °C		SM2550B(2)
Turbidity (Hach)	13.2 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # 500-151705-17	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	93 mg/L	5	SM2320B
Chloride	18 mg/L	1	EPA 300.0
Hardness (as CaCO3)	120 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	11 mg/L	5	SM2540D
Solids, Total (TS)	250 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	250 mg/L	10	SM2540C
Sulfate	16 mg/L	1	EPA 300.0
Calcium (Total)	34 mg/L	0.2	EPA 200.7
Magnesium (Total)	9.4 mg/L	0.1	EPA 200.7
COD	7.5 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	5.9 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.13 mg/L	0.05	SM4500P-E
TKN	0.58 mg/L	0.4	SM4500N(Org)-D
TOC	3.3 mg/L	1	SM5310C

Lab ID # AB34655	Result	Reporting Limit	Method
E. coli	613.1 MPN/100mL	1	SM9223B

Lab ID # AB34655a	Result	Reporting Limit	Method
Coliforms (Total)	46110 MPN/100mL	100	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0012 Sample Date: 9/24/2018 IDEM Sample #: AB34958
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	82.8 %		ASTM D888-09(C)
DO	7.58 mg/L		ASTM D888-09(C)
pH (Field)	7.68 SU		EPA 150.2
Specific Conductance (Field)	167 umho/cm		SM2510B
Temperature	19.68 °C		SM2550B(2)
Turbidity (Hach)	407 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	5 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 241960 MPN/100mL	241960	SM9223B
E. coli	41060 MPN/100mL	100	SM9223B

SiteID: WEL-15-0012 Sample Date: 10/1/2018 IDEM Sample #: AB34998
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	114.1 %		ASTM D888-09(C)
DO	10.3 mg/L		ASTM D888-09(C)
pH (Field)	8.05 SU		EPA 150.2
Specific Conductance (Field)	339 umho/cm		SM2510B
Temperature	20.31 °C		SM2550B(2)
Turbidity (Hach)	10.6 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	435.2 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0012 Sample Date: 10/8/2018 IDEM Sample #: AB35017
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	140.4 %		ASTM D888-09(C)
DO	11.69 mg/L		ASTM D888-09(C)
pH (Field)	8.45 SU		EPA 150.2
Specific Conductance (Field)	326 umho/cm		SM2510B
Temperature	24.48 °C		SM2550B(2)
Turbidity (Hach)	9.9 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	2 Lookup		Observation

Lab ID # AB35017	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1299.7 MPN/100mL	1	SM9223B

SiteID: WEL-15-0012 Sample Date: 10/15/2018 IDEM Sample #: AB35036
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	119 %		ASTM D888-09(C)
DO	12.3 mg/L		ASTM D888-09(C)
pH (Field)	8.43 SU		EPA 150.2
Specific Conductance (Field)	318 umho/cm		SM2510B
Temperature	13.93 °C		SM2550B(2)
Turbidity (Hach)	4.52 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	2 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-17	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	100 mg/L	5	SM2320B
Chloride	16 mg/L	1	EPA 300.0
Hardness (as CaCO3)	130 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	4 mg/L	5	SM2540D
Solids, Total (TS)	220 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	200 mg/L	10	SM2540C
Sulfate	14 mg/L	1	EPA 300.0
Calcium (Total)	36 mg/L	0.2	EPA 200.7
Magnesium (Total)	11 mg/L	0.1	EPA 200.7
COD	14 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	4.7 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.063 mg/L	0.05	SM4500P-E
TKN	0.46 mg/L	0.4	SM4500N(Org)-D
TOC	3 mg/L	1	SM5310C

Lab ID # AB35036	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1119.9 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0010 **USGS Hydrologic Unit:** 051202081504
Stream Name: East Fork White River **County:** Dubois
Description: CR 1100 E **Latitude:** 38 30 8.97869 **Longitude:** -86 58 25.60926
Drainage: **Site Number:** 18T-007

SiteID: WEL-15-0010 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB33988
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	118.1 %		ASTM D888-09(C)
DO	9.27 mg/L		ASTM D888-09(C)
pH (Field)	8.33 SU		EPA 150.2
Specific Conductance (Field)	459 umho/cm		SM2510B
Temperature	27.77 °C		SM2550B(2)
Turbidity (Hach)	46.6 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-149960-13	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	25 mg/L	1	EPA 300.0
Hardness (as CaCO3)	220 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	65 mg/L	5.9	SM2540D
Solids, Total (TS)	360 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	340 mg/L	10	SM2540C
Sulfate	21 mg/L	1	EPA 300.0
Calcium (Total)	58 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	21 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.47 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.13 mg/L	0.05	SM4500P-E
TKN	0.84 mg/L	0.4	SM4500N(Org)-D
TOC	3.4 mg/L	1	SM5310C

Lab ID # AB33988	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	20.1 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
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Surface Water Results Summary**

SiteID: WEL-15-0010 **Sample Date:** 8/15/2018 **IDEM Sample #:** AB31598
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	93.1 %		ASTM D888-09(C)
DO	7.33 mg/L		ASTM D888-09(C)
pH (Field)	8.22 SU		EPA 150.2
Specific Conductance (Field)	454.7 umho/cm		SM2510B
Temperature	27.6 °C		SM2550B(2)
Turbidity (Hach)	33.7 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

SiteID: WEL-15-0010 **Sample Date:** 9/17/2018 **IDEM Sample #:** AB34654
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	68.8 %		ASTM D888-09(C)
DO	5.84 mg/L		ASTM D888-09(C)
pH (Field)	7.73 SU		EPA 150.2
Specific Conductance (Field)	322 umho/cm		SM2510B
Temperature	23.47 °C		SM2550B(2)
Turbidity (Hach)	72.6 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-151705-16	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	15 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	130 mg/L	6.7	SM2540D
Solids, Total (TS)	350 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	230 mg/L	10	SM2540C
Sulfate	11 mg/L	0.4	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	25 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.81 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.18 mg/L	0.05	SM4500P-E
TKN	0.72 mg/L	0.4	SM4500N(Org)-D
TOC	6.7 mg/L	1	SM5310C

Lab ID # AB34654	Result	Reporting Limit	Method
E. coli	140.1 MPN/100mL	1	SM9223B

Lab ID # AB34654a	Result	Reporting Limit	Method
Coliforms (Total)	22820 MPN/100mL	100	SM9223B

SiteID: WEL-15-0010 **Sample Date:** 9/24/2018 **IDEM Sample #:** AB34957
Water Flow Type Run **Water Appearance** Brown **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	87.8 %		ASTM D888-09(C)
DO	7.59 mg/L		ASTM D888-09(C)
pH (Field)	8.1 SU		EPA 150.2
Specific Conductance (Field)	423 umho/cm		SM2510B
Temperature	22.59 °C		SM2550B(2)
Turbidity (Hach)	43 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34957	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	344.8 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
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Surface Water Results Summary**

SiteID: WEL-15-0010 Sample Date: 10/1/2018 IDEM Sample #: AB34997
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	89 %		ASTM D888-09(C)
DO	8.01 mg/L		ASTM D888-09(C)
pH (Field)	7.95 SU		EPA 150.2
Specific Conductance (Field)	435 umho/cm		SM2510B
Temperature	20.47 °C		SM2550B(2)
Turbidity (Hach)	41.4 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34997	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	48.7 MPN/100mL	1	SM9223B

SiteID: WEL-15-0010 Sample Date: 10/8/2018 IDEM Sample #: AB35016
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	97.6 %		ASTM D888-09(C)
DO	8.24 mg/L		ASTM D888-09(C)
pH (Field)	8.08 SU		EPA 150.2
Specific Conductance (Field)	529 umho/cm		SM2510B
Temperature	23.76 °C		SM2550B(2)
Turbidity (Hach)	30.7 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	2 Lookup		Observation

