

## PARACR04

**LOCATION:** Approximately 50 yards downstream of confluence of Tank Creek and Yankee Run.

Latitude 41° 07' 43.80"

Longitude -75° 18' 57.80"

### 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
PARACR04	4/4/03	5.98	192	11.66	7.08	336	93.70	122	125
PARACR04	5/3/03	11.92	188	10.02	7.15	275	92.90	141	122
PARACR04	6/17/03	11.94	179	10.35	7.17	312	95.90	134	116
PARACR04	7/15/03	14.16	127	10.39	7.60	240	101.20	100	82
PARACR04	8/11/03	15.28	159	9.92	7.99	246	99.00	130	104
PARACR04	9/10/03	13.57	189	8.95	7.33	375	86.00	148	123
PARACR04	10/29/03	9.89	106	11.37	7.24	392	100.50	75	69
PARACR04	11/22/03	8.76	142	11.16	7.18	306	96.00	98	92
PARACR04	12/13/03	3.78	136	12.67	7.37	304	96.20	81	88
PARACR04	1/24/04	0.01	158	12.92	7.93	140	88.40	83	103
PARACR04	2/21/04	2.89	174	12.28	7.79	287	91.00	101	113
PARACR04	3/27/04	9.43	205	11.94	7.41	325	104.40	144	133
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
PARACR04	4/4/03	6.55	0.37	<0.005	<1.0	0.08	3
PARACR04	5/3/03	6.93	0.36	0.009	3.9	0.06	1
PARACR04	6/17/03	6.92	0.46	<0.005	3.0	0.05	13
PARACR04	7/15/03	6.56	1.32	0.01	<1.0	0.13	175
PARACR04	8/11/03	6.71	0.78	0.02	<1.0	0.09	16
PARACR04	10/29/03	6.85	<0.10	<0.005	<1.0	0.04	170
PARACR04	11/22/00	6.85	1.49	0.02	<1.0	0.17	1
PARACR04	12/13/03	6.87	0.90	0.02	1.1	0.08	14
PARACR04	1/24/04	6.72	<0.1	0.01	1.8	0.06	0
PARACR04	2/21/04	6.70	0.56	0.04	2.0	0.05	6
PARACR04	3/27/04	6.94	0.53	<0.01	<1.0	<0.02	2
PARACR04	9/10/03	6.76	0.85	0.01	8	0.02	3
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								
CRANCR01	Cranberry Creek (Paradise)	29									
PARACR04	Paradise Creek	33	31								
DEHOCR04	Devils Hole Creek	31	31								
CRANCR03	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

### 2003

PARACR04      186      Suboptimal  
-Optimal      Only 3 of the 4 velocity/depth regimes present.  
Occurrence of riffles relatively frequent.  
Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.

### 2004

PARACR04      193      Optimal      Greater than 50% mix of boulder, cobble, submerged logs or other stable habitat.  
All four velocity/depth regimes present. Occurrence of riffles relatively frequent.

**MACROINVERTEBRATE IDENTIFICATIONS**

**2003 MONROE COUNTY WATER QUALITY STUDY**

**SITE ID: PARACR04**

Insecta		Philopotamidae	10	Simuliidae	4
Ephemeroptera		Polycentropodidae	4	Tabanidae	
Baetidae	51	Psychomyiidae		Dixidae	
Baetiscidae		Beraeidae		Collembola	
Caenidae		Brachycentridae	6	Poduridae	
Ephemerellidae		Lepidostomatidae		Nemertea	
Ephemeridae		Helicopsychidae		Nematoda	
Heptageniidae	8	Leptoceridae		Nematomorpha	
Leptophlebiidae	2	Limnephilidae		Annelida	
Metretopodidae		Molannidae		Hirudinea	
Neoephemeridae		Odontoceridae		Oligochaeta	
Oligoneuriidae		Phryganeidae		Lumbriculida	
Polymitarcyidae		Sericostomatidae		Lumbriculidae	
Potamanthidae		Uenoidae		Tubificida	
Siphonuridae		Glossosomatidae		Platyhelminthes	
Tricorythidae		Hydroptilidae	5	Turbellaria	
Odonata		Rhyacophilidae		Planariidae	
Aeshnidae		Lepidoptera		Mollusca	
Cordulegastridae		Pyralidae		Bivalva	
Corduliidae		Coleoptera		Unionidae	
Gomphidae	1	Dytiscidae		Sphaeriidae	
Libellulidae		Gyrinidae		Cyrenidae	
Macromiidae		Halplidae		Corbiculidae	
Calopterygidae		Noteridae		Gastropoda	
Coenagrionidae		Elmidae	10	Ancylidae	
Lestidae		Hydraenidae		Physidae	
Plecoptera		Hydrophilidae		Planorbidae	
Capniidae		Limnichidae		Bulimidae	
Chloroperlidae	8	Psephenidae		Limnaeidae	
Leuctridae	5	Ptilodactylidae		Crustacea	
Nemouridae		Megaloptera		Amphipoda	
Peltoperlidae	9	Corydalidae	2	Gammaridae	
Perlidae		Sialidae		Talitridae	
Perlodidae	4	Neuroptera		Isopoda	
Pteronarcyidae	21	Sisyridae		Asellidae	
Taeniopterygidae		Diptera		Decapoda	
Hemiptera		Ephydriidae	1	Cambaridae	1
Belostomatidae		Athericidae		Arachnidia	
Corixidae		Tipulidae	9	Acari	
Gerridae		Empididae		Hydrachnidia	
Mesoveliidae		Blephariceridae			

