

Appendix B: Surface Water Parameters

SURFACE WATER PARAMETERS

STREAM CLASSIFICATION CODE (TITLE 25, PA CODE)

EV	Exceptional value
HQ-CWF	High Quality Cold Water Fishery
CWF	Cold Water Fishery
MF	Migratory Fishes
TSF	Trout Stocking Fishery

Volume of Flow -

Flow is essential in determining the dilution factor for any potential discharge. It is also an indicator of recent weather patterns. Volumes of flow would be higher than normal after a period of heavy precipitation. This is important because during a test period which may occur after heavy rains, the quality of the stream may appear degraded due to non-point source run off. It is also important that the testing period occur during a low flow since pollutants would have the most damaging effect during low flow.

Temperature -

Temperature is essential in determining if acceptable standards exist for a particular stream classification. Elevated temperatures from heated water discharges may have a significant ecological effect. It is also important in determining what the direct effect on fish and other aquatic life will be as a result of temperature fluctuation. Maximum temperatures for streams during the month of August are as follows:

CWF and HQ-CWF		18.9 C (66 F)
WWF and HQ-TSF		30.6 C (87 F)
TSF and HQ-WWF	August 1-15	26.7 C (80 F)
	August 16-31	30.6 C (87 F)
EV	Must maintain Existing Quality	

Dissolved Oxygen -

Oxygen dissolved in water is measured as D.O. Different levels of D.O. are necessary to support various types of aquatic life. D.O. levels in natural and wastewaters are dependent on the physical, chemical and biochemical activities prevailing in the water body. Many fishing waters average a D.O. of 9.0 mg/l and above. The minimum daily averages for D.O. are as follows:

CWF	5.0 mg/l
WWF and TSF	4.0 mg/l

pH - Measurement of pH is one of the most important and frequently used tests in water chemistry. The pH value of most natural waters falls within the range of 4 to 9. The pH scale ranges from 0 (acid) to 14 (base). The majority of waters are slightly basic because of the presence of carbonates and bicarbonates. A departure from the normal pH for a particular body of water can be caused by the influx of acid or alkaline industrial wastes (acid deposition in the form of rain or snow). It is a common practice for water treatment plants to adjust the pH. The pH of a solution refers to its hydrogen ion activity. Most fish can tolerate pH values from 5.0 to 9.0, however the best fishing waters fall within the range 6.5 to 8.2.

Specific Conductance - Conductivity is a numerical expression of an aqueous ability to carry an electrical current. It is an indication of the dissolved inorganic solids in the water. The higher the specific conductance, the more impurities are in the water. Freshly distilled water has a conductivity of 0.5 to 2.0 micromhos/cm. The conductivity of the drinking water in the U.S. generally ranges from 50 to 1,500 micromhos/cm.

Total Hardness - Hardness is defined as the total amount of calcium and magnesium salts that are present in the water. Water can be defined by its total hardness as follows:

Soft Water	0 - 60 mg/l
Moderately Hard Water	60 - 120 mg/l
Hard Water	120 - 180 mg/l
Very Hard Water	180 mg/l and up

Total Alkalinity - Alkalinity measures the water's ability to buffer acid. It indicates the water's ability to protect fish and other aquatic life against sudden changes in pH. The best fishing waters are those with alkalinity of 100 - 120 mg/l. The minimum level of total alkalinity for aquatic life is 20 mg/l except where natural conditions are less.

Nitrogen - Nitrate plus nitrite as nitrogen. The maximum recommended level of nitrate plus nitrite for water supply is 10 mg/l as Nitrogen.

Nitrate (NO₃) - Nitrate is found only in small amounts in domestic wastewater and is a major ingredient in farm fertilizer. During precipitation, varying amounts of this chemical wash from farmland into nearby waterways. Nitrates stimulate the growth of plankton on water weeds which provide food for fish. This may cause an increase in the fish population, however, if algae grows too quickly, oxygen levels in the water will be reduced and the fish may die.

Nitrite (NO₂) - Nitrite is the intermediate stage between nitrate and ammonia. It is relatively short-lived because it is quickly converted to nitrates by bacteria. However, nitrites produce a serious illness in fish even though they don't exist for very long in the environment. Nitrite concentrations in drinking water seldom exceed 0.1 mg/l. It can be expected that levels below 0.2 mg/l are representative of normal conditions.