Lab ID # AB35016	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	30.5 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0010 Sample Date: 10/15/2018 IDEM Sample #: AB35035
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	93 %		ASTM D888-09(C)
DO	9.01 mg/L		ASTM D888-09(C)
pH (Field)	8.28 SU		EPA 150.2
Specific Conductance (Field)	566 umho/cm		SM2510B
Temperature	16.85 °C		SM2550B(2)
Turbidity (Hach)	18.4 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	3 Lookup		Observation

Lab ID # 500-153283-16	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	230 mg/L	5	SM2320B
Chloride	25 mg/L	2	EPA 300.0
Hardness (as CaCO3)	280 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	26 mg/L	5	SM2540D
Solids, Total (TS)	370 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	330 mg/L	10	SM2540C
Sulfate	24 mg/L	2	EPA 300.0
Calcium (Total)	76 mg/L	0.2	EPA 200.7
Magnesium (Total)	23 mg/L	0.1	EPA 200.7
COD	15 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1.5 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.096 mg/L	0.05	SM4500P-E
TKN	0.52 mg/L	0.4	SM4500N(Org)-D
TOC	2.8 mg/L	1	SM5310C

Lab ID # AB35035	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	34.1 MPN/100mL	1	SM9223B

Weather Code Definitions			
SC Sky Conditions	WD Wind Direction	WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	2 - Mod./Light	3 - 46-60
4 - Cloudy		3 - Moderate	4 - 61-75
5 - Mist		4 - Mod./Strong	5 - 76-85
6 - Fog		5 - Strong	6 - > 86
7 - Shower		6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0018 USGS Hydrologic Unit: 051202081504
 Stream Name: Sugar Cr County: Daviess
 Description: CR 600 S Latitude: 38 34 2.99378 Longitude: -86 57 37.11420
 Drainage: Site Number: 18T-008

SiteID: WEL-15-0018 Sample Date: 9/17/2018 IDEM Sample #: AB34650
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	100.6 %		ASTM D888-09(C)
DO	8.47 mg/L		ASTM D888-09(C)
pH (Field)	7.8 SU		EPA 150.2
Specific Conductance (Field)	482 umho/cm		SM2510B
Temperature	24.05 °C		SM2550B(2)
Turbidity (Hach)	3.92 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # 500-151705-12	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	8.7 mg/L	1	EPA 300.0
Hardness (as CaCO3)	220 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	7 mg/L	5	SM2540D
Solids, Total (TS)	350 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	350 mg/L	10	SM2540C
Sulfate	130 mg/L	4	EPA 300.0
Calcium (Total)	55 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.073 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.13 mg/L	0.05	SM4500P-E
TKN	0.64 mg/L	0.4	SM4500N(Org)-D
TOC	5.9 mg/L	1	SM5310C

Lab ID # AB34650	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	73.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0018 Sample Date: 9/24/2018 IDEM Sample #: AB34953
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	50.9 %		ASTM D888-09(C)
DO	4.65 mg/L		ASTM D888-09(C)
pH (Field)	7.43 SU		EPA 150.2
Specific Conductance (Field)	453 umho/cm		SM2510B
Temperature	19.71 °C		SM2550B(2)
Turbidity (Hach)	17.7 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34953	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1119.9 MPN/100mL	1	SM9223B

SiteID: WEL-15-0018 Sample Date: 10/1/2018 IDEM Sample #: AB34993
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	61.4 %		ASTM D888-09(C)
DO	5.76 mg/L		ASTM D888-09(C)
pH (Field)	7.49 SU		EPA 150.2
Specific Conductance (Field)	484 umho/cm		SM2510B
Temperature	18.5 °C		SM2550B(2)
Turbidity (Hach)	5.77 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34993	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	129.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0018 Sample Date: 10/8/2018 IDEM Sample #: AB35012
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	69.2 %		ASTM D888-09(C)
DO	5.86 mg/L		ASTM D888-09(C)
pH (Field)	7.54 SU		EPA 150.2
Specific Conductance (Field)	537 umho/cm		SM2510B
Temperature	23.85 °C		SM2550B(2)
Turbidity (Hach)	5.92 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB35012	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	816.4 MPN/100mL	1	SM9223B

SiteID: WEL-15-0018 Sample Date: 10/15/2018 IDEM Sample #: AB35031
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	58.7 %		ASTM D888-09(C)
DO	6.08 mg/L		ASTM D888-09(C)
pH (Field)	7.55 SU		EPA 150.2
Specific Conductance (Field)	526 umho/cm		SM2510B
Temperature	13.15 °C		SM2550B(2)
Turbidity (Hach)	2.47 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	3 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-12	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	180 mg/L	5	SM2320B
Chloride	8.6 mg/L	0.4	EPA 300.0
Hardness (as CaCO3)	260 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	2.5 mg/L	5	SM2540D
Solids, Total (TS)	360 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	370 mg/L	10	SM2540C
Sulfate	87 mg/L	5	EPA 300.0
Calcium (Total)	64 mg/L	0.2	EPA 200.7
Magnesium (Total)	23 mg/L	0.1	EPA 200.7
COD	24 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.069 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.14 mg/L	0.05	SM4500P-E
TKN	0.55 mg/L	0.4	SM4500N(Org)-D
TOC	6.9 mg/L	1	SM5310C

Lab ID # AB35031	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	387.3 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0022 **USGS Hydrologic Unit:** 051202081504
Stream Name: West Fork Sugar Creek **County:** Daviess
Description: CR 700 S **Latitude:** 38 33 15.20091 **Longitude:** -86 59 33.89621
Drainage: **Site Number:** 18T-009

SiteID: WEL-15-0022 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB33985
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	66.2 %		ASTM D888-09(C)
DO	5.67 mg/L		ASTM D888-09(C)
pH (Field)	7.66 SU		EPA 150.2
Specific Conductance (Field)	1650 umho/cm		SM2510B
Temperature	22.71 °C		SM2550B(2)
Turbidity (Hach)	6.2 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

<u>Lab ID # 500-149960-11</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	210 mg/L	5	SM2320B
Chloride	6.8 mg/L	0.4	EPA 300.0
Hardness (as CaCO3)	720 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	4.5 mg/L	5	SM2540D
Solids, Total (TS)	1400 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	1500 mg/L	10	SM2540C
Sulfate	700 mg/L	20	EPA 300.0
Calcium (Total)	150 mg/L	0.2	EPA 200.7
Magnesium (Total)	85 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.033 mg/L	0.05	SM4500P-E
TKN	0.37 mg/L	0.4	SM4500N(Org)-D
TOC	4.1 mg/L	1	SM5310C

<u>Lab ID # AB33985</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	61.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0022 Sample Date: 9/17/2018 IDEM Sample #: AB34651
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	83.7 %		ASTM D888-09(C)
DO	7.13 mg/L		ASTM D888-09(C)
pH (Field)	7.83 SU		EPA 150.2
Specific Conductance (Field)	476 umho/cm		SM2510B
Temperature	23.33 °C		SM2550B(2)
Turbidity (Hach)	10.2 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-13	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	100 mg/L	5	SM2320B
Chloride	5.5 mg/L	1	EPA 300.0
Hardness (as CaCO3)	210 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	8 mg/L	5	SM2540D
Solids, Total (TS)	410 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	370 mg/L	10	SM2540C
Sulfate	160 mg/L	4	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	22 mg/L	0.1	EPA 200.7
COD	16 mg/L	10	SM5220C
Nitrogen, Ammonia	0.1 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.061 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.055 mg/L	0.05	SM4500P-E
TKN	0.53 mg/L	0.4	SM4500N(Org)-D
TOC	5.9 mg/L	1	SM5310C

