

PARACR01

LOCATION: Approximately 50 yards upstream of Lower Swiftwater Road

Latitude 41° 06' 07.30"

Longitude -75° 16' 07.60"

FIELD CHEMISTRY:

SITE ID	SAMPLE DATE	TEMP C	SpC mScm	DO mg/l	pH su	ORP mV	DO % sat.	COND mS/cm	TDS mg/l
PARACR01	4/4/03	6.40	112	11.89	7.20	300	96.50	72	73
PARACR01	5/2/03	13.88	122	9.77	7.56	276	94.60	96	79
PARACR01	6/11/03	13.15	99	10.28	7.25	290	97.90	77	65
PARACR01	7/9/03	18.08	112	9.24	7.44	265	97.80	97	73
PARACR01	8/12/03	17.22	97	9.65	7.50	346	100.30	82	63
PARACR01	9/10/03	15.48	116	8.68	7.64	357	87.00	95	75
PARACR01	10/29/03	10.27	68	11.49	7.42	371	102.50	49	44
PARACR01	11/22/03	7.81	80	11.74	7.43	299	98.70	54	52
PARACR01	12/13/03	3.27	76	13.07	7.94	299	97.80	45	50
PARACR01	1/24/04	0.01	77	12.59	8.31	202	86.20	40	50
PARACR01	2/21/04	4.35	111	11.72	8.17	273	90.20	67	72
PARACR01	3/27/04	8.63	128	11.95	7.59	294	102.50	88	83
Wshed min.		0.01	29	5.42	5.47	46	57.70	1	19
Wshed max.		26.25	548	14.37	8.99	561	113.10	388	356
Wshed avg.		10.04	146	10.97	7.50	304	96.14	104	95

Temperatures that exceed Specific Water Quality Criteria in Chapter 93 of Title 25 of the PA Code are shown in red. SpC is specific conductance. DO is dissolved oxygen. ORP is oxidation reduction potential. COND is conductivity. TDS is total dissolved solids. Refer to Sampling and Analysis Plan under Phase I study results for quality assurance/quality control information.

LABORATORY DATA:

SITE ID	SAMPLE DATE	pH	NITRATE	NITRITE	TOTAL SUPSENDED	TOTAL PHOSPHORUS	FECAL COLIFORM
		su	mg/l	mg/l	SOLIDS mg/l	mg/l	CFU/100ml
PARACR01	4/4/03	6.43	<0.1	<0.005	<1.0	0.02	0
PARACR01	5/2/03	6.96	0.31	0.03	1.7	0.19	1
PARACR01	6/11/03	6.85	<0.1	<0.005	1.9	0.11	17
PARACR01	7/9/03	7.33	0.39	0.02	<1.0	0.45	12
PARACR01	8/12/03	6.99	0.36	0.03	<1.0	0.16	438
PARACR01	10/29/03	6.74	<0.10	<0.005	<1.0	0.06	910
PARACR01	11/22/03	6.86	0.87	0.02	1.6	0.14	1
PARACR01	12/13/03	6.69	0.59	0.02	2.8	0.08	4
PARACR01	1/24/04	6.62	<0.1	0.01	<1.0	0.09	0
PARACR01	2/21/04	6.67	0.47	0.03	3.0	0.11	3
PARACR01	3/27/04	6.76	0.40	<0.01	<1.0	0.04	6
PARACR01	9/10/03	6.85	0.61	0.03	5.2	0.24	1
Wshed min		5.47	0.10	0.005	1.0	0.01	0
Wshed max		8.19	1.51	0.050	13.0	0.90	5700
Wshed avg		6.85	0.50	0.019	2.7	0.11	

If the number of sample results where the analytical parameter was not detected exceeded 20% of the sample pool, they were not included in the calculated watershed average. If the number of non-detect samples was less than 20% of the sample pool, ½ of the detection limit was used to represent those samples in the calculated watershed average. Refer to Sampling and Analysis Plan under Phase I of study results for quality assurance/quality control information.

BENTHIC MACROINVERTEBRATES:

The following table compares trending results of the EPA/County scoring schemes for repeat sites (1995 through 2004).