Ammonia (NH₃) -	Ammonia is naturally present in surface and ground water and in wastewater. Pure ammonia is strong smelling and colorless. It is manufactured synthetically from nitrogen and hydrogen or it is produced from coal gas. In nature ammonia is formed by the action of bacteria on proteins and urea. Ammonia concentrations of 0.06 mg/l can cause gill damage in fish; 0.1 mg/l may indicate domestic or agricultural wastes and 0.2 mg/l and above is lethal to trout.
Total Phosphorous -	Phosphorous occurs in natural waters and waste waters almost solely in the form of phosphate. Phosphates enter waterways from human and animal wastes, phosphate rich rocks, waste from laundries, cleaning and industrial processes and from fertilizer. Phosphorous is essential to the growth of organisms and it can be the nutrient that limits the productivity of a body of water. If phosphates are present in high concentrations in streams the algae and water weeds grow more rapidly, choking the waterways and using up large amounts of oxygen. The recommended maximum level is 0.1 mg/l for rivers and streams.
Chlorides -	Chlorides are salts that contain chlorine and metal. Common chlorides are sodium chloride, calcium chloride and magnesium chloride. Most good fishing waters have a chloride concentration of less than 170 mg/l. The recommended maximum chloride levels are 150 mg/l for special protection waters and 250 mg/l for water supply.
Total Acidity -	Acidity can be defined as a solution's ability to neutralize bases. Acidity of water is significant because acids contribute to corrosiveness and influence certain biological processes. Measuring acidity can also reflect changes in the quality of the source water.
Solids -	The term solids or residue refers to the matter suspended or dissolved in water. Residue may affect water and effluent quality in many different ways. It can affect the palatability of drinking water or the aesthetic quality of bathing waters. For these reasons wastewater treatment processes remove solids from the discharge.
T.D.S. -	Total dissolved solids (T.D.S.), also termed total filterable residue refers to the portion of residue that passes through a filter of a particular size. The maximum recommended value for T.D.S. is 750 mg/l.
T.S.S. -	Total suspended solids (T.S.S.), also termed total non-filterable residue refers to the portion of residue that cannot pass through a filter of a particular size.
Fecal Coliform -	Coliform bacteria are common in the intestines of both warm and cold-blooded animals and aid in the digestion of food. Some of these coliform bacteria pass out of the body with the stool. Fecal coliform counts of 200/100 mls or less are desirable.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	PARACR03	BUTZRU01	CRCRPA01	DEHOCR04
Date	8/6/07	8/6/07	8/6/07	8/6/07
Time	0815	0900	0945	1015
Stream Name	Paradise Creek	Butz Run	Cranberry Creek	Devils Hole Creek
Weather	Rain	Rain	Overcast	Overcast
Volume of Flow (cfs)	13.5	0.21	2.14	3.9
Stream Temperature (°C)	20.6	18.8	20	17.3
Dissolved Oxygen	9.69	8.2	7.89	8.75
pH	Field / Lab 7.2 6.48	Field / Lab 7.6 6.66	Field / Lab 7.4 6.64	Field / Lab 7.6 6.63
Conductivity µs/cm	105.0	66.4	63.1	99.2
Total Hardness	36	34	28	20.0
Total Alkalinity	29.5	22.0	16.0	9.00
Nitrate+Nitrite as N	0.288	0.36	0.232	0.384
Nitrate NO ₃	0.288	0.36	0.232	0.384
Nitrite NO ₂	ND	ND	ND	ND
Ammonia NH ₃	ND	ND	ND	ND
Total Phosphorus	ND	ND	ND	ND
Chlorides	34.6	15.2	13.1	9.04
Total Acidity	ND	ND	ND	ND
T.D.S.	52.9	34.4	32	49.7
T.S.S.	3.6	ND	ND	ND
Fecal Coliform	20 EST.	<10 EST.	ND	80 EST.