Lab ID # AB34651	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	547.5 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0022 Sample Date: 9/24/2018 IDEM Sample #: AB34954
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	83.7 %		ASTM D888-09(C)
DO	7.63 mg/L		ASTM D888-09(C)
pH (Field)	7.96 SU		EPA 150.2
Specific Conductance (Field)	901 umho/cm		SM2510B
Temperature	19.78 °C		SM2550B(2)
Turbidity (Hach)	38 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34954	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	> 2419.6 MPN/100mL	2419.6	SM9223B

SiteID: WEL-15-0022 Sample Date: 10/1/2018 IDEM Sample #: AB34994
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	88.6 %		ASTM D888-09(C)
DO	8.22 mg/L		ASTM D888-09(C)
pH (Field)	7.87 SU		EPA 150.2
Specific Conductance (Field)	655 umho/cm		SM2510B
Temperature	18.91 °C		SM2550B(2)
Turbidity (Hach)	7.1 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34994	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	152.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0022 Sample Date: 10/8/2018 IDEM Sample #: AB35013
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	60.7 %		ASTM D888-09(C)
DO	5.18 mg/L		ASTM D888-09(C)
pH (Field)	7.74 SU		EPA 150.2
Specific Conductance (Field)	1171 umho/cm		SM2510B
Temperature	23.15 °C		SM2550B(2)
Turbidity (Hach)	10.9 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB35013	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	40.8 MPN/100mL	1	SM9223B

SiteID: WEL-15-0022 Sample Date: 10/15/2018 IDEM Sample #: AB35032
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	77.8 %		ASTM D888-09(C)
DO	8.1 mg/L		ASTM D888-09(C)
pH (Field)	7.8 SU		EPA 150.2
Specific Conductance (Field)	1236 umho/cm		SM2510B
Temperature	13.19 °C		SM2550B(2)
Turbidity (Hach)	3.79 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	3 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-13	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	220 mg/L	5	SM2320B
Chloride	5.9 mg/L	0.4	EPA 300.0
Hardness (as CaCO3)	560 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	< 5 mg/L	5	SM2540D
Solids, Total (TS)	1000 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	920 mg/L	10	SM2540C
Sulfate	460 mg/L	20	EPA 300.0
Calcium (Total)	120 mg/L	0.2	EPA 200.7
Magnesium (Total)	65 mg/L	0.1	EPA 200.7
COD	14 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.047 mg/L	0.05	SM4500P-E
TKN	0.42 mg/L	0.4	SM4500N(Org)-D
TOC	5.1 mg/L	1	SM5310C

Lab ID # AB35032	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	83.6 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0009 **USGS Hydrologic Unit:** 051202081504
Stream Name: Sugar Cr **County:** Daviess
Description: CR 900 S **Latitude:** 38 31 29.97021 **Longitude:** -86 58 33.65921
Drainage: **Site Number:** 18T-010

SiteID: WEL-15-0009 **Sample Date:** 9/17/2018 **IDEM Sample #:** AB34652
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	106.6 %		ASTM D888-09(C)
DO	8.87 mg/L		ASTM D888-09(C)
pH (Field)	8.02 SU		EPA 150.2
Specific Conductance (Field)	451 umho/cm		SM2510B
Temperature	24.62 °C		SM2550B(2)
Turbidity (Hach)	5.22 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID # 500-151705-14</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	110 mg/L	5	SM2320B
Chloride	6.8 mg/L	1	EPA 300.0
Hardness (as CaCO3)	190 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	4 mg/L	5	SM2540D
Solids, Total (TS)	340 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	340 mg/L	10	SM2540C
Sulfate	120 mg/L	4	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	0.15 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.073 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.053 mg/L	0.05	SM4500P-E
TKN	0.51 mg/L	0.4	SM4500N(Org)-D
TOC	5.6 mg/L	1	SM5310C

<u>Lab ID # AB34652</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	145 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0009 Sample Date: 9/24/2018 IDEM Sample #: AB34955
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	83.4 %		ASTM D888-09(C)
DO	7.6 mg/L		ASTM D888-09(C)
pH (Field)	7.94 SU		EPA 150.2
Specific Conductance (Field)	467 umho/cm		SM2510B
Temperature	19.93 °C		SM2550B(2)
Turbidity (Hach)	108 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34955a	Result	Reporting Limit	Method
Coliforms (Total)	> 241960 MPN/100mL	241960	SM9223B
E. coli	12110 MPN/100mL	100	SM9223B

SiteID: WEL-15-0009 Sample Date: 10/1/2018 IDEM Sample #: AB34995
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	100.9 %		ASTM D888-09(C)
DO	9.29 mg/L		ASTM D888-09(C)
pH (Field)	7.9 SU		EPA 150.2
Specific Conductance (Field)	524 umho/cm		SM2510B
Temperature	19.36 °C		SM2550B(2)
Turbidity (Hach)	6.66 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34995	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	228.2 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0009 Sample Date: 10/8/2018 IDEM Sample #: AB35014
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	88.5 %		ASTM D888-09(C)
DO	7.5 mg/L		ASTM D888-09(C)
pH (Field)	7.85 SU		EPA 150.2
Specific Conductance (Field)	651 umho/cm		SM2510B
Temperature	23.56 °C		SM2550B(2)
Turbidity (Hach)	3.27 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB35014	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	290.9 MPN/100mL	1	SM9223B

SiteID: WEL-15-0009 Sample Date: 10/15/2018 IDEM Sample #: AB35033
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	102.1 %		ASTM D888-09(C)
DO	10.57 mg/L		ASTM D888-09(C)
pH (Field)	7.98 SU		EPA 150.2
Specific Conductance (Field)	770 umho/cm		SM2510B
Temperature	13.58 °C		SM2550B(2)
Turbidity (Hach)	2.29 NTU		EPA 180.1
Air Temp	3 Lookup		Observation
Sky Conditions	4 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	3 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-14	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	180 mg/L	5	SM2320B
Chloride	8.3 mg/L	0.4	EPA 300.0
Hardness (as CaCO3)	340 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	< 5 mg/L	5	SM2540D
Solids, Total (TS)	610 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	530 mg/L	10	SM2540C
Sulfate	220 mg/L	5	EPA 300.0
Calcium (Total)	77 mg/L	0.2	EPA 200.7
Magnesium (Total)	36 mg/L	0.1	EPA 200.7
COD	15 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.13 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.04 mg/L	0.05	SM4500P-E
TKN	0.47 mg/L	0.4	SM4500N(Org)-D
TOC	5.2 mg/L	1	SM5310C

Lab ID # AB35033	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	152.9 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0013 **USGS Hydrologic Unit:** 051202081506
Stream Name: Birch Creek **County:** Dubois
Description: CR 460 N **Latitude:** 38 26 46.78659 **Longitude:** -87 1 9.39666
Drainage: **Site Number:** 18T-011

SiteID: WEL-15-0013 **Sample Date:** 8/14/2018 **IDEM Sample #:** AB33975
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	86.2 %		ASTM D888-09(C)
DO	8.49 mg/L		ASTM D888-09(C)
pH (Field)	7.65 SU		EPA 150.2
Specific Conductance (Field)	372 umho/cm		SM2510B
Temperature	16.14 °C		SM2550B(2)
Turbidity (Hach)	13.5 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	6 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-3	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	160 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	27 mg/L	5	SM2540D
Solids, Total (TS)	270 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	300 mg/L	10	SM2540C
Sulfate	9.6 mg/L	0.4	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	7.7 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.5 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.081 mg/L	0.05	SM4500P-E
TKN	0.51 mg/L	0.4	SM4500N(Org)-D
TOC	1.1 mg/L	1	SM5310C