Site #	Site Name	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995
PARACR03	Paradise Creek	33	31								31
BUTZRU01	Butz Run	29	23								
CRCRPA01	Cranberry Creek (Paradise)	29									
PARACR04	Paradise Creek	33	31								
DEHOCR04	Devils Hole Creek	31	31								
CRCRPA03	Cranberry Creek (Paradise)	21	23								
SWIFCR06	Swiftwater Creek	21	23								
SWIFCR02	Swiftwater Creek	25	27								
FOHIRU01	Forest Hills Run	29	25								
PARACR01	Paradise Creek	29	29								
FOHIRU04	Forest Hills Run	25	19	25	29	25	27	27	23	31	
FOHIRU09	Forest Hills Run	15	17								
SWIFCR07	Swiftwater Creek	29	25	29	33						
SWIFCR05	Swiftwater Creek	33	23	25	29	27	25	29	21	25	19
SWIFCR03	Swiftwater Creek	29	29	25	29	29	17	27	19	27	23

The range 35 - 29 is considered optimal. The range 28 - 14 is the slightly to moderately impaired category, and any site with a total score of less than 14 is considered severely impaired.

HABITAT ANALYSIS

PARACR01 2003	194	Optimal	More than 90% of the streambank surfaces covered by vegetation. 5 - 30% of the bottom affected by sediment deposition. All four velocity/depth regimes present.
PARACR01 2004	189	Suboptimal-	Gravel, cobble, and boulder particles are 50 - 75% Optimal surrounded by fine sediment. All four velocity/depth regimes present. Width of riparian zone 12-18 meters.

MACROINVERTEBRATE IDENTIFICATIONS

2003 MONROE COUNTY WATER QUALITY STUDY SITE ID: PARACR01

Insecta		Philopotamidae	47	Simuliidae	4
Ephemeroptera		Polycentropodidae	11	Tabanidae	
Baetidae	43	Psychomyiidae		Dixidae	
Baetiscidae		Beraeidae		Collembola	
Caenidae		Brachycentridae	2	Poduridae	
Ephemerellidae	7	Lepidostomatidae		Nemertea	
Ephemeridae		Helicopsychidae		Nematoda	
Heptageniidae	4	Leptoceridae		Nematomorpha	
Leptophlebiidae	2	Limnephilidae		Annelida	
Metretopodidae		Molannidae		Hirudinea	
Neoephemeridae		Odontoceridae		Oligochaeta	
Oligoneuriidae	8	Phryganeidae		Lumbriculida	
Polymitarcyidae		Sericostomatidae		Lumbriculidae	2
Potamanthidae		Uenoidae		Tubificida	
Siphonuridae		Glossosomatidae		Platyhelminthes	
Tricorythidae		Hydroptilidae	2	Turbellaria	
Odonata		Rhyacophilidae		Planariidae	
Aeshnidae		Lepidoptera		Mollusca	
Cordulegastridae		Pyralidae		Bivalva	
Corduliidae		Coleoptera		Unionidae	
Gomphidae		Dytiscidae		Sphaeriidae	39
Libellulidae		Gyrinidae	1	Cyrenidae	
Macromiidae		Haliplidae		Corbiculidae	
Calopterygidae		Noteridae		Gastropoda	
Coenagrionidae		Elmidae	8	Ancyliidae	2
Lestidae		Hydraenidae		Physidae	
Plecoptera		Hydrophilidae		Planorbidae	
Capniidae		Limnichidae		Bulimidae	
Chloroperlidae		Psephenidae	10	Limnaeidae	
Leuctridae	8	Ptilodactylidae		Crustacea	
Nemouridae		Megaloptera		Amphipoda	
Peltoperlidae		Corydalidae	3	Gammaridae	
Perlidae	5	Sialidae		Talitridae	
Perlodidae		Neuroptera		Isopoda	
Pteronarcyidae		Sisyridae		Asellidae	
Taeniopterygidae		Diptera		Decapoda	
Hemiptera		Ephydriidae		Cambaridae	
Belostomatidae		Athericidae	3	Arachnidia	
Corixidae		Tipulidae		Acari	
Gerridae		Empididae		Hydrachnidia	
Mesoveliidae		Blephariceridae			