Notonectidae		Ceratopogonidae		
Saldidae		Chaoboridae		
Veliidae		Chironomidae	27	
Trichoptera		Culicidae		
Hydropsychidae	5	Muscidae		

## 2004

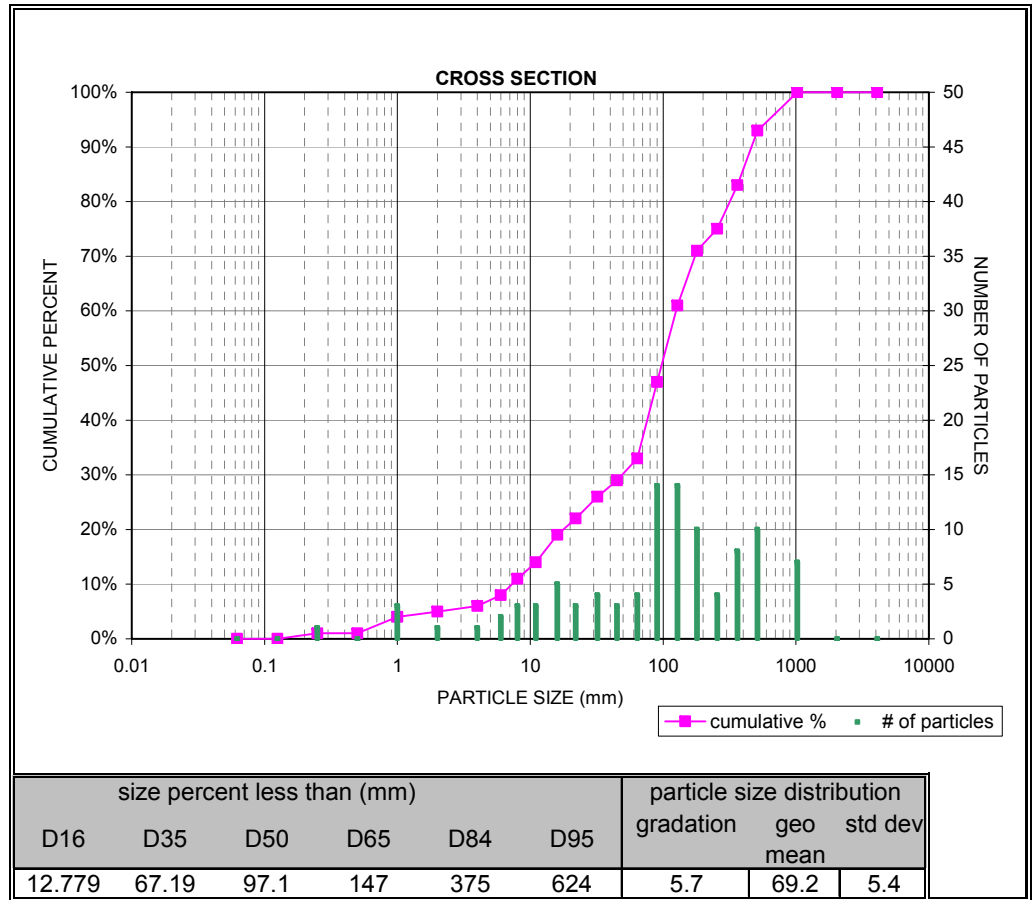
MONROE COUNTY WATER QUALITY STUDY			SITE ID. PARACR04		
Insecta		Philopotamidae	16	Simuliidae	
Ephemeroptera		Polycentropodidae		Tabanidae	4
Baetidae	42	Psychomyiidae		Dixidae	
Baetiscidae		Beraeidae		Collembola	
Caenidae		Brachycentridae	2	Poduridae	
Ephemerellidae	2	Lepidostomatidae		Nemertea	
Ephemeridae		Helicopsychidae		Nematoda	
Heptageniidae	11	Leptoceridae		Nematomorpha	
Leptophlebiidae		Limnephilidae		Annelida	
Metretopodidae		Molannidae		Hirudinea	
Neoephemeridae		Odontoceridae		Oligochaeta	
Oligoneuriidae		Phryganeidae		Lumbriculida	
Polymitarcyidae		Sericostomatidae		Lumbriculidae	
Potamanthidae		Uenoidae		Tubificida	
Siphonuridae		Glossosomatidae		Platyhelminthes	
Tricorythidae		Hydroptilidae	19	Turbellaria	
Odonata		Rhyacophilidae		Planariidae	
Aeshnidae		Lepidoptera		Mollusca	
Cordulegastridae		Pyralidae	2	Bivalva	
Corduliidae		Coleoptera		Unionidae	
Gomphidae		Dytiscidae		Sphaeriidae	
Libellulidae		Gyrinidae		Cyrenidae	
Macromiidae		Halipidae		Corbiculidae	
Calopterygidae		Noteridae		Gastropoda	
Coenagrionidae		Elmidae	3	Ancylidae	
Lestidae		Hydraenidae		Physidae	
Plecoptera		Hydrophilidae		Planorbidae	
Capniidae		Limnichidae		Bulimidae	
Chloroperlidae	15	Psephenidae	4	Limnaeidae	
Leuctridae	38	Ptilodactylidae		Crustacea	
Nemouridae		Megaloptera		Amphipoda	
Peltoperlidae		Corydalidae		Gammaridae	
Perlidae		Sialidae		Talitridae	
Perlodidae	4	Neuroptera		Isopoda	
Pteronarcyidae	5	Sisyridae		Asellidae	
Taeniopterygidae		Diptera		Decapoda	
Hemiptera		Ephydriidae		Cambaridae	
Belostomatidae		Athericidae		Arachnidia	
Corixidae		Tipulidae	4	Acari	
Gerridae		Empididae		Hydrachnidia	
Mesoveliidae		Blephariceridae			
Notonectidae		Ceratopogonidae			
Saldidae		Chaoboridae			
Veliidae		Chironomidae	38		
Trichoptera		Culicidae			
Hydropsychidae	9	Muscidae			