<u>Lab ID #</u> AB33975	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	980.4 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0013 Sample Date: 9/18/2018 IDEM Sample #: AB34641
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	82.4 %		ASTM D888-09(C)
DO	7.94 mg/L		ASTM D888-09(C)
pH (Field)	7.7 SU		EPA 150.2
Specific Conductance (Field)	378 umho/cm		SM2510B
Temperature	17.22 °C		SM2550B(2)
Turbidity (Hach)	59.5 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-3	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	18 mg/L	1	EPA 300.0
Hardness (as CaCO3)	160 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	140 mg/L	7.1	SM2540D
Solids, Total (TS)	400 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	270 mg/L	10	SM2540C
Sulfate	11 mg/L	0.4	EPA 300.0
Calcium (Total)	45 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	27 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	7.2 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.23 mg/L	0.05	SM4500P-E
TKN	0.72 mg/L	0.4	SM4500N(Org)-D
TOC	1.7 mg/L	1	SM5310C

Lab ID # AB34641	Result	Reporting Limit	Method
E. coli	727 MPN/100mL	1	SM9223B

Lab ID # AB34641a	Result	Reporting Limit	Method
Coliforms (Total)	141360 MPN/100mL	100	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0013 Sample Date: 9/25/2018 IDEM Sample #: AB34944
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	69.3 %		ASTM D888-09(C)
DO	6.28 mg/L		ASTM D888-09(C)
pH (Field)	7.47 SU		EPA 150.2
Specific Conductance (Field)	332 umho/cm		SM2510B
Temperature	20.11 °C		SM2550B(2)
Turbidity (Hach)	42.7 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34944	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	1986.3 MPN/100mL	1	SM9223B

SiteID: WEL-15-0013 Sample Date: 10/2/2018 IDEM Sample #: AB34984
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	94.8 %		ASTM D888-09(C)
DO	8.89 mg/L		ASTM D888-09(C)
pH (Field)	7.87 SU		EPA 150.2
Specific Conductance (Field)	382 umho/cm		SM2510B
Temperature	18.45 °C		SM2550B(2)
Turbidity (Hach)	32.4 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34984	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	920.8 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0013 Sample Date: 10/9/2018 IDEM Sample #: AB35003
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	90.3 %		ASTM D888-09(C)
DO	8.51 mg/L		ASTM D888-09(C)
pH (Field)	7.88 SU		EPA 150.2
Specific Conductance (Field)	381 umho/cm		SM2510B
Temperature	18.14 °C		SM2550B(2)
Turbidity (Hach)	41.4 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	410.6 MPN/100mL	1	SM9223B

SiteID: WEL-15-0013 Sample Date: 10/16/2018 IDEM Sample #: AB35022
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	88.2 %		ASTM D888-09(C)
DO	9.92 mg/L		ASTM D888-09(C)
pH (Field)	7.92 SU		EPA 150.2
Specific Conductance (Field)	379 umho/cm		SM2510B
Temperature	10.09 °C		SM2550B(2)
Turbidity (Hach)	25 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-3	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	47 mg/L	5	SM2540D
Solids, Total (TS)	320 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	260 mg/L	10	SM2540C
Sulfate	12 mg/L	0.4	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	6.1 mg/L	10	SM5220C
Nitrogen, Ammonia	0.13 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	7.3 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.08 mg/L	0.05	SM4500P-E
TKN	0.54 mg/L	0.4	SM4500N(Org)-D
TOC	1.5 mg/L	1	SM5310C

Lab ID # AB35022	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	488.4 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0014 **USGS Hydrologic Unit:** 051202081506
Stream Name: Birch Creek **County:** Dubois
Description: W Portersville Rd **Latitude:** 38 29 22.92610 **Longitude:** -87 1 13.46040
Drainage: **Site Number:** 18T-012

SiteID: WEL-15-0014 **Sample Date:** 8/14/2018 **IDEM Sample #:** AB33976
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	50.4 %		ASTM D888-09(C)
DO	4.4 mg/L		ASTM D888-09(C)
pH (Field)	7.62 SU		EPA 150.2
Specific Conductance (Field)	350 umho/cm		SM2510B
Temperature	22.44 °C		SM2550B(2)
Turbidity (Hach)	6.33 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-4	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	13 mg/L	1	EPA 300.0
Hardness (as CaCO3)	150 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	7.5 mg/L	5	SM2540D
Solids, Total (TS)	210 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	250 mg/L	10	SM2540C
Sulfate	13 mg/L	1	EPA 300.0
Calcium (Total)	41 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	17 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	4.9 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.051 mg/L	0.05	SM4500P-E
TKN	0.63 mg/L	0.4	SM4500N(Org)-D
TOC	2.2 mg/L	1	SM5310C

<u>Lab ID #</u> AB33976	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	129.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0014 Sample Date: 9/18/2018 IDEM Sample #: AB34642
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	78.4 %		ASTM D888-09(C)
DO	6.66 mg/L		ASTM D888-09(C)
pH (Field)	7.73 SU		EPA 150.2
Specific Conductance (Field)	377 umho/cm		SM2510B
Temperature	23.39 °C		SM2550B(2)
Turbidity (Hach)	35.6 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-4	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	93 mg/L	5	SM2320B
Chloride	12 mg/L	1	EPA 300.0
Hardness (as CaCO3)	120 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	17 mg/L	5	SM2540D
Solids, Total (TS)	280 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	280 mg/L	10	SM2540C
Sulfate	70 mg/L	2	EPA 300.0
Calcium (Total)	32 mg/L	0.2	EPA 200.7
Magnesium (Total)	8.6 mg/L	0.1	EPA 200.7
COD	22 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	3.2 mg/L	0.2	SM4500NO3-F
Phosphorus, Total	0.12 mg/L	0.05	SM4500P-E
TKN	0.55 mg/L	0.4	SM4500N(Org)-D
TOC	2 mg/L	1	SM5310C

Lab ID # AB34642	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	151.5 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0014 Sample Date: 9/25/2018 IDEM Sample #: AB34945
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	73.5 %		ASTM D888-09(C)
DO	6.51 mg/L		ASTM D888-09(C)
pH (Field)	7.68 SU		EPA 150.2
Specific Conductance (Field)	313 umho/cm		SM2510B
Temperature	21.38 °C		SM2550B(2)
Turbidity (Hach)	30.2 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34945	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	> 2419.6 MPN/100mL	2419.6	SM9223B

SiteID: WEL-15-0014 Sample Date: 10/2/2018 IDEM Sample #: AB34985
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	84.6 %		ASTM D888-09(C)
DO	7.53 mg/L		ASTM D888-09(C)
pH (Field)	7.76 SU		EPA 150.2
Specific Conductance (Field)	362 umho/cm		SM2510B
Temperature	21.03 °C		SM2550B(2)
Turbidity (Hach)	13.1 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34985	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	172.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0014 Sample Date: 10/9/2018 IDEM Sample #: AB35004
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	73.4 %		ASTM D888-09(C)
DO	6.36 mg/L		ASTM D888-09(C)
pH (Field)	7.77 SU		EPA 150.2
Specific Conductance (Field)	368 umho/cm		SM2510B
Temperature	23.45 °C		SM2550B(2)
Turbidity (Hach)	5.37 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB35004	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	117.8 MPN/100mL	1	SM9223B

SiteID: WEL-15-0014 Sample Date: 10/16/2018 IDEM Sample #: AB35023
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	86.1 %		ASTM D888-09(C)
DO	9.59 mg/L		ASTM D888-09(C)
pH (Field)	8.1 SU		EPA 150.2
Specific Conductance (Field)	364 umho/cm		SM2510B
Temperature	10.36 °C		SM2550B(2)
Turbidity (Hach)	6.55 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-4	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	150 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	< 5 mg/L	5	SM2540D
Solids, Total (TS)	260 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	260 mg/L	10	SM2540C
Sulfate	15 mg/L	1	EPA 300.0
Calcium (Total)	41 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	< 10 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	6.3 mg/L	0.5	SM4500NO3-F
Phosphorus, Total	0.067 mg/L	0.05	SM4500P-E
TKN	0.45 mg/L	0.4	SM4500N(Org)-D
TOC	2 mg/L	1	SM5310C