Notonectidae		Ceratopogonidae			
Saldidae		Chaoboridae			
Veliidae		Chironomidae	87		
Trichoptera		Culicidae			
Hydropsychidae	104	Muscidae			

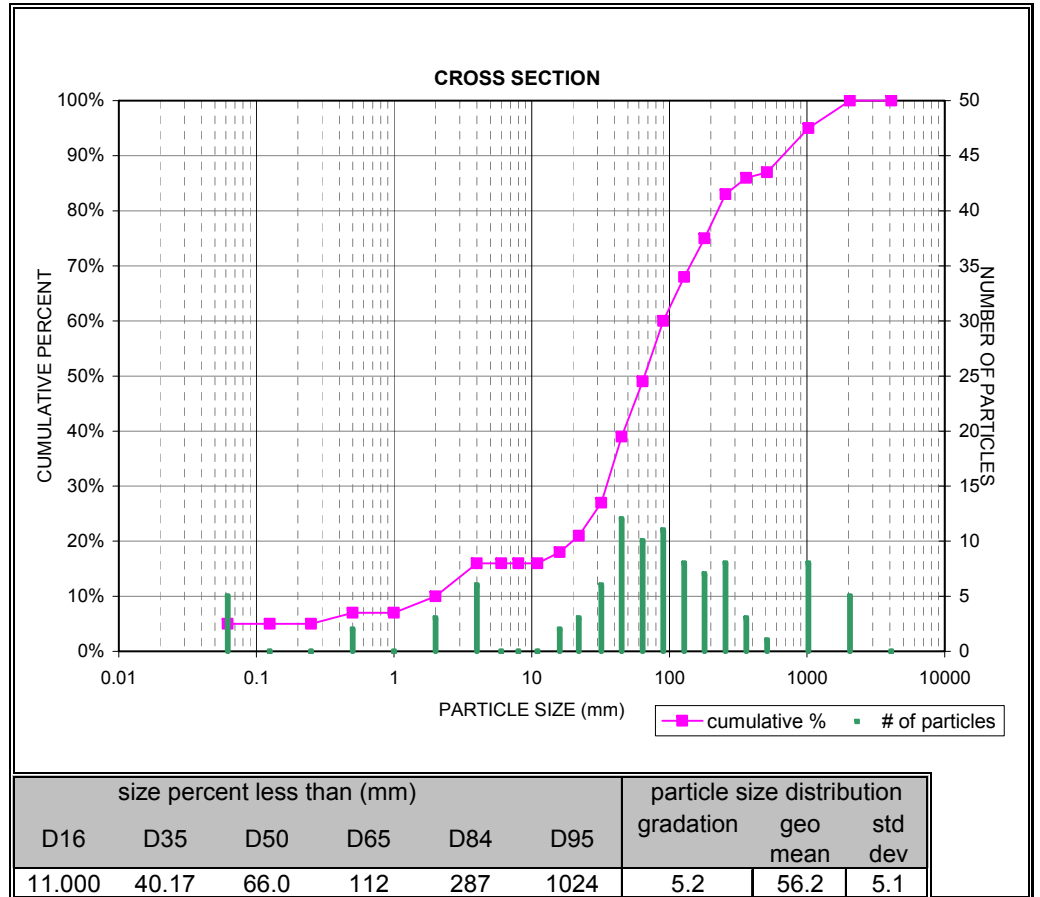
2004 MONROE COUNTY WATER QUALITY STUDY SITE ID: PARACR01