ND - None Detected

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	PARACR04	INDIRU01	FOHIRU01	SWIFCR06
Date	8/6/07	8/6/07	8/7/07	8/7/07
Time	1045	1100	0820	0845
Stream Name	Paradise Creek	Indian Run	Forest Hills Run	Swiftwater Creek
Weather	Overcast	Overcast	Clear	Clear
Volume of Flow (cfs)	2.58	0.83	3.2	7.57
Stream Temperature (°C)	17.2	10.6	19.7	21.7
Dissolved Oxygen	8.58	8.66	8.82	8.1
pH	Field / Lab 7.4 6.61	Field / Lab 5.8 ---	Field / Lab 6.7 6.77	Field / Lab 7.0 6.49
Conductivity µs/cm	436	433	493	491
Total Hardness	42.0	---	54.0	ND
Total Alkalinity	11.0	---	30.5	18.0
Nitrate+Nitrite as N	0.525	---	0.484	0.32
Nitrate NO ₃	0.525	---	0.484	0.32
Nitrite NO ₂	ND	---	ND	ND
Ammonia NH ₃	ND	---	ND	ND
Total Phosphorus	ND	---	ND	ND
Chlorides	52.8	---	44.7	52.2
Total Acidity	ND	---	ND	ND
T.D.S.	215	217	246	225
T.S.S.	ND	---	ND	2.0
Fecal Coliform	10 EST.	---	10 EST.	ND

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	SWIFCR02	PARACR01	FOHIRU09	FOHIRU06
Date	8/7/07	8/7/07	8/7/07	8/7/07
Time	0900	0945	1015	1100
Stream Name	Swiftwater Creek	Paradise Creek	Forest Hills Run	Forest Hills Run
Weather	Overcast	Overcast	Overcast	Clear
Volume of Flow (cfs)	9.34	4.32	2.06	1.22
Stream Temperature (°C)	21.3	20.4	21.7	18.6
Dissolved Oxygen	8.4	8.62	7.1	9.28
pH	Field / Lab 6.6 6.66	Field / Lab 7.1 6.48	Field / Lab 7.1 6.87	Field / Lab 7.4 7.0
Conductivity $\mu\text{s}/\text{cm}$	491	236	610	824
Total Hardness	39.0	28.0	62.0	66.0
Total Alkalinity	21.5	12.5	38.5	35.0
Nitrate+Nitrite as N	0.320	0.318	0.330	4.20
Nitrate NO ₃	0.320	0.307	0.305	4.03
Nitrite NO ₂	ND	0.011	0.025	0.175
Ammonia NH ₃	ND	ND	ND	0.133
Total Phosphorus	ND	ND	ND	0.162
Chlorides	52.2	22.0	56.9	78.0
Total Acidity	ND	ND	ND	ND
T.D.S.	225	99.3	307	414
T.S.S.	2.00	6.00	2.80	ND
Fecal Coliform	ND	30 EST.	40 EST	60 EST.

ND - None Detected

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	POCOCR18	POCOCR15	SCOTCR04	SWIFCR07
Date	8/9/07	8/9/07	8/9/07	8/9/07
Time	0800	0845	0945	1015
Stream Name	Pocono Creek	Pocono Creek	Scotrun Creek	Swiftwater Creek
Weather	Clear	Clear	Clear	Clear
Volume of Flow (cfs)	17.13	25.28	4.46	4.16
Stream Temperature (°C)	20.5	19.6	19.7	15.7
Dissolved Oxygen	8.88	8.60	8.05	9.80
pH	Field / Lab 6.9 6.79	Field / Lab 7.2 6.91	Field / Lab 6.9 6.87	Field / Lab 7.1 6.92
Conductivity $\mu\text{s}/\text{cm}$	427.0	425.0	509.0	234.0
Total Hardness	40.0	40.0	52.0	20.0
Total Alkalinity	24.0	23.0	32.5	8.50
Nitrate+Nitrite as N	0.432	0.416	0.531	0.458
Nitrate NO ₃	0.432	0.416	0.531	0.458
Nitrite NO ₂	ND	ND	ND	ND
Ammonia NH ₃	ND	ND	ND	ND
Total Phosphorus	ND	ND	ND	ND
Chlorides	40.8	40.9	46.3	28.2
Total Acidity	ND	ND	ND	ND
T.D.S.	2.15	214	256	118
T.S.S.	2.80	ND	ND	3.20
Fecal Coliform	830 EST.	270 EST.	790 EST.	360 EST.