Lab ID # AB35023	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	228.2 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0015 **USGS Hydrologic Unit:** 051202081508
Stream Name: Bear Creek **County:** Pike
Description: CR 550 N **Latitude:** 38 30 10.17157 **Longitude:** -87 6 2.09326
Drainage: **Site Number:** 18T-014

SiteID: WEL-15-0015 **Sample Date:** 8/14/2018 **IDEM Sample #:** AB33977
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	76 %		ASTM D888-09(C)
DO	6.68 mg/L		ASTM D888-09(C)
pH (Field)	7.99 SU		EPA 150.2
Specific Conductance (Field)	514 umho/cm		SM2510B
Temperature	21.55 °C		SM2550B(2)
Turbidity (Hach)	7.53 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-5	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	200 mg/L	5	SM2320B
Chloride	19 mg/L	2	EPA 300.0
Hardness (as CaCO3)	230 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	6.5 mg/L	5	SM2540D
Solids, Total (TS)	320 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	350 mg/L	10	SM2540C
Sulfate	29 mg/L	2	EPA 300.0
Calcium (Total)	54 mg/L	0.2	EPA 200.7
Magnesium (Total)	22 mg/L	0.1	EPA 200.7
COD	8.3 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.1 mg/L	0.2	SM4500NO3-F
Phosphorus, Total	0.06 mg/L	0.05	SM4500P-E
TKN	0.34 mg/L	0.4	SM4500N(Org)-D
TOC	2.2 mg/L	1	SM5310C

<u>Lab ID #</u> AB33977	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	185 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0015 Sample Date: 9/18/2018 IDEM Sample #: AB34643
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	67.9 %		ASTM D888-09(C)
DO	5.9 mg/L		ASTM D888-09(C)
pH (Field)	7.86 SU		EPA 150.2
Specific Conductance (Field)	534 umho/cm		SM2510B
Temperature	22.04 °C		SM2550B(2)
Turbidity (Hach)	4.47 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-5	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	210 mg/L	5	SM2320B
Chloride	22 mg/L	1	EPA 300.0
Hardness (as CaCO3)	230 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	7.5 mg/L	5	SM2540D
Solids, Total (TS)	400 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	350 mg/L	10	SM2540C
Sulfate	35 mg/L	1	EPA 300.0
Calcium (Total)	59 mg/L	0.2	EPA 200.7
Magnesium (Total)	20 mg/L	0.1	EPA 200.7
COD	< 10 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.7 mg/L	0.2	SM4500NO3-F
Phosphorus, Total	0.11 mg/L	0.05	SM4500P-E
TKN	0.52 mg/L	0.4	SM4500N(Org)-D
TOC	2.8 mg/L	1	SM5310C

Lab ID # AB34643	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	290.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0015 Sample Date: 9/25/2018 IDEM Sample #: AB34946
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	67 %		ASTM D888-09(C)
DO	5.96 mg/L		ASTM D888-09(C)
pH (Field)	7.53 SU		EPA 150.2
Specific Conductance (Field)	359 umho/cm		SM2510B
Temperature	21.12 °C		SM2550B(2)
Turbidity (Hach)	37.5 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34946	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	> 2419.6 MPN/100mL	2419.6	SM9223B

SiteID: WEL-15-0015 Sample Date: 10/2/2018 IDEM Sample #: AB34986
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	79.9 %		ASTM D888-09(C)
DO	7.24 mg/L		ASTM D888-09(C)
pH (Field)	7.89 SU		EPA 150.2
Specific Conductance (Field)	437 umho/cm		SM2510B
Temperature	20.17 °C		SM2550B(2)
Turbidity (Hach)	7.22 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34986	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	249.5 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0015 Sample Date: 10/9/2018 IDEM Sample #: AB35005
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	61.4 %		ASTM D888-09(C)
DO	5.34 mg/L		ASTM D888-09(C)
pH (Field)	7.83 SU		EPA 150.2
Specific Conductance (Field)	552 umho/cm		SM2510B
Temperature	22.33 °C		SM2550B(2)
Turbidity (Hach)	4.57 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	2 Lookup		Observation

Lab ID # AB35005	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	218.7 MPN/100mL	1	SM9223B

SiteID: WEL-15-0015 Sample Date: 10/16/2018 IDEM Sample #: AB35024
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	82.6 %		ASTM D888-09(C)
DO	8.94 mg/L		ASTM D888-09(C)
pH (Field)	8.01 SU		EPA 150.2
Specific Conductance (Field)	536 umho/cm		SM2510B
Temperature	10.32 °C		SM2550B(2)
Turbidity (Hach)	3.16 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-5	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	220 mg/L	5	SM2320B
Chloride	8.7 mg/L	1	EPA 300.0
Hardness (as CaCO3)	250 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	2.5 mg/L	5	SM2540D
Solids, Total (TS)	340 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	350 mg/L	10	SM2540C
Sulfate	14 mg/L	1	EPA 300.0
Calcium (Total)	64 mg/L	0.2	EPA 200.7
Magnesium (Total)	22 mg/L	0.1	EPA 200.7
COD	< 10 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	3.8 mg/L	0.2	SM4500NO3-F
Phosphorus, Total	0.062 mg/L	0.05	SM4500P-E
TKN	0.48 mg/L	0.4	SM4500N(Org)-D
TOC	2.4 mg/L	1	SM5310C

Lab ID # AB35024	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	547.5 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0016 **USGS Hydrologic Unit:** 051202081508
Stream Name: Beech Creek **County:** Pike
Description: CR 550 N **Latitude:** 38 30 9.46944 **Longitude:** -87 7 44.51491
Drainage: **Site Number:** 18T-015

SiteID: WEL-15-0016 **Sample Date:** 8/14/2018 **IDEM Sample #:** AB33978
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	78.2 %		ASTM D888-09(C)
DO	6.73 mg/L		ASTM D888-09(C)
pH (Field)	7.95 SU		EPA 150.2
Specific Conductance (Field)	569 umho/cm		SM2510B
Temperature	22.63 °C		SM2550B(2)
Turbidity (Hach)	16.4 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-6	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	220 mg/L	5	SM2320B
Chloride	23 mg/L	2	EPA 300.0
Hardness (as CaCO3)	260 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	15 mg/L	5	SM2540D
Solids, Total (TS)	360 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	430 mg/L	10	SM2540C
Sulfate	35 mg/L	2	EPA 300.0
Calcium (Total)	65 mg/L	0.2	EPA 200.7
Magnesium (Total)	23 mg/L	0.1	EPA 200.7
COD	< 10 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.4 mg/L	0.2	SM4500NO3-F
Phosphorus, Total	0.074 mg/L	0.05	SM4500P-E
TKN	0.4 mg/L	0.4	SM4500N(Org)-D
TOC	1.8 mg/L	1	SM5310C

<u>Lab ID #</u> AB33978	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	198.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0016 Sample Date: 9/18/2018 IDEM Sample #: AB34644
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	75.1 %		ASTM D888-09(C)
DO	6.52 mg/L		ASTM D888-09(C)
pH (Field)	7.87 SU		EPA 150.2
Specific Conductance (Field)	580 umho/cm		SM2510B
Temperature	22.3 °C		SM2550B(2)
Turbidity (Hach)	24.9 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-6	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	220 mg/L	5	SM2320B
Chloride	27 mg/L	1	EPA 300.0
Hardness (as CaCO3)	260 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	22 mg/L	5	SM2540D
Solids, Total (TS)	390 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	390 mg/L	10	SM2540C
Sulfate	44 mg/L	1	EPA 300.0
Calcium (Total)	69 mg/L	0.2	EPA 200.7
Magnesium (Total)	22 mg/L	0.1	EPA 200.7
COD	19 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.5 mg/L	0.2	SM4500NO3-F
Phosphorus, Total	0.094 mg/L	0.05	SM4500P-E
TKN	0.62 mg/L	0.4	SM4500N(Org)-D
TOC	2.5 mg/L	1	SM5310C