Ephemeroptera		Polycentropodidae	4	Tabanidae	
Baetidae	36	Psychomyiidae		Dixidae	
Baetiscidae		Beraeidae		Collembola	
Caenidae		Brachycentridae	5	Poduridae	
Ephemerellidae	1	Lepidostomatidae	1	Nemertea	
Ephemeridae		Helicopsychidae		Nematoda	
Heptageniidae	62	Leptoceridae		Nematomorpha	
Leptophlebiidae	1	Limnephilidae		Annelida	
Metretopodidae		Molannidae	1	Hirudinea	
Neoephemeridae		Odontoceridae		Oligochaeta	
Oligoneuriidae	2	Phryganeidae		Lumbriculida	
Polymitarciidae		Sericostomatidae		Lumbriculidae	
Potamanthidae		Uenoidae		Tubificida	
Siphonuridae		Glossosomatidae		Platyhelminthes	
Tricorythidae		Hydroptilidae	3	Turbellaria	
Odonata		Rhyacophilidae		Planariidae	
Aeshnidae		Lepidoptera		Mollusca	
Cordulegastridae		Pyralidae		Bivalva	
Corduliidae		Coleoptera		Unionidae	
Gomphidae	2	Dytiscidae		Sphaeriidae	5
Libellulidae		Gyrinidae		Cyrenidae	
Macromiidae		Haliplidae		Corbiculidae	
Calopterygidae		Noteridae		Gastropoda	
Coenagrionidae		Elmidae	7	Ancylidae	7
Lestidae		Hydraenidae		Physidae	3
Plecoptera		Hydrophilidae		Planorbidae	
Capniidae		Limnichidae		Bulimidae	
Chloroperlidae		Psephenidae	5	Limnaeidae	
Leuctridae	38	Ptilodactylidae		Crustacea	
Nemouridae		Megaloptera		Amphipoda	
Peltoperlidae		Corydalidae	11	Gammaridae	
Perlidae	5	Sialidae	1	Talitridae	
Perlodidae		Neuroptera		Isopoda	
Pteronarcyidae		Sisyridae		Asellidae	
Taeniopterygidae		Diptera		Decapoda	
Hemiptera		Ephydriidae		Cambaridae	
Belostomatidae		Athericidae		Arachnidia	
Corixidae		Tipulidae	2	Acari	
Gerridae		Empididae		Hydrachnidia	
Mesoveliidae		Blephariceridae			
Notonectidae		Ceratopogonidae			
Saldidae		Chaoboridae			
Veliidae		Chironomidae	123		
Trichoptera		Culicidae			
Hydropsychidae	52	Muscidae			

Pebble Count (Cross Section)

PARACR01

Material	Size Range (mm)		Particle Count	Cumulative Percent
silt/clay	0	0.062	5	5%
very fine sand	0.062	0.13	0	5%
fine sand	0.13	0.25	0	5%
medium sand	0.25	0.5	2	7%
coarse sand	0.5	1	0	7%
very coarse sand	1	2	3	10%
very fine gravel	2	4	6	16%
fine gravel	4	6	0	16%
fine gravel	6	8	0	16%
medium gravel	8	11	0	16%
medium gravel	11	16	2	18%
coarse gravel	16	22	3	21%
coarse gravel	22	32	6	27%
very coarse gravel	32	45	12	39%
very coarse gravel	45	64	10	49%
small cobble	64	90	11	60%
medium cobble	90	128	8	68%
large cobble	128	180	7	75%
very large cobble	180	256	8	83%
small boulder	256	362	3	86%
small boulder	362	512	1	87%
medium boulder	512	1024	8	95%
large - very large boulder	1024	2048	5	100%
bedrock	2048	4096	0	100%
Total Particle Count:			100	



Pebble Count (Cross Section)

PARACR01

Material	Size Range (mm)		Particle Count	Cumulative Percent
silt/clay	0	0.062	0	0%
very fine sand	0.062	0.13	0	0%
fine sand	0.13	0.25	0	0%
medium sand	0.25	0.5	0	0%
coarse sand	0.5	1	0	0%
very coarse sand	1	2	0	0%
very fine gravel	2	4	0	0%
fine gravel	4	6	0	0%
fine gravel	6	8	0	0%
medium gravel	8	11	1	1%
medium gravel	11	16	2	3%
coarse gravel	16	22	7	10%
coarse gravel	22	32	11	21%
very coarse gravel	32	45	10	31%
very coarse gravel	45	64	15	46%
small cobble	64	90	10	56%
medium cobble	90	128	17	73%
large cobble	128	180	17	90%
very large cobble	180	256	6	96%
small boulder	256	362	0	96%
small boulder	362	512	0	96%
medium boulder	512	1024	0	96%
large - very large boulder	1024	2048	4	100%
bedrock	2048	4096	0	100%
Total Particle Count:			100	