ND - None Detected

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	SWIFCR05	SWIFCR03	POCOCR20	POCOCR16
Date	8/9/07	8/9/07	8/10/07	8/10/07
Time	1045	1120	0830	0900
Stream Name	Swiftwater Creek	Swiftwater Creek	Pocono Creek	Pocono Creek
Weather	Clear	Clear	Rain	Rain
Volume of Flow (cfs)	11.07	9.38	12.7	18.9
Stream Temperature (°C)	18.5	17.8	17.6	18.3
Dissolved Oxygen	8.6	9.60	9.23	9.02
pH	Field / Lab 7.1 6.84	Field / Lab 7.4 6.89	Field / Lab 7.2 6.95	Field / Lab 6.92 6.92
Conductivity $\mu\text{s}/\text{cm}$	501.0	274.0	308.0	406.0
Total Hardness	36.0	26.0	24.0	36.0
Total Alkalinity	21.0	12.0	15.5	21.00
Nitrate+Nitrite as N	0.624	0.471	0.128	0.321
Nitrate NO ₃	0.624	0.471	0.128	0.321
Nitrite NO ₂	ND	ND	ND	ND
Ammonia NH ₃	ND	ND	ND	ND
Total Phosphorus	ND	ND	ND	ND
Chlorides	53.9	29.6	45.0	42.4
Total Acidity	ND	ND	ND	ND
T.D.S.	253	137	155	204
T.S.S.	ND	ND	ND	9.2
Fecal Coliform	250 EST.	180 EST	210 EST.	130 EST.

ND - None Detected

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	POCOCR17	PINEMTRU01	MIDDBR01	BRODCR01
Date	8/10/07	8/10/07	8/10/07	8/10/07
Time	0930	1030	1115	1130
Stream Name	Pocono Creek	Pine Mt. Run	Middle Branch Creek	Brodhead Creek
Weather	Rain	Rain	Rain	Rain
Volume of Flow (cfs)	15.28	11.83	22.74	135.7
Stream Temperature (°C)	18.3	19.5	18.2	18.8
Dissolved Oxygen	8.90	9.05	9.11	8.88
pH	Field / Lab 7.5 6.80	Field / Lab 7.3 6.70	Field / Lab 7.2 6.71	Field / Lab 7.3 / ---
Conductivity $\mu\text{s}/\text{cm}$	362	76.8	114	150
Total Hardness	33.0	14.0	20.0	---
Total Alkalinity	17.50	5.00	20.0	---
Nitrate+Nitrite as N	0.358	ND	0.300	---
Nitrate NO ₃	0.358	ND	0.300	---
Nitrite NO ₂	ND	ND	ND	---
Ammonia NH ₃	ND	ND	ND	---
Total Phosphorus	ND	ND	ND	---
Chlorides	38.3	5.14	8.69	---
Total Acidity	ND	ND	ND	---
T.D.S.	182.0	34.6	57.2	75.0
T.S.S.	ND	5.2	2.0	---
Fecal Coliform	60 EST.	110 EST.	410 EST.	---

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	REDRU03	HAWKRU01	TUNKCR07	TOBYCR14
Date	8/13/07	8/13/07	8/13/07	8/13/07
Time	0830	0915	0945	1015
Stream Name	Red Run	Hawkey Run	Tunkhannock Creek	Tobyhanna Creek
Weather	Clear	Overcast	Overcast	Overcast
Volume of Flow (cfs)	0	8.25	0	28.44
Stream Temperature (°C)	16.4	19.5	20.0	18.0
Dissolved Oxygen	7.76	7.87	6.51	9.24
pH	Field / Lab 5.9 ---	Field / Lab 6.38 6.28	Field / Lab 5.2 ---	Field / Lab 7.6 7.47
Conductivity $\mu\text{s}/\text{cm}$	336	175	96.5	357
Total Hardness	---	22.0	---	47.0
Total Alkalinity	---	9.00	---	27.5
Nitrate+Nitrite as N	---	0.313	---	0.518
Nitrate NO ₃	---	0.313	---	0.518
Nitrite NO ₂	---	ND	---	ND
Ammonia NH ₃	---	ND	---	ND
Total Phosphorus	---	ND	---	ND
Chlorides	---	20.6	---	39.0
Total Acidity	---	ND	---	3.50
T.D.S.	169	91	48.4	166
T.S.S.	---	3.2	---	ND
Fecal Coliform	---	190 EST	---	50 EST.