Lab ID # AB34644	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	261.3 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0016 Sample Date: 9/25/2018 IDEM Sample #: AB34947
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	72.7 %		ASTM D888-09(C)
DO	6.51 mg/L		ASTM D888-09(C)
pH (Field)	7.64 SU		EPA 150.2
Specific Conductance (Field)	354 umho/cm		SM2510B
Temperature	20.73 °C		SM2550B(2)
Turbidity (Hach)	83.6 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation
Lab ID # AB34947a	Result	Reporting Limit	Method
Coliforms (Total)	> 241960 MPN/100mL	241960	SM9223B
E. coli	5200 MPN/100mL	100	SM9223B

SiteID: WEL-15-0016 Sample Date: 10/2/2018 IDEM Sample #: AB34987
 Water Flow Type Pool Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	79.9 %		ASTM D888-09(C)
DO	7.4 mg/L		ASTM D888-09(C)
pH (Field)	7.85 SU		EPA 150.2
Specific Conductance (Field)	581 umho/cm		SM2510B
Temperature	18.98 °C		SM2550B(2)
Turbidity (Hach)	40.4 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation
Lab ID # AB34987	Result	Reporting Limit	Method
E. coli	727 MPN/100mL	1	SM9223B
Lab ID # AB34987a	Result	Reporting Limit	Method
Coliforms (Total)	46110 MPN/100mL	100	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0016 **Sample Date:** 10/9/2018 **IDEM Sample #:** AB35006
Water Flow Type Pool **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	65.7 %		ASTM D888-09(C)
DO	5.74 mg/L		ASTM D888-09(C)
pH (Field)	7.74 SU		EPA 150.2
Specific Conductance (Field)	593 umho/cm		SM2510B
Temperature	21.96 °C		SM2550B(2)
Turbidity (Hach)	24 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	2 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	344.8 MPN/100mL	1	SM9223B

SiteID: WEL-15-0016 **Sample Date:** 10/16/2018 **IDEM Sample #:** AB35025
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	84.4 %		ASTM D888-09(C)
DO	9.27 mg/L		ASTM D888-09(C)
pH (Field)	8.04 SU		EPA 150.2
Specific Conductance (Field)	564 umho/cm		SM2510B
Temperature	11.08 °C		SM2550B(2)
Turbidity (Hach)	22.6 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-6	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	230 mg/L	5	SM2320B
Chloride	19 mg/L	2	EPA 300.0
Hardness (as CaCO3)	260 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	17 mg/L	5	SM2540D
Solids, Total (TS)	410 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	360 mg/L	10	SM2540C
Sulfate	34 mg/L	2	EPA 300.0
Calcium (Total)	67 mg/L	0.2	EPA 200.7
Magnesium (Total)	23 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	0.1 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	2.6 mg/L	0.2	SM4500NO3-F
Phosphorus, Total	0.071 mg/L	0.05	SM4500P-E
TKN	0.49 mg/L	0.4	SM4500N(Org)-D
TOC	2.6 mg/L	1	SM5310C

Lab ID # AB35025	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	488.4 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL170-0008 **USGS Hydrologic Unit:** 051202081507
Stream Name: Aikman Creek **County:** Daviess
Description: Alex Hill Rd **Latitude:** 38 34 15.42672 **Longitude:** -87 10 2.38580
Drainage: 20 **Site Number:** 18T-016

SiteID: WEL170-0008 **Sample Date:** 8/14/2018 **IDEM Sample #:** AB33979
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	54.5 %		ASTM D888-09(C)
DO	4.64 mg/L		ASTM D888-09(C)
pH (Field)	7.75 SU		EPA 150.2
Specific Conductance (Field)	649 umho/cm		SM2510B
Temperature	22.96 °C		SM2550B(2)
Turbidity (Hach)	12.1 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-7	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	180 mg/L	5	SM2320B
Chloride	14 mg/L	1	EPA 300.0
Hardness (as CaCO3)	220 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	12 mg/L	5	SM2540D
Solids, Total (TS)	440 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	500 mg/L	10	SM2540C
Sulfate	120 mg/L	10	EPA 300.0
Calcium (Total)	55 mg/L	0.2	EPA 200.7
Magnesium (Total)	20 mg/L	0.1	EPA 200.7
COD	24 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.13 mg/L	0.05	SM4500P-E
TKN	0.57 mg/L	0.4	SM4500N(Org)-D
TOC	5.9 mg/L	1	SM5310C

<u>Lab ID #</u> AB33979	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	111.2 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL170-0008 Sample Date: 9/18/2018 IDEM Sample #: AB34645
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	33.7 %		ASTM D888-09(C)
DO	3 mg/L		ASTM D888-09(C)
pH (Field)	7.43 SU		EPA 150.2
Specific Conductance (Field)	486 umho/cm		SM2510B
Temperature	22.27 °C		SM2550B(2)
Turbidity (Hach)	11.3 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # 500-151705-7	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	120 mg/L	5	SM2320B
Chloride	9.7 mg/L	1	EPA 300.0
Hardness (as CaCO3)	150 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	20 mg/L	5	SM2540D
Solids, Total (TS)	360 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	330 mg/L	10	SM2540C
Sulfate	130 mg/L	4	EPA 300.0
Calcium (Total)	38 mg/L	0.2	EPA 200.7
Magnesium (Total)	13 mg/L	0.1	EPA 200.7
COD	20 mg/L	10	SM5220C
Nitrogen, Ammonia	0.18 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.35 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.19 mg/L	0.05	SM4500P-E
TKN	0.64 mg/L	0.4	SM4500N(Org)-D
TOC	6.3 mg/L	1	SM5310C

Lab ID # AB34645	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	85.7 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL170-0008 Sample Date: 9/25/2018 IDEM Sample #: AB34948
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	64.1 %		ASTM D888-09(C)
DO	5.73 mg/L		ASTM D888-09(C)
pH (Field)	7.56 SU		EPA 150.2
Specific Conductance (Field)	371 umho/cm		SM2510B
Temperature	20.82 °C		SM2550B(2)
Turbidity (Hach)	68.8 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	8 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 241960 MPN/100mL	241960	SM9223B
E. coli	5910 MPN/100mL	100	SM9223B

SiteID: WEL170-0008 Sample Date: 10/2/2018 IDEM Sample #: AB34988
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	44.5 %		ASTM D888-09(C)
DO	4.11 mg/L		ASTM D888-09(C)
pH (Field)	7.44 SU		EPA 150.2
Specific Conductance (Field)	493 umho/cm		SM2510B
Temperature	19.12 °C		SM2550B(2)
Turbidity (Hach)	13.9 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	235.9 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL170-0008 Sample Date: 10/9/2018 IDEM Sample #: AB35007
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	31.8 %		ASTM D888-09(C)
DO	2.76 mg/L		ASTM D888-09(C)
pH (Field)	7.37 SU		EPA 150.2
Specific Conductance (Field)	559 umho/cm		SM2510B
Temperature	22.3 °C		SM2550B(2)
Turbidity (Hach)	6.63 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	3 Lookup		Observation

Lab ID # AB35007	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	488.4 MPN/100mL	1	SM9223B