### Pebble Count (Cross Section)

PARACR04

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	1	1%
medium sand	0.25	0.5	0	1%
coarse sand	0.5	1	3	4%
very coarse sand	1	2	1	5%
very fine gravel	2	4	1	6%
fine gravel	4	6	2	8%
fine gravel	6	8	3	11%
medium gravel	8	11	3	14%
medium gravel	11	16	5	19%
coarse gravel	16	22	3	22%
coarse gravel	22	32	4	26%
very coarse gravel	32	45	3	29%
very coarse gravel	45	64	4	33%
small cobble	64	90	14	47%
medium cobble	90	128	14	61%
large cobble	128	180	10	71%
very large cobble	180	256	4	75%
small boulder	256	362	8	83%
small boulder	362	512	10	93%
medium boulder	512	1024	7	100%
large - very large boulder	1024	2048	0	100%
bedrock	2048	4096	0	100%
Total Particle Count:			100	



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silt/clay	0	0.062	0	0%
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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	1	1%
very fine gravel	2	4	1	2%
fine gravel	4	6	0	2%
fine gravel	6	8	0	2%
medium gravel	8	11	0	2%
medium gravel	11	16	3	5%
coarse gravel	16	22	7	12%
coarse gravel	22	32	10	22%
very coarse gravel	32	45	20	42%
very coarse gravel	45	64	23	65%
small cobble	64	90	14	79%
medium cobble	90	128	14	93%
large cobble	128	180	4	97%
very large cobble	180	256	0	97%
small boulder	256	362	1	98%
small boulder	362	512	0	98%
medium boulder	512	1024	1	99%
large - very large boulder	1024	2048	1	100%
bedrock	2048	4096	0	100%
Total Particle Count:			100	