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	TUNKCR03	JONASCR01	SHAWCR05	MARSCR08
Date	8/13/07	8/13/07	8/14/07	8/14/07
Time	1115	1200	0830	0900
Stream Name	Tunkhannock Creek	McMichael Creek	Shawnee Creek	Hawkey Run
Weather	Overcast	Overcast	Clear	Clear
Volume of Flow (cfs)	27.04	3.49	2.11	2.83
Stream Temperature (°C)	20.4	15.7	19.0	15.1
Dissolved Oxygen	7.77	9.84	9.45	9.23
pH	Field / Lab 5.1 ---	Field / Lab 6.1 6.35	Field / Lab 7.9 7.61	Field / Lab 6.7 ---
Conductivity $\mu\text{s}/\text{cm}$	69.0	76.0	645	189
Total Hardness	---	11.0	132	---
Total Alkalinity	---	4.00	107	---
Nitrate+Nitrite as N	---	0.278	0.158	---
Nitrate NO ₃	---	0.278	0.158	---
Nitrite NO ₂	---	ND	ND	---
Ammonia NH ₃	---	ND	ND	---
Total Phosphorus	---	ND	ND	---
Chlorides	---		18.6	---
Total Acidity	---	---	ND	---
T.D.S.	---	38.1	323	94.5
T.S.S.	---	ND	3.2	---
Fecal Coliform	---	50 EST.	ND	---

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	MARSCR09	BRODCR14	BRODCR15	POCOCR14
Date	8/14/07	8/14/07	8/14/07	8/14/07
Time	0930	1000	1030	1130
Stream Name	Marshalls Creek	Brodhead Creek	Brodhead Creek	Pocono Creek
Weather	Clear	Clear	Clear	Clear
Volume of Flow (cfs)	30.92	138.54	141.89	18.91
Stream Temperature (°C)	19.0	18.7	19.3	20.3
Dissolved Oxygen	8.62	8.88	9.5	9.5
pH	Field / Lab 7.5 ---	Field / Lab 7.5 7.15	Field / Lab 7.5 6.98	Field / Lab 7.42 7.12
Conductivity $\mu\text{s}/\text{cm}$	236	162	163.5	542
Total Hardness	---	24.0	24.0	60.0
Total Alkalinity	---	12.5	14.0	434
Nitrate+Nitrite as N	---	0.147	0.133	0.460
Nitrate NO ₃	---	0.147	0.133	0.460
Nitrite NO ₂	---	ND	ND	ND
Ammonia NH ₃	---	ND	ND	ND
Total Phosphorus	---	ND	ND	ND
Chlorides	---	14.7	14.4	48.2
Total Acidity	---	ND	ND	ND
T.D.S.	118	81.0	81.8	272
T.S.S.	---	ND	ND	ND
Fecal Coliform	---	30 EST.	20 EST.	20 EST.

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	MCMICR21		POHOCR08		WEIRCR02		POHOCR06
Date	8/14/07		8/15/07		8/15/07		8/15/07
Time	1200		0815		0900		0945
Stream Name	McMichael Creek		Pohopoco Creek		Weir Creek		Pohopoco Creek
Weather	Clear		Overcast		Overcast		Clear
Volume of Flow (cfs)	43.78		2.7		3.69		33.58
Stream Temperature (°C)	20.5		16.7		14.7		17.4
Dissolved Oxygen	8.75		8.56		7.14		9.27
pH	Field / Lab 7.7 ---		Field / Lab 7.2 6.42		Field / Lab 6.3 5.95		Field / Lab 6.9 ---
Conductivity μ s/cm	454		197.5		257.0		167.3
Total Hardness	---		34		40.0		---
Total Alkalinity	---		14.0		10.0		---
Nitrate+Nitrite as N	---		1.18		2.15		---
Nitrate NO ₃	---		1.16		2.15		---
Nitrite NO ₂	---		0.018		ND		---
Ammonia NH ₃	---		ND		ND		---
Total Phosphorus	---		ND		ND		---
Chlorides	---		20.7		18.8		---
Total Acidity	---		ND		ND		---
T.D.S.	230		93.5		ND		83.6
T.S.S.	---		ND		2.00		---
Fecal Coliform	---		170 EST.		310 EST.		---