SiteID: WEL170-0008 Sample Date: 10/16/2018 IDEM Sample #: AB35026
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	59 %		ASTM D888-09(C)
DO	6.34 mg/L		ASTM D888-09(C)
pH (Field)	7.96 SU		EPA 150.2
Specific Conductance (Field)	605 umho/cm		SM2510B
Temperature	11.33 °C		SM2550B(2)
Turbidity (Hach)	13.6 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-7	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	170 mg/L	5	SM2320B
Chloride	18 mg/L	1	EPA 300.0
Hardness (as CaCO3)	210 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	6 mg/L	5	SM2540D
Solids, Total (TS)	430 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	400 mg/L	10	SM2540C
Sulfate	110 mg/L	5	EPA 300.0
Calcium (Total)	53 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	15 mg/L	10	SM5220C
Nitrogen, Ammonia	0.16 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.18 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.14 mg/L	0.05	SM4500P-E
TKN	0.58 mg/L	0.4	SM4500N(Org)-D
TOC	6.7 mg/L	1	SM5310C

Lab ID # AB35026	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	105 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0017 **USGS Hydrologic Unit:** 051202081509
Stream Name: Mud Creek **County:** Pike
Description: CR 725 N **Latitude:** 38 31 37.93847 **Longitude:** -87 13 11.17811
Drainage: **Site Number:** 18T-017

SiteID: WEL-15-0017 **Sample Date:** 8/14/2018 **IDEM Sample #:** AB33981
Water Flow Type Run **Water Appearance** Clear **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

<u>Lab ID #</u>	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
% Sat	78.8 %		ASTM D888-09(C)
DO	6.75 mg/L		ASTM D888-09(C)
pH (Field)	7.97 SU		EPA 150.2
Specific Conductance (Field)	1197 umho/cm		SM2510B
Temperature	22.69 °C		SM2550B(2)
Turbidity (Hach)	5.49 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

<u>Lab ID #</u> 500-149960-9	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Alkalinity (as CaCO3)	190 mg/L	5	SM2320B
Chloride	9.2 mg/L	1	EPA 300.0
Hardness (as CaCO3)	500 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	940 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	1000 mg/L	10	SM2540C
Sulfate	430 mg/L	20	EPA 300.0
Calcium (Total)	94 mg/L	0.2	EPA 200.7
Magnesium (Total)	63 mg/L	0.1	EPA 200.7
COD	18 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.048 mg/L	0.05	SM4500P-E
TKN	0.53 mg/L	0.4	SM4500N(Org)-D
TOC	4.4 mg/L	1	SM5310C

<u>Lab ID #</u> AB33981	<u>Result</u>	<u>Reporting Limit</u>	<u>Method</u>
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	201.4 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0017 Sample Date: 9/18/2018 IDEM Sample #: AB34647
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	77.8 %		ASTM D888-09(C)
DO	6.56 mg/L		ASTM D888-09(C)
pH (Field)	7.72 SU		EPA 150.2
Specific Conductance (Field)	877 umho/cm		SM2510B
Temperature	23.46 °C		SM2550B(2)
Turbidity (Hach)	10.6 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # 500-151705-9	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	8.5 mg/L	1	EPA 300.0
Hardness (as CaCO3)	320 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	9 mg/L	5	SM2540D
Solids, Total (TS)	620 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	590 mg/L	10	SM2540C
Sulfate	350 mg/L	10	EPA 300.0
Calcium (Total)	63 mg/L	0.2	EPA 200.7
Magnesium (Total)	39 mg/L	0.1	EPA 200.7
COD	23 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	< 0.1 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.098 mg/L	0.05	SM4500P-E
TKN	0.72 mg/L	0.4	SM4500N(Org)-D
TOC	5.6 mg/L	1	SM5310C

Lab ID # AB34647	Result	Reporting Limit	Method
E. coli	42 MPN/100mL	1	SM9223B

Lab ID # AB34647a	Result	Reporting Limit	Method
Coliforms (Total)	14500 MPN/100mL	100	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0017 Sample Date: 9/25/2018 IDEM Sample #: AB34950
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	78.5 %		ASTM D888-09(C)
DO	6.98 mg/L		ASTM D888-09(C)
pH (Field)	7.78 SU		EPA 150.2
Specific Conductance (Field)	565 umho/cm		SM2510B
Temperature	21.12 °C		SM2550B(2)
Turbidity (Hach)	225 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 241960 MPN/100mL	241960	SM9223B
E. coli	3230 MPN/100mL	100	SM9223B

SiteID: WEL-15-0017 Sample Date: 10/2/2018 IDEM Sample #: AB34990
 Water Flow Type Riffle Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	89.1 %		ASTM D888-09(C)
DO	7.98 mg/L		ASTM D888-09(C)
pH (Field)	7.91 SU		EPA 150.2
Specific Conductance (Field)	964 umho/cm		SM2510B
Temperature	20.67 °C		SM2550B(2)
Turbidity (Hach)	9.6 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID #	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	161.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0017 Sample Date: 10/9/2018 IDEM Sample #: AB35009
 Water Flow Type Pool Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	77.2 %		ASTM D888-09(C)
DO	6.65 mg/L		ASTM D888-09(C)
pH (Field)	7.9 SU		EPA 150.2
Specific Conductance (Field)	999 umho/cm		SM2510B
Temperature	22.65 °C		SM2550B(2)
Turbidity (Hach)	7.06 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	2 Lookup		Observation

Lab ID # AB35009	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	344.8 MPN/100mL	1	SM9223B

SiteID: WEL-15-0017 Sample Date: 10/16/2018 IDEM Sample #: AB35028
 Water Flow Type Run Water Appearance Clear Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	85 %		ASTM D888-09(C)
DO	9.44 mg/L		ASTM D888-09(C)
pH (Field)	8.06 SU		EPA 150.2
Specific Conductance (Field)	1029 umho/cm		SM2510B
Temperature	10.5 °C		SM2550B(2)
Turbidity (Hach)	8.08 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-153283-9	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	190 mg/L	5	SM2320B
Chloride	8.3 mg/L	1	EPA 300.0
Hardness (as CaCO3)	460 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	5 mg/L	5	SM2540D
Solids, Total (TS)	820 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	750 mg/L	10	SM2540C
Sulfate	350 mg/L	20	EPA 300.0
Calcium (Total)	93 mg/L	0.2	EPA 200.7
Magnesium (Total)	56 mg/L	0.1	EPA 200.7
COD	11 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.074 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.061 mg/L	0.05	SM4500P-E
TKN	0.42 mg/L	0.4	SM4500N(Org)-D
TOC	4.7 mg/L	1	SM5310C

Lab ID # AB35028	Result	Reporting Limit	Method
Coliforms (Total)	2419.6 MPN/100mL	1	SM9223B
E. coli	151.5 MPN/100mL	1	SM9223B

Weather Code Definitions					
SC Sky Conditions		WD Wind Direction		WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0	North (0 Degrees)	0 - Calm	1 - < 32
2 - Scattered	9 - Snow	9	East (90 Degrees)	1 - Light	2 - 33-45
3 - Partly	10 - Sleet	18	South (180 Degrees)	2 - Mod./Light	3 - 46-60
4 - Cloudy		27	West (270 Degrees)	3 - Moderate	4 - 61-75
5 - Mist				4 - Mod./Strong	5 - 76-85
6 - Fog				5 - Strong	6 - > 86
7 - Shower				6 - Gale	

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0020 **USGS Hydrologic Unit:** 051202081509
Stream Name: East Fork White River **County:** Pike
Description: SR 57 **Latitude:** 38 32 19.71102 **Longitude:** -87 13 23.17826
Drainage: **Site Number:** 18T-018

SiteID: WEL-15-0020 **Sample Date:** 8/13/2018 **IDEM Sample #:** AB31609
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	139.6 %		ASTM D888-09(C)
DO	10.98 mg/L		ASTM D888-09(C)
pH (Field)	8.49 SU		EPA 150.2
Specific Conductance (Field)	447.9 umho/cm		SM2510B
Temperature	27.7 °C		SM2550B(2)
Turbidity (Hach)	27.2 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	2 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	0 Lookup		Observation

SiteID: WEL-15-0020 **Sample Date:** 8/14/2018 **IDEM Sample #:** AB33980
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	109.2 %		ASTM D888-09(C)
DO	8.8 mg/L		ASTM D888-09(C)
pH (Field)	8.34 SU		EPA 150.2
Specific Conductance (Field)	458 umho/cm		SM2510B
Temperature	26.5 °C		SM2550B(2)
Turbidity (Hach)	39.3 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-149960-8	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	180 mg/L	5	SM2320B
Chloride	25 mg/L	2	EPA 300.0
Hardness (as CaCO3)	230 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	75 mg/L	5	SM2540D
Solids, Total (TS)	370 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	360 mg/L	10	SM2540C
Sulfate	31 mg/L	2	EPA 300.0
Calcium (Total)	59 mg/L	0.2	EPA 200.7
Magnesium (Total)	19 mg/L	0.1	EPA 200.7
COD	26 mg/L	10	SM5220C
Nitrogen, Ammonia	< 0.2 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.39 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.096 mg/L	0.05	SM4500P-E
TKN	0.93 mg/L	0.4	SM4500N(Org)-D
TOC	3.4 mg/L	1	SM5310C

Lab ID # AB33980	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	12 MPN/100mL	1	SM9223B

SiteID: WEL-15-0020 **Sample Date:** 9/18/2018 **IDEM Sample #:** AB34646
Water Flow Type Run **Water Appearance** Murky **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	68.6 %		ASTM D888-09(C)
DO	5.85 mg/L		ASTM D888-09(C)
pH (Field)	7.66 SU		EPA 150.2
Specific Conductance (Field)	328 umho/cm		SM2510B
Temperature	23.13 °C		SM2550B(2)
Turbidity (Hach)	81.9 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

Lab ID # 500-151705-8	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	130 mg/L	5	SM2320B
Chloride	15 mg/L	1	EPA 300.0
Hardness (as CaCO3)	170 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	160 mg/L	6.7	SM2540D
Solids, Total (TS)	390 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	230 mg/L	10	SM2540C
Sulfate	13 mg/L	1	EPA 300.0
Calcium (Total)	46 mg/L	0.2	EPA 200.7
Magnesium (Total)	12 mg/L	0.1	EPA 200.7
COD	27 mg/L	10	SM5220C
Nitrogen, Ammonia	0.11 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	0.71 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.28 mg/L	0.05	SM4500P-E
TKN	0.72 mg/L	0.4	SM4500N(Org)-D
TOC	5.9 mg/L	1	SM5310C

Lab ID # AB34646	Result	Reporting Limit	Method
E. coli	172.3 MPN/100mL	1	SM9223B

Lab ID # AB34646a	Result	Reporting Limit	Method
Coliforms (Total)	23590 MPN/100mL	100	SM9223B

SiteID: WEL-15-0020 **Sample Date:** 9/25/2018 **IDEM Sample #:** AB34949
Water Flow Type Run **Water Appearance** Brown **Water Depth** **Algae?**
Water Flow (cf/sec): **Flow Estimated?** **Aquatic Life?** **Canopy Closed %** 0-20%
Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	82.2 %		ASTM D888-09(C)
DO	7.11 mg/L		ASTM D888-09(C)
pH (Field)	8.03 SU		EPA 150.2
Specific Conductance (Field)	408 umho/cm		SM2510B
Temperature	22.52 °C		SM2550B(2)
Turbidity (Hach)	48.3 NTU		EPA 180.1
Air Temp	4 Lookup		Observation
Sky Conditions	7 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	0 Lookup		Observation

Lab ID # AB34949	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	2419.6 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0020 Sample Date: 10/2/2018 IDEM Sample #: AB34989
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	89.5 %		ASTM D888-09(C)
DO	7.97 mg/L		ASTM D888-09(C)
pH (Field)	7.97 SU		EPA 150.2
Specific Conductance (Field)	450 umho/cm		SM2510B
Temperature	21.03 °C		SM2550B(2)
Turbidity (Hach)	39.3 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # AB34989	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	77.6 MPN/100mL	1	SM9223B

SiteID: WEL-15-0020 Sample Date: 10/9/2018 IDEM Sample #: AB35008
 Water Flow Type Run Water Appearance Brown Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	100.4 %		ASTM D888-09(C)
DO	8.51 mg/L		ASTM D888-09(C)
pH (Field)	8.11 SU		EPA 150.2
Specific Conductance (Field)	524 umho/cm		SM2510B
Temperature	23.6 °C		SM2550B(2)
Turbidity (Hach)	22.8 NTU		EPA 180.1
Air Temp	5 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	18 Lookup		Observation
Wind Strength	2 Lookup		Observation

Lab ID # AB35008	Result	Reporting Limit	Method
Coliforms (Total)	> 2419.6 MPN/100mL	2419.6	SM9223B
E. coli	28.5 MPN/100mL	1	SM9223B

**Indiana Department of Environmental Management
Office of Water Quality-Watershed Assessment and Planning Branch
Surface Water Results Summary**

SiteID: WEL-15-0020 Sample Date: 10/16/2018 IDEM Sample #: AB35027
 Water Flow Type Run Water Appearance Murky Water Depth Algae?
 Water Flow (cf/sec): Flow Estimated? Aquatic Life? Canopy Closed % 0-20%
 Sampler Comments:

Lab ID #	Result	Reporting Limit	Method
% Sat	91.8 %		ASTM D888-09(C)
DO	9.31 mg/L		ASTM D888-09(C)
pH (Field)	8.24 SU		EPA 150.2
Specific Conductance (Field)	566 umho/cm		SM2510B
Temperature	14.64 °C		SM2550B(2)
Turbidity (Hach)	20.9 NTU		EPA 180.1
Air Temp	2 Lookup		Observation
Sky Conditions	1 Lookup		Observation
Wind Direction	27 Lookup		Observation
Wind Strength	1 Lookup		Observation

Lab ID # 500-153283-8	Result	Reporting Limit	Method
Alkalinity (as CaCO3)	240 mg/L	5	SM2320B
Chloride	27 mg/L	2	EPA 300.0
Hardness (as CaCO3)	280 mg/L	1.3	SM2340B
Solids, Suspended Total, (TSS)	27 mg/L	5	SM2540D
Solids, Total (TS)	380 mg/L	10	SM2540B
Solids, Total Dissolved (TDS)	360 mg/L	10	SM2540C
Sulfate	25 mg/L	2	EPA 300.0
Calcium (Total)	76 mg/L	0.2	EPA 200.7
Magnesium (Total)	23 mg/L	0.1	EPA 200.7
COD	12 mg/L	10	SM5220C
Nitrogen, Ammonia	0.12 mg/L	0.2	SM4500NH3-G
Nitrogen, Nitrate+Nitrite	1.6 mg/L	0.1	SM4500NO3-F
Phosphorus, Total	0.093 mg/L	0.05	SM4500P-E
TKN	0.44 mg/L	0.4	SM4500N(Org)-D
TOC	2.6 mg/L	1	SM5310C

Lab ID # AB35027	Result	Reporting Limit	Method
Coliforms (Total)	2419.6 MPN/100mL	1	SM9223B
E. coli	22.6 MPN/100mL	1	SM9223B

Weather Code Definitions			
SC Sky Conditions	WD Wind Direction	WS Wind Strength	AT Air Temp
1 - Clear	8 - Rain	0 - North (0 Degrees)	0 - Calm
2 - Scattered	9 - Snow	9 - East (90 Degrees)	1 - Light
3 - Partly	10 - Sleet	18 - South (180 Degrees)	2 - Mod./Light
4 - Cloudy		27 - West (270 Degrees)	3 - Moderate
5 - Mist			4 - Mod./Strong
6 - Fog			5 - Strong
7 - Shower			6 - > 86
			6 - Gale