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	AQUACR09	AQUACR10	BUCKCR01	BRODCR12
Date	8/15/07	8/15/07	8/15/07	8/16/07
Time	1045	1115	1015	0800
Stream Name	Aquashicola Creek	Aquashicola Creek	Buckwha Creek	Brodhead Creek
Weather	Cloudy	Cloudy	Clear	Overcast
Volume of Flow (cfs)	14.59	10.03	6.47	78.38
Stream Temperature (°C)	17.3	17.8	17.7	19.1
Dissolved Oxygen	10.17	9.85	9.15	9.27
pH	Field / Lab 7.6 ---	Field / Lab 7.8 7.35	Field / Lab 7.1 6.66	Field / Lab 6.5 ---
Conductivity $\mu\text{s}/\text{cm}$	362	346	187.8	165
Total Hardness	---	79.0	40.0	---
Total Alkalinity	---	66.0	24.0	---
Nitrate+Nitrite as N	---	0.249	0.824	---
Nitrate NO ₃	---	0.249	0.824	---
Nitrite NO ₂	---	ND	ND	---
Ammonia NH ₃	---	ND	ND	---
Total Phosphorus	---	ND	ND	--
Chlorides	---	8.51	11.2	---
Total Acidity	---	ND	ND	--
T.D.S.	183	175	104	82
T.S.S.	---	ND	3.6	---
Fecal Coliform	---	140 EST.	160 EST.	---

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	CRCRST02	BUSHCR07	BRODCR13	MCMICR30
Date	8/16/07	8/16/07	8/16/07	8/16/07
Time	0900	0930	1030	1200
Stream Name	Cranberry Creek	Bushkill Creek	Brodhead Creek	McMichael Creek
Weather	Overcast	Overcast	Overcast	Overcast
Volume of Flow (cfs)	0.34	176.02	110.7	55.8
Stream Temperature (°C)	18.5	20.0	20.3	21.2
Dissolved Oxygen	7.8	9.0	9.01	9.33
pH	Field / Lab 6.7 7.05	Field / Lab 6.8 ---	Field / Lab 7.4 7.17	Field / Lab 7.13 7.33
Conductivity $\mu\text{s}/\text{cm}$	920	83.7	336	608
Total Hardness	108	---	108	20
Total Alkalinity	36.5	---	36.0	45.5
Nitrate+Nitrite as N	15.3	---	0.235	0.857
Nitrate NO ₃	15.3	--	0.235	0.835
Nitrite NO ₂	ND	---	ND	0.022
Ammonia NH ₃	ND	---	ND	ND
Total Phosphorus	2.04	---	ND	0.966
Chlorides	56.9	---	56.9	41.7
Total Acidity	ND	---	ND	ND
T.D.S.	410	41.7	171	307
T.S.S.	ND	---	ND	ND
Fecal Coliform	30 EST.	---	80 EST.	20 EST.

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

**SURFACE WATER TEST SITES
PHYSICAL/CHEMICAL DATA**

Site ID	CHERCR11	LEHIRI01	LEHIRI02	TOBYCR01
Date	8/16/07	8/17/07	8/17/07	8/17/06
Time	1115	0915	0930	1030
Stream Name	Cherry Creek	Lehigh River	Lehigh River	Tobyhanna Creek
Weather	Overcast	Clear	Clear	Clear
Volume of Flow (cfs)	8.97	48.8	32.7	22.35
Stream Temperature (°C)	19.7	20.0	20.0	21.0
Dissolved Oxygen	8.70	8.50	8.81	8.4
pH	Field / Lab 7.33 ---	Field / Lab 6.8 6.5	Field / Lab 7.0 6.5	Field / Lab 7.1 ---
Conductivity $\mu\text{s}/\text{cm}$	758	130	135	178
Total Hardness	---	19.0	21.0	---
Total Alkalinity	---	8.0	8.0	---
Nitrate+Nitrite as N	---	ND	ND	---
Nitrate NO ₃	---	ND	ND	---
Nitrite NO ₂	---	ND	ND	---
Ammonia NH ₃	---	ND	ND	---
Total Phosphorus	---	ND	ND	---
Chlorides	---	13.6	13.5	---
Total Acidity	---	ND	ND	---
T.D.S.	381	66.2	67.5	89.0
T.S.S.	---	ND	ND	---
Fecal Coliform	---	50 EST.	90 EST.	---

ND - None Detected

Sites that are tested annually and which consistently show good water quality did not have chemical samples taken for laboratory analysis.

